

Grand Forks, ND Crash Data Analysis

Overcoming Barriers Strengthening Connections



Grand Forks - East Grand Forks
Metropolitan Planning Organization

Ensuring Opportunities Planning One Community

"A community that provides a variety of complementary transportation choices, that are fiscally constrained, for people and goods."



GRAND FORKS, ND
PEDESTRIAN & BICYCLIST

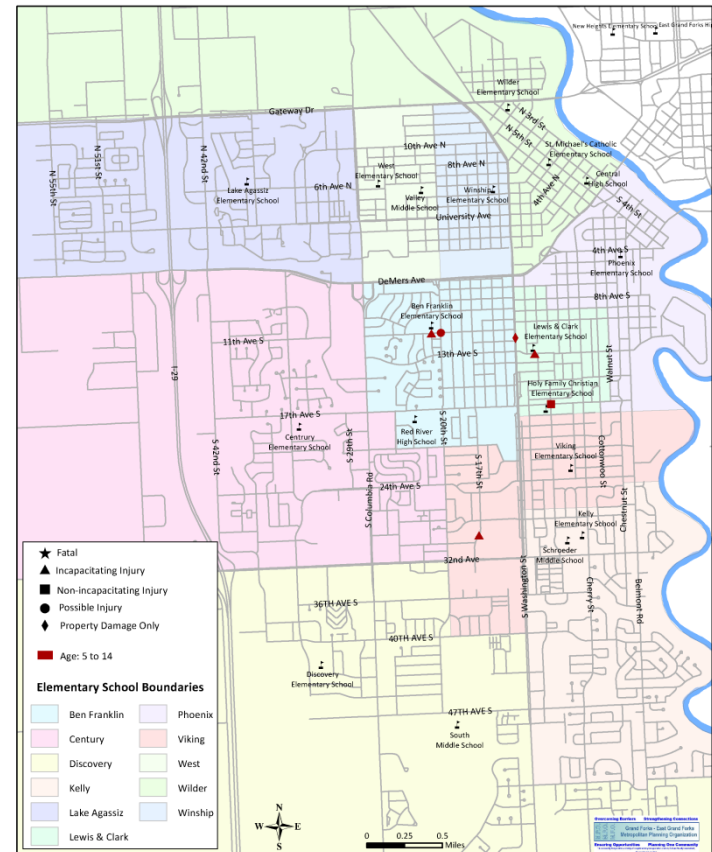
CRASH DATA ANALYSIS
FOR Y2016-2017-2018
(5-14 Years old) (K-9)

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Grand Forks Pedestrian Crashes, 2016, 2017, & 2018



OUTLINE

1. Importance of Children Safety
2. Supporting Initiatives:
 - Parent's Survey's (2016)
 - Safe Routes to School Maps (2019)
 - School Zone Safety Program
 - Pedestrian & Bicycle Crash Analysis & Visualization (2016-2018)
3. Methodology
 - Type of Crashes
 - Crash Related Factors
 - Contributing Factors
 - Proximity to Schools
 - Roadway's Characteristics at Crash Locations

OUTLINE

4. School Crossing Guard Programs
5. Safe Kids Grand Forks: Pedestrian and Bicycle Education Events
6. Street Corridors Leading to River Crossings
7. Observations



Importance Children Safety

Pedestrian & Bicycle Crashes involving Children:

- Increasing parent's concerns for children safety
- Children do not understand danger
- Walk-bike to school as opportunity for socialization



Importance Children Safety

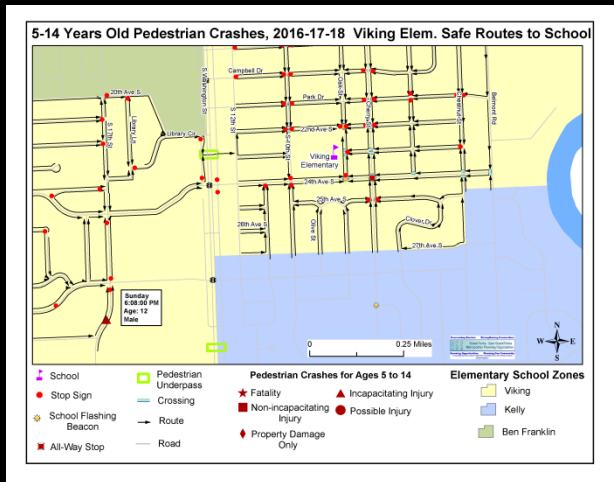
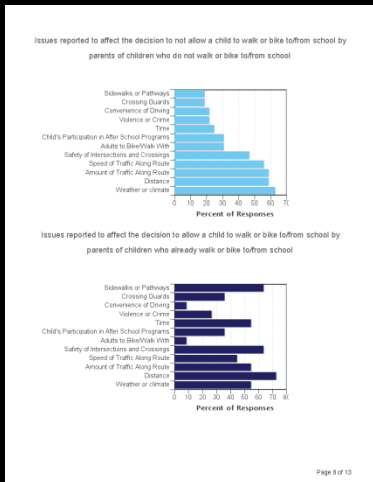
Pedestrian & Bicycle Crashes involving Children:

- Children are among the most vulnerable road users.
- Unique in nature: Inattentiveness
- Some pedestrians have cognitive, mobility, or vision impairments.
- Account for road users' abilities and characteristics when designing an intersection.



Supporting Initiatives

- Parent's Survey's (2016)
- Safe Routes to School Maps (2019)
- School Zone Safety Program
- Pedestrian & Bicycle Crash Analysis & Visualization (2016-2018)



Methodology

Type of Crashes:

- Pedestrian & Bicycle (5-14 Years Old) (K-9)

Crash Related Factors:

- Severity
- Contributing Factors
- Vehicle Movement (Pedestrian/Bicyclist)
- Crash Day

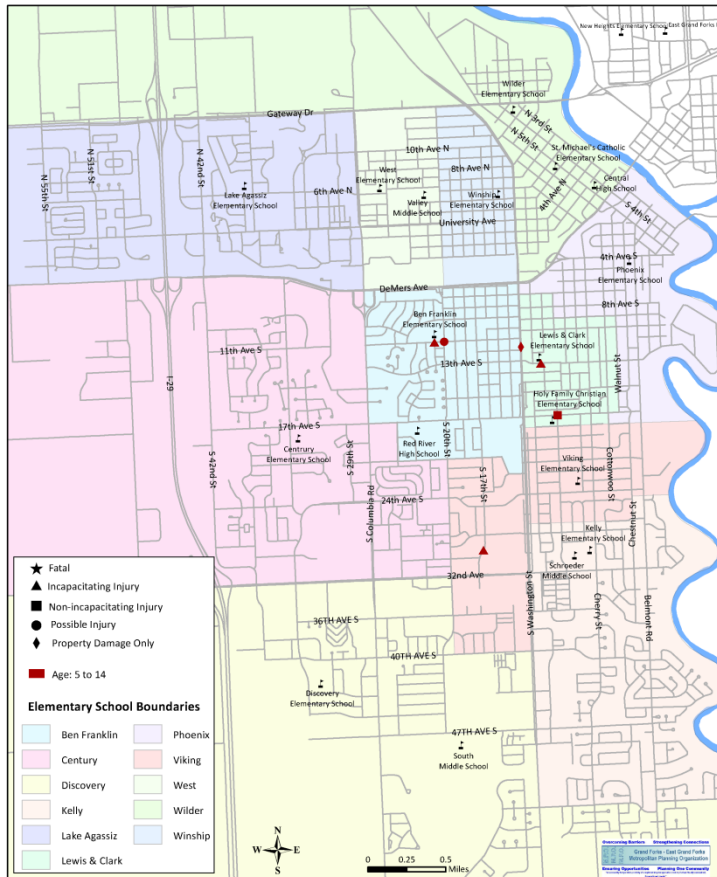
Methodology

- Contributing Factors
- Proximity to Schools
- Walking (1/4 mile) Biking (2 mile) Radius
- Roadway's Characteristics at Crash Locations
- Intersection
- AADT
- Roadway Classification
- Posted Speed
- Road Lanes
- Traffic Controls
- Safe Routes to School

PEDESTRIAN CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)

Map 1. Grand Forks Pedestrian Incidents for 2016-2017-2018
(5-14 Years Old) (K-9)



- 11th Ave. S between S 20th & 21th Str. (2)
- 13th Ave. S between S 11th & S 12th St.
- S 17th St. S between 28th & 29th Ave. S
- S Washington St. between 11th & 12th Ave. S

PEDESTRIAN CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)

Table 1. TOTAL PEDESTRIAN CRASHES INVOLVING PEOPLE AGED 5 TO 14 YEARS OLD (pre-K-9) 2016-2017-2018

	AGED 5 TO 14 YEARS OLD/SEX	AGED 5 TO 14 YEARS OLD/SEX	AGED 5 TO 14 YEARS OLD/SEX
CRASH SEVERITY	2016	2017	2018
TOTAL	2	2	2
Fatal			
Incapacitating Injury		6-Male	
Non-Incapacitating Injury	10-Male 12-Male	11-Male	
Possible Injury			6-Male
Property Damage			13-Male

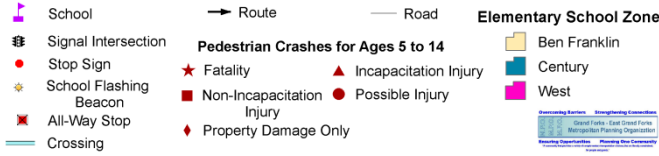
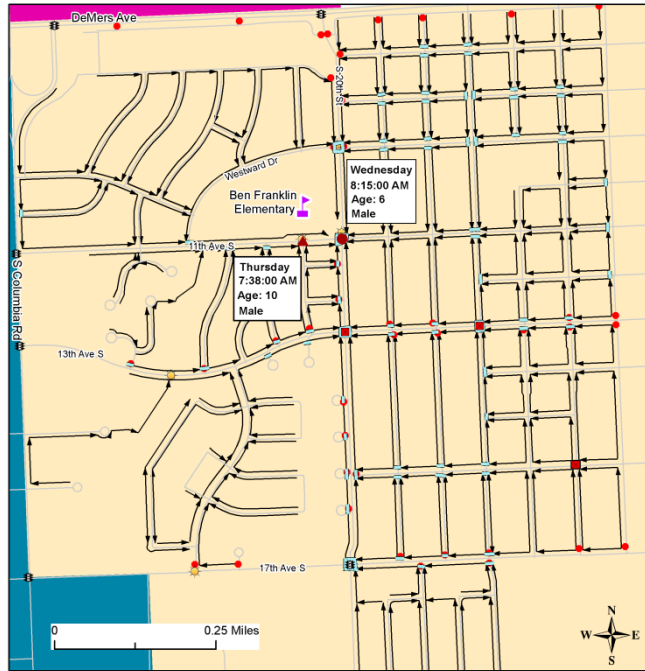
Table 2. OTHER CRASH RELATED FACTORS FOR PEDESTRIAN CRASHES INVOLVING PEOPLE AGED 5 TO 14 YEARS OLD, 2016-2017-2018

	Injury Severity	Relation to Junction	Contributing Factor	Vehicle Movement_2	Crash Day
2016	Incapacitating Injury	Intersection	Failed to Yield	Crossing at Intersection	Thursday
	Incapacitating Injury	Non-Junction	Not Clear	Crossing at Intersection	Sunday
2017	Non-Incapacitating Injury	Intersection	Not Clear	Not on Roadway	Saturday
	Incapacitating Injury	Intersection	Too fast for Conditions	Crossing at Intersection	Tuesday
2018	Possible Injury	Intersection	Other	Crossing at Intersection	wednesday
	Property Damage (PDO)	Non-Junction	Not Clear	Not on Roadway	Thursday

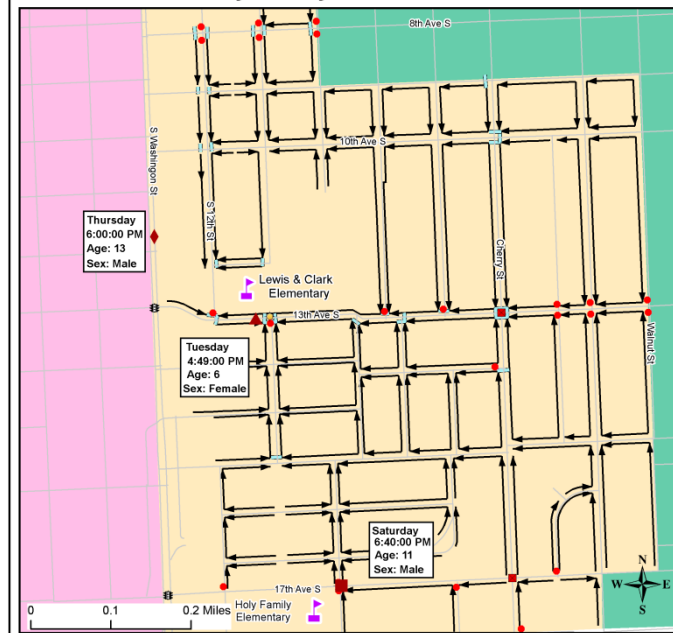
PEDESTRIAN CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)-Proximity to Schools

**5-14 Years Old Pedestrian Crashes, 2016-2017-2018
Ben Franklin Safe Routes to School**



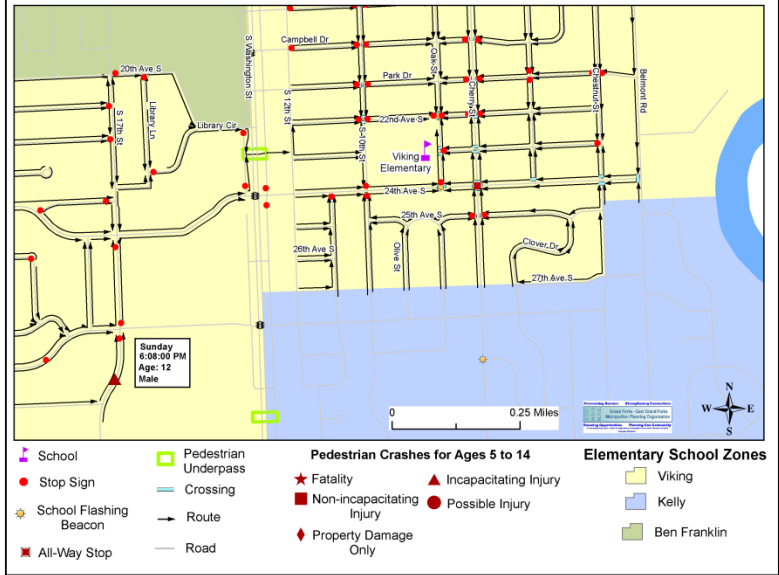
**5-14 Years Old Pedestrian Crashes 2016, 2017, 2018
Lewis & Clark/Holy Family Elem. Safe Routes to School**



CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)—Proximity to Schools

5-14 Years Old Pedestrian Crashes, 2016-17-18 Viking Elem. Safe Routes to School



CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)—Roadway Characteristics at Pedestrian Crash Locations

Table 3. Roadway's Characteristics at Pedestrian Crash Locations, 2016-2018

Crash Street	Intersection or In-between Streets	AADT 2018	Roadway Classification	Posted Speed Mph	Road Lanes	Traffic Controls	Safe Route to School
11th Ave S	S 21st St	NA	Local	25	2	Marked School Xing	Ben Franklin
S 17th St	Between 28th Ave S & 30 Ave S	NA	Local	25	2	Mid-Block	South Middle
17th Ave S	S 10th St	4900	Minor Arterial	25	2	Beacon Xing	viking
13th Ave S	S 11th St	5890	Collector	25	2	Crosswalks, Beacon Xing	Lewis & Clark
S 20th St	11th Ave S	3855	Collector	25	2	Over-head Flashing Beacon	Ben Franklin
S Washington St	Between 11th Ave S & 12th Ave S	29285	Principal Arterial	30	4	N/A/Mid-Block	Lewis & Clark

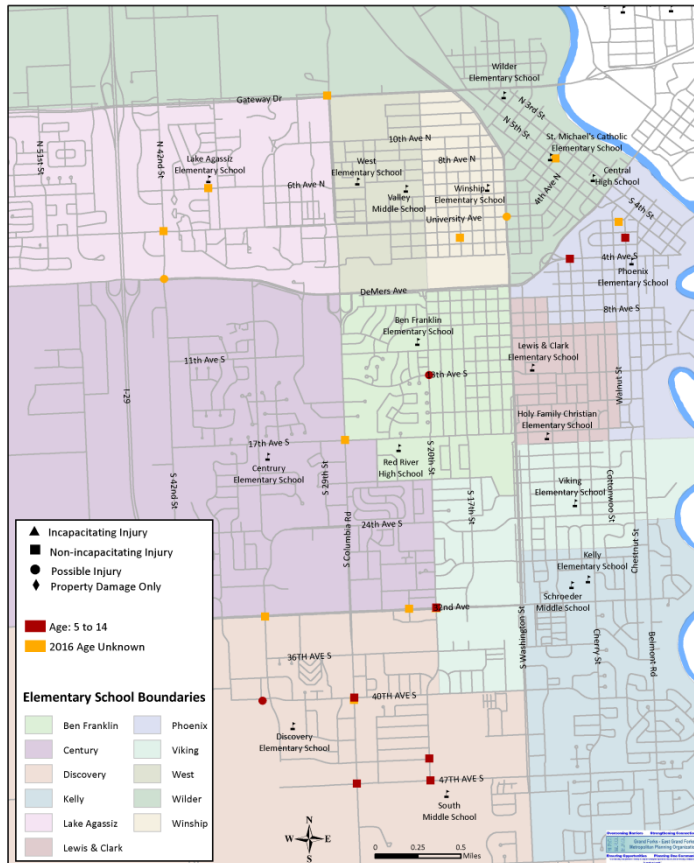
Pedestrian Crashes

- Neither motorist nor pedestrians were impaired at the time of the crashes
- Most pedestrian crashes took place *at an intersection*. Most crashes occurred when the pedestrian was *crossing an intersection*
- There were traffic controls (*stop signs, flashing beacon crossings*) at most pedestrian crash locations
- Most pedestrian crashes happened at two –lane, collector intersections

BICYCLIST CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)

Map 2. Grand Forks Bicycle Crashes, 2016-2017-2018 (5-14 Years Old) (K-9)



BICYCLIST CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)

Phoenix Elementary
3rd Avenue S at Chestnut
Street

Non-incapacitating Injury

4th Ave S at Oak Street

Non-Incapacitating Injury

Ben Franklin Elementary
13th Avenue S at S 20th
Street

Possible Injury

South Middle School*
S 20th Street at 45th
Avenue S

Non-incapacitating Injury

Discovery Elementary School
40th Avenue S at S 35th
Street

Possible Injury

S Columbia Road at 40th Ave S
47th Ave S at S 20th St.

Non-Incapacitating Injury
S Columbia RD. at 47th Ave S
Non-Incapacitating Injury

(See: Discovery Elementary)
S20th at 32nd Ave S
Non-Incapacitating Injury

BICYCLIST CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)

Table 4. TOTAL BICYCLIST CRASHES INVOLVING PEOPLE AGED 5 TO 14-YEARS OLD (pre-K-9), 2016-2017-2018

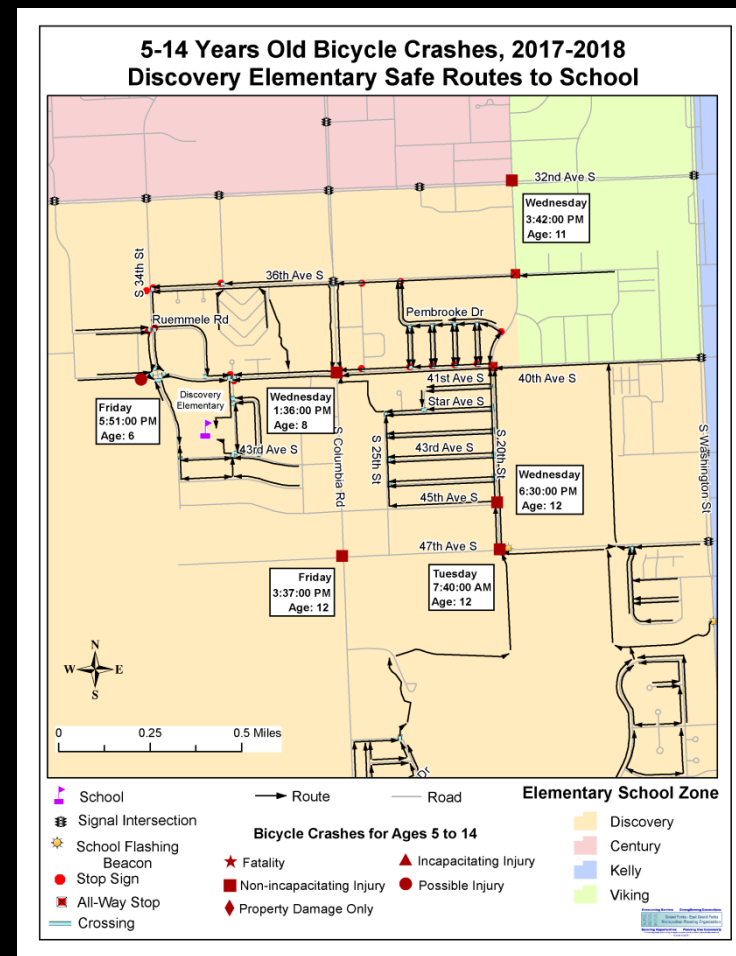
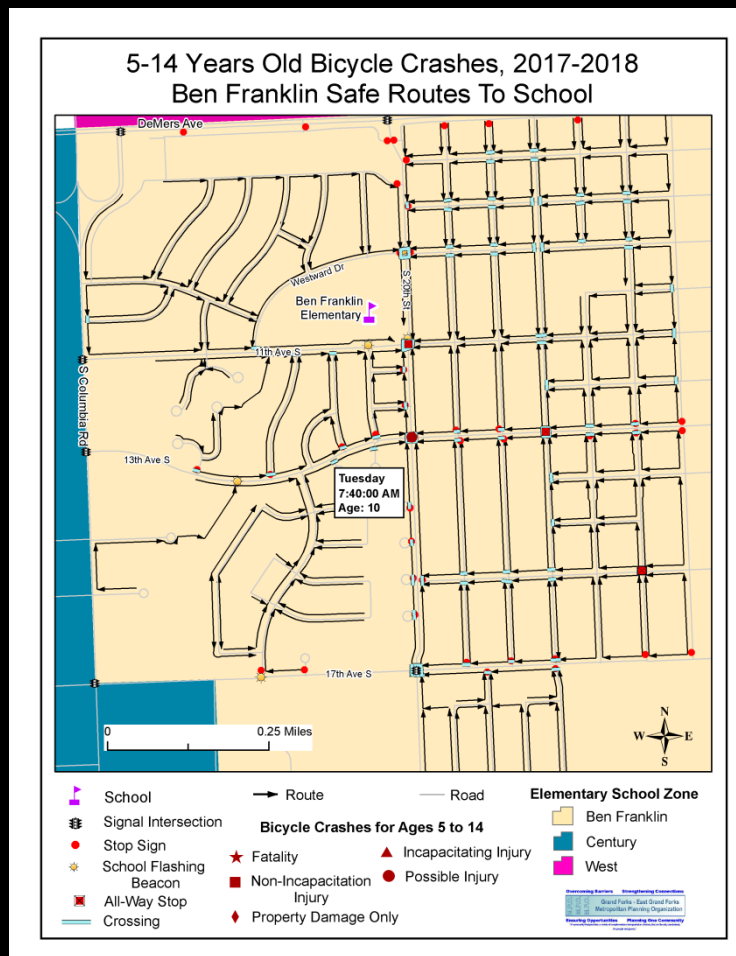
	AGED 5 TO 14 YEARS OLD/SEX	AGED 5 TO 14 YEARS OLD/SEX	AGED 5 TO 14 YEARS OLD/SEX
	2016* Age/Sex Not Available	2017	2018
TOTAL	14	4	5
Fatal			
Incapacitating Injury	1		
Non-Incapacitating Injury	11	6-Male 12-Male 8-Female	10-Male 12-Female 13-Male 12-Male 11-Male
Possible Injury	2	6-Male	
Property Damage			

Table 5. OTHER CRASH RELATED FACTORS FOR BICYCLE CRASHES INVOLVING PEOPLE AGED 5 TO 14 YEARS OLD, 2016-2017-2018

	Injury Severity	Relation to Junction	Contributing Factor	Vehicle Movement_2	Crash Day
2017	Possible Injury	Intersection	No Clear	Crossing at Intersection	Friday
	Non-incapacitating injury	Non-junction	No Clear	Crossing at Intersection	Thursday
	Non-incapacitating injury	Intersection	No Clear	Crossing at Intersection	Tuesday
	Non-incapacitating injury	Intersection	Failed to Yield	Not on Roadway	Wednesday
2018	Possible Injury	Intersection	No Clear	Not on Roadway	Tuesday
	Non-incapacitating injury	Intersection	No Clear	Crossing at Intersection	Wednesday
	Non-incapacitating injury	Intersection	No Clear	Crossing at Intersection	Monday
	Non-incapacitating injury	Intersection	No Clear	Crossing at Intersection	Friday
	Non-incapacitating injury	Intersection	No Clear	Crossing at Intersection	Wednesday

BICYCLIST CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)



BICYCLIST CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)

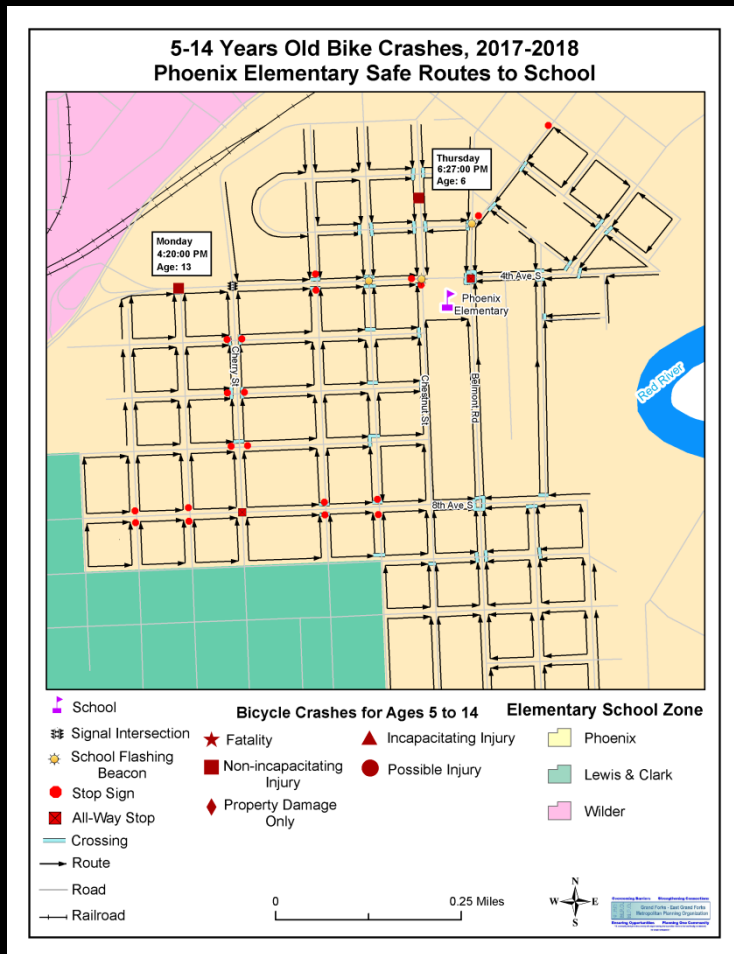


Table 6. ROADWAY CHARACTERISTICS AT BICYCLE CRASH LOCATIONS, 2016-2018

Crash Street	Signal Intersection or Inbetween Streets	AADT*, 2018	Roadway Classification	Posted Speed	Road Lanes	Traffic Controls	Safe Route to School
2016 Age & Gender Not Available							
32nd Ave S	S 34th St	21005	Principal Arterial	40	4	Signal Intersection, Crosswalks	South Middle
Gateway Dr	N Columbia Rd	19225	Principal Arterial	40	4	Signal Intersection	Valley Middle
N 17th St	1st Ave N and 2nd Ave N	0	Local	25	2	N/A	Winship
S 23rd St	32nd Ave S	560	Local	25	2	Crosswalks	South Middle
N 42nd St	University Ave	13775	Minor Arterial	30	2	Signal Intersection	Lake Agassiz
6th Ave N	State St	NA	collector	25	2	Beacon Xings, Crosswalks	Lake Agassiz
S 20th St	32nd Ave S	7505	collector	25	2	Signal Intersection, Crosswalks	South Middle
S Columbia Rd	17th Ave S	27455	Principal Arterial	35	4	Signal Intersection	Century
1st Ave S	Chestnut St & Walnut St	1955	collector	25	2	N/A	Phoenix
S Columbia Rd	40th Ave S	8230	Principal Arterial	35	2	Signal Intersection, Crosswalks	South Middle
5th Ave N	N 5th St	910	Local	25	2	Beacon Xing, Signal Intersection, Crosswalks	Central HS
University Ave	N Washington St	5525	Minor Arterial	25	2	Signal Intersection, Crosswalks	Winship
N 42nd St	DeMers Ave	13775	Minor Arterial	40	4	Signal Intersection	Lake Agassiz
32nd Ave S	S 20th St	19700	Principal Arterial	40	4	Signal Intersection, Crosswalks	South Middle
2017 Includes Only Crashes Involving Bicyclist 5-14 Years Old							
40th Ave S	S 34th St	NA	Local	25	2	Roundabout	Discovery
Chestnut St	2nd Ave S & 3rd Ave S	NA	Local	25	2	N/A	Phoenix
47th Ave S	S 20th St	4160	Minor Arterial	25	2	Allways Stop, Beacon Xing, Crosswalk	Discovery
S Columbia Rd	40th Ave S	6770	Principal Arterial	40	2	Signal Intersection, Crosswalks	Discovery
2018 Includes Only Crashes Involving Bicyclist 5-14 Years Old							
13th Ave S	S 20th St	3385	collector	25	2	All ways Stop	Ben Franklin
4th Avenue S	Oak St	7050	Minor Arterial	25	2	N/A	Phoenix
S 20th St	45th Ave S	1895	collector	25	2	N/A	Discovery
S 20th St	32nd Ave S	7505	collector	25	2	Signal Intersection, Crosswalks	South Middle
S Columbia Rd	47th Ave S	6770	Principal Arterial	40	2	Signal Intersection	Discovery

BICYCLIST CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)

- Most bicycle related crashes occurred when bicyclist was crossing the intersection
-
- In most cases, there were neither alcohol nor drugs involved with bicycle crashes
-
- Most bicycle related crashes occurred in daylight and dry conditions, during daylight time.

BICYCLIST CRASH ANALYSIS, 2016-2018

5-14 Year Old (K-9)

- There were traffic controls (*stop signs*) at most bicycle crash locations
-
- Most bicycle crashes happened during weekdays, after school hours and
-
- Most bicycle crashes happened at two – lane, local and low volume traffic roads.

Supporting Initiatives

Elementary School Crossing Guard Programs, Grand Forks (ND)



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Corridor	Nelson Kelly	Schroeder	Lewis & Clark	Viking
17th Avenue S		◇	◇	
Elks Drive		◇		◇
32nd Avenue S	◇	◇		
47th Avenue S		◇		

Recommendations

1. Support the annual administration of Parent's Surveys
2. Continue designing and distributing Safe Routes to School Maps
3. Continue the implementation of the School-Zone Highway Safety Program
4. Support the establishment and operation of Adult School Crossing Guard programs in all schools in the Grand Forks District.

Questions?

