



VISION
ZERO



CCTA Vision Zero Working Group Meeting 3



Agenda

1. Introductions
2. Project Overview
3. Overview of Vision Zero “How To” Implementation Guide
4. Present Countywide Collision Analysis & Collision Profiles
5. Breakout Group Discussion on Collision Profiles
6. Breakout Group Report Back
7. Discuss Next Steps



Proposed Meeting Outcomes

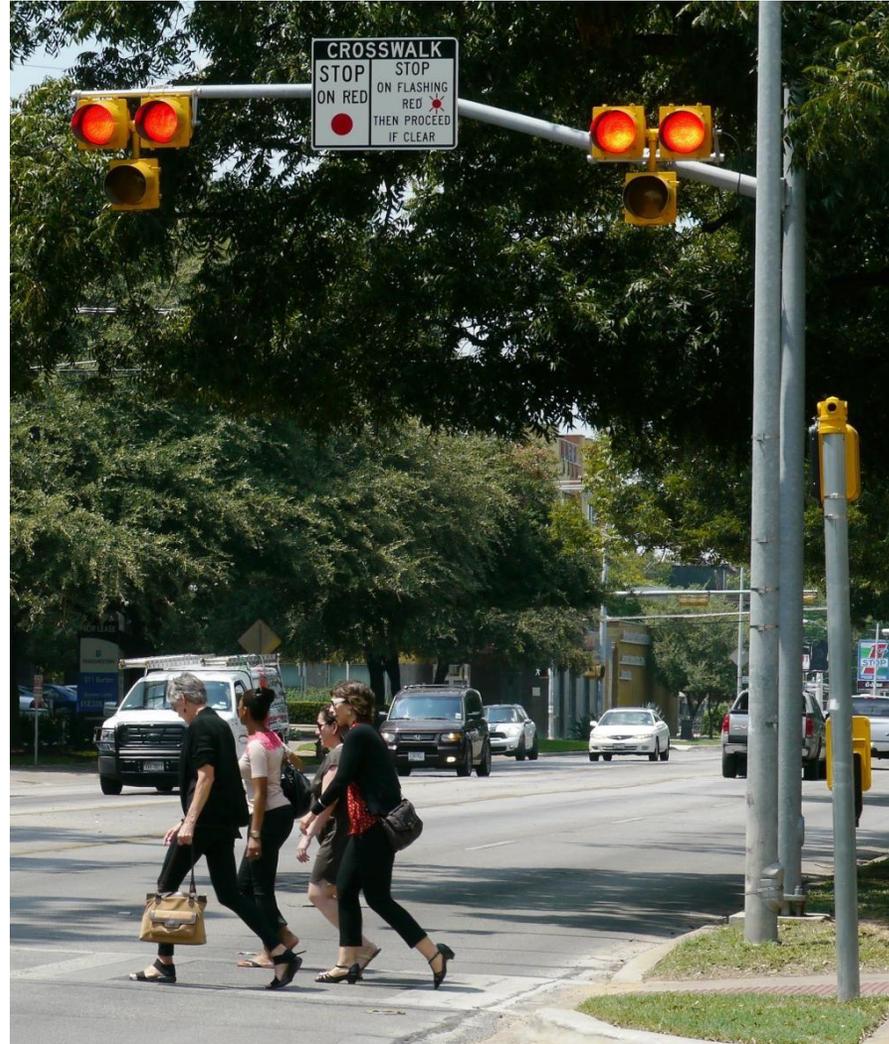
- Introduce “How-To” Guide for review
- Discuss & gather feedback/recommendations on collision profiles



Project Overview

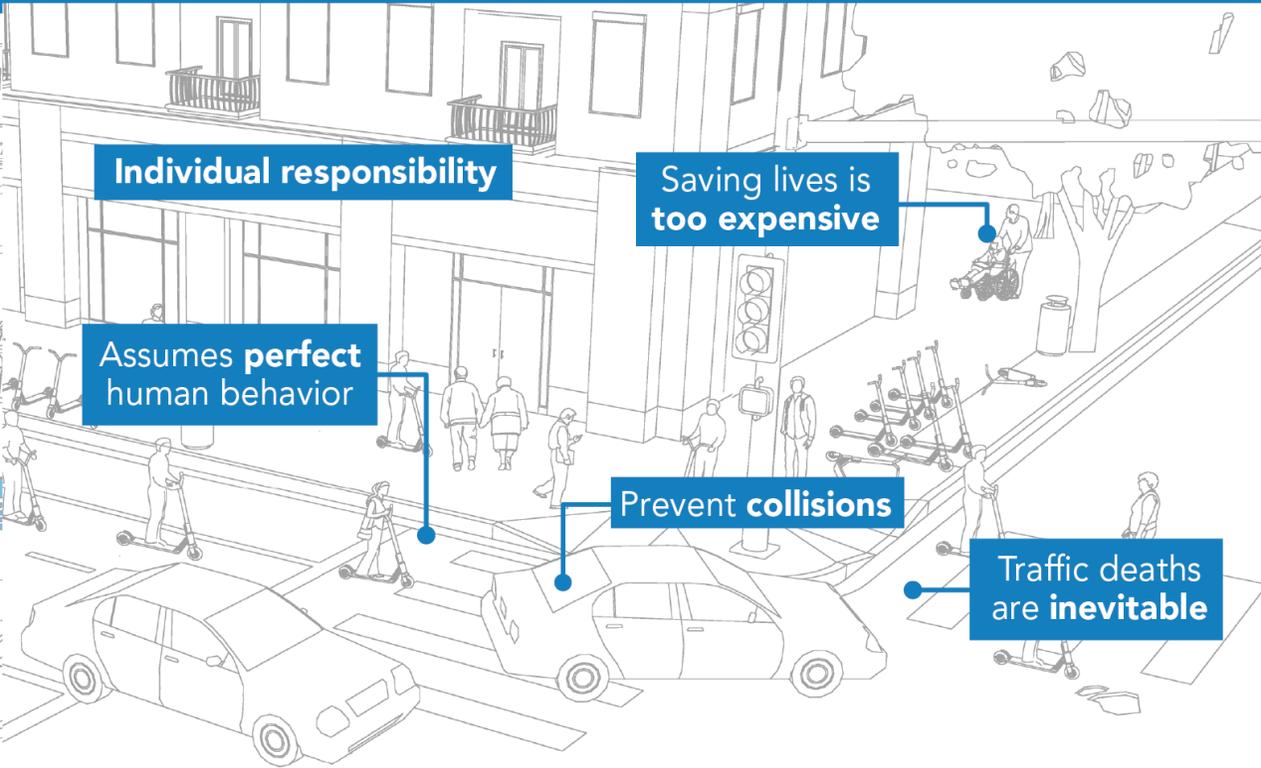
Project Goals

- Advocate Vision Zero as standard practice
- Collect & analyze traffic safety data
- Develop “How To” guide for local jurisdictions

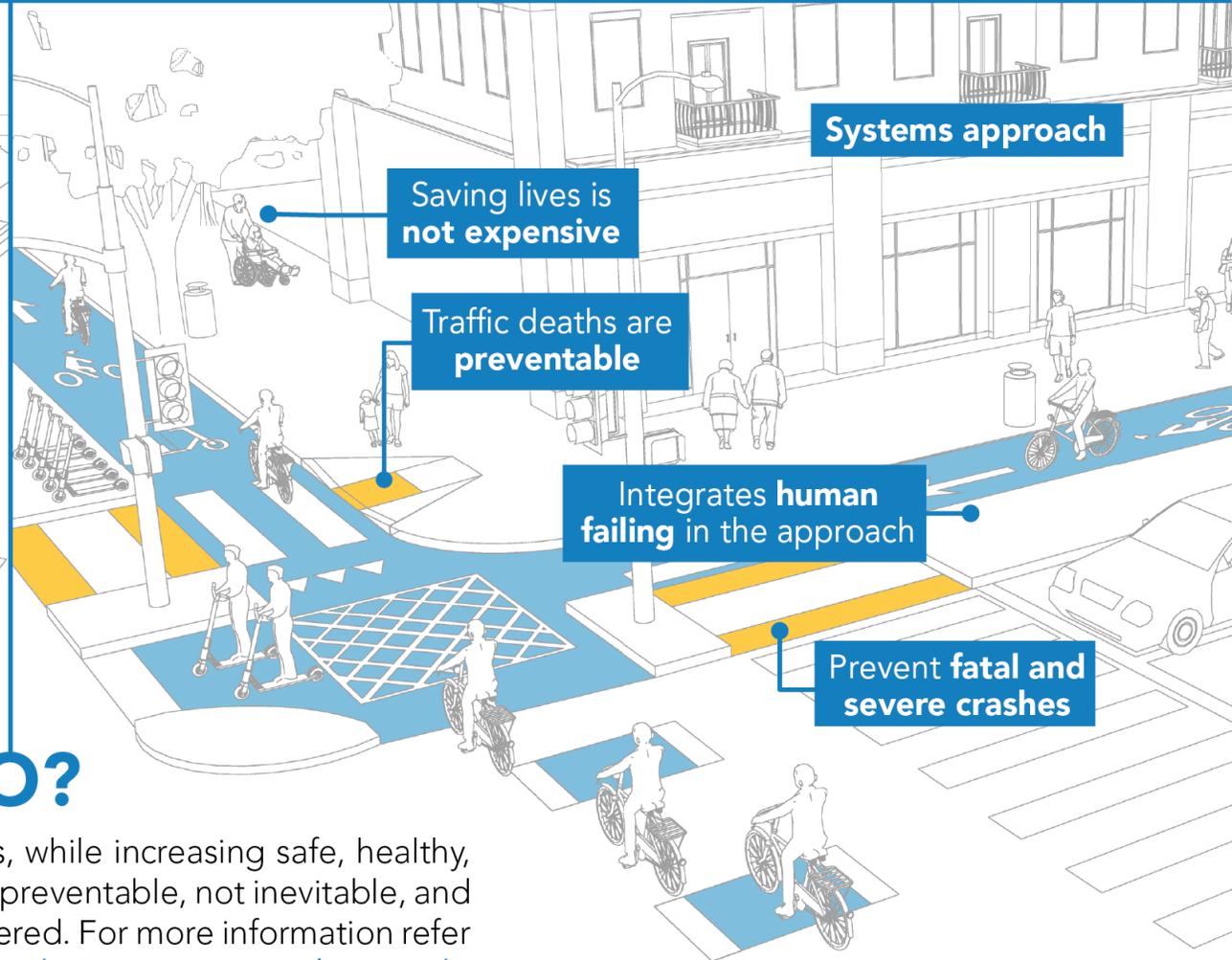




TRADITIONAL APPROACH TO SAFETY



VISION ZERO APPROACH TO SAFETY

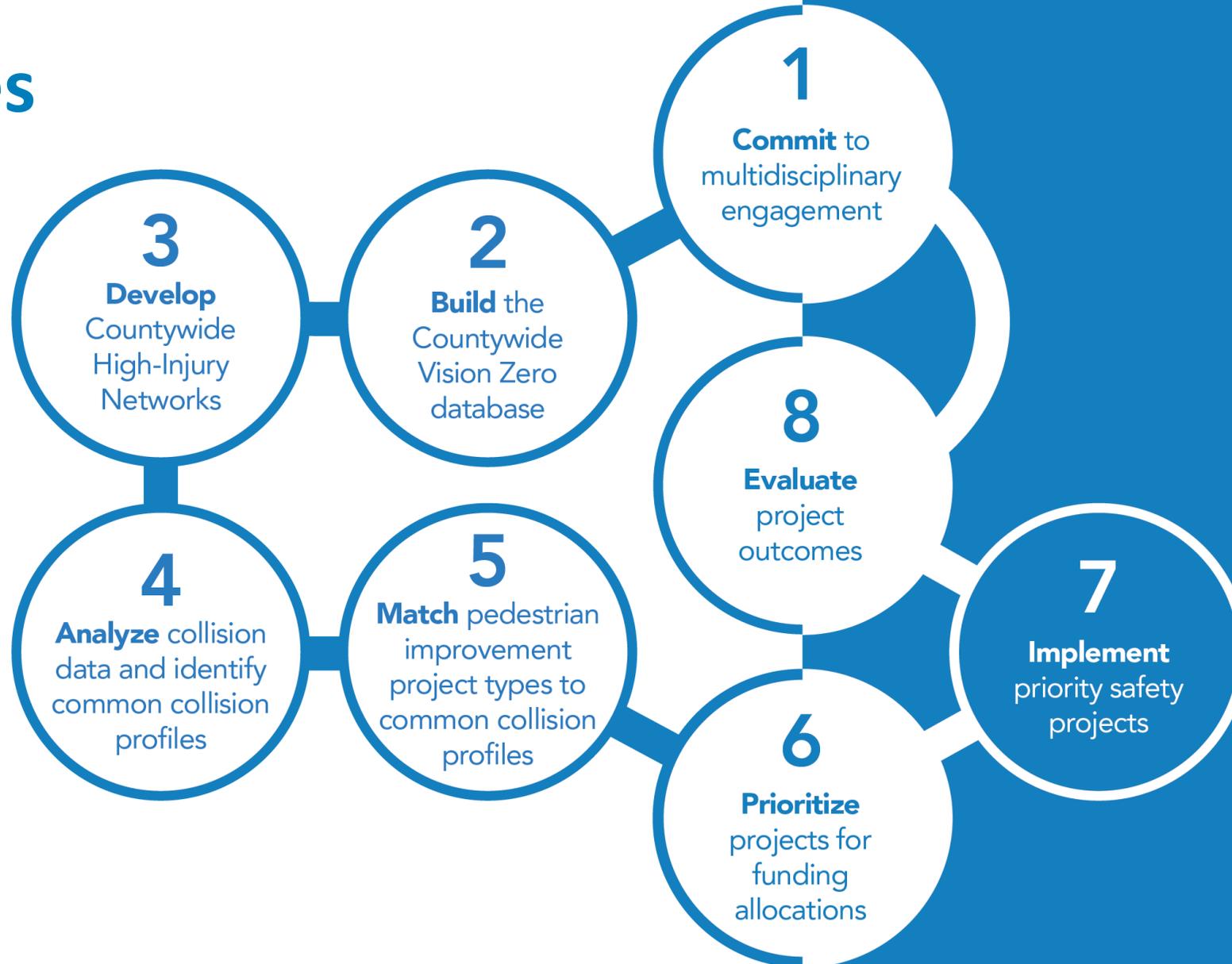


WHAT IS VISION ZERO?

Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all. The Vision Zero approach views traffic fatalities as preventable, not inevitable, and relies on multi-disciplinary collaboration and is data-driven and equity-centered. For more information refer to the Vision Zero Core Elements at <https://visionzeronetwork.org/resources/vision-zero-core-elements/>.



Roles



Project Status

Complete

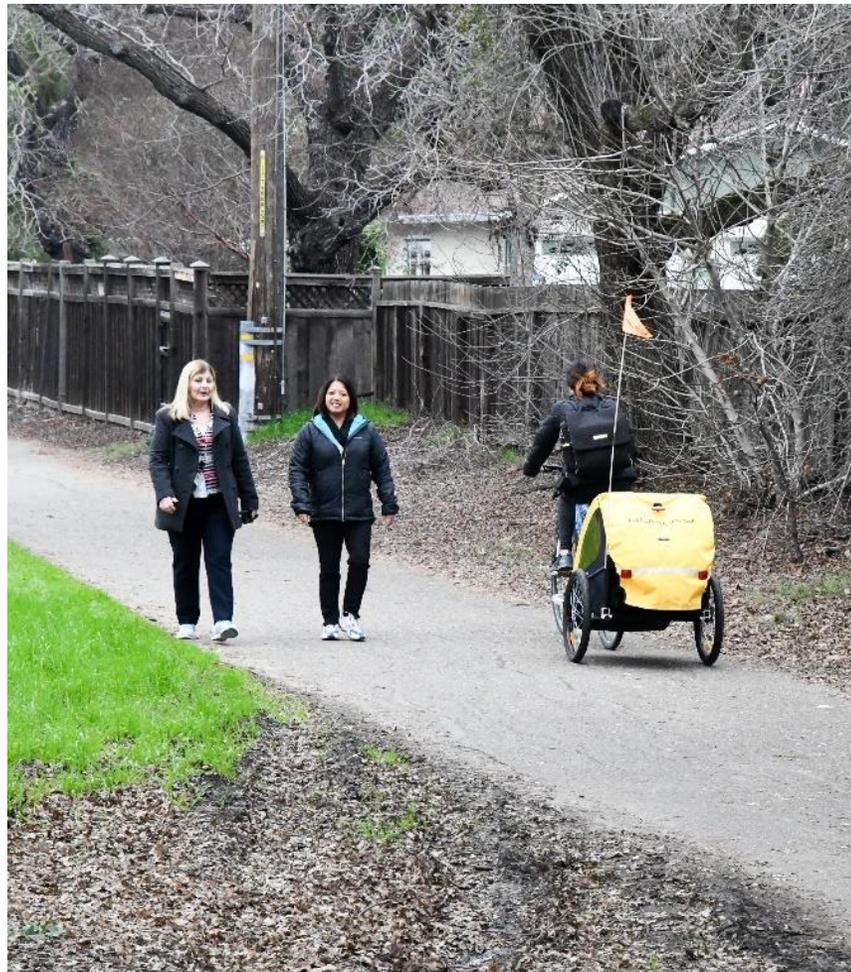
- Best practice review
- Local plan review
- Mapping high concentrations of injuries

In-progress

- Collision profiles/typologies
- Vision Zero “How To” Implementation Guide
- Vision Zero database

Future actions

- RTPC Presentations/“Roadshow”
- Typical pedestrian improvement projects & pedestrian needs assessment

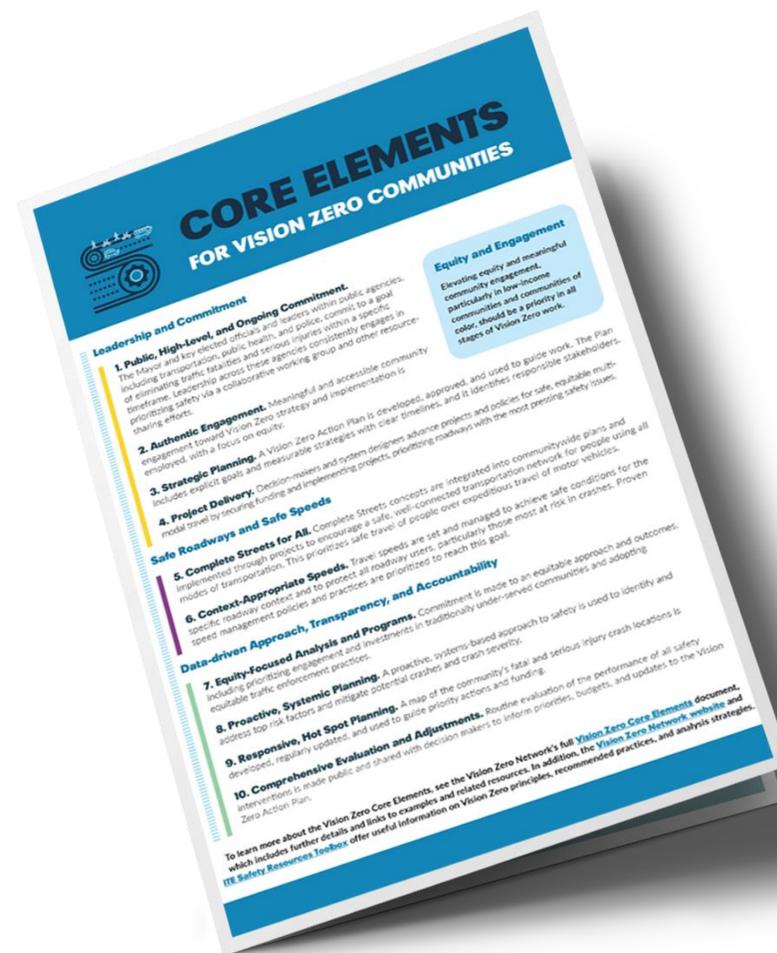




Vision Zero “How To” Implementation Guide

“How To” Guide

- Inspired by *ITE Core Elements for Vision Zero Communities*
- Highlights best practices for each Core Element
- Indicates role of CCTA & local jurisdictions
- Summarizes data analysis and resources developed to-date
- Refers to external resources to stay up-to-date





“How To” Guide

How to Develop Vision Zero Leadership & Commitment

- Public High-Level, and Ongoing Commitment
- Authentic Engagement
- Strategic Planning



“How To” Guide

How to Take a Data-Driven Approach

- Equity-Focused Analysis and Programs
- Responsive, Hot Spot Planning
- Proactive, Systemic Planning
- Comprehensive Evaluation and Adjustments



“How To” Guide

How to Build Safe Roadways & Ensure Safe Speeds

- Complete Streets for All
- Context Appropriate Speeds
- Project Delivery

Public, High-Level & Ongoing Commitment

- Example Vision Zero policies
- Education materials & approaches
- Inter-departmental & agency collaboration



Source: City of Richmond

Equity-Focused Analysis & Programs

- External resources on defining, analyzing, and programming for equity
- Understanding historical context of segregation and disinvestment
- Project prioritization using equity metric(s) (e.g., project located in MTC “Community of Concern”)

People Killed While Walking:



Governing, 2014

People Killed While Walking:



Governing, 2014

Communities With Sidewalks:



Bridging the Gap, 2012

Chance of Being Stopped and Searched:



New York Times, 2015

Source: Vision Zero Network

Proactive, Systemic Planning

- Underlying collision risk factors: the who, where, how, and why collisions happen
- Using travel behavior, roadway design, built environment factors to ID profiles
- Resources on countywide collision profiles and how to develop local profiles

Draft Countywide Collision Profiles

	Speeding
	DUIs
	Channelized right turns
	Skewed intersections
	Left turns at signals
	Red light violation

Complete Streets for All

- Integrate Complete Streets concepts
- Leverage CCTA pedestrian & bicycle design guidelines
- Select & apply safety countermeasures to make streets safer for all users

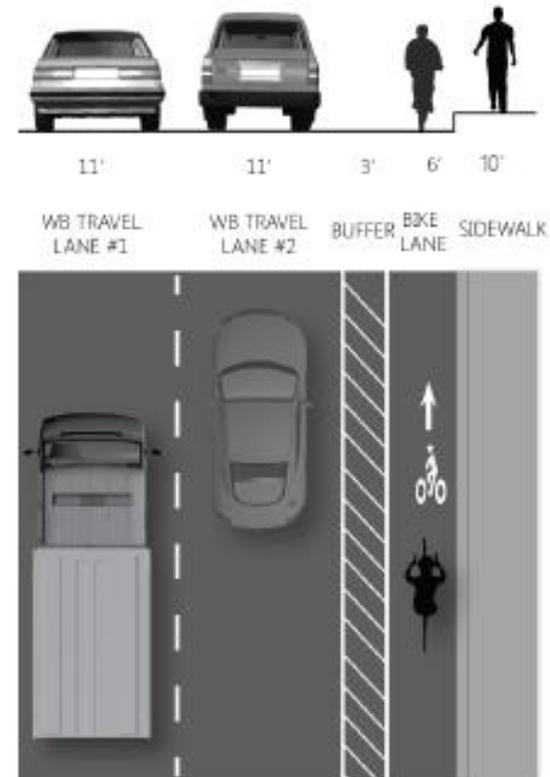


Figure D-8 Buffered Bicycle Lanes Preferred Width

Complete Streets for All

What You'll See in This Toolbox:

COUNTERMEASURE

Extend Pedestrian Crossing Time

Countermeasure icon

Countermeasure description

Prolongs the green phase when pedestrians are present to provide additional time for pedestrians to clear the intersection. Can occur automatically in the signal phasing or when prompted with pedestrian detection. Topography should be considered in clearance time.

Treatment locations

Notes and details

Locations: Signalized intersections
Note: identified as "Increase Cycle Length for Pedestrian Crossing" in CMF Clearinghouse

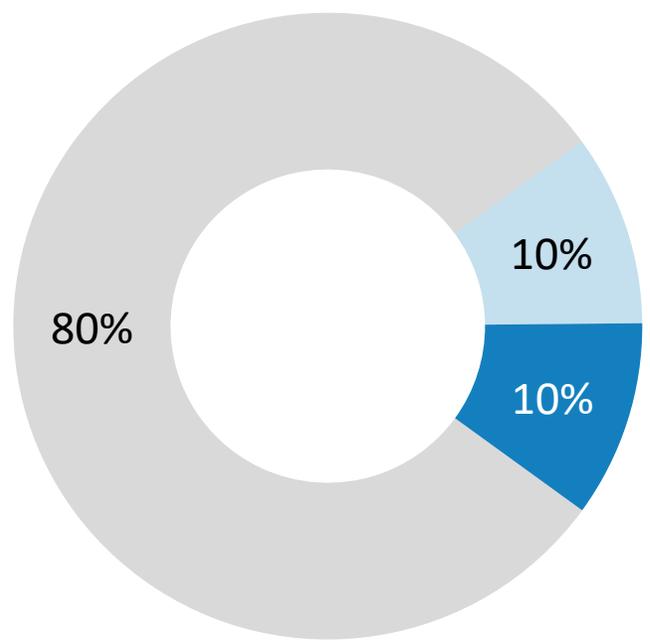
Low Cost & Quick Build countermeasures are identified with a pale blue background



Countywide Collision Analysis Summary & Collision Profiles

Collisions by Mode

Countywide
2008-2017



2,048 collisions involved **bicyclists** between 2008 and 2017

2,101 collisions involved **pedestrians** between 2008 and 2017

Collisions that involve:

 pedestrians

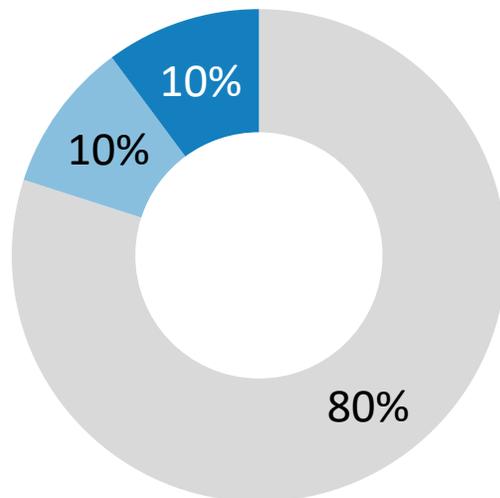
 bicycles

 vehicles only

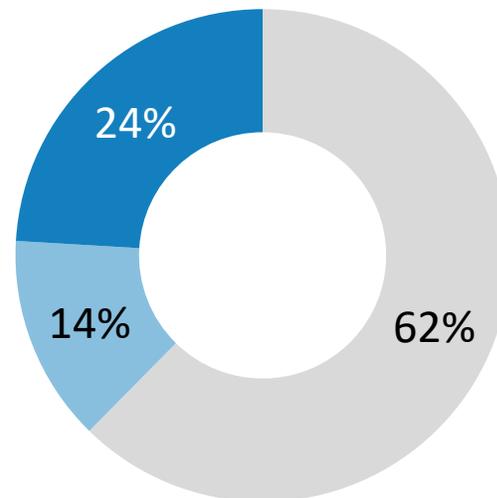
Collisions by Severity

Countywide
2008-2017

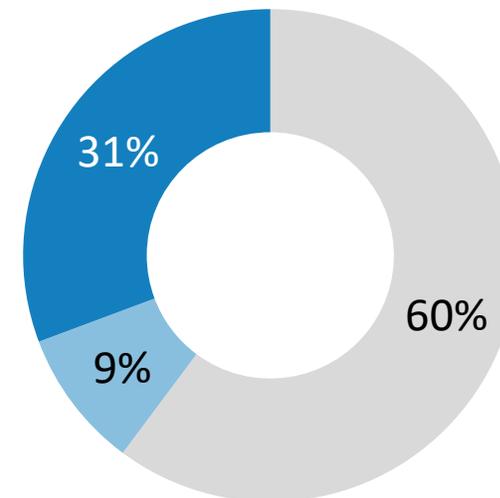
All Collisions



KSI* Collisions



Fatal Collisions



Collisions that involve:

 pedestrians

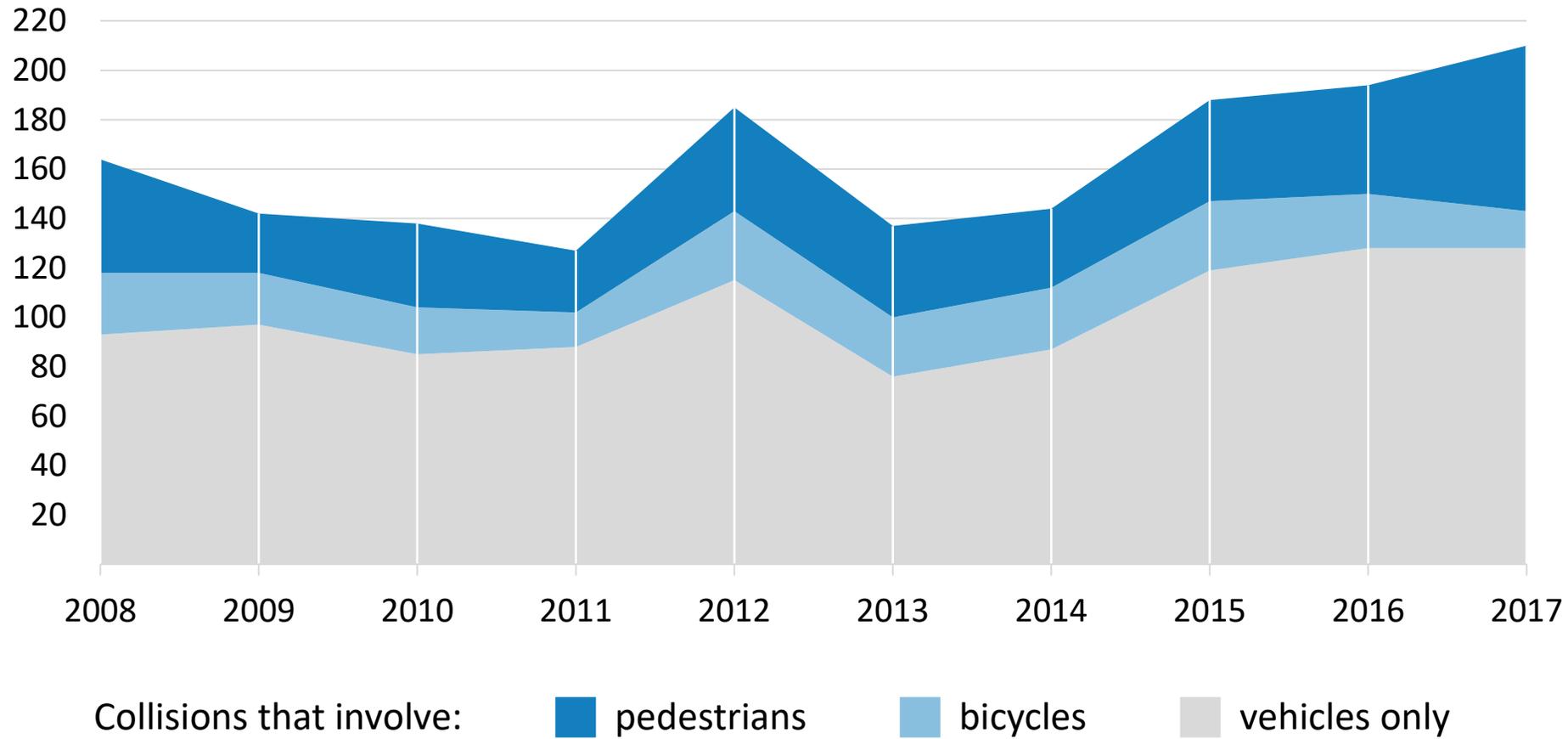
 bicycles

 vehicles only

* Killed or severely injured

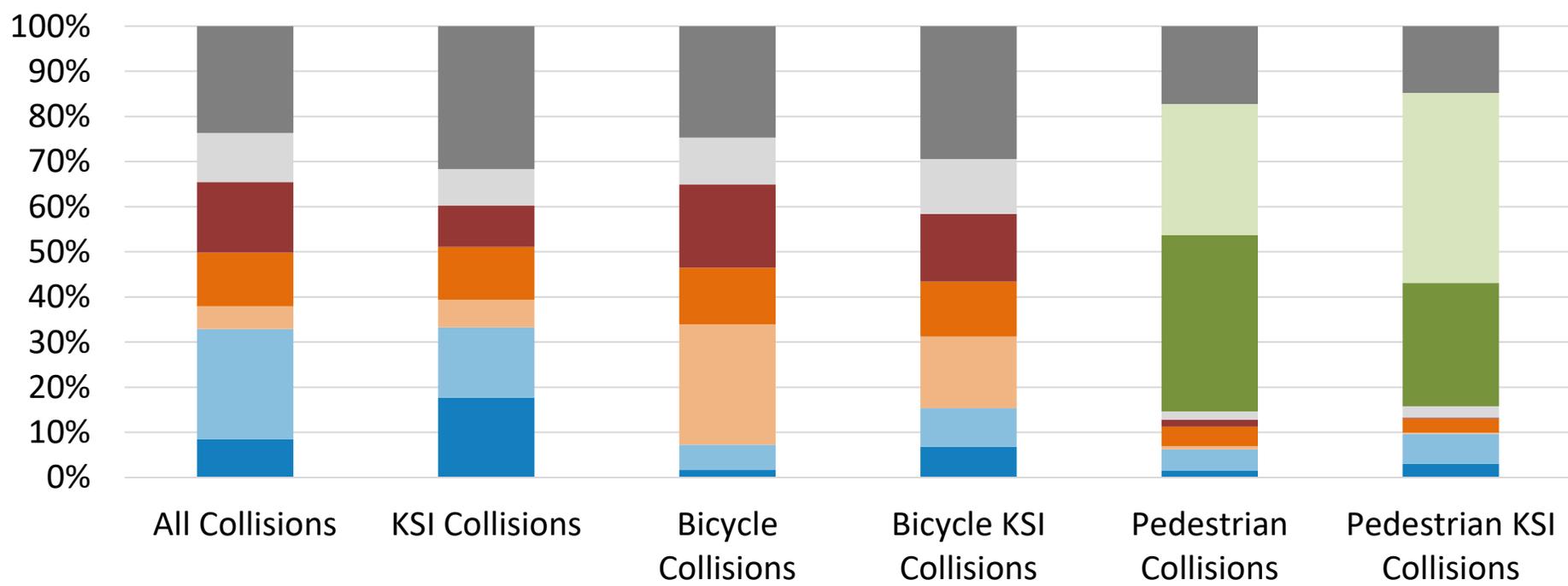
Increasing KSIs

Countywide
2008-2017



Primary Violation

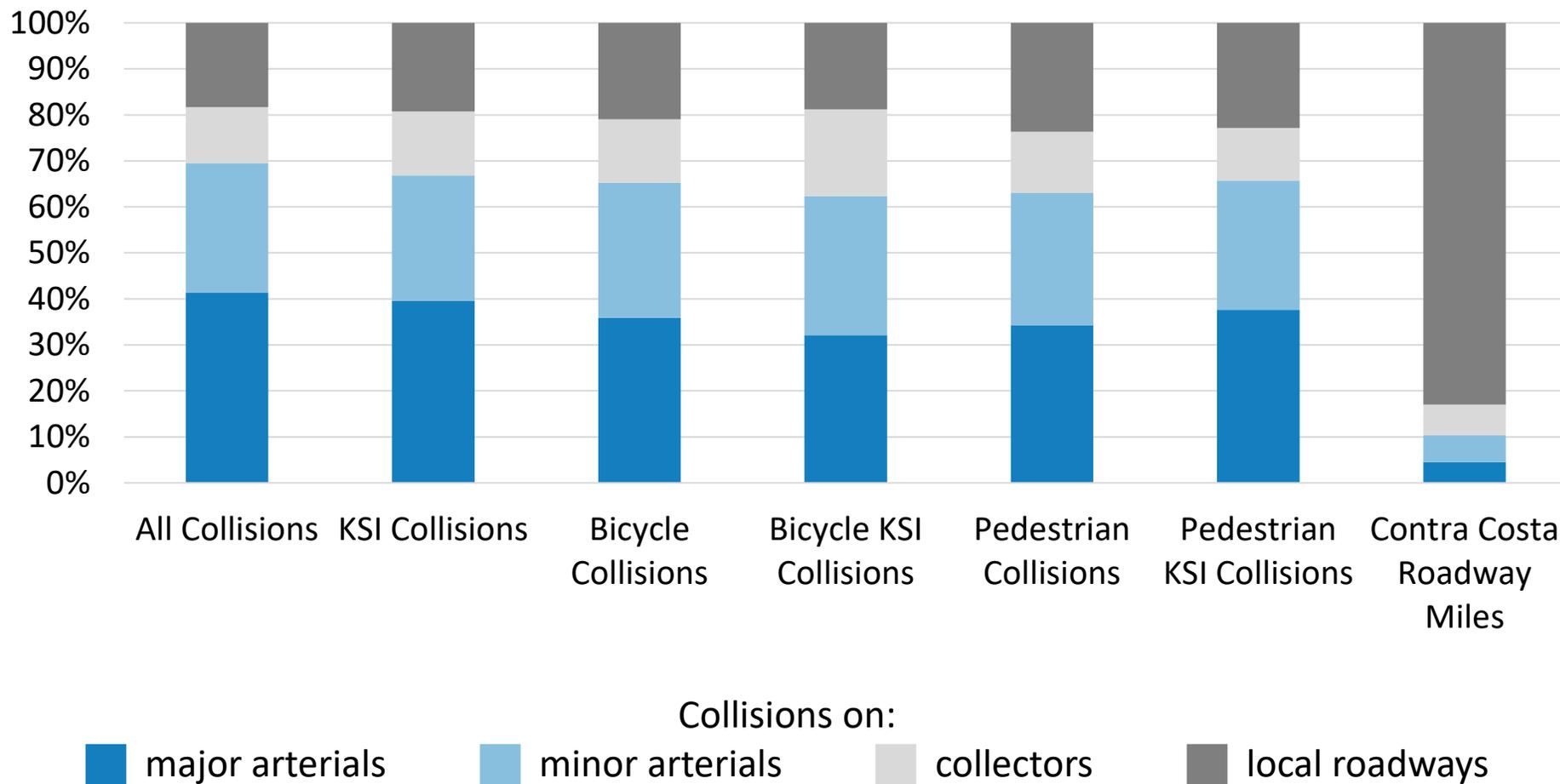
Countywide
2008-2017



- Driving Under Influence
- Unsafe Speed
- Wrong Side of Road
- Automobile Right of Way
- Ped Right-of-Way Violation
- Pedestrian Violation
- Traffic Signs and Signals
- Other

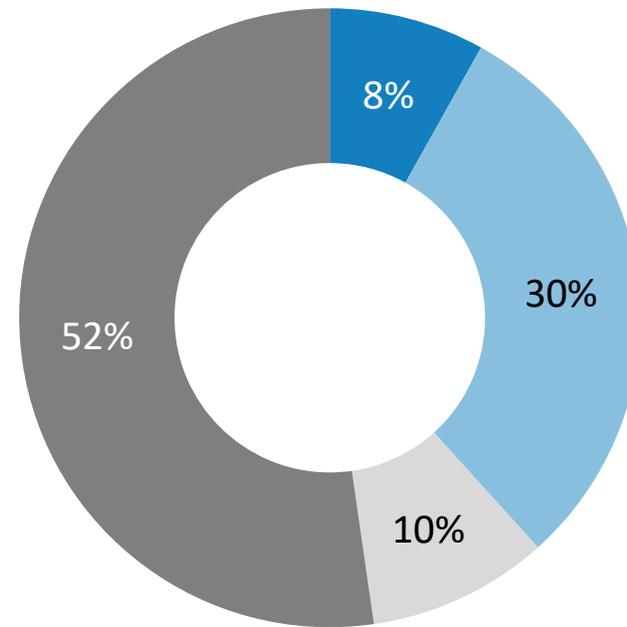
Roadway Type

Countywide
2008-2017



Existing Bike Facilities

Countywide
2008-2017



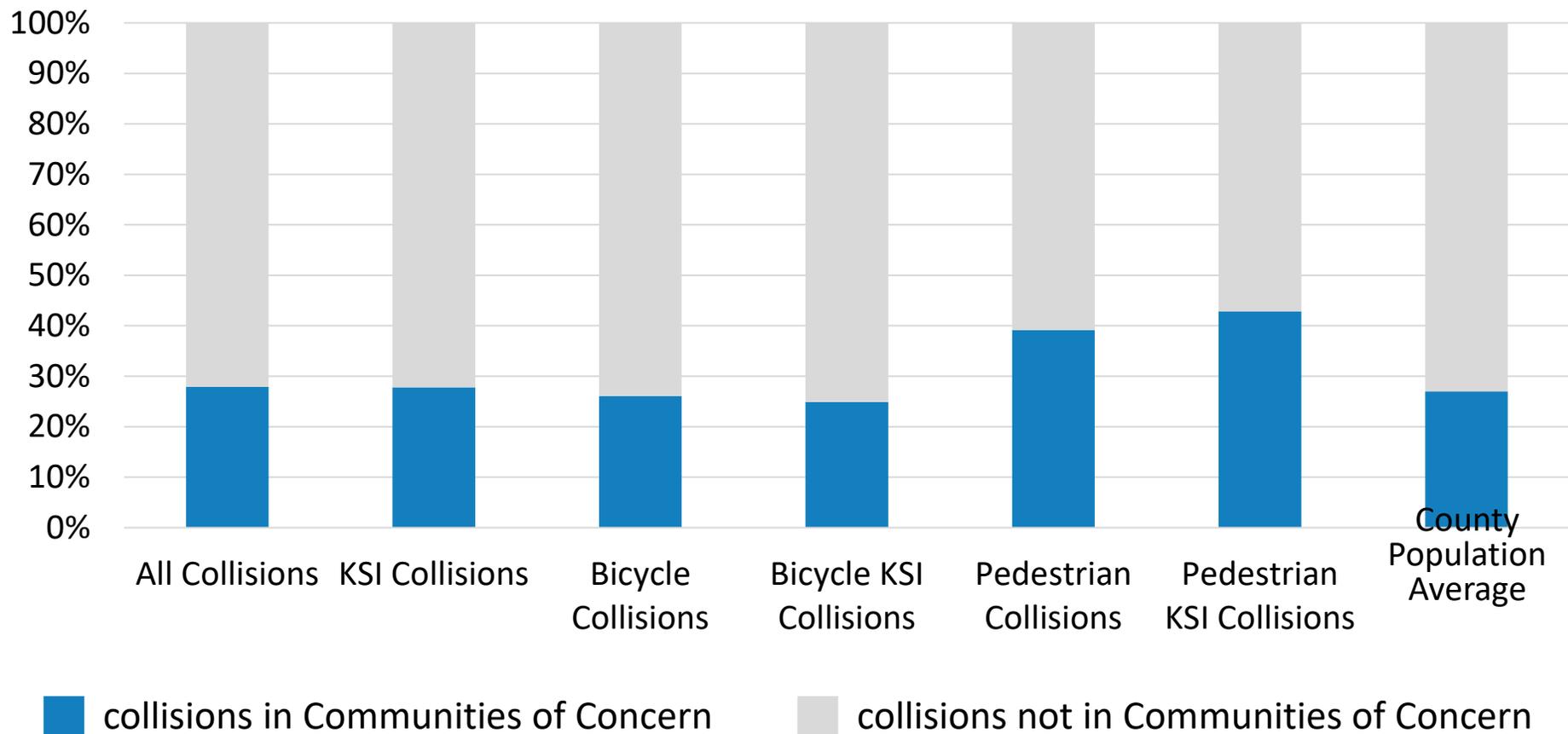
Bicycle collisions on:

-  bike paths
-  bike lanes
-  shared facilities
-  no bike facilities present



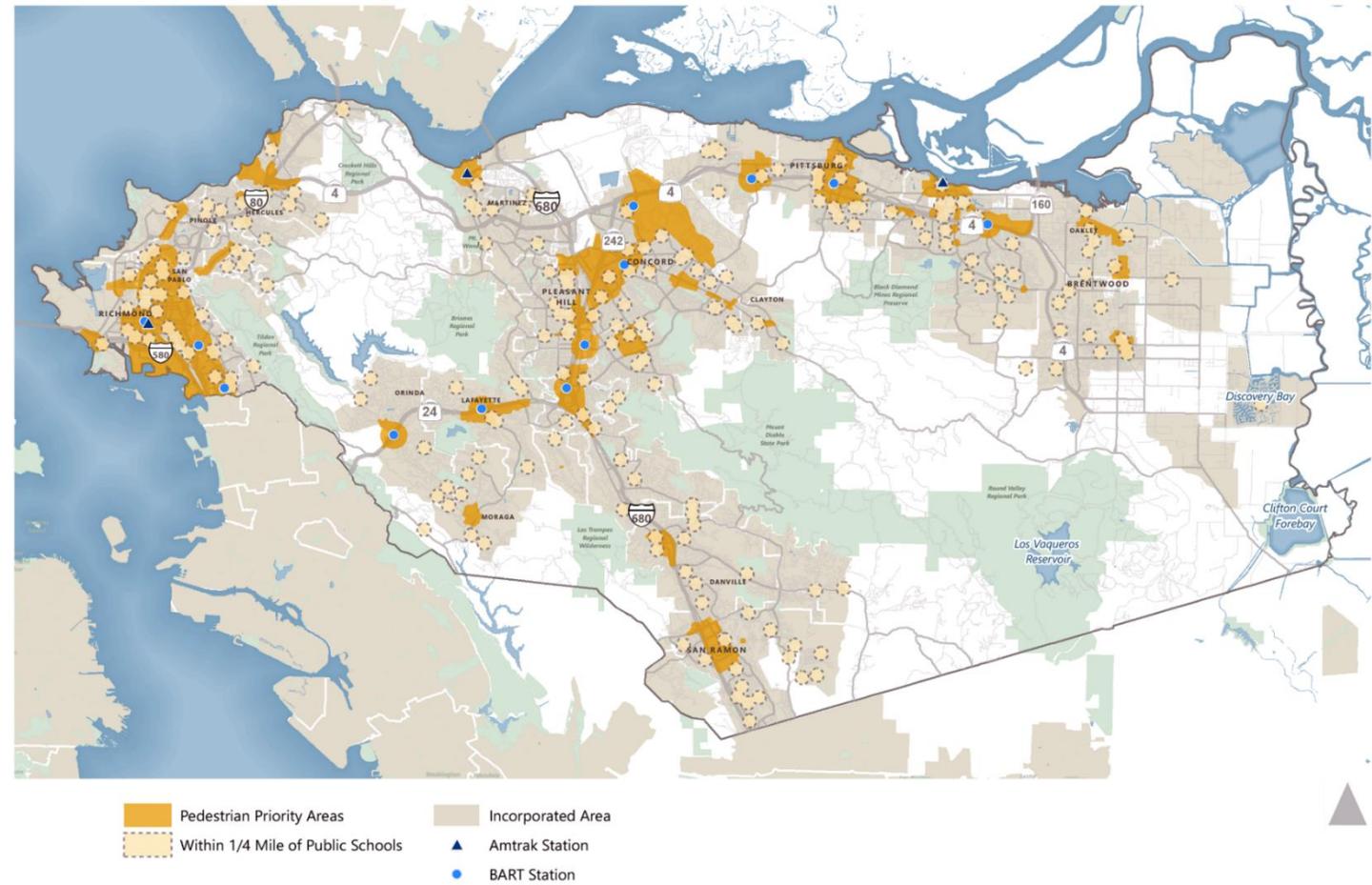
Communities of Concern

Countywide
2008-2017



Communities of Concern are defined by the Metropolitan Transportation Commission as census tracts having concentrations of both low-income and non-white populations; Contra Costa population average estimated using 2017 American Community Survey 5-Year Estimates

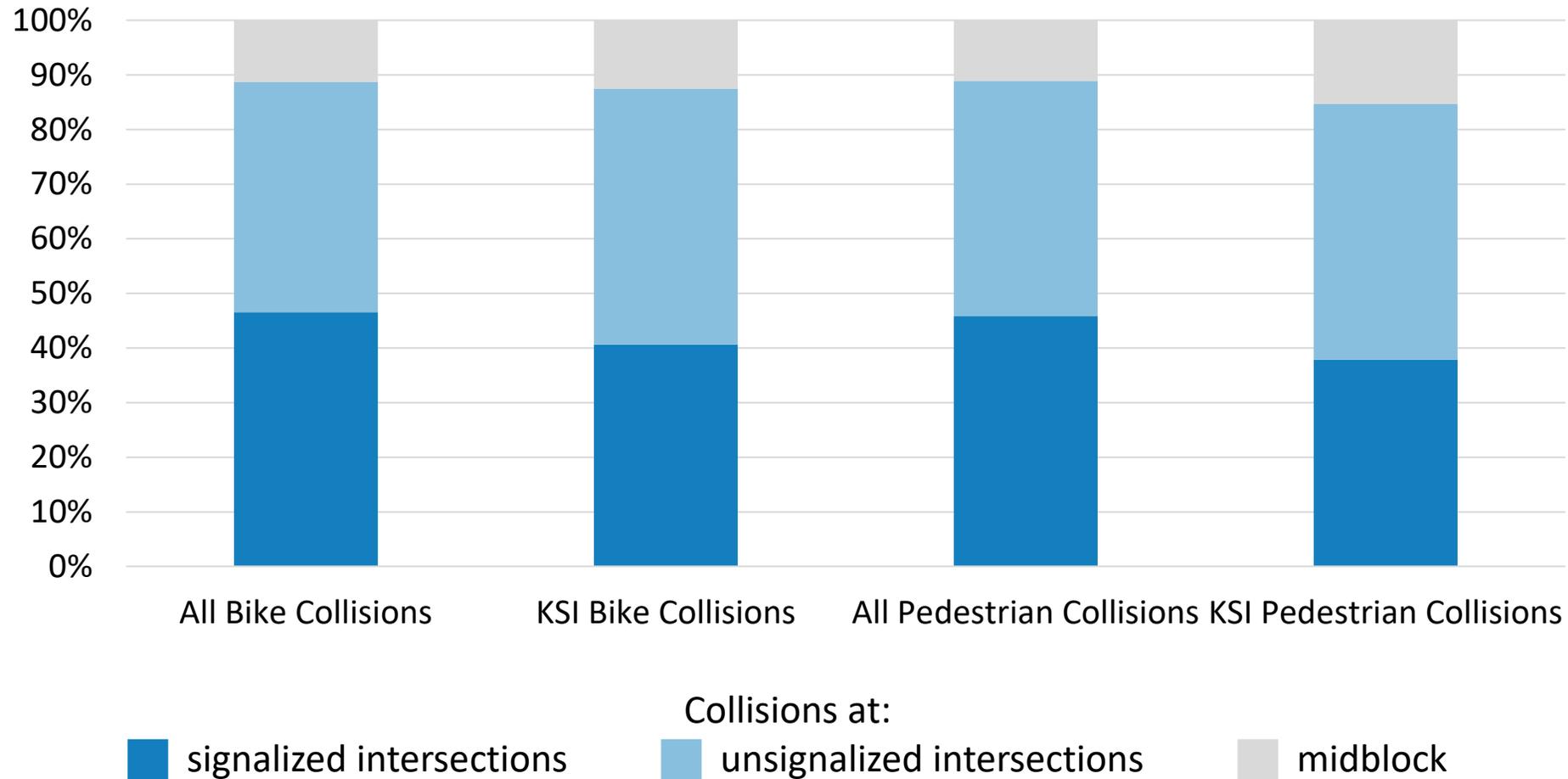
Pedestrian Priority Areas (PPAs)



CCTA's 2018 Countywide Bicycle and Pedestrian Plan Update identifies Priority Pedestrian Areas (PPAs), which include areas within walking distance of schools and major transit stops and locations with the greatest concentrations of pedestrian collisions.

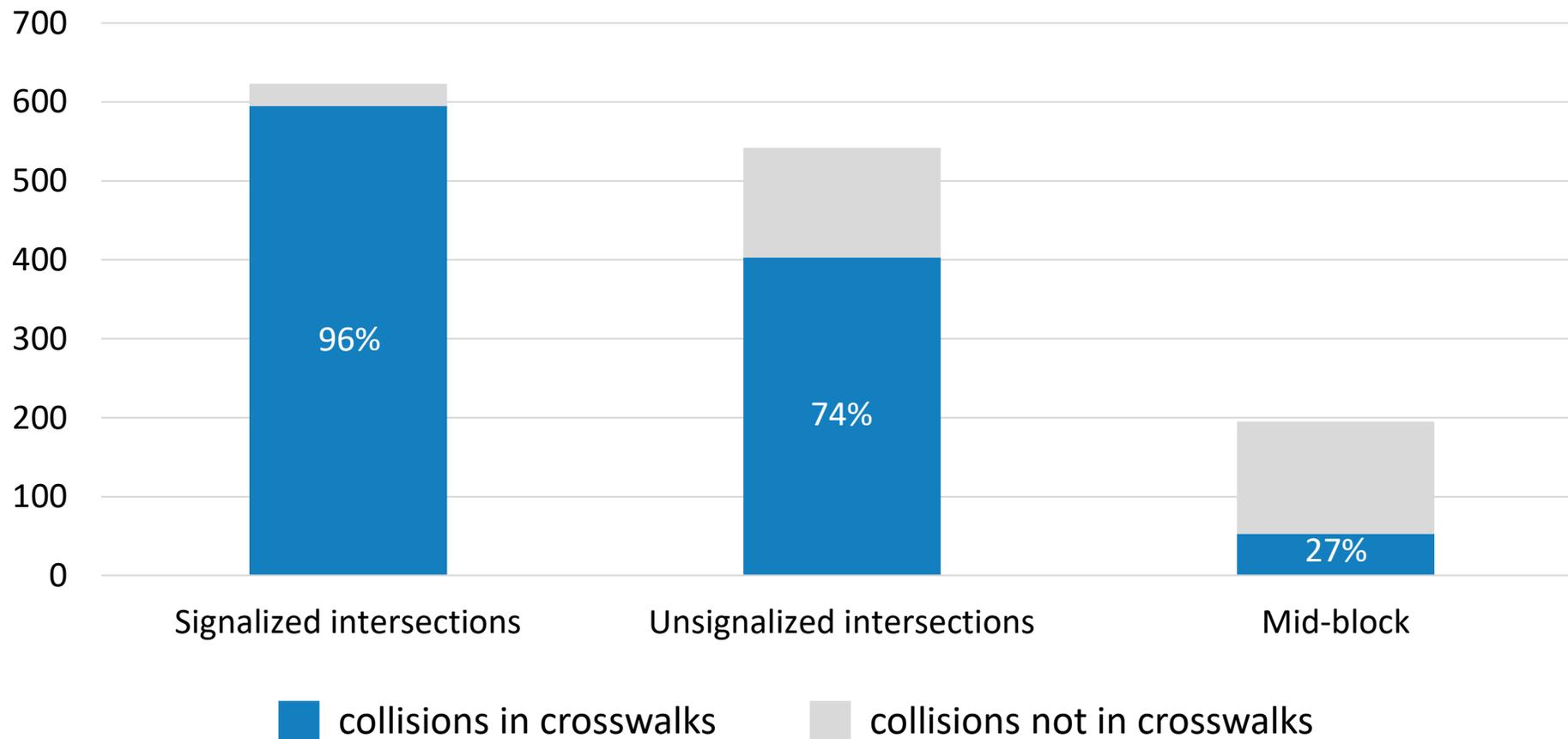
Location & Control Type

PPAs
2008-2017



Location & Marked Crosswalks

PPAs
2008-2017





Contra Costa Common Collision Profiles

Common Collision Profiles



Speeding



DUIs



Channelized
right turns



Skewed
intersections



Left turns at
signals



Red light violation



Highway
interchanges



Trail
crossings



Contraflow
bike riding



Transit priority areas



Vulnerable populations –
Seniors

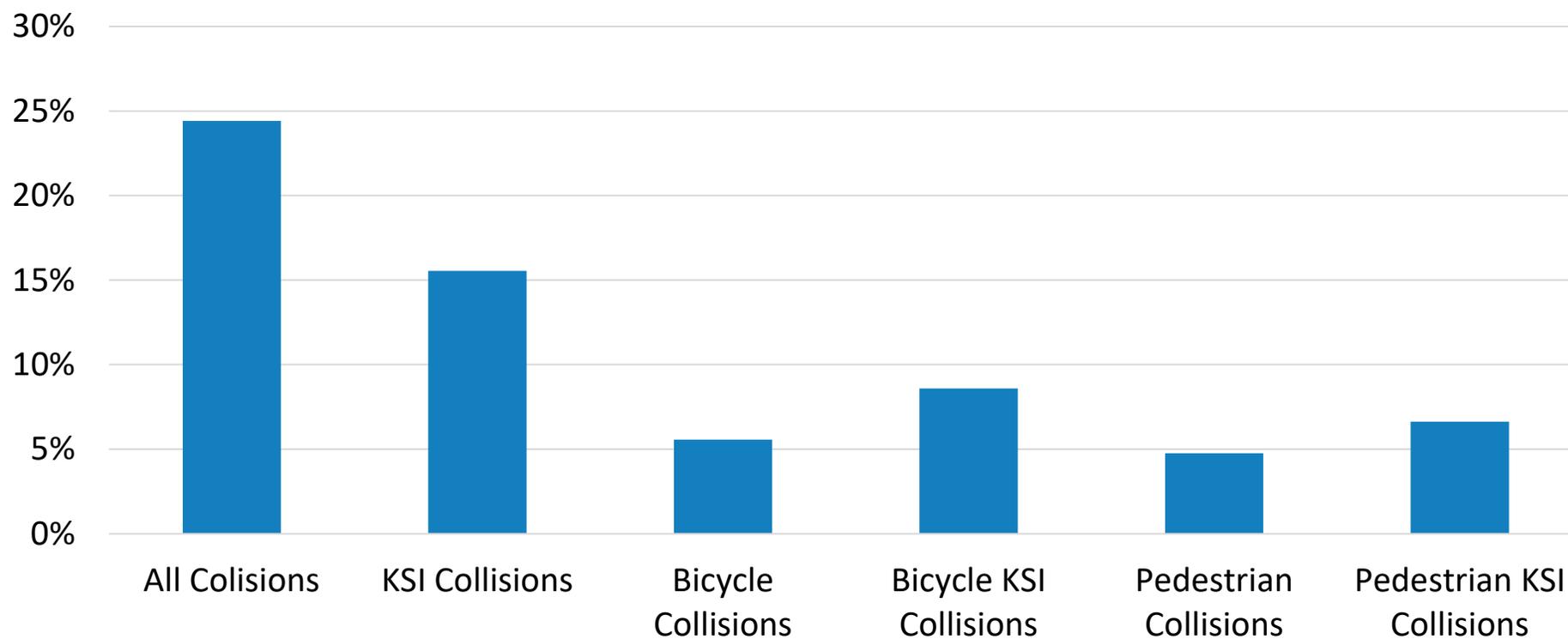


Vulnerable populations –
Youth



Profile 1 Speeding

Unsafe speeds is a common collision profile and key systemic safety issue across Contra Costa. Vehicles often travel faster than the posted speed limit. Since victim injuries and deaths increase exponentially with vehicle speeds, especially for people walking and biking, reducing speeds is the most critical way to improve safety. Potential countermeasures for this profile include traffic calming, speed warning signs, increased enforcement (including automated once allowed in California), and driver education.



■ collisions with unsafe speed listed as the primary collision factor



7%
of pedestrian
KSI collisions

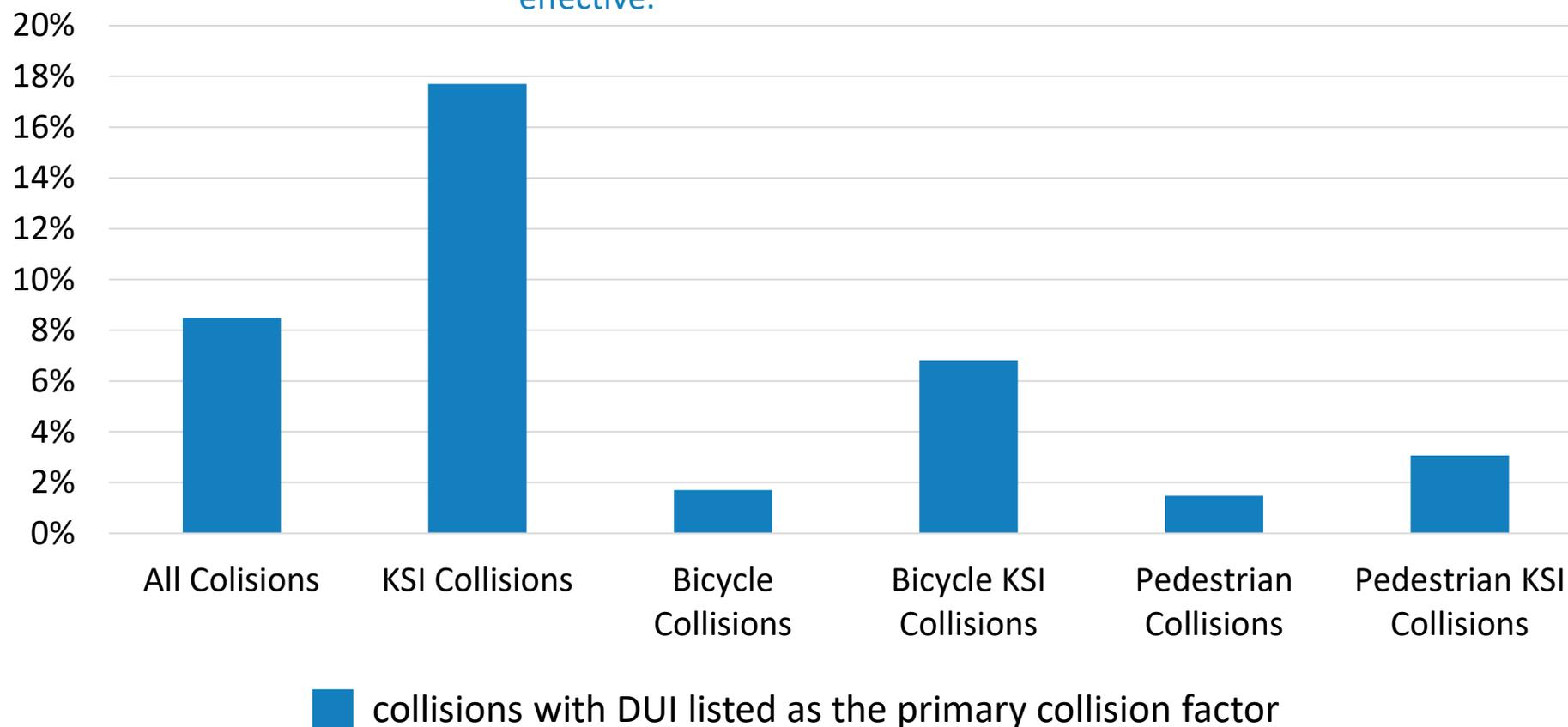


9%
of bicycle
KSI collisions



Profile 2 DUIs

Driving under the influence (DUI) of alcohol, drugs, or medication is a common collision profile in Contra Costa – and has a strong influence on KSI collisions. The proportion of collisions where DUI is considered the primary collision factor (PCF) more than doubles from 8% of all collisions to 18% of all KSI collisions. Potential strategies to address this collision profile include enforcement activities (e.g., sobriety checkpoints), marketing campaigns, and education. In areas where DUI is especially prevalent, design redundancy, such as center medians and rumble strips, may also be effective.



3%
of pedestrian
KSI collisions

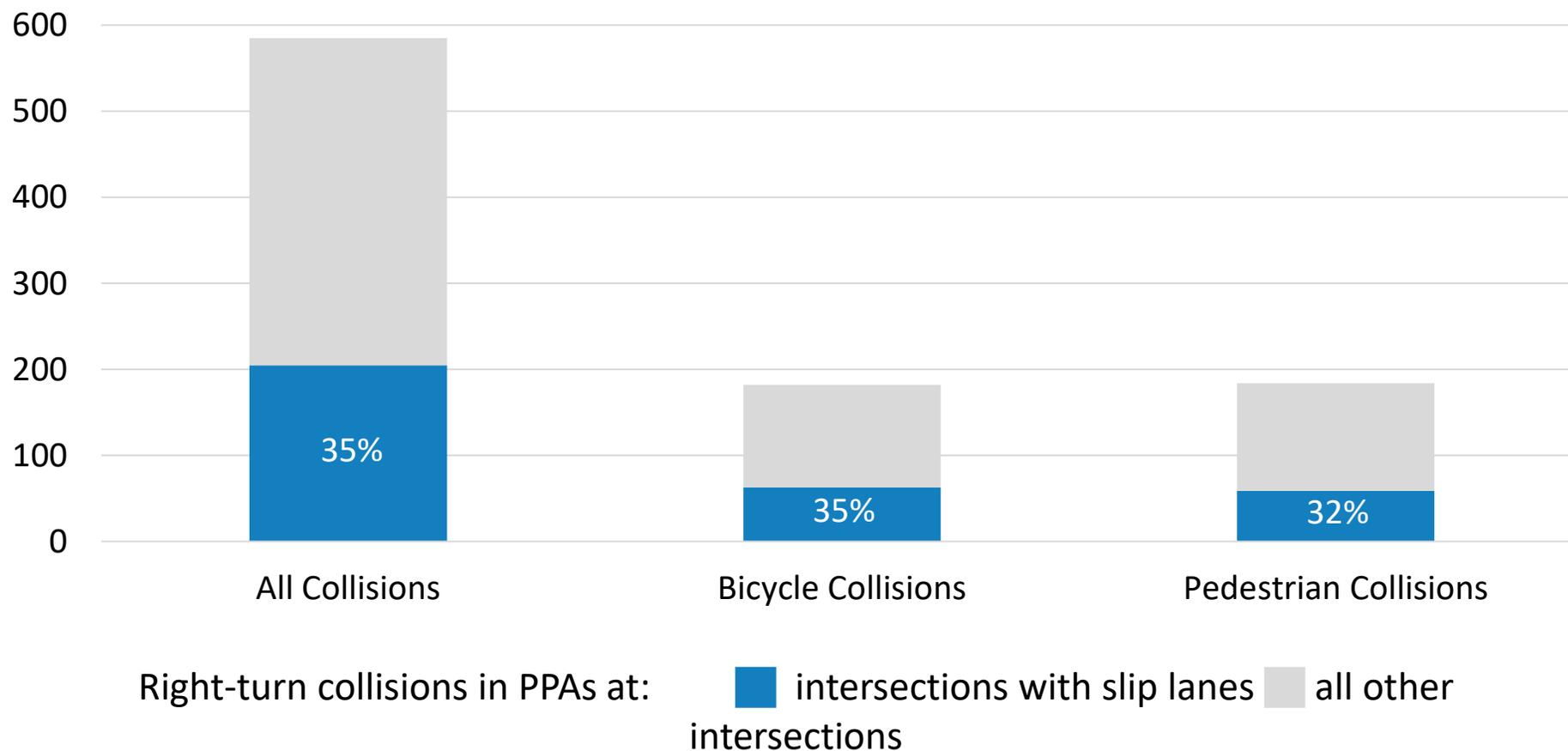


7%
of bicycle
KSI collisions



Profile 3 Channelized Right Turns

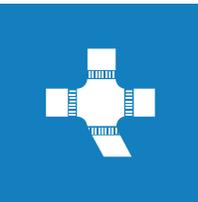
About one-third of collisions at signalized intersections in Priority Pedestrian Areas (PPAs) that involve a right-turning vehicle occur at intersections with channelized right-turn lanes (i.e., slip lanes). Slip lanes facilitate fast moving vehicles through the conflict point with a pedestrian crossing. Potential countermeasures to address this collision profile include improvements that slow speeds and improve visibility such as closing slip lanes and reducing curb radii. Redesigning slip lanes to slow approach angles (similar to a roundabout entry) and provide a raised crossing area also potential countermeasures.



2%
of pedestrian KSI
collisions in PPA

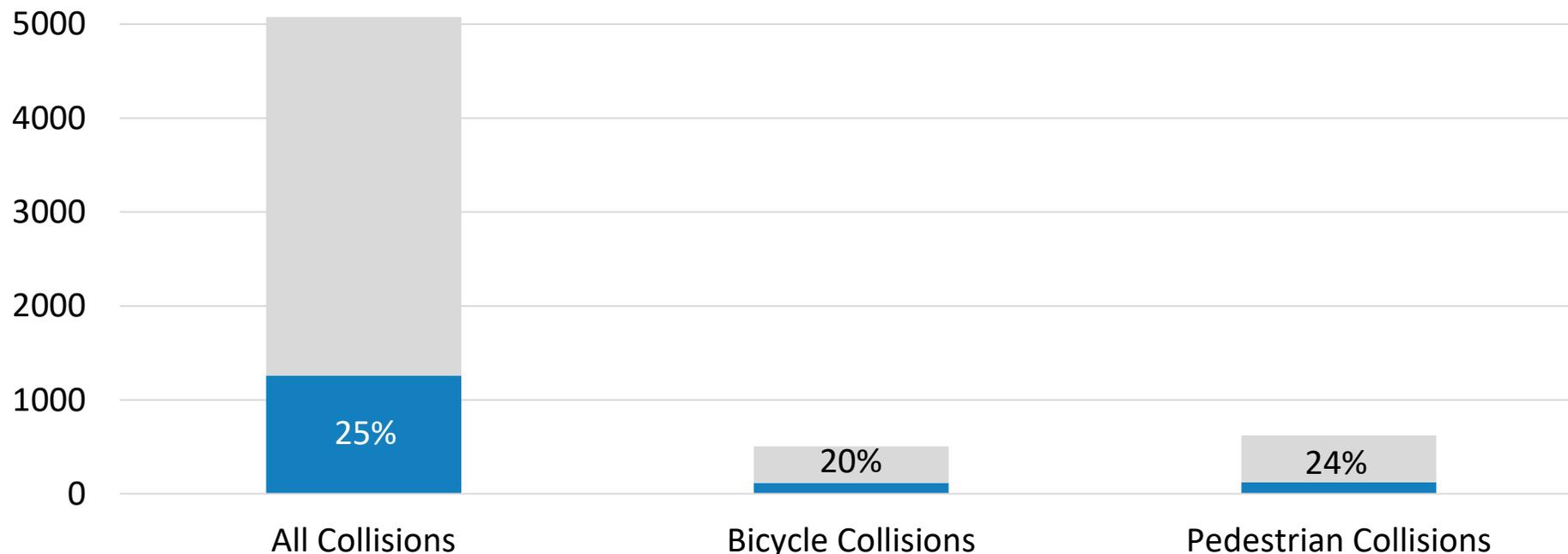


1%
of bicycle KSI
collisions in PPA



Profile 4 Skewed Intersections

Many intersections across Contra Costa are not orthogonal and have skewed or offset approaches. About one-quarter of all collisions occurred at skewed intersections. These intersections may have longer or less intuitive pedestrian crossings. Motorists may have limited visibility of pedestrians and vehicles on the intersecting roadway. Potential counter-measures include “tightening up” approaches, crosswalk daylighting (i.e., prohibiting parking for at least 20’ adjacent to a crosswalk), or channelizing turns to improve sight lines and encourage slower speeds.



Collisions at signals in PPAs with:

■ skewed approaches ■ non-skewed approaches



8%
of pedestrian KSI
collisions in PPA

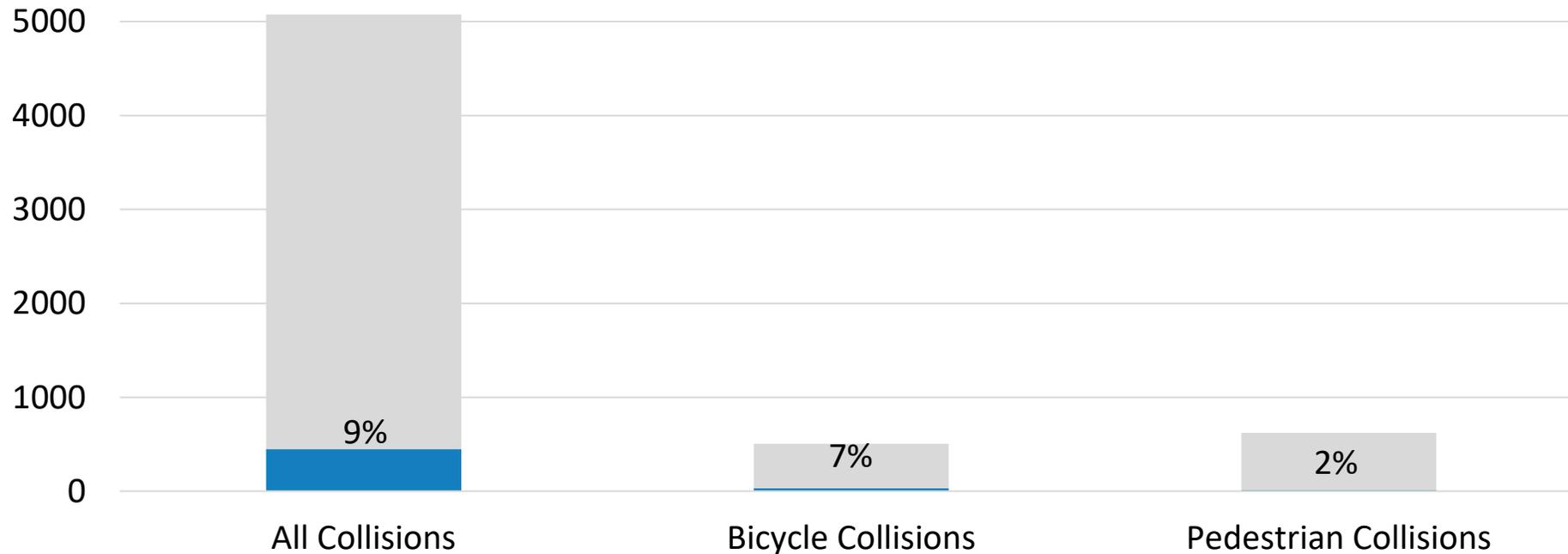


6%
of bicycle KSI
collisions in PPA



Profile 5 Left Turns at Signals

About one-quarter of collisions at signalized intersections in PPAs involve a left-turning vehicle. This could be related to permitted rather than protected left turn phases at signalized intersections. Potential approaches to addressing this collision profile include providing a Leading Pedestrian Interval, installing protected left turn phases (where feasible), or using split signal phasing. In some cases prohibiting left turns in a grid network may also be an option to address this collision type. Finally, a road diet may allow for left turn pockets to be provided if current right of way does not allow for this.



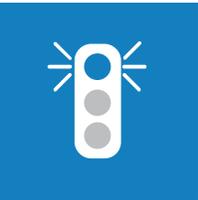
Collisions at signals in PPAs: ■ with driver making left turn ■ all other movements



1%
of pedestrian KSI
collisions in PPA

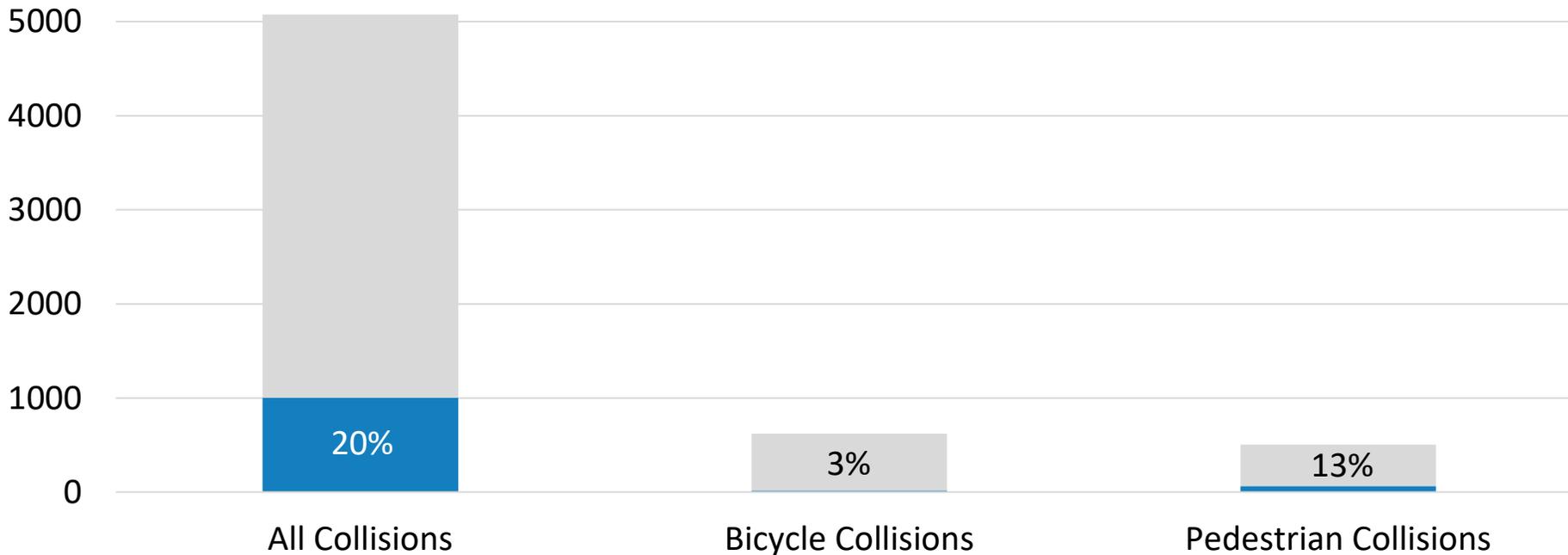


1%
of bicycle KSI
collisions in PPA



Profile 6 Red Light Violation

Red light violations occur when either a motorist, bicyclist, or pedestrian enters an intersection against the signal. Approximately 20% of all collisions at signalized intersections in PPAs had 'signals & signs' listed at the primary collision factors, which is how red light violations are typically categorized in collision databases. Potential countermeasure to address this collision profile could include signal timing adjustments to allow for longer clearance intervals or shorter cycle lengths, or green paint for increased bicyclist visibility. Enforcement and red light cameras may also be considered.



Collisions at signals in PPAs: ■ with 'signals & signs' listed as primary collision factor
■ all other factors



3%
of pedestrian KSI collisions in PPA

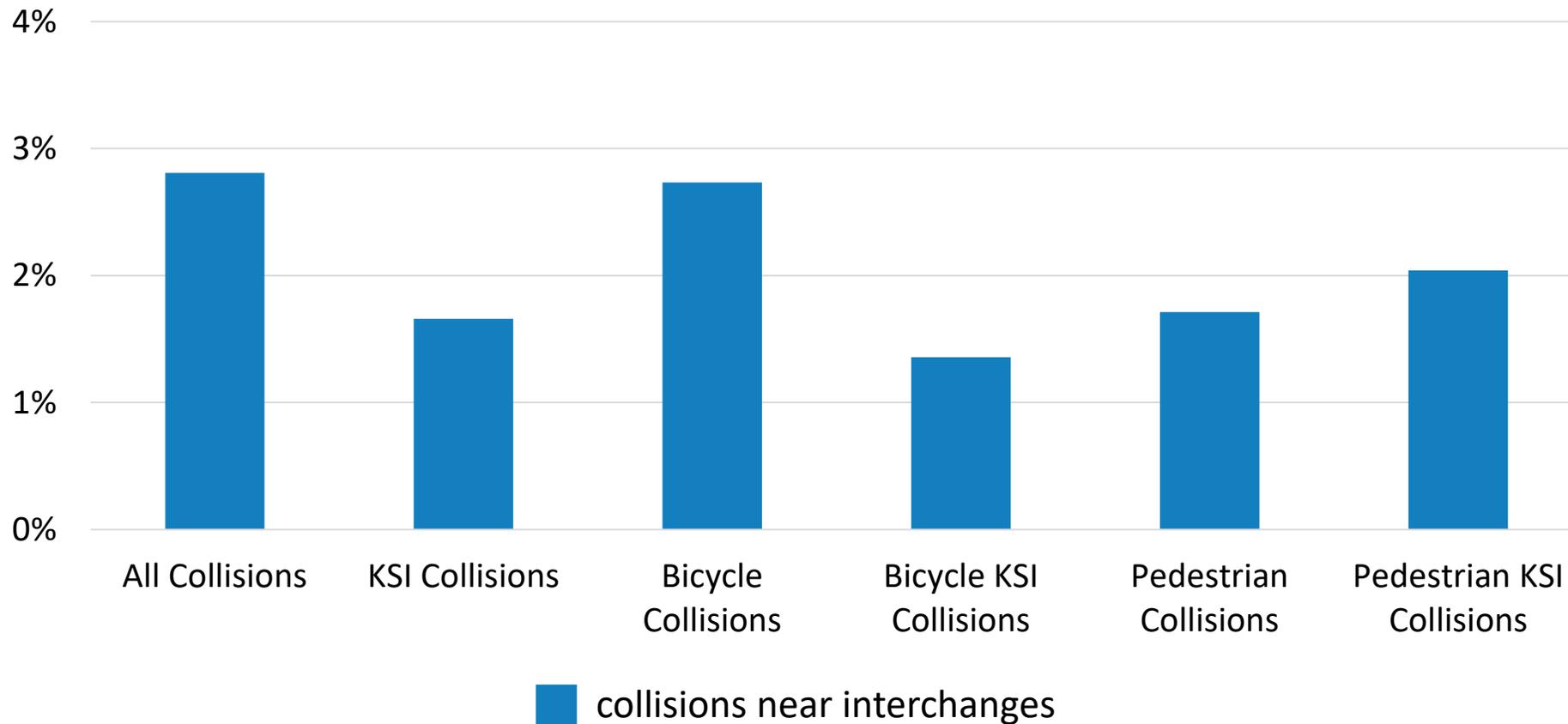


3%
of bicycle KSI collisions in PPA



Profile 7 Highway Interchanges

Interchanges tend to be difficult to navigate for pedestrians and bicyclists due to high volume of fast-moving vehicles and land use and roadway designs that do not signal for the presence of multi-modal users. This challenge was highlighted as part of community and stakeholder outreach during the development of the 2018 CBPP Update. Although this profile represents a smaller number of collisions, this may reflect lower levels of walking and biking near interchanges. Potential countermeasures include reducing curb radii at ramps and providing single lane ramps, where possible, to minimize conflict points.



2%
of pedestrian
KSI collisions

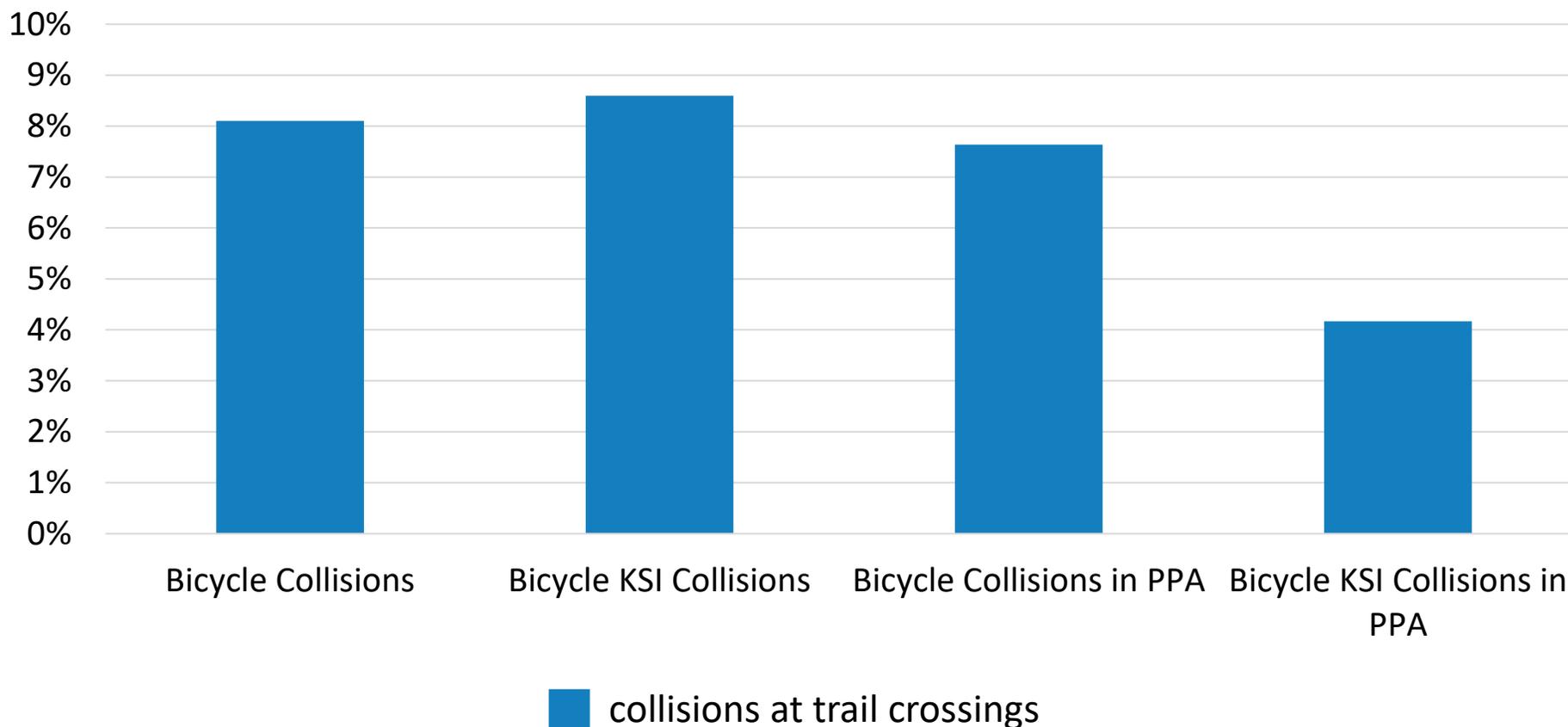


1%
of bicycle
KSI collisions



Profile 8 Trail Crossings

Contra Costa has a well-developed system of trails, such as the Iron Horse Trail, that provide separated connections for people walking and biking. However, trail crossings of major roadways can present stressful experiences and significant conflict points. Potential improvements at trail crossings include enhanced crossings (e.g., rectangular rapid flashing beacons (RRFBs) or pedestrian hybrid beacons (PHBs)) or grade-separated crossings (e.g., pedestrian/bicycle bridge).

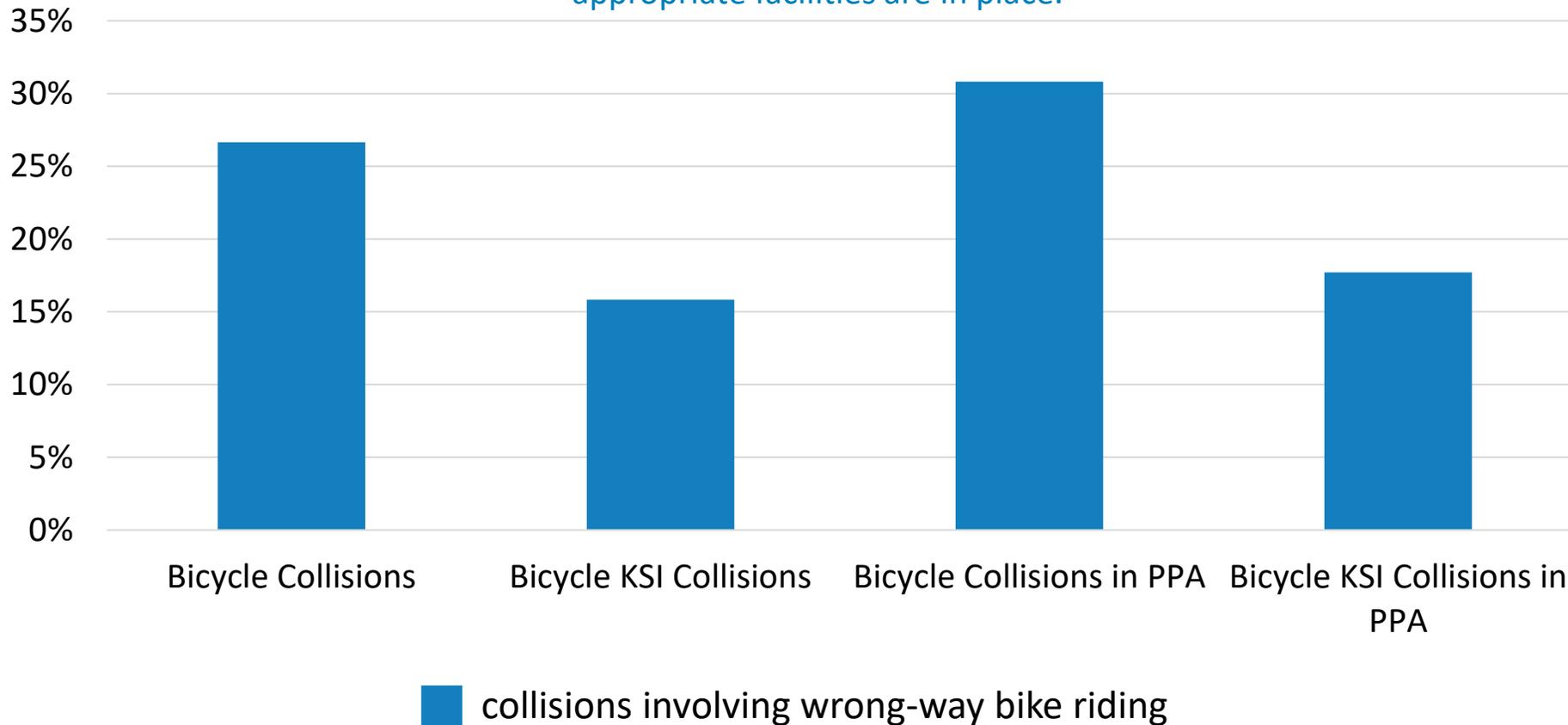


4%
of bicycle
KSI collisions



Profile 9 Contraflow Bike Riding

Wrong way riding collisions denote a collision that occurs when a bicyclist travels in the opposite direction of vehicular traffic. This can occur when existing facilities do not exist or when existing facilities do not meet bicyclists' desire lines. For example, if an adequate crossing does not exist where a bicyclist wants to cross the street, they may ride in the wrong direction to access a signalized crossing. Potential solutions include installing bicycling facilities or bicycle crossings at key desire lines. Bicyclist education is also important to address risky behaviors when appropriate facilities are in place.

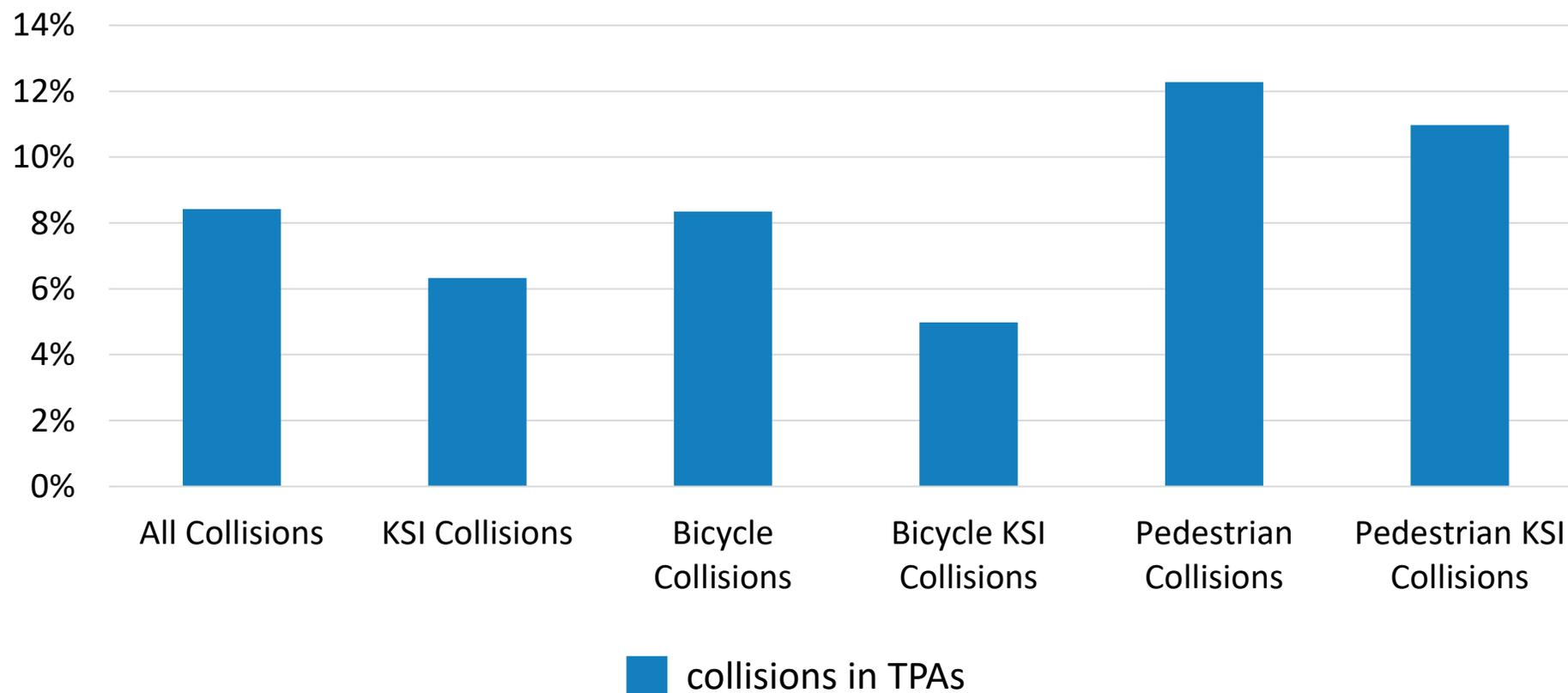


15%
of bicycle KSI collisions



Profile 10 Transit Priority Areas (TPAs)

CCTA defines Transit Priority Areas (TPAs) as areas within a half-mile walk of transit stations with 15-minute headways or better during peak periods, such as BART stations. Improving access for people walking and biking can make transit more convenient, which is a key goal of the 2018 CBPP Update. Therefore, improving safety for people walking and biking to/from transit is key, considering that 11% of pedestrian KSI collisions countywide occur within TPAs.



11%
of pedestrian
KSI collisions

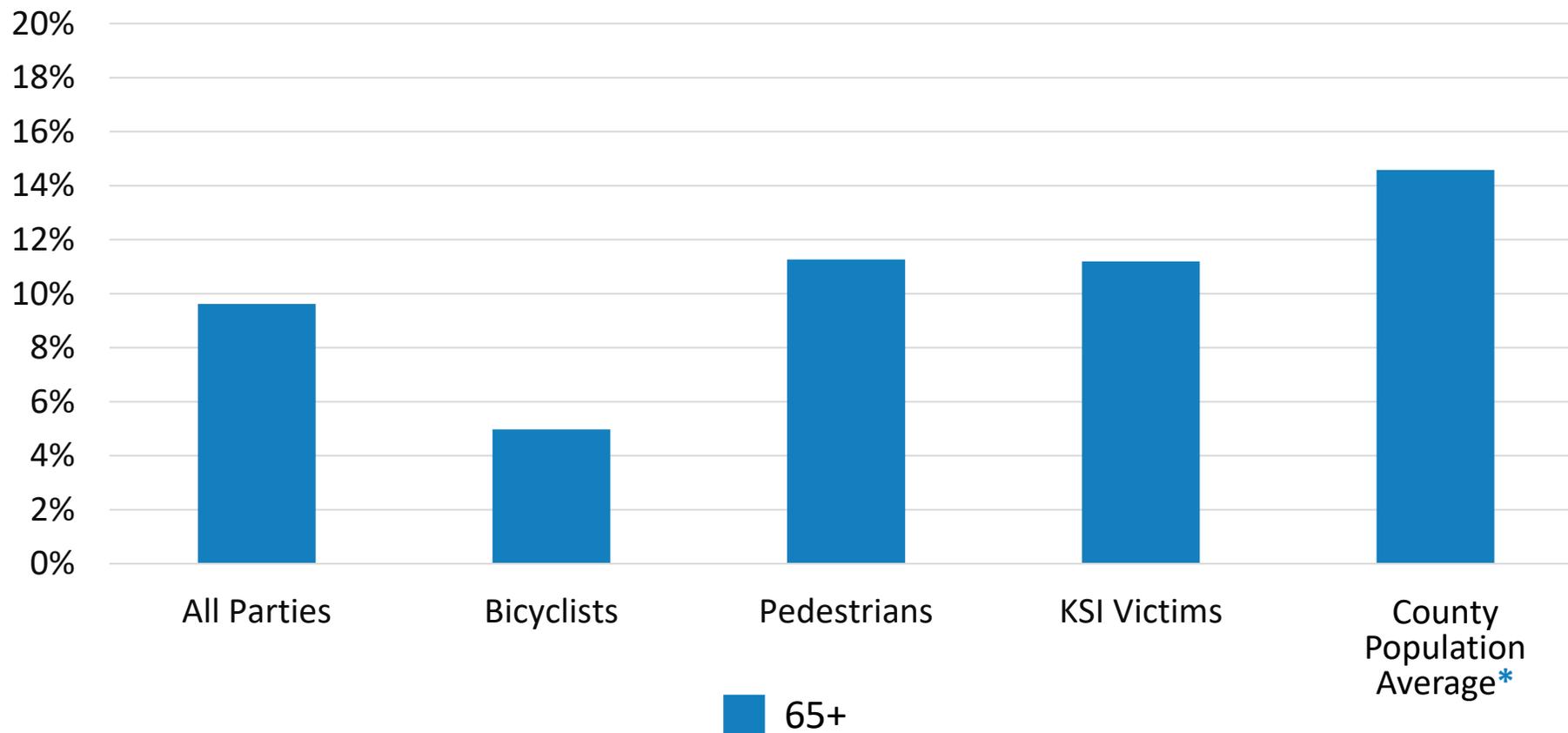


5%
of bicycle
KSI collisions



Profile 11 Seniors

Seniors (65 years old and older) are involved in 11% of pedestrian-involved collisions. Incorporating senior-friendly design, such as slower crossing times at signals, or focusing pedestrian improvements near senior centers are some potential countermeasures to consider for this profile.



11%
of countywide
pedestrian
collisions

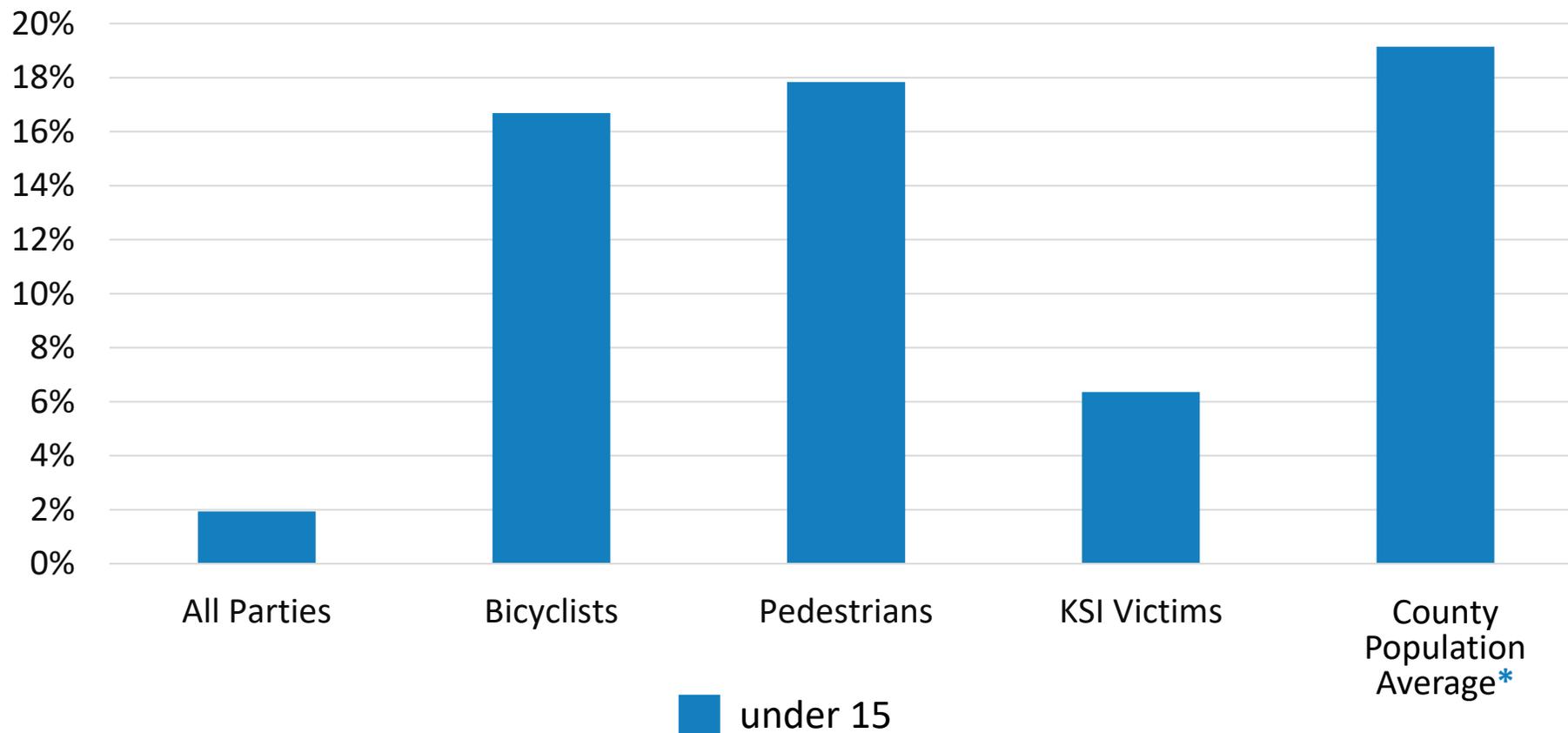


5%
of countywide
bicycle collisions



Profile 12 Youth

Youth (less than 15 years old) are involved in a disproportionate share of pedestrian-involved collisions. Opportunities for Safe Routes to School (SRTS) projects and programs are numerous and can include education, encouragement, and engineering strategies.



18%
of countywide
pedestrian
collisions



17%
of countywide
bicycle collisions



BREAKOUT GROUP DISCUSSION



NEXT STEPS



Next Steps

- Finalize “How To” Guide
- Finalize Collision Profiles
- Vision Zero RTPC “Roadshow” & TAC Input
- Countywide Pedestrian Needs Assessment
- Countywide Micromobility Policy