



San Mateo County
SAFE ROUTES TO SCHOOL
Healthy Kids • Green Communities • Safe Journeys



Youth-Based High Injury Network (HIN) for San Mateo County Safe Routes to School

San Mateo County BPAC | May 19, 2022



alta

Project Overview



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1. Evaluation of SMCOE Safe Routes to Schools (2015/16-2019/20)
2. Develop 5 Year Strategic Plan for Safe Routes to School
3. Perform a youth-based High Injury Network analysis of roadways near San Mateo County schools



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SAN MATEO
COUNTY
OFFICE OF
EDUCATION

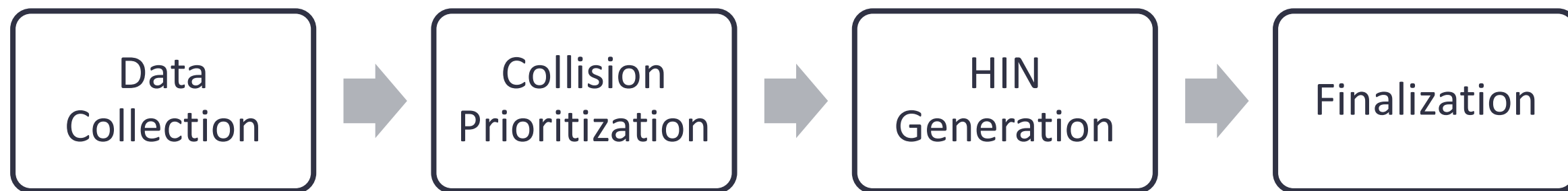
High Injury Network Development

The background image shows a yellow school bus parked on the right side of a paved street. The bus has "SCHOOL BUS" written on its rear and "STOP WHEN RED LIGHTS FLASH" on its back. A red octagonal stop sign is visible on the side of the bus. To the left of the bus, there are several cars parked along the curb. The street is lined with large, leafy trees on both sides, and a sidewalk runs along the left edge of the road. The overall scene is a typical suburban street during the day.

HIN Development



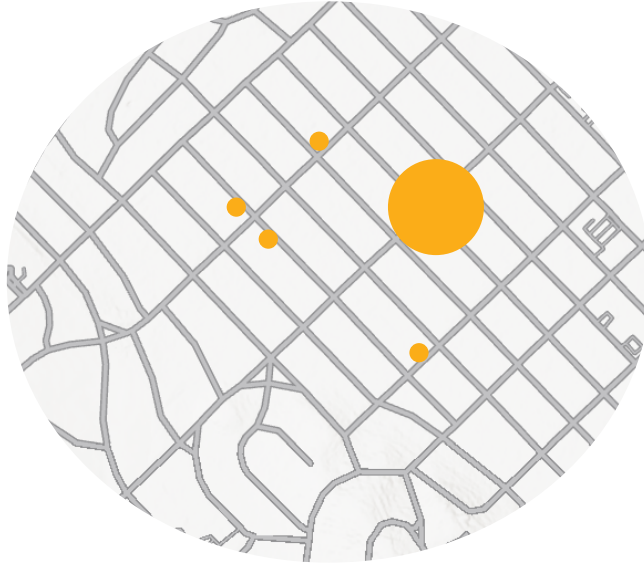
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1. Data collection

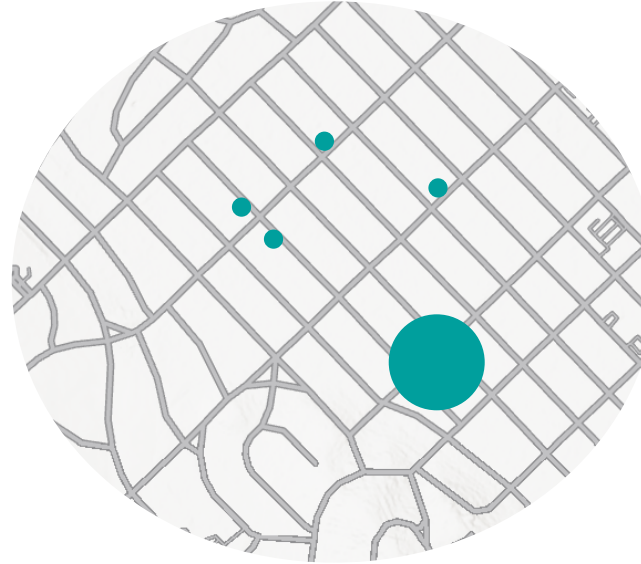
- **SWITRS Collision data**
 - Filtered to exclude collisions on interstates/freeways – except where Hwy 1 functions as an at-grade arterial (southeast part of the county)
- **Caltrans road centerline**
- California Department of Education (DOE) public and private schools
- DOE Free and Reduced Price Meal data
- MTC Equity Priority Communities layer

2 Collision Prioritization



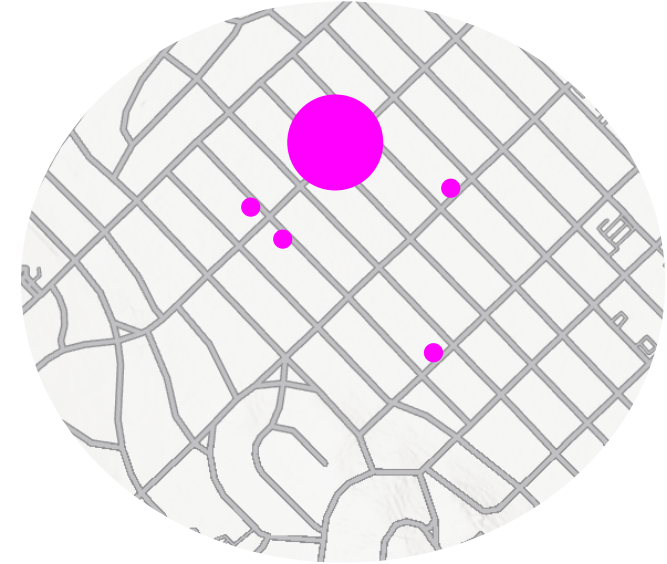
Severity

KSI (killed or severely injured) weighted above other collisions



Active Mode

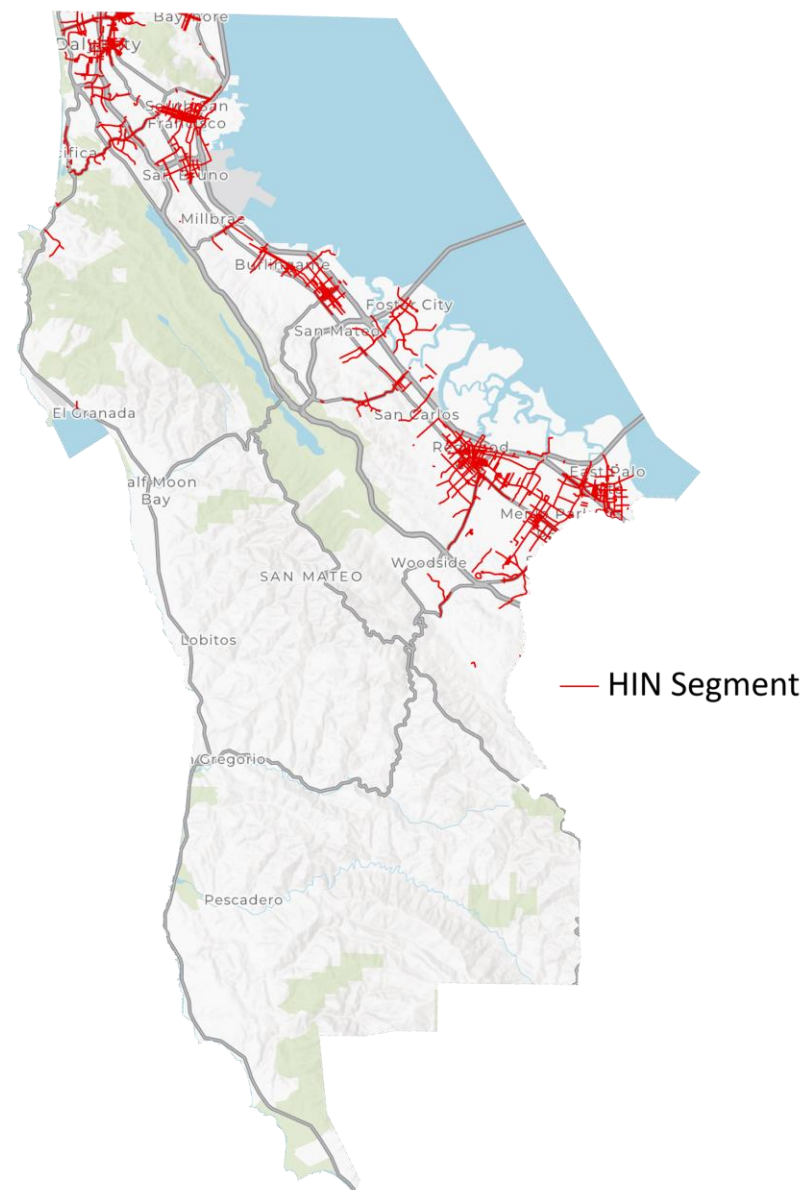
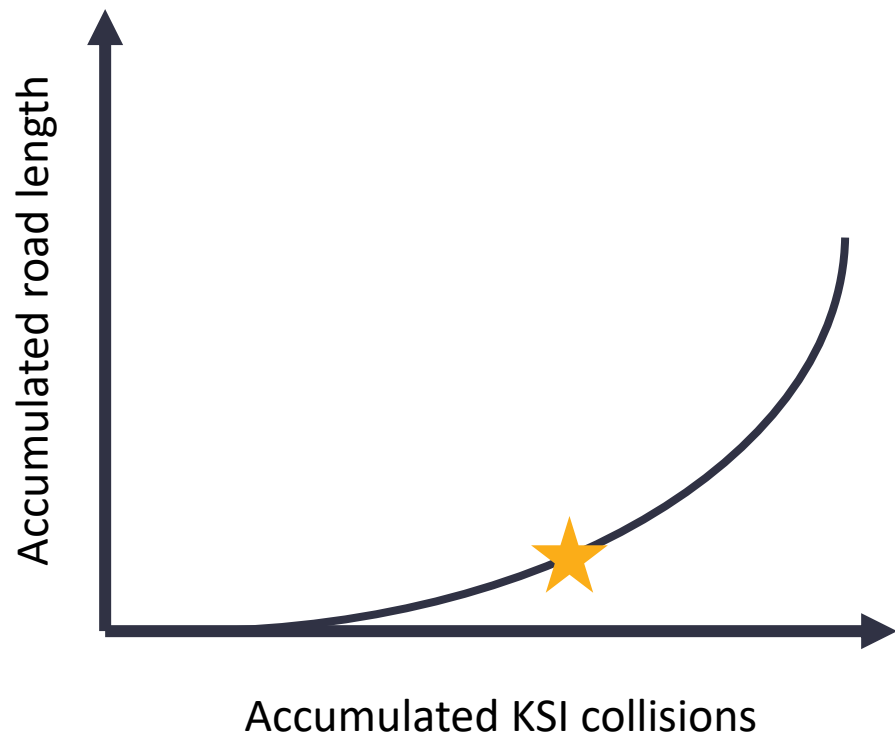
Collision involved a person walking or bicycling



Youth Involvement

Victim under 18

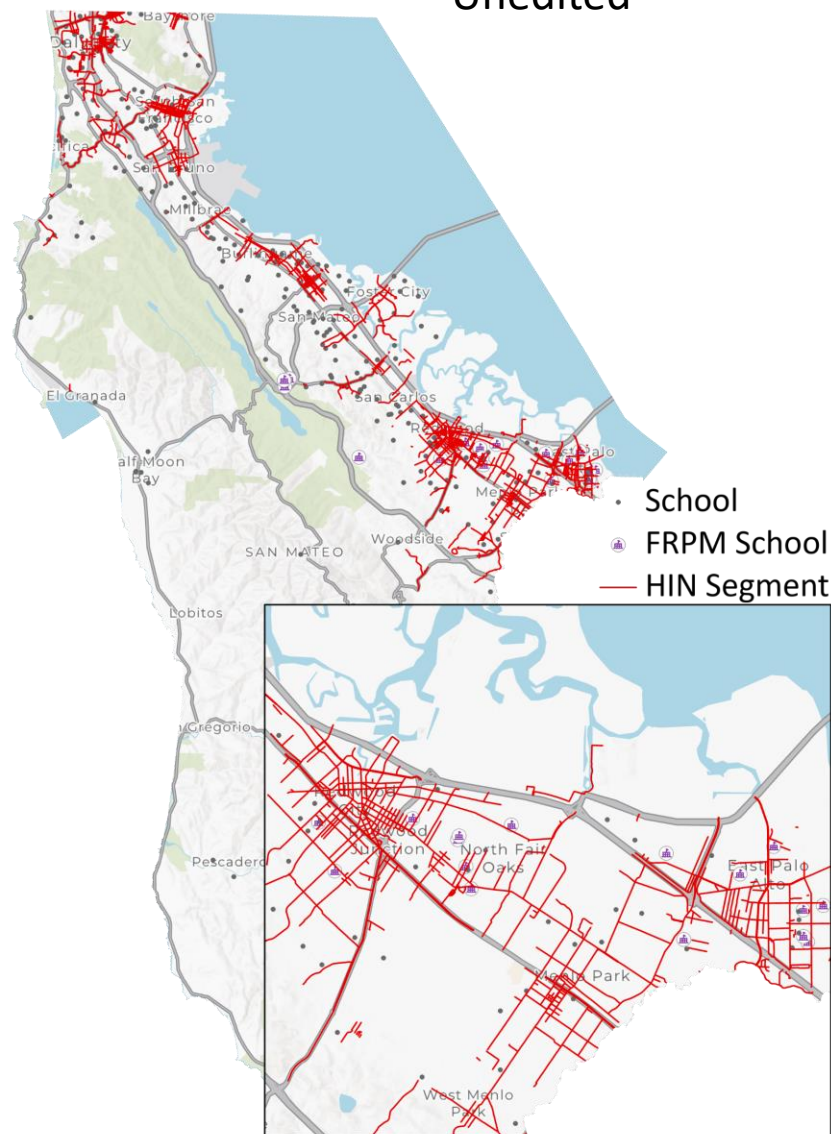
3. HIN Generation



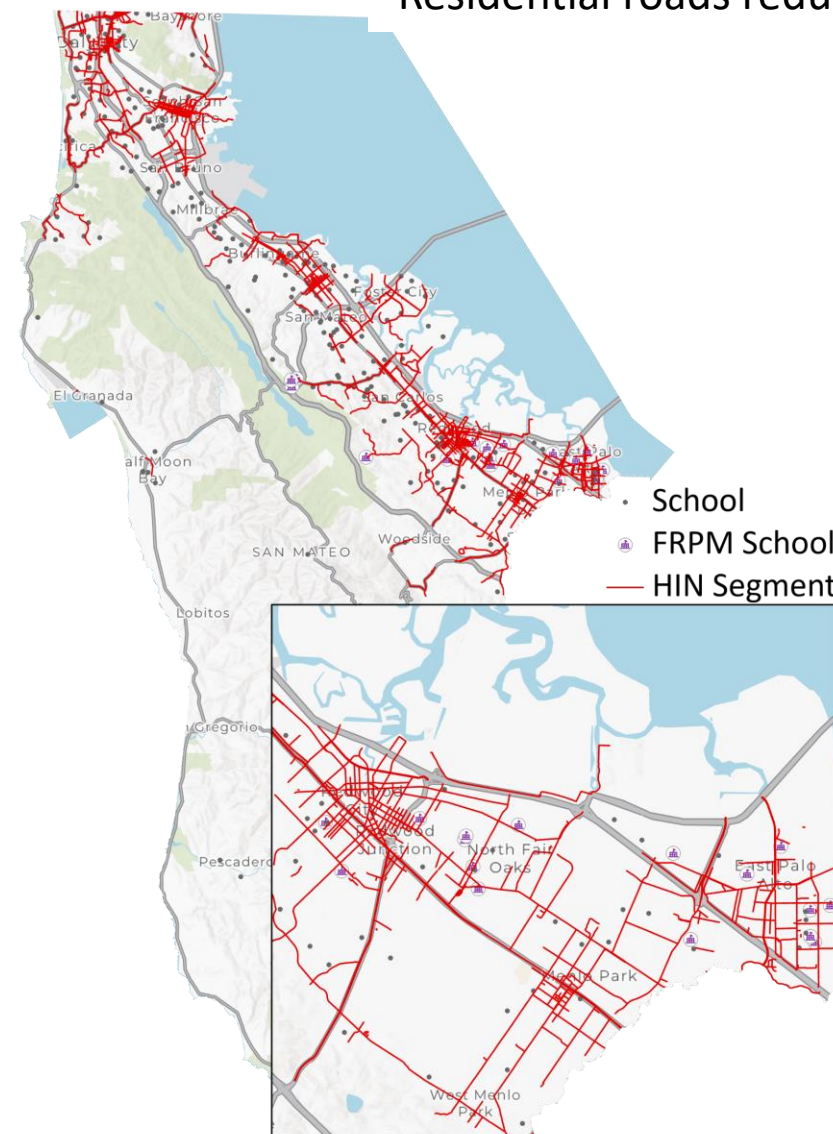
4. Finalization

- Network “bleeding” onto residential streets
- Manual edits based on feedback

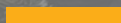
Unedited



Residential roads reduced



High Injury Network Findings

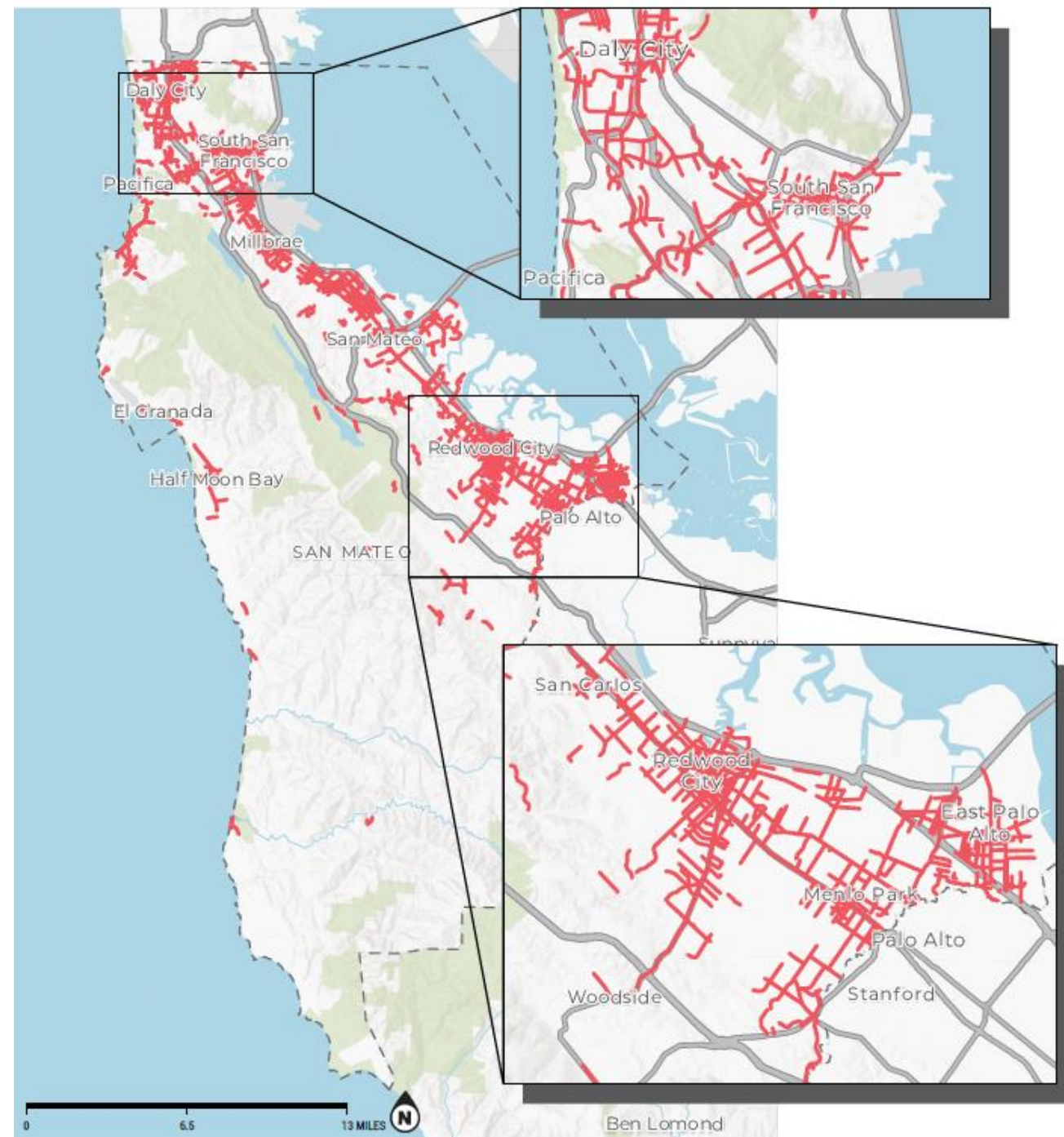
The background image shows a yellow school bus parked on the right side of a paved street. The bus has "SCHOOL BUS" written on its rear and "STOP WHEN RED LIGHTS FLASH" on its back. A red octagonal stop sign is visible on the side of the bus. To the left of the bus, there are several cars parked along the curb. A concrete sidewalk runs along the left side of the street, bordered by lush green trees and bushes. The scene is set in a sunny, outdoor environment with a clear blue sky.

HIN Statistics

- 325.8 total miles
(10.4% of total network)
- Majority is concentrated in population centers
- 96% is within 1 mile of a school
- 28% is within 1 mile of a high-FRPM school

ELEMENT

- High Injury Network Corridor
- San Mateo County

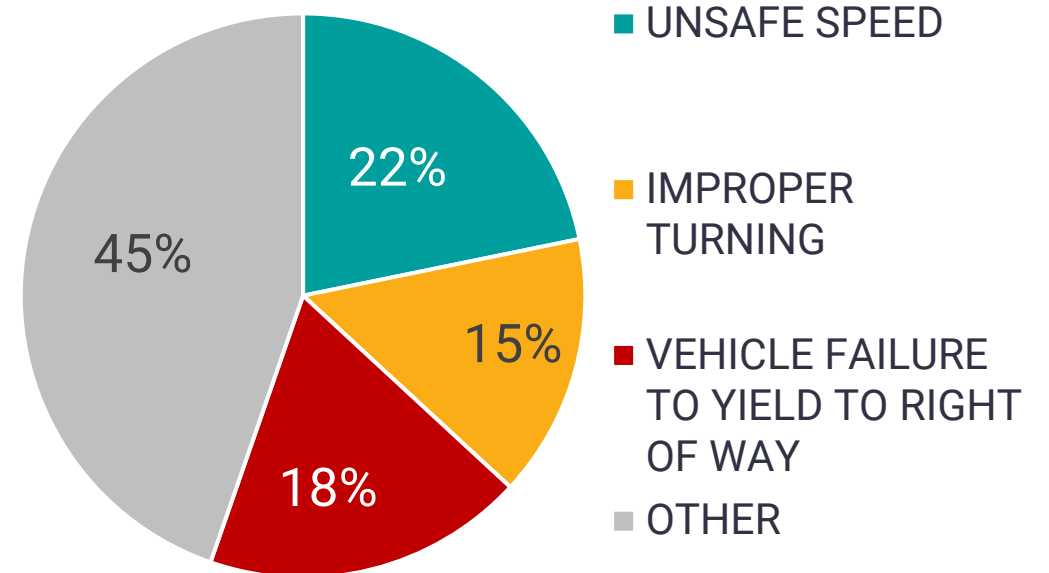


Causes of Collisions

- Three crash factors account for 55% of all collisions:

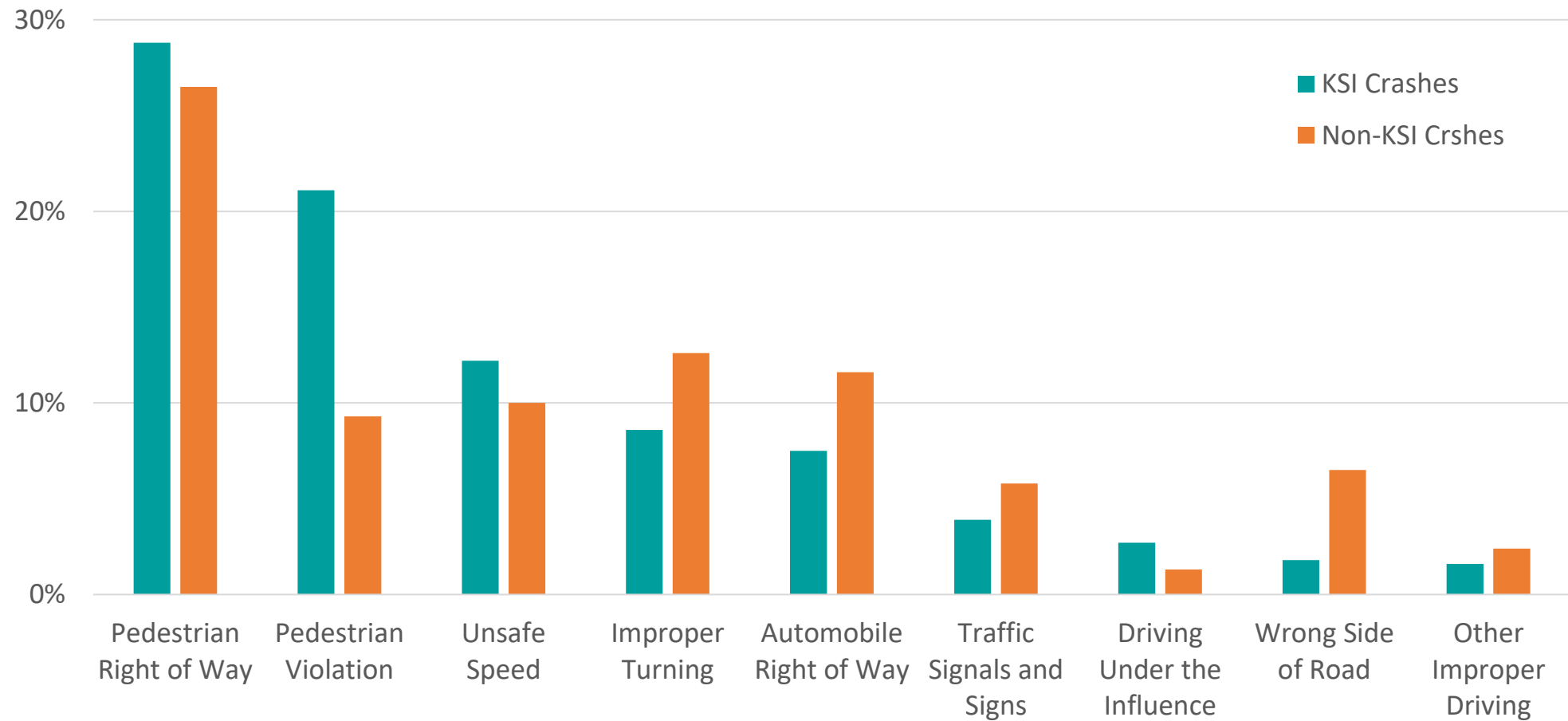
- Unsafe speed
- Improper turning
- Vehicle failure to yield right-of-way

PRIMARY CRASH FACTOR, ALL COLLISIONS



Top Active Mode Crash Causes

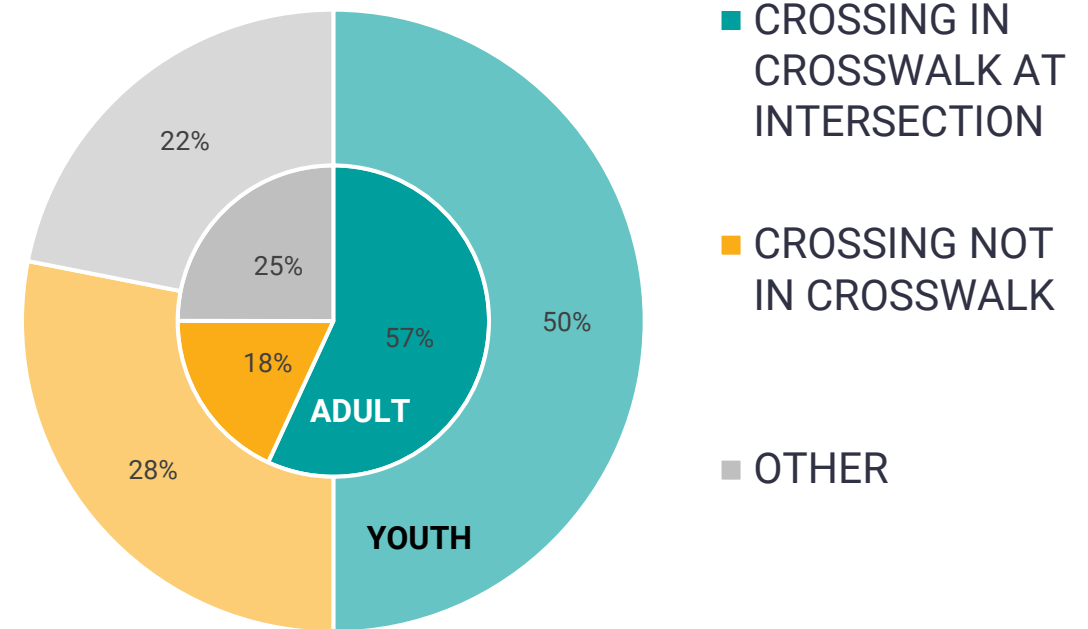
Causes of Active Killed or Severely Injured (KSI) Collisions Countywide



Pedestrian Collision Action Statistics

- For all pedestrians, most collisions occur while crossing at an intersection (blue)
- Youth pedestrians (outer circle) are more likely than adults (inner circle) to be hit while crossing outside of a crosswalk (yellow)

PEDESTRIAN ACTION IN ALL PEDESTRIAN COLLISIONS



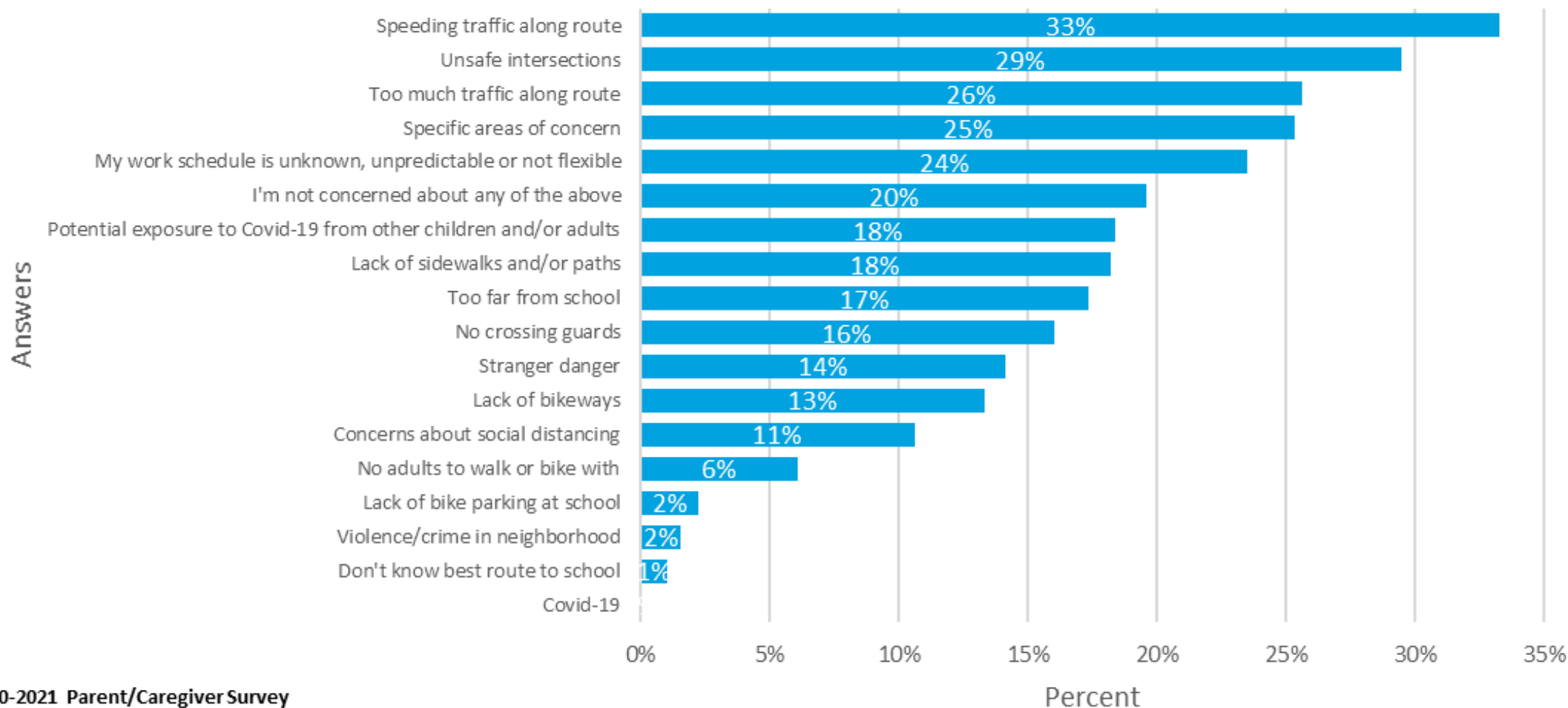
Parent/Caregiver Concerns with Walking/Biking to School



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The survey asked, "what concerns limit your child's ability to walk or bike from school?"



Source : 2020-2021 Parent/Caregiver Survey

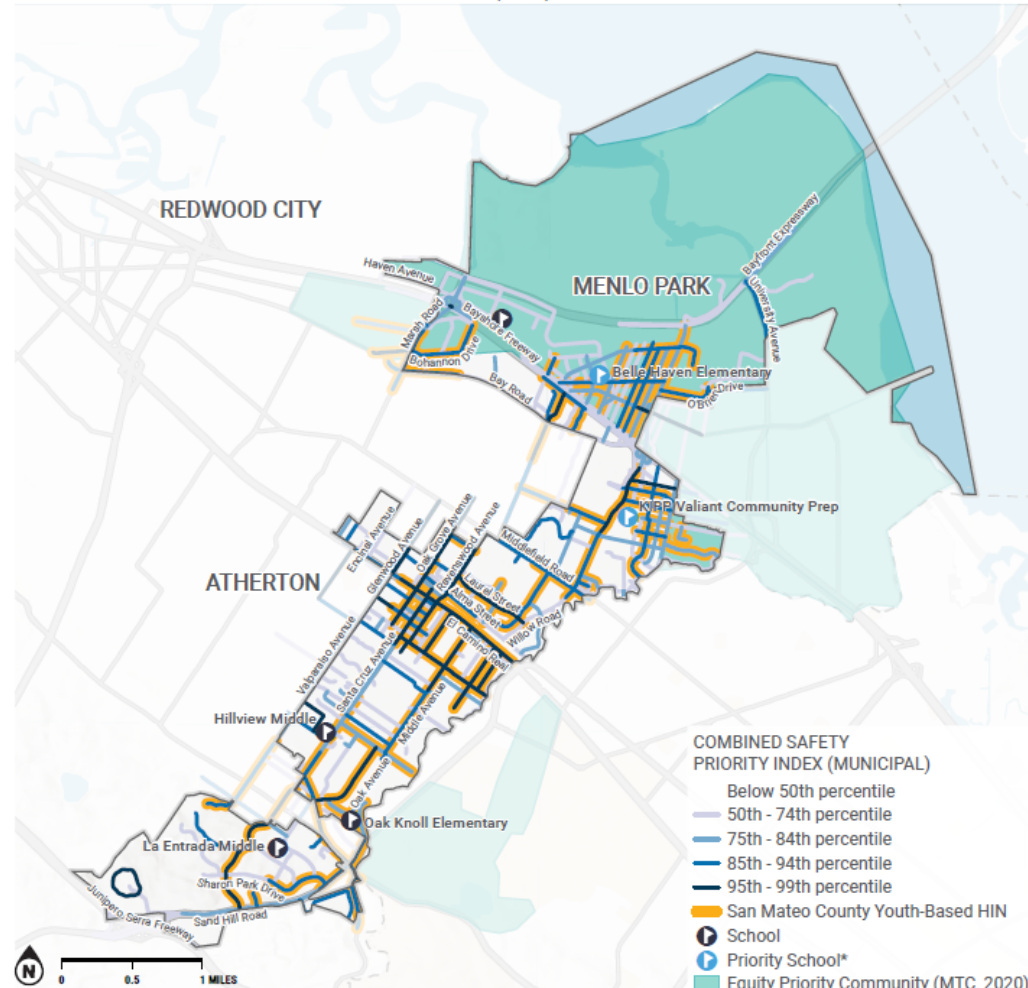
Note: Percentages may not add up to 100% due to rounding.

Resources for San Mateo County Cities

The background image shows a yellow school bus parked on the right side of a street. The bus has "SCHOOL BUS" written on its back and "STOP WHEN RED LIGHTS FLASH" below it. The number "3" is visible on the rear. The street is lined with trees and other vehicles are visible in the distance. The entire image is covered with a semi-transparent teal overlay.

MENLO PARK SCHOOL SAFETY ANALYSIS

YOUTH-BASED HIGH INJURY NETWORK (HIN) - TOP CORRIDORS



TOP 5 SAFETY PRIORITY CORRIDORS

Corridor	All Collisions	Fatal or Severe (KSI)	Pedestrian Involved	Bicyclist Involved	Youth Involved
Ravenswood Ave	22	1	3	6	6
Avy Ave	12	1	0	7	2
State Highway 82	59	2	3	8	14
Laurel St	20	3	1	6	9
Glenwood Ave	6	1	0	3	2

Segments are sorted by their Combined Safety Priority Index scores. Columns may not add up because collisions may be counted in multiple columns.

Prepared 2/2/2022 5:09 PM

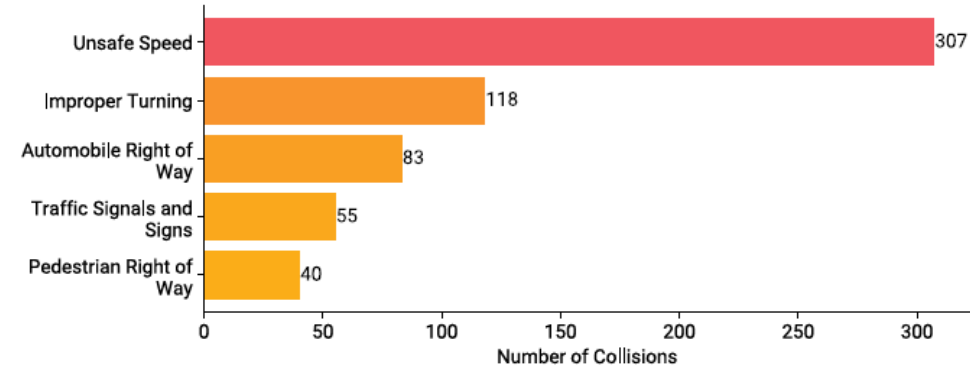
COLLISION STATISTICS FOR MENLO PARK, 2014-2020

See the San Mateo County SRTS High Injury Network Report for additional context and guidance on countermeasures.

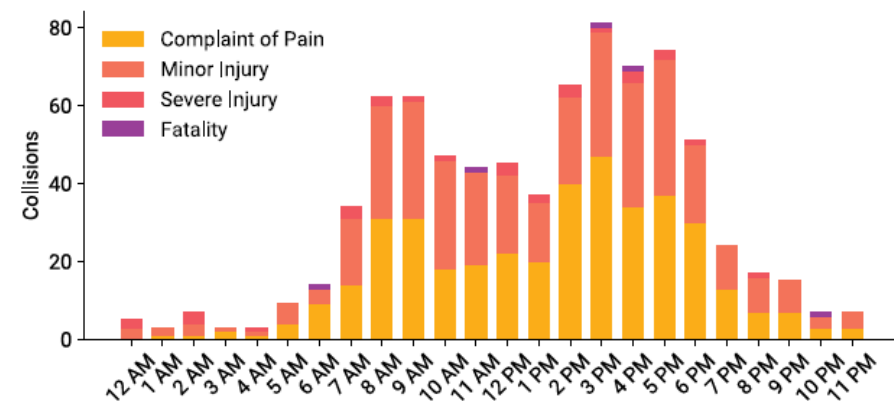
COLLISION TYPES BY LOCATION

	City-Wide				Within 1/4 Mile of a School				Within 1/4 Mile of a Target* School			
	All	KSI	Youth	Active	All	KSI	Youth	Active	All	KSI	Youth	Active
All Collisions	786	34	198	258	111	4	36	45	69	1	24	31
Alcohol Involved	53	8	9	19	12	1	3	5	8	0	2	4
Speeding Involved	307	11	69	39	47	2	15	9	26	0	9	3
Mid-Block Collision	403	21	103	101	59	3	20	19	37	1	12	11

TOP 5 COLLISION FACTORS, ALL COLLISIONS



ALL COLLISIONS BY TIME OF DAY



Collision data from 2014 to 2020 was downloaded from the statewide Transportation Injury Mapping System (TIMS) which reports all collisions resulting in an injury. 2020 data was provisional at the time of download.

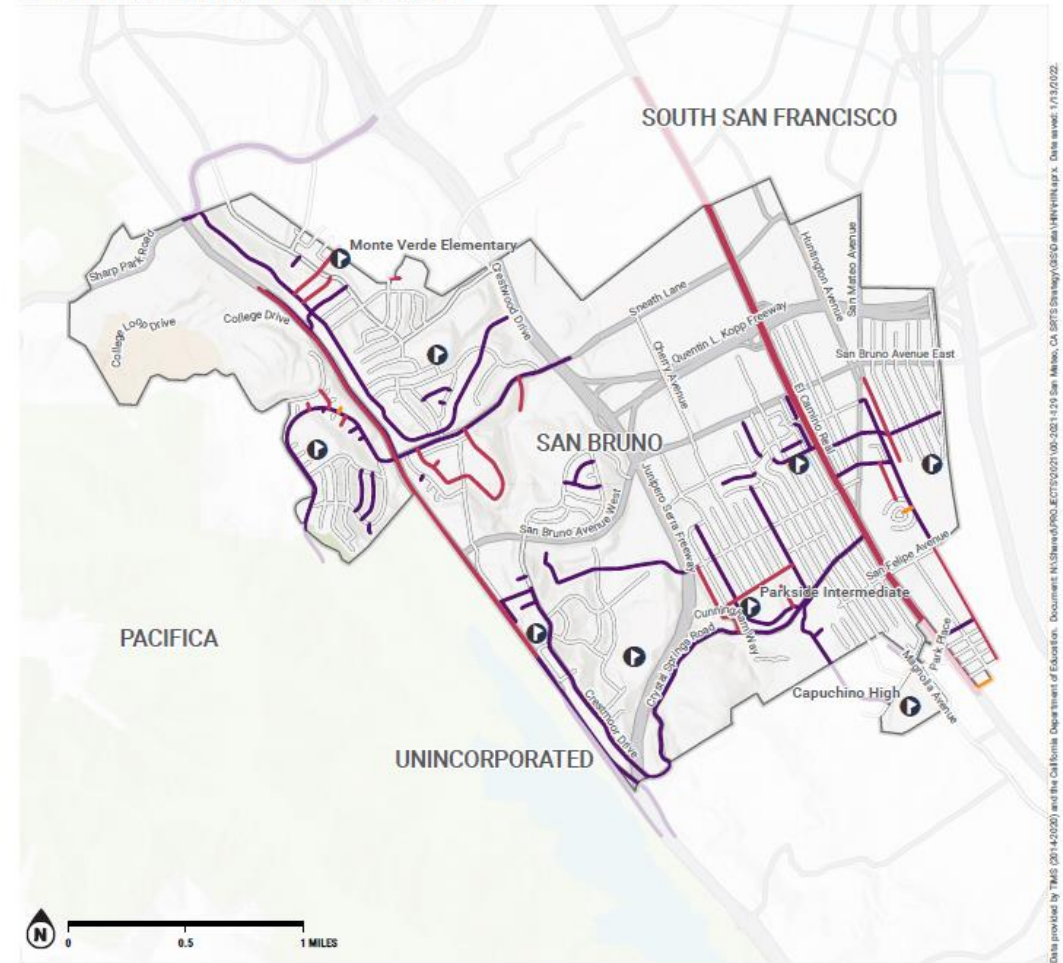
Collision Causes – Mapping to Countermeasures

Countermeasures	Cost Efficiency ¹	Effectiveness ²	Co-benefits ³
Actuated Beacons (RRFB/PHB)	★ ★ ★	★ ★ ★	★
Speed Humps & Tables	★ ★	★ ★	★



Speeding Analysis

- Countywide StreetLight data provided by C/CAG
- Map provided for each city



REPORTED SPEEDING*

- No Speeding Measured
- 1-5 MPH
- 6 - 10 MPH
- 11 - 15 MPH
- More than 15 MPH
- No Streetlight Data Available

SCHOOLS

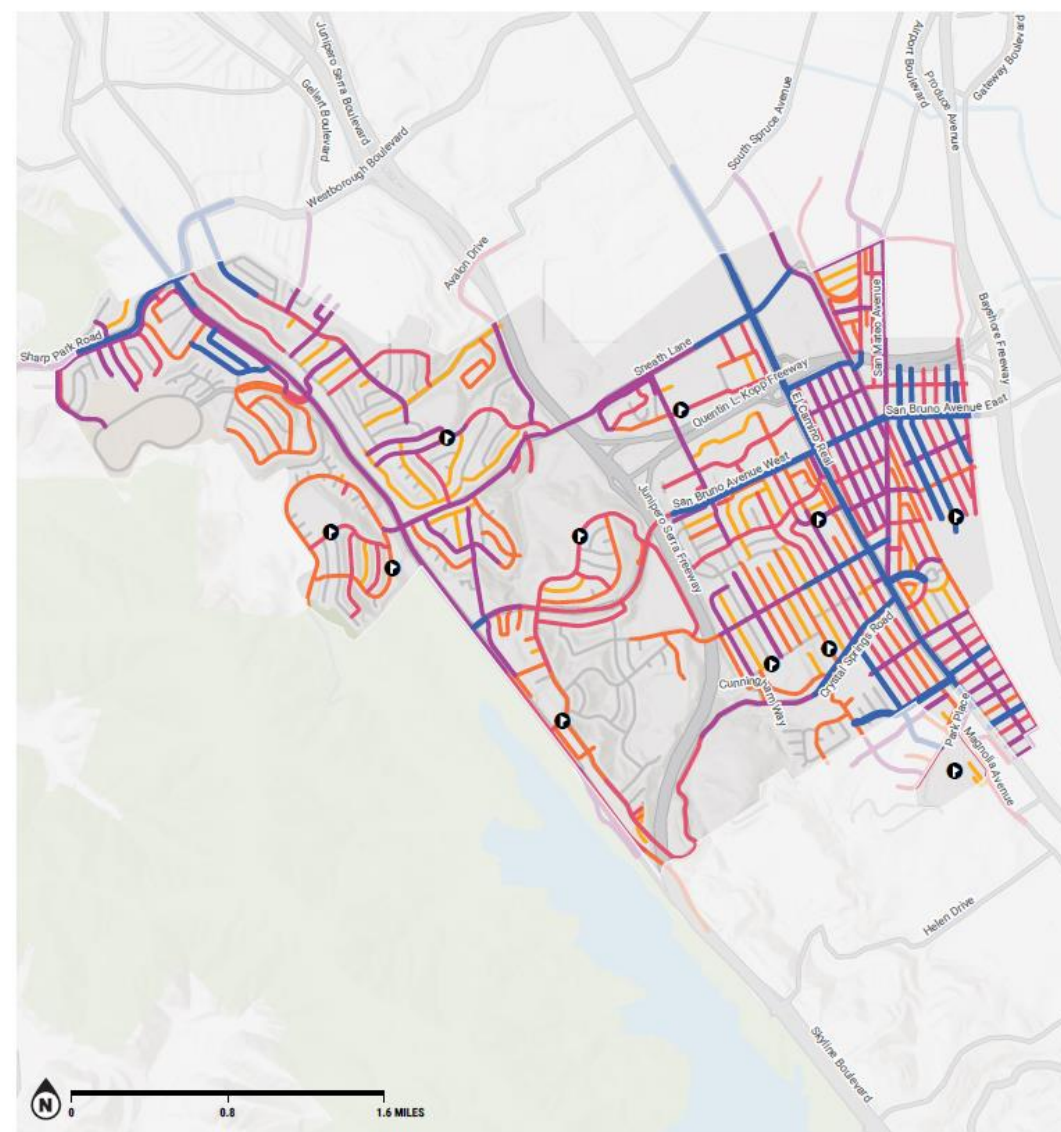
- School
- Priority School*

*Speeding is reported as the difference between the 95th and 85th percentile vehicle speeds per Streetlight data, where the 85th percentile is a proxy for the posted speed limit.

*Priority schools are defined as those with 75% or greater eligibility for Free and Reduced Price Meal (FRPM) programs during the 2020-2021 school year.

City of San Bruno SRTS Plan

- Sustainable Communities Grant funded SRTS Plan
- Will inform recommendations and prioritization for school-based infrastructure projects



SEVERITY-WEIGHTED COLLISION DENSITY

CITY OF SAN BRUNO
SRTS

SEVERITY-WEIGHTED COLLISION DENSITY

- High Collision Density
- Medium - High
- Medium
- Low - Medium
- Low Collision Density
- No Collisions

POINTS OF INTEREST

- Study School

BELLE AIR ELEMENTARY

SCHOOL COLLISION PROFILE



Collision data from 2014 to 2020 was downloaded from the statewide Transportation Injury Mapping System (TIMS) which reports all collisions resulting in an injury. Data from 2020 was provisional at the time of download.



COLLISIONS

- Bicycle KSI
- Bicycle Non-KSI
- Pedestrian KSI
- Pedestrian Non-KSI
- KSI
- Non-KSI

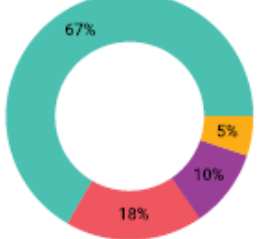
STUDY FEATURES

- Study School
- Study Area (1/2 mile buffer)
- San Bruno City Limit

COLLISION CHARACTERISTICS

	Total	KSI	Youth	Bicycle	Pedestrian
All Collisions	133	21	30	6	39
Mid-Block Collision	56	10	14	3	13
At Intersection	77	11	16	3	26
Alcohol Involved	13	3	1	0	1
Speeding Involved	15	1	4	0	0

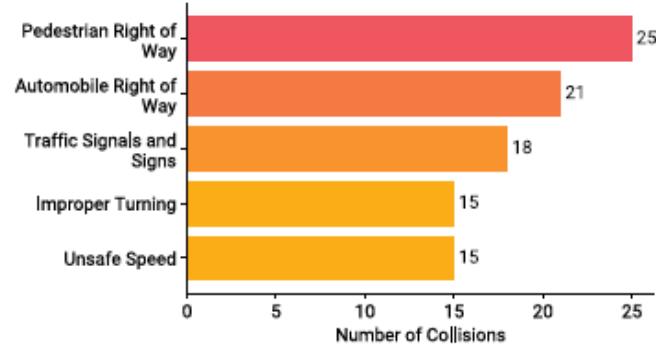
PEDESTRIAN LOCATION WHEN STRUCK



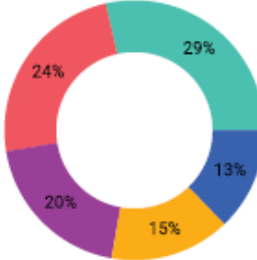
- Crossing in Crosswalk at Intersection
- Crossing Not in Crosswalk
- In Road, Including Shoulder
- Not in Road

ALL COLLISIONS

PRIMARY CRASH FACTOR

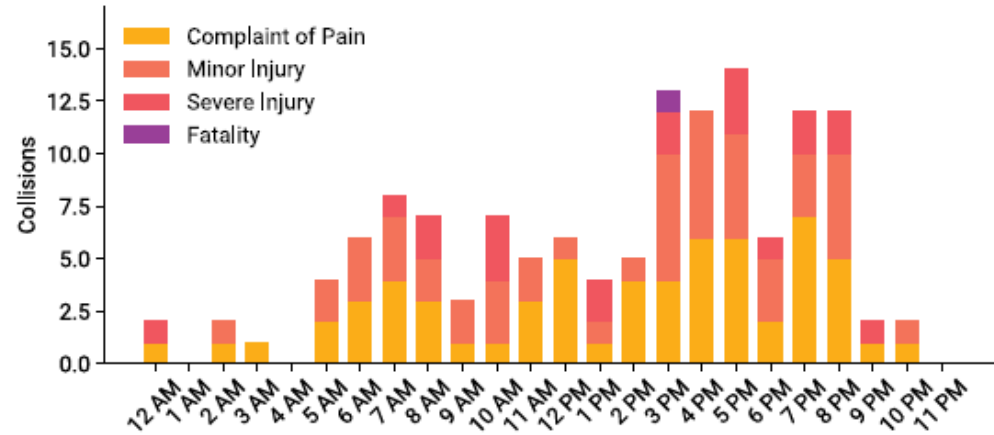


TYPE OF COLLISION



- Broadside
- Vehicle/Pedestrian
- Other
- Rear End
- Sideswipe

COLLISIONS BY TIME OF DAY



Thank You!

*Please email me with questions or feedback at:
hannahday-kapell@altago.com*