

Rapid City Area  
Metropolitan Planning Organization

**PEDESTRIAN/BICYCLIST  
CRASH REPORT  
2002 – 2011**



*Prepared in cooperation with:*

City of Rapid City  
Engineering Services Division  
Public Works Department

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## ***INTRODUCTION/PURPOSE***

The Pedestrian & Bicyclist Crash Report is designated in the Rapid City Area Metropolitan Planning Organization's Operations Plan as one of the transportation products to be presented to the MPO's three transportation process committees. The purposes of this report are as follows:

1. To present an overview of those motor vehicle crashes that involved pedestrians or bicyclists.
2. To present the results of trend analyses of the crash data.
3. To identify any appropriate mitigation measures that would reduce the frequency of crashes involving pedestrians or bicyclists.

## ***DATA & METHODOLOGY***

The dates and locations of pedestrian and bicyclist crashes within the City were identified using data furnished by the Rapid City Police Department and the South Dakota Department of Public Safety. The crash reports were reviewed to determine the type of crash, contributing factors, and other pertinent facts. Excluded from this analysis were crashes that involved a passenger exiting a moving vehicle or an individual riding or hanging onto a moving vehicle. Concurrent with the report review, the location of each crash was mapped using the City's Geographic Information System (GIS).

The analysis considered 10 years of data, which is a departure from the typical traffic engineering practice of considering crash experience in a three year period. By nature, pedestrian/motor vehicle crashes and bicyclist/motor vehicle crashes are relatively rare events and the use of 10 years of data helps offset the limited number of data points that would be expected to be found within a more traditional 3 year period.

Crash type descriptors were developed based on criteria presented in the Federal Highway Administration's PEDSAFE: Pedestrian Safety Guide and Countermeasure

Selection System (September 2004) and in the National Highway Traffic Safety Administration's Pedestrian & Bicycle Crash Analysis Tool software. The crash types used in this report are defined below; note that not every crash type was necessarily represented in the reviewed ten years of data.

## **Pedestrian Crash Types**

*Backing Vehicle* - The pedestrian was struck by a backing vehicle on a street, in a driveway, on a sidewalk, in a parking lot, or at another location.

*Bus Related* - The pedestrian was struck by a vehicle while: (1) crossing in front of a commercial bus stopped at a bus stop; (2) going to or from a school bus stop; or (3) going to or from, or waiting near a commercial bus stop.

*Dart/Dash* - The pedestrian walked or ran into the roadway at an intersection or mid-block location and was struck by a vehicle. The motorist's view of the pedestrian may have been blocked until an instant before the impact.

*Driverless Vehicle* – The pedestrian was struck by a driverless vehicle that was left in gear or one that rolled forward or back.

*Multiple Threat/Trapped* - The pedestrian entered the roadway in front of stopped or slowed traffic and was struck by a multiple threat vehicle in an adjacent lane after becoming trapped in the middle of the roadway.

*Non-Roadway* - The pedestrian was standing or walking near the roadway edge, on the sidewalk, in a driveway or alley, or in a parking lot when struck by a vehicle.

*Other* - Pedestrian struck after a vehicle/vehicle collision, pedestrian struck by falling cargo, emergency vehicle striking a pedestrian, pedestrian lying in the road, etc.

*Through Vehicle No Traffic Control* - The pedestrian was struck at an unsignalized intersection or mid-block location. Either the motorist or the pedestrian may have failed to yield.

*Through Vehicle, Traffic Control* - The pedestrian was struck at a signalized intersection or mid-block location by a vehicle that was traveling straight ahead.

*Turning Vehicle* - The pedestrian was attempting to cross at an intersection, driveway or alley and was struck by a vehicle that was turning right or left.

*Unique Mid-block* – The pedestrian was struck while crossing the road to/from a mailbox, newspaper box, or ice cream truck, or while getting into or out of a stopped vehicle.

*Unknown* – The crash report did not provide adequate information to type the crash.

*Walking Along Roadway* - The pedestrian was moving along the roadway and was struck from the front or from behind by a vehicle.

*Working/Playing in Road* - A vehicle struck a pedestrian who was: (1) standing or walking near a disabled vehicle, (2) riding a play vehicle that was not a bicycle, (3) playing in the road or (4) working in the road.

## **Bicycle Crash Types**

*Assault with Vehicle* – The bicyclist was intentionally struck by a vehicle.

*Backing Vehicle* – The bicyclist was struck by a backing vehicle on a street, in a driveway, on a sidewalk, in a parking lot, or at another location.

*Bicyclist Ride Out* - The bicyclist was struck at a location where the bicyclist was facing a traffic control device or the bicyclist entered the roadway from an alley or driveway.

*Head On* – The bicyclist and vehicle directly collided while traveling in opposite directions.

*Overtaking Vehicle* – The bicyclist was struck by a vehicle that was traveling in the same direction.

*Through Vehicle No Traffic Control* - The bicyclist was struck at an unsignalized intersection or mid-block location. Either the motorist or the bicyclist may have failed to yield.

*Through Vehicle, Traffic Control* - The bicyclist was struck at a signalized intersection or mid-block location by a vehicle that was traveling straight ahead.

*Turning Bicyclist* - The bicyclist made a right or left turn in front of a vehicle.

*Turning Vehicle* - The motorist made a right or left turn in front of a bicyclist.

*Vehicle Pull Out* - The bicyclist was struck at a location where the vehicle was facing a traffic control device or the vehicle exiting from an alley or driveway.

*Other* – The bicyclist was struck under unusual circumstances.

*Unknown* – The crash report did not provide adequate information to type the crash.

## ***ANALYSIS OF PEDESTRIAN CRASHES***

### **Crash Location**

Figure 1 is a mapping of Rapid City pedestrian crashes occurring in the 10 year review period. As shown, pedestrian crashes tend to be clustered within the central business district (CBD) and along the Mt. Rushmore Road, 5<sup>th</sup> Street/Haines Avenue, and East Boulevard/East North Street corridors. This trend is likely due to the following reasons:

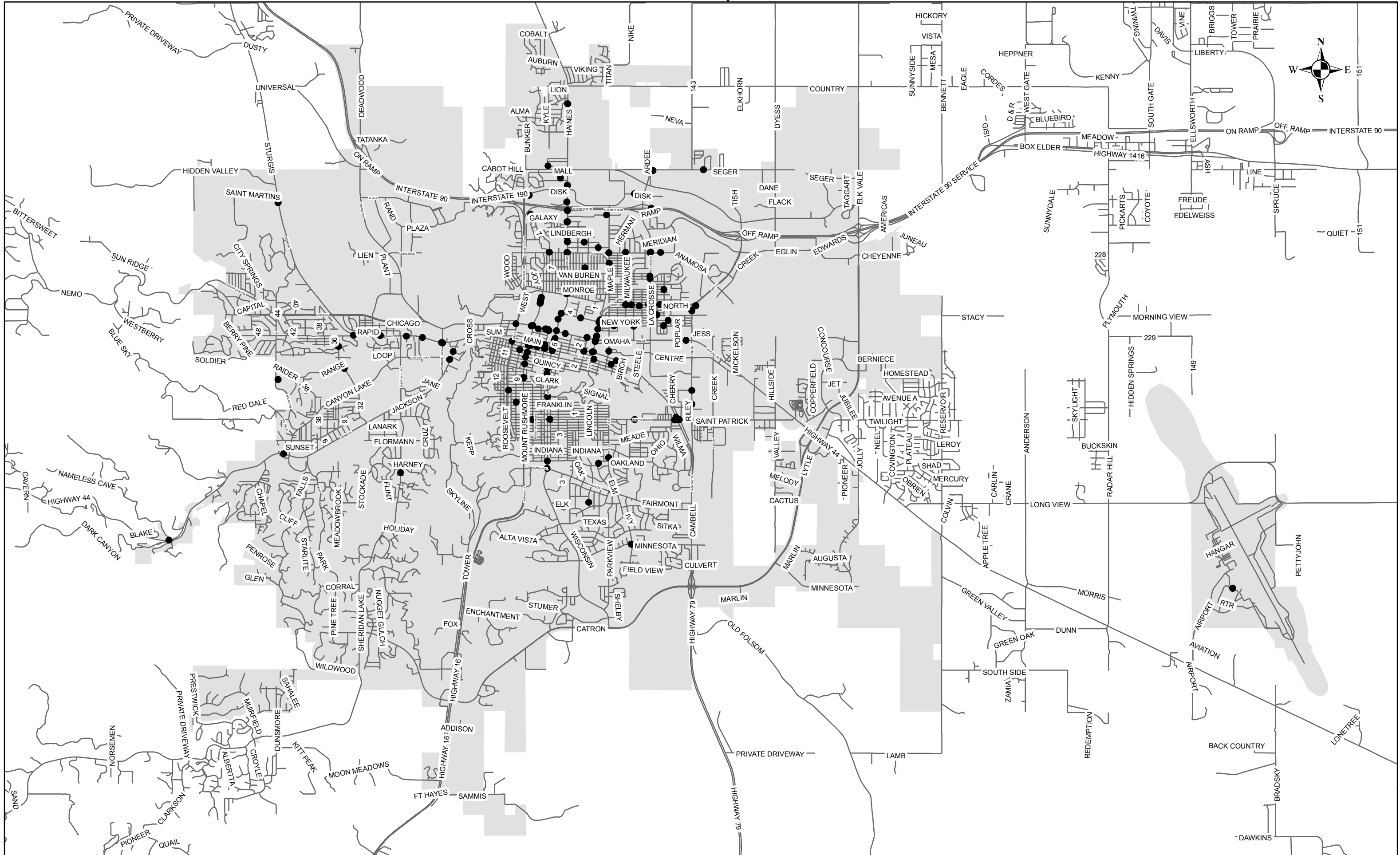
- The amount of commercial development along the corridors
- The relatively high population densities adjacent to each corridor.
- The volume of pedestrians within the CBD and along the three corridors.

### **Crash Type**

Table 1 presents a summary of crash types for the 10 years of data. Each community in the United States can be expected to exhibit a unique distribution of crash types due to area-specific context (driver/pedestrian behavior, socio-economic data, etc.) While stressing the importance of local analysis in identifying areas or patterns of concern, the Federal Highway Administration suggests that nationwide, approximately 75% of pedestrian crashes fall into one of the following seven crash-type categories: Backing Vehicle, Dart/Dash, Non-roadway, Turning Vehicle, Through Vehicle – No Traffic Control, Through Vehicle – Traffic Control or Walking Along Roadway. Rapid City's 10 year experience has approximately 84% of all crashes falling into one of these types.

2002 - 2011 Pedestrian/Motor Vehicle Crashes

Figure 1





**TABLE 1**  
**RAPID CITY PEDESTRIAN CRASH TYPES - 2002 TO 2011**

<b>CRASH TYPE</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2002 - 2011 OVERALL</b>
DART/DASH	5	3	8	7	5	0	13	10	4	12	67
TURNING VEHICLE	3	7	5	5	3	8	7	10	4	8	60
THROUGH VEHICLE - TRAFFIC CONTROL	1	1	0	0	0	3	4	1	2	2	14
THROUGH VEHICLE - NO TRAFFIC CONTROL	3	2	2	3	0	0	2	1	0	1	14
BACKING VEHICLE	1	4	1	0	0	1	0	0	0	0	7
WALKING ALONG ROADWAY	1	0	0	1	0	1	1	2	1	1	8
NON-ROADWAY	1	3	0	1	1	0	0	0	0	0	6
OTHER	0	1	0	1	1	0	1	0	0	0	4
DRIVERLESS VEHICLE	0	2	2	0	0	0	0	0	0	0	4
WALKING INTO VEHICLE	2	1	0	1	0	0	0	0	0	0	4
UNKNOWN	0	0	0	0	0	0	0	0	2	1	3
WORKING/PLAYING IN ROAD	0	0	0	1	0	1	0	0	1	0	3
MULTIPLE THREAT/TRAPPED	1	1	0	0	0	0	0	0	0	0	2
ASSAULT WITH VEHICLE	0	0	0	0	0	0	0	0	0	1	1
LAYING IN ROAD	0	0	0	0	0	0	1	0	0	1	2
UNIQUE MIDBLOCK	1	0	0	0	0	0	0	0	0	0	1
<b>TOTAL</b>	<b>19</b>	<b>25</b>	<b>18</b>	<b>20</b>	<b>10</b>	<b>14</b>	<b>29</b>	<b>24</b>	<b>14</b>	<b>27</b>	<b>200</b>

## **Crash Rates**

Table 2 presents a summary of injury crash rates for the 10 years of data and compares Rapid City's experience to South Dakota and the United States. Table 3 presents similar information for fatal crashes.

As shown, Rapid City's injury crash rate generally exceeds both the statewide and national rates. One factor that must be considered when considering Rapid City versus the entire state is that of urbanization, i.e., Rapid City's typically higher traffic volumes, higher population densities and increased opportunities for pedestrian travel may account for such a significant difference. The influence of urbanization is effectively diminished however when comparing Rapid City to the entire nation.

The rates for pedestrian fatality rates are shown for information only. The rarity of fatal pedestrian crashes, coupled with the sensitivity of the calculated rate relative to Rapid City's relatively small population, makes it impossible to develop a meaningful comparison to the State and National rates.

## **Pedestrian Age**

Table 4 presents a summary of pedestrian crash involvement by age and compares Rapid City's experience to South Dakota's. National data was not included in the analysis of pedestrian age since the age ranges cited by the National Highway Traffic Safety Administration do not correspond to those used by South Dakota. In general, Rapid City's pedestrian crash experience corresponds well with the statewide data.

## **Crash Responsibility**

Table 5 presents a summary of pedestrian crash responsibility. As shown, both drivers and pedestrians are almost equally likely to be at fault in a pedestrian crash.

**TABLE 2  
PEDESTRIAN INJURY CRASHES**

<b>YEAR</b>	<b># OF INJURY CRASHES - RAPID CITY</b>	<b>RAPID CITY INJURY CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>	<b># OF INJURY CRASHES - SOUTH DAKOTA</b>	<b>SOUTH DAKOTA INJURY CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>	<b>UNITED STATES INJURY CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>
<b>2002</b>	18	30.20	104	13.78	24.70
<b>2003</b>	25	41.94	91	12.06	24.10
<b>2004</b>	18	30.20	95	12.59	23.20
<b>2005</b>	17	28.52	89	11.79	22.00
<b>2006</b>	10	16.78	113	14.97	20.20
<b>2007</b>	14	23.49	110	14.57	23.20
<b>2008</b>	27	45.30	96	12.72	23.00
<b>2009</b>	24	40.26	95	12.59	19.00
<b>2010</b>	13	19.23	108	13.26	N/A
<b>2011</b>	25	36.98	N/A	N/A	N/A
<b>2002 TO 2010 AVERAGE</b>	18	30.66	100	13.15	

**TABLE 3  
PEDESTRIAN FATALITY CRASHES**

<b>YEAR</b>	<b># OF FATAL CRASHES - RAPID CITY</b>	<b>RAPID CITY FATAL CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>	<b># OF FATAL CRASHES - SOUTH DAKOTA</b>	<b>SOUTH DAKOTA FATAL CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>	<b>UNITED STATES FATAL CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>
<b>2002</b>	1	1.68	8	1.06	1.70
<b>2003</b>	0	0.00	10	1.32	1.60
<b>2004</b>	0	0.00	9	1.19	1.60
<b>2005</b>	3	5.03	15	1.99	1.70
<b>2006</b>	0	0.00	7	0.93	1.60
<b>2007</b>	0	0.00	7	0.93	1.50
<b>2008</b>	2	3.36	10	1.32	1.44
<b>2009</b>	0	0.00	4	0.53	1.33
<b>2010</b>	1	1.48	9	1.11	N/A
<b>2011</b>	2	2.96	N/A	N/A	N/A
<b>2002 TO 2010 AVERAGE</b>	0.8	1.28	8.8	1.15	

**TABLE 4  
PEDESTRIAN CRASH INVOLVEMENT BY AGE**

<b>AGE</b>	<b>2011 - RAPID CITY</b>		<b>2002 TO 2010 - RAPID CITY</b>		<b>2002 TO 2010 - STATEWIDE</b>
<b>0 - 5</b>	3.7%		3.5%		4.9%
<b>6 - 13</b>	25.9%		20.9%		17.5%
<b>14 - 19</b>	7.4%		10.5%		13.0%
<b>20 - 24</b>	3.7%		7.6%		10.0%
<b>25 - 34</b>	3.7%		12.8%		11.3%
<b>35 - 44</b>	7.4%		14.0%		10.8%
<b>45 - 54</b>	22.2%		15.7%		14.8%
<b>55 - 64</b>	14.8%		9.3%		7.7%
<b>65 - OVER</b>	11.1%		5.8%		9.9%
	100.0%		100.0%		100.0%

**TABLE 5  
PEDESTRIAN CRASH RESPONSIBILITY**

<b>YEAR</b>	<b>DRIVER'S FAULT</b>	<b>PEDESTRIAN'S FAULT</b>	<b>NONE/UNKNOWN</b>
<b>2002</b>	52.6%	36.8%	10.5%
<b>2003</b>	52.0%	20.0%	28.0%
<b>2004</b>	35.7%	64.3%	0.0%
<b>2005</b>	45.0%	40.0%	15.0%
<b>2006</b>	40.0%	60.0%	0.0%
<b>2007</b>	85.7%	14.3%	0.0%
<b>2008</b>	41.4%	51.7%	6.9%
<b>2009</b>	50.0%	50.0%	0.0%
<b>2010</b>	46.2%	38.5%	15.4%
<b>2011</b>	40.7%	44.4%	14.8%
<b>2002 - 2011 OVERALL</b>	47.4%	43.1%	9.6%

## **Summary Review of Disabled Pedestrian Crashes**

- 2002 - Walking Along Roadway crash. The pedestrian was in the middle of the road at night and was struck by a through vehicle. The crash report did not include any explanation as to why the pedestrian was in the middle of the road, but the report included a witness statement that the individual had been exhibiting this behavior for some time and that "it was bound to happen sooner or later."
- 2005 - Turning Vehicle crash. The pedestrian was struck during daylight hours in a marked crosswalk across a free-flow right turn lane. The driver was responsible for the crash and the pedestrian's use of a wheelchair was not a contributing factor.
- 2009 - Dart/Dash crash. The pedestrian was struck crossing the road at night when it was raining. The pedestrian's blood alcohol content (BAC) was 0.41%.
- 2009 - Walking Along Roadway crash. The pedestrian was in the right lane of the road at night and was struck by a through vehicle. No BAC test was administered; however the reporting officer's narrative stated that the pedestrian had "the strong smell of an alcoholic beverage on his breath and person." The pedestrian admitted to being "medicated" from a recent hospital visit.
- 2011 - Dart/Dash crash. The pedestrian was struck crossing the road at night. No fault could be determined from the crash report narrative.

## **Summary Review of Fatal Crashes**

- 2002 – Fifth Street, north of Omaha Street, Non-Roadway crash. This crash was caused by a minor-aged driver losing control of the vehicle and leaving the

roadway, striking the pedestrian on the sidewalk. The crash occurred during daylight conditions, on dry pavement and no alcohol or drug usage was involved.

- 2005 – Haines Avenue, north of Lawrence Drive, Walking Along Road crash. This crash was caused by a driver driving under the influence of alcohol. The crash occurred during the dawn hours, on dry pavement within a construction zone. The pedestrian was struck when the driver crossed the centerline.
- 2005 – Mt. Rushmore Road, south of St. Cloud Street, Dart/Dash crash. This crash was caused by a pedestrian stepping into a travel lane mid-block. The crash occurred at dusk on dry pavement; alcohol use by the pedestrian was a factor in the crash.
- 2005 – I-90 near I-190, Dart/Dash crash. This crash was caused by a pedestrian stepping into a travel lane. The crash occurred at night on dry pavement; it is unknown whether or not alcohol or drug use by the pedestrian was a factor in the crash.
- 2008 – E. Omaha Street, west of Cambell Street, Other crash. The pedestrian was lying in the roadway and was run over by a vehicle. The crash occurred at night on dry pavement; alcohol use by the pedestrian was a factor in the crash.
- 2008 – Fifth Street at Oakland Street, Thru Vehicle No Traffic Control crash. The pedestrian was hit while crossing Fifth Street at an unmarked crosswalk. The crash occurred at night on dry pavement; neither alcohol nor drug use was a factor in the crash.
- 2010 - Seger Dr., east of 143rd St., Working/Playing Road crash. A skateboarder was hit while riding in the road. The crash occurred at night on an unlit road during dry conditions.



- 2011 – Omaha St. at 1st St., Laying in Road crash. The pedestrian was standing by the curb, slumped over onto the roadway and was run over by a vehicle. The crash occurred at night on dry pavement; alcohol use by the pedestrian was a factor in the crash.
- 2011 – Milwaukee St., south of Monroe St., Dart/Dash crash. The pedestrian was crossing the street outside of a crosswalk and was hit by a vehicle. The crash occurred at night on dry pavement. Alcohol use by the driver was a factor; alcohol and drug use by the pedestrian were a factor.

## ***ANALYSIS OF BICYCLIST CRASHES***

### **Crash Location**

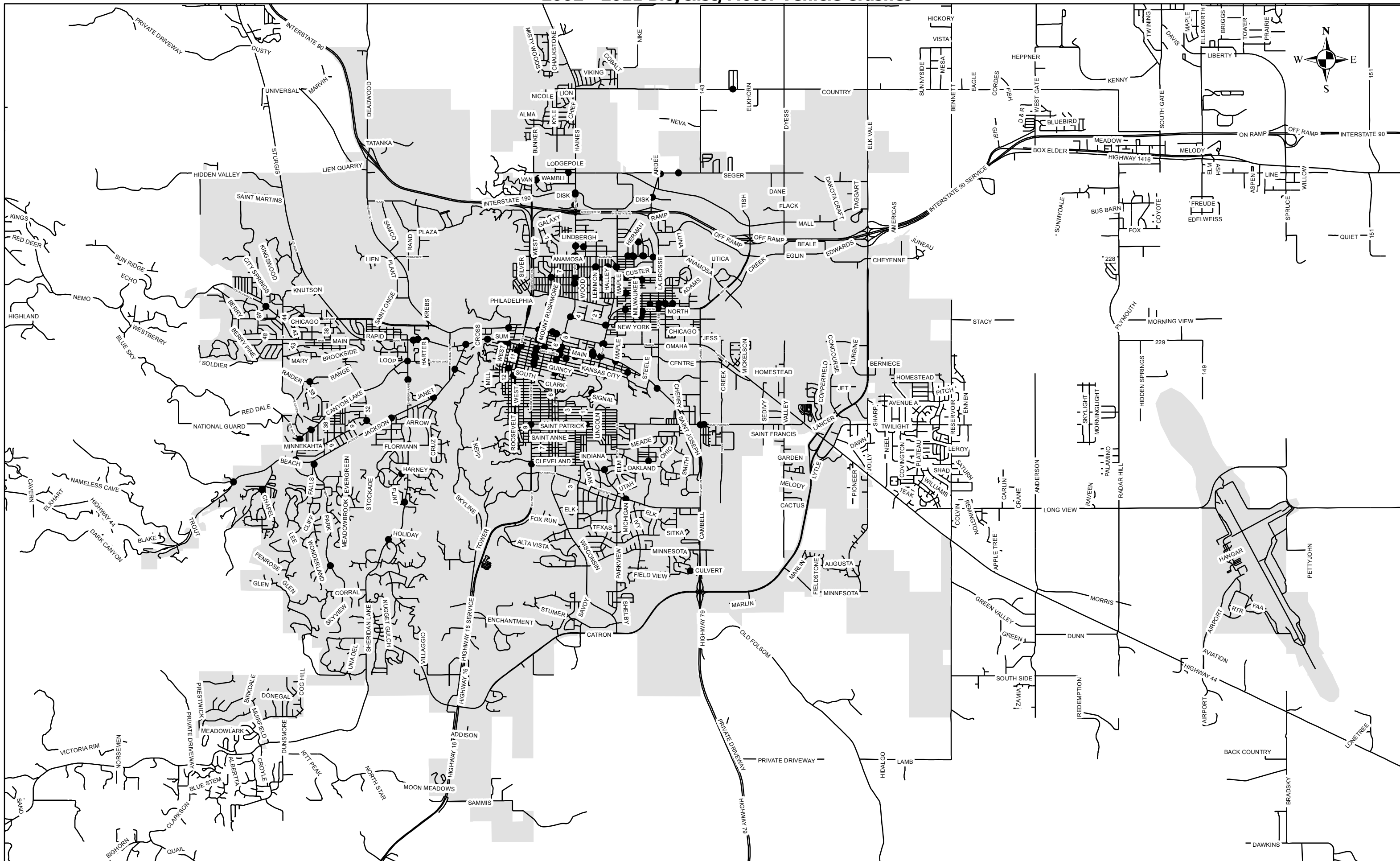
Figure 2 is a mapping of bicyclist crashes occurring in the 10 year review period. Similar to pedestrian crashes, the map illustrates that a majority of bicyclist crashes are occurring along the Mt. Rushmore Road and 5<sup>th</sup> Street/Haines Avenue corridors and in the central business district (CBD).

### **Crash Type**

Table 6 presents a summary of crash types for the 10 years of data. Similar to pedestrian crashes, Rapid City's distribution of crash types should be somewhat unique. In general, the Federal Highway Administration suggests that nationwide, approximately 80% of bicyclist crashes fall into one of the following five crash-type categories: Bicyclist Ride Out, Overtaking Vehicle, Turning Bicyclist, Turning Vehicle, or Vehicle Pull Out. Rapid City's experience has approximately 87% of all crashes falling into one of these types.

2002 - 2011 Bicyclist/Motor Vehicle Crashes

Figure 2



**TABLE 6**  
**RAPID CITY BICYCLIST CRASH TYPES - 2002 TO 2011**

<b>CRASH TYPE</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2002 - 2011 OVERALL</b>
BICYCLIST RIDE-OUT	8	6	4	6	9	13	14	5	12	10	87
TURNING VEHICLE	0	6	2	2	6	3	3	2	2	3	29
VEHICLE PULL-OUT	8	3	3	6	1	0	2	1	0	3	27
THROUGH VEHICLE - TRAFFIC CONTROL	0	0	0	0	5	1	0	1	1	1	9
OTHER	1	1	0	0	0	1	1	1	0	2	7
OVERTAKING VEHICLE	0	0	0	1	0	1	0	0	1	0	3
BACKING VEHICLE	0	1	0	1	0	0	0	0	0	0	2
UNKNOWN	1	0	0	0	0	0	0	0	0	1	2
ASSAULT WITH VEHICLE	0	1	0	0	0	0	0	0	0	0	1
HEAD ON	0	0	1	0	0	0	0	0	0	0	1
<b>TOTAL</b>	<b>18</b>	<b>18</b>	<b>10</b>	<b>16</b>	<b>21</b>	<b>19</b>	<b>20</b>	<b>10</b>	<b>16</b>	<b>20</b>	<b>168</b>

## **Crash Rates**

Table 7 presents a summary of injury crash rates for the 10 years of data and compares Rapid City's experience to South Dakota and the United States. Table 8 presents similar information for fatal crashes.

Rapid City's injury crash rate generally exceeds both the statewide and national rates. As with pedestrian crashes, Rapid City's level of urbanization may account for the significant difference when compared to statewide rates. The influence of urbanization is greatly diminished however when comparing Rapid City to the entire nation.

The rates for bicyclist fatality rates are shown for information only. The rarity of a fatal crash, coupled with the sensitivity of the calculated rate relative to Rapid City's relatively small population, makes it impossible to develop a meaningful comparison to the State and United States rates.

## **Bicyclist Age**

Table 9 presents a summary of bicyclist crash involvement by age and compares Rapid City's experience to South Dakota's. National data was not included in the analysis of bicyclist age since the age ranges cited by the National Highway Traffic Safety Administration do not correspond to those used by South Dakota. In general, Rapid City's bicyclist crash experience corresponds well with the statewide data.

## **Crash Responsibility**

Table 10 presents a summary of bicyclist crash responsibility. As shown, bicyclists are most likely to be at fault in a crash

## **Summary Review of Fatal Crashes**

There were no fatal bicyclist crashes in the 10 years of data analyzed

**TABLE 7  
BICYCLIST INJURY CRASHES**

<b>YEAR</b>	<b># OF INJURY CRASHES - RAPID CITY</b>	<b>RAPID CITY INJURY CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>	<b># OF INJURY CRASHES - SOUTH DAKOTA</b>	<b>SOUTH DAKOTA INJURY CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>	<b>UNITED STATES INJURY CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>
<b>2002</b>	18	30.20	87	11.53	16.70
<b>2003</b>	18	30.20	109	14.44	15.80
<b>2004</b>	9	15.10	77	10.20	14.00
<b>2005</b>	15	25.16	99	13.12	15.20
<b>2006</b>	21	35.23	92	12.19	14.60
<b>2007</b>	19	31.88	101	13.38	14.40
<b>2008</b>	20	33.55	103	13.65	17.23
<b>2009</b>	10	16.78	98	12.98	16.50
<b>2010</b>	17	25.15	105	12.90	N/A
<b>2011</b>	20	29.59	N/A	N/A	N/A
<b>2002 TO 2010 AVERAGE</b>	16	27.03	97	12.71	

**TABLE 8  
BICYCLIST FATALITY CRASHES**

<b>YEAR</b>	<b># OF FATAL CRASHES - RAPID CITY</b>	<b>RAPID CITY FATAL CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>	<b># OF FATAL CRASHES - SOUTH DAKOTA</b>	<b>SOUTH DAKOTA FATAL CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>	<b>UNITED STATES FATAL CRASH RATE (CRASHES PER 100,000 PEOPLE)</b>
<b>2002</b>	0	0.00	1	0.13	0.23
<b>2003</b>	0	0.00	1	0.13	0.21
<b>2004</b>	0	0.00	1	0.13	0.25
<b>2005</b>	0	0.00	0	0.00	0.27
<b>2006</b>	0	0.00	1	0.13	0.26
<b>2007</b>	0	0.00	0	0.00	0.23
<b>2008</b>	0	0.00	0	0.00	0.23
<b>2009</b>	0	0.00	0	0.00	0.21
<b>2010</b>	0	0.00	2	0.25	N/A
<b>2011</b>	0	0.00	N/A	N/A	N/A
<b>2002 TO 2010 AVERAGE</b>	0.0	0.00	0.7	0.09	

**TABLE 9  
BICYCLIST CRASH INVOLVEMENT BY AGE**

<b>AGE</b>	<b>2011 - RAPID CITY</b>		<b>2002 TO 2010 - RAPID CITY</b>		<b>2002 TO 2010 - STATEWIDE</b>
<b>0 - 5</b>	5.9%		1.3%		1.4%
<b>6 - 13</b>	17.6%		34.9%		38.2%
<b>14 - 19</b>	11.8%		25.5%		20.0%
<b>20 - 24</b>	17.6%		7.4%		9.2%
<b>25 - 34</b>	17.6%		8.7%		8.6%
<b>35 - 44</b>	5.9%		9.4%		9.4%
<b>45 - 54</b>	23.5%		8.1%		8.3%
<b>55 - 64</b>	0.0%		4.7%		3.7%
<b>65 - OVER</b>	0.0%		0.0%		1.3%
	100.0%		100.0%		100.0%

**TABLE 10  
BICYCLIST CRASH RESPONSIBILITY**

<b>YEAR</b>	<b>DRIVER'S FAULT</b>	<b>BICYCLIST'S FAULT</b>	<b>NONE/UNKNOWN</b>
<b>2002</b>	4.7%	5.3%	0.6%
<b>2003</b>	4.7%	5.3%	0.6%
<b>2004</b>	2.4%	3.6%	0.0%
<b>2005</b>	4.1%	4.7%	0.6%
<b>2006</b>	4.1%	8.3%	0.0%
<b>2007</b>	3.6%	7.7%	0.0%
<b>2008</b>	3.6%	8.3%	0.0%
<b>2009</b>	2.4%	3.6%	0.0%
<b>2010</b>	1.8%	8.3%	0.0%
<b>2011</b>	3.6%	7.1%	1.2%
<b>2002 - 2011 OVERALL</b>	34.9%	62.1%	3.0%



## **CONCLUSIONS**

- Rapid City's pedestrian and bicyclist injury crash rates are generally higher than corresponding statewide and national rates.
- No location specific trends were identified for pedestrian or bicyclist crashes.
- There is a general trend for pedestrian crashes to occur within the central business district (CBD) and along the Mt. Rushmore Road, 5th Street/Haines Avenue, and East Boulevard/East North Street corridors
- The age distribution of Rapid City pedestrians and bicyclists involved in crashes is consistent with statewide data.
- The most frequently occurring pedestrian crash types are Dart/Dash and Turning Vehicle.
- The most frequently occurring bicyclist crash types are Bicyclist Pull Out, Vehicle Pull Out and Turning Vehicle.
- A significant number of bicyclist crashes involved bicyclists who were using the sidewalk at an intersection. Most of the bicyclists involved in crashes at intersections demonstrated a lack of understanding of South Dakota law specifically that bicyclists must stop before entering a crosswalk or highway from a sidewalk or sidewalk area. Failure to comply with this law is a direct cause of crashes since the higher operating speed of bicycles versus pedestrians (1) makes it difficult for drivers to judge the necessity of yielding to bicyclists who do not stop, and, (2) allows for bicyclists to pass slowing vehicles approaching an intersection leading to drivers being "surprised" by crossing bicycle traffic at the intersection.

## **RECOMMENDATIONS**

Unfortunately, the 10 years of data do not point towards any specific mitigation strategies to address Rapid City's high pedestrian and bicyclist crash rates. If anything, the data harshly illustrates that past efforts at education, outreach and enforcement simply have not been successful at making pedestrians, bicyclists and drivers aware of

safety practices associated with non-motorized modes of transportation. While all crashes should be considered preventable, a staggering 67% of Rapid City's pedestrian and bicyclist crashes are due to pedestrians or bicyclists entering traffic inappropriately and drivers not paying attention when turning at intersections. Pedestrians and bicyclists simply are not getting the message that they have a vested responsibility in avoiding injury or death and a significant portion of the driver population is seemingly indifferent towards non-motorized road users. Based on the data, there needs to be a serious re-examination of how we are trying to deliver our safety message to pedestrians, bicyclists and drivers with adjustments made accordingly.