



APPENDIX D

HIGH-INJURY NETWORK (HIN) FACT SHEETS AND PROJECT RECOMMENDATIONS - GROUP 1



HIGH-INJURY NETWORK (HIN) FACT SHEETS AND PROJECT RECOMMENDATIONS - GROUP 1



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FACT SHEET > VALMONT ROAD

CORRIDOR FACTS

Corridor Boundary: 57th Street to 6300 block

Functional Class: West of 61st Street: Principal Arterial (11,350 ADT)
East of 61st Street: Minor Arterial (7,600 ADT)

Corridor Length: 1 Mile

Posted Speed Limit: 40mph

Travel Lanes: West of 61st Street: four lanes (two lanes in each direction)
East of 61st Street: two lanes (one lane in each direction)

Bicycle Facilities: Bikeable Shoulder

TOTAL CRASHES



MINOR INJURIES



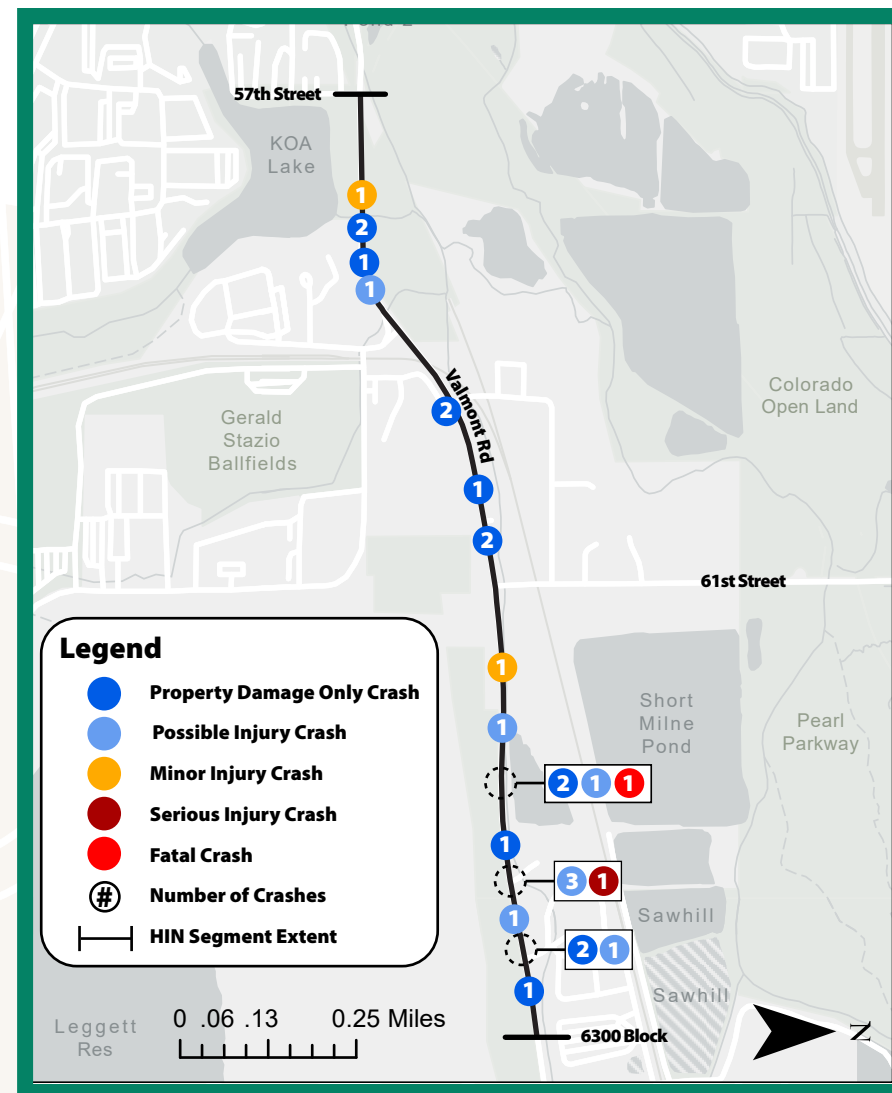
FATALITIES



SERIOUS INJURIES



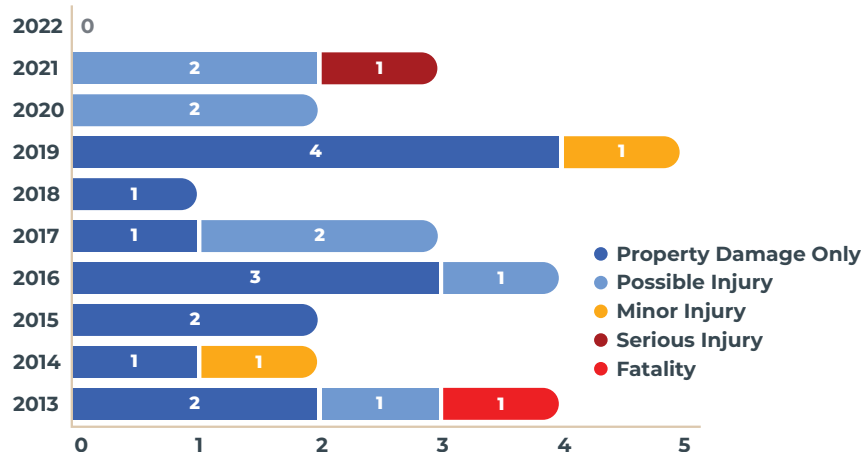
Note: an additional minor injury crash occurred on Valmont Road in 2023, outside of the VZAP data analysis period (2013 - 2022).



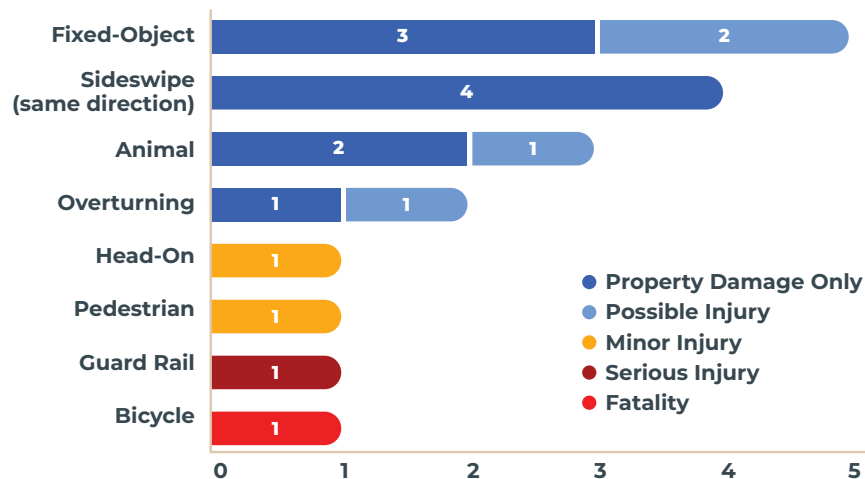


FACT SHEET > VALMONT ROAD

CRASHES BY YEAR



CRASHES BY TYPE



LIGHTING CONDITIONS

Severity	Daylight	Dawn or Dusk	Dark Lighted	Dark Unlighted
Non-KSI	14	1	2	7
KSI	1	1	0	0

KSI - Killed or Serious Injury

OVERREPRESENTED CRASH TRENDS

Trend	% of Total Crashes for Corridor	State Average % at Similar Facility Type
Injury Crashes (east of 61st Street)	56%	23%
Two-Vehicle Crashes (east of 61st Street)	44%	30%





FACT SHEET > VALMONT ROAD

CRASH REDUCTION POTENTIAL

West of 61st Street: Rural Flat and Rolling 4-Lane Divided Highway

East of 61st Street: Rural Flat and Rolling 2-Lane Undivided Highway

FREQUENCY OF CRASHES



West of 61st Street: **Low to Medium** Potential for Crash Reduction



East of 61st Street: **High** Potential for Crash Reduction

SEVERITY OF CRASHES



West of 61st Street: **Low to Medium** Potential for Crash Reduction



East of 61st Street: **High** Potential for Crash Reduction

Planning-Level Recommendation Cost Estimates

\$	Under \$50,000
\$\$	\$50,001 - \$100,000
\$\$\$	\$100,001 - \$500,000
\$\$\$\$	\$500,001 - \$1,000,000
\$\$\$\$\$	Over \$1,000,000

RECOMMENDATIONS

ROADWAY

- ✓ Consider lighting on curves throughout corridor to improve visibility of curbed median during night time, however, this may be difficult if utilities are not present (lighting) \$\$\$
- ✓ Maintain foliage east of 61st Street to improve bicycle space and improve sight distance around curves (bike and ped crashes) \$\$

PEDESTRIAN/BICYCLE FACILITIES

- ✓ Widen road to provide buffered shoulder or increased shoulder width for cyclists, about 2,750 feet east of 61st Street; consider narrowing travel lane to provide more space for buffer (bicycle facilities) \$\$\$

SIGNING AND STRIPING

- ✓ Install Chevron (W1-8) signs for curves west of 61st (improved signage) \$
 - Eastbound west of 61st Street
 - Westbound east of 61st Street
- ✓ Replace existing Object Markers with updated Object Marker (OM-3) signs on median (improved signage) \$
 - Eastbound, 57th Street
 - Westbound, Butte Mill Road
 - Eastbound, Butte Mill Road
 - Eastbound, west of 61st Street
 - Westbound, west of 61st Street

Note: construction of the 61st Street & Valmont Road Intersection Improvement Project is expected to be completed in 2026.





FACT SHEET > LEFTHAND CANYON DRIVE

CORRIDOR FACTS

Corridor Boundary: West of Geer Canyon Drive to N Foothills Highway (US 36)

Functional Class: Minor Arterial (1,700 ADT)

Corridor Length: 1.03 Miles

Posted Speed Limit: 35 mph westbound | 30 mph eastbound

Travel Lanes: Two lanes (one lane in each direction)

Bicycle Facilities: Bikeable Shoulder

TOTAL CRASHES



MINOR INJURIES



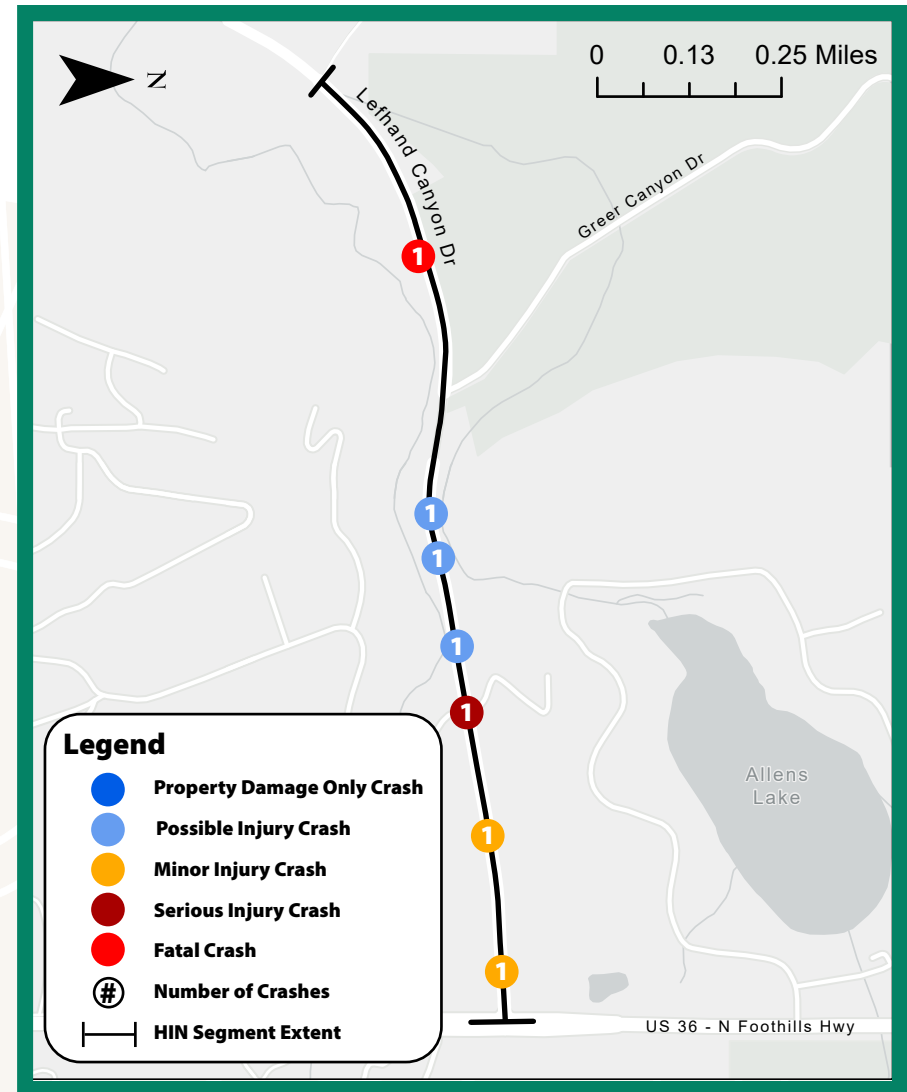
FATALITIES



SERIOUS INJURIES



Note: Lefthand Canyon was repaved in 2015.



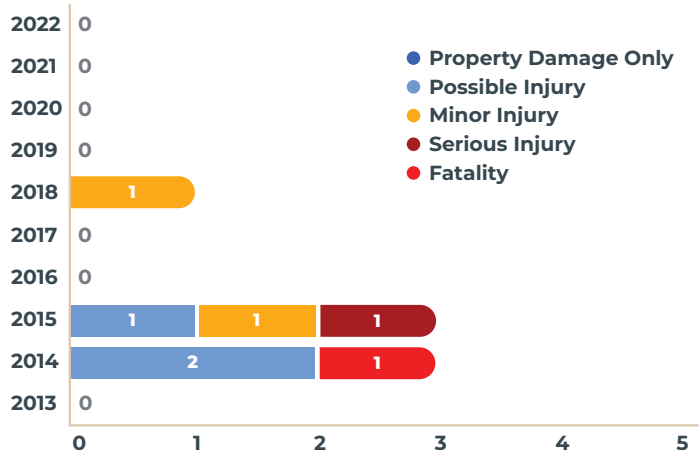


FACT SHEET

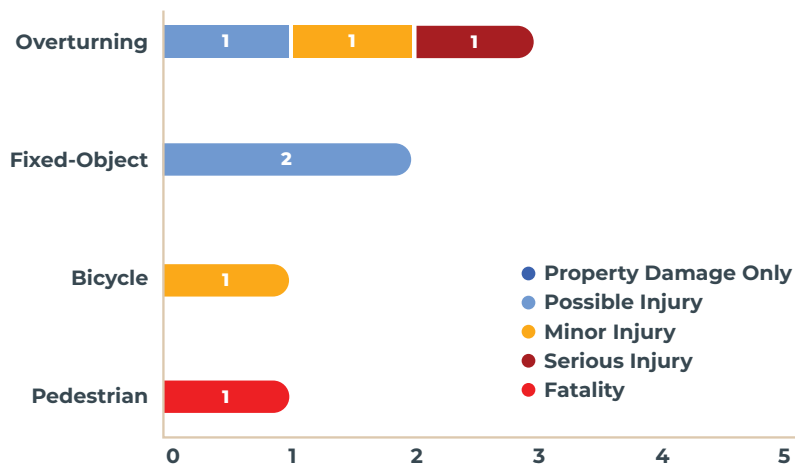


LEFTHAND CANYON DRIVE

CRASHES BY YEAR



CRASHES BY TYPE



LIGHTING CONDITIONS

Severity	Daylight	Dawn or Dusk	Dark Lighted	Dark Unlighted
Non-KSI	3	0	0	2
KSI	2	0	0	0

KSI - Killed or Serious Injury

OVERREPRESENTED CRASH TRENDS

Trend	% of Total Crashes for Corridor	State Average % at Similar Facility Type
Injury Crashes	100%	31%
Overturning Crashes	50%	22%





FACT SHEET >

LEFTHAND CANYON DRIVE

CRASH REDUCTION POTENTIAL

Rural Mountainous 2-Lane Undivided Highway

FREQUENCY OF CRASHES



Low to Medium Potential for Crash Reduction

SEVERITY OF CRASHES



Medium to High Potential for Crash Reduction

Planning-Level Recommendation Cost Estimates

\$	Under \$50,000
\$\$	\$50,001 - \$100,000
\$\$\$	\$100,001 - \$500,000
\$\$\$\$	\$500,001 - \$1,000,000
\$\$\$\$\$	Over \$1,000,000

RECOMMENDATIONS

ROADWAY

- ✓ Evaluate changing the speed limit in both directions to 25 mph (injury crashes, overturning crashes, pedestrian fatality) **\$**
- ✓ Evaluate need for guard rails through S-Curve (overturning crashes) **\$\$\$**
- ✓ Review and maintain foliage and clearance distance to trees along curves (line of sight) **\$\$**
- ✓ Consider prohibiting passing through subject area due to high pedestrian, bicycle, and parked car activity (bicycle crash, pedestrian crash) **\$**

PEDESTRIAN/BICYCLE FACILITIES

- ✓ Install "Motorist Must Give Bicycles 3 FT Clearance" (R4-50_CO) signs in the westbound direction (improved signage) **\$**

SIGNING AND STRIPING

- ✓ Install Curve Warning (W1-4, W1-10e) sign for curve through study area (overturning crashes, fixed object crash) **\$**
- ✓ Add Chevron (W1-8) signs in both directions at curves **\$**
- ✓ Install Curve Warning (W1-4, W1-10e) sign for curve through study area (overturning crashes, fixed object crashes) **\$**
 - Westbound chevrons to the west of Geer Canyon Drive
 - Eastbound chevrons to the east of Geer Canyon Drive





FACT SHEET > SUNSHINE CANYON DRIVE

CORRIDOR FACTS

Corridor Boundary: East of Eagles Drive to north of Timber Trail

Functional Class: Collector (1,700 ADT)

Corridor Length: 0.77 Miles

Posted Speed Limit: 25 mph

Travel Lanes: Two lanes (one lane in each direction)

Bicycle Facilities: None

TOTAL CRASHES



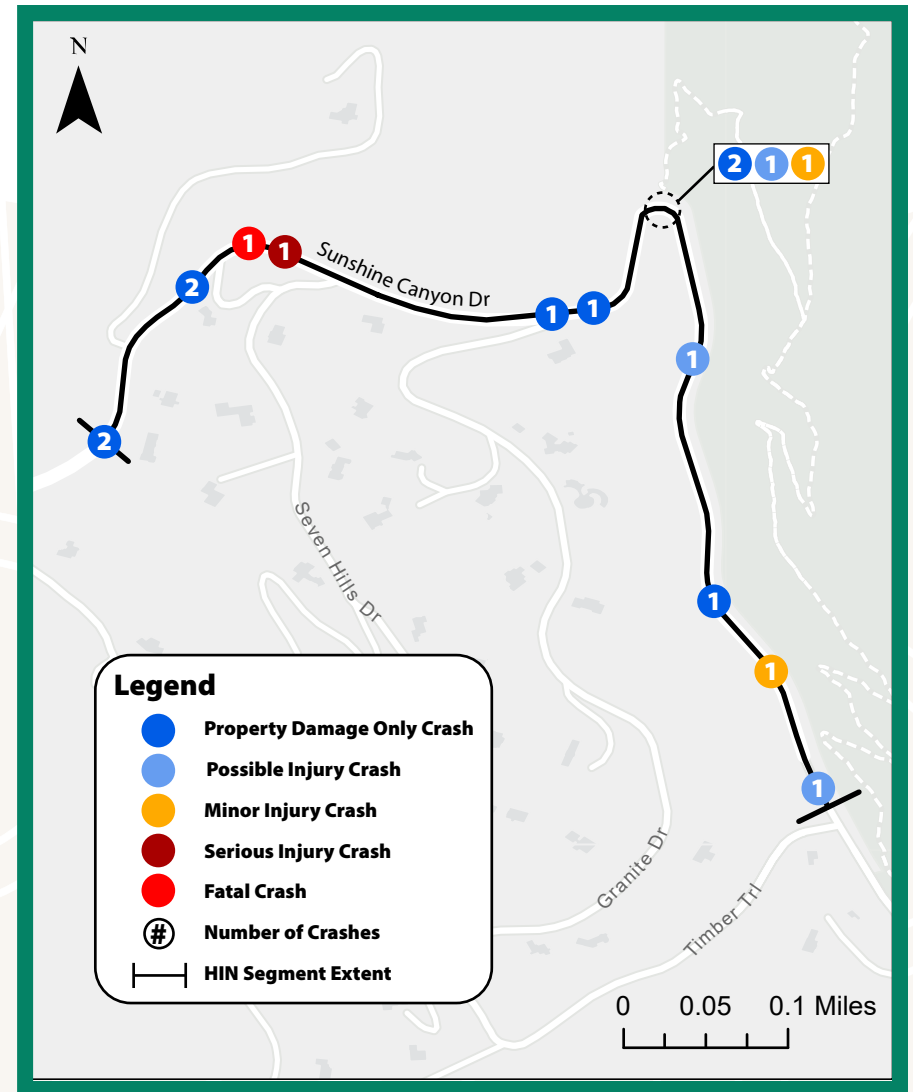
MINOR INJURIES



FATALITIES



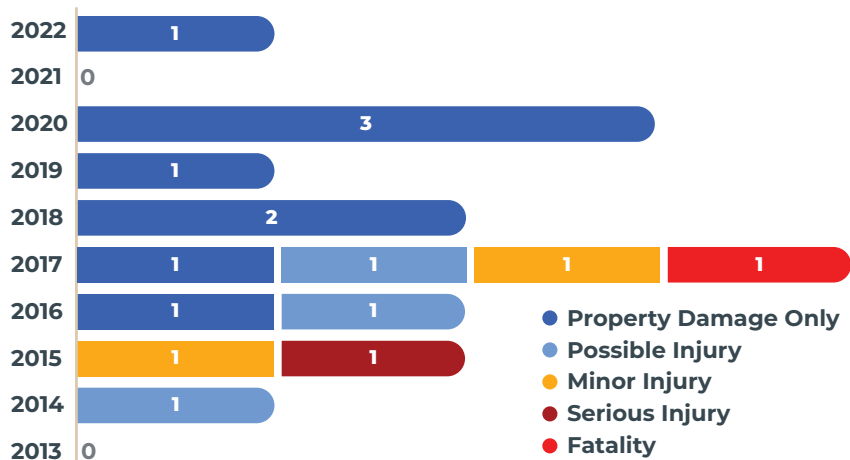
SERIOUS INJURIES



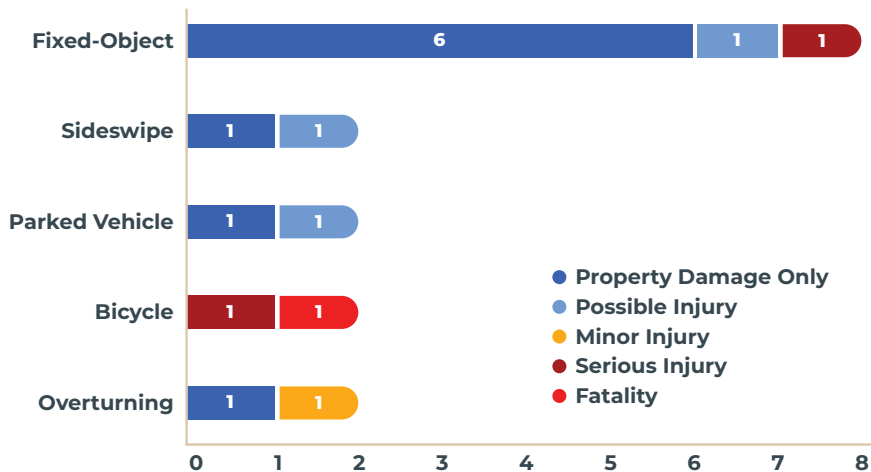


FACT SHEET > SUNSHINE CANYON DRIVE

CRASHES BY YEAR



CRASHES BY TYPE



LIGHTING CONDITIONS

Severity	Daylight	Dawn or Dusk	Dark Lighted	Dark Unlighted
Non-KSI	3	2	0	9
KSI	2	0	0	0

KSI - Killed or Serious Injury

OVERREPRESENTED CRASH TRENDS

Trend	% of Total Crashes for Corridor	State Average % at Similar Facility Type
Two-Vehicle Crashes	38%	14%
Off-Road Crashes	75%	54%





FACT SHEET > SUNSHINE CANYON DRIVE

CRASH REDUCTION POTENTIAL

Rural Mountainous 2-Lane Undivided Highway

FREQUENCY OF CRASHES



High Potential for Crash Reduction

SEVERITY OF CRASHES



High Potential for Crash Reduction

Planning-Level Recommendation Cost Estimates

\$	Under \$50,000
\$\$	\$50,001 - \$100,000
\$\$\$	\$100,001 - \$500,000
\$\$\$\$	\$500,001 - \$1,000,000
\$\$\$\$\$	Over \$1,000,000

RECOMMENDATIONS

ROADWAY

- ✓ Consider widening shoulder and install edge-line and centerline rumble strips on Lions Lair Trailhead curve and the curve west of Seven Hills Drive (off-road crashes, fixed object crashes, bicycle crashes) \$\$\$\$

PEDESTRIAN/BICYCLE FACILITIES

- ✓ Install "Motorist Must Give Bicycles 3 FT Clearance" (R4-50_CO) sign in both directions at the base and at the top and/or just before the first curves on the downhill and uphill west of Seven Hills Drive to warn cyclists of upcoming down grade and curve (bicycle crashes) \$
- ✓ Conduct bicycle and motorist education campaign for areas with steep grades and curves in Sunshine Canyon (bicycle crashes) \$\$

SIGNING AND STRIPING

- ✓ Add Chevron (W1-8) signs westbound on the curve west of Seven Hills Drive (improved signage) \$

Note: reconstruction of Sunshine Canyon Drive is listed as an upcoming project funded by the Boulder County Transportation Sales Tax.





FACT SHEET

63RD STREET & JAY ROAD INTERSECTION

INTERSECTION FACTS

Left-Turn Operations:

Southbound	Westbound	Northbound	Eastbound
Protected-Permitted	Protected-Permitted	Protected-Permitted	Protected-Permitted

Functional Classification of Approaches: 63rd Street - Minor Arterial (6,050 ADT)
Jay Road - Minor Arterial (5,350 ADT)

Approach Speed Limits:

Southbound	Westbound	Northbound	Eastbound
40 mph	40 mph	35 mph	40 mph

Bicycle Facilities: Bikeable shoulders approaching intersection in all directions. Multi-use path on west side.

Southbound	Westbound	Northbound	Eastbound
Green pavement markings at intersection	Bike lane at intersection adjacent to right-turn lane	Green pavement markings at intersection	Bike lane at intersection adjacent to right-turn lane

TOTAL CRASHES

 **24**

MINOR INJURIES

 **2**

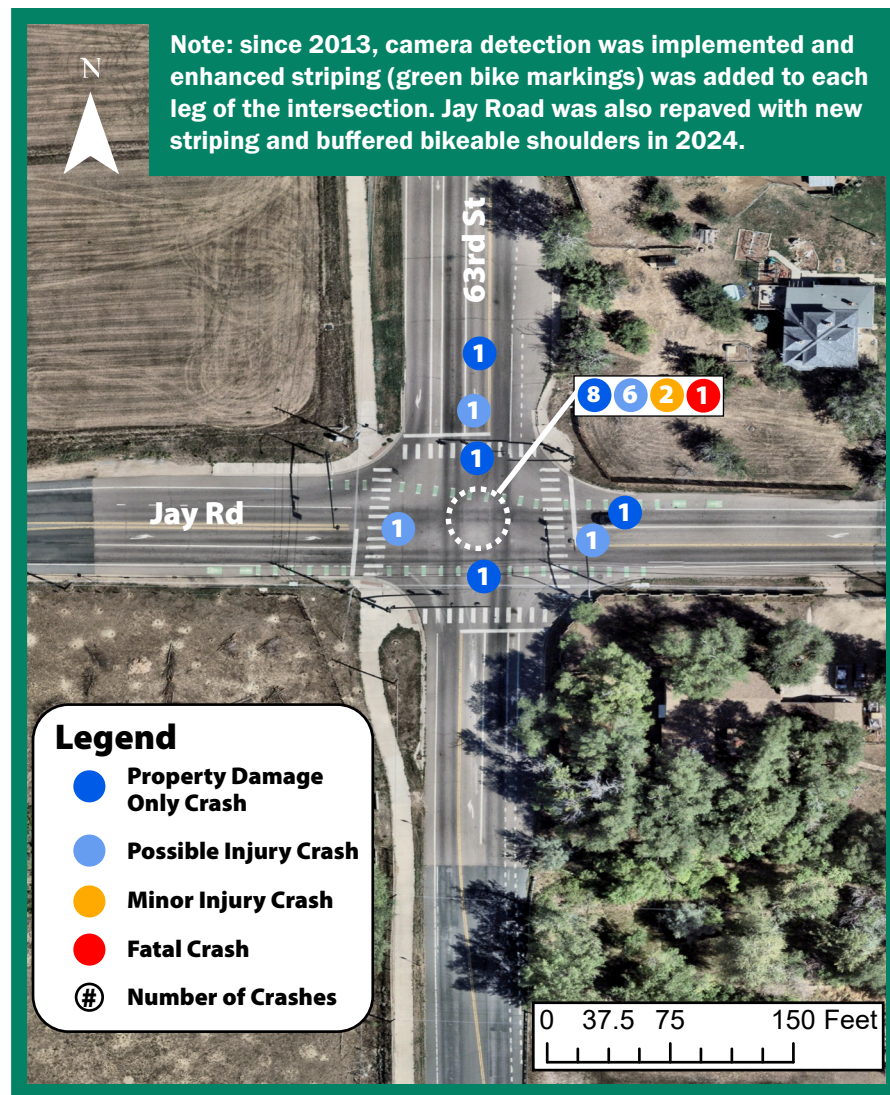
FATALITIES

 **1**

SERIOUS INJURIES

 **0**

Note: an additional serious injury crash occurred on Valmont Road in 2024, outside of the VZAP data analysis period (2013 - 2022).

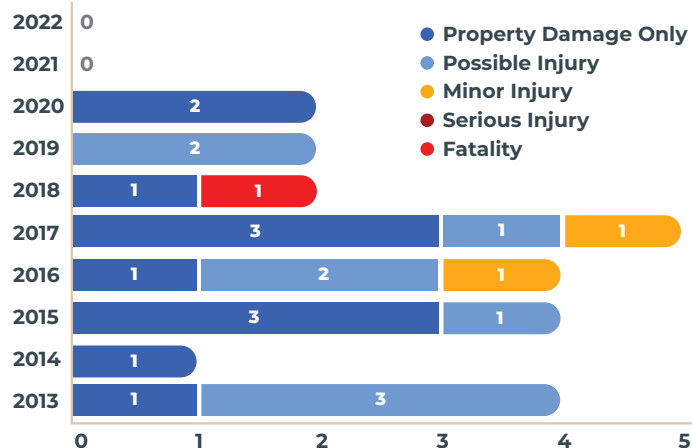




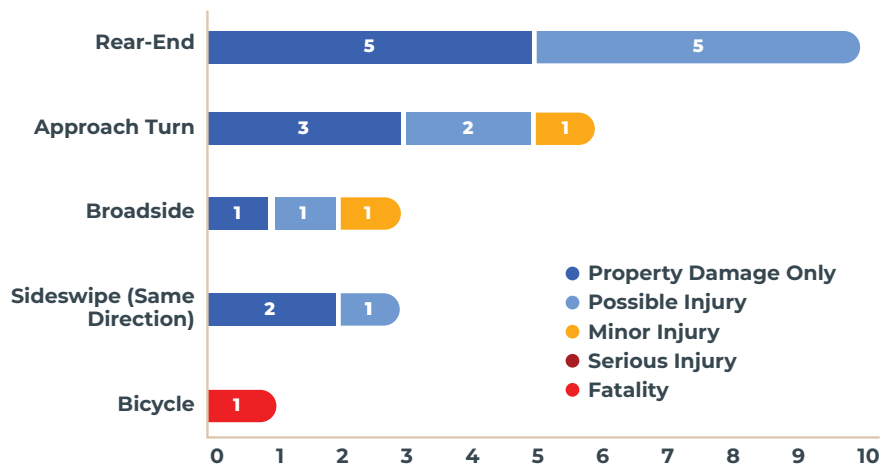
FACT SHEET

63RD STREET & JAY ROAD INTERSECTION

CRASHES BY YEAR



CRASHES BY TYPE



DIRECTION OF AT-FAULT PARTY

	Rear-End	Left-Turn	Broadside
Northbound	3	2	1
Southbound	2	4	1
Eastbound	2	0	0
Westbound	3	0	1

LIGHTING CONDITIONS

Severity	Daylight	Dawn or Dusk	Dark Lighted	Dark Unlighted
Non-KSI	22	0	0	1
KSI	1	0	0	0

KSI - Killed or Serious Injury

OVERREPRESENTED CRASH TRENDS

Trend	% of Total Crashes for Corridor	State Average % at Similar Facility Type
Injury Crashes	46%	29%
Preoccupied Driving	30%	16%



CRASH REDUCTION POTENTIAL

Urban 2-Lane Divided Signalized 4-Leg Intersection

FREQUENCY OF CRASHES



Medium to High Potential for Crash Reduction

SEVERITY OF CRASHES



High Potential for Crash Reduction

Planning-Level Recommendation Cost Estimates

\$	Under \$50,000
\$\$	\$50,001 - \$100,000
\$\$\$	\$100,001 - \$500,000
\$\$\$\$	\$500,001 - \$1,000,000
\$\$\$\$\$	Over \$1,000,000

RECOMMENDATIONS

SIGNAL OPERATIONS

- ✓ Install 4-section FYA signal heads to be consistent with nearby intersection traffic signal design (consistent infrastructure) \$
- ✓ Install reflective back plates (rear-end and broadside crashes) \$
- ✓ Review yellow and red clearance times (rear-end and broadside crashes) \$
- ✓ Review traffic operations for protected only left-turn movements by time of day for northbound and southbound lefts (left-turn crashes) \$

ROADWAY

- ✓ Install luminaire with modern LED light with shielding on northeast and southwest corner of intersection (lighting) \$
- ✓ Evaluate curb radii on all four intersection corners (traffic calming, crossing distances) \$\$\$
 - Reduce northwest curb radius, tie into removing second westbound receiving lane
 - Reduce southeast curb radius to improve pedestrian landing size and pull pedestrian push button away from private fence
 - Reduce northeast curb radius to slow westbound right-turn speeds





RECOMMENDATIONS (CONT.)

PEDESTRIAN/BICYCLE FACILITIES

- ✓ Reconstruct pedestrian ramps to be directional and evaluate pedestrian push button locations (pedestrian facilities) \$\$\$
- ✓ Install green pavement markings in northbound and southbound directions (bicycle facilities) \$
- ✓ Align westbound green pavement markings on east leg and west leg (bicycle facilities) \$
 - This recommendation is contingent on the reduction of the west leg to one receiving lane

SIGNING AND STRIPING

- ✓ Consider installing active flashers tied to signal operations on intersection warning signs on all approaches (injury crashes) \$\$
- ✓ Install left-turn lane assignment striping closer to stop bar for westbound direction to match all other directions (improved striping) \$

Note: construction of a nearby multiuse path along Jay Road and Spine Road to complete a missing link in the Longmont-to-Boulder (LoBo) Regional Trail is anticipated in 2026.





FACT SHEET > LEE HILL DRIVE & WAGONWHEEL GAP ROAD INTERSECTION

INTERSECTION FACTS

Number of Approach Lanes:

Southbound	Northbound	Eastbound
1x Shared Left/Through Lane	1x Shared Through/Right Lane	1x Shared Left-Right Lane

Stop Control Operations:

Southbound	Northbound	Eastbound
Uncontrolled	Uncontrolled	Stop-Controlled

Functional Classification of Approaches:

Wagonwheel Gap Road - Collector (600 ADT)

Lee Hill Road - Collector (3,400 ADT)

Approach Speed Limits:

Southbound	Northbound	Eastbound
35 mph	35 mph	25 mph

Bicycle Facilities: Bikeable shoulders approaching intersection on Lee Hill Drive.
Southbound: Green pavement marking through intersection shared with vehicle lane.

TOTAL CRASHES



4

MINOR INJURIES



1

FATALITIES

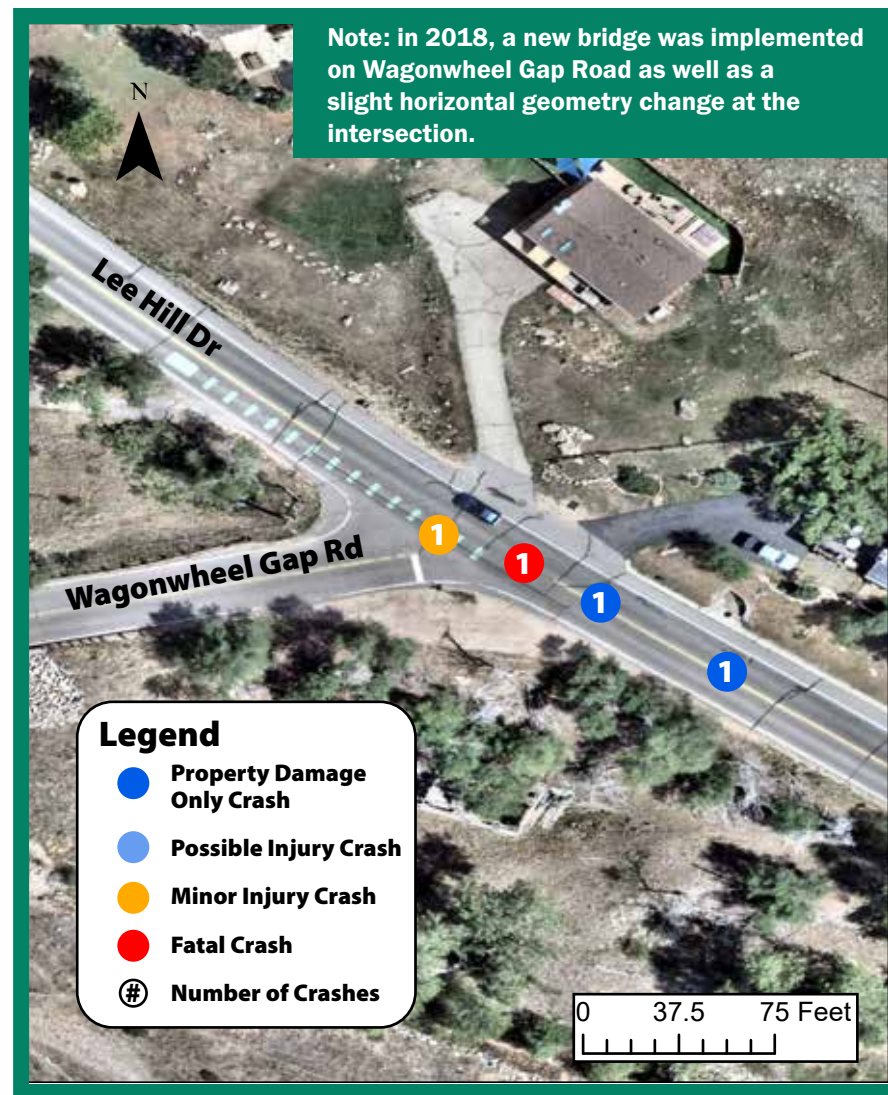


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SERIOUS INJURIES



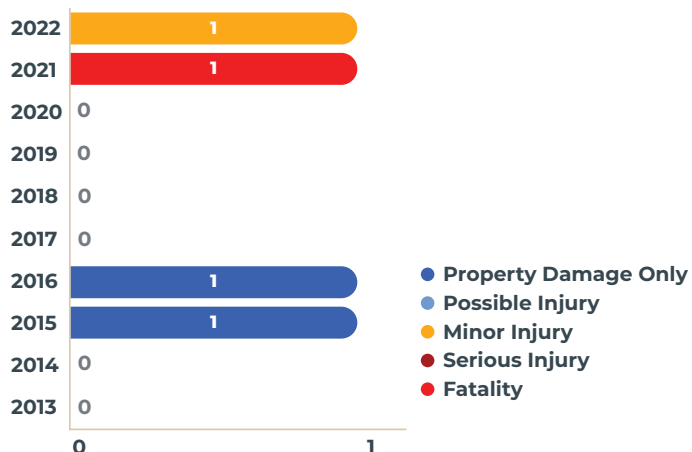
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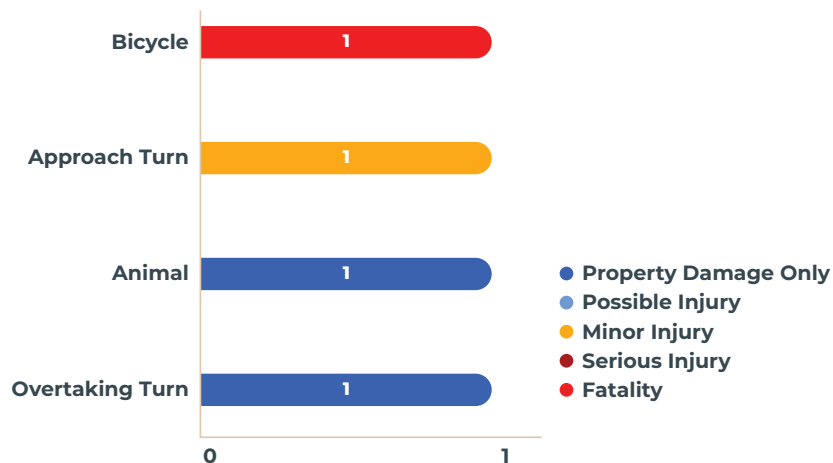


FACT SHEET > LEE HILL DRIVE & WAGONWHEEL GAP ROAD INTERSECTION

CRASHES BY YEAR



CRASHES BY TYPE



DIRECTION OF AT-FAULT PARTY

	Bicycle	Left-Turn	Animal	Overtaking Turn
Northbound	1	1	1	1
Southbound	0	0	0	0
Eastbound	0	0	0	0
Westbound	0	0	0	0

LIGHTING CONDITIONS

Severity	Daylight	Dawn or Dusk	Dark Lighted	Dark Unlighted
Non-KSI	2	1	0	0
KSI	1	0	0	0

KSI - Killed or Serious Injury

OVERREPRESENTED CRASH TRENDS

Trend	% of Total Crashes for Corridor	State Average % at Similar Facility Type
Not Enough Crashes to Determine Trends		





FACT SHEET > LEE HILL DRIVE & WAGONWHEEL GAP ROAD INTERSECTION

CRASH REDUCTION POTENTIAL

Rural 2-Lane Undivided Unsignalized 3-Leg Intersection

FREQUENCY OF CRASHES



Medium to High Potential for Crash Reduction

SEVERITY OF CRASHES



Medium to High Potential for Crash Reduction

Planning-Level Recommendation Cost Estimates

\$	Under \$50,000
\$\$	\$50,001 - \$100,000
\$\$\$	\$100,001 - \$500,000
\$\$\$\$	\$500,001 - \$1,000,000
\$\$\$\$\$	Over \$1,000,000

RECOMMENDATIONS

ROADWAY

- ✓ Install southbound Lee Hill Drive right-turn lane if feasible (downgrade conflicts) \$\$\$\$
- ✓ Replace luminaire with modern LED light with shielding (lighting) \$

OPERATIONS

- ✓ Consider all-way-stop analysis to address issues of grade, line of site, and bicycle volumes (northbound Lee Hill Dr crashes) \$\$

SIGNING AND STRIPING

- ✓ Gate-post Intersection Warning (W2-2, W16-8, W13-1p) signs on both sides of the southbound Lee Hill Dr and northbound Lee Hill Dr approaches (improved signage) \$
 - Install flashing beacons on warning signs in southbound Lee Hill Drive direction if all-way stop is installed \$
- ✓ Install Bicycle Hill (W7-5) sign in the southbound Lee Hill Drive direction south of Olde Stage Road to warn cyclists of upcoming downgrade and chevrons to warn cyclists of curve (improved signage) \$





FACT SHEET



75TH STREET & HYGIENE ROAD INTERSECTION

INTERSECTION FACTS

Number of Approach Lanes:

Southbound	Northbound	Westbound
1x Shared Left/Through/Right Lane	1x Shared Through/Right Lane	1x Shared Left/Through Lane, 1x Channelized Right-turn Lane

Stop Control Operations:

Southbound	Northbound	Westbound
Stop-Controlled	Stop-Controlled	Stop-Controlled

Functional Classification of Approaches:

75th Street - Minor Arterial (4,750 ADT)

Hygiene Road - Collector (3,000 ADT)

Approach Speed Limits:

Southbound	Northbound	Westbound
30 mph	30 mph	30 mph

Bicycle Facilities: Bikeable shoulders approaching intersection in all directions.. Northbound: Bike lane at intersection.

TOTAL CRASHES



6

MINOR INJURIES



1

FATALITIES



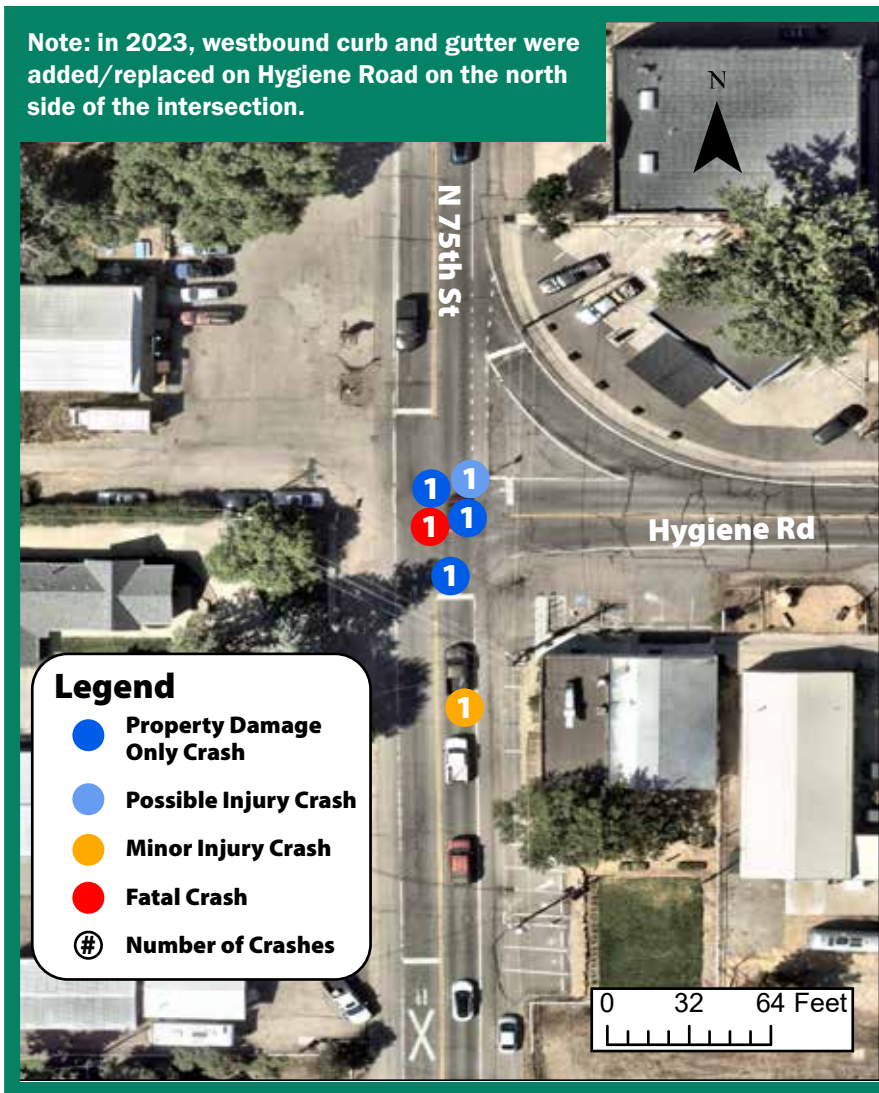
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SERIOUS INJURIES



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Note: in 2023, westbound curb and gutter were added/replaced on Hygiene Road on the north side of the intersection.



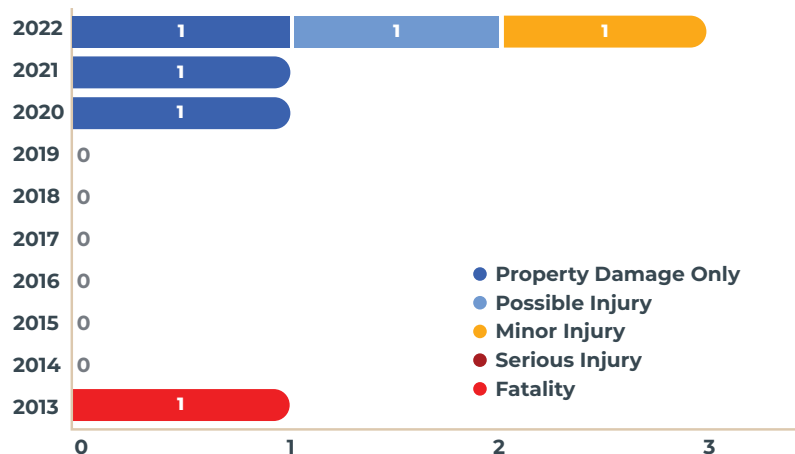


FACT SHEET

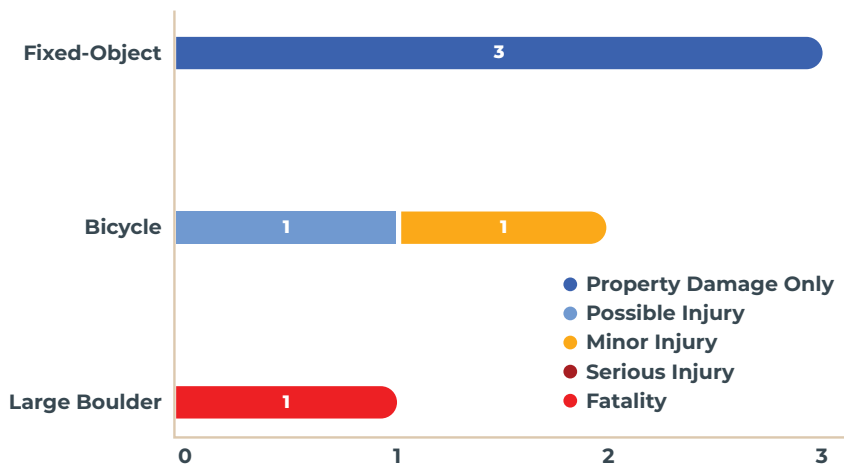


75TH STREET & HYGIENE ROAD INTERSECTION

CRASHES BY YEAR



CRASHES BY TYPE



DIRECTION OF AT-FAULT PARTY

	Fixed Object*	Bicycle	Large Boulder
Northbound	1	1	0
Southbound	0	0	0
Westbound	1	1	1

* One crash direction was listed as unknown.

LIGHTING CONDITIONS

Severity	Daylight	Dawn or Dusk	Dark Lighted	Dark Unlighted
Non-KSI	2	2	0	1
KSI	0	0	1	0

KSI - Killed or Serious Injury

OVERREPRESENTED CRASH TRENDS

Trend	% of Total Crashes for Corridor	State Average % at Similar Facility Type
Not Enough Crashes to Determine Trends		



CRASH REDUCTION POTENTIAL

Rural 2-Lane Undivided Signalized Intersection

FREQUENCY OF CRASHES



Medium to High Potential for Crash Reduction

SEVERITY OF CRASHES



Medium to High Potential for Crash Reduction

Planning-Level Recommendation Cost Estimates

\$	Under \$50,000
\$\$	\$50,001 - \$100,000
\$\$\$	\$100,001 - \$500,000
\$\$\$\$	\$500,001 - \$1,000,000
\$\$\$\$\$	Over \$1,000,000

RECOMMENDATIONS

ROADWAY

- ✓ Consider eliminating the westbound channelized right-turn lane (remove conflicts) \$\$\$\$
- ✓ Install raised island for the westbound approach if westbound channelized right-turn remains (traffic calming) \$\$
- ✓ Install modern LED luminaires with shielding (lighting) \$\$

PEDESTRIAN/BICYCLE FACILITIES

- ✓ Install "Motorist Must Give Bicycles 3 FT Clearance" (R4-50_CO) signs approaching intersection (bicycle crashes, improved signage) \$
- ✓ Widen shoulders to increase bikeable shoulder widths (bicycle crashes) \$\$\$
- ✓ Install northbound green pavement markings through intersection for cyclists (bicycle crashes) \$

SIGNING AND STRIPING

- ✓ Install oversize Stop Signs (R1-1) in all directions (improved signage, fatality) \$
- ✓ Install larger Object Markers (OM-3) and/or LEDs on stop signs and add 3M reflective tape around stop sign post (improved signage, fatality) \$