

A Report on  
**Traffic**  
**Accidents**  
within the  
City of Grand Junction,  
Colorado, 1996-1998

Prepared for the  
Division of Transportation Engineering,  
City of Grand Junction, Colorado.

## **Introduction**

Traffic accidents have considerable impact on the Grand Junction community, causing considerable property damage, injury and loss. Using figures from the Colorado Department of Transportation, the monetary loss due to the reported accidents was more than \$16 million in 1996, almost \$20 million in 1997, and nearly \$16 million in 1998.

Between 1996 and 1998, the accident rate has decreased or remained steady even as the number of vehicles registered in Mesa County has increased (see page 4.) The increasing numbers of vehicles increases the volume of traffic carried on existing roadways in the City of Grand Junction.

Fifteen intersections with the highest numbers of accidents have been analyzed for trends and comparisons. Referred to as the 'Frequent Fifteen,' these intersections all have accident rates below two accidents per million vehicle miles. Accident rates are calculated by dividing the number of accidents by the annual vehicle miles through the intersection. The annual vehicle mileage through the intersection is calculated by multiplying the average daily approach count (number of vehicles through the intersection) by 365 days.

Three other Colorado communities were selected for comparison. These communities had several similarities to Grand Junction:

- the communities were of comparable size to Grand Junction's urbanized area (estimated to be 86,500,)
- the communities had similar attributes, such as college populations,
- the communities had state or federal highways crossing through the city,
- whenever possible, communities that were not contiguous with another community were used for comparison,
- intersection signals were timed and maintained by municipal crews.

Grand Junction's rates were well below those of Pueblo, a community of 106,000. Grand Junction's rates were also below those of Fort Collins, a college community of 100,000 residents. Grand Junction's accident rates were slightly above those of Westminster, a community of 103,000 contiguous to the Denver metropolitan area.

Transportation engineering officials in the three communities consider accident rates to be 'high' when they rise above three accidents per million vehicle miles, or million vehicles entering, in the case of intersections.



## **A Look at Accidents 1996-1998**

This report summarizes data collected by the Traffic Engineering Division of the City of Grand Junction for the three years, 1996 through 1998. The Division receives accident reports from the Police Department, and the information is entered into the Traffic Trax computer program. The information entered into the system includes only the accidents reported on city streets, not those which have occurred on private property. National studies estimate that only about half of all

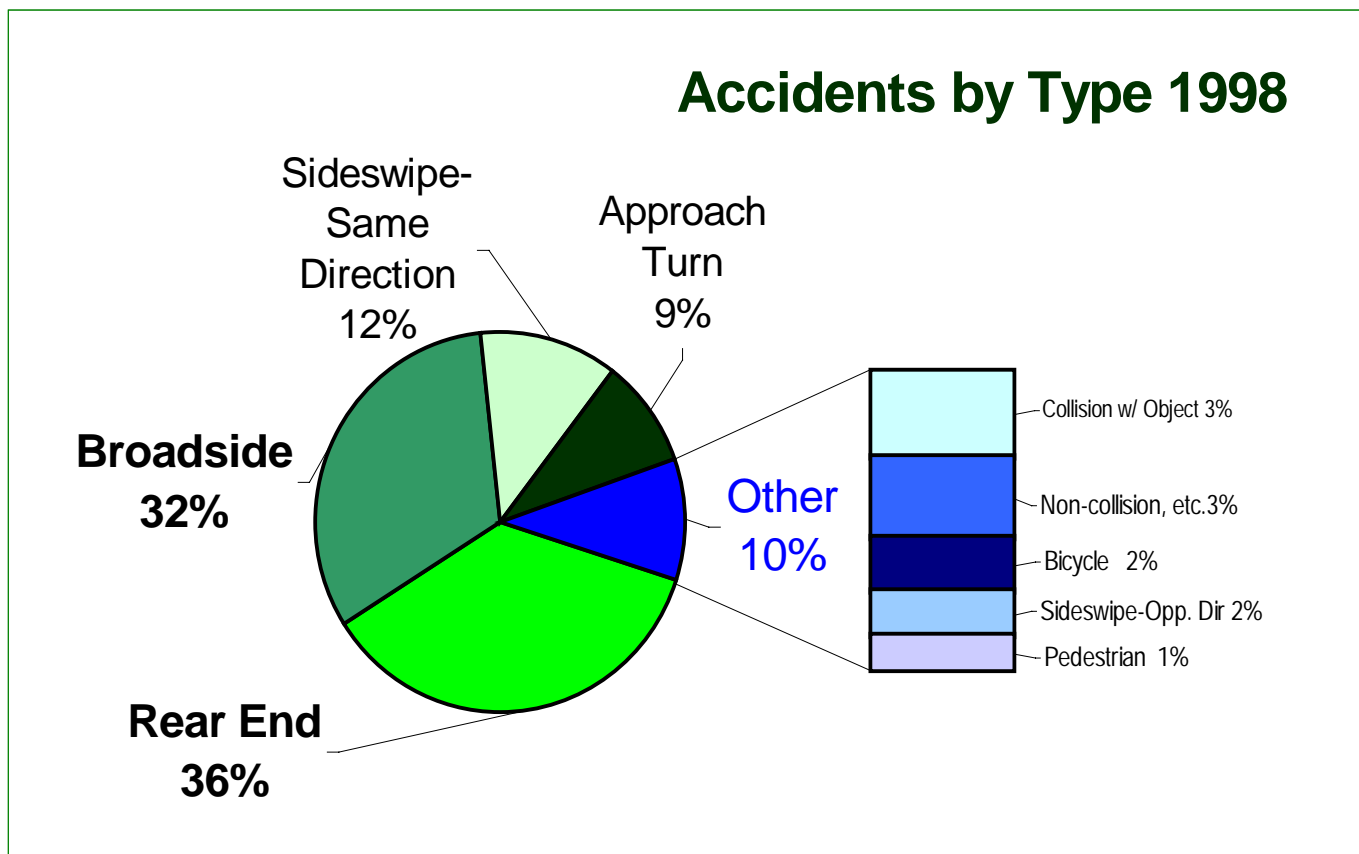
injuries occurring in accidents are reported and that motorists report fewer than half of all 'property damage-only' accidents.  
 The table below summarizes the accidents reported for the three years.

### Summary of Reported Accidents on City of Grand Junction Streets

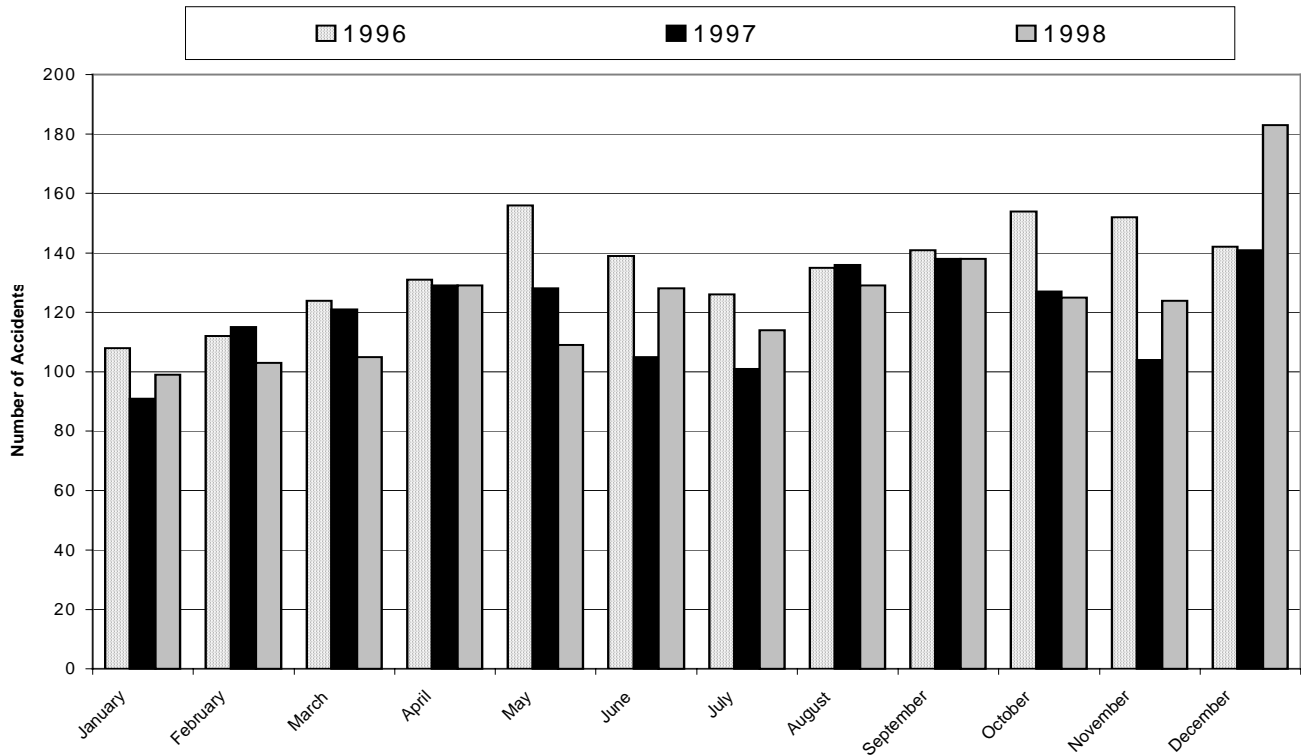
Accident Type	1996	1997	1998	3 yr Avg	% change 98/3yr Avg
<b>Total Accidents</b>	<b>1696</b>	<b>1452</b>	<b>1492</b>	<b>1546.67</b>	<b>-3.53%</b>
Fatalities	7	3	2	4	-50.00%
Injury Accidents	373	262	335	323.33	3.61%
Property Damage Only	1317	1187	1182	1228.67	-3.80%
Bicycle Accidents	23	17	28	22.67	23.53%
Pedestrian Accidents	19	10	17	15.33	10.87%

Accident Type	1996	1997	1998	3 yr Avg	% change 98/3yr Avg
Rear End	622	476	536	544.67	-1.59%
Broadside	506	473	482	487.00	-1.03%
Sideswipe-Same Direction	201	190	183	191.33	-4.36%

The total number of accidents appears to have dropped from 1996 to 1998. This in itself may or may not be significant, as this is a short time period for analysis, and, as noted above, estimates of unreported accidents may be very high. As the Traffic Trax database contains more information, a better estimate of trends will be available in the future.



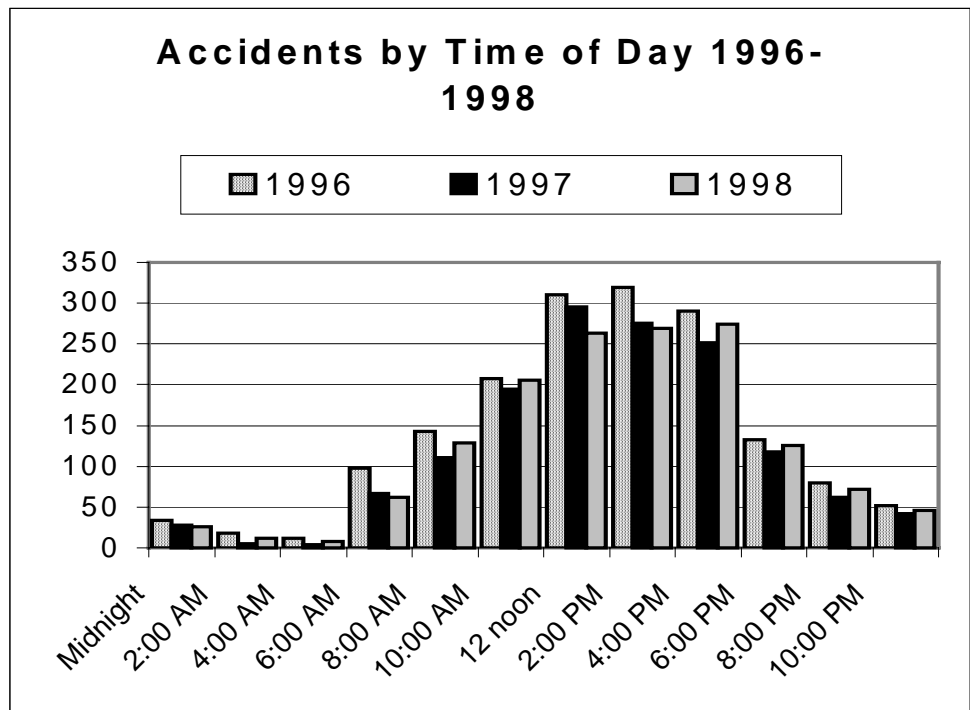
### Accident Distribution by Month



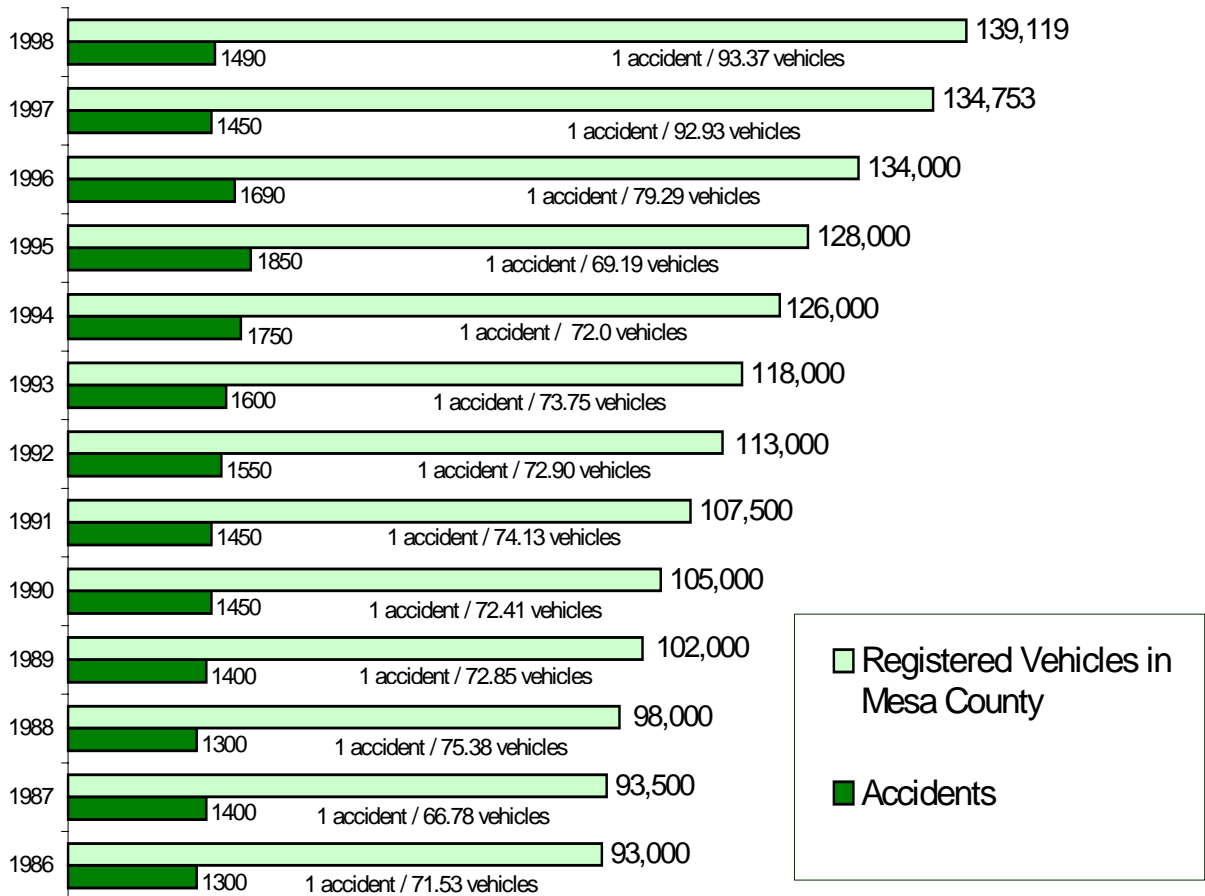
The chart above shows the distribution of frequency of accidents by month. There is a general trend for the three years, with variations due to such things as weather and the random nature of accidents.

The adjacent chart shows variation by time of day. Not surprisingly, the highest numbers of accidents occur when the highest volumes of traffic also occur.

### Accidents by Time of Day 1996-1998



## Ratio of Accidents to Number of Registered Vehicles in Mesa County



A steady increase of registered vehicles versus a stable and/or declining ratio in accidents over the past ten years are partly due to multiple corrective engineering measures.



## High Frequency Locations

To determine if there are specific locations where engineering solutions may prevent future accident occurrences, a list of locations where accidents occur more frequently was generated. The database was queried for locations where five or more accidents occurred in each year.

<u>Site</u>	<u># in 1996</u>	<u>Site</u>	<u># in 1997</u>	<u>Site</u>	<u># in 1998</u>
12th and North Avenue	31	12th and North Avenue	20	7th and North Avenue	24
1 st and Grand Avenue	23	5th and Pitkin Avenue	19	5th and Pitkin Avenue	22
5th and Pitkin Avenue	20	7th and North Avenue	19	12th and Patterson Road	20
1 st and North Avenue	17	1 st and Grand Avenue	16	12th and North Avenue	18
28 Road and North Avenue	16	6th and Ute avenue	16	29 Road and Patterson Road	18
12th and Orchard Avenue	15	5th and Ute Avenue	15	5th and Ute Avenue	16
7th and North Avenue	14	12th and Patterson Road	14	10th and North Avenue	15
25 Road and I-70B	13	5th Street Overpass	13	27 Road and SH 50	14
29 Road and Patterson Road	12	7th and Patterson Road	13	29 Road and North Avenue	13
5th and Ute Avenue	12	29 Road and North Avenue	11	1 st and Grand Avenue	12
12 <sup>th</sup> and Patterson Road	11	12th and Orchard Avenue	10	24.5 Road and I-70B	11
4th and Pitkin Avenue	10	23rd St and North Avenue	10	28.5 Road and North Avenue	11
7th and Ute Avenue	10	7th and Orchard Avenue	10	5th and North Avenue	11
Independent Avenue and I-70B	10	24.5 Road and Patterson Road	9	6th and Ute avenue	11
12 <sup>th</sup> and Horizon Drive	9	28.25 Road and Orchard Avenue	9	1 st and Patterson Road	10
29 Road and North Avenue	9	SH 50 and W Ouray Avenue	9	24.5 Road and Mesa Mall	10
28.25 Road and Patterson Road	8	12th and Ute Avenue	8	28 Road and North Avenue	10
7th and Patterson Road	8	28.5 Road and North Avenue	8	4th and Pitkin Avenue	10
River Road and SH 340	8	7th and Glenwood Avenue	8	1 st and North Avenue	9
1 st and Rood Avenue	7	10th and North Avenue	7	12th and Orchard Avenue	9
10 <sup>th</sup> and North Avenue	7	12th and Elm Avenue	7	5th and Grand Avenue	9
12 <sup>th</sup> and Ute Avenue	7	12th and Grand Avenue	7	7th and Ute Avenue	9
23 <sup>rd</sup> St and North Avenue	7	24.5 Road and I-70B	7	Horizon Drive and 12th Street	9
25 Road and Patterson Road	7	25 Road and I-70B	7	12th and Bookcliff Avenue	8
28.25 Road and North Avenue	7	27 Road and SH 50	7	15th and North Avenue	8
28.75 Road and North Avenue	7	28 Road and North Avenue	7	7th and Patterson Road	8
4th and Grand Avenue	7	29 Road and Patterson Road	7	8th and Ute Avenue	8
7th and Grand Avenue	7	4th and Pitkin Avenue	7	Independent Avenue and I-70B	8
7th and Gunnison Avenue	7	5th and North Avenue	7	SH 50 and Unaweep Avenue	8
9th and Gunnison Avenue	7	8th and North Avenue	7	SH 50 and W Ouray Avenue	8
12 <sup>th</sup> and Bookcliff Avenue	6	9th and Ute Avenue	7	12th and Bunting Avenue	7
12 <sup>th</sup> and Elm Avenue	6	Court Road and North Avenue	7	12th and Elm Avenue	7
12 <sup>th</sup> and Grand Avenue	6	Independent Avenue and I-70B	7	24 Road and F Road	7
24.5 Road and I-70B	6	River Road and SH 340	7	27.5 Road and Patterson Road	7
24.5 Road and Mesa Mall	6	SH 6 & 50 W of 24.5 Road	7	7th and Grand Avenue	7
28 Road and I-70B	6	Spruce Street and W Grand Avenue	7	7th and Orchard Avenue	7
29 Road and G Road	6	1 st and North Avenue	6	Horizon Drive and I-70 WB Off Ramp	7
5th and South Avenue	6	12th and Horizon Drive	6	1 st and Main Street	6
6th and Ute avenue	6	15th and Orchard Avenue	6	24.5 Road and Patterson Road	6
7th and Glenwood Avenue	6	5th Street At Colorado River	6	3rd and Grand Avenue	6
7th and Orchard Avenue	6	7th and Grand Avenue	6	4th and Grand Avenue	6
Horizon Drive and I-70 WB Off Ramp	6	9th and Pitkin Avenue	6	5th and Main Street	6

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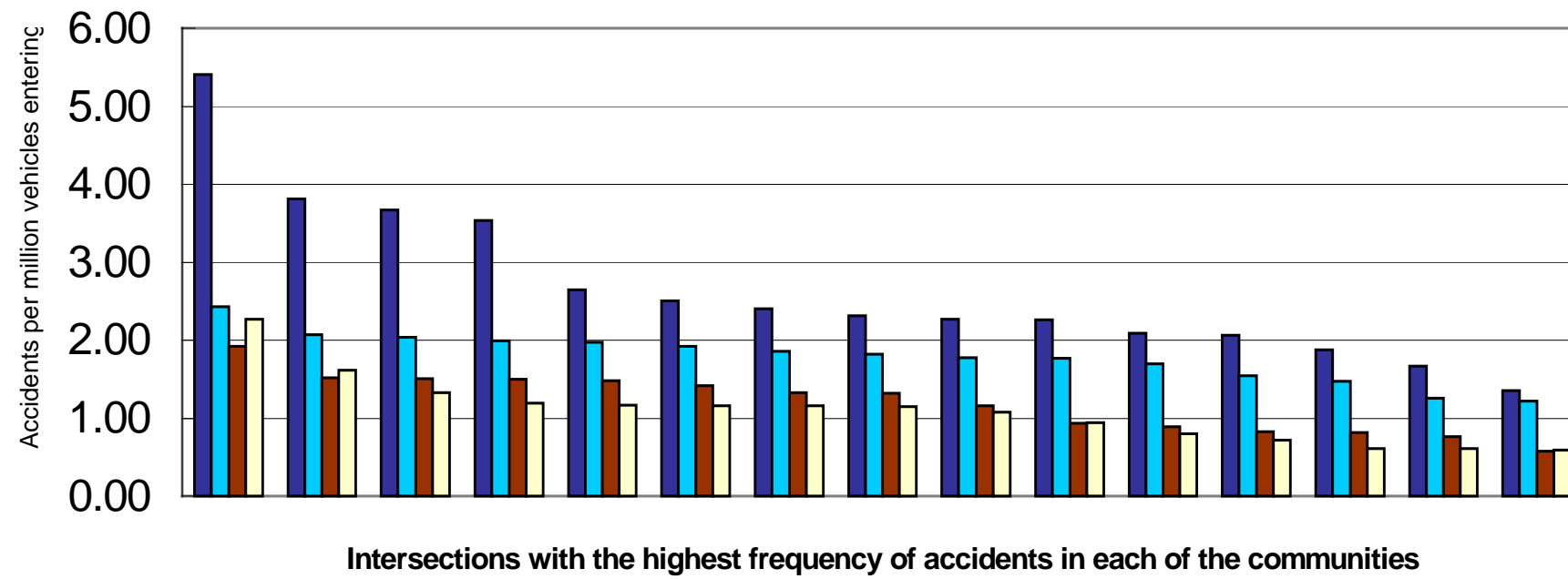
Horizon Drive and Visitor Way	6	Aspen Street and SH 50	6	5th Street Overpass	6
<u>Site</u>	<u># in 1996</u>	<u>Site</u>	<u># in 1997</u>	<u>Site</u>	<u># in 1998</u>
SH 50 and W Ouray Avenue	6	Monument Road and SH 340	6	9th and Pitkin Avenue	6
1 st and Main Street	5	SH 50 and High Street/Grand Mesa	6	Block 1300 South 5th Street	6
1 st and Ute Avenue	5	1 st and Patterson Road	5	Block 2300 North Avenue	6
1 st and White Avenue	5	11th and North Avenue	5	Melody Lane and North Avenue	6
1 st and Patterson Road	5	3rd and Rood Avenue	5	Redlands Pkwy and SH 340	6
12th and Main Street	5	4th and Grand Avenue	5	Spruce Street and W Grand Avenue	6
15th and Patterson Road	5	4th and Main Street	5	12th and Grand Avenue	5
24.5 Road and G Road	5	4th and Ouray Avenue	5	12th and Kennedy Avenue	5
27.5 Road and Patterson Road	5	5th and Main Street	5	12th and Ute Avenue	5
28.25 Road and Orchard Avenue	5	8th and Ute Avenue	5	15th and Patterson Road	5
5th and Gunnison Avenue	5	Block 600 Patterson Avenue	5	23rd St and North Avenue	5
6th and North Avenue	5	Block 700 North Avenue	5	24 Road and G Road	5
7th and Pitkin Avenue	5	Cannell Street and North Avenue	5	24.5 Road and G Road	5
9th and Pitkin Avenue	5	Horizon Drive and G Road	5	25 Road and I-70B	5
Block 1100 North Avenue	5	Melody Lane and North Avenue	5	28 Road and Belford Avenue	5
Block 2500 North Avenue	5			28 Road and Grand Avenue	5
Horizon Drive and Crossroads Blvd	5			28 Road and Patterson Road	5
				28.25 Road and North Avenue	5
				28.25 Road and Orchard Avenue	5
				29.5 Road and Patterson Road	5
				4th and Main Street	5
				5th and Ouray Avenue	5
				Block 1000 North Avenue	5
				Block 500 North Avenue	5
				Burkey Street and Patterson Avenue	5
				College Place and North Avenue	5
				Horizon Drive and Crossroads Blvd	5
				Horizon Drive and G Road	5
				SH 50 and High Street/Grand Mesa	5

### How does Grand Junction Compare?

The accident rate is calculated by dividing the number of accidents times 1 million by the number of vehicles annually entering the intersection. The number of vehicles annually entering the intersection is calculated by multiplying the average daily approach counts by 365 days.

## Accident Rates in the 'Frequent Fifteen' Intersections

■ Pueblo ■ Ft Collins ■ Grand Jct ■ Westminster



## 'Frequent Fifteen' Intersections in Four Colorado Communities: Grand Junction, Fort Collins, Westminster & Pueblo

### Grand Junction 'Frequent Fifteen'

<u>Location</u>	<u>Accidents</u>	<u>1998 Annual Entering Vehicles</u>	<u>Accident Rate</u>
7th and North Avenue	24	16,205,018	1.48
5th and Pitkin Avenue	22	14,716,756	1.49
12th and Patterson Road	20	14,081,218	1.42
12th and North Avenue	18	19,195,350	0.93
29 Road and Patterson Road	18	11,859,580	1.52
5th and Ute Avenue	16	9,380,500	1.92
10th and North Avenue	15	11,285,070	1.33
29 Road and North Avenue	13	9,819,230	1.32
1 st and Grand Avenue	12	14,491,230	0.83
6th and Ute Avenue	11	7,134,838	1.51
28 Road and North Avenue	10	12,132,965	0.82
12th and Orchard Avenue	9	10,133,130	0.89
1 st and North Avenue	9	11,883,378	0.76
7th and Patterson Road	8	14,090,950	0.57
5th Street Overpass (section)	6	5,175,014	1.16

### Westminster 'Frequent Fifteen'

<u>Location</u>	<u>Accidents</u>	<u>1998 Annual Entering Vehicles</u>	<u>Accident Rate</u>
Sheridan & 104th	26	19,503,775	1.33
Federal & 74th	25	15,498,265	1.61
Huron & 120th	22	20,379,410	1.08
Federal & 104th	21	18,020,780	1.17
Federal & 72nd	20	17,237,855	1.16
Harlan & 92nd	19	16,032,990	1.19
Wadsworth PW & 92nd	19	20,129,750	0.94
Wadsworth PW & 100th	19	16,547,640	1.15
Sheridan & 92nd	18	29,718,665	0.61
US 36 & Sheridan Blvd	18	23,481,180	0.77
Sheridan & 88th	15	25,264,205	0.59
Sheridan & 80th	14	22,995,730	0.61
Sheridan & 72nd	13	18,082,830	0.72
Harlan & 91st	13	5,738,530	2.27
Sheridan & 76th	13	16,171,325	0.80

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### Ft Collins 'Frequent Fifteen'

<u>Location</u>	<u>Accidents</u>	<u>1998 Annual Entering Vehicles</u>	<u>Accident Rate</u>
College & Prospect	52	26,152,250	1.99
College & Drake	44	28,579,500	1.54
College & Harmony	42	23,122,750	1.82
Elizabeth & Shields	40	16,493,255	2.43
Horsetooth & Shields	39	22,178,130	1.76
Drake & Shields	38	18,422,280	2.07
College & Horsetooth	37	29,638,000	1.25
College & Laurel	33	18,633,250	1.78
Lemay & Prospect	31	18,296,355	1.70
College & Swallow	30	20,440,000	1.47
Horsetooth & Lemay	29	23,845,450	1.22
Horsetooth & Shields	29	15,147,500	1.92
Drake & Taft Hill	28	14,259,820	1.97
Mulberry & Riverside	27	14,600,000	1.85
Harmony & Mason	25	12,300,500	2.04

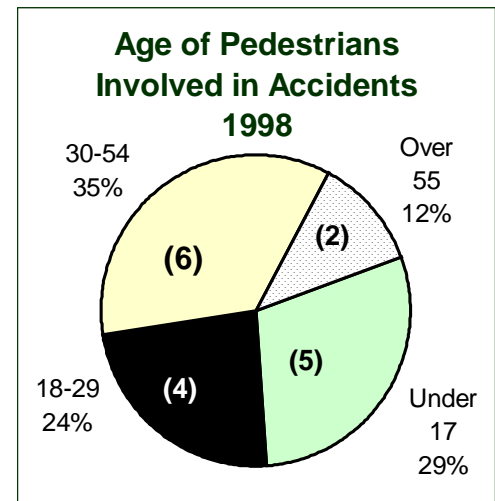
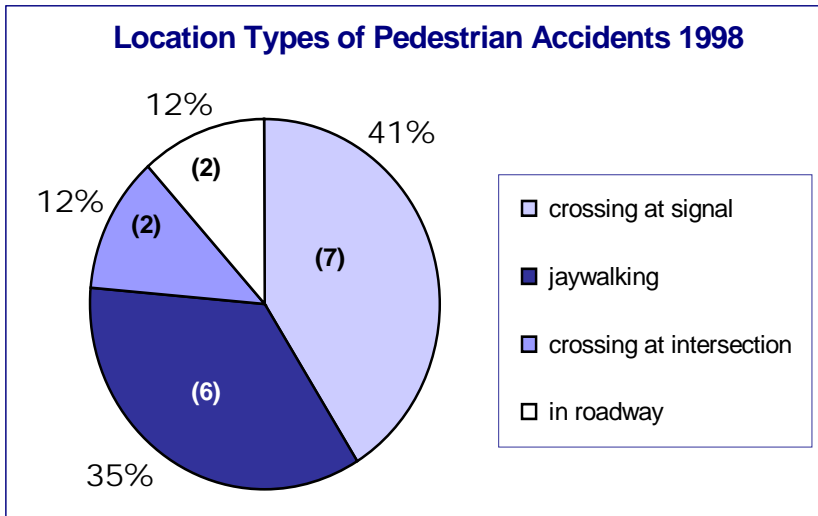
### Pueblo 'Frequent Fifteen'

<u>Location</u>	<u>Accidents</u>	<u>1998 Annual Entering Vehicles</u>	<u>Rate</u>
Elizabeth St & US Hwy 50	59	16,060,000	3.67
Frontage Rd & State Hwy 47	38	9,964,500	3.81
I-25 & US Hwy50	36	21,535,000	1.67
Jerry Murphy Rd & COHwy47	34	9,636,000	3.53
Prairie Avenue & Northern Ave	33	12,446,500	2.65
29th Street & I-25	32	5,913,000	5.41
US Hwy 50 & Club Manor Dr	28	11,680,000	2.40
US Hwy 50 & Morris Avenue	27	11,899,000	2.27
29th Street & Elizabeth St	27	11,972,000	2.26
Pueblo Blvd & Thatcher Ave	27	11,169,000	2.42
Northern Ave & Pueblo Blvd	25	10,804,000	2.31
I-25 & US Hwy50 Bypass	25	12,154,500	2.06
Bonforte Blvd & Hwy50 Bypass	24	12,848,000	1.87
4th Street & Santa Fe Avenue	23	11,023,000	2.09
Abriendo Avenue & I-25	21	15,585,500	1.35



## Accidents Involving Pedestrians

Of the almost 1500 reported accidents on city streets in 1998, there were 17 accidents involving pedestrians. This represents 1% of the total reported accidents for 1998. Pedestrian accidents were more likely to result in injuries to the pedestrian; in nearly 87% of the accidents, the pedestrian sustained injury. There were no fatalities among pedestrian-related accidents in 1998.



Pedestrians were involved in accidents most frequently near three locations in town. These are the St. Mary's Hospital area, the area along 12<sup>th</sup> Street near Mesa State College and the area around Grand Junction High School. Locations where accidents occurred involving pedestrians are:

Street	Intersection	Date	Time	Age	Type	Inj
12 <sup>TH</sup> ST	ELM AVE	19980112	19:20	18	at signal	0
12 <sup>TH</sup> ST	BUNTING AVE.	19980506	17:37	26	at intersection	1
12 <sup>TH</sup> ST	ORCHARD AVE	19981228	14:24	46	at signal	1
26.5 RD	336' N OF H RD	19980409	16:07	12	In roadway	1
29 RD	NORTH AVE	19980330	9:29	48	at signal	1
3RD ST	1200 BLOCK	19980329	14:30	32	Jaywalking	1
3RD ST	GRAND AVE	19981005	16:00	40	at intersection	0
4TH ST	MAIN ST	19981221	14:45	65	Jaywalking	0
5TH ST	50' S OF ELM CT	19980116	11:05	16	Jaywalking	1
7TH ST	PATTERSON RD	19980311	20:28	73	at signal	1
7TH ST	PATTERSON RD	19980423	15:07	24	Jaywalking	1
ELM AVE	1920 ELM AVE	19980619	8:36	6	Jaywalking	1
HORIZON DR	715 HORIZON DR	19980605	23:44	25	Jaywalking	2
NORTH AVE	W OF 5TH ST	19980217	11:40	18	Jaywalking	1
NORTH AVE	HOUSTON AVE	19980417	15:19	19	at signal	1
ORCHARD AVE	120' W OF 15TH ST	19980702	14:19	16	Jaywalking	1
UTE AVE	80' E OF 5TH ST	19980822	12:19	16	In roadway	1

## Locations Where Pedestrian Accidents Occurred 1996-1998

To determine if there are specific locations where engineering solutions may prevent future accident occurrences, a list of locations where accidents occur was generated. Occurrence refers to where the pedestrian was situated in the location.

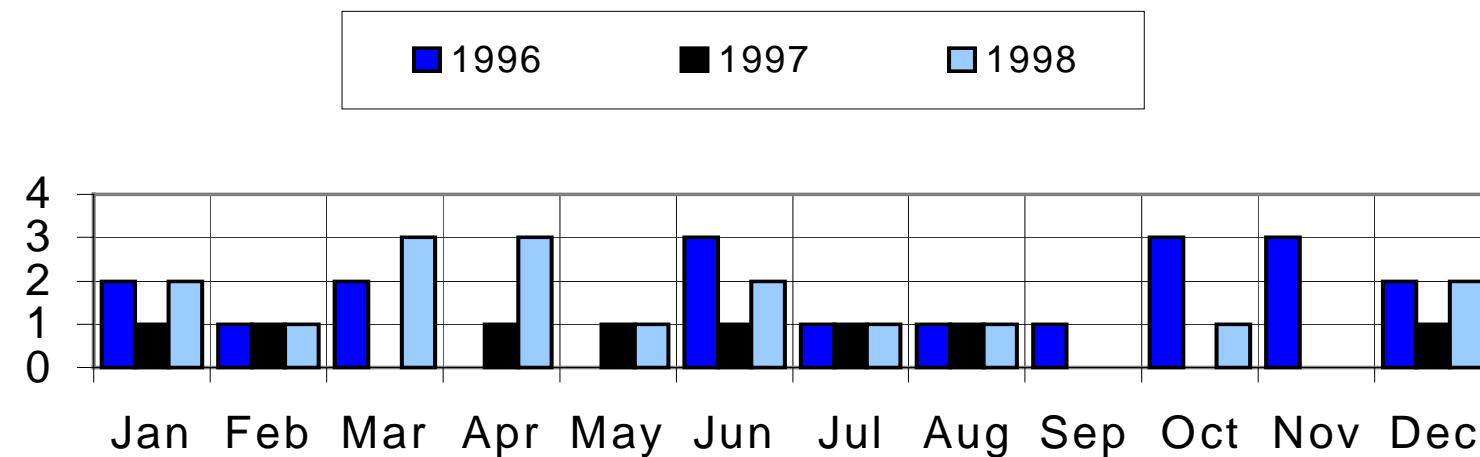
Site (1996)	Occurrence
Main Street & 7th Street	X @ signal
North Avenue & 29 Road	X @ signal
29 Road & Patterson Road	X @ signal
2824 North Avenue	X @ driveway
28 Road & North Avenue	X @ signal
North Avenue & 10th Street	X @ signal
4000 Applewood	In roadway
5th Street- 150' S of Teller Ave	In roadway
29 3/8 Road & Patterson Road	In roadway
Shwy 50- 254' E of 27 Road	jaywalking
North Avenue & 10th Street	X @ signal
1321 North 17th Street	In roadway
1300 Block North 12th Street	jaywalking
7th Street & Main Street	X @ signal
Bookcliff Avenue- 35' E of 9th St	X-walk
5th Street & Pitkin Avenue	X @ signal
12th Street & North Avenue	X @ signal
12th Street & Bunting Avenue	X@Intrscn
Santa Clara Avenue & Palisade St	X@Intrscn

Site (1997)	Occurrence
1st Street & Orchard Avenue	X @ signal
Gunnison Avenue & 15th Street	X@Intrscn
7th Street- 20' S of Glenwood Ave	X street
28.5 Road & North Avenue	X @ signal
27.5 Road & Cortland Avenue	X@Intrscn
Shwy 6&50- .2 mi W of 25 Road	In roadway
Linden Street- 75' N o Linden Wy	In roadway
24.75 Rd- .25 mi N of G Road	In roadway

Site (1998)	Occurrence
12th Street & Elm Avenue	X @ signal
5th St- 50' S of Elm Court	jaywalking
North Ave- W of 5th St	jaywalking
7th Street & Patterson Avenue	X @ signal
29 Road & North Avenue	X @ signal
3rd Street- 1200 Block	jaywalking
26.5 Road- 335' N of H Road	In roadway
7th St & Patterson Road	jaywalking
North Avenue & Houston Avenue	X @ signal
12th Street & Bunting Avenue	X@Intrscn
715 Horizon Drive	jaywalking
1920 Elm Avenue	jaywalking
Orchard Avenue- 120' W of 15th St	jaywalking
Ute Avenue- 80' E of 5th St	In roadway
3rd Street & Grand Avenue	jaywalking
4th Street & Main Street	jaywalking
12th Street & Orchard Avenue	X @ signal

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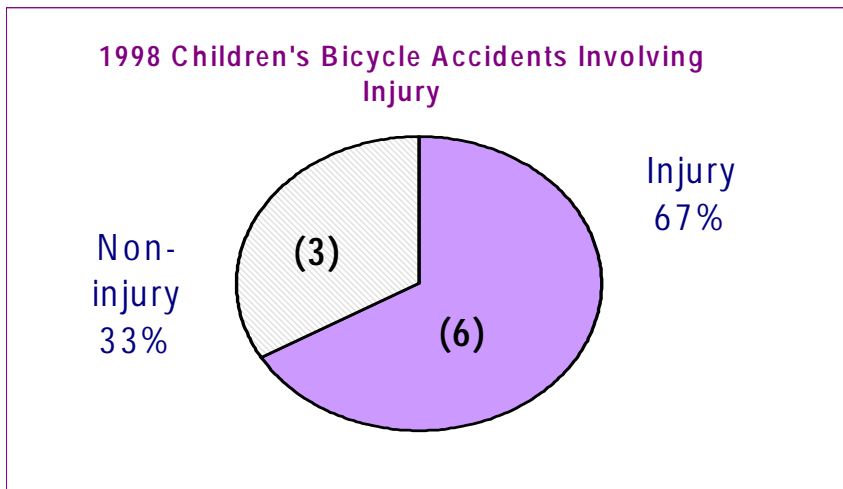
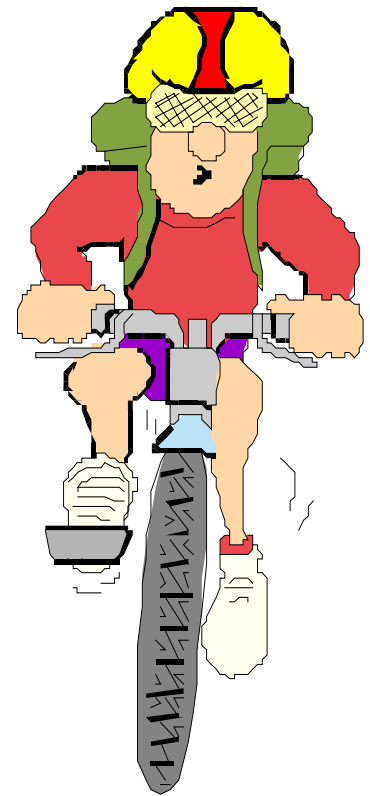
### Accidents Involving Pedestrians by Month 1996-1998



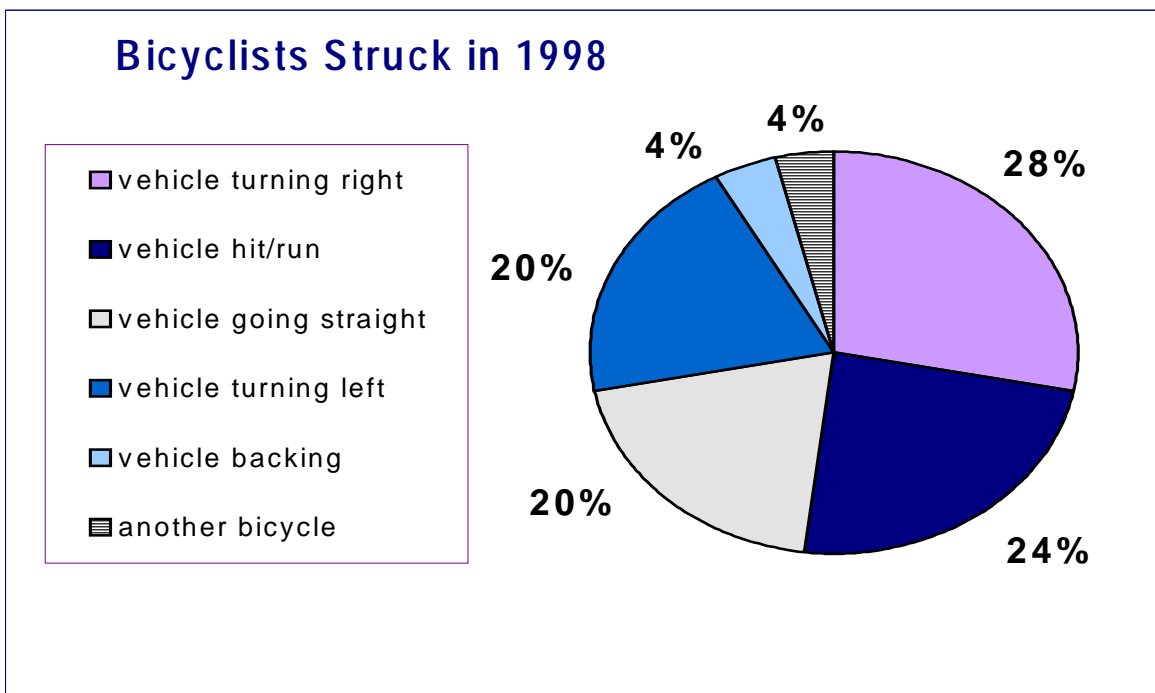
The accidents involving pedestrians demonstrate little consistent trending between 1996 and 1998. Pedestrians were involved in accidents in highest numbers in spring and fall months, but most consistently, year-to-year, in summer and winter months.

## Accidents Involving Bicycles

Accidents involving bicycles numbered 28 for 1998. Of that total, the majority involved adults on bicycles. The average age of the bicyclist involved was 23, but the range was from 10 to 62 years of age. Ten of the accidents involved children, ranging from 10 to 17 years in age, constituting 36% of bicycle accidents for 1998. Of those accidents, nearly two-thirds resulted in injury.



The majority of accidents involving bicycles were situations where the bicyclist was struck by a moving vehicle, or 53.2%. Of these accidents, causes ranged from vehicles turning, moving in a straight line or, to a lesser degree, backing. Vehicle hit-and-run was the second highest type of incident reported in vehicle-bicycle collisions.



## Locations Where Accidents Involving Bicyclists Have Occurred 1996-1998

To determine if there are specific locations where engineering solutions may prevent future accident occurrences, a list of locations where accidents occur was generated.

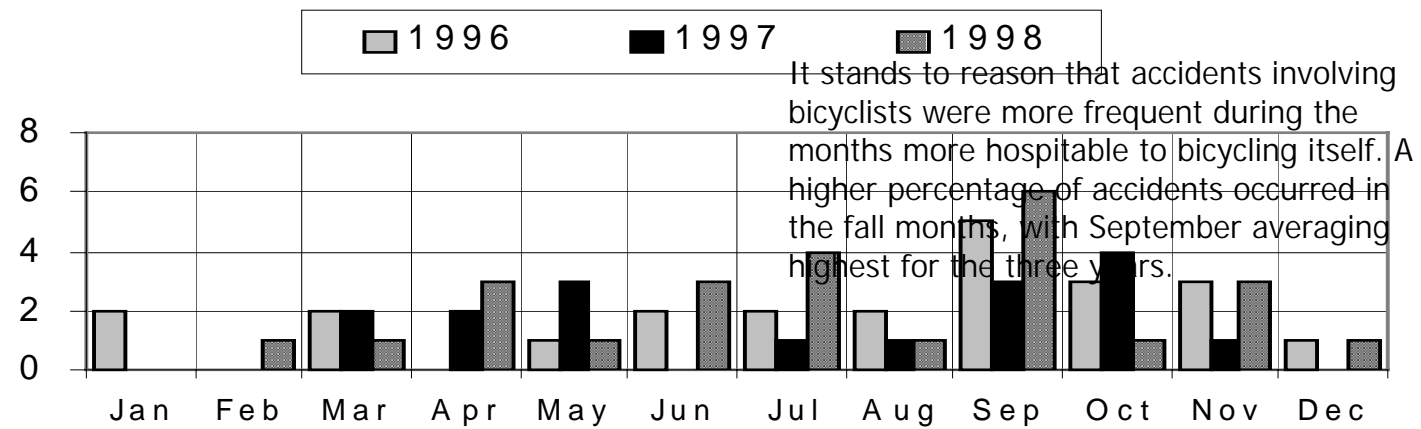
Site (1996)		Injury
28.75 & North Avenue	1/18/96	yes
Bunting Avenue & 12th Street	1/19/96	
7th Street - 150' S of Bookcliff Ave	3/19/96	
12th Street & Walnut Avenue	3/21/97	yes
5th St Alley & Main Street	5/9/96	
8th Street & Teller Avenue	6/3/96	yes
Orchard Avenue- .1 mi E of 29 Road	6/8/96	yes
28 Road & Belford Avenue	7/1/96	yes
Alley 100 block S of 6th Street	7/5/96	yes
29 Road & North Avenue	8/8/96	yes
Grand Avenue & 10th Street	8/19/96	yes
North Avenue & 10th Street	9/6/96	yes
1901 N 7th Street	9/13/96	yes
6th Street & Ute Avenue	9/18/96	yes
6th Street & North Avenue	9/25/96	yes
7th Street & Glenwood Avenue	9/30/96	yes
Orchard Avenue & 7th Street	10/11/96	
UnawEEP Avenue & Cedar Street	10/12/96	yes
27 Road & SHwy 50	10/12/96	yes
28.25 Road & North Avenue	11/13/96	yes
12th Street & North Avenue	11/22/96	yes
28 Road & North Avenue	11/30/96	yes
W Grand Avenue & Spruce Street	12/13/96	yes

Site (1997)		Injury
Shwy 340 & Country Club Drive	3/18/97	yes
5th Street & Struthers Avenue	3/19/97	
28.5 Road & Orchard Avenue	4/6/97	yes
1st Street & Independent Avenue	4/24/97	yes
26.5 Road & H Road	5/16/97	yes
28 Road & North Avenue	5/20/97	yes
2845 North Avenue	5/23/97	yes
Fisher Avenue & Sherman Drive	7/20/97	yes
2600 Block 15th Street	8/4/97	yes
12th Street & Elm Avenue	9/8/99	
Alley N of Main Street	9/19/97	yes
29 Road & Patterson Road	9/24/97	Fatal
28.5 Road & North Avenue	10/8/97	yes
26th Street & Orchard Avenue	10/11/97	yes
2817 North Avenue	10/11/97	
2720 SHwy 50	10/27/97	
28.5 Road & North Avenue	11/29/97	yes

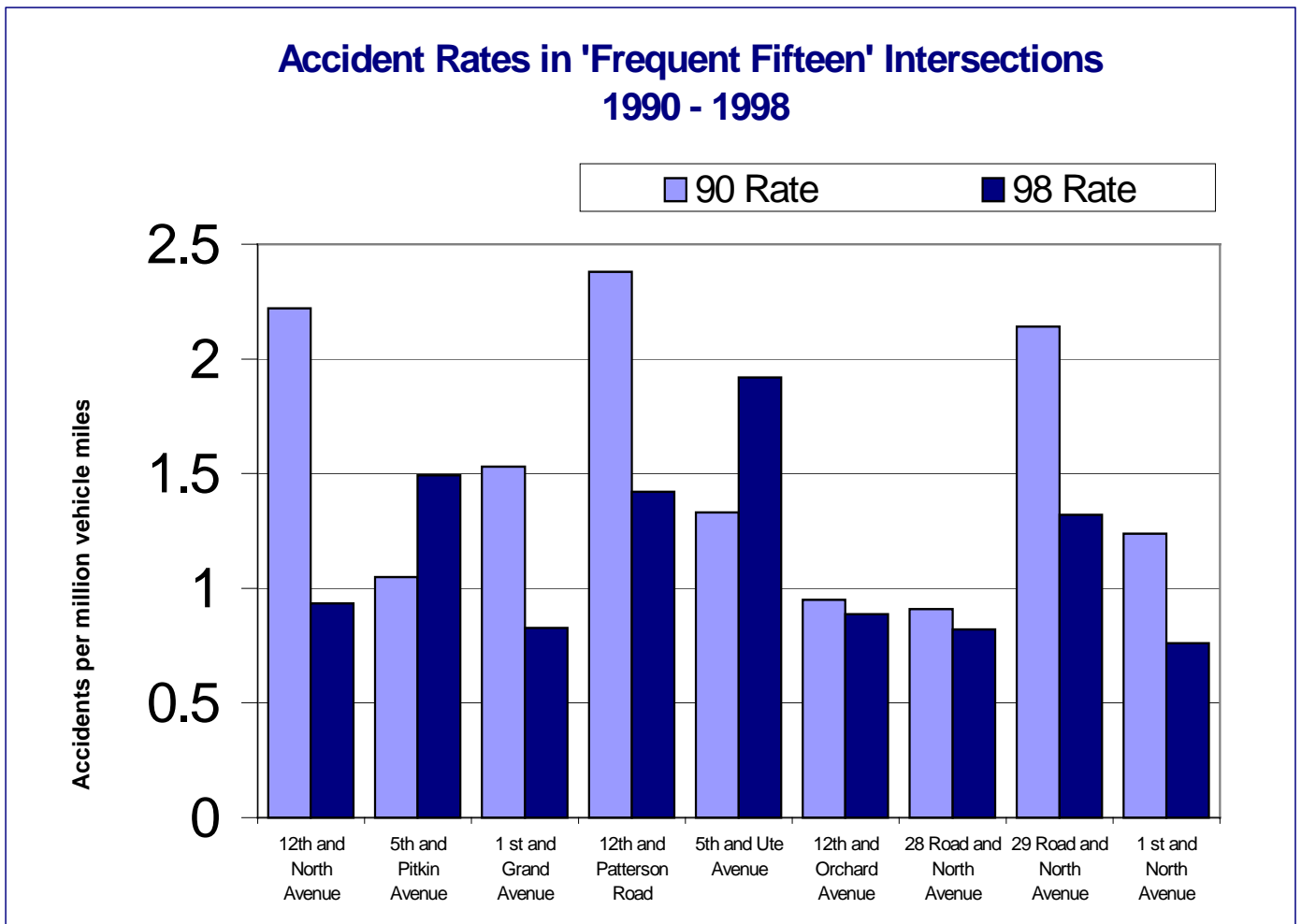
Site (1998)		Injury
200 Block N 1st Street	2/10/98	yes
2nd Street & Grand Avenue	3/24/98	
1st Street & Park Drive	4/20/98	yes
26.5 Road - 100' N of F.5 Road	4/21/98	yes
SHwy 340 & River Road	4/7/98	yes
5th Street & Grand Avenue	5/27/98	yes
12th Street & North Avenue	6/2/98	
Martello Drive & S Redlands	6/9/98	yes
SHwy 340 & River Road	6/24/98	yes
Glenwood Avenue & 12th St	7/24/98	yes
28 Road & North Avenue	7/25/98	
SHwy 340 & River Road	7/29/98	yes
27 Road & UnawEEP Avenue	7/30/98	
12th Street & North Avenue	8/3/98	yes
28.5 Road & North Avenue	9/25/98	yes
12th Street & Orchard Avenue	9/8/98	yes
3rd Street & Chipeta Avenue	9/9/98	yes
1st Street & Orchard Avenue	9/10/98	yes
12th Street & North Avenue	9/10/98	yes
21st Street & Mesa Avenue	9/14/98	yes
12th Street & Bookcliff Avenue	9/14/98	yes
28.5 Road & Orchard Avenue	9/25/98	
7th Street- S of Main Street	9/27/98	
12th Street & Bunting Avenue	10/30/98	yes
10th Street & Grand Avenue	11/2/98	

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### Accidents Involving Bicyclists by Month 1996-1998



## Where We've Been...



The above chart compares several intersections that appeared in the 'Frequent Fifteen' list in both 1990 and 1998. (Not all intersections appeared on both lists.) In comparing the rates, the accident rates dropped at the majority of the nine mutual intersections. The notable exceptions were 5<sup>th</sup> Street at Pitkin Avenue and 5<sup>th</sup> Street at Ute Avenue. In 1997, the 5<sup>th</sup> Street overpass underwent construction, modifications were made at South Avenue, and the section between Pitkin and Ute Avenue in 1997-98. Continuous construction activity has probably altered driver behavior, and the accident rate may stabilize now that construction has been completed.

Older signals were replaced at 5<sup>th</sup> Street and Ute Avenue, 23<sup>RD</sup> Street and North Avenue, and 10<sup>th</sup> Street and North Avenue.

## Summary, and Where We're Going...

In analyzing the City of Grand Junction's 'Frequent Fifteen', a reduction in the accident rates occurred in over half of the locations during the period 1996-1998. In those intersections, significant improvement was made in accident rate reduction. In those intersections with an increase in accident rate, several locations were under major reconstruction. When construction work is completed in such locations as Ute Avenue at 5<sup>th</sup> Street, and 10<sup>th</sup> Street at North Avenue, accident rates should decrease.

Overall, the 'Frequent Fifteen' showed a reduction of 6% in the accident rate between 1996 and 1998.

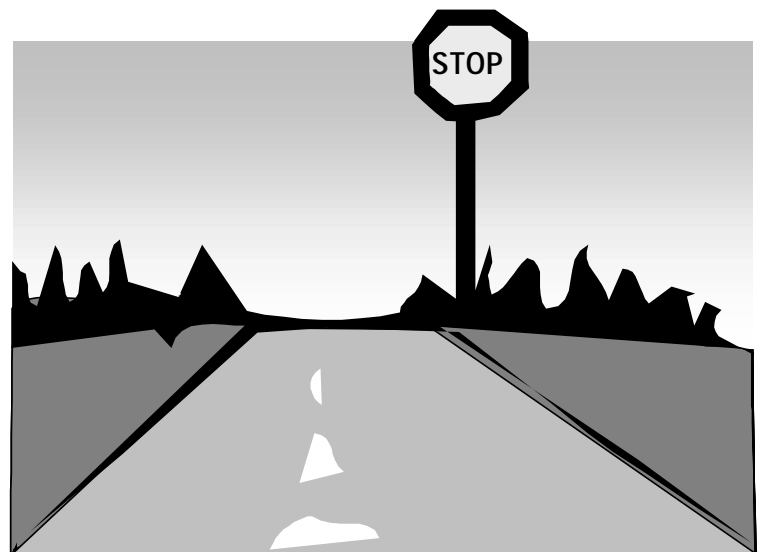
Signal retiming in major corridors was completed in 1998. The North Avenue corridor was retimed in July, and improvements in traffic flow decreased travel times by almost two minutes eastbound and over three minutes westbound. Traffic flowed more evenly, and motorists felt the benefit of adhering to the speed limit as they were able to 'catch the light' when doing so. With traffic progressing at a consistent rate, accidents were reduced, as were delays, fuel consumption, and emission levels.

The Patterson Road corridor was retimed in November, 1998. Travel time was improved, however, pressure on the intersections with 12<sup>th</sup> Street and 7<sup>th</sup> Street continued as construction to the north and east of 12<sup>th</sup> Street has affected both these arteries.

Retiming of signals on State Highway 340 appears to have positively affected the accident rate at the intersection of 1<sup>st</sup> Street and Grand Avenue. Significant reductions were shown between 1996 and 1998.

Increases in the accident rate at the intersections of 29 Road with North Avenue and Patterson are being monitored. There is no pattern to the occurrences, but the volumes are known to have increased. An improvement project is planned for the 29 Road corridor, which will affect the geometry of the intersection and install a new signal on North Avenue.

The Transportation Engineering Division of the City of Grand Junction will continue its monitoring and retiming activities in an effort to continue a steady downward trend in accident rates. Implementation of a signal communications system would allow signal adjustments to be done from the office, reducing personnel time in the field, and reducing response delay. Presently, the Division becomes aware of



signal operation problems by receiving notification from outside the office. ▣