APPENDIX D

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

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

TABLE OF CONTENTS

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

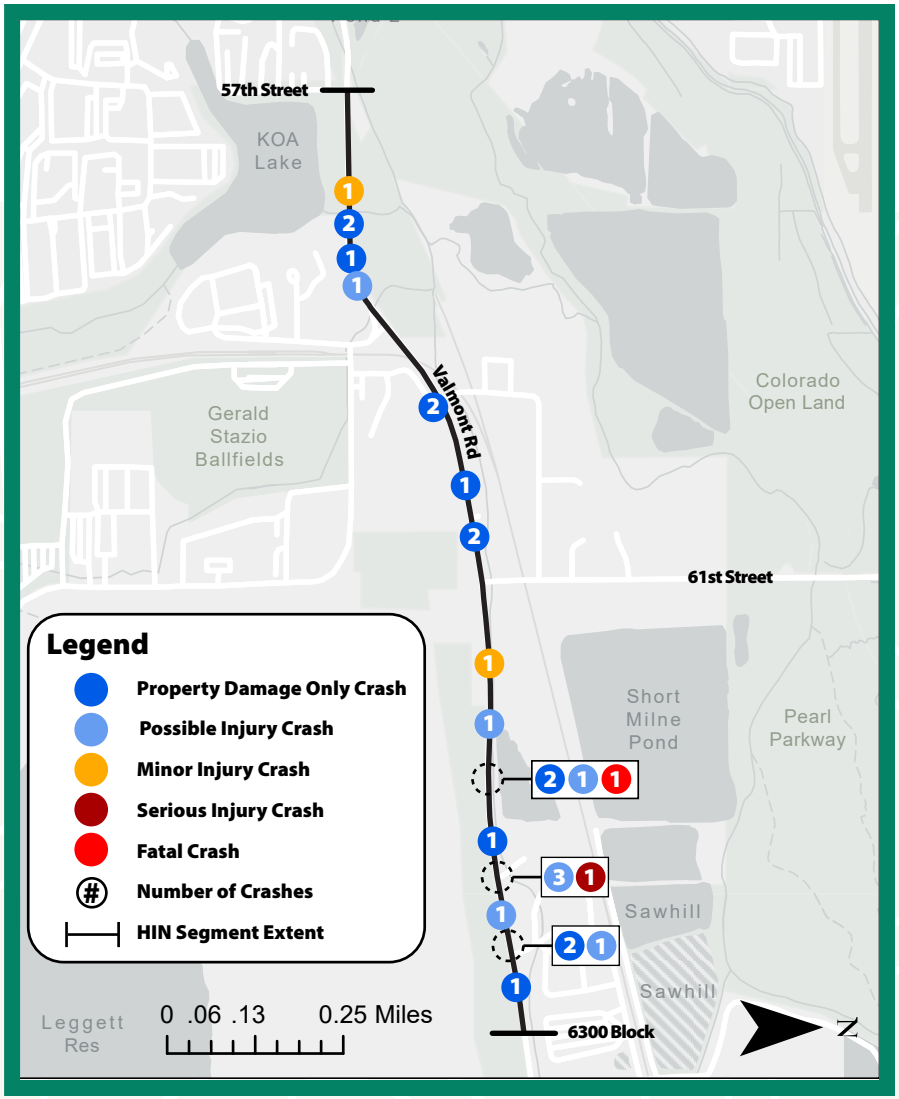
TOTAL CRASHES
26

MINOR INJURIES
2

FATALITIES
1

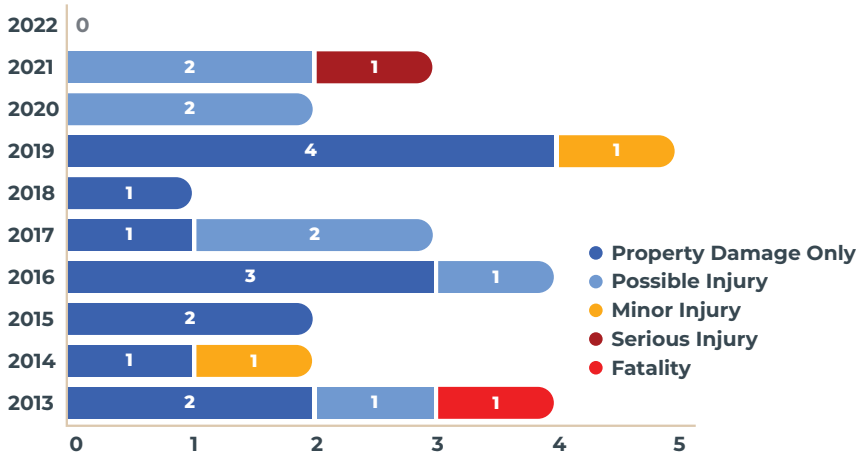
SERIOUS INJURIES
1

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

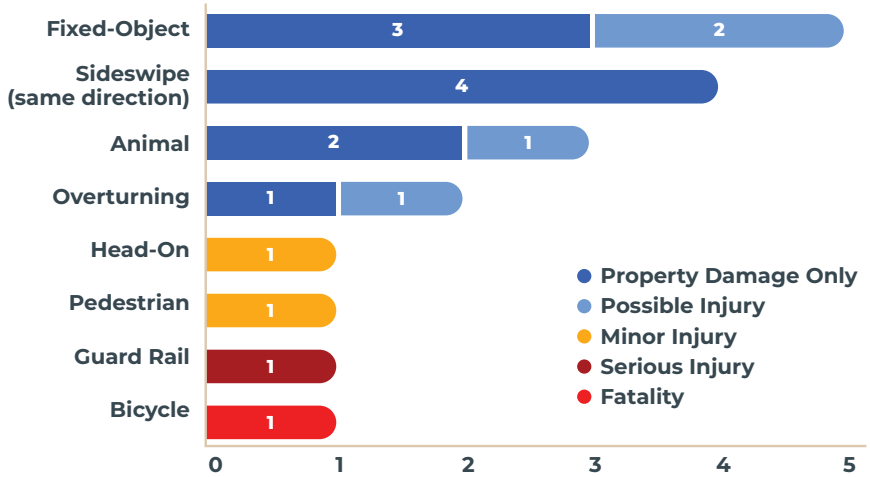


FACT SHEET › VALMONT ROAD

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

7

MINOR INJURIES

2

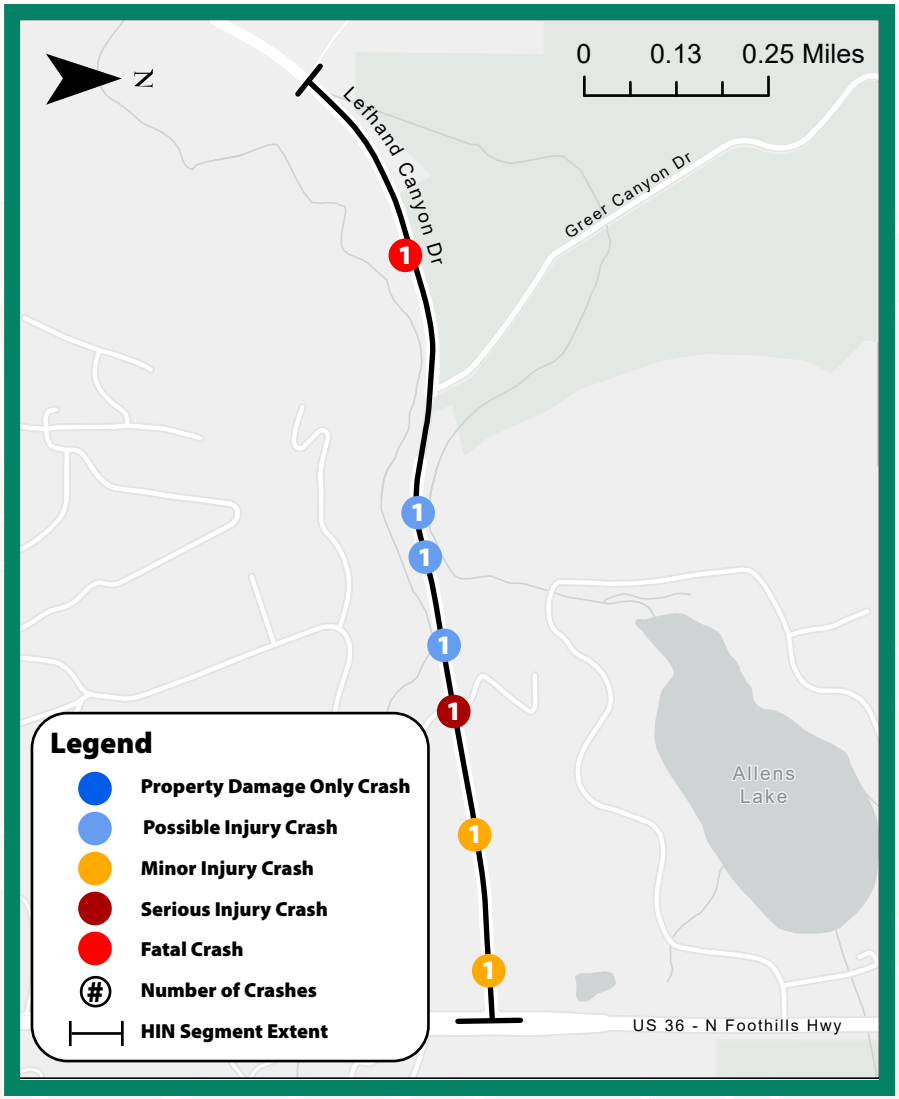
FATALITIES

1

SERIOUS INJURIES

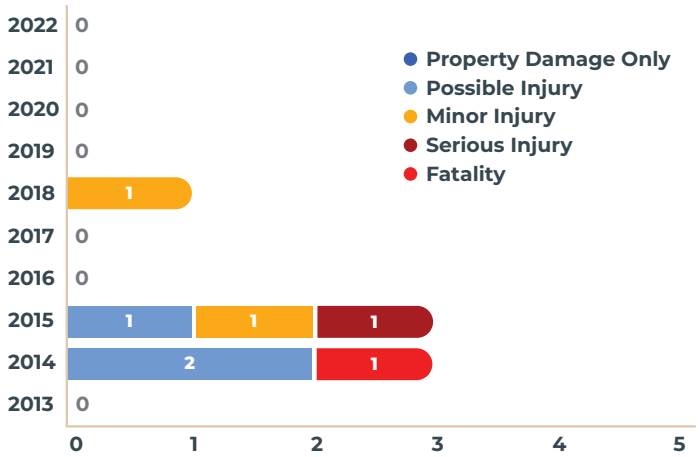
1

Note: Lefthand Canyon was repaved in 2015.



FACT SHEET › LEFTHAND CANYON DRIVE

CRASHES BY YEAR

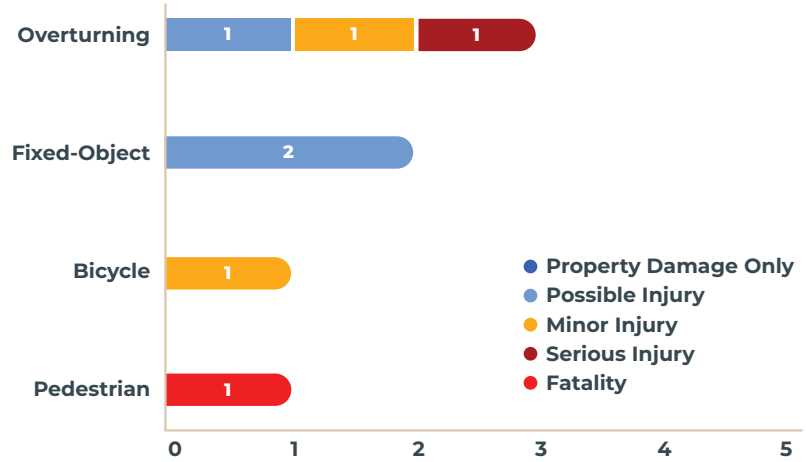


LIGHTING CONDITIONS

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

CRASHES BY TYPE



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

16

MINOR INJURIES

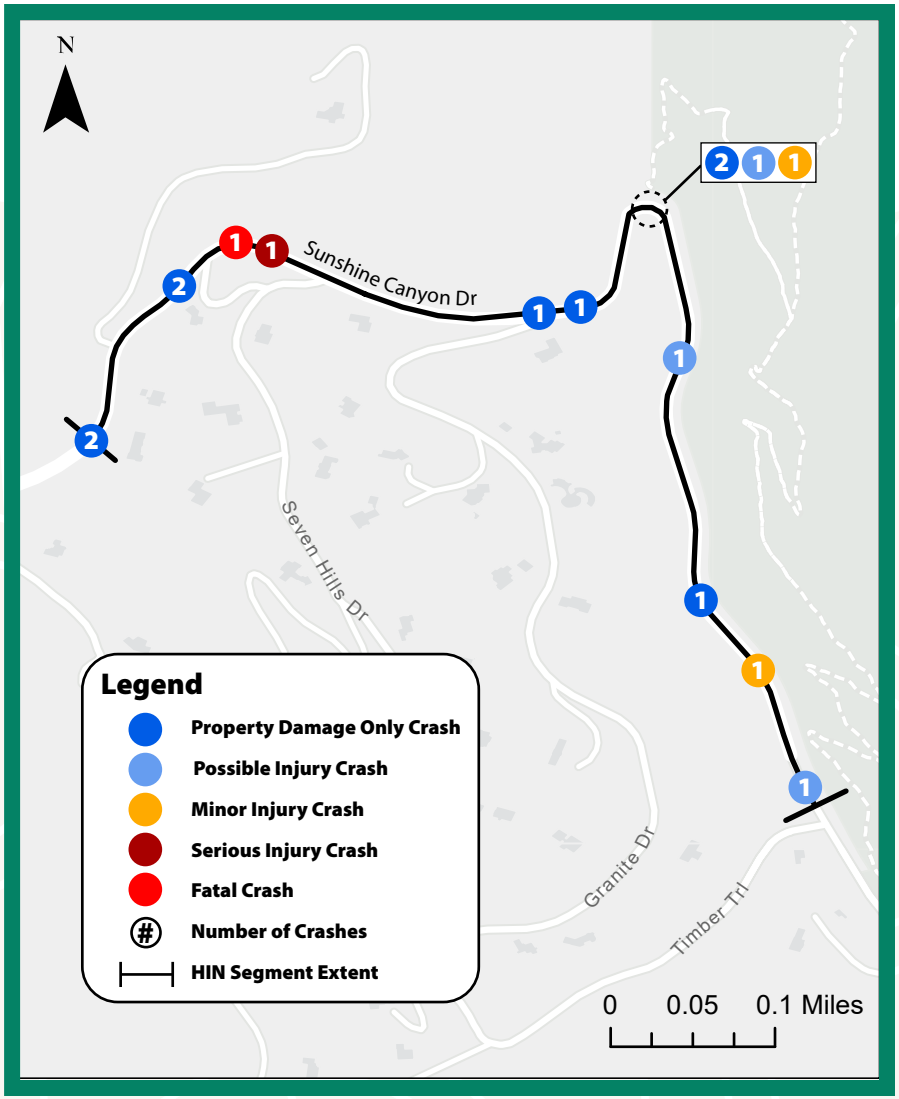
2

FATALITIES

1

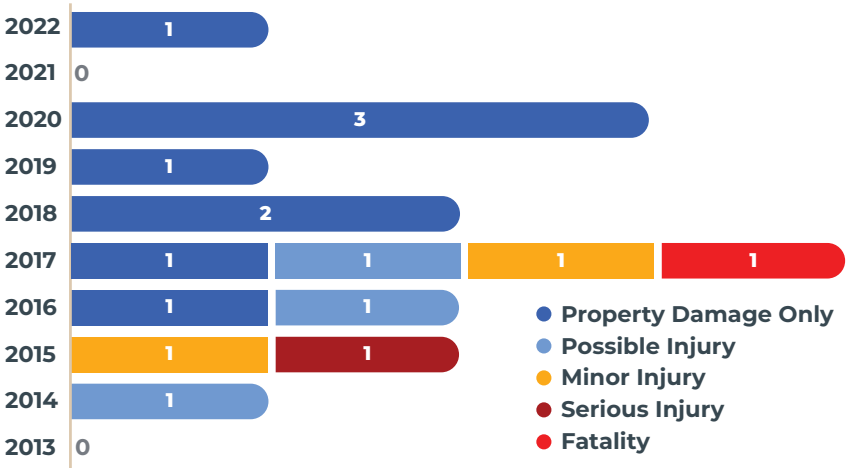
SERIOUS INJURIES

1



FACT SHEET › SUNSHINE CANYON DRIVE

CRASHES BY YEAR

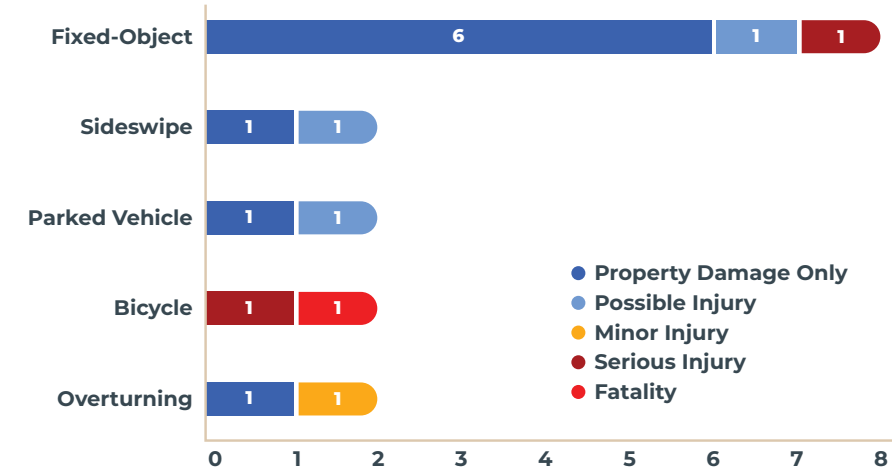


LIGHTING CONDITIONS

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

CRASHES BY TYPE



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

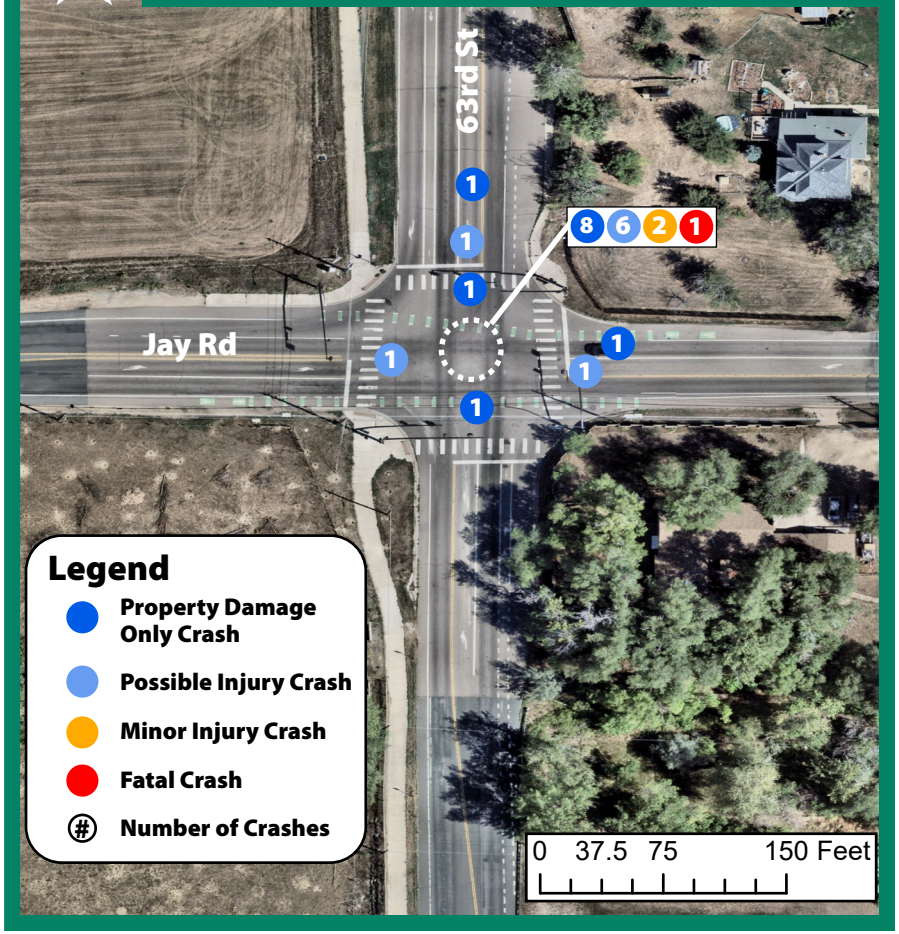
MINOR INJURIES 2

FATALITIES 1

SERIOUS INJURIES 0

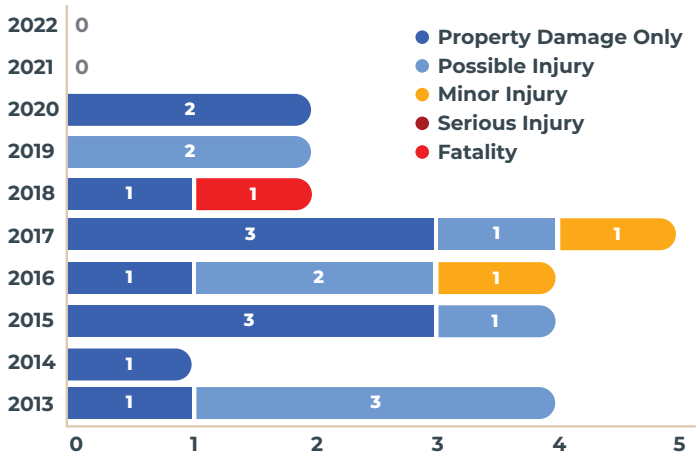
Note: an additional serious injury crash occurred on Valmont Road in 2024, outside of the VZAP data analysis period (2013 - 2022).

Note: since 2013, camera detection was implemented and enhanced striping (green bike markings) was added to each leg of the intersection. Jay Road was also repaved with new striping and buffered bikeable shoulders in 2024.

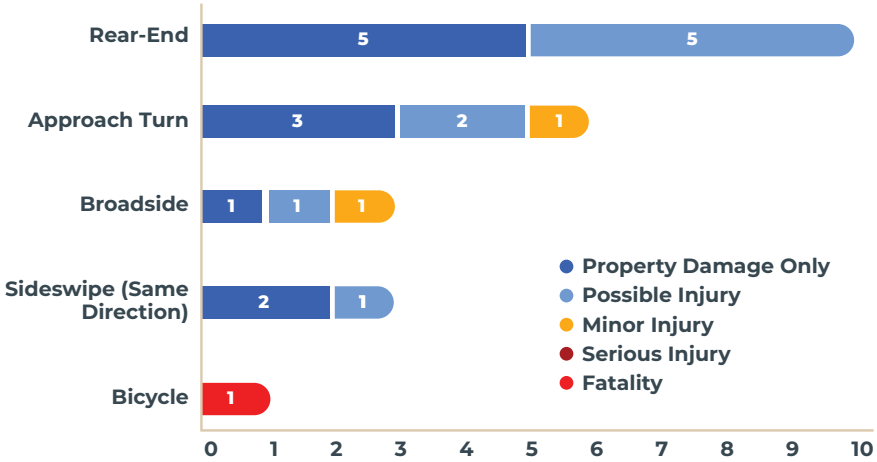


FACT SHEET › 63RD STREET & JAY ROAD INTERSECTION

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%

FACT SHEET › 63RD STREET & JAY ROAD INTERSECTION

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

63RD STREET & JAY ROAD INTERSECTION

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.

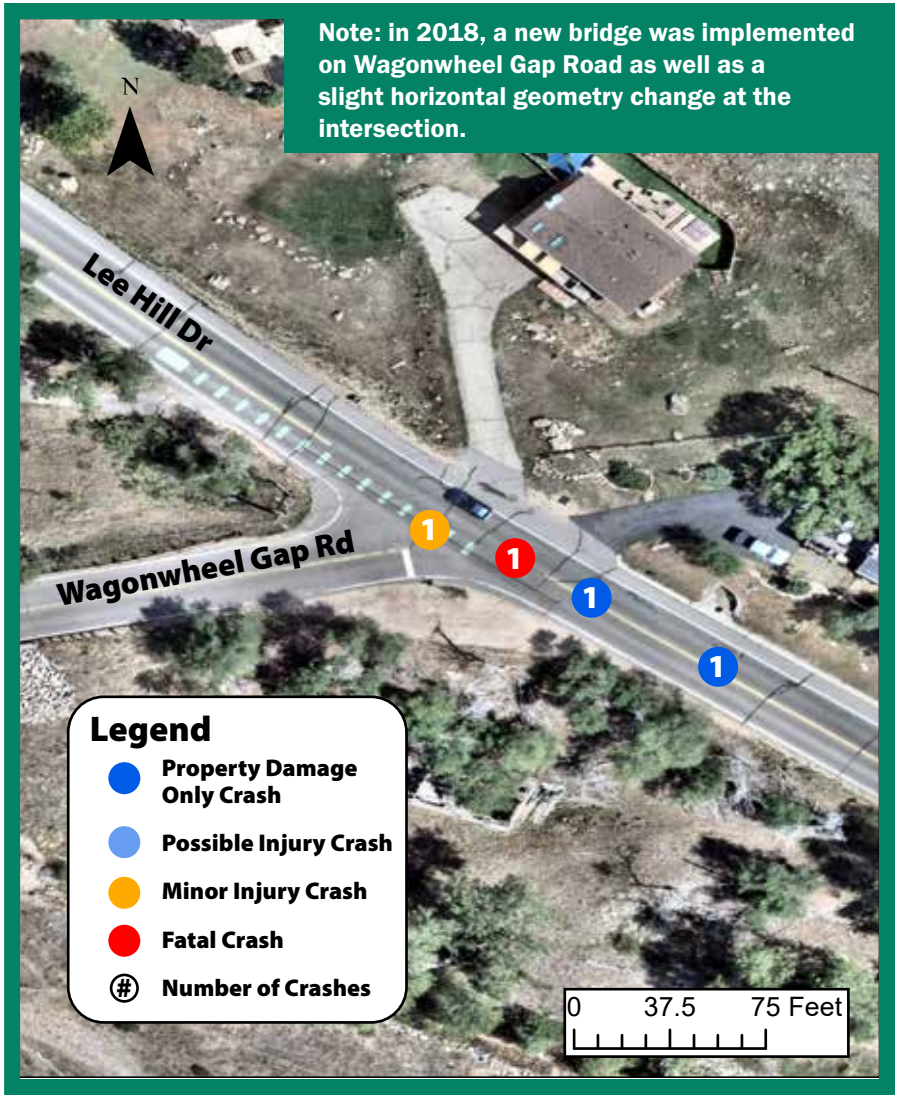
TOTAL CRASHES 4

MINOR INJURIES 1

FATALITIES 1

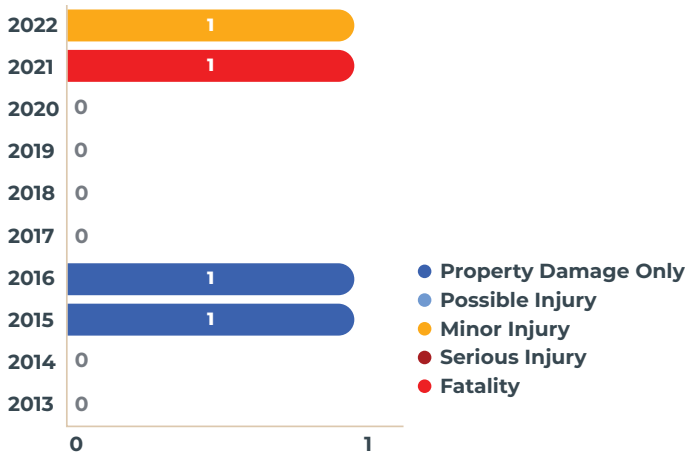
SERIOUS INJURIES 0

Note: in 2018, a new bridge was implemented on Wagonwheel Gap Road as well as a slight horizontal geometry change at the intersection.

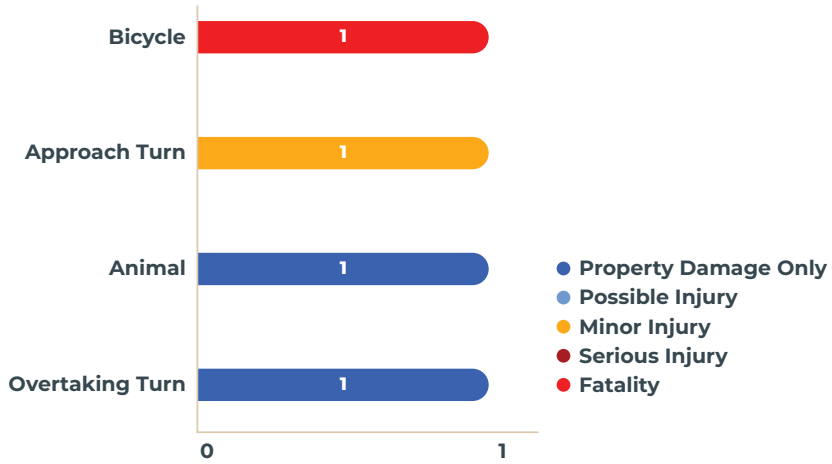


FACT SHEET > LEE HILL DRIVE & WAGONWHEEL GAP ROAD INTERSECTION

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.

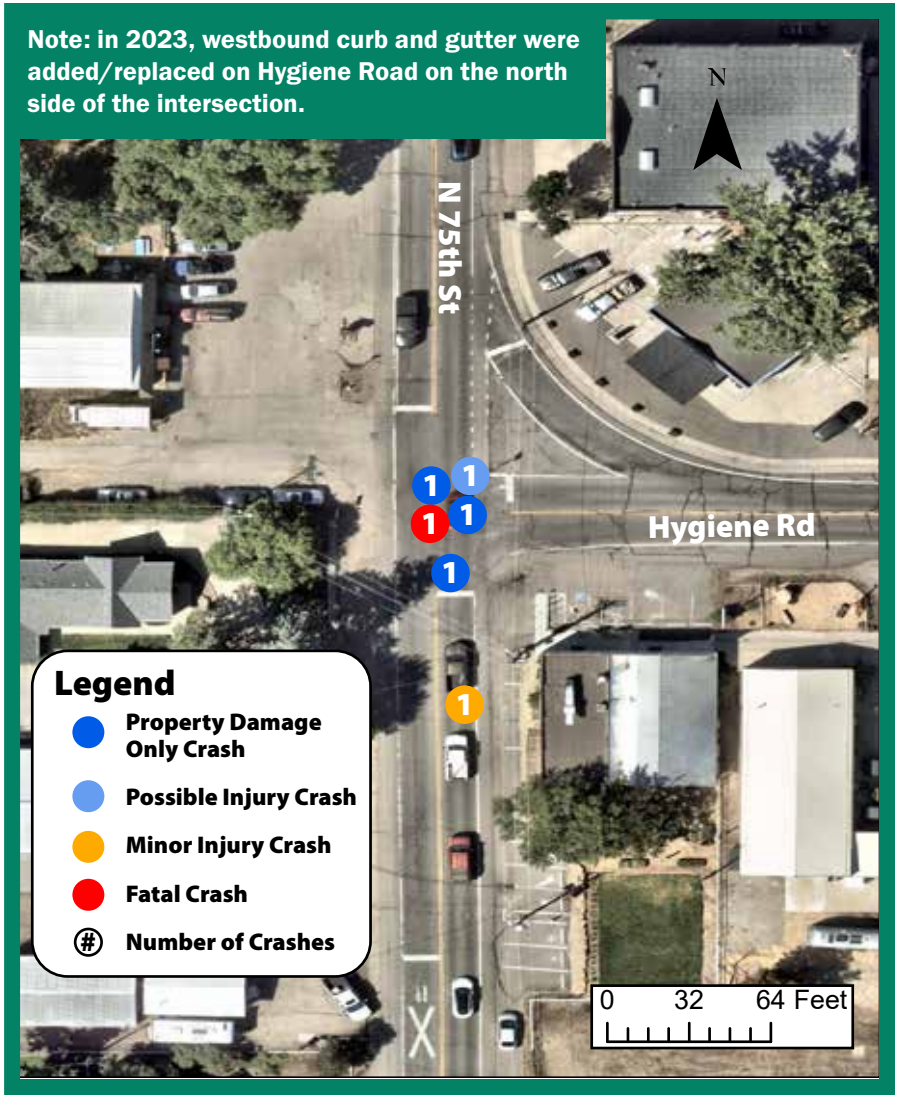
TOTAL CRASHES 6

MINOR INJURIES 1

FATALITIES 1

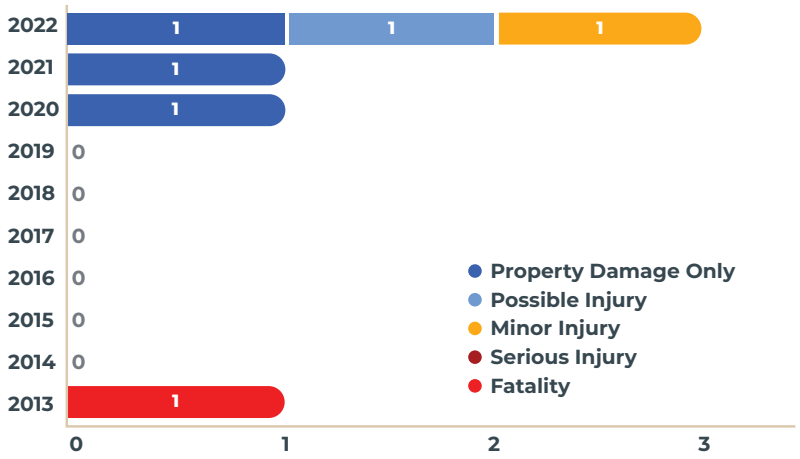
SERIOUS INJURIES 0

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

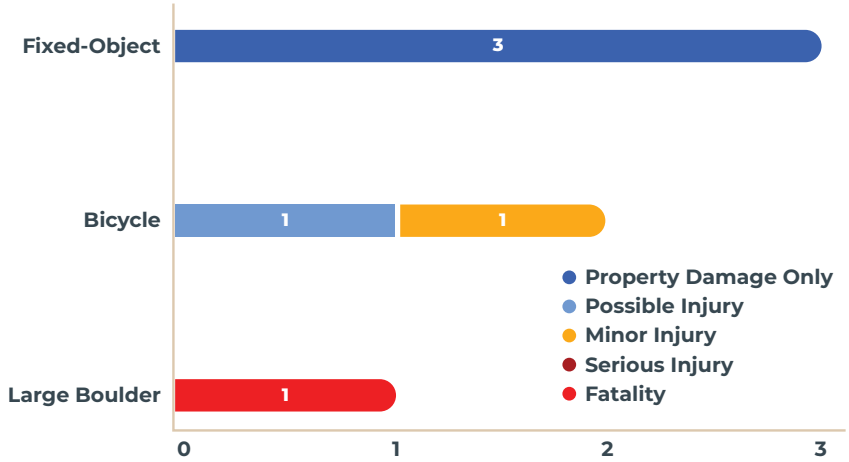


FACT SHEET > 75TH STREET & HYGIENE ROAD INTERSECTION

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		

FACT SHEET > 75TH STREET & HYGIENE ROAD INTERSECTION

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) **$**
- ✔ Install larger Object Markers (OM-3) and/or LEDs on stop signs and add 3M reflective tape around stop sign post (improved signage, fatality) **$**