TOOLE DESIGN

CITY OF TACOMA:
VISION ZERO ROAD SAFETY AUDITS

RSA TECHNICAL MEMO #3: SOUTH PINE ST

SEPTEMBER 2024 | FINAL

CONTENTS

This report is provided for informational purposes only, and all results, recommendations, preliminary concepts, cost opinions, and commentary contained herein are based on limited data available at the time of preparation. Further engineering analysis and design are necessary prior to implementing any of the recommendations contained herein. Toole Design makes no representations or warranties regarding the accuracy of the underlying source data. Motor vehicle crashes are complex occurrences that often result from multiple contributing factors. The success of these safety recommendations depends on multiple factors outside of Toole Design Group's control.

INTRODUCTION

The purpose of this study is to conduct a road safety audit (RSA) for a study area that includes one corridor segment and its intersections: South Pine St Ave between Center St and South 47th St. This report was developed in accordance with the FHWA Road Safety Audit (RSA) guidelines and combines findings from crash data analysis and other available data.

SAFE SYSTEM APPROACH

The Tacoma Vision Zero Road Safety Audit is framed around the Safe System Approach (Figure 1). The Federal Highway Administration (FHWA) provides guidance on the Safe System Approach, which recognizes that road safety is a shared responsibility between those that design, build, operate, and use the road system. It recognizes that to reduce risks to humans all parts of the transportation system must be strengthened, so that if one part fails, the other parts still protect people.

Safe System Principles are illustrated in the outer ring of the graphic with the Safe System elements found on the inner ring: Safer People, Safer Vehicles, Safer Speeds, Safer Roads, and Post-Crash Care.

The Safe System Approach aims to eliminate fatal and serious injury crashes using a proactive approach that anticipates human mistakes- and reduces the severity of crashes that do happen, so the impact is less likely to be fatal or cause serious injury. The strategies and practices included in this memo are framed around safer people, safer vehicles, safer roads, safer speeds, and post-crash care.

Figure 1: Safe System Approach Wheel (Source: FHWA)

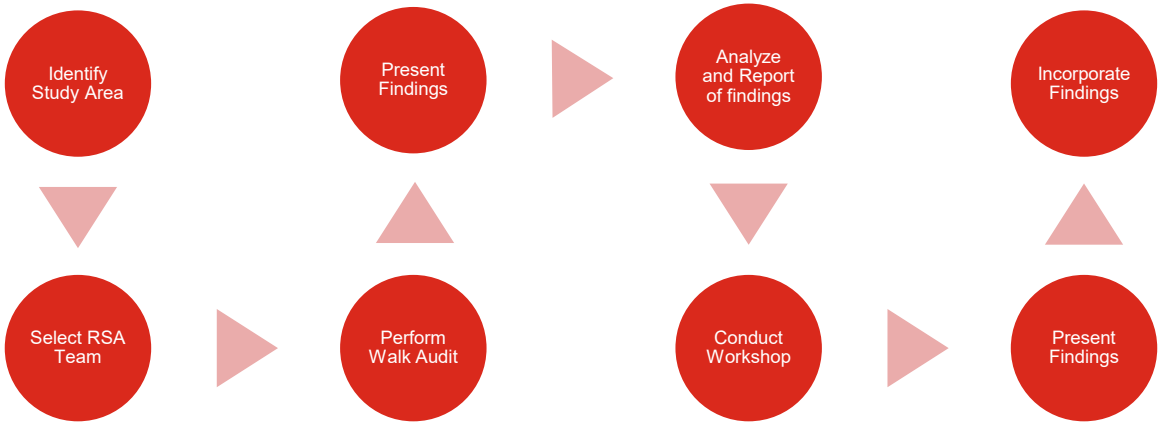
WHAT IS A ROAD SAFETY AUDIT?

PURPOSE

An RSA is the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users. The aim of an RSA is to answer the following questions:

- What elements of the road may present a safety concern: to what extent, to which road users, and under what circumstances?
- What opportunities exist to eliminate or mitigate identified safety concerns?

PROCESS



STUDY AREA

The study area for this RSA is under the jurisdiction of the City of Tacoma. It includes South Pine St between Center St and S 47th St and a short segment of S Oakes St. South Pine St from S Tacoma Way (two blocks south of Center St) to S 47th St was identified in the 2022 Tacoma Vision Zero Local Roads Safety Plan as an Arterial High Risk Network Priority Corridors.[1]

Table 1 describes the segments details and Figure 2 displays where the segment is located within the City of Tacoma. Appendix C includes 2018 vehicle volume data shared by City of Tacoma staff.

Table 1: South Pine St Segment Details

Extent	WSDOT Functional Classification	Tacoma Arterial Classification	Length	Speed Limit
Center St to S 38th St	Urban Minor Arterial	Minor Arterial	0.79	35
S 38th St to S 47th St	Urban Minor Arterial	Minor Arterial	0.52	30

[1] Arterial High Risk Network Priority Corridors were prioritized based on analysis of three primary components: speed differential between posted speed and operating speeds; number of KSI crashes; and sliding window scores. These corridors strongly need roadway safety countermeasures focused on both reducing speed and improving safety.

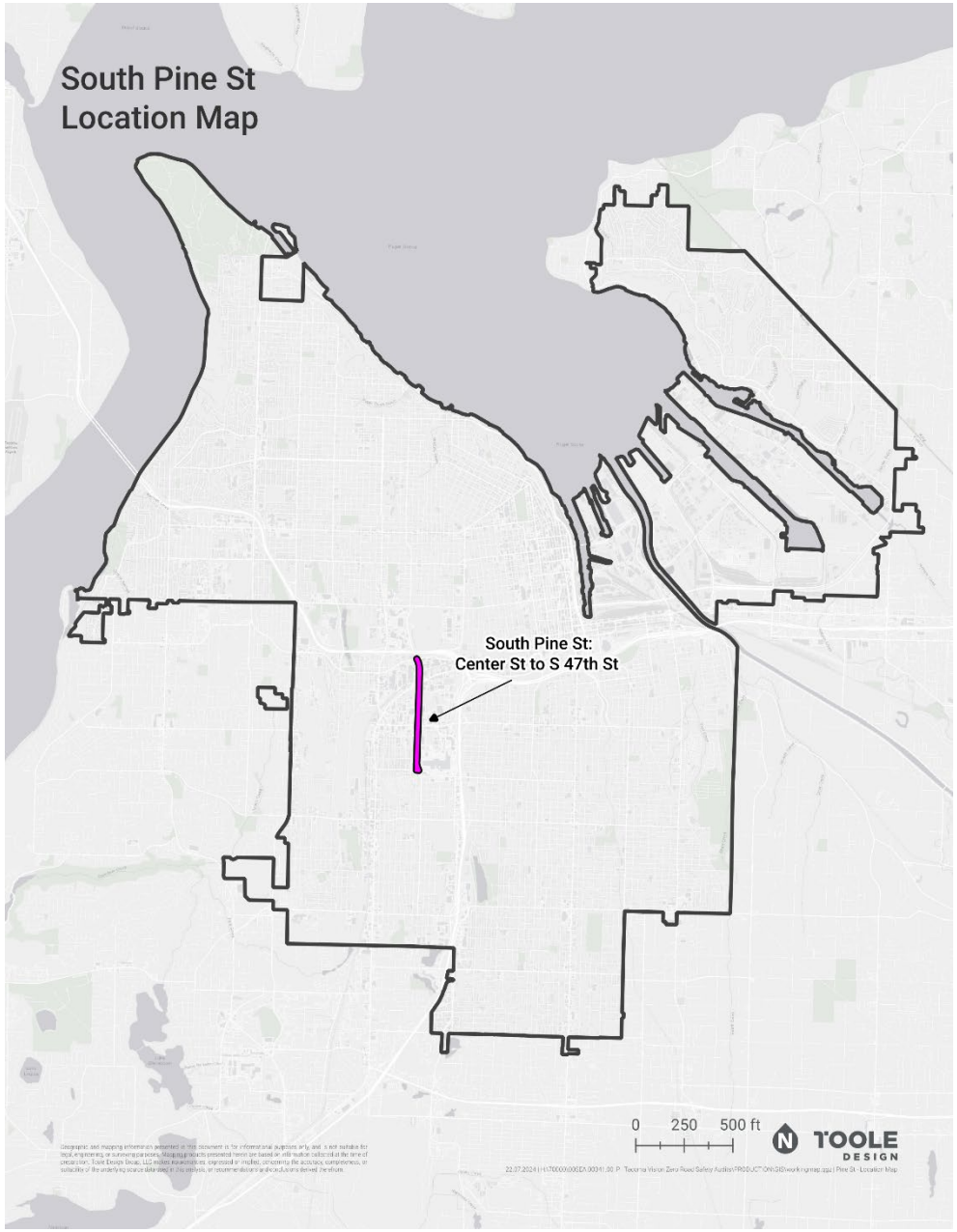


Figure 2: South Pine St Location Map

NEIGHBORHOOD PROFILE

South Pine St runs through the center of the Tacoma Mall Regional Growth Center, one of Tacoma's two designated growth centers. This area is planned for urban densities with a mix of uses well connected to transit. Figure 3 displays the boundaries for these zones and includes nearby parks and key locations. The area contains:

- Auto-oriented commercial retail (small & large format retailers, including the Tacoma Mall and strip malls) east of S Pine St and surrounding S 38th St,
- Office, distribution, fleet services, bus center and other commercial uses mixed,
- Industrial in western and northern portions near S Tacoma Way,
- Generally, 2-3 story residential (garden apartments, townhouses, single family), Madison and Lincoln Height Districts, mixed with commercial in Mall District,
- 7-8-story newer residential mixed-use development near the mall (The Pacifica Apartments at S Pine St and S 45th St), and
- S 40th St Community Garden and Lincoln Heights Park are the only parks in the area.

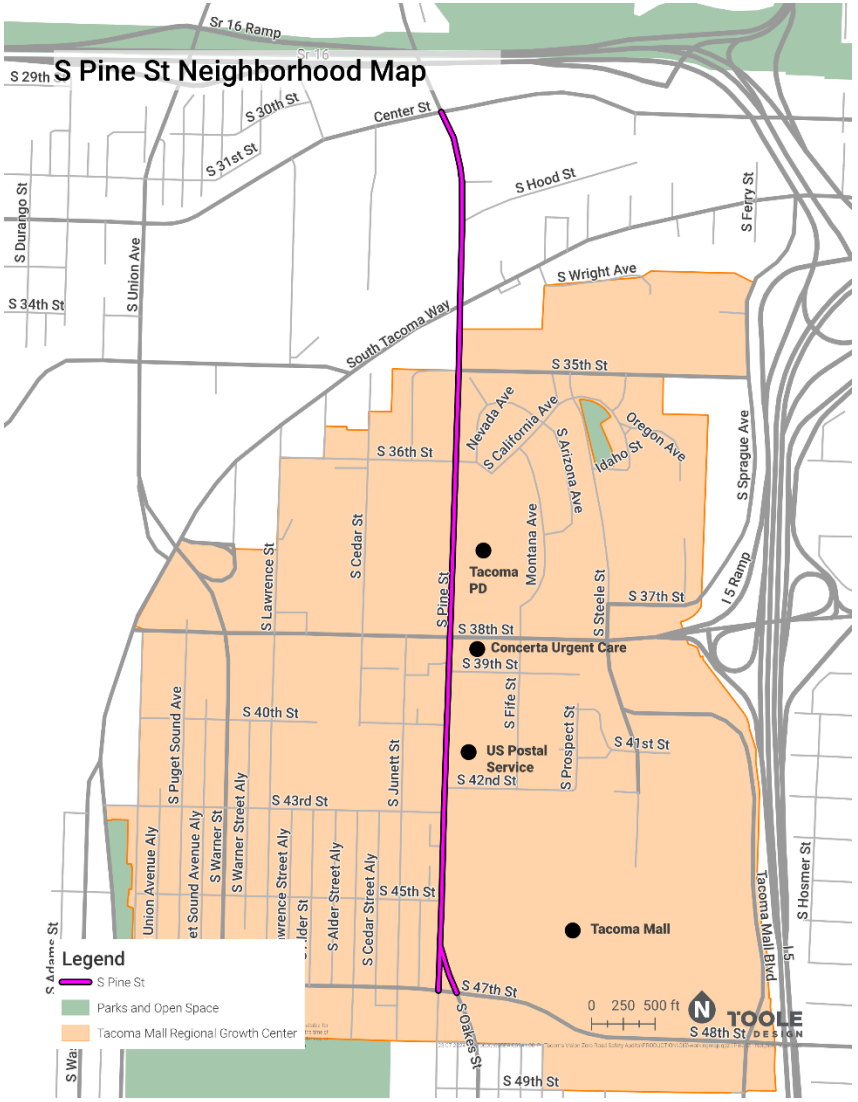


Figure 3: South Pine St Neighborhood Map

Zoning and Land Use

Figure 4 shows the zoning around S Pine St. This area has an inclusionary zoning requirement adopted with the Tacoma Mall Subarea Plan in 2018.[2] Inclusionary zoning requires developers of 15+ units to build 10% of units as affordable for households who earn 50% of the area median income. It also reduces parking requirements from 1 parking stall per unit to 0.5 parking stalls per unit, and no off-street parking is required for each affordable housing unit.[3]

Tacoma Mall Neighborhood Subarea Plan

The Tacoma Mall Subarea Plan was adopted in 2018 and seeks to promote a vision for positive growth and change within the Subarea. The Tacoma Mall Neighborhood Subarea Plan's land use and urban form goals include:

- The Tacoma Mall Regional Growth Center increases in density with transit-supportive density and mixed-use development. The development is consistent with growth targets.
    - Projected 8,385 new jobs and 8,887 new residents by 2040 (from 2018).
    - Zoned capacity is much greater than the growth targets, accounting for market forces.
- Improving the public realm by linking land use, transportation, and parks.
- Improving urban design by supporting place-based character districts through design review: Madison, Northwest, Lincoln Heights, and Mall Districts.
- Focusing density around the mall and along S 38th St and S Pine St and transition out to less intense areas through updated zoning.

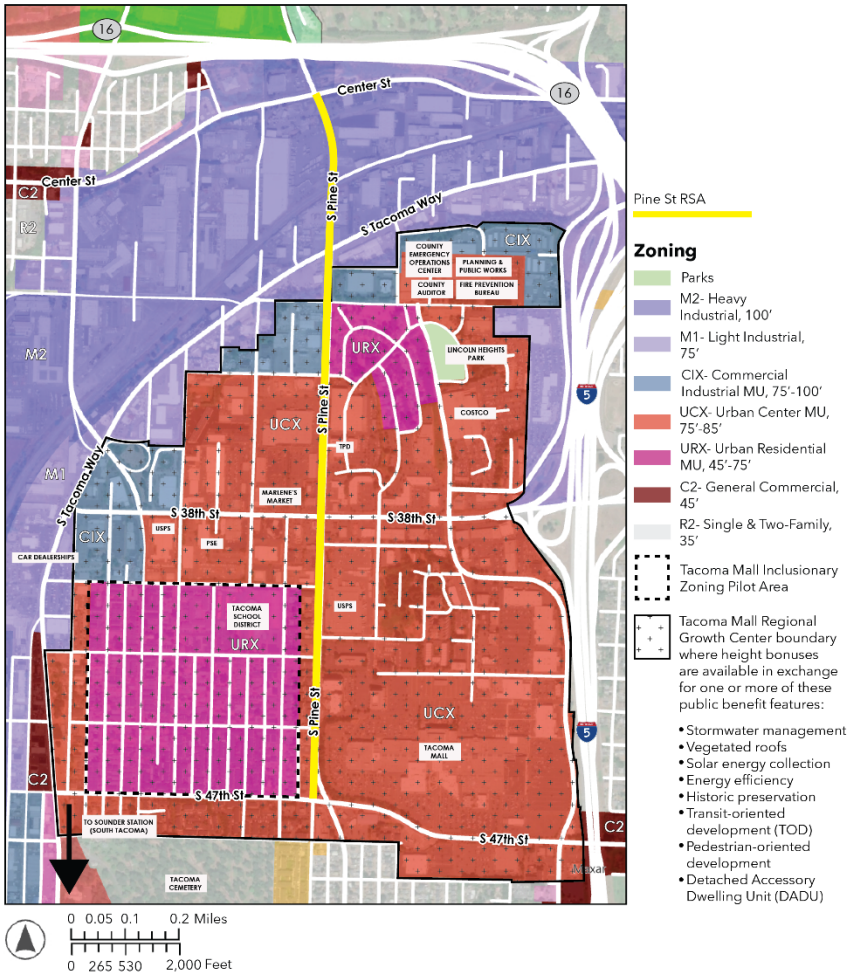


Figure 4: South Pine St Zoning Map (Source: Makers, 2024)

[2] https://www.cityoftacoma.org/cms/one.aspx?pageId=67757
[3] Note from MAKERS: Parking requirements may be further reduced through recent state laws for multifamily near frequent transit and Home in Tacoma zoning updates.

- Creating a plan for an internal loop road (off major thoroughfares) and a string of connected public spaces.
- Breaking down superblocks via through-block connections (max block size of 600' x 600') with redevelopment and through catalytic public investment.
- Incorporating green infrastructure, signage, public art, etc. for place identity and co-benefits.

The land use strategies in the plan include rezoning, upzoning, and increased transition areas between the commercial and residential are to meet growth targets and improve connectivity as well as design objectives to improve the urban form through street-oriented multifamily design, increased landscaping, and adoption of "Pedestrian Street" designations. Figure 5 shows the Vision Map from the Tacoma Mall Subarea Plan illustrating the overall design, landscaping, and development for the subarea. Future zoning code change considerations will include hybrid form-based neighborhood code, high-capacity transit station overlay district, and updated bonuses to improve connectivity. Key strategies from this plan include:

- Meet growth targets and improve connectivity through redevelopment and prioritize connections based on their ability to support growth, provide alternatives to major arterials, and support use of alternative modes to cars.
- Promote design objectives, develop design review methods, refine design standards towards subarea goals.
- Prioritize pedestrian corridors and connectivity through adoption of "Pedestrian Street" designations, which apply to major streets throughout subarea.
- Increased development incentives.

Long Term Illustrative Vision Map

Figure 5: Tacoma Mall Subarea Plan Illustrative Vision Map; yellow indicates the RSA study area, green identifies the internal loop road concept" (Source: Tacoma Mall Subarea Plan, 2018; Makers, 2024)

CORRIDOR FACILITIES

Figure 6 displays facilities along South Pine St. The map includes locations of existing bicycle facilities, traffic signals, stop signs, and bus stops.

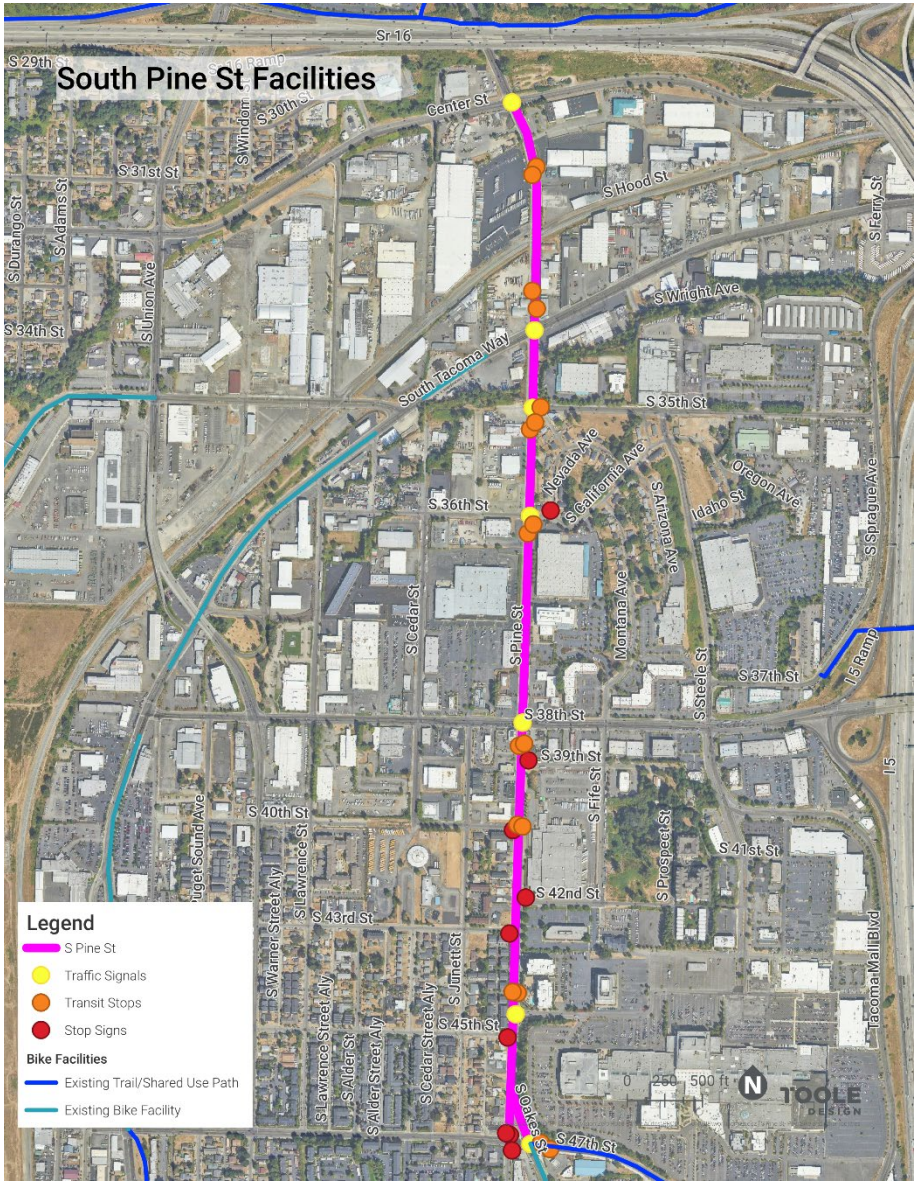
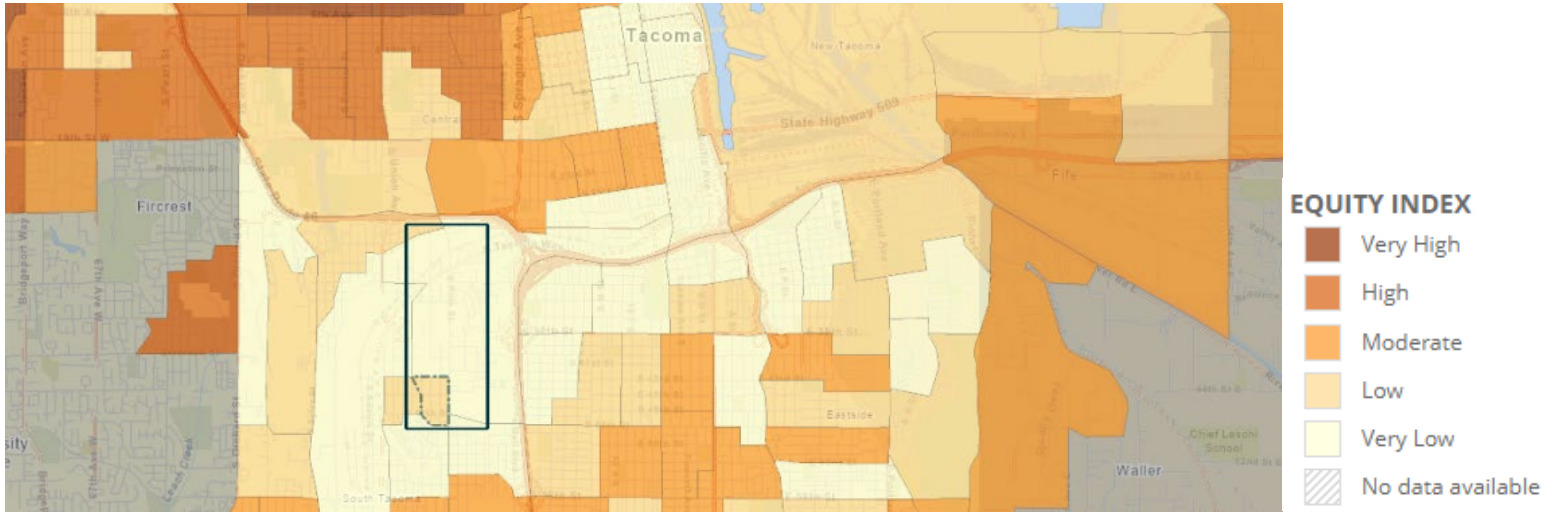
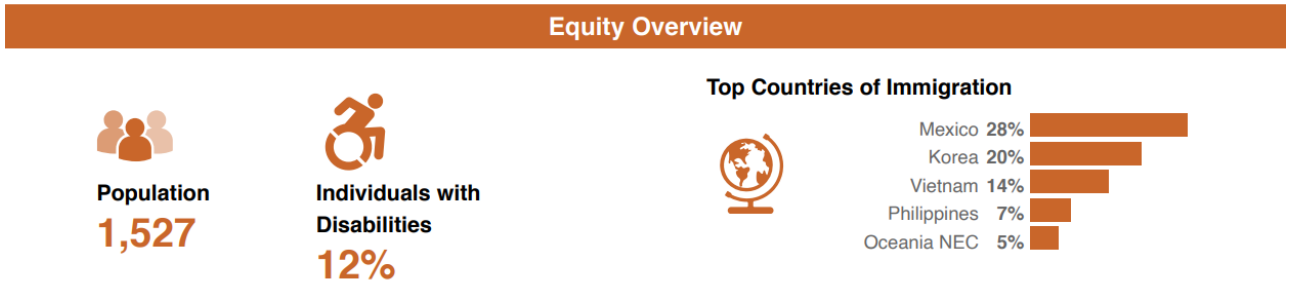


Figure 6: South Pine St Facilities

CITY OF TACOMA EQUITY INDEX MAP

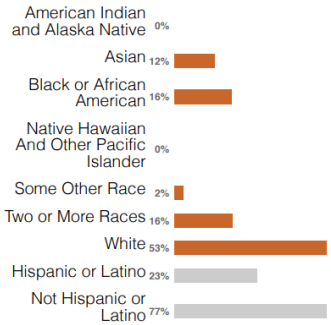
The City of Tacoma Equity Index is a tool which highlights areas of Tacoma where residents have the most access to opportunity and where residents are further away from opportunity.[4] The tool looks at five categories: livability, accessibility, economy, education, and environmental health. Areas that have the most access to opportunities are shaded the darkest or identified as “Very High” Opportunity and areas where residents are furthest from opportunity are shaded the lightest or identified as “Very Low” Opportunity. The following graphics describe the equity and opportunity of residents living near South Pine St and show that the corridor is within “Very Low” to “Low” Opportunity areas.



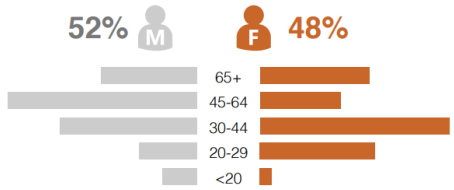


[4] City of Tacoma Equity Index, https://www.cityoftacoma.org/cms/One.aspx?portalId=169&pageId=175030

Race & Ethnicity



Age & Gender



Foreign Born Population
17%

Limited English
2%

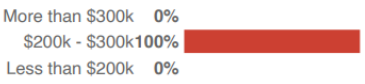
Livability

Average Life Expectancy
77

Insured Rate
90%

Pedestrian / Bicyclist Crashes
1

Median Home Value



Owner Cost Burden
10%

Renter Cost Burden
51%

6
Personal Crimes
Total in 2022-2023

78
Property Crimes
Total in 2022-2023

Accessibility

Voter Participation Rate
26%

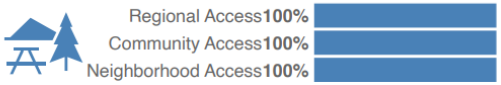
Households with Internet
98%

Sidewalks and Bikeways
0.04

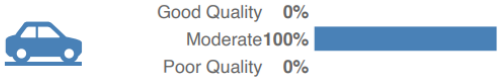
Household Vehicle Access
91%

Healthy Food Availability
0.25

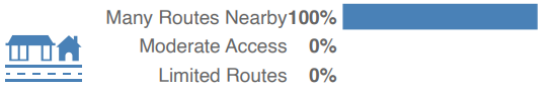
Parks & Open Space



Average Pavement Condition



Transit Access Score



Economy

200% of Poverty
46%

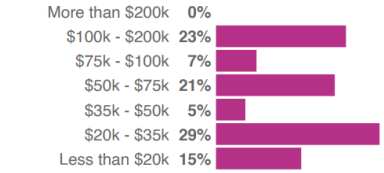
Employment Rate
99%

Poverty Rate
20%

Quality Jobs Index
0.68

Median Household Income
$47,250

Median Household Income



Education

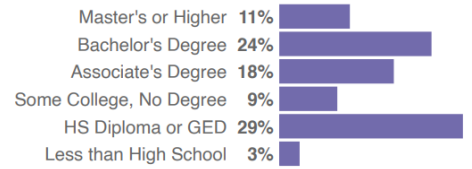
Average Student Mobility
7%

High School Graduation Rate
87%

Average Testing Proficiency
25%

Kindergarten Readiness Rate
64%

Highest Educational Attainment



Environmental Health

Ozone Concentration
50 Micrograms / cubic meter

PM 2.5 Concentration
7 Parts/billion

Diesel Emissions
0.48 Tons/km2/year

Heavy Traffic Roadways
411 Inverse Distance Weighted Annual Daily Traffic Count

Toxic Risk
793 RSEI Calculated Score

Urban Heat Island Index
87°

Urban Tree Canopy
14%

COLLISION HISTORY

The following sections include tables summarizing the killed and serious injury (KSI) crashes from 2017 to 2023 (Tables 2 and 3). Figure 7 displays the crash mode and severity of crashes along the segment from 2017 to 2023. Figure 8 illustrates the crash diagrams. Each crash includes a corresponding number based on crash location from north to south. The corresponding number in the collision diagrams relates to the ID column in Table 3, which includes additional crash details.

Table 2: Number of KSI Crashes by Severity in Study Area by Year, 2017-2023

	2017	2018	2019	2020	2021	2022	2023
Serious Injury	1	1	0	0	1	0	1
Fatal	0	0	0	0	0	0	1

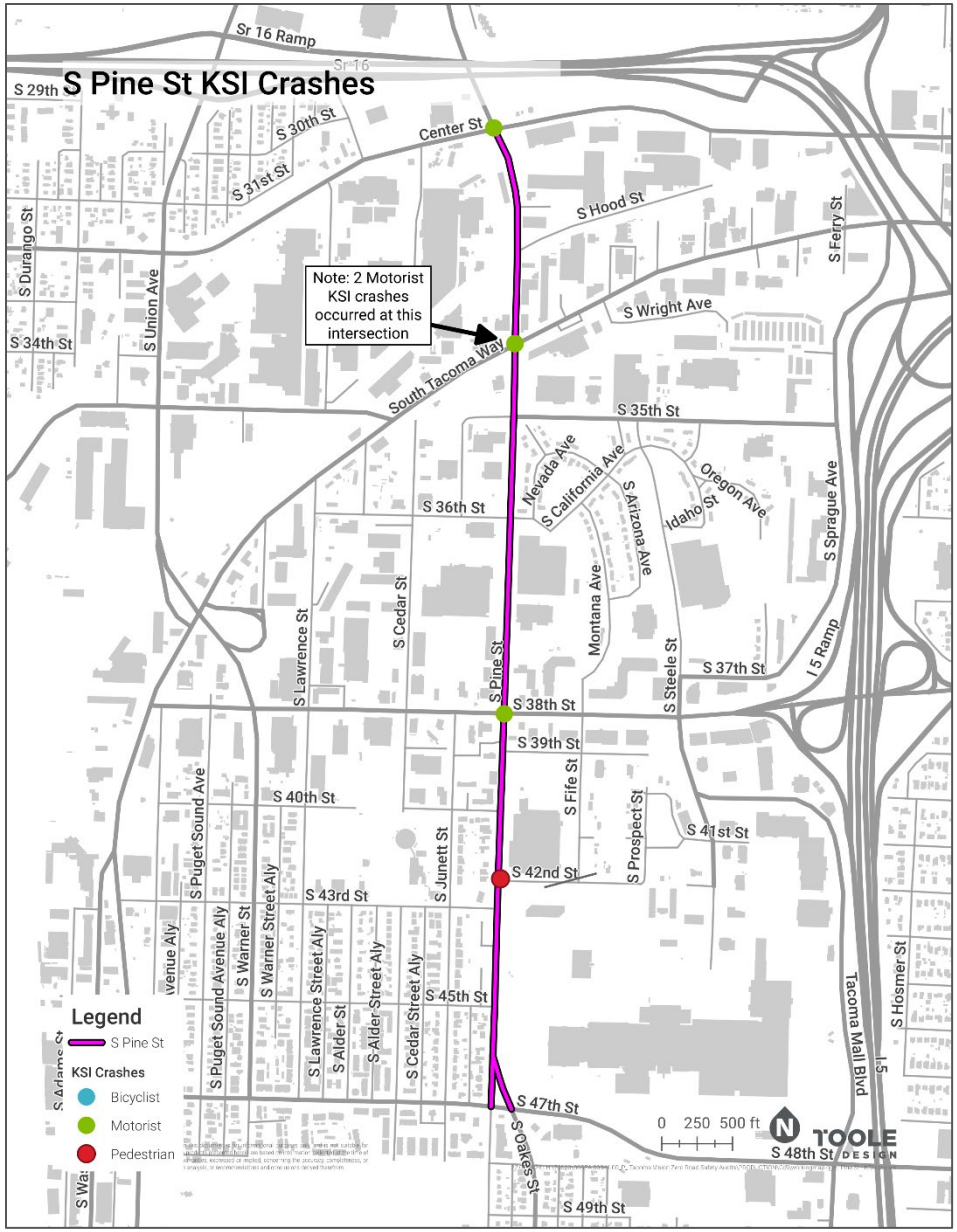


Figure 7: South Pine St KSI Crashes Map

Table 3: KSI Crash Details

ID	Injury Severity	Crash Modes	Crash Actions	Location Type	Intersection Control	Lighting	Contributing Factors	Year	Nearest Cross Street
1	Suspected Serious Injury	Motorist	From opposite direction - one left turn - one straight	Intersection	Traffic Signal	Dark-Street Lights On	--	2017	Center St
2	Suspected Serious Injury	Motorist	Entering at angle	Intersection	Traffic Signal	Dawn	Distracted Driver	2021	S Tacoma Way
3	Fatal Died at Hospital	Motorcyclist	From opposite direction - one left turn - one straight	Intersection	Traffic Signal	Daylight	Distracted Driver	2023	S Tacoma Way
4	Suspected Serious Injury	Motorist	Entering at angle	Intersection	Traffic Signal	Daylight	Distracted Driver	2023	S 38th St
5	Suspected Serious Injury	Pedestrian	Vehicle going straight hits pedestrian (Not in crosswalk)	Intersection	Partial Stop	Dark-Street Lights On	Distracted Driver	2018	S 42nd St

SOUTH PINE ST COLLISION DIAGRAMS

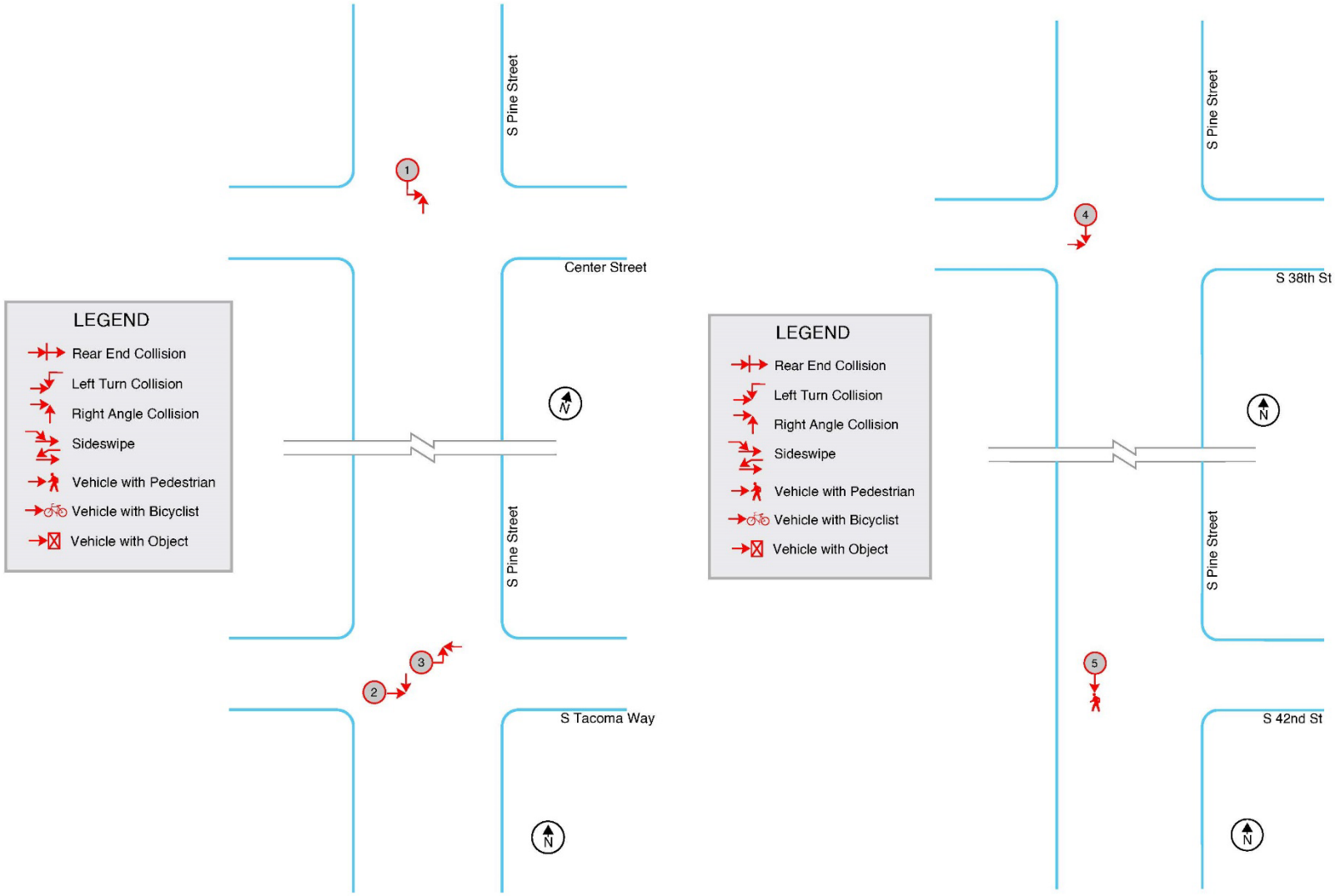


Figure 8: South Pine St Collision Diagrams (Crashes 1-5)

WALKING AUDIT AND RSA WORKSHOP

On Wednesday, July 31, 2024, the RSA team, comprised of City of Tacoma staff and the consultant team, participated in a walking audit of South Pine St. The walking audit is a formal safety performance examination of an existing roadway and intersections. The walking audit team thoroughly examines the corridor and estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users.

The walking audit included the following participants:

- City of Tacoma
  - Brian Churchill
  - Grayson Reim
  - Vicki Marsten
  - Daniel Brewer
  - Liz Kaster
  - Matt Fleming
  - Natalie Dupille
  - Brian Wang
  - Rebecca Solverson
  - Harrison Jastrzembski
  - Luke Faulkner
  - Stephen Antupit
- Pierce Transit
  - Anna Peterson
  - Tina Vaslet
- Toole Design
  - Alex DuVall
  - Cody Wuestney
  - Jaxon Roller
  - Maimoona Rahim
- MAKERS
  - Rachel Miller
- DKS Associates
  - Sarah Keenan
  - Alexander Emmons

On Thursday August 1, 2024, the RSA team held a virtual workshop to discuss the area in more detail. Workshop attendees included most people who attended the walking audit. The RSA team reviewed study area, segment packet provided in advance of the walking audit, and shared findings from the walking audit. The workshop followed this schedule:

Time	**Agenda**
8:30-8:45	Join & Attendance
8:45-9:00	Overview & Practice
9:00-9:10	Countermeasure Toolkit
9:10-10:00	Northern Extent
10:00-10:10	Coffee Break
10:10-11:00	Middle Extent
11:00-11:10	Coffee Break
11:10-12:00	Southern Extent
12:00-12:30	Wrap up and Next Steps

To promote brainstorming, the consultant team used the MIRO digital visual collaboration tool that provided the opportunity for simultaneous written input from all participants. The facilitator led a verbal discussion alongside to supplement the written inputs. Figure 9 shows a screenshot of the MIRO board used during the workshop and Appendix A provides “zoom in” of each of the subareas of the RSA study. Appendix B shows the Conceptual Engineering Design Drawings for the South Tacoma Station Improvements Phase II project, which was included on the MIRO board and in the segment packets, with comments from the RSA team.

Tacoma Vision Zero RSA 2: South Yakima Ave

VISION ZERO TACOMA

RSA 3:

South Pine St

The purpose of this study is to conduct a road safety audit (RSA) for a study area that includes one corridor segment and its intersections: South Pine St between Center St and S 47th St.

AGENDA:
8:30-8:45: Join & Attendance
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9:00-9:10: Countermeasure Toolkit
9:10-10:00: Northern Extent
10:00-10:10: Coffee Break
10:10-11:00: Middle Extent
11:00-11:10: Coffee Break
11:10-12:00: Southern Extent
12:00-12:30: Reserve

Welcome!
COME HERE TO PRACTICE !

A Logistics & Tips

As with all tools, there's a learning curve! Be patient with yourself, others, and technology. Here are some helpful tips to get us started on the right foot.

Tech: A chrome browser is key. Sometimes you need to refresh the page.

The Basics: See list on the left. Most importantly: move and zoom!

Issues?: Please use meeting chat or raise your hand for assistance

Cursors Off: Other users' cursors will be hidden to reduce confusion

B Your Avatar

Every Miro user invited to this board is represented with an avatar at the top of the screen. Your avatar is highlighted.

C Follow Your Facilitator

1. Facilitator will note where on the screen we are focused on
2. Facilitator may occasionally use the feature "bring everyone to me" which will bring everyone's screen to the same location

D Practice

CLICK, TYPE, COPY, DUPLICATE!

Safe System Approach

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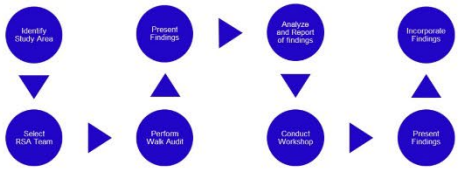


COUNTERMEASURE TOOLKIT

Other Safety Ideas

VISION BOARD

CORRIDOR WIDE:

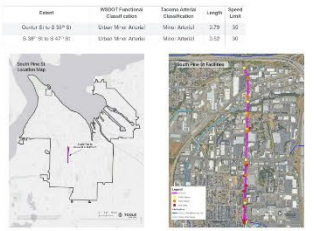
North Extent: Center St to North of S 36th St

MIDDLE EXTENT: S 36th St to S 42nd St

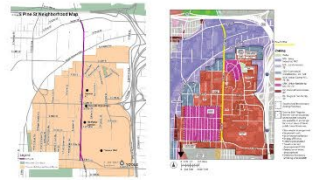
SOUTH EXTENT: South of S 42nd St to S 47th St

REFERENCES

Segment Details



Neighborhood Profile



Other Projects

Historic Water Ditch Trail- Phase III & IV
Phase IV is complete. Phase III will complete 1.1 miles of shared use trail between Pine and M Street on the north side of South Tacoma Way and a sidewalk between Pine and Sprague on the south side of South Tacoma Way.
38th and Cedar Street Crossing Improvements
The project will construct pedestrian safety improvements at the intersection of South 38th Street and Cedar Street, and approximately 400 feet to the west of that intersection. Improvements will include curb bulbs, accessible curb ramps, high visibility crosswalk markings, signal upgrades, and a ten-foot-wide sidewalk on the north side of South 38th Street to close a gap in the sidewalk network.
2024 Street Operations Overlay Program
Crews will grind out sections of pavement to make minor repairs and prepare the surface for the placement of a 2-inch layer of asphalt over the existing street surface. ADA curb ramp upgrades will also be made at this time if applicable. 2024 projects are still in utility review and are subject to change.

Collision History

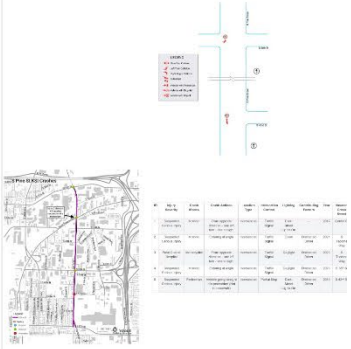


Figure 9: South Pine St MIRO Board

The quantity of feedback, comments, photos, and safety treatment recommendations provided was much greater than what can be captured in a typical brainstorm setting. The consultant team captured all verbal input shared by attendees to help inform the safety recommendations in the next section.

The following section summarizes the comments and suggestions from the team participating in the walking audit and workshop. These suggestions were taken into consideration for the development of recommended improvement considerations shown in the Recommended Safety Treatments section of this memo.

WHOLE EXTENT: S PINE ST FROM CENTER ST TO S 47TH ST

- Evaluate speed limit with consideration of road diet
- Evaluate traffic calming on streets that cross S Pine St
- Leverage art/visual elements for traffic calming

Walking audit team on S Pine St near S 45th St

NORTHERN EXTENT: S PINE ST FROM CENTER ST TO NORTH OF S 36TH ST

At the intersection of S Pine St and Center St

- Should add LPI once we have APS.
- Need APS, but Cedar St Active Transportation project will be providing.
- Center St is a planned future bike route.
- Tacoma Fire Department would like to have Emergency Vehicle Preemption on all directions.
- Intersection of two high risk VZ corridors: S Pine St and Center St.

Along S Pine St between Center St and S Hood St

- If the planned buffered bike lane includes concrete barriers, the concrete buffers could be a great spot for art.
    - There are a number of options for bike lane barrier types as well (concrete stamps, enameled metal inlays, murals, thermoplastic etc). We could consider adding greenery/pollinator paths. Seattle has planter boxes in these buffers, and we could easily do vinyl on metal planter boxes.
- No sidewalk on east side.
- Ensure larger vehicle turning movements are provided here (dirt/sand filling station) in the conceptual design.
    - It is also the place where people can fill sandbags in prep for a storm event. There are large commercial trucks (regular) and smaller vehicles (on occasion) entering and exiting.
- Replace driveway on east side to Dodge warehouse/NW Etch.
- No street trees throughout. Consider trees for median.
- Narrower sidewalk on both sides.
- Steep slope on both sides.

At the intersection of S Pine St S Hood St

- Consider adding a robust center turn lane median.
- Left turns out of goodwill driveway are restricted, but people were still turning left.

Raised median north of S Hood St

Rail tracks owned by Sound Transit

- Someone made a left turn out of Goodwill driveway while we were there yesterday. They drove into the southbound lane to head north and avoid the curb.
- The railroad is owned by Sound Transit.
- The railroad pedestrian crossing does not include gates for pedestrians.
- The pedestrian and bicyclist railroad crossing do not meet current standards.
- Very long term--but this Sound Transit rail corridor seems well set up for a trail, though redundant with Water Flume Trail and S Tacoma Way future bike facilities.

Along S Pine St between S Hood St and S Tacoma Way

- Properties on both side of street (south of railroad) owned by Dixon; there is parking on the west side, and the work site is on the east side. There are lots of workers crossing midblock from the parking lot.
- There is on street parallel parking.
  - Is this parking needed? Seemed underutilized - potential option for tree-planting/landscaping.
- Very hot. Lack of shade.

At the intersection of S Pine St and S Tacoma Way

- Tacoma Fire Department would like to have Emergency Vehicle Preemption for all directions.
- Future pedestrian project through intersection for S Tacoma Way.
- No APS.
- Recently installed 12" signal heads with backplates.
- Existing video detection.
- Signal system attached to one of Tacoma Public Utilities pole.
- Need marked crosswalks.
- South Tacoma Way - Need to decide on intersection design for trail or protected bike lane. Dependent on Pierce Transit Bus Rapid Transit (BRT) plans.
- Remove one of the two private driveways serving the 7-11 in the SE corner of the intersection if possible.

Steep slope south of S Tacoma Way

Unmarked crosswalks at South Tacoma Way intersection

Along S Pine St between S Tacoma Way and S 35th St

- Missing sidewalk on east side.
  - Sidewalk on east side will be constructed by Water Ditch Trail Ph 3 between intersection to existing sidewalk
- Possible sight distance issue, due to vertical curve at S 35th St.
- 2018 ADT ~22,000.
- Narrower sidewalk on both sides.

At the intersection of S Pine St and S 35th St

- Lots of people and traffic expected at this intersection due to floral delivery, County Annex, vehicular and ped/bike route to Costco, only existing park (Lincoln Heights), plus new housing planned.
- Double check pedestrian signal timing.
- No APS.
- Existing video detection.
- 12/8/8 signal heads.
- Missing ramps for crossing west side.
- Signal system attached to two Tacoma Public Utilities poles.
- Need marked crosswalks
- Street (west side) here may be connected through to S Junett St. It currently dead ends and looks like parking lot.
- West-East ramp crossings are not aligned.
- SE corner landing and ramp are non-compliant.
- Likely bike route to the S 37th St bike/ped bridge.
- There is a lot of housing development planned on east side of intersection.

Along S Pine St between S 35th St and S 36th St

- Narrower sidewalk on west side.
- No sidewalk midblock on east side.
- Rolled driveways here. Not ADA accessible.
- No sidewalk on south end of segment both sides.

Missing sidewalk between S 35th St and S 36th St

• Potential EPA cleanup from this site on NW corner near S 36th St.	

MIDDLE EXTENT: S PINE ST FROM S 36TH ST S 42ND ST

At the intersection of S Pine St and S 36th St

- 12/8/8 signal heads E/W.
- 12/12/12 signal heads N/S.
- No video detection.
- No APS.
- No pedestrian ramps.
- No crosswalk markings.

Along S Pine St between S 36th St and S 38th St

- No sidewalk on west side near intersection of S 36th St.
- Trees chopped here. Trees might have been removed due conflicts with the communication and power lines.
  - Should add street trees to reduce perceived roadway width. Can add smaller species under the west side's power lines, but large trees on the east side.
  - There will be tree plantings involved with future work.
- Steep slopes behind sidewalk on west side.
- Narrower sidewalk on west side.
- True "protected" Bike Lane barriers needed, not just flex posts as part of the ST2 scope of work.
- Should add a mid-block crossing near the police station entrance/callbox in front of building.
- Long block with no crossing
- Consider working with property owner to add pedestrian access to shopping center. Due to steep slope, stairs and accessibility will be required,
- Narrower sidewalk on east side on southern end of block.
- Lots of driveways on south half of block.
- Water filter system with tree - private property?

Missing link sidewalk south of S 36th St

At the intersection of S Pine St and S 38th St

- This intersection will have Miovision video analytics.
- Signal system attached to two Tacoma Public Utilities poles.
- 12/8/8 signal heads.
- Conduit crossings of 2 legs.
- No APS.
- Need Opticom.
- Existing video detection.
- Intersection of two high risk VZ corridors: S Pine St and S 38th St.
- Needs marked crossings.
- Remove pedestrian curb tripping hazard at SE corner, relocate catch basin upstream.
- Double check pedestrian timing.

Along S Pine St between S 38th St and S 39th St

- Possible for raised median for access management (right in/right out).
- Lots of driveways.
- Consolidate driveways as possible (no alley on this block).
- Wide driveway & 2 driveways - can we shrink/close one?
- Two driveways are owned by same property (Taco Time) with some lease for McDonalds.

At the intersection of S Pine St and S 39th St

- Recently installed daylighting on S 39th St.
- Non-compliant existing ramps, no receiving west ramps. Relocate CB out of crossing.

Along S Pine St between S 39th St and S 40th St

- Busy driveway near USPS; driveway operations are one way.

Trail access from S 40th St is not ADA accessible

Curb ramps misaligned at S 40th St

At the intersection of S Pine St and S 40th St

- Recently installed daylighting on S 40th St.
- Missing E-W crossing at S 40th St.
- Align ADA ramps.

Along S Pine St between S 40th St and S 42nd St

- Busy driveway near USPS; driveway operations are one way.
- A deaf blind person lives and walks to S 47th St to get to the bus to the Sound Transit Station at S 56th St & Washington St. This person has been struck by a vehicle, and the service dog has also been struck by a vehicle at or near these intersections (see note at S 45th St).
- New Madison development west of S Junett St.

At the intersection of S Pine St and S 42nd St

- Non-compliant ramps.
- Tacoma should consider striping (and narrowing if possible) lanes.
- Conceptual Sound Transit design shows RRFB here; should evaluate sight distance.
- Consider narrowing EB lane on S 42nd St with consideration of mail truck turning movements (although they take Fife).
- Crest curve to the north creates potential sight distance issues with cars traveling at high speeds.
- Pedestrian signal or HAWK is preferred over RRFB since RRFB is not best for ADA (does not provide vibro-tactile communication).

Unmarked crosswalks at S 42nd St

SOUTHERN EXTENT: S PINE ST SOUTH OF S 42ND ST TO S 47TH ST

Along S Pine St between S 42nd St and S 43rd St

- In 2024, there was a crash resulting in pedestrian injury. Vehicles not slowing SB S Pine St and turning right onto S 43rd St. Speeding also noted NB S Pine St. Some possible sight distance issues with trees needing to be limbed up.

At the intersection of S Pine St and S 43rd St

- No pedestrian crossing of S Pine St.
- Possible sight distance issue, due to vertical curve at S 42nd St.
- Recently installed daylighting on S 43rd St
- Crossing at S 43rd St is considered mid-block as it is located right now - consider moving closer to intersection.
- Recommended painted median.

Along S Pine St between S 43rd St and S 45th St

- Trees are not maintained leading to potential sight distance issues.
- Nice buffered sidewalk here.

At the intersection of S Pine St and Tacoma Mall Entrance

- Add north side crosswalk, especially to serve bus stop.
- Double check pedestrian signal timing.
- Right of way constraints for the signal equipment.
- Work with property owners to stripe (and narrow if possible) lanes on Tacoma mall driveway.
- Needs new ramps.
- Need to remove trees or limb up for pedestrian signal visibility.
- 12/8/8 signal heads.
- Existing APS and video detection.

Curb ramp at least 20 feet south of S 43rd St intersection

At the intersection of S Pine St and S 45th St

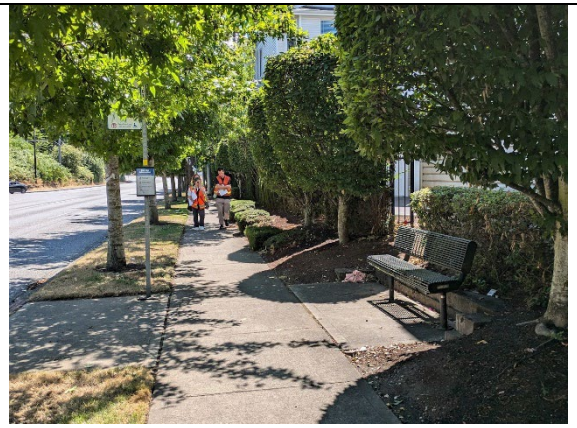
- Median with potential sculptural element, archway across path, etc -- many creative options here!
- S 45th St is part of Loop road from Tacoma Mall Subarea Plan.
- Look at making S 45th St right-out only.
- Recently installed daylighting on S 45th St.
- Community member's service animal was struck at S 45th St when driver did not stop.

Along S Pine St between S 45th St and S 47th St

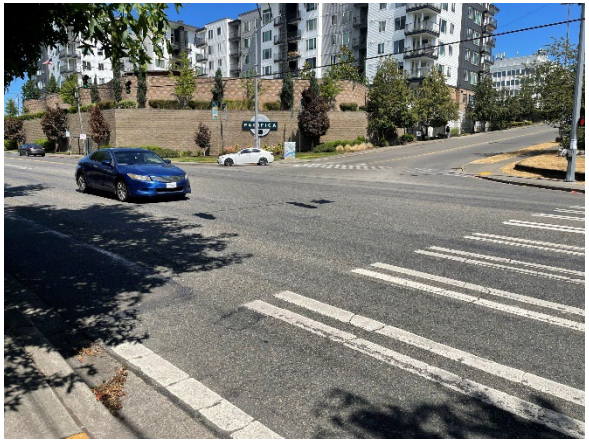
- Consider positive flashing speed signage (i.e. green smiley instead of red SLOW DOWN).
- Should do a speed study.
- Speeding is a top community concern along the corridor.
- 10% plans include 2 NB lanes here - can we repurpose one?
- Work with property owners to consolidate driveways and shift access to alley where possible along west side.
- Narrower sidewalks on west side.
- Narrower sidewalks with steep slope up to mall on east side.

At the intersection of S Pine St, S Oakes St and S 47th St

- Check right turn movements along S Pine St.
- Possible art as bollards at NW corner.
    - If bollards are used at any point, consider creative/artist designed bollards, more noticeable for drivers.
- Double check pedestrian timing; confirm LPIs.
- Recapturing the triangle at S 47th St and S Oakes St by closing the SB to WB "Slip Lane" as a street park with pedestrian lighting and a grove of trees to signal (at least for northbound vehicles) entry into a modified/reduced speed zone.
- Need ramps at S Pine St.



Nice buffered sidewalk and bus stop between S 43rd St and S 45th St



Large intersection and with only N-S eastside and E-W southside marked crossings

• There is potential for street mural or sculptural artistic element on median as traffic calming. • Pedestrian improvement project did not update signal heads, could use 12/12/12. • If no roundabout here, what else can be done to slow traffic and act as gateway? Start of PBLs and median will help, especially with lots of trees acting as friction. • Inquire with Tacoma Fire Department if Opticom is desired at this intersection. • New apartments built a few blocks west of S Pine St. • Intersection of two high risk VZ corridors: S Pine St and S 47th St.	

OTHER PROJECTS

The following projects and project descriptions are listed in the City of Tacoma's Capital Projects Tacoma GIS file.[5]

LOOP TRAIL ROAD

The Tacoma Mall Subarea Plan will result in the completion of a corridor plan for the Loop Road concept and active transportation connections to the Loop Road in the Tacoma Mall Regional Growth Center. The Loop Road will create a safer and more usable environment for pedestrians, bicycles and other active transportation modes; connecting land uses with each other and creating a larger sense of home in the Tacoma Mall Neighborhood. Connections from the Loop Road to the Water Flume Line Trail and the S 37th St I-5 pedestrian bridge will also be included in the study.

SOUTH TACOMA STATION IMPROVEMENTS PHASE 2

Sound Transit is partnering with the City of Tacoma to build a better-connected network so more people can walk, roll, bike and take transit to South Tacoma Station and connect to neighborhood destinations. All improvements will be complete by 2030.[6] Conceptual design drawings for this project along S Pine St is in Appendix B and includes comments and feedback from the RSA team.

HISTORIC WATER DITCH TRAIL- PHASE III & IV

Phase III will complete (over the next 2 years) 1.1 miles of shared use trail over the next two years. This shared use trail is between S Pine St and S M St on the north side of South Tacoma Way and Phase IIIb will continue the trail between S Pine St and S Sprague Ave on the south side of South Tacoma Way including a road diet and south sidewalk. Phase IV is complete (out of order).

S 38TH ST AND CEDAR ST CROSSING IMPROVEMENTS

The project will construct pedestrian safety improvements at the intersection of South 38th St and Cedar St (one block west of S Pine St), and approximately 400 feet to the west of that intersection. Improvements will include curb bulbs, accessible curb ramps, high visibility crosswalk markings, signal upgrades, and a ten-foot-wide sidewalk on the north side of South 38th St to close a gap in the sidewalk network.

[5] https://data.cityoftacoma.org/datasets/ae4dfd060eff49e7b85789ae02441703_0/explore
[6] https://www.soundtransit.org/system-expansion/south-tacoma-station-access-improvements

2024 STREET OPERATIONS OVERLAY PROGRAM

Crews will grind out sections of pavement to make minor repairs and prepare the surface for the placement of a 2-inch layer of asphalt over the existing street surface. ADA curb ramp upgrades will also be made at this time if applicable. 2024 projects are still in utility review and are subject to change.

RECOMMENDED SAFETY TREATMENTS

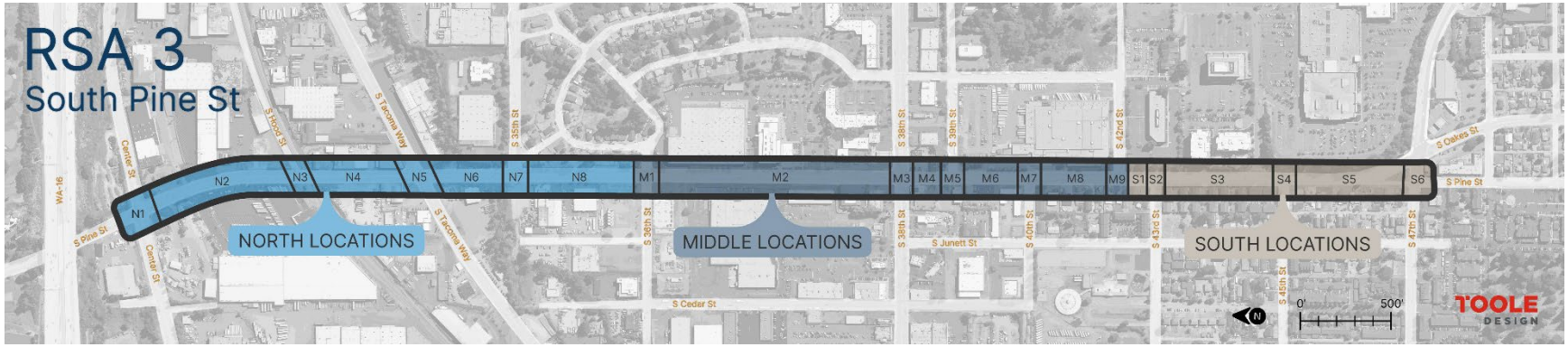
As part of Tacoma's Vision Zero Action Plan, a list of roadway safety countermeasures was created, with the intent that Tacoma could quickly deploy those countermeasures to advance safety. The list of countermeasures was reviewed by Tacoma staff from various departments to ensure feasibility. This list of countermeasures resulted in the Safety Countermeasure Guide (the "Guide"), which provides instruction on how to use the Safety Countermeasure Toolkit (the "Toolkit"), both developed specifically for the City of Tacoma. The safety countermeasures featured in the Guide are not an extensive list of every available option to improve roadway safety, but rather a tailored list of proven countermeasures that have a demonstrated history of improving safety around context and crash causes that may be most effective in Tacoma. Refer to the full Guide and Toolkit for more comprehensive information, including safety benefits and considerations. While developing the following recommended safety treatments for RSA 3, the consultant team referred to both the Guide and the Toolkit, with the intent of streamlining the implementation of safety improvements along the corridor. Not all recommended safety treatments are in the Guide and Toolkit, but many of them are.

KEYS/LEGENDS

Estimated Implementation Cost Key	
$	<= $75,000
$$	$75,000-$150,000
$$$	$150,000-$300,000
$$$$	>= $300,000

Timeframe Key	
Near-term (Near)	<= 2 years
Intermediate (Int.)	2-5 years
Long-term (Long)	>= 5 years

Abbreviations	
ADA	America with Disabilities Act
APS	Accessible Pedestrian Signals
CMF	Crash Modification Factor
LPI	Leading Pedestrian Intervals
RRFB	Rectangular Rapid Flashing Beacon



CORRIDOR-WIDE: S PINE ST FROM CENTER ST TO S 47TH ST

LOCATION CODE	POTENTIAL IMPROVEMENTS FOR CONSIDERATION	TIMEFRAME			COST	CMF*	LEAD
		NEAR	INT.	LONG			
South Pine St between Center St and S 47th St	Update all existing signals to use 12" signal heads with reflective backplates. Evaluate whether the signal span needs to be replaced as part of this upgrade.	✓			$$-$$$$	0.85	CoT
	Evaluate all street lighting		✓		$$-$$$	-	CoT
	Evaluate lane width reductions		✓		$$$	-	CoT
	Install pedestrian scale lighting, particularly at pedestrian crossings			✓	$$$$	-	CoT
	Limb up all trees within the ROW to 8' on sidewalk side and 14' on street side	✓			$	-	CoT/property owners
	Resurface roadway after evaluating 4 to 3 lane reconfiguration		✓		$$$$	0.887	CoT
	Refresh/replace thermoplastic pavement markings after resurfacing roadway		✓		$$	-	CoT
	Widen sidewalks to 7' per COT standards for arterial roads, unless otherwise specified			✓	$$$$	-	CoT

	Plant trees and improve landscaping			✓	$$-$$$$	-	CoT
	Reconfigure the road to incorporate bike facilities throughout the corridor in coordination with projects currently under design			✓	$$$$	-	CoT/Sound Transit
	Upgrade existing storm inlet grates with parallel openings to new standard inlet grates or replace the whole structure		✓		$-$$$	-	CoT

*Crash Modification Factor from CMF Clearinghouse. CMF is approximate for the general countermeasure. A specific CMF should be determined for each unique scenario. For selection of specific CMFs for specific locations in Tacoma, explore the CMF clearing house and apply all relevant factors. All CMFs reported are taken from Tacoma's Countermeasure Toolkit or FHWA's list of Proven Safety Countermeasures and should be used as a general reference.

NORTHERN EXTENT: S PINE ST FROM CENTER ST TO NORTH OF S 36TH ST

LOCATION CODE		POTENTIAL IMPROVEMENTS FOR CONSIDERATION	TIMEFRAME			COST	CMF*	LEAD
			NEAR	INT.	LONG			
Intersection: Center St	**N1**	Install Emergency Vehicle Preemption (EVP) for all directions	✓			$$-$$$	-	CoT
		Upgrade signal with APS and LPI after confirming all curb ramps are ADA compliant		✓		$$$-$$$$	-	CoT
Center St to S Hood St	**N2**	Install sidewalk on east side of roadway		✓		$$$-$$$$	0.35	CoT
		Replace driveway ~200 feet south of Center St on east side with ADA compliant city standard driveway		✓		$$$	-	CoT
Intersection: S Hood St	**N3**	Harden center median with concrete curb, and extend to the north to restrict left turns out of the Goodwill driveway	✓			$$	-	CoT
		Install railroad crossing gates for sidewalks		✓		$$$$	-	CoT/Sound Transit
S Hood St to S Tacoma Way	**N4**	Provide mid block crossing with median refuge and evaluate other pedestrian crossing improvements, as required by ROW manual			✓	$$$$	0.54-0.86	CoT

Intersection: S Tacoma Way	**N5**	Install EVP for all directions	✓			$$-$$$	-	CoT
		Install sidewalk on east side of roadway		✓		$$$-$$$$	0.35	CoT
		Upgrade signal with LPI after confirming all curb ramps are ADA compliant and APS is installed		✓		$$$-$$$$	-	CoT
		Install high visibility marked crosswalks		✓		$$	0.6	CoT
S Tacoma Way to S 35th St	**N6**	Install sidewalk on east side of roadway		✓		$$$-$$$$	0.35	CoT
Intersection: S 35th St	**N7**	Upgrade signal with APS and LPI after installing ADA compliant curb ramps		✓		$$$$	-	CoT
		Install high visibility marked crosswalks	✓			$$	0.6	CoT
S 35th St to S 36th St	**N8**	Install sidewalk on east and west side of roadway		✓		$$$-$$$$	0.35	CoT
		Replace rolled curb driveways with ADA compliant city standard driveways		✓		$$$	-	CoT

*Crash Modification Factor from CMF Clearinghouse. CMF is approximate for the general countermeasure. A specific CMF should be determined for each unique scenario. For selection of specific CMFs for specific locations in Tacoma, explore the CMF clearing house and apply all relevant factors. All CMFs reported are taken from Tacoma's Countermeasure Toolkit or FHWA's list of Proven Safety Countermeasures and should be used as a general reference.

MIDDLE EXTENT: S PINE ST FROM S 36TH ST S 42ND ST

LOCATION CODE		POTENTIAL IMPROVEMENTS FOR CONSIDERATION	TIMEFRAME			COST	CMF*	LEAD
			NEAR	INT.	LONG			
Intersection: S 36th St	**M1**	Install ADA compliant curb ramps and upgrade signal with APS and LPI once curb ramps are ADA compliant			✓	$$$$	-	CoT
		Install high visibility marked crosswalks	✓			$$	0.6	CoT
S 36th St to S 38th St	**M2**	Install sidewalk where missing near S 36th St west side		✓		$$$-$$$$	0.35	CoT

		Install midblock crossing with pedestrian median refuge near police station and evaluate other pedestrian crossing improvements, as required by the ROW manual			✓	$$$$	0.54-0.86	CoT
		Evaluate the potential benefits of consolidating access points while taking into account any implications for property access			✓	$$$	0.56	CoT/property owners
Intersection: S 38th St	**M3**	Upgrade signal with APS and LPI after confirming all curb ramps are ADA compliant			✓	$$$$	-	CoT
		Install EVP for all directions	✓			$$-$$$	-	CoT
		Install high visibility marked crosswalks		✓		$$	0.6	CoT
		Replace curb ramps on SE corner	✓			$	-	CoT
		Evaluate pedestrian crossing time	✓			$	-	CoT
S 38th St to S 39th St	**M4**	Evaluate the possibility of installing a centerline curb to limit left turns along the block, ensuring adequate lighting, maintenance needs, and property rights access		✓		$$-$$$	-	CoT
		Install ADA compliant city standard driveways		✓		$$$	-	CoT
		Evaluate the potential benefits of consolidating access points while taking into account any implications for property access			✓	$$$	0.56	CoT/property owners
Intersection: S 39th St	**M5**	Install ADA compliant curb ramps and permanent curb extensions to replace quick-build curb extensions (daylighting)		✓		$$$$	-	CoT
		Consolidate access points on the west side of the intersection, across from S 39th St			✓	$$	0.56	CoT/property owners
S 39th St to S 40th St	**M6**	Install ADA compliant city standard driveways		✓		$$$	-	CoT/property owners
Intersection: S 40th St	**M7**	Install aligned ADA curb ramps on SW corner		✓		$$$	-	CoT
		Install permanent curb extensions to replace quick-build curb extensions (daylighting)		✓		$$$$	-	CoT

		Install high visibility marked crosswalks with appropriate enhanced pedestrian crossing treatment and add street lighting as deemed necessary		✓		$$(RRFB)-$$$$ (PHB)	0.792	CoT
S 40th St to S 42nd St	**M8**	Install ADA compliant city standard driveways		✓		$$$	-	CoT/property owners
Intersection: S 42nd St	**M9**	Install ADA compliant curb ramps and permanent curb extensions to replace quick-build curb extensions (daylighting)		✓		$$$$	-	CoT
		Install high visibility marked crosswalks with appropriate enhanced pedestrian crossing treatment and add street lighting as deemed necessary		✓		$$(RRFB)-$$$$ (PHB)	0.792	CoT

*Crash Modification Factor from CMF Clearinghouse. CMF is approximate for the general countermeasure. A specific CMF should be determined for each unique scenario. For selection of specific CMFs for specific locations in Tacoma, explore the CMF clearing house and apply all relevant factors. All CMFs reported are taken from Tacoma's Countermeasure Toolkit or FHWA's list of Proven Safety Countermeasures and should be used as a general reference.

SOUTHERN EXTENT: S PINE ST SOUTH OF S 42ND ST TO S 47TH ST

LOCATION CODE		POTENTIAL IMPROVEMENTS FOR CONSIDERATION	TIMEFRAME			COST	CMF*	LEAD
			NEAR	INT.	LONG			
S 42nd St to S 43rd St	**S1**	Maintain landscaping to support adequate sight distance	✓			$	-	CoT/property owners
Intersection: S 43rd St	**S2**	Install high visibility marked crosswalks with appropriate enhanced pedestrian crossing treatment and add street lighting as deemed necessary		✓		$$(RRFB)-$$$$ (PHB)	0.792	CoT
		Evaluate permanent curb extensions to replace quick-build curb extensions (daylighting), considering maintenance needs		✓		$$$$	-	CoT
S 43rd St to S 45th St	**S3**	Maintain landscaping to support adequate sight distance	✓			$	-	CoT/property owners
Intersection: Tacoma Mall entrance (east leg)	**S4**	Install ADA compliant curb ramps and high visibility crosswalk crossing north side of intersection		✓		$$$	0.6	CoT
		Upgrade signal with LPI after confirming all curb ramps are ADA compliant and APS is installed		✓		$	-	CoT/property owners
		Work with property owners to restripe lanes on the Tacoma Mall entrance		✓		$$	-	CoT/property owners
		Evaluate ADA curb ramp compliance and upgrade where non-compliant		✓		$$$	-	CoT
Intersection: S 45th St (west leg)	**S4**	Evaluate installing median with art		✓		$$$	-	CoT
		Evaluate permanent curb extensions to replace quick-build curb extensions (daylighting), considering maintenance needs		✓		$$$$	-	CoT
		Evaluate the feasibility of restricting eastbound S 45th St left turns onto S Pine St using a median or concrete curb, while considering the impact on the proposed Loop Road		✓		$$	-	CoT
S 45th St to S 47th St	**S5**	Install positive flashing speed signage or speed warning sign in line with industry guidelines	✓			$	-	CoT

		Evaluate the potential benefits of consolidating access points while taking into account any implications for property access			✓	$$$	0.56	CoT/property owners
		Evaluate if access to businesses on the S Pine St slip lane (SB S Pine St to WB S 47th St) can be provided through the alley and evaluate whether the slip lane can be closed			✓	$$-$$$	-	CoT
Intersection: S 47th St	**S6**	Install ADA compliant curb ramps at S Pine St		✓		$$$	-	CoT
		Upgrade signal with LPI after confirming all curb ramps are ADA compliant and APS is installed		✓		$	-	CoT
		Install EVP for all directions	✓			$$-$$$	-	CoT

*Crash Modification Factor from CMF Clearinghouse. CMF is approximate for the general countermeasure. A specific CMF should be determined for each unique scenario. For selection of specific CMFs for specific locations in Tacoma, explore the CMF clearing house and apply all relevant factors. All CMFs reported are taken from Tacoma's Countermeasure Toolkit or FHWA's list of Proven Safety Countermeasures and should be used as a general reference.

NEXT STEPS

Tacoma should proceed with implementing the short-term safety treatments identified as both high-priority and actionable. For short-term, intermediate, and long-term safety countermeasures, City staff are prioritizing all projects and evaluating the feasibility of those projects, and for those with promise begin identifying funding sources. This could include the development of grant applications to seek State and Federal funding.

The RSA findings should be revisited regularly, and Tacoma may consider conducting a follow-up RSA every 5 years, or on a schedule determined by the City during development of a citywide RSA program.

APPENDIX A: MIRO BOARD

Tacoma Vision Zero RSA 2: South Yakima Ave

VISION ZERO TACOMA

RSA 3:
South Pine St

The purpose of this study is to conduct a road safety audit (RSA) for a study area that includes one corridor segment and its intersections: South Pine St between Center St and S 47th St.

AGENDA:
8:30-8:45: Join & Attendance
8:45-9:00: Overview & Practice
9:00-9:10: Countermeasure Toolkit
9:10-10:00: Northern Extent
10:00-10:10: Coffee Break
10:10-11:00: Middle Extent
11:00-11:10: Coffee Break
11:10-12:00: Southern Extent
12:00-12:30: Reserve

Welcome!
COME HERE TO PRACTICE !

A Logistics & Tips

As with all tools, there's a learning curve! Be patient with yourself, others, and technology. Here are some helpful tips to get us started on the right foot.

Tech: A chrome browser is key. Sometimes you need to refresh the page.

The Basics: See list on the left. Most importantly: move and zoom!

Issues?: Please use meeting chat or raise your hand for assistance

Cursors Off: Other users' cursors will be hidden to reduce confusion

B Your Avatar

Every Miro user invited to this board is represented with an avatar at the top of the screen. Your avatar is highlighted.

C Follow Your Facilitator

1. Facilitator will note where on the screen we are focused on
2. Facilitator may occasionally use the feature "bring everyone to me" which will bring everyone's screen to the same location

D Practice

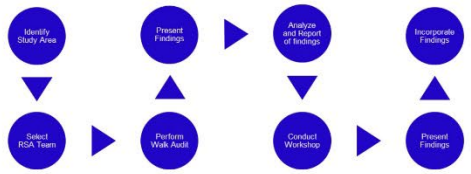
CLICK, TYPE, COPY, DUPLICATE!

Safe System Approach

The Tacoma Vision Zero Road Safety Audit is framed around the Safe System Approach. The Federal Highway Administration (FHWA) provides guidance on the Safe System Approach, which recognizes that road safety is a shared responsibility between those that design, build, operate, and use the road system. It recognizes that to reduce risks to humans all parts of the transportation system must be strengthened, so that if one part fails, the other parts still protect people.

Safe System Principles are illustrated in the outer ring of the graphic with the Safe System elements found on the inner ring: Safer People, Safer Vehicles, Safer Speeds, Safer Roads, and Post-Crash Care.

The Safe System Approach aims to eliminate fatal and serious injury crashes using a proactive approach that anticipates human mistakes- and reduces the severity of crashes that do happen, so the impact is less likely to be fatal or cause serious injury. The strategies and practices included in this memo are framed around safer people, safer vehicles, safer roads, safer speeds, and post-crash care.



COUNTERMEASURE TOOLKIT

Other Safety Ideas

VISION BOARD

CORRIDOR WIDE:

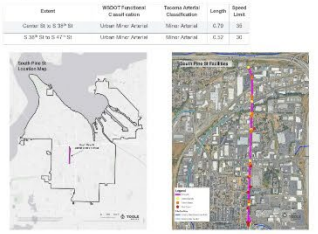
North Extent: Center St to North of S 36th St

MIDDLE EXTENT: S 36th St to S 42nd St

SOUTH EXTENT: South of S 42nd St to S 47th St

REFERENCES

Segment Details



Neighborhood Profile

Other Projects

Historic Water Ditch Trail- Phase III & IV
Phase IV is complete. Phase III will complete 1.1 miles of shared-use trail between Pine and M Street on the north side of South Tacoma Way and a sidewalk between Pine and Sprague on the south side of South Tacoma Way.

38th and Cedar Street Crossing Improvements
The project will construct pedestrian safety improvements at the intersection of South 38th Street and Cedar Street, and approximately 400 feet to the west of that intersection. Improvements will include curb bulbs, accessible curb ramps, high visibility crosswalk markings, signal upgrades, and a new sidewalk on the north side of South 38th Street to close a gap in the sidewalk network.

2024 Street Operations Overlay Program
Crews will grind out sections of pavement to make minor repairs and prepare the surface for the placement of a 2 inch layer of asphalt over the existing street surface. ADA curb ramp upgrades will also be made at this time if applicable.
2024 projects are still in utility review and are subject to change.

Collision History

VISION BOARD

CORRIDOR WIDE:

Evaluate speed limit with consideration of road diet

Evaluate traffic calming on streets that cross Pine

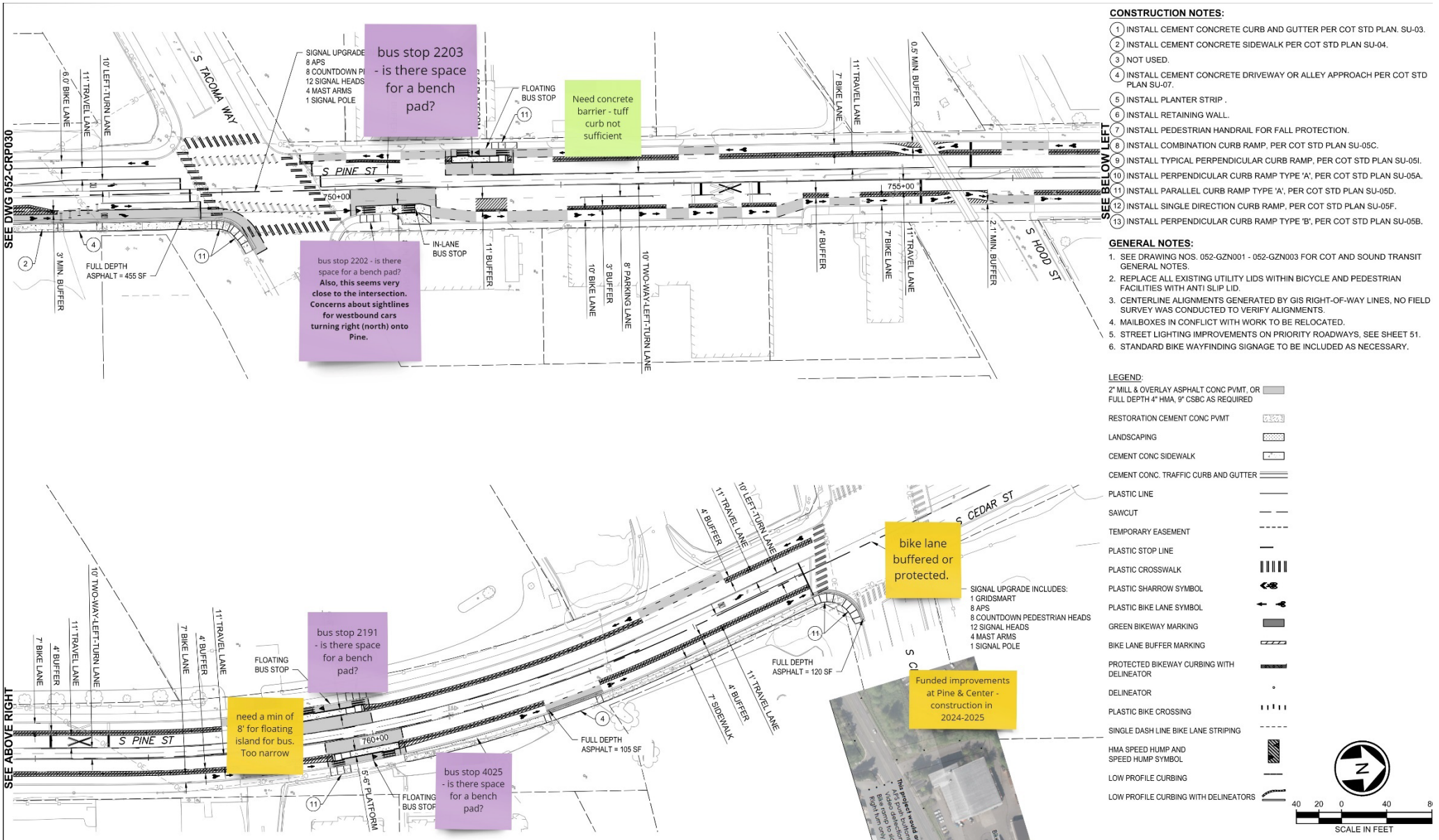
Leverage art/visual elements for traffic calming

North Extent: Center St to North of S 36th St

MIDDLE EXTENT: S 36th St to S 42nd St

SOUTH EXTENT: South of S 42nd St to S 47th St

APPENDIX B: CONCEPTUAL DESIGN DRAWINGS



CONSTRUCTION NOTES:

1. INSTALL CEMENT CONCRETE CURB AND GUTTER PER COT STD PLAN. SU-03.
2. INSTALL CEMENT CONCRETE SIDEWALK PER COT STD PLAN SU-04.
3. NOT USED.
4. INSTALL CEMENT CONCRETE DRIVEWAY OR ALLEY APPROACH PER COT STD PLAN SU-07.
5. INSTALL PLANTER STRIP .
6. INSTALL RETAINING WALL.
7. INSTALL PEDESTRIAN HANDRAIL FOR FALL PROTECTION.
8. INSTALL COMBINATION CURB RAMP, PER COT STD PLAN SU-05C.
9. INSTALL TYPICAL PERPENDICULAR CURB RAMP, PER COT STD PLAN SU-05I.
10. INSTALL PERPENDICULAR CURB RAMP TYPE 'A', PER COT STD PLAN SU-05A.
11. INSTALL PARALLEL CURB RAMP TYPE 'A', PER COT STD PLAN SU-05D.
12. INSTALL SINGLE DIRECTION CURB RAMP, PER COT STD PLAN SU-05F.
13. INSTALL PERPENDICULAR CURB RAMP TYPE 'B', PER COT STD PLAN SU-05B.

GENERAL NOTES:

1. SEE DRAWING NOS. 052-GZN001 - 052-GZN003 FOR COT AND SOUND TRANSIT GENERAL NOTES.
2. REPLACE ALL EXISTING UTILITY LIDS WITHIN BICYCLE AND PEDESTRIAN FACILITIES WITH ANTI SLIP LID.
3. CENTERLINE ALIGNMENTS GENERATED BY GIS RIGHT-OF-WAY LINES, NO FIELD SURVEY WAS CONDUCTED TO VERIFY ALIGNMENTS.
4. MAILBOXES IN CONFLICT WITH WORK TO BE RELOCATED.
5. STREET LIGHTING IMPROVEMENTS ON PRIORITY ROADWAYS, SEE SHEET 51.
6. STANDARD BIKE WAYFINDING SIGNAGE TO BE INCLUDED AS NECESSARY.

LEGEND:

- 2" MILL & OVERLAY ASPHALT CONC PVMT, OR FULL DEPTH 4" HMA, 9" CSBC AS REQUIRED
- RESTORATION CEMENT CONC PVMT
- LANDSCAPING
- CEMENT CONC SIDEWALK
- CEMENT CONC. TRAFFIC CURB AND GUTTER
- PLASTIC LINE
- SAWCUT
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- PLASTIC STOP LINE
- PLASTIC CROSSWALK
- PLASTIC SHARROW SYMBOL
- PLASTIC BIKE LANE SYMBOL
- GREEN BIKEWAY MARKING
- BIKE LANE BUFFER MARKING
- PROTECTED BIKEWAY CURBING WITH DELINEATOR
- DELINEATOR
- PLASTIC BIKE CROSSING
- SINGLE DASH LINE BIKE LANE STRIPING
- HMA SPEED HUMP AND SPEED HUMP SYMBOL
- LOW PROFILE CURBING
- LOW PROFILE CURBING WITH DELINEATORS

SCALE IN FEET: 40 20 0 40 8

AHJ: ########## PROJECT # ###############

No.	DATE	DSN	CHK	APP	REVISION

DESIGNED BY: J. CROFOOT
DRAWN BY: B. WILLIAMS
CHECKED BY: R. PARKER
APPROVED BY: B. AGAN

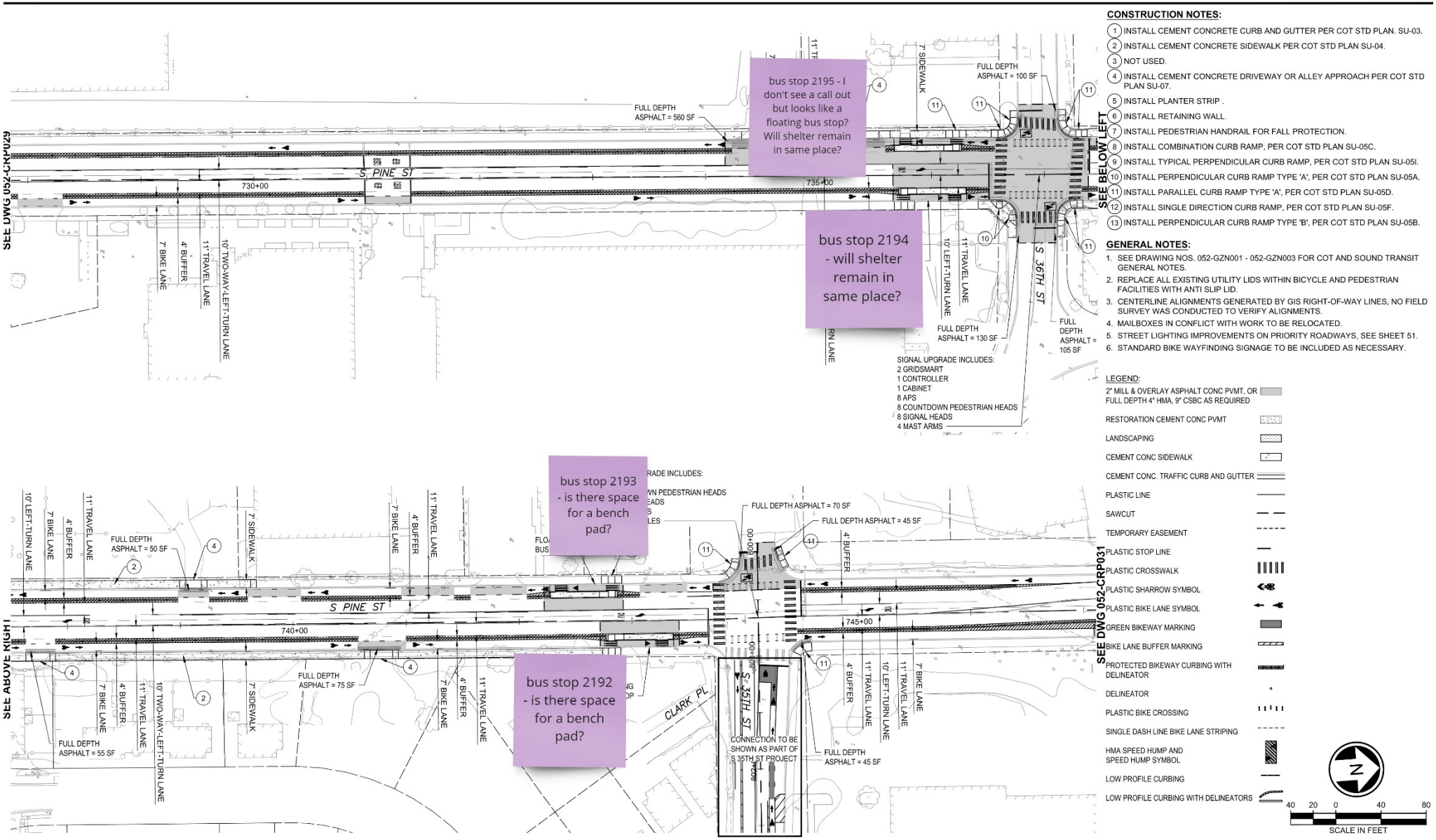
Parametrix — ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

DAVID EVANS AND ASSOCIATES INC. — 2106 Pacific Ave East Suite 400, Tacoma Washington 98424, Phone: 253.922.9761

SUBMITTED BY: T. GONZALEZ — DATE: 10/30/2023 — REVIEWED BY: K. YOUSSEF — 10/30/2023

SOUTH TACOMA STATION IMPROVEMENTS
PHASE 2
CIVIL
S PINE ST
CITY OF TACOMA

DRAWING No.: 052-CRP031
FACILITY ID: ###
SHEET No.: # REV.: ####



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40 20 0 40 80
SCALE IN FEET

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DAVID EVANS AND ASSOCIATES INC.
2100 Pacific Ave East Suite 400
Tacoma Washington 98424
Phone: 253.922.9751

SOUNDTRANSIT

SUBMITTED BY:	DATE:	REVIEWED BY:	DATE:
T. GONZALEZ	10/30/2023	K. YOUSSEF	#

SCALE:	1"=40'
FILENAME:	STRA-30-CRP021-32
CONTRACT No.:	RTA/LR #
DATE:	10/30/2023

SOUTH TACOMA STATION IMPROVEMENTS
PHASE 2
CIVIL
S PINE ST
CITY OF TACOMA

DRAWING No.:	052-CRP030
FACILITY ID:	###
SHEET No.:	#
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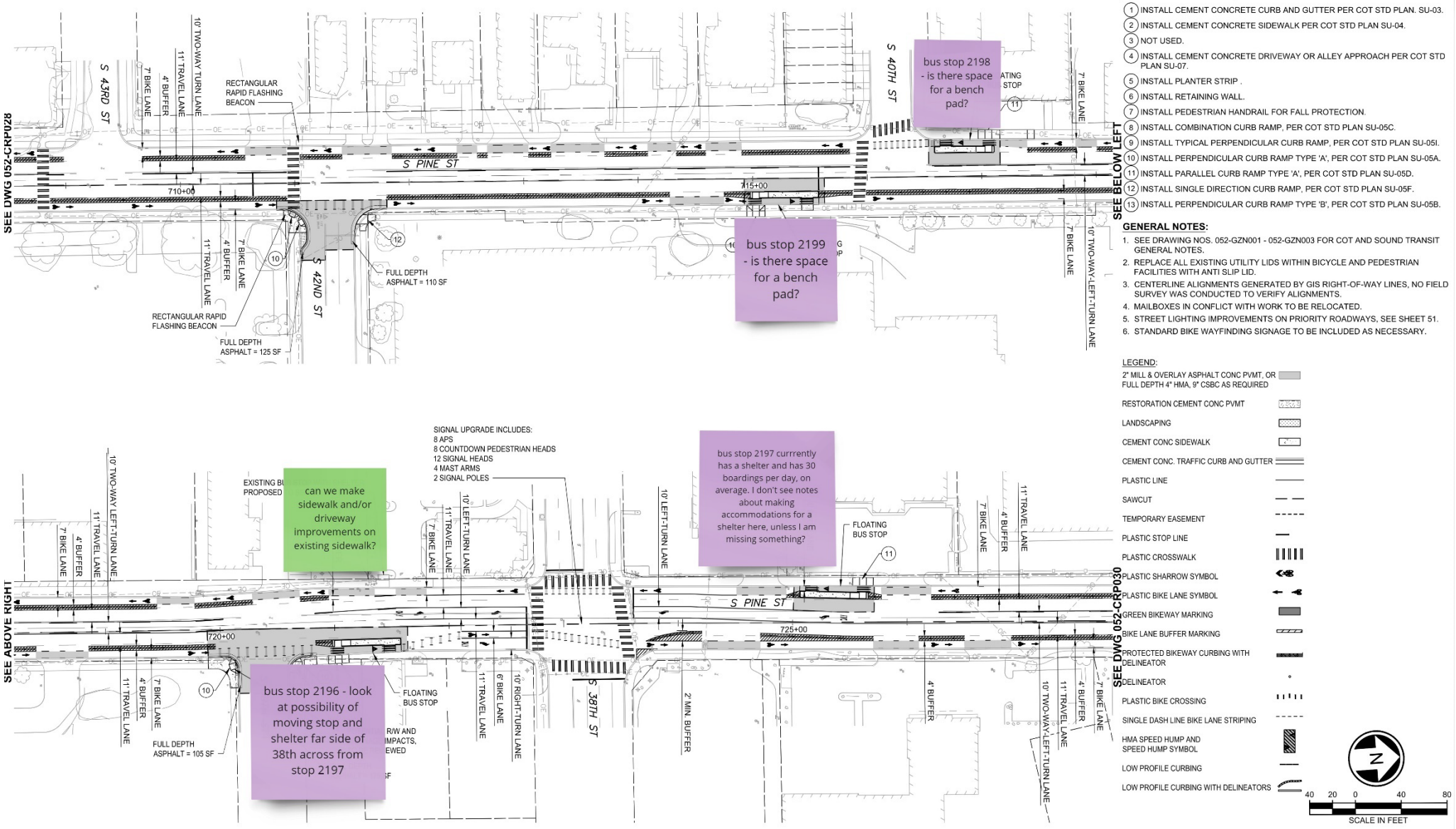

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N

40 20 0 40 80
SCALE IN FEET

No.	DATE	DSN	CHK	APP	REVISION

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CHECKED BY: R. PARKER
APPROVED BY: B. AGAN

AHJ: ##########

PACKAGE # ##########

Parametrix — ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES
SUBMITTED BY: T. GONZALEZ — DATE: 10/30/2023

DAVID EVANS AND ASSOCIATES INC.
2106 Pacific Ave East Suite 400
Tacoma Washington 98424
Phone: 253.922.9761
REVIEWED BY: K. YOUSSEF — DATE: #

LINE IS 1" AT FULL SCALE

SOUNDTRANSIT
DATE: 10/30/2023

SCALE: 1"=40'
FILENAME: STRA-30-CRP021-32
CONTRACT No.: RTA/LR #

SOUTH TACOMA STATION IMPROVEMENTS
PHASE 2
CIVIL
S PINE ST
CITY OF TACOMA

DRAWING No.: 052-CRP029
FACILITY ID: ###
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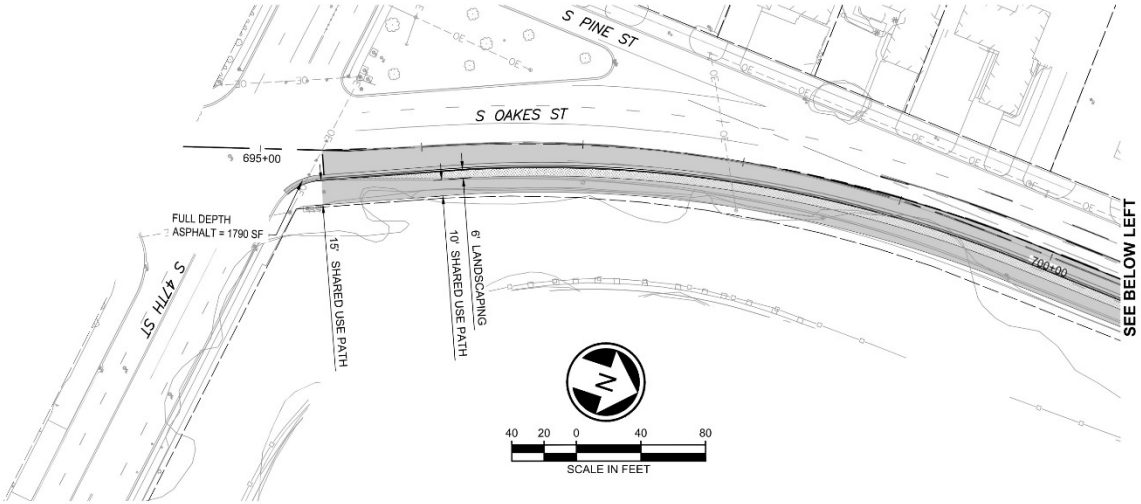

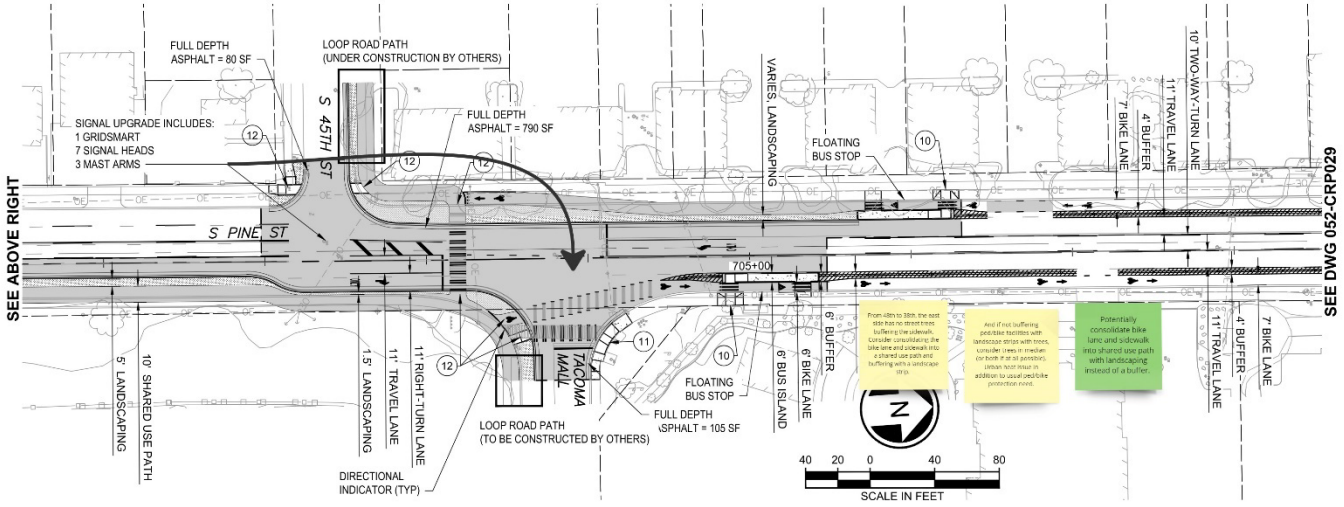

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SOUTH TACOMA STATION IMPROVEMENTS
PHASE 2
CIVIL
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CITY OF TACOMA

DRAWING No.: 052-CRP028
FACILITY ID: ###
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