MARYSVILLE BOULEVARD CRASHES

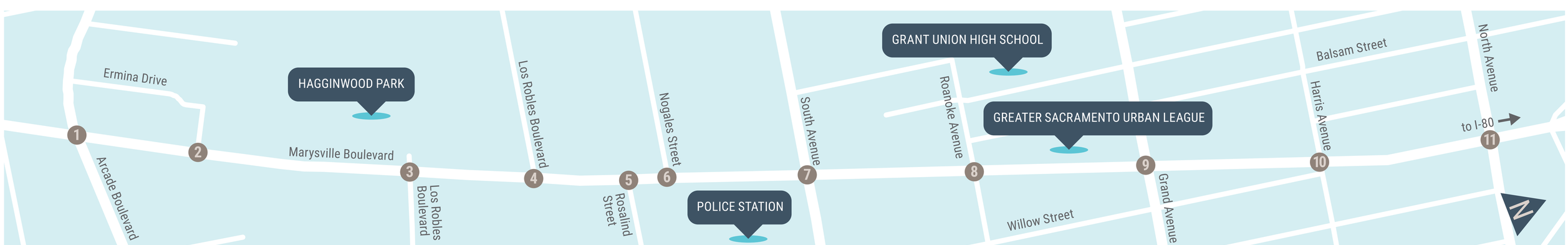
CORRIDOR CRASH SUMMARY (2009-2017)

ALL INJURY CRASHES	148	25	15
FATAL AND SEVERE CRASHES	5	11	3

KEY CHARACTERISTICS

SPEED LIMIT 35

- Four travel lanes plus raised median/center turn lane.
- Class II bicycle lanes along most of the corridor.



CORRIDOR-WIDE CRASH TYPES

VEHICLE

Unsafe Speed

"Unsafe Speed" was cited as the primary violation in 20% of crashes.

1 2 3 4 5 6
7 8 9 10 11

Proceeding Straight

2/3 of drivers were proceeding straight or stopped at the time of the crash.

1 2 3 4 5 6
7 8 9 10 11

Head On

Nearly 20% of all crashes were head on.

1 2 3 4 5 6
7 8 9 10 11

KSI & Alcohol Involved

Alcohol was involved in over half of crashes resulting in a fatality or severe injury.

1 2 3 4 5 6
7 8 9 10 11

Rear End

Nearly 20% of all crashes were rear end.

1 2 3 4 5 6
7 8 9 10 11

Left Turns

More than 20% of drivers were making a left turn at the time of the crash.

1 2 3 4 5 6
7 8 9 10 11

Broadside

40% of all crashes were broadside, also called T-Bone.

1 2 3 4 5 6
7 8 9 10 11

PEDESTRIAN

Pedestrian Crossing

Almost all people hit while walking were crossing. 2/3 of people were in the crosswalk.

1 2 3 4 5 6
7 8 9 10 11

Nighttime

Half of pedestrian crashes occurred during nighttime or dark conditions.

1 2 3 4 5 6
7 8 9 10 11

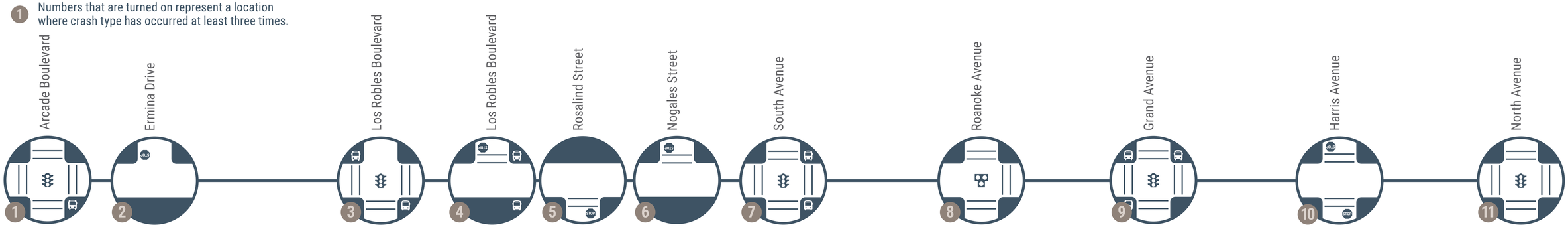
BICYCLE

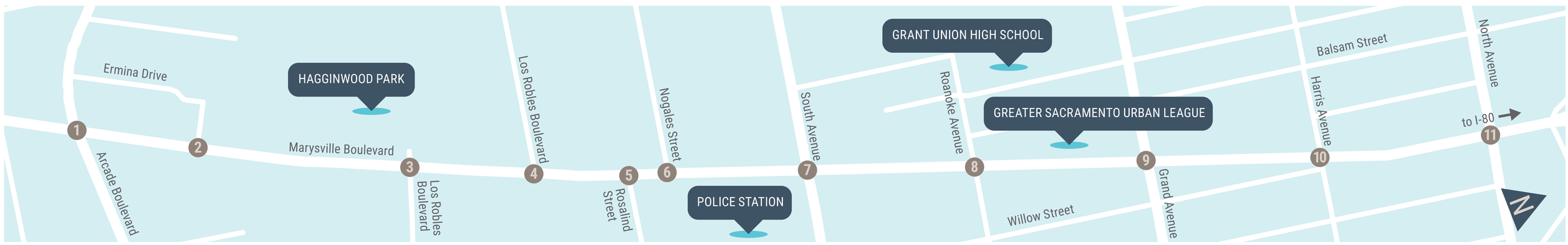
Broadside

3/4 of bicycle crashes were broadside, also called T-Bone.

1 2 3 4 5 6
7 8 9 10 11

1 Numbers that are turned on represent a location where crash type has occurred at least three times.





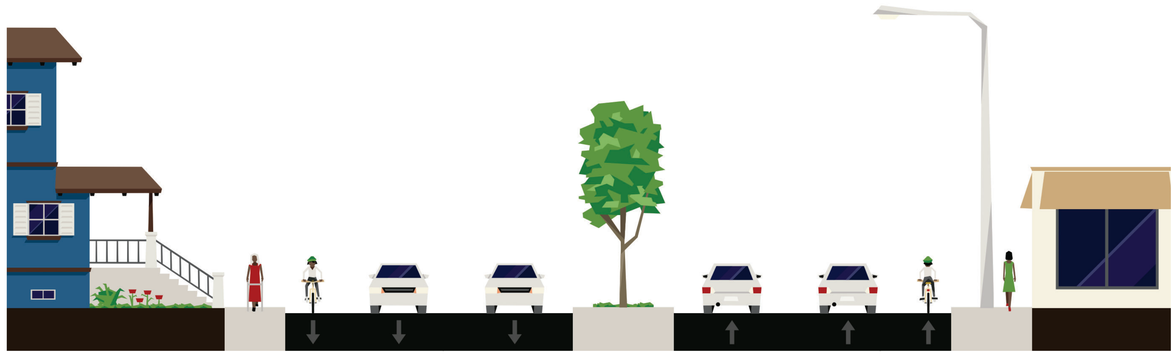
MARYSVILLE BOULEVARD
CORRIDOR-WIDE RECOMMENDATIONS

SPEED LIMIT 35

(XXX) Distance Between Crosswalks With Improvements

XXX Existing Distance Between Crosswalks

On-Street Bicycle Lane



What You See Today

Source: StreetMix (CC BY-SA 4.0, https://creativecommons.org/licenses/by-sa/4.0/)

What's Proposed

Corridor-Wide Recommendations

MARYSVILLE BOULEVARD
RECOMMENDATIONS

SPEED LIMIT 35

(XXX) Distance Between Crosswalks With Improvements

XXX Existing Distance Between Crosswalks

On-Street Bicycle Lane

Location-Specific Recommendations

- Close Bike Lane Gap
- Protected Left Turns
- Raised Median
- Leading Pedestrian Interval
- Consolidate Driveways
- Countdown Ped. Signal Heads
- Prohibit Turns During Pedestrian Phase

- High Visibility Crosswalk
- Full Pedestrian Signal

- CountdownPed. Signal Heads
- Straighten Crosswalk
- Prohibit Turns During Ped. Phase
- Leading Pedestrian Interval
- Protected Left Turns
- Extend Signal Clearance Time

- New Traffic Signal
- Co-Locate Bus Stops and Ped Crossings

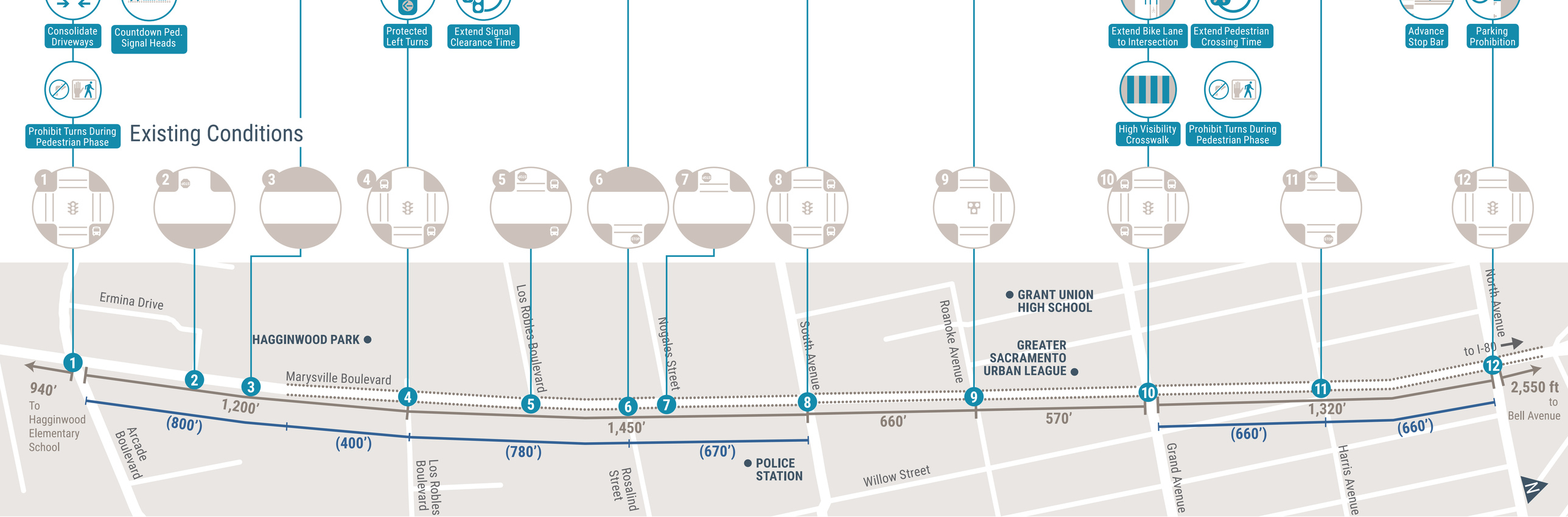
- Class II Bicycle Lane

- High Visibility Crosswalk

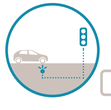
- Protected Left Turns
- Advance Stop Bar
- New Traffic Signal
- Narrow Lanes
- Leading Pedestrian Interval
- High Visibility Crosswalk
- Extend Bike Lane to Intersection
- Extend Pedestrian Crossing Time
- High Visibility Crosswalk
- Prohibit Turns During Pedestrian Phase

- Split Signal Phase
- Extend Signal Clearance Time
- High Visibility Crosswalk
- Red Light Camera
- Advance Stop Bar
- Parking Prohibition

Existing Conditions



MARYSVILLE BOULEVARD IMPROVEMENTS



S4 40%

Advanced Dilemma-Zone Detection

Signals/Signage

Advanced dilemma-zone detection enhances safety at signalized intersections by modifying traffic control signal timing on the fly to reduce the number of drivers that may have difficulty deciding whether to stop or proceed during a yellow phase. This may reduce rear-end crashes associated with unsafe stopping and angle crashes due to red light running.

S21 15%

Advance Stop Bar

Crossing, Pedestrian Safety

A stop bar placed ahead of the crosswalk at stop signs and signals reduces instances of vehicles encroaching on the crosswalk.

R36 35%

Class II Bicycle Lane

Bike Safety

Five to seven foot wide designated lanes for bicyclist adjacent to vehicle travel lanes, delineated with pavement markings.

R36 35%

Close Bike Lane Gap

Bike Safety

Closing gaps between bicycle lanes increases the amount of dedicated facilities bicyclists can use, reducing mixing of bicyclists and drivers and increasing network connectivity and visibility of bicyclists in the roadway.

Co-Locate Bus Stops and Pedestrian Crossings

Crossing, Pedestrian Safety

Place bus stops and pedestrian crossings in close proximity to allow transit riders to cross the street safely.

Consolidate Driveways

Bike Safety, Pedestrian Safety, Visibility

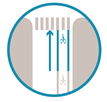
Reducing the number of driveway entrances/ exits through consolidation limits the exposure of bicyclists, pedestrians, and drivers to vehicles entering or exiting driveways, reducing conflicts.

S19 25%

Countdown Pedestrian Signal Heads

Crossings, Pedestrian Safety, Signals/Signage

Displays “countdown” of seconds remaining on the pedestrian signal. Countdown indications improve safety for all road users, and are required for all newly installed traffic signals where pedestrian signals are installed.



Extend Bike Lane to Intersection

Bike Safety

In locations where a bike lane is dropped due to the addition of a right turn pocket, the intersection approach may be restriped to allow for bicyclists to move to the left side of right-turning vehicles ahead of reaching the intersection.

S3 15%

Extend Pedestrian Crossing Time

Crossings, Pedestrian Safety

Increases time for pedestrian walk phases, and can better accommodate vulnerable populations such as children and the elderly.

S3 15%

Extend Signal Clearance Time

Signals/Signage

Extending yellow and all red time allows drivers and bicyclists to safely cross through a signalized intersection before conflicting traffic movements are permitted to enter the intersection.

Full Pedestrian Signal

Crossings, Pedestrian Safety, Signals/Signage

Full pedestrian signals are full traffic signals, with red, amber and green indicators, that may be installed at mid-block locations. These signals provide a protected pedestrian crossing phase when the pedestrian phase is called, but otherwise rest in green for oncoming vehicles.

NS6/NS17/NS18 25-35%

High Visibility Crosswalk

Crossings, Pedestrian Safety, Visibility

A crosswalk designed to be more visible to approaching drivers, striped with ladder markings using high-visibility material such as thermoplastic tape instead of paint.

59%

Leading Pedestrian Interval

Crossings, Pedestrian Safety, Visibility

Traffic signals timed to allow pedestrians a short head start in crossing an intersection to minimize conflicts with turning vehicles and improve pedestrian visibility.

Narrow Lanes

Speed

A reduction in lane width, in 11 feet, produces a traffic calming effect by encouraging drivers to travel at slower speeds, lowering the risk of collision with bicyclists, pedestrians, and other drivers.

NS3 25%

New Traffic Signal

Signals/Signage

New traffic signals help organize travel of all modes at an intersection, limiting interactions between vehicles, pedestrians, and bicyclists with conflicting movements. New signals can have a traffic calming effect on long, high-speed straightaways.

R36 35%

Caltrans Local Road Safety Manual ID

Crash Reduction Factor

Safety Issue Categories

MARYSVILLE BOULEVARD IMPROVEMENTS

30%

Parking Prohibition

Bike Safety, Crossings, Pedestrian Safety, Signals/Signage

By restricting parking at curbs in front of intersection crosswalks, sight lines are cleared between pedestrian crossings and oncoming drivers, reducing the risk of collision (also called “daylighting). Parking can also be restricted in locations with on-street bicycle facilities to minimize dooring collisions.

Prohibit Turns During Pedestrian Phase

Bike Safety, Crossings, Pedestrian Safety, Signals/Signage

Restricts left or right turns during the pedestrian crossing phase at locations where a turning vehicle may conflict with pedestrians in the crosswalk. This restriction may be displayed with a blank-out sign.

S6/S17 30-55%

Protected Left Turns

Signals/Signage

Protected left turns provide an exclusive phase for left-turning vehicles to enter an intersection separate from conflicting vehicle or pedestrian movements.

S13/NS12/R9 25-45%

Raised Median

Crossings, Pedestrian Safety, Speed

Curbed sections in the center of the roadway that are physically separated from vehicular traffic. Raised medians can also help control access to and from side streets and driveways, reducing conflict points.

Red Light Camera

Signals/Signage

Red light cameras can be used for automated enforcement to issue citations to drivers running red lights at signalized intersections, and may discourage this behavior.

R15 30%

Road Diet

Speed, Pedestrian Safety, Bike Safety, Crossings

Road diets generally reassign space in the roadway from vehicle travel lanes to create room for bicycle facilities, wider sidewalks, or center turn lanes. Road diets optimize street space to benefit all users by improving the safety and comfort of pedestrians and bicyclists, and reducing vehicle speeds and the potential for rear end collisions.

R36 35%

Separated/Buffered Bikeway

Bike Safety

Designated bicycle lanes, separated from vehicle traffic by a physical barrier, usually bollards, landscaping, or parked cars. These facilities can increase safety by decreasing opportunities for collisions with over-taking vehicles, and reducing the risk of dooring.

Slow Green Wave

Signals/Signage, Speed

A series of traffic signals coordinated to allow for slower vehicle travel speeds through several intersections along a corridor. Coordinating signals for slower travel speeds gives bicyclists and pedestrians more time to cross safely and encourages drivers to travel at slower speeds.

Split Signal Phase

Signals/Signage

Opposing legs of an intersection each receive their own phase

Straighten Crosswalk

Crossings, Pedestrian Safety, Visibility

Straightening crosswalks improves sight lines, making pedestrians more visible to oncoming drivers, and may shorten the crossing distance, reducing the length of time required for pedestrians to cross an intersection.

R36 35%

Caltrans Local Road Safety Manual ID

Crash Reduction Factor

Safety Issue Categories