South Jersey Transportation Planning Organization

2006 Road Safety Audit

Broad Street (CR 607)
Penns Grove Borough/Carney's Point Township
Salem County

Prepared By:

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In Association with:

March 8, 2006

Introduction

Orth-Rodgers & Associates, Inc. (ORA) was selected by the South Jersey Transportation Planning Organization (SJTPO) to conduct their 2006 Road Safety Audit (RSA). The sections of roadway to be studied were selected by SJTPO. The roads were selected based on a number of factors considered important to the safety and future development of the roadways. Among the factors considered were crash data, traffic volume growth, local cooperation and control, and recent and future development along the roadway. Except for intersecting roadways, state highways were excluded from the process. County and local officials cooperated with SJTPO in identifying roads that meet these parameters.

Five roadway sections were chosen for the 2006 audits. Two of the roadways are located in Atlantic County, one is in Cumberland County, one in Cape May County, and one in Salem County. The five roadway sections are:

1. Tilton Road (CR 563) between Shore Road (CR 585) and the Black Horse Pike (US 40-322) (MP 3.70-6.27), in the Townships of Northfield and Egg Harbor, Atlantic County.

2. Jimmie Leeds Road (CR 561 & 633), between Pitney Road (CR 634) and Pomona Road (CR 575) (MP 1.54-4.49) and CR 633 (MP 0.64-1.68), in Galloway Township, Atlantic County.

3. Main Road (CR 555) between Sherman Avenue (CR 552) and E. Chestnut Avenue (MP 13.70-16.05) in the City of Vineland, Cumberland County.

4. Bayshore Road (CR 603) from Route US 9-Sandman Boulevard (a.k.a. Ferry Road) to Fishing Creek Road (CR 639) (MP 1.74-3.80) in Lower Township, Cape May County.

5. Broad Street (CR 607) between N. Virginia Avenue (US 130) and Maple Avenue (CR 634) (MP 0.00-1.93) in the Township of Carneys Point and the Borough of Penns Grove, Salem County.

Each road will have a separate report, but will share the same introduction, background section, format and some text.

Safety audits serve to address the safe operation of the roadways and to ensure a high level of safety for all road users. The process of a safety audit is two-fold: 1) to conduct a formal examination of highway features and the surrounding environment that increases the potential for crashes; and, 2) to identify countermeasures that will reduce or eliminate the probability of such crashes. According to the Federal Highway Administration (FHWA), the formal definition of a road safety audit is as follows:

"A Road Safety Audit is the formal examination of an existing or future roadway or traffic project by an independent team of trained specialists."[1]

To accomplish these goals, the audit team assesses the safety performance history as well as the future crash potential of a roadway and prepares a report that documents the safety deficiencies and appropriate countermeasures.

The purpose of the 2006 audit is to identify potential safety deficiencies along the selected section of five roads. There are three primary parts of the audit: 1) the data collection and analysis phase; 2) the field view (conducted by the team); and, 3) the preparation of the report and findings.

The **data collection phase** is performed prior to the audit team conducting a field view of the entire roadway. The data is intended to assist the team in identifying potential safety problems, as well as to provide a factual and historic component of the study. Traffic count and crash data are collected, and a capacity analysis of major intersections is performed. The traffic counts are used to assist in analyzing solutions for the intersections, as well as aid in identifying the most congested sections of the roads. The crash data assists the team in identifying specific areas and/or conditions that warrant close scrutiny that might have otherwise been overlooked. The capacity analysis of intersections identifies how well the intersections are operating and when

1 Federal Highway Administration, Road Safety Audits and Road Safety Audit Reviews, EDL #12345 FHWA XX-03-999

and where improvements may be needed. Based on an analysis of all data, the audit team can conduct a productive and comprehensive evaluation of the roads being studied. The **field view** is conducted by a multi-disciplinary team. In this case the team will walk the entire length of the study area, discussing observations and taking notes for inclusion in the report. The team leader prepares a **draft report** that documents the audits finding and recommended action. The draft report is distributed to the team members for their review and comments. A final report is them prepared by the team leader incorporating the agreed upon draft report comments.

BACKGROUND INFORMATION

A meeting was held on October 11, 2005 at the SJTPO offices with representatives of all four counties, SJTPO and ORA to discuss the implementation of the 2005 safety audit findings and to gather information on the 2006 roadway to be audited. At that meeting ORA sought to obtain background information on the selected 2006 sections of roadways from the counties by asking such questions as:

- Why was the road chosen for the audit?
- What problems exist on the road?
- What area should be given special attention?
- Has the roadway changed in the last three years?
- Are there any projects pending or anticipated for the roadway and their status?
- Have any of the traffic control devices or regulations been changed in the last three years (i.e., signals, speed limits, etc.)?
- Was there any development on the road in the last three years, or any proposed development on the road or in the area that will impact traffic?
- Are any recent traffic counts available?
- Have any recent traffic studies been conducted on the road?
- What plans, if any, are available for the road?
- At what locations should new traffic counts be conducted?

The same questions were again asked at the workshop on the day of the audit to ensure that all possible available information was obtained.

Since Salem County had already participated in two previous road safety audits, ORA did not plan a general kick-off meeting. Additionally, a pre-audit information package was prepared and distributed in advance of the workshop and field view. The package included a brief explanation of what a safety audit is, why safety audits are conducted, and the process involved. It also included a line diagram plot showing the crash data for Broad Street (CR 607); charts of three-year crash trends, crash occurrence by month, by day of the week, by time of day, by surface condition, by light condition, by crash severity, by crash type, and by closest intersection. All team members were asked to review the information package prior to attending the workshop and audit. Also, prior to the audit ORA had contacted the Penns Grove and Carneys Point Police Departments and explained the purposes and process involved in the audit to the ranking officers assigning their representative to the team. Since most of the scheduled team members had already participated in either the FY 2004 or FY 2005 audits, and all stakeholders should had received the information package, the workshop and field views were scheduled to take place on the same day.

BROAD STREET (CR 607)

Broad Street (CR 607) is under the jurisdictional control of Salem County. It is designated as an east-west road. However, since its general orientation is south-north in this report it will be assumed to extend in the south-north direction with Maple Avenue at the southern end and Route US 130 (N. Virginia Avenue) at the northern end.

Broad Street is 1.93 miles long and classified as an urban collector roadway. It is a two lane road for its' entire length. Parking is practiced along the entire length of the road. The Penns Grove Borough section is approximately one mile long and has curb and sidewalks along both sides. It is approximately 40 foot wide with no shoulders. The section south of Main Street has been resurfaced with new sidewalks, and curbing within the last couple of years. The Carneys Point Township section of the road has curb but little if any sidewalk. It is approximately 40 foot wide and has marked shoulders.

Starting at Maple Avenue and traveling north, the curb line development is dense with mostly residential housing units until several blocks south of Main Street where the development becomes mixed retail and residential. It remains mixed retail and residential several blocks north of Main Street where it again becomes mostly residential. It remains mostly residential although less densely developed until Route US 130.

There is only one signalized intersection on the road at Main Street. This intersection is discussed in detail in the findings of the report.

There are no significant traffic generators along the road or was there any proposed development along the road mentioned during the audit.

The following sections describe the various tasks undertaken by ORA in partnership with the Safety Audit Team and summarize the findings from the audit process in a manner that will allow the responsible agencies and personnel to prioritize implementation of safety enhancements.

Pre-Audit Data Collection and Analysis

Prior to the audit activities on site, ORA collected and reviewed traffic data and other related materials in order to assist the team in conducting the audit. A description of the materials that were reviewed is provided below.

1. **Aerial Photos**

   Aerial photographs of the study section, scaled at approximately 1"=300', were printed and used as reference at the audit meeting.

2. **Straight Line Plan**

   Straight line plans, 1"=400', were developed of the study section of the road. The crash data was shown on these plans for use at the audit and for the final report.

3. **Traffic Volume Data**

   No traffic count data was requested for the road.

4. **Traffic Signal**

   Neither a traffic signal plan nor timing schedule were submitted by the County for review. As previously stated, the Main Street intersection is discussed in detail in the findings of the report with specific recommendations for the intersection.

5. **Crash Data**

   SJTPO forwarded to ORA the crash reports from the Penns Grove Borough Police Department for the years 2002, 2003, 2004, and crash reports from the Carneys Point Township Police Department for the years 2001, 2002, 2003, 2004 and 2005 (the first 9 months). Summary sheets were prepared for each year, as well as a summary sheet for the five-year period. For the five-year period, a total of 35 crashes were plotted for the study

section of road. Eleven (11) crashes occurred in Penns Grove Borough and 24 occurred in Carneys Point Township. Nine (9) crashes occurred in 2001 (Penns Grove only), eight (8) in 2002, eight (8) in 2003, six (6) in 2004 and four (4) in the first nine months of 2005 (Penns Grove only).

The type of crashes are characterized as follows:

0 – fatal crashes

11 – injury crashes

24 – non-injury crashes

3 – right-angle type crashes – No concentrations.

6 – same-direction type crashes – No concentrations.

1 – left-turn type crashes

4 – right-turn type crashes – Two at 6th Avenue and one at 5th Avenue.

13 – fixed-object type crashes – Eight involving a northbound motorist striking the channelized island at Route US 130. There was no other concentration.

4 – other type crashes

5 – struck parked vehicle type crashes – No concentration.

A review of the crashes established the following:

- The critical months for crashes were February and October.
- The highest frequency of crashes occurred on Tuesday, Wednesday, Saturday and Sunday.
- The highest frequency of crashes occurred between 7:00-8:00 PM.
- The percentage of crashes during hours of darkness (50%) is greater than the statewide average for county roads (approximately 30%).
- The percentage of crashes for wet surface conditions (23%) is consistent with the

statewide average for county roads (approximately 24%). The percentage of crashes with snowy or icy surface conditions (6%) is consistent with the statewide average for county roads (approximately 5%).

- The percentage of crashes with injuries (31%) is consistent with the statewide average for county roads (approximately 30%).
- The percentage of right-angle type crashes (9%) is less than the statewide average for county roads (approximately 21%).
- The percentage of same directional crashes (3%) is much less than the statewide average for county roads (approximately 29%).
- The percentage of left-turn crashes (3%) is consistent with the statewide average for county roads (approximately 6%).
- The percentage of side- swipe type crashes (0%) is less than the statewide average for county roads (approximately 12%).
- The percentage of fixed-object type crashes (37%) is three times the statewide average for county roads (approximately 12%).

6. Other Information

Additional materials reviewed by ORA prior to the formal audit process included videotapes taken by A-TECH Engineering.

Materials listed above are included in the Appendix.

Audit

On December 7, 2005, the Safety Audit Team met in the Penns Grove Borough Hall located on Main Street to formally conduct the audit. The meeting commenced at 9:00 AM with brief statements by ORA representatives who reiterated the importance of RSAs and outlined the objectives of the safety audit. There were brief introductions by team members followed by an extensive review and discussion of materials described in the previous section. The team then walked to the Broad Street and Main Street intersection to begin the audit. Team members are listed below.

SAFETY AUDIT TEAM FOR HOOK ROAD

Name	Agency
Karen Yunk	FHWA
Dan Mott	FHWA
Douglas Akin	Salem County
Bill Miller	Salem County
Wayne Mathis	NJDOT
Norman Deitch	Orth-Rodgers & Associates, Inc.
Bill Schiavi	SJTPO
George Strathern	Orth-Rodgers & Associates, Inc.
Gary DiPietro	Carneys' Point Police Department
John Boucher	Penns Grove Borough Police

The team began at Main Street and walked to Route US 130 and back before breaking for lunch. After lunch the team continued south to Maple Avenue and back.

During the walk, team members identified features on the roadway and its surrounding environment that could contribute to the occurrence or relative severity of roadway crashes. At each intersection and mid-block location, the Audit Team identified safety deficiencies and inappropriate traffic signs and other items that are not consistent with effective road function and use. A variety of safety improvement measures were discussed with field notes and digital photographs being taken by team members.

At the completion of the audit, the team leader recapped the findings of the audit with the team. The team leader informed other team members on the next step in the audit process; ORA will prepare a draft report summarizing the findings from the audit process and forward the report to all team members for their review and comments.

Norm Deitch and George Strathern conducted a night audit on February 16, 2006. The goal was to check the retroreflectivity of the street signs, pavement markings, and condition of the raised pavement markers (RPMs). In addition, the need for street lighting was checked and lights adjacent to the roadway on private property were checked to ensure that they did not create bright areas that could distract drivers. The team also looked for issues that would only be apparent during hours of darkness, such as clearly defined roadway alignment, signal indication visibility conflicts, ineffective street lighting, etc. The observations and results of the nighttime audit are listed in Item # 48 of the findings.

The next section of the report summarizes the findings from the roadway inspection.

Findings

The findings from the Broad Street (CR 607) safety audit are presented on the following pages in the approximate order of their location along the road that they were observed during the audit, beginning at the Main Street intersection and traveling north to Route US 130; and then beginning at Main Street and traveling south to Maple Avenue.

	SAFETY ISSUE	REMEDIAL ACTION	LEVEL OF EFFORT REQUIRED			POTENTIAL SAFETY BENEFIT		
			LOW	MEDIUM	HIGH	LOW	MEDIUM	HIGH
1	General comment – Sign installation. Many of the signs along the road are installed as "bendaway" rather than "breakaway."	Consideration should be given to inventorying the method of sign installation along the entire road and taking steps to properly install all signs as "breakaway" in accordance with the most current NJDOT standards and the MUTCD.		X			X	
2	General comment – Pavement markings along Broad Street north of Main Street are generally worn and in need of re-painting.	Re-paint pavement markings along the road north of Main Street.	X				X	

3	Broad Street and Main Street signalized intersection in the center of town. Sidewalks and curbs on all corners: A. Signal display to Main Street approaches consist of near right over-the-road signal and far left pole mounted signal. B. Significant pedestrian activity at the intersection and no WALK/ DON'T WALK signals. C. Foundation supporting the pole on the southwest corner of the intersection is damaged. D. No handicapped ramps at the intersection. E. All pavement markings are worn at the intersection. F. NO TURN ON RED signs along all approaches to the intersection are in poor condition. G. White on green STOP HERE ON RED signs along all approaches to the intersection are worn and non-conforming. H. There are abandoned foundations on the southeast corner of the intersection and on the northeast corner of the intersection that are tripping hazards.	A,B,C. Install new traffic signal installation at the intersection to include two over- the-roadway signals along all approaches to the intersection, and WALK-DON'T WALK signals across all approaches to the intersection. D. Install handicapped ramps on all corners of the intersection. E. Re-install all pavement markings at the intersection and it's approaches. F. Replace all NO TURN ON RED signs at the intersection. G. Replace existing STOP HERE ON RED signs along both Main Street approaches and the Broad Street northerly approach with new R10-6 STOP HERE ON RED signs. The STOP HERE ON RED sign along the Broad Street southerly approach is not needed and should be removed. H. Remove the abandoned foundations on the southeast and northwest corners of the intersection and repair sidewalk.		X X X X		X X X		X X X X	X X
4	Broad Street southbound side, between Main and Harmony, inlet that is not bicycle safe.	Replace with bicycle safe grate.	X			X		
5	STOP sign on Harmony Avenue installed less than 7 feet above ground.	Re-install STOP sign at height of 7 feet to bottom of sign.	X			X		
6	STOP sign on Griffin Avenue is worn.	Replace STOP sign.	X			X		
7	At Pittman Avenue intersection on the southwest corner, there is part of a foundation with a section of a pole that needs to be removed.	Remove old foundation and broken pole.	X			X		

8	Pittman Avenue westerly approach – STOP sign defaced and installed below minimum height of 7 feet.	Install new STOP sign at height of 7 feet to bottom of sign.	X			X		
9	Pittman Avenue easterly approach STOP sign installed below minimum height of 7 feet.	Re-install STOP signs at height of 7 feet to bottom of sign.	X			X		
10	At Pearl Street intersection – inlets on the northwest and southeast corners are not bicycle safe.	Replace with bicycle safe grates.	X			X		
11	The STOP sign along Pearl Street is non-reflectorized and needs to be replaced.	Install new STOP sign at height of 7 feet to bottom of sign.	X			X		
12	The STOP sign along Elvin Avenue is worn.	Install new STOP sign at height of 7 feet to bottom of sign.	X			X		
13	On the southbound side, the Speed Limit 30 MPH sign just north of Pearl Street is defaced.	Replace with new Speed Limit 30 MPH sign.	X			X		
14	West Union Street, on the northeast and northwest corners, there are inlets that are not bicycle safe.	Replace with bicycle safe grates.	X			X		
15	East Line Road easterly approach – STOP sign is installed below minimum height of 7 feet.	Re-install STOP sign at height of 7 feet to bottom of sign.	X			X		
16	Florence Avenue – STOP sign is worn and installed below minimum height of 7 feet.	Install new STOP sign at height of 7 feet to bottom of sign.	X			X		
17	Railroad grade crossing north of Florence Avenue – grade crossing pavement markings along both northbound and southbound Broad Street are worn.	Re-install pavement markings.	X			X		
18	On northbound side – curve symbol sign installed north of 4th Avenue too far in advance of curve to be effective.	Relocate sign to a point 250 feet south of curve.	X			X		
19	At 6th Avenue, STOP sign installed on back-to-back signposts.	Remove back-to-back sign posts and re-install sign on standard breakaway sign post	X				X	
20	On southbound side - curve symbol sign with advisory 30 MPH speed plate installed south of 7th Avenue worn.	Replace sign.	X			X		
21	STOP sign on Washington Avenue is worn and installed below minimum height of 7 feet.	Install a new STOP sign at height of 7 feet to bottom of sign.	X			X		
22	On northbound side just north of Washington Avenue, 40 MPH sign worn.	Replace sign.	X			X		
23	Northbound side approximately 100 feet north of Washington Avenue, end of guide rail damaged.	Repair end of guide rail.		X			X	

24	On southbound side "REDUCE SPEED AHEAD" sign. Sign has been replaced in current MUTCD with W3-5 or W3-5a warning sign.	Replace existing "REDUCE SPEED AHEAD" word message sign with W3-5 or W3-5a warning sign.	X			X		
25	STOP sign on W. Del-a-vue Avenue is worn.	Install new STOP sign at height of 7 feet to bottom of sign.	X			X		
26	STOP sign on E. Del-a-vue Avenue installed less than 7 feet above ground.	Re-install STOP signs at height of 7 feet to bottom of sign.	X			X		
27	On northbound side – Speed Limit 40 MPH sign, installed north of Del-a-vue Avenue, is worn.	Replace with new 40 MPH sign.	X			X		

28	Route US 130 and Broad Street Eight (8) of the 35 crashes along the road involved a northbound vehicle striking the center island along Broad Street at Rt. US 130. All of these crashes occurred during hours of darkness. The intersection was revised several years ago. This revision involved creating a smaller radius on the southwest corner of the intersection to slow traffic turning right from Rt. US 130 onto southbound Broad Street. Local team members state that this revision has helped with speeding along the northern end of the road. The crash data indicates that the last crash occurred at the intersection in 2003, which coincides with the time of the revision. Local team members state that crashes still occur at the location involving northbound vehicles striking the center median, but that the crashes are not being reported, as motorists are able to leave the scene. Rt. US 130 experiences a horizontal curve beginning north of the intersection and ending south of the intersection. A contributing factor to the crashes seems to be the straight alignment of Broad Street with Rt. US 130 prior to the sharp right hand horizontal curve in Broad Street to form the 'T'-type intersection. Street lighting along the southbound side of Rt. US 130 and southbound side of Broad Street, and the headlights of southbound Rt. US 130 traffic contribute to this illusion. Additionally: • Existing "STOP AHEAD" sign on the northbound side is leaning and damaged. • Auto dealer on the southeast corner of the intersection parks vehicles within the state and county owned R.O.W. restricting visibility of the intersection. • Auto dealer has built a shelter on the county owned R.O.W. also restricting visibility of the intersection. • There is a "DO NOT ENTER" sign on the northern end of the Broad Street center median. • Stop sign installed on the northern end of Broad Street center median is worn.	• Plant conifer trees on the southwest corner of the intersection to break up the clear site line of traffic southbound on Rt US 130 and shield the headlights of southbound Route US 130 traffic from northbound Broad Street traffic. • Install chevron alignment warning signs on the southwest corner of the intersection facing Broad Street traffic. • Replace and re-install "STOP AHEAD" sign on the approach to the intersection. • Install yellow bright sticks on signposts supporting "STOP AHEAD" sign. • Contact owner of auto dealer on southeast corner of the intersection. Require that he remove vehicles and structure from state and county R.O.W. • Replace "DO NOT ENTER" sign on the northern end of the Broad Street center median with a "KEEP RIGHT" symbol sign. • Replace STOP sign on the northern end of the Broad Street center median with a new sign. • Install white bright stick on post supporting " KEEP RIGHT " symbol sign on the southern end on the center median along Broad Street. • A lane use control symbol sign R (NJ) 3-8B with ahead plate below it should be installed along the Broad Street approach to the intersection approximately 200 feet south of the "STOP AHEAD" sign along that approach. This sign will give the motorist another clue that the road turns as it approaches Route US 130.		X				X
29	STOP sign on Railroad Avenue is worn.	Install new STOP sign at height of 7 feet to bottom of sign.	X			X		

30	Willis Avenue – STOP sign is installed too low.	Re-install sign at height of 7 feet to bottom of sign.	X			X		
31	STOP sign on Park Avenue is worn.	Install new STOP sign at height of 7 feet to bottom of sign.	X			X		
32	Southbound, approaching the highway-rail grade crossing between Park Avenue and Maple Avenue-highway- rail grade crossing advance warning sign is worn.	Install new highway-rail grade crossing advance warning sign at height of 7 feet to bottom of sign.	X			X		
33	Highway-rail grade crossing located between Park Avenue and Maple Avenue highway-rail grade crossing (crossbuck) signs are worn.	Install new highway-rail grade crossing (crossbuck) signs at the crossing.	X			X		
34	Broad Street at Maple Avenue – STOP sign installed too low.	Re-install sign at height of 7 feet to bottom of sign. Since this is the first STOP sign on the road from where it started at Route 130, it is recommended that a red bright stick be installed on the post supporting the sign.	X			X		
35	The nighttime audit revealed significantly more on street parking then was observed during the daytime fieldview, particularly in the section of road just south of Del-a-vue and in the vicinity of Main Street. Highway lighting appears to be new and very uniform.							
	The pavement marking north of Main Street appeared to be worn and those south of Main Street in good condition.	This is addressed in findings #2 of the report.	X			X		
	Street name signs that are black on white do not appear to be reflectorized.	Consideration be given to replacing existing street name signs with white on green reflectorized signs.	X			X		
	Nighttime observations confirmed contributing factors noted in finding # 28 of the report (Street lighting along the southbound side of Rt. US 130 and southbound side of Broad Street, and the headlights of southbound Rt. US 130 traffic) contribute to the illusion that the road continues straight. Taillights of northbound Rt US 130 also contributes to the illusion.	Paint face of islands vertical curb white. Other remedial actions for RT US 130 intersection previously listed in finding # 28.	X			X		

Recommendations

The safety issues identified during the conduct of this audit and included in the findings of this report have been presented in a manner that will permit their implementation as time and budget limitations allow. To the extent possible, the findings have been separated into line items so that the improvements can be implemented independently as appropriate. Clearly, consolidating a number of the safety recommendations will reduce the overall cost of improvements. We recommend that the appropriate management staff review the findings and decide which items can be completed in the immediate future (within 1 year). Many of the deficiencies can be corrected in the short term if the roadway owners dedicate both the time and financial resources to the task. The Level of Effort (an estimate of expenditures and man hours) indicated on the finding sheets of the report represent the team's best effort at categorizing each item.

The Broad Street approach to Route US 130 and the findings (# 28) related to that section of road appear to have the most potential for reducing the number of crashes. While the signalize intersection of Main Street (Item # 3) has not experienced many crashes the signal is very old and would probably not meet current MUTCD requirements. The other item marked in the medium potential safety benefit column of the report findings should be given priority over those listen in the low column.

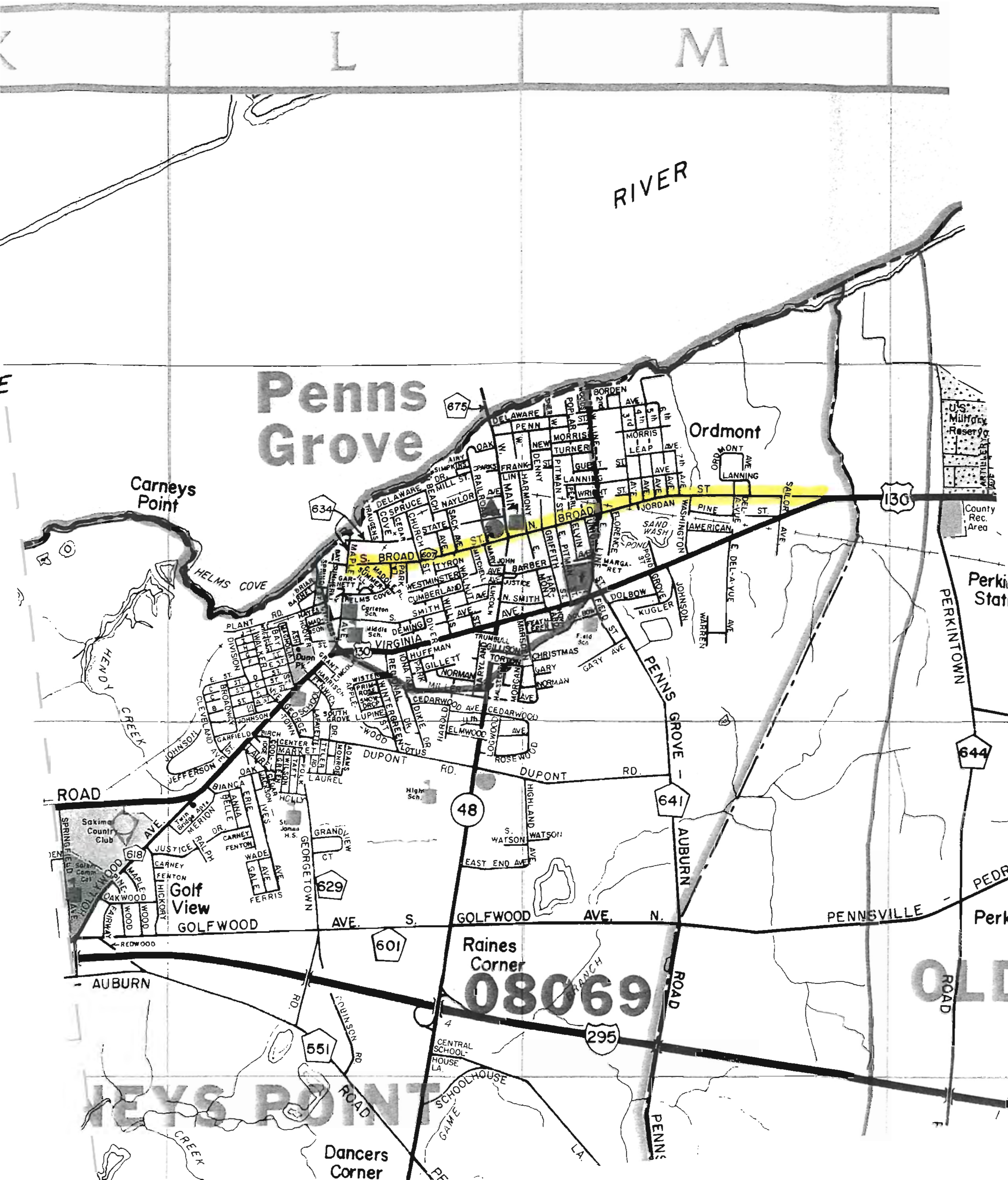
As with all traffic safety studies, some of the crash experience on the roadway has no obvious or practical solution.

While the safety audit focuses on roadway features, enforcement is still a crucial component of safety on a road. Enforcement discourages the motorist from becoming lax in obeying or observing the traffic regulations along the road. Just as resources must be allocated to the physical improvements of the road, they must also be allocated to enforcement to maintain the safe operation of the road.

The opinions found in the findings of this Safety Audit report are those of the Safety Audit Team, as a whole, and not necessarily the opinions of the SJTPO or the individual team members.

Appendix

- Map of Broad Street
- Straight-line plan on which are plotted crashes, and traffic volumes.
- Crash Data Summary Sheets
- Crash Data Charts
- Photographs
- Checklists


L
M
RIVER
Penns Grove
Carneys Point
Ordmont
HELMS COVE
S. BROAD
N. BROAD
ST
PINE
JORDAN
130
675
634
607
VIRGINIA
HENDY CREEK
U.S. Military Reservation
County Rec. Area
PERKINTOWN
PENNS GROVE - AUBURN
641
644
DUPONT RD.
48
Sakima Country Club
618
Golf View
GOLFWOOD AVE. S.
GOLFWOOD AVE. N.
PENNSVILLE
629
601
Raines Corner
08069
295
AUBURN
551
GEORGETOWN
SCHOOLHOUSE
CENTRAL SCHOOL-HOUSE LA.
Dancers Corner
CREEK
BRANCH

SOUTH BROAD STREET (CR 607)
PENNS GROVE-2001-2005 (9 months)
CARNEY'S POINT-2002-2004
CRASH SUMMARY
TOTAL 35 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
5	4	3	3	2	2	1	1	2	4	3	5

Time of Day				Day of Week	
AM Midnight - Noon	Number of Crashes	PM Noon - Midnight	Number of Crashes		Number of Crashes
Midnight – 1:00	1	12:00-1300		Monday	3
1:00 – 2:00	1	1300-1400	3	Tuesday	6
2:00 – 3:00	2	1400-1500	2	Wednesday	6
3:00 – 4:00	1	1500-1600	1	Thursday	5
4:00 – 5:00		1600-1700		Friday	3
5:00 – 6:00		1700-1800	1	Saturday	6
6:00 – 7:00		1800-1900	3	Sunday	6
7:00 – 8:00	2	1900-2000	5		
8:00 – 9:00	2	2000-2100			
9:00 – 10:00	1	2100-2200	3		
10:00 – 11:00	2	2200-2300	2		
11:00 – 12 Noon	1	2300-2400	2		

DAY_17
NIGHT 17

DRY__26___WET_8 SNOWY_1_ ICY__ OTHERS_0_____

CLEAR_26 _ RAIN 6_ SNOW _2 FOG___1___

INJURY11 _NON-INJURY_24_ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
3	6	1	3	

Fixed Object	Head On	Other	Pedestrian	Bike
13		4		

Parking Related __5_

SOUTH BROAD STREET (CR 607)
PENNS GROVE-CARNEY'S POINT
CRASH SUMMARY 2002
TOTAL - 8 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2	0	2	1	0	1	0	1	0	1	0	0

Time of Day				Day of Week	
AM Midnight - Noon	**Number of Crashes**	**PM Noon - Midnight**	**Number of Crashes**		**Number of Crashes**
Midnight – 1:00		12:00-1300		Monday	1
1:00 – 2:00		1300-1400	2	Tuesday	
2:00 – 3:00	1	1400-1500	1	Wednesday	
3:00 – 4:00	1	1500-1600		Thursday	2
4:00 – 5:00		1600-1700		Friday	
5:00 – 6:00		1700-1800	1	Saturday	2
6:00 – 7:00		1800-1900	1	Sunday	3
7:00 – 8:00		1900-2000			
8:00 – 9:00	1	2000-2100			
9:00 – 10:00		2100-2200			
10:00 – 11:00		2200-2300			
11:00 – 12 Noon		2300-2400			

DAY_ 6
NIGHT 2

DRY_ 6____WET_2 SNOWY__ ICY__ OTHERS_0_____

CLEAR 5 _ RAIN_3 SNOW _ FOG_____

INJURY_3 NON-INJURY_5 _ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
	1		1	

Fixed Object	Head On	Other	Pedestrian	Bike
3		1		

Parking Related 2___

SOUTH BROAD STREET (CR 607)
PENNS GROVE-CARNEY'S POINT
CRASH SUMMARY 2003
TOTAL 8 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2	0	0	1	0	1	0	0	1	1	1

Time of Day				Day of Week	
AM Midnight - Noon	**Number of Crashes**	**PM Noon - Midnight**	**Number of Crashes**		**Number of Crashes**
Midnight – 1:00	1	12:00-1300		Monday	
1:00 – 2:00	1	1300-1400		Tuesday	2
2:00 – 3:00		1400-1500	1	Wednesday	2
3:00 – 4:00		1500-1600		Thursday	1
4:00 – 5:00		1600-1700		Friday	2
5:00 – 6:00		1700-1800		Saturday	1
6:00 – 7:00		1800-1900	1	Sunday	
7:00 – 8:00	1	1900-2000	1		
8:00 – 9:00		2000-2100			
9:00 – 10:00		2100-2200	2		
10:00 – 11:00		2200-2300			
11:00 – 12 Noon		2300-2400			

DAY_2_
NIGHT 6

DRY_5 WET 3_ SNOWY__ ICY__ OTHERS_0_____

CLEAR_5 _ RAIN_1 SNOW 1 _ FOG__1____

INJURY_1 _ NON-INJURY_7 _ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
1	2		1	

Fixed Object	Head On	Other	Pedestrian	Bike
3		1		

Parking Related ___1____

SOUTH BROAD STREET (CR 607)
PENNS GROVE-CARNEY'S POINT
CRASH SUMMARY 2004
TOTAL 6 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	1	1	1	1	0	0	0	0	0	0	2

Time of Day				Day of Week	
AM Midnight - Noon	**Number of Crashes**	**PM Noon - Midnight**	**Number of Crashes**		**Number of Crashes**
Midnight – 1:00		12:00-1300		Monday	
1:00 – 2:00		1300-1400		Tuesday	1
2:00 – 3:00		1400-1500		Wednesday	1
3:00 – 4:00		1500-1600		Thursday	
4:00 – 5:00		1600-1700		Friday	1
5:00 – 6:00		1700-1800		Saturday	1
6:00 – 7:00		1800-1900	1	Sunday	
7:00 – 8:00	1	1900-2000	2		
8:00 – 9:00		2000-2100			
9:00 – 10:00		2100-2200			
10:00 – 11:00	1	2200-2300			
11:00 – 12 Noon	1	2300-2400			

DAY_4
NIGHT 2

DRY___6__WET_ SNOWY__ ICY__ OTHERS_0_____

CLEAR_6 _ RAIN_ SNOW FOG_____

INJURY_2 _ NON-INJURY_4 _ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
1	1		1	

Fixed Object	Head On	Other	Pedestrian	Bike
1		1		

Parking Related __1_

SOUTH BROAD STREET (CR 607)
CARNEY'S POINT
CRASH SUMMARY 2001-2005 (9 months)
TOTAL-24 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
4	2	2	3	2	1	0	0	2	3	3	2

Time of Day				Day of Week	
AM Midnight - Noon	Number of Crashes	PM Noon - Midnight	Number of Crashes		Number of Crashes
Midnight – 1:00	1	12:00-1300		Monday	3
1:00 – 2:00	1	1300-1400	2	Tuesday	4
2:00 – 3:00	2	1400-1500	1	Wednesday	4
3:00 – 4:00	1	1500-1600	1	Thursday	3
4:00 – 5:00		1600-1700		Friday	1
5:00 – 6:00		1700-1800		Saturday	5
6:00 – 7:00		1800-1900	1	Sunday	4
7:00 – 8:00	2	1900-2000	2		
8:00 – 9:00	1	2000-2100			
9:00 – 10:00	1	2100-2200	2		
10:00 – 11:00	2	2200-2300	2		
11:00 – 12 Noon		2300-2400	2		

DAY__10
NIGHT 13

DRY__17___WET_6 SNOWY__1 ICY__ OTHERS_0_____

CLEAR_18_ RAIN_4 SNOW _1 FOG___1___

INJURY__8_ NON-INJURY_16_ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
2	2	1	3	

Fixed Object	Head On	Other	Pedestrian	Bike
11		1		

Parking Related ___5_____

SOUTH BROAD STREET (CR 607)
CARNEY'S POINT
CRASH SUMMARY 2001
TOTAL- 9 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1	0	0	0	0	3	0	2	1	2	2

Time of Day				Day of Week	
AM Midnight - Noon	**Number of Crashes**	**PM Noon - Midnight**	**Number of Crashes**		**Number of Crashes**
Midnight – 1:00		12:00-1300		Monday	1
1:00 – 2:00		1300-1400	1	Tuesday	2
2:00 – 3:00	1	1400-1500		Wednesday	1
3:00 – 4:00		1500-1600		Thursday	1
4:00 – 5:00		1600-1700		Friday	
5:00 – 6:00		1700-1800		Saturday	2
6:00 – 7:00		1800-1900		Sunday	2
7:00 – 8:00		1900-2000	2		
8:00 – 9:00		2000-2100			
9:00 – 10:00	1	2100-2200			
10:00 – 11:00		2200-2300	2		
11:00 – 12 Noon		2300-2400	2		

DAY__2
NIGHT 6

DRY__6___WET_3 SNOWY__ ICY__ OTHERS_0_____

CLEAR_7_ RAIN_2 SNOW _ FOG_____

INJURY__4_ NON-INJURY_5_ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
1	1			

Fixed Object	Head On	Other	Pedestrian	Bike
5		1		

Parking Related ___1_____

SOUTH BROAD STREET (CR 607)
CARNEY'S POINT
CRASH SUMMARY 2002
TOTAL- 4 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	2	1	0	0	0	0	0	0	0	0

Time of Day				Day of Week	
AM Midnight - Noon	**Number of Crashes**	**PM Noon - Midnight**	**Number of Crashes**		**Number of Crashes**
Midnight – 1:00		12:00-1300		Monday	1
1:00 – 2:00		1300-1400	1	Tuesday	
2:00 – 3:00	1	1400-1500	1	Wednesday	
3:00 – 4:00	1	1500-1600		Thursday	
4:00 – 5:00		1600-1700		Friday	
5:00 – 6:00		1700-1800		Saturday	2
6:00 – 7:00		1800-1900		Sunday	1
7:00 – 8:00		1900-2000			
8:00 – 9:00		2000-2100			
9:00 – 10:00		2100-2200			
10:00 – 11:00		2200-2300			
11:00 – 12 Noon		2300-2400			

DAY__2
NIGHT 2

DRY__3___WET_1 SNOWY__ ICY__ OTHERS_0_____

CLEAR_3_ RAIN_1 SNOW _ FOG_____

INJURY_1__ NON-INJURY_3_ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
			1	

Fixed Object	Head On	Other	Pedestrian	Bike
1				

Parking Related ____2____

SOUTH BROAD STREET (CR 607)
CARNEY'S POINT
CRASH SUMMARY 2003
TOTAL- 5 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1	0	0	1	0		0	0	1	1	0

Time of Day				Day of Week	
AM Midnight - Noon	**Number of Crashes**	**PM Noon - Midnight**	**Number of Crashes**		**Number of Crashes**
Midnight – 1:00	1	12:00-1300		Monday	
1:00 – 2:00	1	1300-1400		Tuesday	1
2:00 – 3:00		1400-1500		Wednesday	1
3:00 – 4:00		1500-1600		Thursday	1
4:00 – 5:00		1600-1700		Friday	1
5:00 – 6:00		1700-1800		Saturday	1
6:00 – 7:00		1800-1900	1	Sunday	
7:00 – 8:00	1	1900-2000			
8:00 – 9:00		2000-2100			
9:00 – 10:00		2100-2200	1		
10:00 – 11:00		2200-2300			
11:00 – 12 Noon		2300-2400			

DAY__1
NIGHT 4

DRY_3____WET_2 SNOWY__ ICY__ OTHERS_0_____

CLEAR_3_ RAIN_1 SNOW _ FOG___1___

INJURY_1__ NON-INJURY__ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
1			1	

Fixed Object	Head On	Other	Pedestrian	Bike
3				

Parking Related _____

SOUTH BROAD STREET (CR 607)
CARNEY'S POINT
CRASH SUMMARY 2004
TOTAL- 2 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	0	1	1	0	0	0	0	0	0	0

Time of Day				Day of Week	
AM Midnight - Noon	Number of Crashes	**PM** Noon - Midnight	Number of Crashes		Number of Crashes
Midnight – 1:00		12:00-1300		Monday	1
1:00 – 2:00		1300-1400		Tuesday	
2:00 – 3:00		1400-1500		Wednesday	1
3:00 – 4:00		1500-1600		Thursday	
4:00 – 5:00		1600-1700		Friday	
5:00 – 6:00		1700-1800		Saturday	
6:00 – 7:00		1800-1900		Sunday	
7:00 – 8:00	1	1900-2000			
8:00 – 9:00		2000-2100			
9:00 – 10:00		2100-2200			
10:00 – 11:00	1	2200-2300			
11:00 – 12 Noon		2300-2400			

DAY_2_
NIGHT

DRY__2___WET_ SNOWY__ ICY__ OTHERS_0_____

CLEAR_2_ RAIN_ SNOW _ FOG_____

INJURY_1__ NON-INJURY_1_ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
			1	

Fixed Object	Head On	Other	Pedestrian	Bike
1				

Parking Related _____

SOUTH BROAD STREET (CR 607)
CARNEY'S POINT
CRASH SUMMARY 2005
TOTAL- 4 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	1	0	1	0	0	0	1	0	0

Time of Day				Day of Week	
AM Midnight - Noon	**Number of Crashes**	**PM Noon - Midnight**	**Number of Crashes**		**Number of Crashes**
Midnight – 1:00		12:00-1300		Monday	
1:00 – 2:00		1300-1400		Tuesday	1
2:00 – 3:00		1400-1500		Wednesday	1
3:00 – 4:00		1500-1600	1	Thursday	1
4:00 – 5:00		1600-1700		Friday	
5:00 – 6:00		1700-1800		Saturday	
6:00 – 7:00		1800-1900		Sunday	1
7:00 – 8:00		1900-2000			
8:00 – 9:00	1	2000-2100			
9:00 – 10:00		2100-2200	1		
10:00 – 11:00	1	2200-2300			
11:00 – 12 Noon		2300-2400			

DAY_3_
NIGHT 1

DRY__3___WET_ SNOWY_1_ ICY__ OTHERS_0_____

CLEAR_3_ RAIN_ SNOW _1 FOG_____

INJURY_1__ NON-INJURY__ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
	1	1		

Fixed Object	Head On	Other	Pedestrian	Bike
1				

Parking Related ____2____

SOUTH BROAD STREET (CR 607)
PENNS GROVE
CRASH SUMMARY 2002-2004
TOTAL 11 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2	1	0	0	1	1	1	0	1	0	3

Time of Day				Day of Week	
AM Midnight - Noon	**Number of Crashes**	**PM Noon - Midnight**	**Number of Crashes**		**Number of Crashes**
Midnight – 1:00		12:00-1300		Monday	
1:00 – 2:00		1300-1400	1	Tuesday	2
2:00 – 3:00		1400-1500	1	Wednesday	2
3:00 – 4:00		1500-1600		Thursday	2
4:00 – 5:00		1600-1700		Friday	2
5:00 – 6:00		1700-1800	1	Saturday	1
6:00 – 7:00		1800-1900	2	Sunday	2
7:00 – 8:00		1900-2000	3		
8:00 – 9:00	1	2000-2100			
9:00 – 10:00		2100-2200	1		
10:00 – 11:00		2200-2300			
11:00 – 12 Noon	1	2300-2400			

DAY_7_
NIGHT 4

DRY_9____WET_2 SNOWY__ ICY__ OTHERS_0_____

CLEAR_8_ RAIN_2 SNOW 1_ FOG_____

INJURY_3_ NON-INJURY_8_ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
1	4			

Fixed Object	Head On	Other	Pedestrian	Bike
2		3		

Parking Related ___1____

SOUTH BROAD STREET (CR 607)
PENNS GROVE
CRASH SUMMARY 2004
TOTAL 4 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	1	1	0	0	0	0	0	0	0	0	2

Time of Day				Day of Week	
AM Midnight - Noon	**Number of Crashes**	**PM Noon - Midnight**	**Number of Crashes**		**Number of Crashes**
Midnight – 1:00		12:00-1300		Monday	
1:00 – 2:00		1300-1400		Tuesday	1
2:00 – 3:00		1400-1500		Wednesday	1
3:00 – 4:00		1500-1600		Thursday	
4:00 – 5:00		1600-1700		Friday	1
5:00 – 6:00		1700-1800		Saturday	1
6:00 – 7:00		1800-1900	1	Sunday	
7:00 – 8:00		1900-2000	2		
8:00 – 9:00		2000-2100			
9:00 – 10:00		2100-2200			
10:00 – 11:00		2200-2300			
11:00 – 12 Noon	1	2300-2400			

DAY_2_
NIGHT 2

DRY_4 ___WET_ SNOWY__ ICY__ OTHERS_0_____

CLEAR_4_ RAIN_ SNOW _ FOG_____

INJURY__1_ NON-INJURY_3_ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
1	1			

Fixed Object	Head On	Other	Pedestrian	Bike
		1		

Parking Related ___1___

SOUTH BROAD STREET (CR 607)
PENNS GROVE
CRASH SUMMARY 2003
TOTAL 3 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	1	0	0	0	0	1	0	0	0	0	1

Time of Day				Day of Week	
AM Midnight - Noon	Number of Crashes	PM Noon - Midnight	Number of Crashes		Number of Crashes
Midnight – 1:00		12:00-1300		Monday	
1:00 – 2:00		1300-1400		Tuesday	1
2:00 – 3:00		1400-1500	1	Wednesday	1
3:00 – 4:00		1500-1600		Thursday	
4:00 – 5:00		1600-1700		Friday	1
5:00 – 6:00		1700-1800		Saturday	
6:00 – 7:00		1800-1900		Sunday	
7:00 – 8:00		1900-2000	1		
8:00 – 9:00		2000-2100			
9:00 – 10:00		2100-2200	1		
10:00 – 11:00		2200-2300			
11:00 – 12 Noon		2300-2400			

DAY_1_
NIGHT 2

DRY__2___WET_1 SNOWY__ ICY__ OTHERS_0_____

CLEAR_2_ RAIN_ SNOW _1 FOG_____

INJURY___ NON-INJURY_3_ FATAL 0

Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
	2			

Fixed Object	Head On	Other	Pedestrian	Bike
		1		

Parking Related _____

SOUTH BROAD STREET (CR 607)
PENNS GROVE
CRASH SUMMARY 2002
TOTAL 4 CRASHES
Month

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	1	0	1	0	1	0	0

Time of Day				Day of Week	
AM Midnight - Noon	**Number of Crashes**	**PM Noon - Midnight**	**Number of Crashes**		**Number of Crashes**
Midnight – 1:00		12:00-1300		Monday	
1:00 – 2:00		1300-1400	1	Tuesday	
2:00 – 3:00		1400-1500		Wednesday	
3:00 – 4:00		1500-1600		Thursday	2
4:00 – 5:00		1600-1700		Friday	
5:00 – 6:00		1700-1800	1	Saturday	
6:00 – 7:00		1800-1900	1	Sunday	2
7:00 – 8:00		1900-2000			
8:00 – 9:00	1	2000-2100			
9:00 – 10:00		2100-2200			
10:00 – 11:00		2200-2300			
11:00 – 12 Noon		2300-2400			

DAY_4_
NIGHT

DRY___3__WET 1 SNOWY__ ICY__ OTHERS_0_____

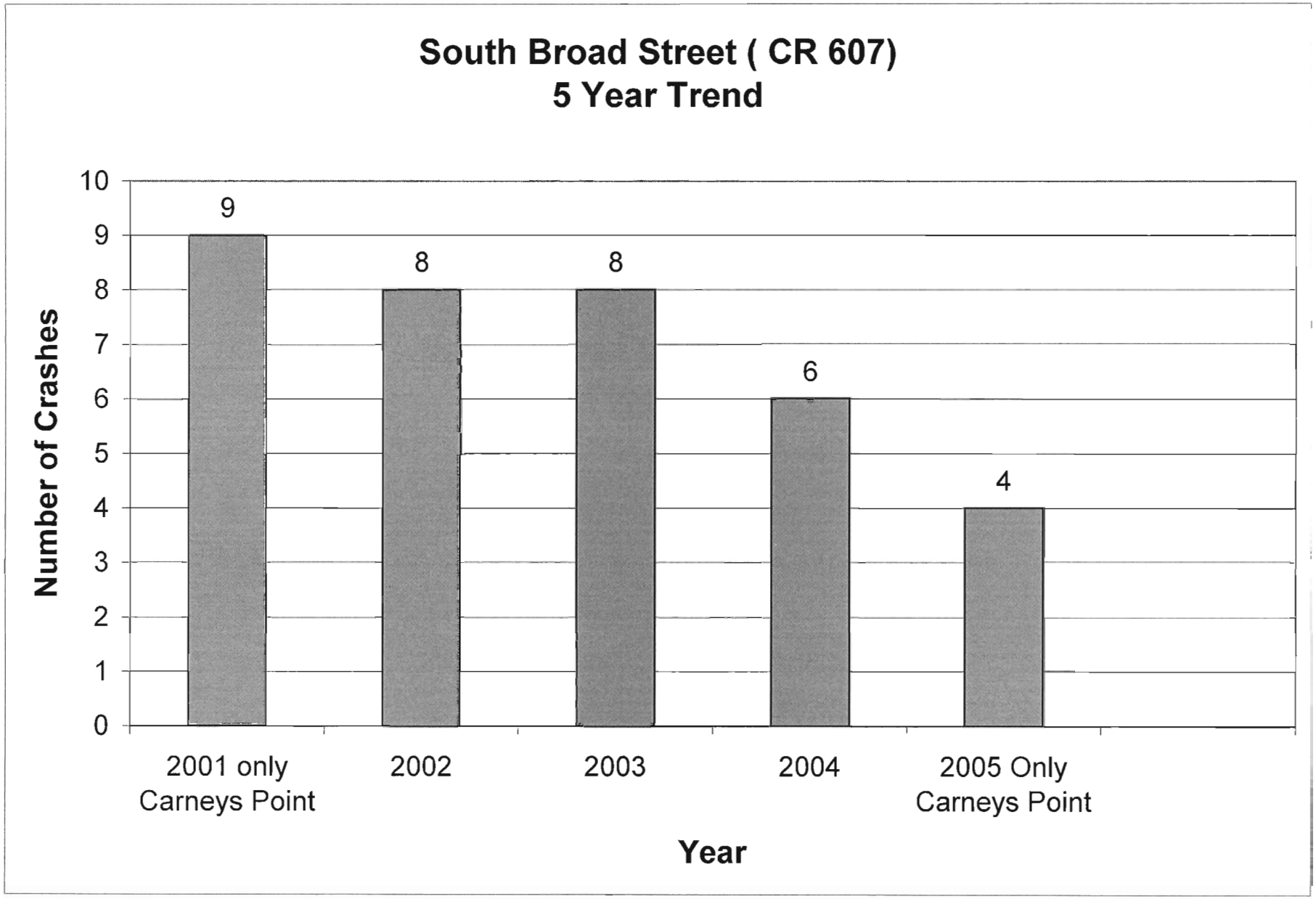
CLEAR_2_ RAIN_2 SNOW _ FOG_____

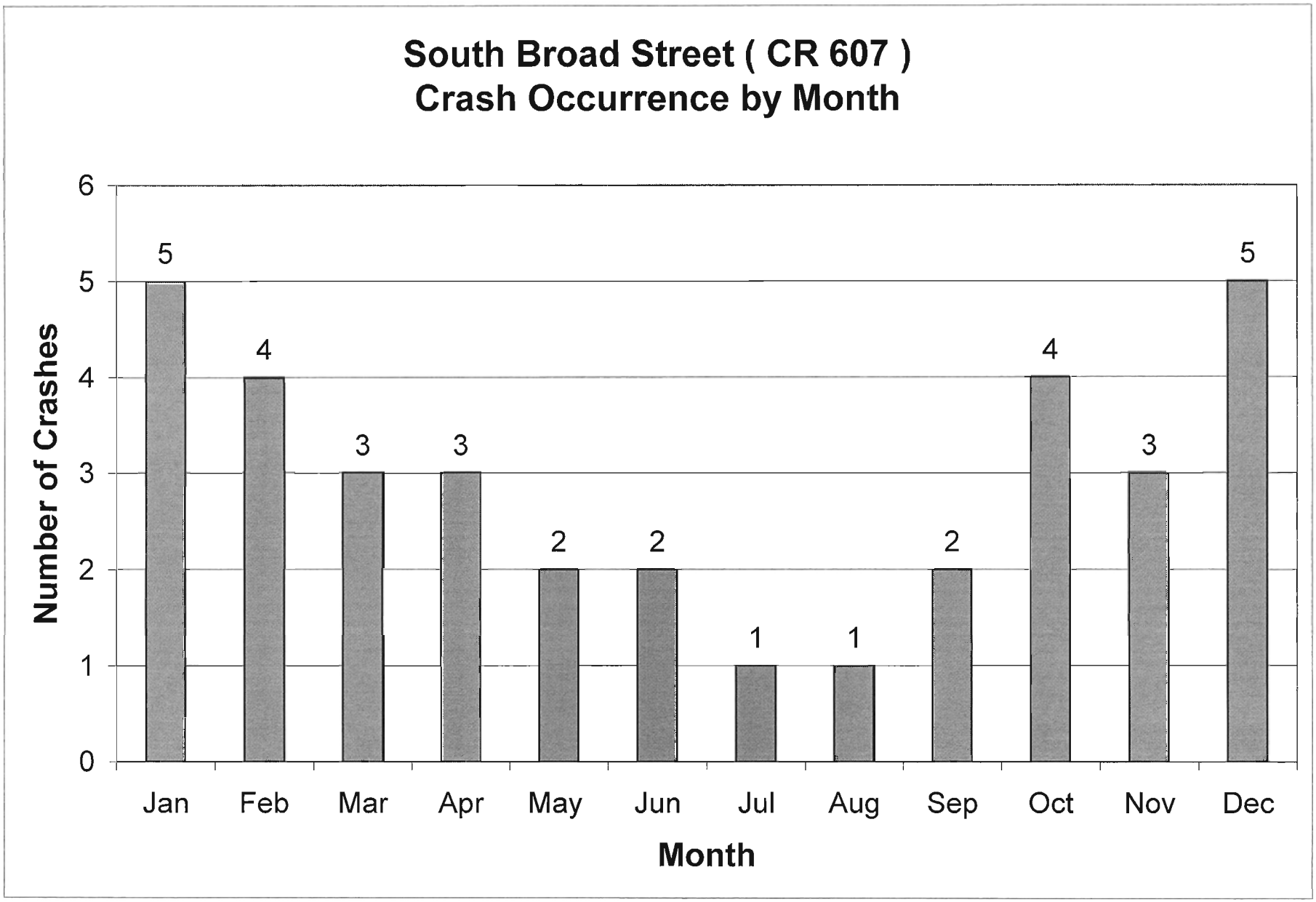
INJURY_2_ NON-INJURY_2_ FATAL 0

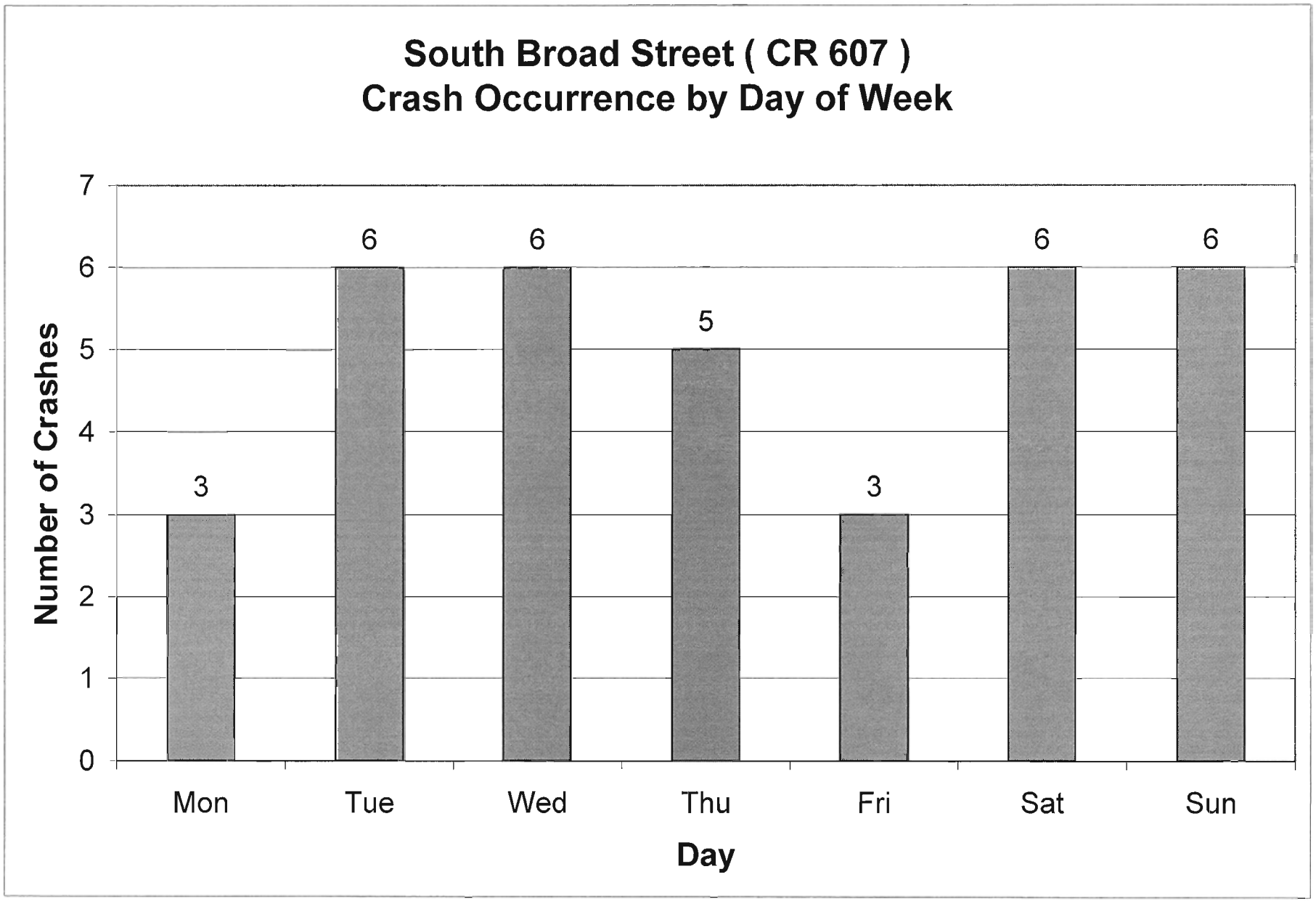
Right Angle	Same Direction	Left Turn	Right Turn	Side Swipe
	1			

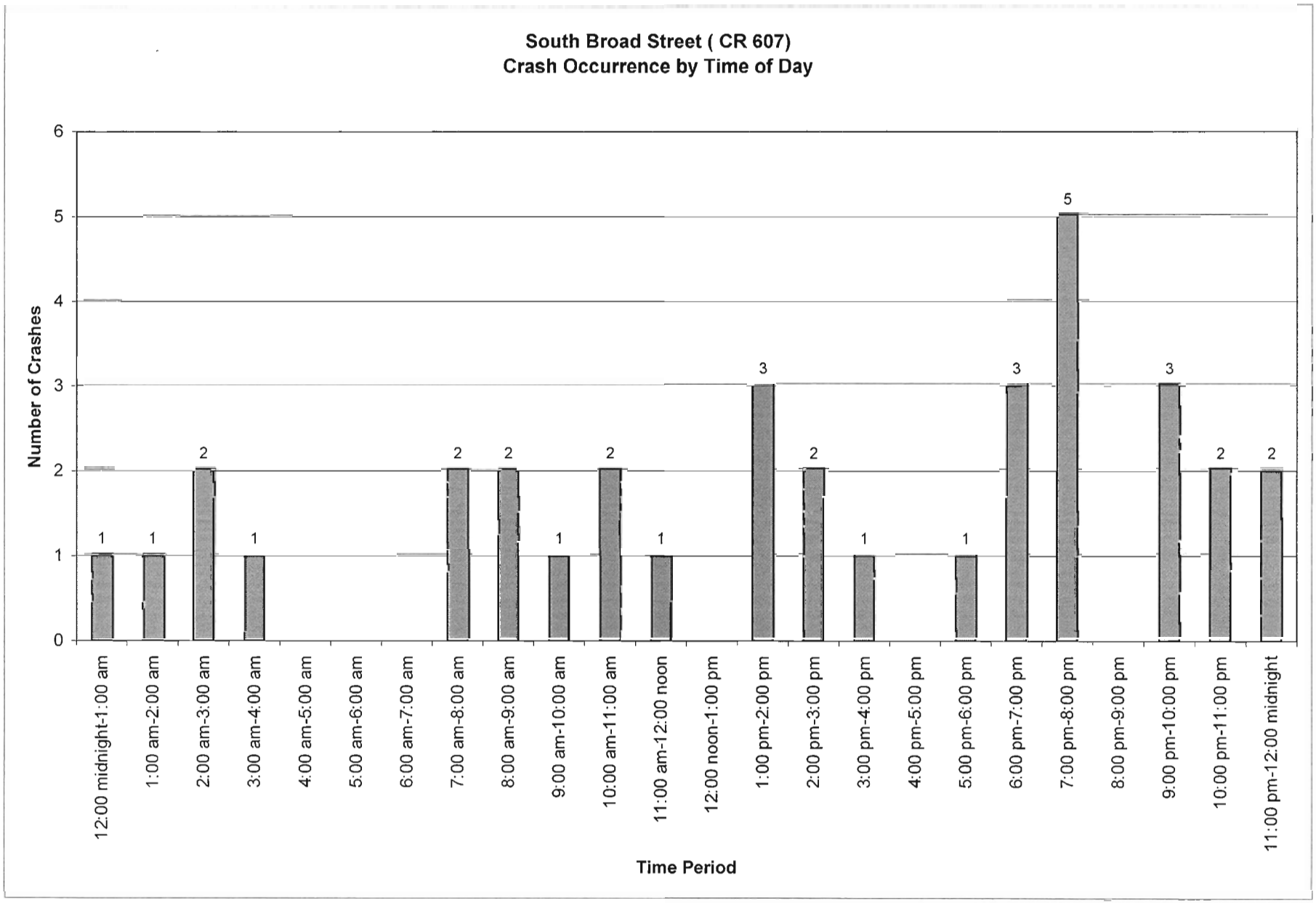
Fixed Object	Head On	Other	Pedestrian	Bike
2		1		

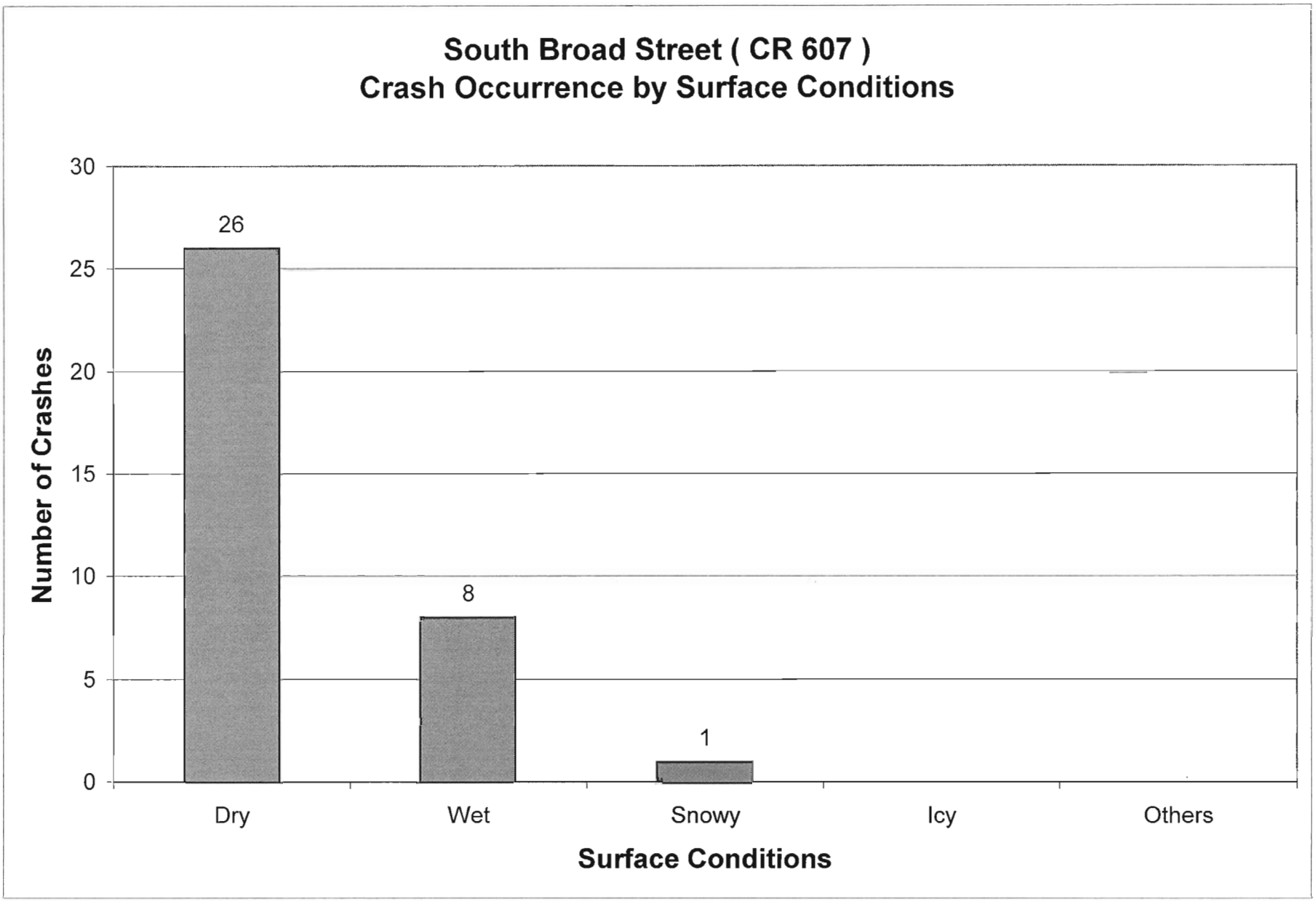
Parking Related _____

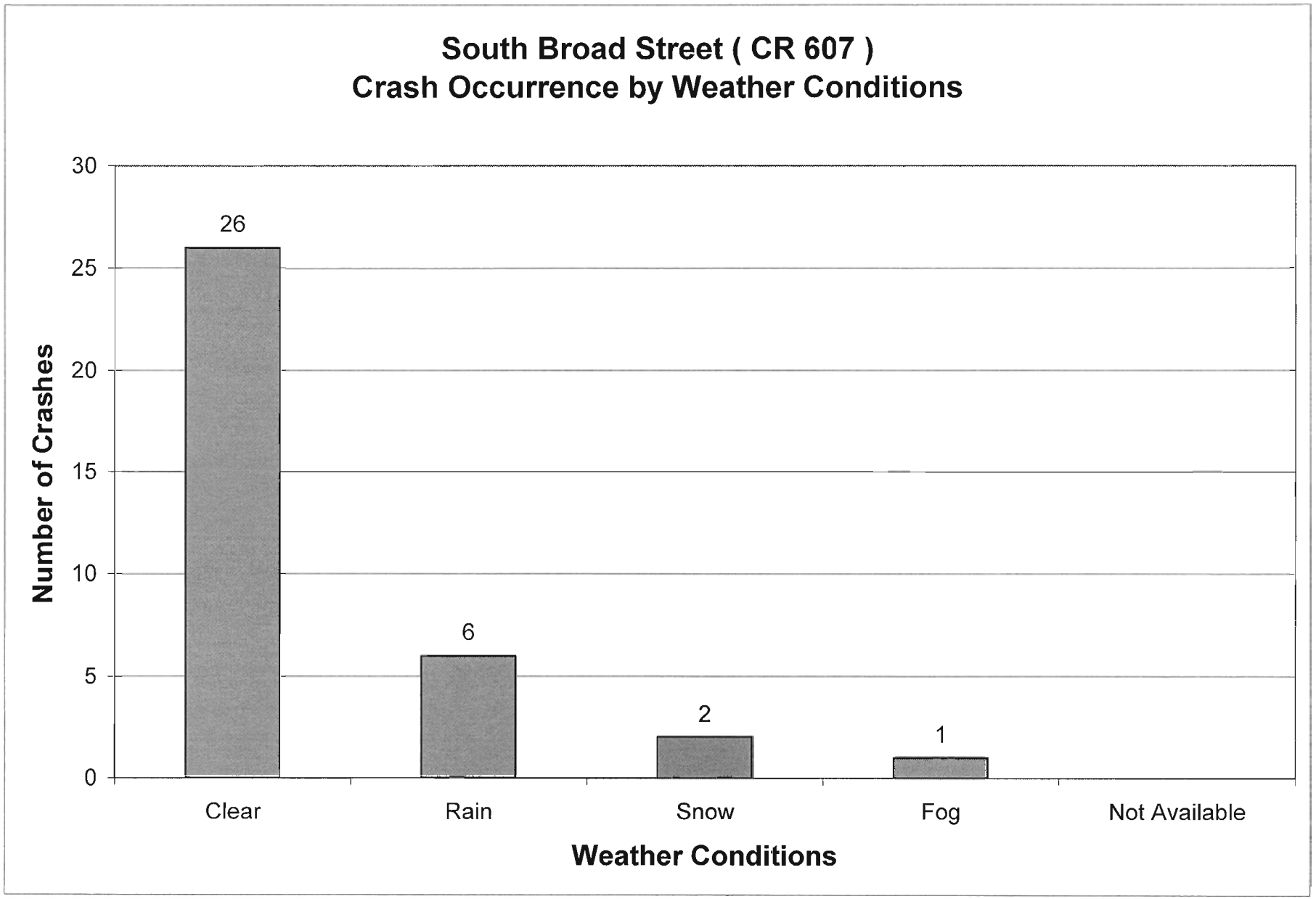

South Broad Street (CR 607)
5 Year Trend
Number of Crashes
10
9
8
7
6
5
4
3
2
1
0
9
8
8
6
4
2001 only
Carneys Point
2002
2003
2004
2005 Only
Carneys Point
Year

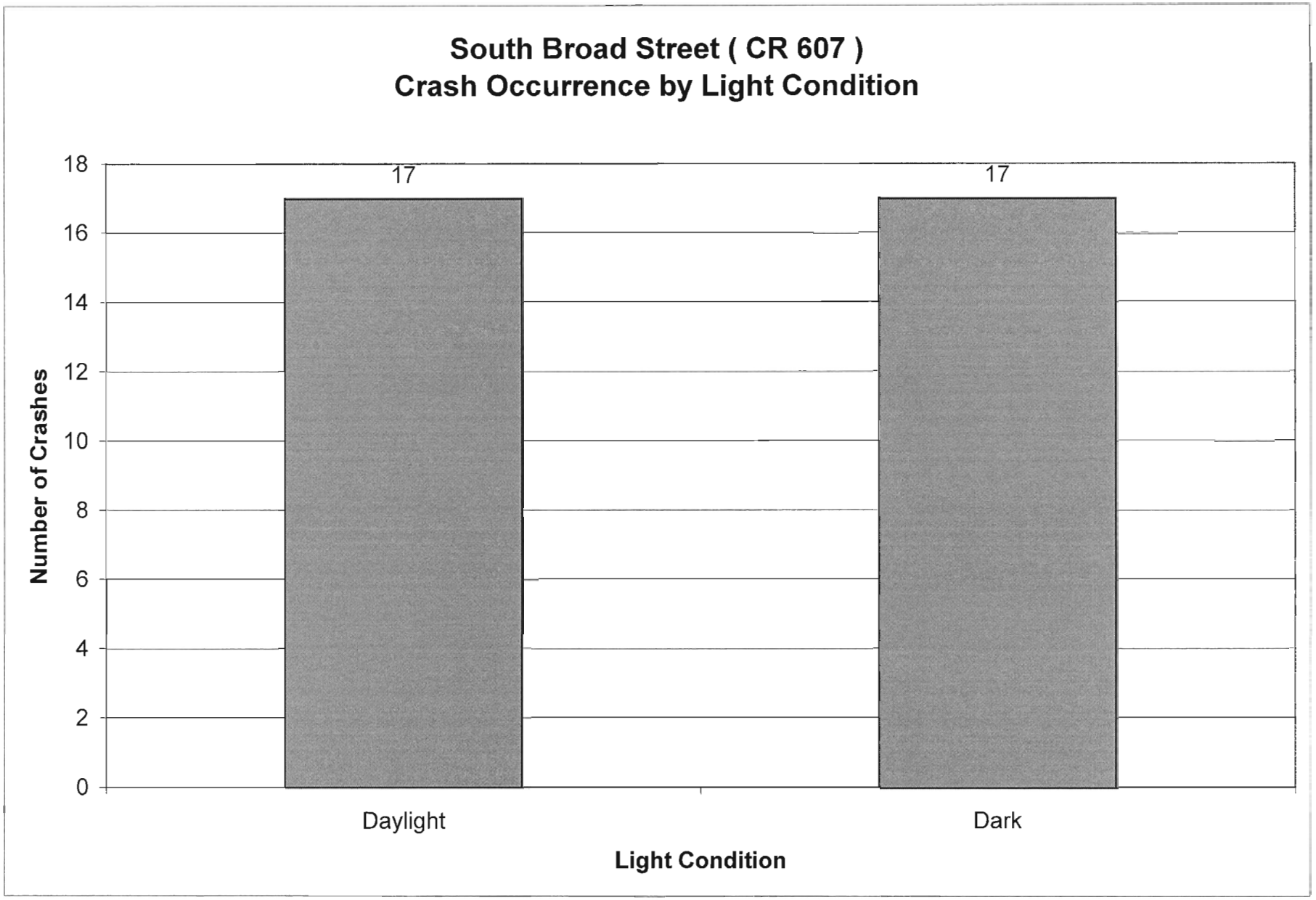

South Broad Street (CR 607)
Crash Occurrence by Month
Number of Crashes
0
1
2
3
4
5
6
5
4
3
3
2
2
1
1
2
4
3
5
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month

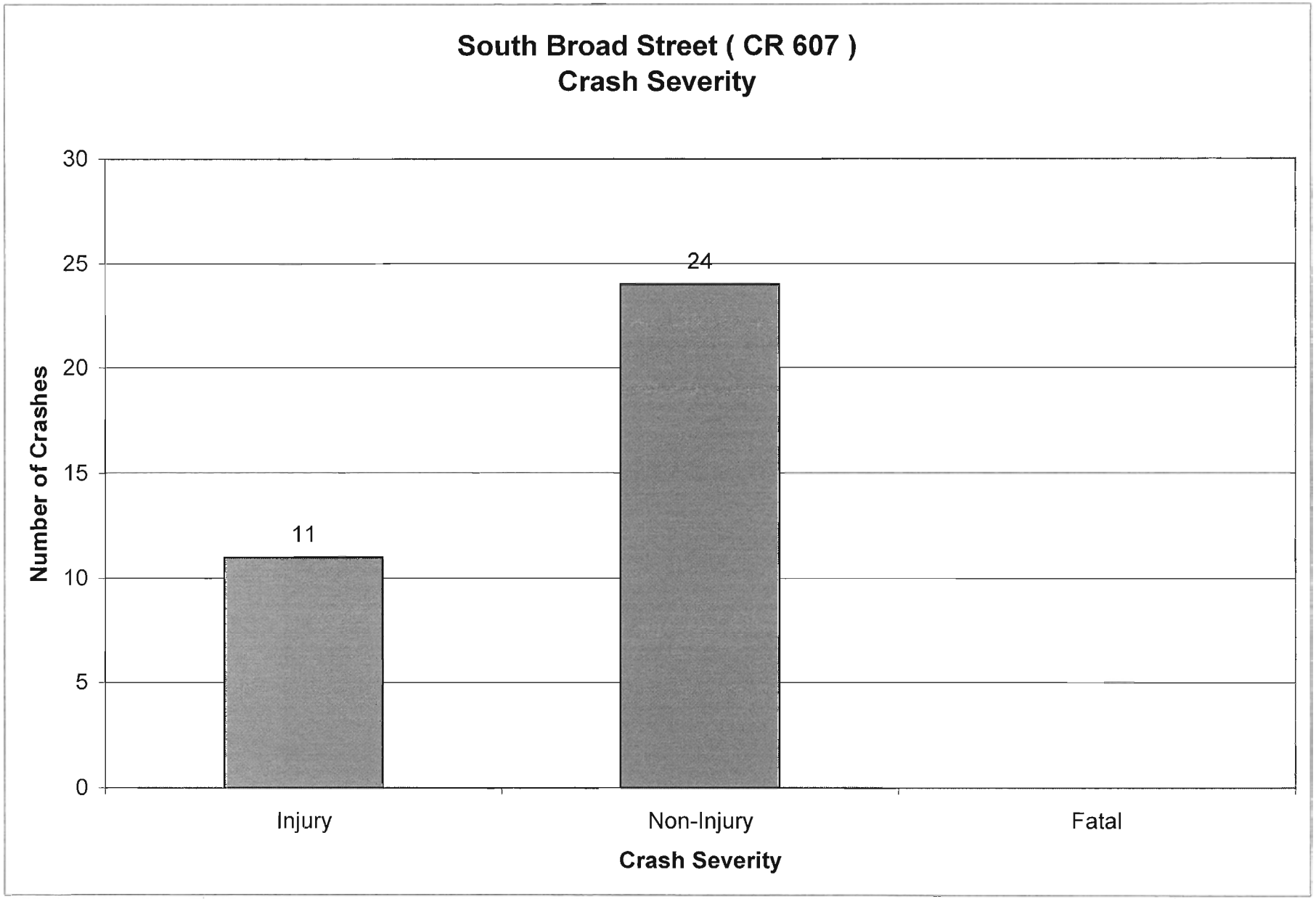

South Broad Street (CR 607)
Crash Occurrence by Day of Week
Number of Crashes
0
1
2
3
4
5
6
7
3
6
6
5
3
6
6
Mon
Tue
Wed
Thu
Fri
Sat
Sun
Day

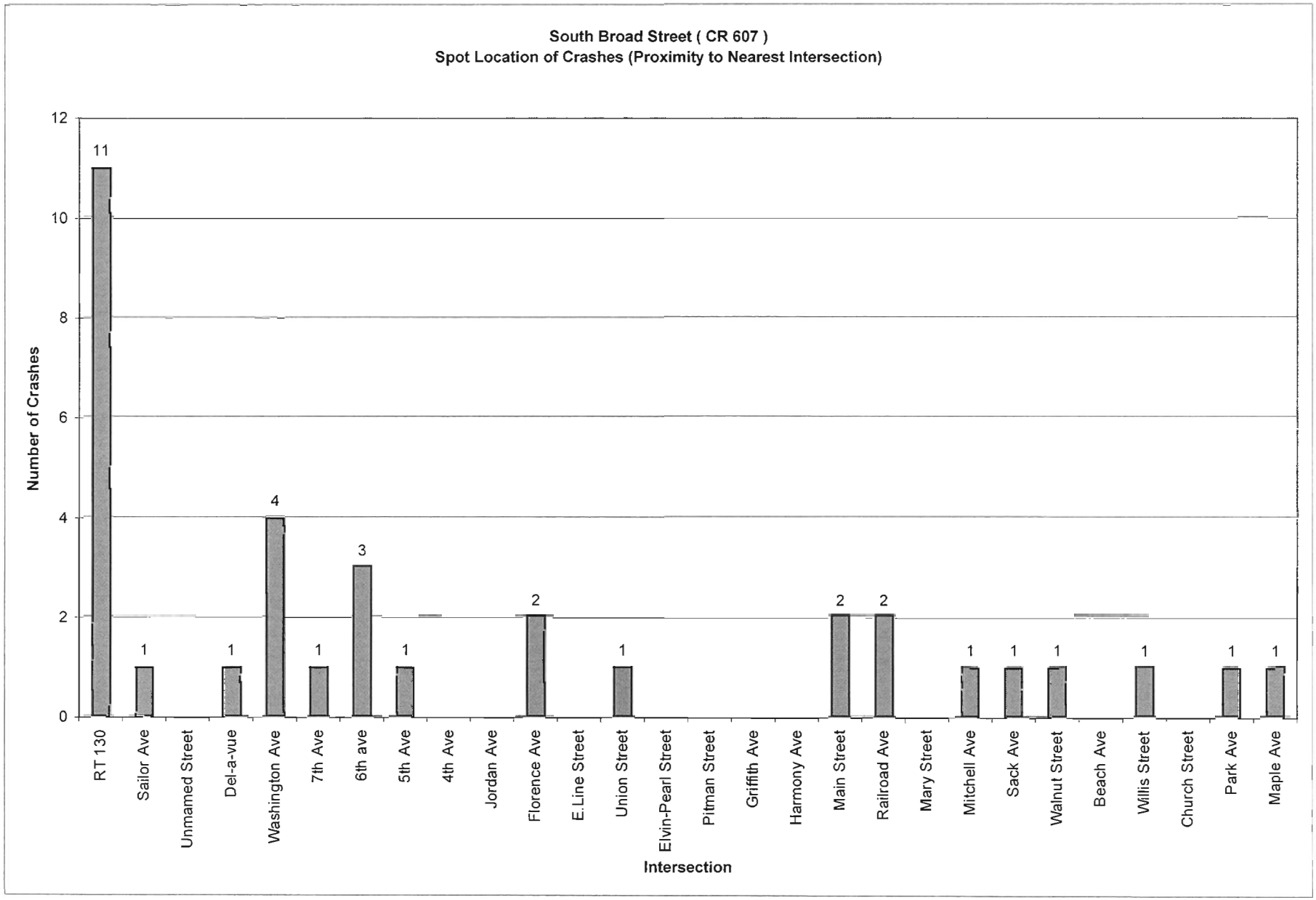

South Broad Street (CR 607)
Crash Occurrence by Time of Day
Number of Crashes
0
1
2
3
4
5
6
1
1
2
1
2
2
1
2
1
3
2
1
1
3
5
3
2
2
12:00 midnight-1:00 am
1:00 am-2:00 am
2:00 am-3:00 am
3:00 am-4:00 am
4:00 am-5:00 am
5:00 am-6:00 am
6:00 am-7:00 am
7:00 am-8:00 am
8:00 am-9:00 am
9:00 am-10:00 am
10:00 am-11:00 am
11:00 am-12:00 noon
12:00 noon-1:00 pm
1:00 pm-2:00 pm
2:00 pm-3:00 pm
3:00 pm-4:00 pm
4:00 pm-5:00 pm
5:00 pm-6:00 pm
6:00 pm-7:00 pm
7:00 pm-8:00 pm
8:00 pm-9:00 pm
9:00 pm-10:00 pm
10:00 pm-11:00 pm
11:00 pm-12:00 midnight
Time Period

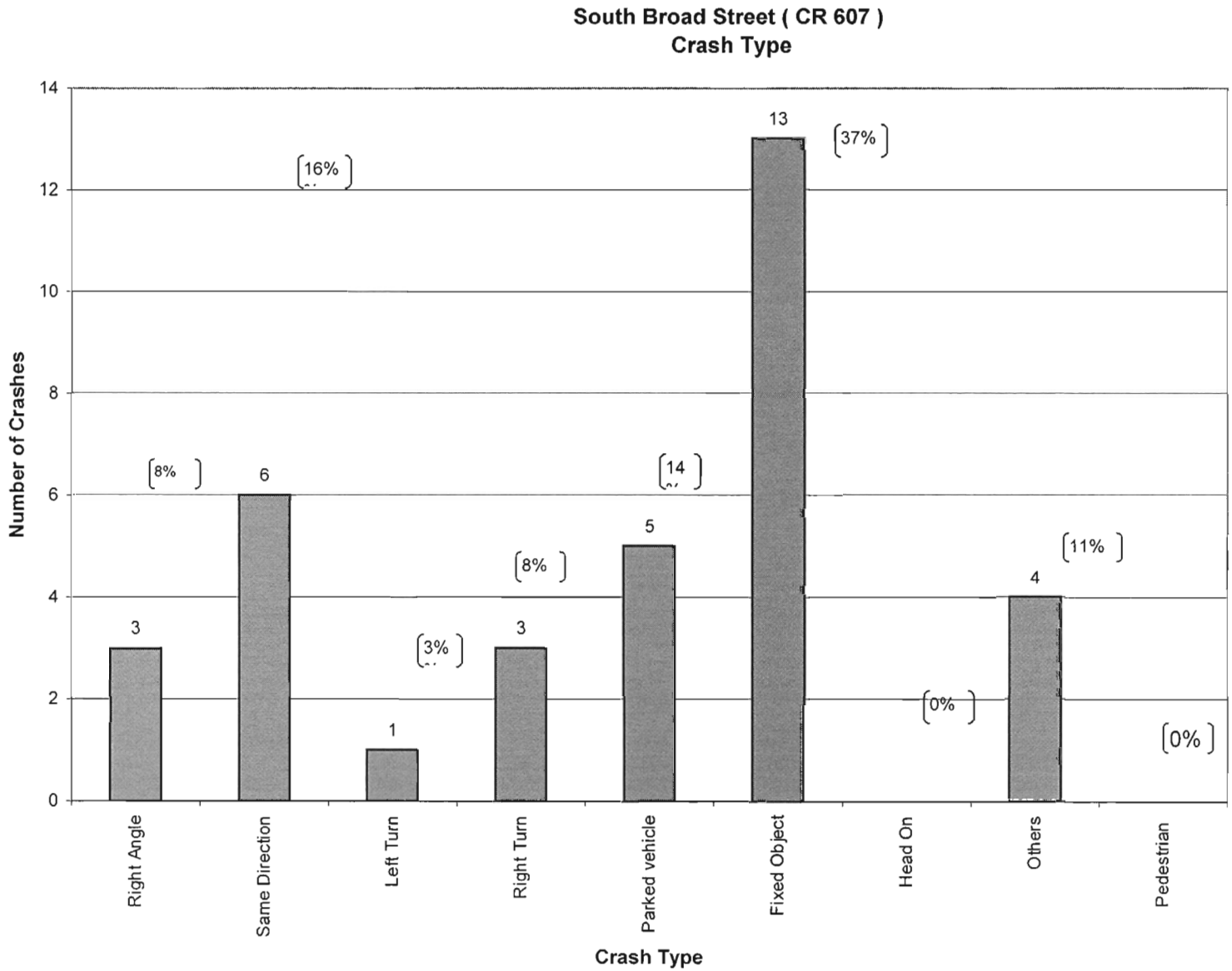

South Broad Street (CR 607)
Crash Occurrence by Surface Conditions
Number of Crashes
30
25
20
15
10
5
0
26
8
1
Dry
Wet
Snowy
Icy
Others
Surface Conditions


South Broad Street (CR 607)
Crash Occurrence by Weather Conditions
Number of Crashes
30
25
20
15
10
5
0
26
6
2
1
Clear
Rain
Snow
Fog
Not Available
Weather Conditions

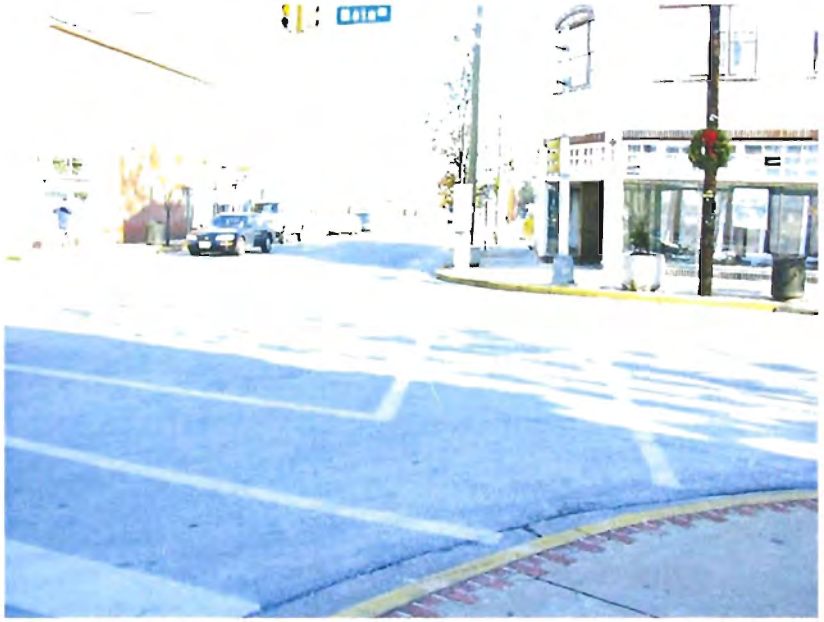

South Broad Street (CR 607)
Crash Occurrence by Light Condition
Number of Crashes
18
16
14
12
10
8
6
4
2
0
17
17
Daylight
Dark
Light Condition


South Broad Street (CR 607)
Crash Severity
Number of Crashes
30
25
20
15
10
5
0
11
24
Injury
Non-Injury
Fatal
Crash Severity


South Broad Street (CR 607)
Spot Location of Crashes (Proximity to Nearest Intersection)
Number of Crashes
0
2
4
6
8
10
12
11
1
1
4
1
3
1
2
1
2
2
1
1
1
1
1
RT 130
Sailor Ave
Unmamed Street
Del-a-vue
Washington Ave
7th Ave
6th ave
5th Ave
4th Ave
Jordan Ave
Florence Ave
E.Line Street
Union Street
Elvin-Pearl Street
Pitman Street
Griffith Ave
Harmony Ave
Main Street
Railroad Ave
Mary Street
Mitchell Ave
Sack Ave
Walnut Street
Beach Ave
Willis Street
Church Street
Park Ave
Maple Ave
Intersection


South Broad Street (CR 607)
Crash Type
Number of Crashes
14
12
10
8
6
4
2
0
3
6
1
3
5
13
0
4
0
8%
16%
3%
8%
14
37%
0%
11%
0%
Right Angle
Same Direction
Left Turn
Right Turn
Parked vehicle
Fixed Object
Head On
Others
Pedestrian
Crash Type

001_PC060002.JPG



002_PC060001.JPG

003_P1010003.JPG

004_PC070017.JPG

Field Views: Broad Street (CR 607)

005_PC070011.JPG

006_P1010018.JPG

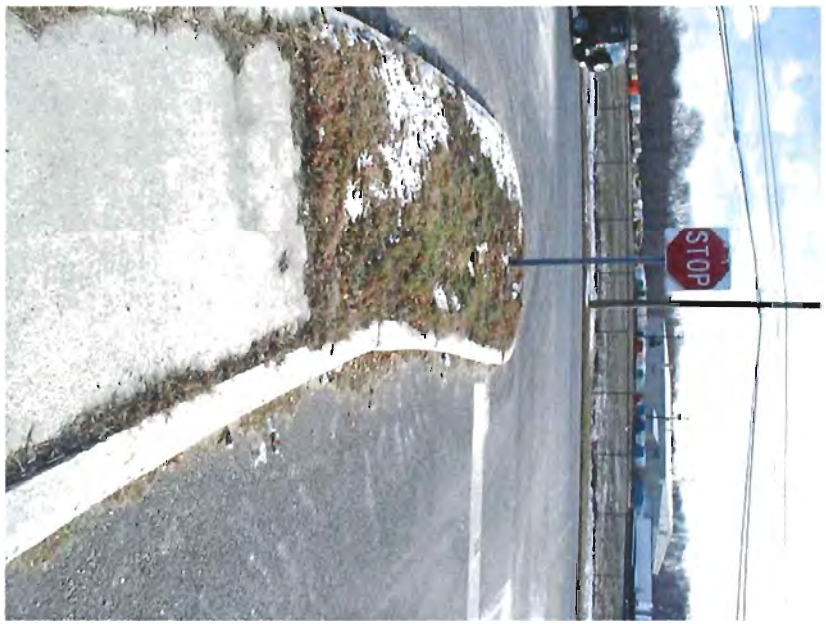
007_PC070013.JPG

008_PC070014.JPG

Field Views: Broad Street (CR 607)

009_PC070015.JPG

010_PC070016.JPG



011_P1010023.JPG

012_P1010003.JPG

Field Views: Broad Street (CR 607)

013_P1010012.JPG

014_P1010011.JPG

015_P1010016.JPG

016_P1010018.JPG

Field Views: Broad Street (CR 607)

Route _____ **Date** _____

Safety Audit Stage 5 — Operation/Existing Roads

Checklist 5-1 — *General Topics*

Item	Issues to be Considered	Check	Comments
1 Landscaping	Is landscaping in accordance with guidelines (e.g., clearances, sight distance)?		
	Are required clearances and sight distances not likely to be restricted following future plant growth (landscaping and natural)?		
2 Parking	Are provisions for parking satisfactory in relation to traffic operations and safety?		
3 Temporary works	Are all locations free of construction or maintenance equipment, and any signing or temporary traffic control devices that are no longer required?		
4 Headlight glare	Have any problems due to headlight glare (e.g., two-way service road close to main traffic lanes) been addressed?		

Checklist 5-2 *Alignment and Cross Section*

Project _____

Audit Team Members _____

Date _____

Item	Issues to be Considered	Check	Comments
1 Visibility, sight distances	Is sight distance adequate for the speed of traffic using the route?		
	Is adequate sight distance provided for intersections, crossings (e.g., pedestrian, cyclist, cattle, railway) etc.?		
2 Design speed	Is the horizontal and vertical alignment suitable for the (85th percentile) traffic speed? If not:		
	(a) Are warning signs installed?		
	(b) Are advisory speed signs installed?		
	Are the posted advisory speeds for curves appropriate?		

Checklist 5-2 *Alignment and Cross Section*

Project _____

Audit Team Members _____

Date _____

Item	Issues to be Considered	Check	Comments
3 Overtaking	Are adequate passing opportunities provided?		
4 Readability by drivers	Are there any sections of roadway which may cause confusion e.g.:		
	(a) Is alignment of roadway clearly defined?		
	(b) Has disused pavement (if any) been removed or treated?		
	(c) Have old pavement markings been removed properly?		
	(d) Do streetlight and tree lines conform with the road alignment?		

Checklist 5-2 *Alignment and Cross Section*

Project _____

Audit Team Members _____

Date _____

Item	Issues to be Considered	Check	Comments
5 Widths	Are all traffic lanes and roadway widths, including bridges, adequate?		
6 Shoulders	Are shoulder widths appropriate (e.g. for broken down or emergency vehicles)?		
	Are shoulders traversable for all vehicles and road users?		
	Is the shoulder cross slope sufficient to provide proper drainage?		
7 Side slopes	Are the side slopes and table drains safe for run off vehicles to traverse?		

Checklist 5-3 *Intersections*

Project

Audit Team Members

Date

Item	Issues to be Considered	Check	Comments
1 Location	Are intersections located safely with respect to horizontal and vertical alignment?		
2 Warning	Where intersections occur at the end of high speed environments (e.g., at approaches to towns), are there traffic control devices to alert drivers?		
3 Controls	Are pavement markings and intersection control signing satisfactory?		
4 Layout	Is the alignment of curbs, traffic islands and medians satisfactory?		
	Is the intersection layout obvious to all users?		
	Are turning radii and tapers appropriate?		

Checklist 5-3 *Intersections*

Project

Audit Team Members

Date

Item	Issues to be Considered	Check	Comments
5 Visibility, sight distances	Is sight distance adequate for all movements and all users?		

Checklist 5-4 *Auxiliary Lanes and Turn Lanes*

Project

Audit Team Members

Date

Item	Issues to be Considered	Check	Comments
1 Tapers	Are starting and finishing tapers located and aligned correctly?		
2 Shoulders	Are appropriate shoulder widths provided at merges in accordance with design guidelines?		
3 Signs	Is signing and marking installed in accordance with standards?		
4 Turning traffic	Is there advance warning of the approaching auxiliary lane?		

Checklist 5-4 *Auxiliary Lanes and Turn Lanes*

Project

Audit Team Members

Date

Item	Issues to be Considered	Check	Comments
5 Visibility, sight distances	Have right turn movements within the length of the auxiliary lane been avoided?		
	Has stopping sight distance been provided to the rear of turning vehicles?		
	Has stopping sight distance been provided for entering and leaving vehicles?		

Checklist 5-5 *Non-Motorized Traffic*

Project

Audit Team Members

Date

Item	Issues to be Considered	Check	Comments
1 Paths	Are there appropriate travel paths and crossing points for pedestrians and cyclists?		
2 Barriers and fencing	Where necessary, is fencing installed to guide pedestrians and cyclists to crossings or overpasses?		
	Is fencing of your design (e.g., avoid solid horizontal rails)?		
	Where necessary, is crash barrier installed to separate vehicle, pedestrian and cyclist flows?		
3 Bus stops	Are bus stops appropriately located with adequate clearance from the traffic lane for safety and visibility?		
4 Elderly and disabled	Are there adequate provisions for the elderly, the disabled, children, wheelchairs and baby carriages (e.g., holding rails, curb and median crossings, ramps)?		
	Where necessary, are hand rails provided (e.g., on bridges, ramps), and are they adequate?		

Checklist 5-5 *Non-Motorized Traffic*

Project _____

Audit Team Members _____

Date _____

Item	Issues to be Considered	Check	Comments
Elderly and disabled (cont.)	Distance between stop line and pedestrian crossing at signalized intersections (for visibility of pedestrians from truck driver's seat).		
	Signal timing - cycle length - pedestrian clearance time - are pedestrian buttons operable?		
5 Cyclists	Is the pavement width adequate for the number of cyclists using the route?		
	Is the bicycle route continuous, i.e., free of squeeze points or gaps?		
	Are bicycle safe grates provided at drainage pits where necessary?		

Checklist 5-6 *Signs and Lighting*

Project _____

Audit Team Members _____

Date _____

Item	Issues to be Considered	Check	Comments
1 Lighting	Is appropriate lighting installed at intersections, roundabouts, pedestrian and bicycle crossings, pedestrian refuges, etc?		
	Is all lighting operating satisfactorily?		
	Are the appropriate types of poles used for all locations and correctly installed (e.g. slip base at correct height, rigid poles protected if within clear zone)?		
	Are all locations free of any lighting which may conflict visually with traffic signals or signs?		
	Has lighting for signs, particularly overhead signs, been provided where necessary?		
2 Signs	Are all necessary regulatory, warning and direction signs (including detours) in place? Are they conspicuous?		
	Are there any redundant signs?		

Checklist 5-6 *Signs and Lighting*

Project

Audit Team Members

Date

Item	Issues to be Considered	Check	Comments
Signs (cont.)	Are traffic signs in their correct locations, and properly positioned with respect to lateral clearance and height?		
	Are the correct signs used for each situation, and is each sign necessary?		
	Are signs placed so as not to restrict sight distance, particularly for vehicles?		
	Are all signs effective for all likely conditions (e.g. day, night, rain, fog, rising or setting sun, oncoming headlights, poor lighting)?		
	Do sign supports conform to guidelines?		
3 Marking and delineation	Have retroreflective markers been installed? Where colored markers are used, have they been installed correctly?		
	Is all necessary pavement marking installed?		
	Are pavement markings (center lines, edge lines, transverse lines) clearly visible and effective for all likely conditions (e.g. day, night, rain, fog, rising or setting sun, oncoming headlights, light colored pavement surface, poor lighting)?		

Checklist 5-6 *Signs and Lighting*

Project

Audit Team Members

Date

Item	Issues to be Considered	Check	Comments
Marking and delineation (cont.)	On light colored pavement surfaces (e.g. concrete) are RRPMs used to simulate traffic lanes?		
	Has raised profile edge marking been provided where necessary (e.g. fatigue zones)?		
	Is delineation adequate and in accordance with guidelines (e.g. post-mounted delineators, RRPMs, chevron alignment markers)?		
	Is delineation effective for all likely conditions (e.g. day, night, rain, fog, rising or setting sun, oncoming headlights)?		
	If chevron alignment markers are installed, have the correct types of markers been used?		
	Are vehicle paths through intersections delineated where required?		
	On truck routes, are reflective devices appropriate to driver's eye height?		

Checklist 5-7 *Traffic Signals*

Project _____

Audit Team Members _____

Date _____

Item	Issues to be Considered	Check	Comments
1 Operation	Are traffic signals operating correctly? Is the number and location of signal displays appropriate?		
2 Visibility	Are traffic signals clearly visible to approaching motorists?		
	Is the end of likely vehicle queues visible to motorists so that they may stop safely?		
	Have any visibility problems caused by the rising or setting sun been addressed?		
	Are signal displays shielded so that they can be seen only by the motorists for whom they are intended?		
	Where signal displays are not visible from an adequate distance, are signal warning signs and/or flashing lights installed?		
3 Other provisions	Where necessary, are there provisions for visually impaired pedestrians (e.g., audio-tactile push buttons, tactile markings)? Are they working?		
	Where necessary, are there provisions for elderly or disabled pedestrians (e.g., extended green phase, phase displacement)?		

Checklist 5-8 *Physical Objects*

Project _____

Audit Team Members _____

Date

Item	Issues to be Considered	Check	Comments
1 Clear zone	Is a clear zone provided in accordance with the guidelines?		
	Is the appropriate treatment or protection provided for any objects within the clear zone (e.g., slip-base or frangible poles, crash barrier, crash cushions, sloping culvert, headwalls)?		

Checklist 5-8 *Physical Objects*

Project

Audit Team Members

Date

Item	Issues to be Considered	Check	Comments
2 Crash barriers	Are safety barriers installed at all necessary locations, including on bridges, in accordance with guidelines?		
	Are the crash barrier systems suitable for the purpose?		
	Is the length of crash barrier at each installation adequate? Are the crash barriers correctly installed?		
	Are Guard Rail Energy Absorbing Terminals (GREAT) or crash cushions installed where necessary (e.g., off ramp, bridge piers)?		

Checklist 5-8 *Physical Objects*

Project

Audit Team Members

Date

Item	Issues to be Considered	Check	Comments
Crash barriers (cont.)	Where works are subject to stage construction, are temporary barriers installed in accordance to guidelines?		
	Is there a safe run off area behind breakaway terminals?		
3 Fencing	Is pedestrian fencing where needed?		
	Is fencing in the clear zone free of separate horizontal rails?		
	Is there adequate delineation/visibility of barriers and fences at night?		

Checklist 5-9 *Delineation*

Project _____

Audit Team Members _____

Date _____

Item	Issues to be Considered	Check	Comments
1 Line markings	Are all line markings (center line, edge line, transverse lines) in good condition?		
2 Guide posts	Are guide posts correctly placed, clean, and visible?		
3 Raised and Recessed Pavement Markings	Are RPM's in good condition?		
4 Chevron Alignment Markers	Are Chevron Alignment Markers placed correctly, and used only according to standards?		

Checklist 5-10 *Pavement*

Project _____

Audit Team Members

_____

Date

Item	Issues to be Considered	Check	Comments
1 Pavement defects	Is the pavement free of defects (e.g., excessive roughness or rutting, potholes, etc.) which could result in safety problems (e.g., loss of steering control)?		
2 Skid resistance	Does the pavement appear to have adequate skid resistance, particularly on curves, steep grades and approaches to intersection? Has skid resistance testing been carried out where necessary?		
3 Ponding	Is the pavement free of areas where ponding or sheet flow of water may occur with resultant safety problems?		
4 Loose screenings	Is the pavement free of loose screenings?		