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**CITY OF PALO ALTO
CITY COUNCIL
Special Meeting
Monday, April 29, 2024
Council Chambers & Hybrid
5:30 PM**

Agenda Item

3. Safe Streets for All (SS4A) Action Plan Collision Analysis Report



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City Council Staff Report

From: City Manager

Report Type: INFORMATION REPORTS

Lead Department: Transportation

Meeting Date: April 29, 2024

Report #:2404-2839

TITLE

Safe Streets for All (SS4A) Action Plan Collision Analysis Report

RECOMMENDATION

Receive Report on the Collision Analysis of the Safe Streets for All Action Plan

EXECUTIVE SUMMARY

This report shares the collision data analysis for the ongoing development of the City's Safe Streets for All (SS4A) Safety Action Plan. Collision data from 2018 through 2022 was analyzed by crash severity and other factors to determine collision profiles and a High Injury Network that will be used to prioritize future roadway projects and institutionalize the Safe System Approach into the City's existing policies and guidelines.

BACKGROUND

In late 2023, the City of Palo Alto and Fehr & Peers began the Safe Streets and Road for All Comprehensive Safety Action Plan. City staff introduced the Action Plan and the Safe System Approach to the Council via an Information Report on November 27, 2023.¹ This Plan will meet the Federal Highway Administration (FHWA)'s SS4A requirements for a safety action plan that can be found [here](#).² The primary goal of this planning effort is to identify proactive, citywide opportunities across the Safe System elements (safe users, safe speeds, safe roads, safe vehicles, and post-crash care) to improve safety for all road users in support of the Vision Zero goal of reducing roadway fatalities and serious injuries by 2030 or a different year to be adopted by Council later in plan development.

¹ [Council Information Report, Safe Streets for All \(SS4A\) Action Plan & Safe System Approach Introduction, November 27, 2023](#)

² [US Department of Transportation, SS4A Action Plan Components](#)

ANALYSIS

The Safe System Approach leverages crash data and contextual information about the built environment to identify traffic safety hot spots, analyze crash patterns, develop citywide insights from these patterns, and identify safety improvements that focus on eliminating fatal and serious injury crash risk. The Comprehensive Safety Action Plan includes the review of Citywide collision data from 2018 through 2022 available through the Transportation Injury Mapping System (TIMS). TIMS reports injury collisions from the Statewide Integrated Traffic Records System (SWITRS) but excludes collisions that cause property damage only and no injuries. Figure 1 shows the yearly collision numbers for the 2018 through 2022 period. For this timeframe in Palo Alto, there were a total of 1,132 collisions, of which 47 were a collision in which someone was killed or severely injured (KSI).

Figure 1: All Collisions and Killed or Severe Injury (KSI) Collisions, 2018-2022

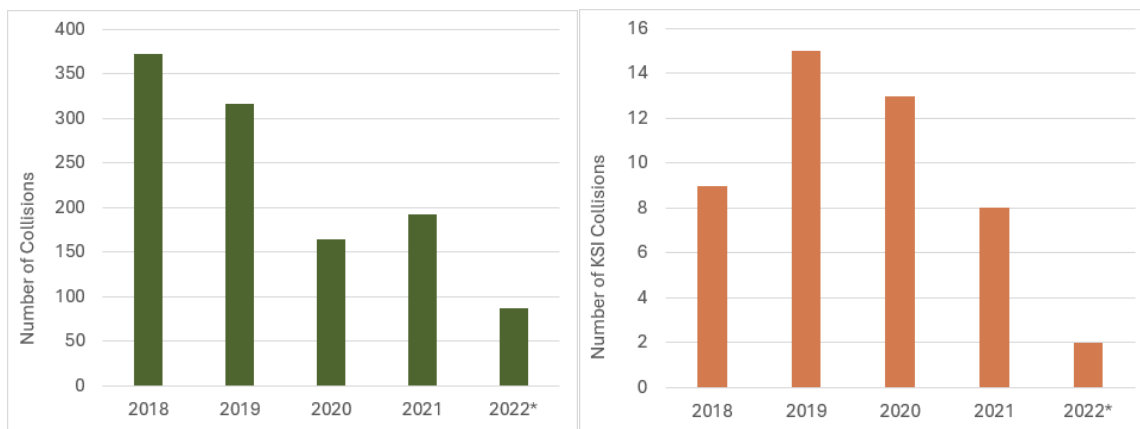
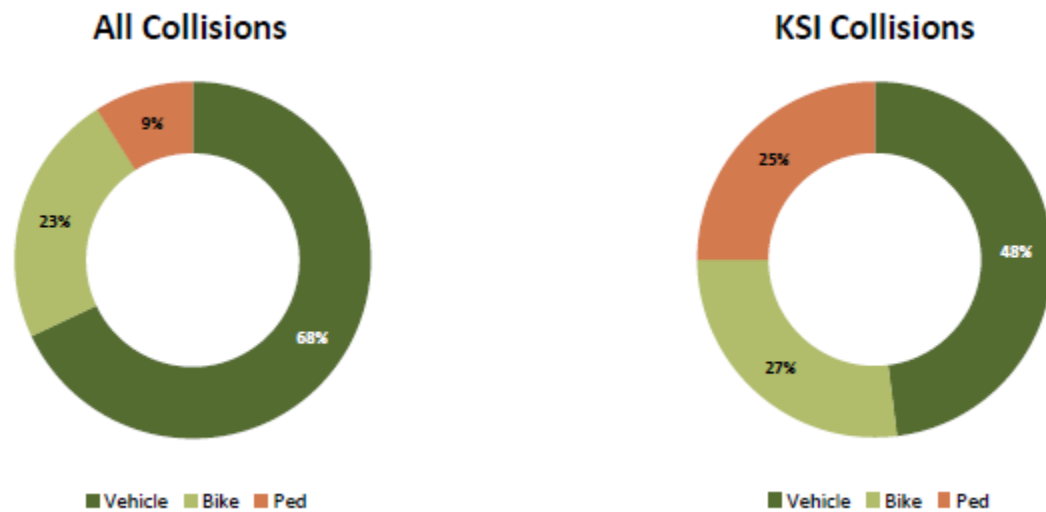


Figure 2 shows the mode of travel involved in all collisions and KSI collisions. The figure shows vehicle-vehicle, vehicle-bike, and vehicle-pedestrian for collisions of all severities and for KSI collisions. People walking or bicycling are particularly vulnerable, with pedestrian and bicycle collisions making up 52% of KSI collisions even though they only represented 32% of the total injury collisions.

Figure 2: All Collisions and KSI Collisions by Modes Involved, 2018-2022



Youth and senior citizens can also be vulnerable to collisions. In Palo Alto, youth collisions (under 18 years old) make up 12% of all collisions and 9% of all KSIs. Youth bicyclists are involved in a quarter (25%) of all bicycle-involved collisions. However, given Palo Alto's high youth biking population, the crash rate for youth bicyclists is very low (about 2%). Senior citizens (65 years old and above) make up 16% of all collisions and 17% of all KSI collisions.

Primary collision factors, or PCFs, are cited by the responding officer and based on their judgement of what contributed to the collisions. PCFs do not include contextual information related to the design of the location that could have been a primary or secondary contributor to the crash. Figure 3 shows all collisions and KSI collisions in the study period sorted by PCF. The most common PCFs in Palo Alto for all collisions are unsafe speed, improper turning, and vehicle right of right of way violation, while the most common PCFs for KSIs are improper turning, DUIs, and pedestrian-related collisions.

Figure 3: All Collisions and KSI Collisions by Primary Collision Factor (PCF), 2018-2022

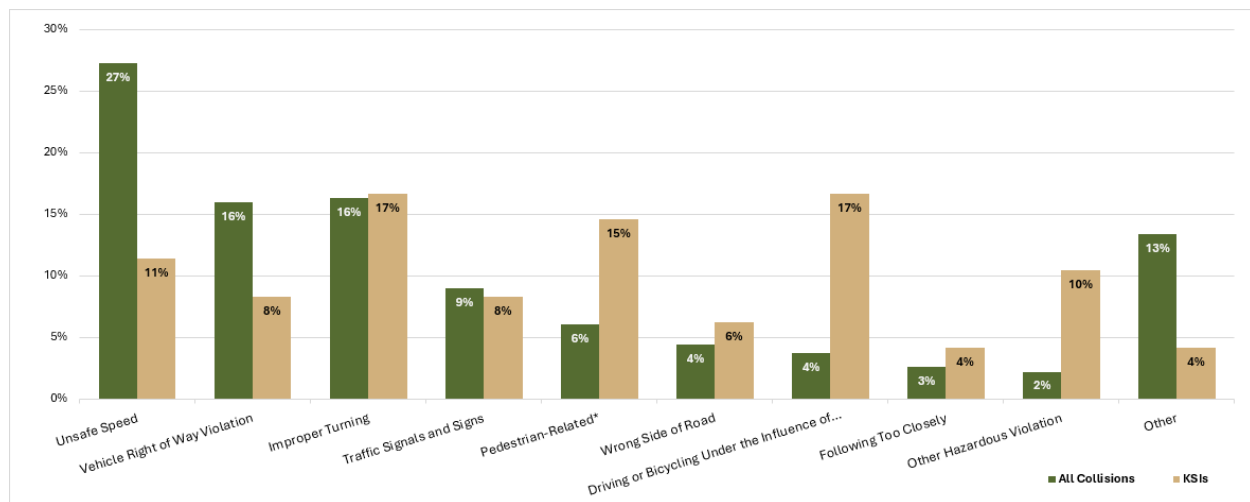
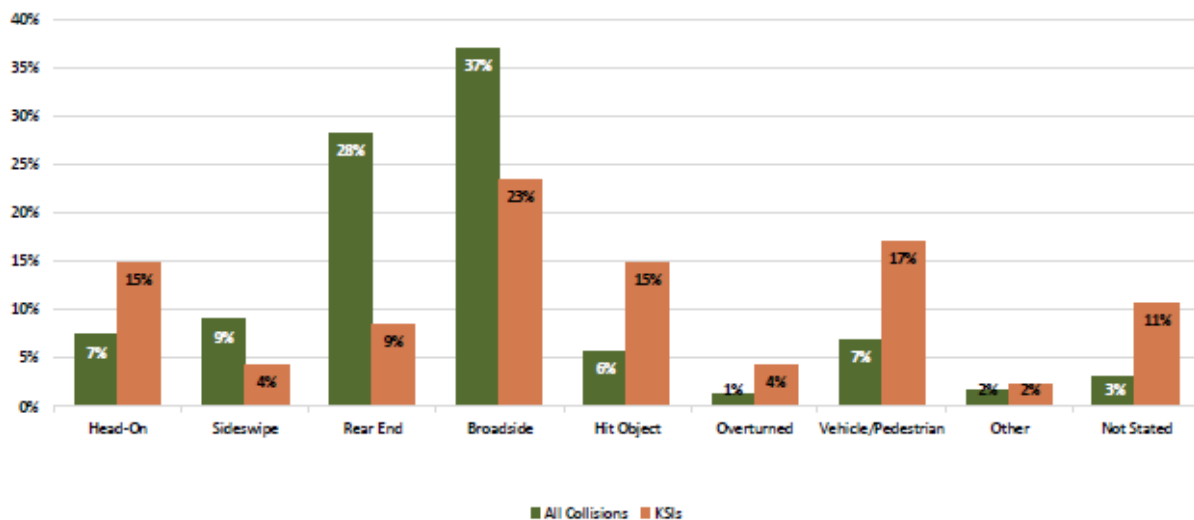


Figure 4 shows all collisions and KSI sorted by the types of collisions reported by officers. Broadside (90-degree angle) collisions and head-on collisions had two of the highest percentages of KSI collisions, and most collisions occurred on weekdays and in the afternoon and evening (3 PM to 9 PM).

Figure 4: All Collisions and KSI Collisions by Collision Type, 2018-2022

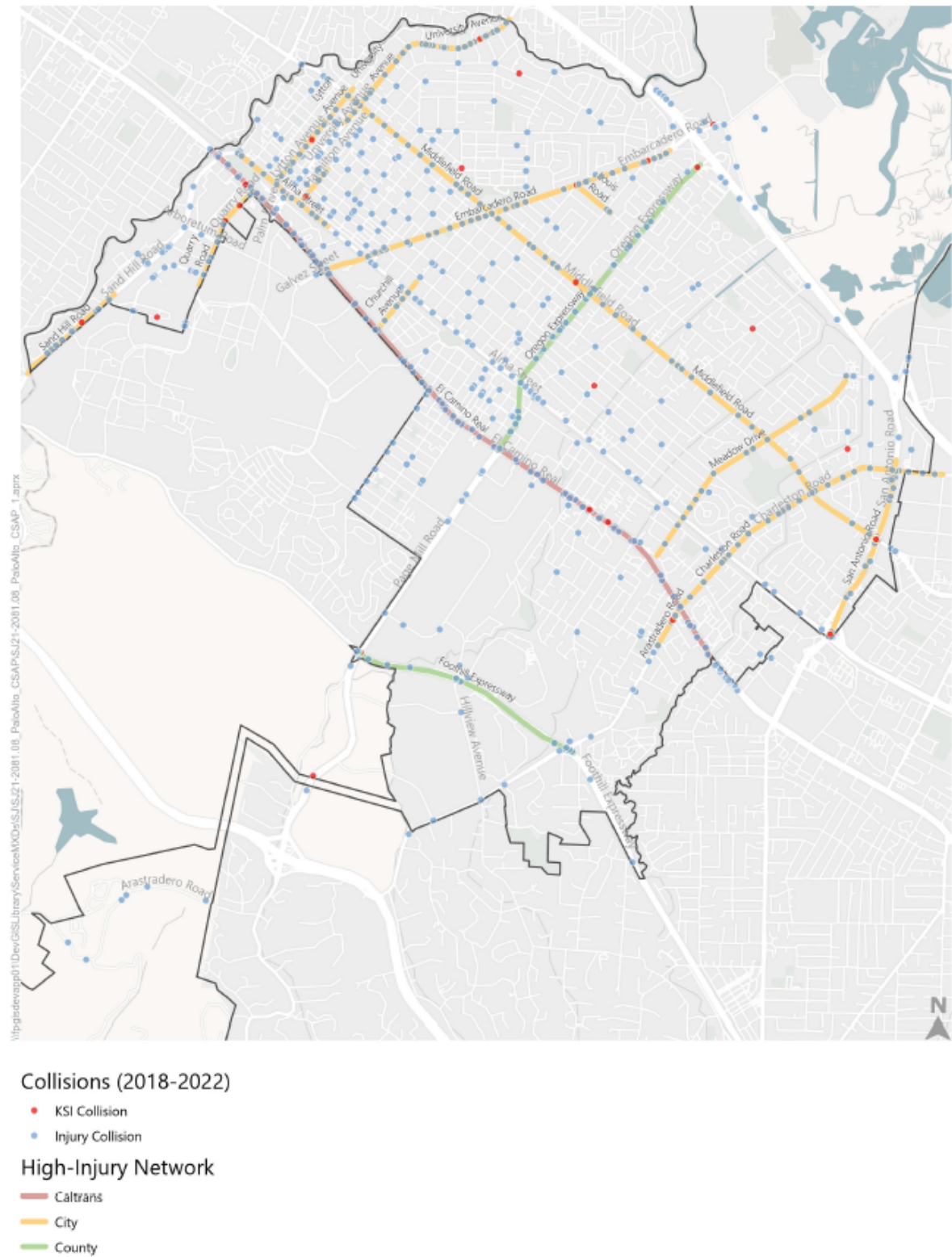


Identifying Trends

To assess corridors experiencing a disproportionate share of collisions, a High Injury Network (HIN) was identified that shows that 62% of injury collisions occurred on 4% of Palo Alto's streets. Within the City's roadway network, roadways are owned by the City, County, and Caltrans. The HIN shown in Figure 5 incorporates and color-codes the roadways owned by each entity. Key roadways on the HIN include higher speed arterials, as well as expressways and a few collectors.

Note that the City and Caltrans have identified or initiated safety projects on portions of the High Injury Network in Palo Alto. The City's Charleston/Arastradero Corridor Project is in its final phase of construction this spring. City staff are also pursuing funding for a striping trial of the South Palo Alto Bikeways Project and will engage the community to review the concept plans that Council endorsed in 2021 for E. Meadow Drive, Fabian Way, and the Waverley Path. Caltrans is currently proposing to repurpose on-street parking for bicycle lanes as part of its Route 82 (El Camino Real) Pavement Rehabilitation and ADA Improvements project. A series of community engagement meetings to provide feedback on this Caltrans plan were scheduled for March and April of this year, with a Council Ad Hoc Committee recently formed to continue consultation with stakeholders.

Figure 5: City of Palo Alto High Injury Network



Seven collision profiles were also developed to summarize key collision and associated roadway contextual conditions in Palo Alto. Each collision profile represents up to 6-15% of all KSI collisions in Palo Alto. These profiles include:

1. Residential Arterials
2. Alcohol Involved
3. Pedestrians On Arterials at Night
4. Pedestrians On Major Downtown Streets
5. 90 Degree Angle Collisions with Bicyclists
6. Walk and Roll Routes on Higher Stress (higher speed/volume) Streets
7. Children Riding Bicycles

These collision profiles will be used to determine roadway safety projects, programs (including adult and youth safety education), policies, and practices the City can pursue to institutionalize safety in Palo Alto and achieve the goal of zero fatalities and serious injuries. To coordinate this effort with the concurrent Bicycle and Transportation Plan (BTP) Update, the Safety Action Plan and BTP teams are sharing the same collision database and coordinating on project recommendations.

Next Steps

Having completed an existing conditions assessment of current safety policies, programs, and practices as well as quantitative and qualitative safety data, the project is moving into the recommendations phase with the development of an action plan and implementation strategy. Another community engagement event is planned for May Fete. This community engagement event is the last opportunity to engage community members before preparing the Draft Comprehensive Safety Action Plan and will focus on prioritizing projects and institutionalizing the Safe System Approach into the City's existing policies and guidelines. The Draft Plan will include a project list based on existing plans, supplemented with projects to cover the entirety of the HIN; identification of where the City's existing policies and guidance could use an update to align with the Safe System Approach; and an Action Plan to identify the ways in which the City can implement actions aligned with the goal of zero fatalities and serious injuries by 2030.

FISCAL/RESOURCE IMPACT

On June 19, 2023, Council approved (CMR 2305-1525) the funding agreement with FHWA and the related budget amendment to the Fiscal Year 2024 Adopted Capital Budget for the Transportation and Parking Improvements Project (PL-12000) to increase the revenue and expense appropriation by \$160,000 to reflect the grant revenue and project cost, respectively. The additional \$40,000 in project cost, which is the 20% City match portion required in the funding agreement, will be absorbed from the same project (PL-12000), as a part of the FY2024 Adopted Capital Budget. No additional budgetary action is required for the City match obligation.

STAKEHOLDER ENGAGEMENT

Alongside the collision data, community input that came through the forms of a survey, interactive maps, and emails to the Office of Transportation was reviewed to provide a qualitative understanding of safety concerns in the City.

The online survey was open from October through December 2023 and was focused on high level attitudes on trade-off decisions. The attitudinal survey, completed by 766 respondents, focused on trade-off decisions that community members were willing to accept to create a safer network for all road users.

A majority (66%) of respondents strongly agreed to prioritize safety over on-street parking and 85% strongly supported eliminating traffic fatalities and serious injuries in Palo Alto. When asked broadly whether the street design should prioritize safety over motor vehicle delays, 68% of respondents strongly agreed. However, when asked more specifically whether roadway changes that reduce lanes or parking should be prioritized to enhance safety for pedestrians or bicyclists, only 57% strongly agreed. Regardless, a majority (84%) agreed or strongly agreed to prioritize pedestrian and bicycle safety over vehicle lanes or parking. Downtown and along commercial corridors, more respondents strongly agreed (65%) that space for people to walk, bike, and cross the street safely should be prioritized over on-street parking for cars.

Comments received through the Office of Transportation and the interactive webmap hosted by the Bicycle and Pedestrian Transportation Plan Update project focused on improving the bicycle connections to downtown, improving safety along Walk and Roll Routes, the desire for road diets citywide, increasing education around safer behavior for all road users, and preparing policies and promoting education around electric bicycles.

In addition to the planned May Fete engagement activity, this project incorporates ongoing updates and study sessions with PTC, the Pedestrian and Bicycle Advisory Committee, the City/School Transportation Safety Committee, and the City Council. A summary of standing committee and public feedback on the contents of this report and associated presentation is attached. Tentatively targeted for May, the next round of standing committee meetings will review the draft project list and Safe System Toolbox.

ENVIRONMENTAL REVIEW

This information report is not a project as defined by CEQA because it does not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment. CEQA Guidelines section 15061(b)(3).

ATTACHMENTS

Attachment A: Summary of Standing Committee & Public Feedback on Collision Analysis

APPROVED BY:

Philip Kamhi, Chief Transportation Official

Standing Committee & Public Feedback on the Safety Action Plan Collision Analysis

February/March 2024

CSTSC – March 28

- Comment around the survey results not being representative of the entire community. Response noted survey was made available through regular communication channels and received a higher response rate
- Comment around the need for more recent data
- Comment noted that collision data may be underrepresented because many collisions are not reported, especially by children/students. Response noted City's ongoing exploration into an interactive map to document near-miss or minor collisions where police reports are not made
- Question regarding age information in TIMS database. Response noted that age in reports is limited to categories for youth (under 14 years old, 14-18 years old)
- Comment that education is need for all school ages – elementary, middle, and high school
- Question around Walk and Roll Routes – how additional housing on ECR would affect Walk and Roll Routes, if the Walk and Roll Routes would be updated to reflect land use changes near San Antonio Road
- Comment around including data from the pandemic years when school was not in session

PABAC – March 5

- Question related to whether collisions occur along streets or crossing streets at the intersection
- Question relate to how HIN was segmented and % of streets was calculated
- Question about collisions on Charleston and how that corresponds to previous improvements on the street
- Comment that broadside collisions are not prevented by separated facilities
- Question on how bikes riding at night affect frequency of broadside bike collisions
- Comment that low KSI means larger error bars
- Question related to how restricting right on red helps reduce broadside collisions and comment that right turn on green is more problematic
- Comments about residential arterials – housing development in the future will increase need to include countermeasures on San Antonio

- Question on how moving to parallel streets will address crossing high LTS concerns
- Question on how the City will enforce new daylighting law
- Comment to address grade separated crossing for ped and bikes over rail crossing
- Question on statistical power of collision data used and whether we should be using 10 years of data instead
- Comment to add glossary of technical terms in report
- Comment related to bike facilities on Walk and Roll maps profile. It is misrepresented because many of the Walk and Roll routes have bike facilities

PTC - February 28

- Question related to increase in 2020 collisions – during the pandemic, there were less cars on the road, leading to increase in speeds and dangerous driving behaviors
- Comment related to the HIN on how 62% of collisions occurred on 3% of streets and an inference that ADT is likely higher on these streets
- Question related to how collision profiles were chosen
- Comment to focus on collisions at intersections
- Question regarding trends in killed vs. serious injury collisions – project did not separate analysis between killed and serious injury collisions
- Request for full survey to be included with report
- Clarification on if Vision Zero goal was adopted – Answer: It will be adopted by Council with Plan
- Question if countermeasures would have eliminated deaths and comment that countermeasures would not solve problems
- Request to ensure project addresses human side, not just data
- Comment to update map to layer KSIs on top – update complete
- Request to show before and after of Charleston corridor improvements
- Request to focus on intersection specific improvements
- Question if survey response was sufficient – response was that it was high for City-released survey
- Request to include actions to address lighting at night and need for reflective surfaces
- Comment on need for improvements on El Camino