

# EVALUATION OF HIGH CRASH LOCATIONS (DARK CRITERIA) STUDY



**LOCATION #10:  
SR 92 (Naamans Road)  
MILEPOST 0 to 1.29  
November 2012**



**Prepared for:**  
**Delaware Department of  
Transportation**



**By:**  
**Urban Engineers, Inc.**



## EXECUTIVE SUMMARY

The purpose of this study was to evaluate locations with the highest ratios of crashes occurring during dark conditions throughout the state of Delaware. The study included reviewing crash history and existing conditions of the locations, identifying specific sites where crashes are occurring and providing recommendations to improve conditions.

The Hazard Elimination Program (HEP) site selection process was used to determine ten (10) locations statewide with a dark crashes Critical Ratio greater than one and ten (10) or more crashes occurring in the three year study period within a one-mile roadway segment. SR 92 (Naamans Road), from Milepost 0 to 1.29, was determined to be one of the ten locations with the highest dark crashes Critical Ratios statewide.

Police crash reports covering three years were analyzed to identify high crash sites along SR 92 (Naamans Road), from Milepost 0 to 1.29. Crash clusters were identified at the following five (5) locations:

- Site #1: SR 92 @ US 202 (Concord Pike) Intersection (M.P. 0)
- Site #2: SR 92 @ Stratford Apartments Entrance/Brandywine Town Center Entrances Intersection (M.P. 0.26)
- Site #3: SR 92 @ Shipley Road Intersection (M.P. 0.52)
- Site #4: SR 92 @ Grubb Road Intersection (M.P. 0.89)
- Site #5: SR 92 @ Ebright Road Intersection (M.P. 1.07)

The analysis of the five (5) sites concluded the following: Sites #1, #2, #3 and #4 have existing partial intersection lighting. Additional new luminaires would be required to bring the light levels up to meet DelDOT lighting criteria. Photometric calculations are recommended to evaluate the existing lighting at each of these sites.

Due to the high number of rear end crashes at Sites #2 and #3, it is recommended that the signal timings and signal coordination along SR 92 be evaluated at these sites.

Two maintenance-related improvements were recommended. At Site #2, the sign that was knocked down in the median adjacent to the SR 92 Westbound approach left turn lanes stop bar should be replaced. At Site #4, the transformer base cover should be replaced for DelDOT pole #1702 on the southeast corner of the intersection.

Upon analysis of the crash history, Site #5 did not have a high enough night-to-day crash ratio to warrant closer evaluation for potential nighttime safety improvements.

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## 1. INTRODUCTION

The purpose of this study was to evaluate locations with the highest ratios of crashes occurring during dark conditions throughout the state of Delaware. The study included reviewing crash history and existing conditions of the locations, identifying specific sites where crashes are occurring and providing recommendations to improve conditions.

The study included three parts:

**Part 1: Location Selection** – The Hazard Elimination Program (HEP) site selection process was used to determine ten (10) locations statewide with a dark crashes Critical Ratio greater than one and ten (10) or more crashes occurring in the three year study period within a one-mile roadway segment. Results from the location selection process were reviewed in coordination with DelDOT. Corridors that were already part of an ongoing HSIP or HEP project were not included in this study. The Critical Ratio methodology was used in the location selection process. The list of statewide 1.0 mile corridors ranked by Critical Ratio is included in **Appendix D**.

**Part 2: Evaluation** – After the list of the top ten locations was approved by DelDOT, an initial review was performed for each selected location. The evaluation included field visits to the sites; collecting information on existing roadway and traffic conditions; crash analysis; preliminary lighting evaluation; and this report. The report includes existing lighting analysis; concept lighting improvement alternatives; other signing, striping and signal recommendations in accordance with the Delaware Strategic Highway Safety Plan (SHSP), particularly related to dark crashes; potential design/implementation issues, and identification of the need for more detailed studies (Phase II studies).

**Part 3: Coordination** – When possible, DelDOT-approved recommendations are coordinated for inclusion into the construction of ongoing DelDOT projects (HEP, Pavement & Rehabilitation, PD, etc.).

The location selection process resulted in a list of ten locations, including SR 92 (Naamans Road) from milepost 0 to 1.29 in Wilmington, Delaware.

### *SR 92 (Naamans Road)*

The evaluation and recommendations for SR 92 (Naamans Road), from milepost 0 to 1.29, are included in this report. The studied portion of SR 92 is a 1.29-mile stretch of principal arterial roadway in suburban Wilmington, Delaware.

A study area map is provided in **Figure 1**.

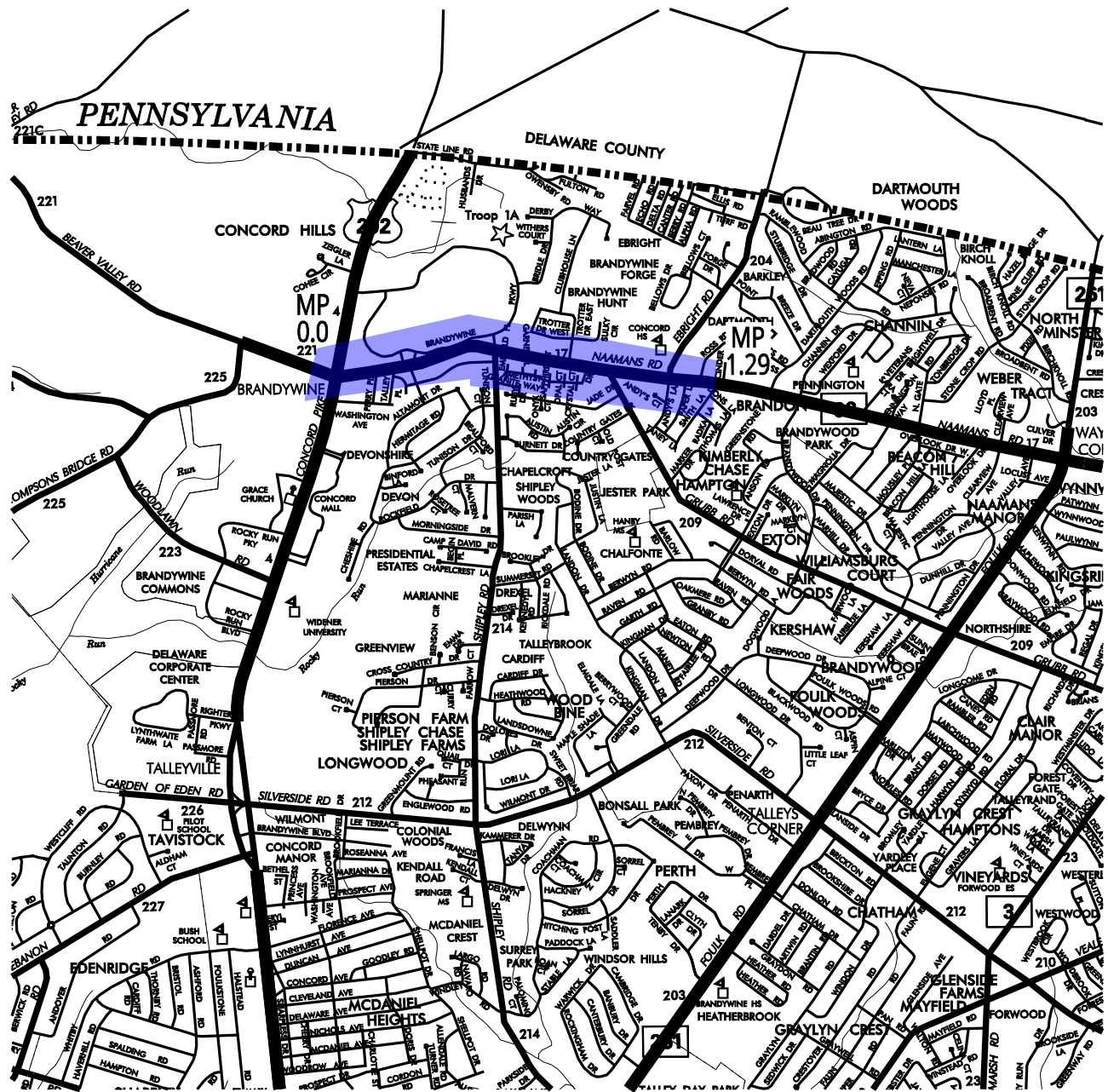


FIGURE 1 - STUDY AREA MAP  
 SR 92 (NC 17), MP 0-1.29  
 Wilmington, Delaware  
 New Castle County



Urban Engineers, Inc.  
 2 Penns Way, Suite 309  
 New Castle, DE 19720

## 2. CRASH DATA SUMMARY

This evaluation was based on crash data during the three year period from May 16, 2008 to May 16, 2011.

A total of 170 crashes occurred on SR 92 (Naamans Road) from milepost 0 to 1.29 during the evaluation period.

There were no fatalities in the study area. Thirty-nine (39) of the crashes resulted in personal injuries.

Of the 170 crashes, 112 of the crashes occurred during daylight (66%). Forty (40) of the crashes occurred during dark-but lighted conditions (24%), 12 of the crashes occurred during dark conditions (7%), 4 of the crashes occurred during either dawn or dusk conditions (2%) and 2 of the crashes occurred in unknown conditions (1%).

The highest number of crashes (42) at a single site occurred at the intersection of SR 92 and Shipley Road.

Crashes were grouped together into sites based on their location along SR 92.

### Site #1: SR 92 @ US 202 (Concord Pike) Intersection (M.P. 0)

There were 40 total crashes at the site during the evaluation period. Fifteen (15) of the crashes (38%) occurred during dark hours. This site has existing partial roadway lighting.

This site was selected for evaluation based on the crash history and the presence of partial roadway lighting.

### Site #2: SR 92 @ Stratford Apartments Entrance/Brandywine Town Center Entrances Intersection (M.P. 0.26)

There were 31 total crashes at this site during the evaluation period. Twelve (12) of the crashes (39%) occurred during dark hours. This site has existing partial roadway lighting.

This site was selected for evaluation based on the crash history and the presence of partial roadway lighting.

### Site #3: SR 92 @ Shipley Road Intersection (M.P. 0.52)

There were 42 total crashes at the site during the evaluation period. Eleven (11) of the crashes (26%) occurred during dark hours. This site has existing partial roadway lighting.

This site was selected for evaluation based on the presence of partial roadway lighting.

Site #4: SR 92 @ Grubb Road Intersection (M.P. 0.89)

There were 20 total crashes at the site during the evaluation period. Six (6) of the crashes (30%) occurred during dark hours. This site has existing roadway lighting.

This site was selected for evaluation based on the presence of partial roadway lighting.

Site #5: SR 92 @ Ebright Road Intersection (M.P. 1.07)

There were 20 total crashes at this site during the evaluation period. Four (4) of the crashes (20%) occurred during dark hours. This site has existing roadway lighting.

This site was not selected for evaluation based on the crash history.



### 3. ROADWAY AND SITE CHARACTERISTICS

SR 92 (Naamans Road) is a four-lane, divided, principal arterial roadway in the study area. Shoulders are present in both directions. The posted speed limit for SR 92 is 40 miles per hour west of Shipley Road and 45 miles per hour east of Shipley Road. There are five signalized intersections in the study area.

In 2010, SR 92 experienced Average Daily Traffic (ADT) of 27,965 vehicles in the study area.

#### Site #1: SR 92 @ US 202 (Concord Pike) Intersection (M.P. 0)

SR 92 and US 202 meet at a large, signalized intersection. The US 202 northbound and southbound approaches both include two left turn lanes, three through lanes and one channelized right turn lane. The SR 92 eastbound and westbound approaches both include two left turn lanes, two through lanes and one channelized right turn lane.

There are no pedestrian crosswalks at the intersection.



**Photo 1: SR 92 and US 202 Intersection**

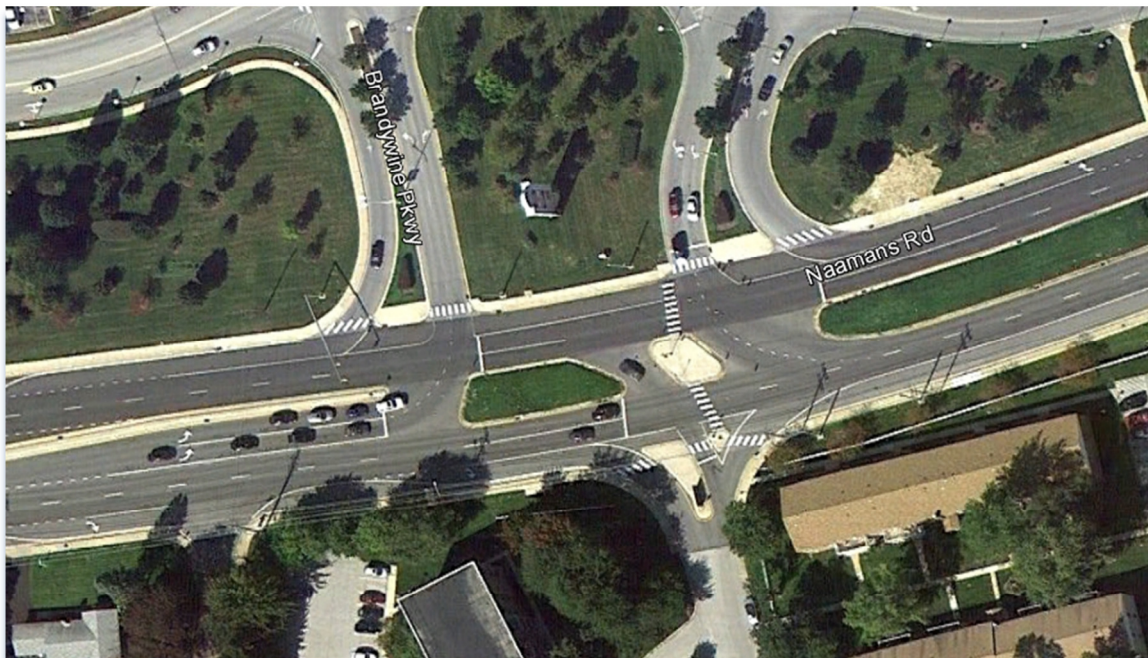
Red light-running cameras are present at this intersection.

There are two (2) existing 250 Watt, High Pressure Sodium (HPS) Mongoose style luminaires at the intersection. The luminaires are on utility poles on the southeast and northeast corners.

*Site #2: SR 92 @ Stratford Apartments Entrance/Brandywine Town Center Entrances Intersection (M.P. 0.26)*

The main entrance to Brandywine Town Center includes two driveways. The west most driveway serves Southbound right turns and Eastbound left turns. The east most driveway served Southbound left turns and Westbound right turns. The SR 92 Eastbound approach includes two left turn lanes, two through lanes, and one right turn lane. The SR 92 Westbound approach includes two through lanes, and one right turn lane. The northbound approach is the access to the Stratford Apartments, it includes one left turn lane and a channelized right turn.

Pedestrian crosswalks are present on the west side of the east most driveway and the south side of the intersection.



***Photo 2: SR 92 and Stratford Apartments Entrance / Brandywine Town Center Entrance Intersection***

During a May 2012 field visit, the stub of a traffic sign post was observed in the median adjacent to the SR 92 Westbound approach left turn lanes stop bar. The sign post stub is shown on **Photo 3**.





***Photo 3: Sign Post Stub at Westbound Left Turn Lane at SR 92 and Stratford Apartments Entrance / Brandywine Town Center Entrance Intersection***

There is one utility pole-mounted 250 Watt, HPS cobrahead luminaire present on the south side of the intersection. Both Brandywine Town Center driveways include site lighting luminaires approximately 70 feet north of SR 92.

**Site #3: SR 92 @ Shipley Road / Brandywine Town Center Entrance Intersection (M.P. 0.52)**

The eastbound and westbound SR 92 approaches both include one left turn lane, two through lanes and one channelized right turn lane. The southbound Brandywine Town Center approach includes two left turn lanes, and one channelized right turn lane. The northbound Shipley Road approach includes two left turn lanes, and one channelized right turn lane.

A diagonal pedestrian crosswalk is present from the northwest island to the southeast island. Pedestrian crosswalks are also present on the south and north sides of the intersection.



***Photo 4: SR 92 and Shipley Road / Brandywine Town Center Entrance Intersection***

Red light-running cameras are present at this intersection.

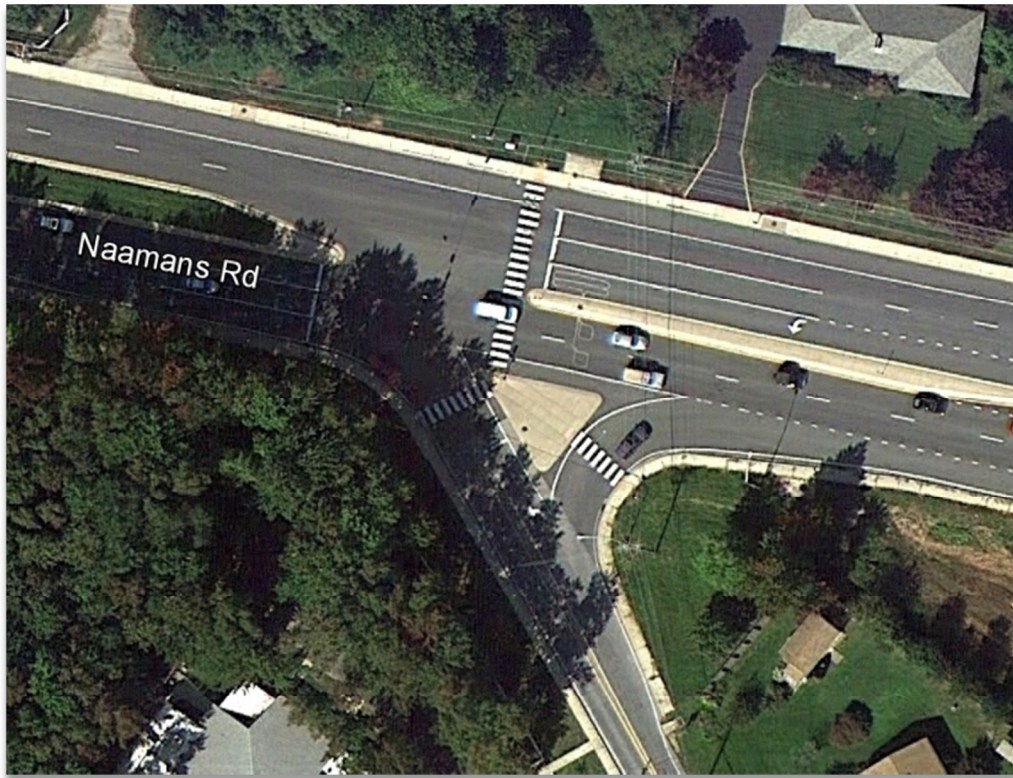
There are several existing 250 Watt, HPS roadway luminaires at and approaching the intersection, including one on each corner of the intersection, except for the southwest corner. All of the existing roadway luminaires are mounted on utility poles. The Brandywine Town Center driveway includes site lighting luminaires approximately 40 feet north of SR 92.

*Site #4: SR 92 @ Grubb Road Intersection (M.P. 0.89)*

Grubb Road meets SR 92 from the south at this signalized T-intersection. The eastbound SR 92 approach includes two through lanes and one right turn lane. The westbound SR 92 approach includes one left turn lane, and two through lanes. The northbound Grubb Road approach includes one left turn lane, and one channelized right turn lane. Medians are present on both SR 92 approaches.

Pedestrian crosswalks are present on south and east sides of the intersection.





***Photo 5: SR 92 and Grubb Road Intersection***

There are four (4) existing 250 Watt, HPS cobrahead luminaires at the intersection. The existing luminaires are on DelDOT aluminum light poles. There is no luminaire on the southwest corner of the intersection.

During a May 2012 field visit, the transformer base cover for DelDOT pole #1702 on the southeast corner of the intersection was observed to be missing as shown on **Photo 6**.



***Photo 6: Pole #1702 Transformer Base Cover Missing***

## 4. LIGHTING WARRANT EVALUATION

The DeIDOT Lighting Guidelines contain the conditions for determining if lighting is warranted at a given site. A warrant analysis is included below for each site that was chosen for evaluation.

Section 2.3, *Lighting Warrants*, of the DeIDOT Lighting Guidelines states that lighting *should* be installed at “locations where crash patterns indicate that lighting may reduce crashes and where the percentage of nighttime accidents is 40 percent or greater.” Section 2.3 also states that lighting *may* be installed at “locations where crash patterns indicate that lighting may reduce crashes and where the percentage of nighttime accidents is 35 percent or greater.”

### Site #1: SR 92 @ US 202 (Concord Pike) Intersection (M.P. 0)

#### *Crash Patterns*

The Crash Data Summary and Evaluation showed that there were 40 total crashes near this intersection during the three year evaluation period. Fifteen (15) of these crashes occurred during dark conditions.

The manner of impact of the fifteen (15) dark crashes was as follows:

- 7 Rear end (4 NB, 2 WB, 1 EB)
- 6 Angle (2 NB/SB LT, 1 NB RT/SB LT, 1 NB LT/SB, 1 NB/WB LT, 1 NB LT/EB/WB LT)
- 2 Ran off the road (EB, NB RT)

#### *Percentage of Nighttime Crashes*

Thirty-eight percent (15 out of 40) of the crashes at the site were during dark conditions according to the crash reports.

#### *Lighting Warrant Results*

Because the intersection has existing lighting at the intersection, the crash history is skewed compared to an unlit intersection. Therefore, the crash history cannot be relied upon in this circumstance for use in lighting warrant analysis.

Site #2: SR 92 @ Stratford Apartments Entrance/Brandywine Town Center Entrances Intersection (M.P. 0.26)

*Crash Patterns*

The Crash Data Summary and Evaluation showed that there were 31 total crashes near this intersection during the three year evaluation period. Twelve (12) of these crashes occurred during dark conditions.

The manner of impact of the twelve (12) dark crashes was as follows:

- 11 Rear end (9 EB, 2 WB)
- 1 Sideswipe (WB)

*Percentage of Nighttime Crashes*

Thirty-nine percent (12 out of 31) of the crashes that occurred at the site were during dark conditions according to the crash reports.

*Lighting Warrant Results*

Because the intersection has existing lighting at the intersection, the crash history is skewed compared to an unlit intersection. Therefore, the crash history cannot be relied upon in this circumstance for use in lighting warrant analysis.

Site #3: SR 92 @ Shipley Road Intersection (M.P. 0.52)

*Crash Patterns*

The Crash Data Summary and Evaluation showed that there were 42 total crashes near this intersection during the three year evaluation period. Eleven (11) of these crashes occurred during dark conditions.

The manner of impact of the eleven (11) dark crashes was as follows:

- 8 Rear end (3 EB, 3 WB, 1 NB, 1 SB RT)
- 2 Angle (EB/WB LT)
- Sideswipe (EB)

*Percentage of Nighttime Crashes*

Twenty-six percent (11 out of 42) of the crashes that occurred at the site were during dark conditions.

### *Lighting Warrant Results*

Because the intersection has existing lighting at the intersection, the crash history is skewed compared to an unlit intersection. Therefore, the crash history cannot be relied upon in this circumstance for use in lighting warrant analysis.

### *Site #4: SR 92 @ Grubb Road Intersection (M.P. 0.89)*

#### *Crash Patterns*

The Crash Data Summary and Evaluation showed that there were twenty (20) total crashes near this intersection during the three year evaluation period. Six (6) of these crashes occurred during dark conditions.

The manner of impact of the six (6) dark crashes was as follows:

- 4 Rear end (EB)
- 2 Angle (EB/WB LT)

#### *Percentage of Nighttime Crashes*

Thirty percent (6 out of 20) of the crashes that occurred at the site were during dark conditions.

### *Lighting Warrant Results*

Because the intersection has existing lighting at the intersection, the crash history is skewed compared to an unlit intersection. Therefore, the crash history cannot be relied upon in this circumstance for use in lighting warrant analysis.



## 5. RECOMMENDATIONS

Recommendations are included below, and recommended improvements are summarized in the following table.

### Site #1: SR 92 @ US 202 (Concord Pike) Intersection (M.P. 0)

#### *Roadway Lighting*

Due to the high percentage of crashes during dark conditions, photometric calculations would be beneficial to evaluate the existing lighting. The lighting levels would benefit from providing luminaires on the west side of the intersection. The intersection should be evaluated for complex intersection lighting as per Section 4.3.2 of the DelDOT Lighting Design Guidelines. Complex intersection lighting typically includes two (2) lights on the approaches to the intersection, and one (1) luminaire after the intersection.

#### *Ongoing Projects*

Improvements to this signal, including a box span signal design, were recommended as part of the 2011 HEP. HEP recommendations also included evaluating lighting on the northwest and southwest corners of the intersection.

### Site #2: SR 92 @ Stratford Apartments Entrance/Brandywine Town Center Entrances Intersection (M.P. 0.26)

#### *Roadway Lighting*

Due to the high percentage of crashes during dark conditions, photometric calculations would be beneficial to evaluate the existing lighting. Currently there is only one luminaire at the intersection. Due to the close proximity of the two Brandywine Town Center entrance driveways (less than 150') the lighting calculation zone should encompass SR 92 between the driveways.

#### *Signal Timings / Signal Coordination*

Twenty-three (23) of the total 31 crashes at this site were rear end crashes. Of the rear end crashes, 11 involved westbound vehicles, 10 involved eastbound vehicles and two (2) involved southbound vehicles. Due to the high proportion of rear end crashes involving SR 92 traffic, it is recommended that signal clearance intervals at the intersection and signal coordination along SR 92 be evaluated. At the time of this report, signal timings are being modified by DelDOT Traffic in coordination with DelDOT's Transportation Management Center.

### *Ongoing Projects*

In addition to the ongoing signal timing improvements, other signal improvements are expected at this intersection. These improvements were 2011 HEP recommendations.

### *Maintenance*

The sign that was knocked down in the median adjacent to the SR 92 Westbound approach left turn lanes stop bar should be replaced.

### *Site #3: SR 92 @ Shipley Road Intersection (M.P. 0.52)*

#### *Roadway Lighting*

Because the intersection features luminaires that appear to only cover part of the intersection, photometric calculations would be beneficial to evaluate the existing lighting. Specifically, there are existing luminaires surrounding the intersection on all corners, except on the southwest corner. The photometric calculations should evaluate how adding a luminaire on the southwest corner would impact the lighting levels. A new utility pole-mounted luminaire may be feasible on the southwest corner.

#### *Signal Timings / Signal Coordination*

Thirty-four (34) of the total 42 crashes at this site were rear end crashes. Of the rear end crashes, 19 involved westbound vehicles, 8 involved eastbound vehicles, six (6) involved northbound vehicles, and one (1) involved southbound vehicles. Due to the high proportion of rear end crashes involving SR 92 traffic, it is recommended that signal clearance intervals at the intersection and signal coordination along SR 92 be evaluated. The presence of red light running cameras at the intersection may also be contributing to the amount of rear end crashes at the intersection.

### *Ongoing Projects*

Signal head backplates will be installed at this intersection in fiscal year 2013. The backplates were recommended from the 2011 HEP.

### *Site #4: SR 92 @ Grubb Road Intersection (M.P. 0.89)*

#### *Roadway Lighting*

Because the intersection features luminaires that appear to only cover part of the intersection, photometric calculations would be beneficial to evaluate the existing lighting. Specifically, there are existing luminaires surrounding the intersection on all corners, except on the southwest corner. The photometric calculations should evaluate how adding a luminaire on the southwest

corner would impact the lighting levels. A new utility pole-mounted luminaire may be feasible on the southwest corner.

### *Ongoing Projects*

Signal head backplates will be installed at this intersection in fiscal year 2013. The backplates were recommended from the 2011 HEP.

### *Maintenance*

The transformer base cover should be replaced for DelDOT pole #1702 on the southeast corner of the intersection.

### ***Recommended Improvements***

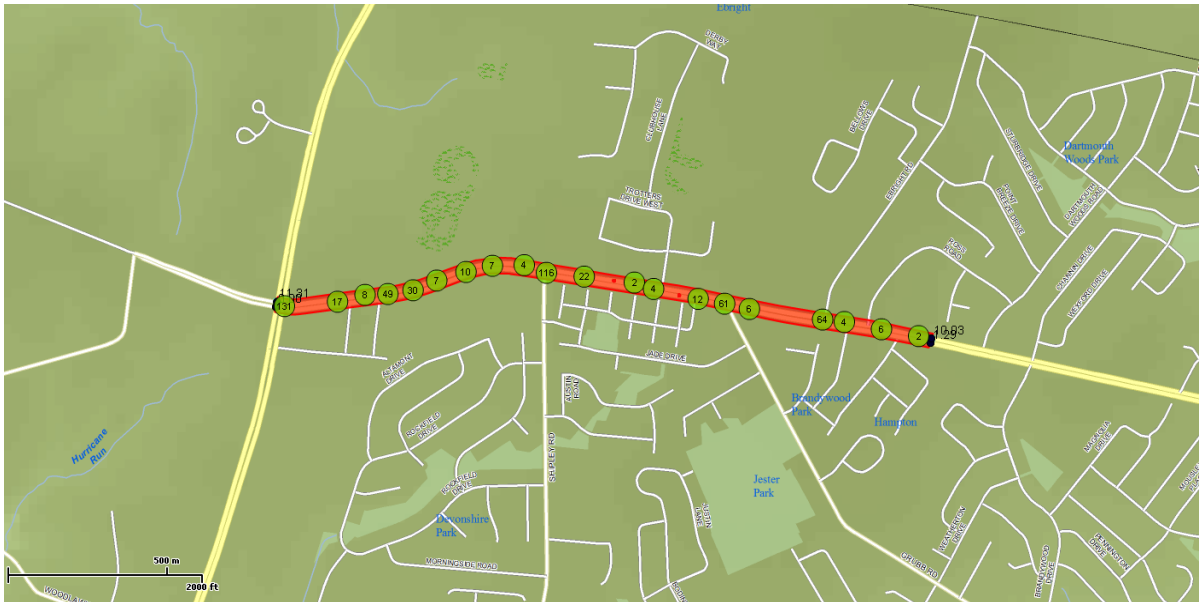
<b>Site</b>	<b>Recommended Improvement</b>
#1. SR 92 @ US 202 Intersection (MP 0)	Evaluate for complex intersection lighting as per Section 4.3.2 of the DelDOT Lighting Design Guidelines.
#2. SR 92 @ Stratford Apartments Entrance / BTC Entrance Intersection (MP 0.26)	Evaluate the existing lighting with photometric calculations. Due to the close proximity of the two Brandywine Town Center entrance driveways (less than 150') the lighting calculation zone should encompass SR 92 between the driveways.
	Replace sign that was knocked down in the median adjacent to the SR 92 Westbound approach left turn lanes stop bar.
#3. SR 92 @ Shipley Rd Intersection (MP 0.52)	Evaluate how adding a luminaire on the southwest corner would impact the lighting levels. A new utility pole-mounted luminaire may be feasible on the southwest corner.
	Evaluate signal clearance intervals at the intersection and signal coordination along SR 92.
#4. SR 92 @ Grubb Rd Intersection (MP 0.89)	Evaluate how adding a luminaire on the southwest corner would impact the lighting levels. A new utility pole-mounted luminaire may be feasible on the southwest corner.
	Replace transformer base for DelDOT pole #1702 on the southeast corner of the intersection.

**APPENDIX A: Crash Data Summary**

## Delaware Crash Analysis Reporting System (CARS)

**Crash Study Time Period:** Study Period from 05-16-2008 to 05-16-2011  
**Query Type:** dualHwyBuffer  
**Description:** N17 DE 92 Naamans Road  
MP 0.00-1.29

**Study Requested By:** LD  
**Study Generated By:** tdtsswn  
**Number of Crashes:** 170  
**Includes Non-Reportable Crashes:** N  
**Study Code:**



"Disclaimer for CARS: Crash data and associated police reports are intended for DelDOT use only and shall not be transmitted, copied, distributed or provided to any entity other than DelDOT unless written approval is received from the DelDOT Legal Section. Police reports are the property of the Delaware State Police."

## State of Delaware Crash Study Summary

Study Period from 05-16-2008 to 05-16-2011

Summary		Classification			Manner Of Impact		
	# of Crashes		# of Crashes	% of Total Crashes		# of Crashes	% of Total Crashes
Total Crashes	170	Non-Reportable	0	0.00%	Front to rear	117	68.82%
Fatal Crashes	0				Front to front	5	2.94%
Total Alcohol-Related Crashes	4		131	77.06%	Angle	22	12.94%
Total Non Alcohol-Related Crashes	166		39	22.94%	Sideswipe, same direction	13	7.65%
Total Fatalities	0		0	0.00%	Sideswipe, opposite direction	3	1.76%
Total Pedestrian Fatalities	0	<b>Total</b>			Rear to side	0	0.00%
Total Pedestrian Injuries	1				Rear to rear	2	1.18%
Total Pedestrian Crashes	1				Other	2	1.18%
Total Motorcycle Crashes	3				Unknown	1	0.59%
Total Pedalcyclist Crashes	0				Not a collision between two vehicles	5	2.94%
					<b>Total</b>	170	

Alcohol Related Crashes by Classification					
	Non-reportable	Reportable	Personal Injury	Fatality	Total
Alcohol Related	0	2	2	0	4
Non-Alcohol Related	0	129	37	0	166
<b>Total</b>	0	131	39	0	170

Manner of Impact By Classification					
	Non-Reportable	Reportable	Personal Injury	Fatality	Total
Front to rear	0	92	25	0	117
Front to front	0	2	3	0	5
Angle	0	15	7	0	22
Sideswipe, same direction	0	11	2	0	13
Sideswipe, opposite direction	0	2	1	0	3
Rear to side	0	0	0	0	0
Rear to rear	0	2	0	0	2
Other	0	2	0	0	2
Unknown	0	1	0	0	1
Not a collision between two vehicles	0	4	1	0	5
<b>Total</b>	0	131	39	0	170

*"Disclaimer for CARS: Crash data and associated police reports are intended for DelDOT use only and shall not be transmitted, copied, distributed or provided to any entity other than DelDOT unless written approval is received from the DelDOT Legal Section. Police reports are the property of the Delaware State Police."*

Day Of Week		
	# of Crashes	% of Total Crashes
Sunday	17	10.00%
Monday	27	15.88%
Tuesday	25	14.71%
Wednesday	27	15.88%
Thursday	21	12.35%
Friday	31	18.24%
Saturday	22	12.94%
<b>Total</b>	170	

Time Of Day (AM)		
	# of Crashes	% of Total Crashes
00:00 - 00:59	3	1.76%
01:00 - 01:59	1	0.59%
02:00 - 02:59	0	0.00%
03:00 - 03:59	0	0.00%
04:00 - 04:59	0	0.00%
05:00 - 05:59	0	0.00%
06:00 - 06:59	1	0.59%
07:00 - 07:59	12	7.06%
08:00 - 08:59	3	1.76%
09:00 - 09:59	6	3.53%
10:00 - 10:59	9	5.29%
11:00 - 11:59	11	6.47%
<b>Total</b>	46	

Time Of Day (PM)		
	# of Crashes	% of Total Crashes
12:00 - 12:59	10	5.88%
13:00 - 13:59	8	4.71%
14:00 - 14:59	14	8.24%
15:00 - 15:59	12	7.06%
16:00 - 16:59	13	7.65%
17:00 - 17:59	12	7.06%
18:00 - 18:59	16	9.41%
19:00 - 19:59	8	4.71%
20:00 - 20:59	7	4.12%
21:00 - 21:59	14	8.24%
22:00 - 22:59	8	4.71%
23:00 - 23:59	2	1.18%
<b>Total</b>	124	
Unknown Time	0	

Surface Conditions		
	# of Crashes	% of Total Crashes
Dry	129	75.88%
Wet	39	22.94%
Snow	0	0.00%
Ice/Frost	0	0.00%
Sand	0	0.00%
Water (standing,mo'	0	0.00%
Slush	1	0.59%
Oil	0	0.00%
Mud, Dirt, Gravel	0	0.00%
Other	0	0.00%
Unknown	1	0.59%
<b>Total</b>	170	

Lighting Conditions		
	# of Crashes	% of Total Crashes
Daylight	112	65.88%
Dawn	1	0.59%
Dusk	3	1.76%
Dark-Lighted	40	23.53%
Dark-Not Lighted	12	7.06%
Dark-Unknown Lighting	0	0.00%
Other	0	0.00%
Unknown	2	1.18%
<b>Total</b>	170	

Weather Conditions		
	# of Crashes	% of Total Crashes
Clear	102	60.00%
Cloudy	37	21.76%
Fog, Smog, Smoke	0	0.00%
Rain	29	17.06%
Sleet, Hail (freezing rain or drizzle)	2	1.18%
Snow	0	0.00%
Blowing Snow	0	0.00%
Severe Crosswinds	0	0.00%
Blowing Sand, Soil, Dirt	0	0.00%
Other	0	0.00%
Unknown	1	0.59%
<b>Total</b>	171	

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First Harmful Event		
	# of Crashes	% of Total Crashes
Overturn/Rollover, Non-Collision	0	0.00%
Fire/Explosion, Non-Collision	0	0.00%
Immersion, Non-Collision	0	0.00%
Jackknife, Non-Collision	0	0.00%
Cargo/Equipment Loss or Shift, Non-Collision	0	0.00%
Fell/Jumped From Motor Vehicle, Non-Collision	0	0.00%
Thrown or Falling Object, Non-Collision	0	0.00%
Other Non-Collision, Non-Collision	1	0.59%
Pedestrian, Collision With Person, Motor Vehicle, or Non-Fixed Object	1	0.59%
Pedalcycle, Collision With Person, Motor Vehicle, or Non-Fixed Object	0	0.00%
Railway Vehicle (train, engine), Collision With Person, Motor Vehicle, or Non-Fixed Object	0	0.00%
Animal, Collision With Person, Motor Vehicle, or Non-Fixed Object	0	0.00%
Motor Vehicle in Transport, Collision With Person, Motor Vehicle, or Non-Fixed Object	160	94.12%
Legally Parked Motor Vehicle, Collision With Person, Motor Vehicle, or Non-Fixed Object	0	0.00%
Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle, Collision With Person, Motor Vehicle, or Non-Fixed Object	0	0.00%
Work Zone / Maintenance Equipment, Collision With Person, Motor Vehicle, or Non-Fixed Object	0	0.00%
Other Non-Fixed Object, Collision With Person, Motor Vehicle, or Non-Fixed Object	0	0.00%
Impact Attenuator/Crash Cushion, Collision With Fixed Object	0	0.00%
Bridge Overhead Structure, Collision With Fixed Object	0	0.00%
Bridge Pier or Support, Collision With Fixed Object	0	0.00%
Bridge Rail, Collision With Fixed Object	0	0.00%
Cable Barrier, Collision With Fixed Object	0	0.00%
Culvert, Collision With Fixed Object	0	0.00%
Curb, Collision With Fixed Object	0	0.00%
Ditch, Collision With Fixed Object	0	0.00%
Embankment, Collision With Fixed Object	1	0.59%

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Guardrail Face, Collision With Fixed Object	0	0.00%
Guardrail End, Collision With Fixed Object	0	0.00%
Concrete Traffic Barrier, Collision With Fixed Object	0	0.00%
Other Traffic Barrier, Collision With Fixed Object	0	0.00%
Tree (standing), Collision With Fixed Object	1	0.59%
Utility Pole, Collision With Fixed Object	1	0.59%
Light Support, Collision With Fixed Object	0	0.00%
Traffic Sign Support, Collision With Fixed Object	1	0.59%
Overhead Sign Support, Collision With Fixed Object	0	0.00%
Traffic Signal Support, Collision With Fixed Object	0	0.00%
Fence, Collision With Fixed Object	0	0.00%
Mailbox, Collision With Fixed Object	0	0.00%
Other Post, Pole or Support, Collision With Fixed Object	0	0.00%
Other Fixed Object (wall, building, tunnel, etc.), Collision With Fixed Object	3	1.76%
Illegally Parked Motor Vehicle, Collision with person, vehicle, or object not fixed	0	0.00%
Stopped Motor Vehicle, Collision with person, vehicle, or object not fixed	0	0.00%
Unknown, Collision With Fixed Object	1	0.59%
<b>Total</b>	<b>170</b>	

Primary Contributing Circumstance		
	# of Crashes	% of Total Crashes
Speeding	0	0.00%
Failed to yield right of way	3	1.76%
Passed Stop Sign	0	0.00%
Disregard Traffic Signal	6	3.53%
Wrong side or wrong way	0	0.00%
Improper passing	0	0.00%
Improper lane change	6	3.53%
Following too close	17	10.00%
Made improper turn	1	0.59%
Driving under the influence	2	1.18%
Driver inattention, distraction, or fatigue	24	14.12%
Driving in a careless or reckless manner	6	3.53%
Driving in an aggressive manner	0	0.00%
Improper backing	0	0.00%
Other improper driving	0	0.00%
Mechanical defects	0	0.00%
Animal in Roadway - Deer	0	0.00%
Animal in Roadway - Other Animal	0	0.00%
Other environmental circumstances - weather, glare	0	0.00%
Roadway circumstances - debris, holes, work zone	0	0.00%
Other	3	1.76%
Unknown	3	1.76%
<b>Total</b>	<b>71</b>	

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Driver Contributing Circumstance		
	# of Drivers	% of Total Drivers
No Contributing Action		0.00%
Failed to yield right of way		4.23%
Ran Red Light		0.00%
Ran Stop Sign		8.45%
Disregard other traffic sign		0.00%
Disregard other road markings		0.00%
Exceeded authorized speed limit		8.45%
Driving too fast for conditions		23.94%
Made an improper turn		1.41%
Improper backing		2.82%
Wrong side or wrong way		33.80%
Followed too closely		8.45%
Failure to keep in proper lane		0.00%
Ran off roadway		0.00%
Operating vehicle in erratic, reckless, careless, negligent or aggressive manner		0.00%
Swerving or avoiding due to wind, slippery surface, vehicle, object, non-motorist in roadway, etc.		0.00%
Over-correcting/over-steering		0.00%
Improper Passing		0.00%
Other Contributing Action		0.00%
Unknown		4.23%
<b>Total</b>		

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CTY	RD	MP	C-MP	DIR	COMP/HQ#	Date	Time	Day	Fat	Inj	AL	LC	WC	SC	FHE	PC	Class	MOI
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## 2008

N	17	5.16	10.81	4	0108054444	6/16/08	1751	2	0	0	N	01	02	01	13		03	03
N	17	1.07	1.07	3	0108063100	7/11/08	0940	6	0	0	N	01	01	01	13		02	01
N	17	5.13	10.78	4	0108046490	5/25/08	1211	1	0	0	N	01	01	01	13		03	01
N	17	0.01	0.01	3	0108053867	6/14/08	2200	7	0	0	N	04	02	02	13		02	03
N	17	0.25	0.25	3	0108075603	8/14/08	2013	5	0	0	N	04	04	02	13		02	01
N	17	1.21	1.21	3	0108083043	9/8/08	1416	2	0	0	N	01	01	01	13		02	01
N	17	0.01	0.01	3	0108075211	8/13/08	1644	4	0	0	N	01	01	01	13		02	04
N	17	0.24	0.24	3	0108049975	6/4/08	0733	4	0	0	N	01	04	02	13		02	05
N	17	0.52	0.52	3	0108077647	8/20/08	1514	4	0	0	N	01	01	01	13		03	01
N	17	0.26	0.26	3	0108063366	7/11/08	2220	6	0	0	N	04	01	01	13		02	01
N	17	0.01	0.01	3	0108073614	8/8/08	2055	6	0	0	N	04	01	01	13		02	01
N	17	0.52	0.52	3	0108062017	7/8/08	1040	3	0	0	N	01	01	01	13		03	01
N	17	0.12	0.12	3	0108050730	6/6/08	1348	6	0	0	N	01	01	01	13		02	04
N	17	5.06	10.71	4	0108074192	8/10/08	1451	1	0	0	N	01	05	02	13		02	01
N	17	1.06	1.06	3	0108047177	5/27/08	1433	3	0	0	N	01	01	01	13		02	01
N	17	0.87	0.87	3	0108099258	10/24/08	1533	6	0	0	N	01	02	01	13		02	01
N	17	5.61	11.26	4	0108112493	12/5/08	1244	6	0	0	N	01	01	01	13		03	01
N	17	0.27	0.27	3	0108117404	12/20/08	1429	7	0	0	N	01	02	01	13		03	01
N	17	5.51	11.16	4	0108120355	12/29/08	1837	2	0	0	N	04	01	01	13		02	01
N	17	0.85	0.85	3	0108118260	12/22/08	1913	2	0	0	N	04	01	01	13		02	01
N	17	0.01	0.01	3	0108115790	12/15/08	1535	2	0	0	N	01	01	01	13		02	03
N	17	4.59	10.24	4	0108100425	10/28/08	0704	3	0	0	N	99	99	99	32		02	00
N	17	0.88	0.88	3	0108083579	9/6/08	2209	7	0	0	N	05	02	02	13		02	03
N	17	0.52	0.52	3	0108118801	12/24/08	1151	4	0	0	N	01	04	02	13		02	05
N	17	0.01	0.01	3	0108089423	9/23/08	2135	3	0	0	N	04	01	01	13		02	03
N	17	0.52	0.52	3	0108119634	12/27/08	1040	7	0	0	N	01	04	02	13		02	01
N	17	5.18	10.83	4	0108091647	9/30/08	2141	3	0	0	N	04	04	02	13		03	01
N	17	5.47	11.12	4	0108090671	9/27/08	1724	7	0	0	N	01	02	01	13		03	01
N	17	5.65	11.3	4	0108120216	12/29/08	1036	2	0	0	N	01	01	01	13		02	03
N	17	5.12	10.77	4	0108114734	12/12/08	0838	6	0	0	N	01	04	02	13		03	01
N	17	5.43	11.08	4	0108114179	12/10/08	1711	4	0	0	N	05	04	02	13		02	01
N	17	5.18	10.83	4	0108112683	12/5/08	2204	6	0	0	N	04	01	01	13		03	01
N	17	0.52	0.52	3	0108121053	12/31/08	1823	4	0	0	N	04	01	01	13		03	04
N	17	0.55	0.55	3	0108111586	12/2/08	1042	3	0	0	N	01	01	01	09		03	00
N	109230	0	0	5	0108100615	10/28/08	1700	3	0	0	N	01	04	02	13		02	01
N	17	0.24	0.24	3	0108095937	10/13/08	2120	2	0	0	N	04	01	01	13		03	01

## 2009

N	17	0.88	0.88	3	0109081102	9/11/09	0905	6	0	0	N	01	04	02	13		02	03
N	17	0.88	0.88	3	0109078015	9/1/09	0728	3	0	0	N	01	01	01	13		02	01
N	17	5.65	11.3	4	0109069297	8/5/09	1857	4	0	0	N	01	01	01	13		02	01
N	17	4.86	10.51	4	0109069330	8/5/09	2053	4	0	0	N	04	02	01	13		02	04

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CTY	RD	MP	C-MP	DIR	COMP/HQ#	Date	Time	Day	Fat	Inj	AL	LC	WC	SC	FHE	PC	Class	MOI
<b>2009</b>																		
N	17	5.06	10.71	4	0109068121	8/2/09	1305	1	0	0	N	01	04	02	13		02	01
N	17	5.66	11.31	4	0109067093	7/30/09	1811	5	0	0	N	01	01	01	13		02	01
N	17	0.88	0.88	3	0109073536	8/18/09	1802	3	0	0	N	01	01	01	13		02	01
N	17	0.6	0.6	3	0109051829	6/14/09	1524	1	0	0	N	01	01	01	13		03	01
N	17	0.23	0.23	3	0109069766	8/7/09	1214	6	0	0	N	01	01	01	13		02	01
N	17	4.59	10.24	4	0109071339	8/11/09	2226	3	0	0	N	04	01	01	13		03	02
N	17	0.52	0.52	3	0109015149	2/22/09	1255	1	0	0	N	01	04	02	13		02	01
N	17	4.59	10.24	4	0109037884	5/5/09	1646	3	0	0	N	01	02	01	13		02	01
N	17	0.52	0.52	3	0109019873	3/9/09	1237	2	0	1	N	01	01	01	13		03	03
N	17	0.52	0.52	3	0109045204	5/26/09	1640	3	0	0	N	01	04	02	13		02	01
N	17	0.51	0.51	3	0109015136	2/22/09	1149	1	0	2	N	01	04	02	13		03	05
N	17	5.37	11.02	4	0109032812	4/20/09	0909	2	0	3	N	01	04	02	13		03	01
N	17	0.52	0.52	3	0109028687	4/6/09	1615	2	0	0	N	01	02	02	13		02	01
N	17	0.19	0.19	3	0109012668	2/13/09	2128	6	0	3	N	04	02	01	13		03	01
N	17	0.53	0.53	3	0109006219	1/22/09	2128	5	0	0	N	04	01	01	13		02	00
N	17	4.48	10.13	4	0109012576	2/13/09	1549	6	0	0	N	01	02	01	13		02	01
N	17	0.01	0.01	3	0109004489	1/17/09	0859	7	0	0	N	01	01	01	40		02	00
N	17	5.64	11.29	4	0109061086	7/11/09	2212	7	0	0	N	04	02	01	13		02	01
N	17	5.65	11.3	4	0109044507	5/24/09	1100	1	0	0	N	01	01	01	13		02	01
N	17	0.88	0.88	3	0109036592	5/1/09	1612	6	0	0	N	01	04	02	13		03	03
N	17	5.51	11.16	4	0109092311	10/17/09	1557	7	0	0	N	01	04	02	13		02	01
N	214	4.96	4.96	5	0109035629	4/28/09	1523	3	0	0	N	01	01	01	13		03	03
N	17	0.83	0.83	3	0109033383	4/21/09	1726	3	0	0	N	01	01	01	13		02	01
N	17	0.01	0.01	3	0109027052	4/1/09	2121	4	0	0	N	05	04	02	13		02	04
N	17	5.48	11.13	4	0109090658	10/11/09	2155	1	0	0	N	99	01	01	99		02	99
N	17	4.59	10.24	4	0109003612	1/14/09	0731	4	0	0	N	01	01	01	13		02	01
N	17	5.45	11.1	4	0109000446	1/2/09	2057	6	0	1	N	05	02	01	13		03	01
N	17	5.64	11.29	4	0109002056	1/8/09	1421	5	0	0	N	01	01	01	13		02	03
N	17	0.56	0.56	3	0109096686	10/31/09	1400	7	0	0	N	01	02	02	13		02	01
N	17	0.93	0.93	3	0109095510	10/27/09	1806	3	0	0	N	03	04	02	13		03	01
N	17	0.87	0.87	3	0109034252	4/24/09	1503	6	0	0	N	01	01	01	13		02	01
N	17	0.52	0.52	3	0109094647	10/24/09	2028	7	0	0	N	04	04	02	13		02	03
N	17	0.88	0.88	3	0109094479	10/24/09	1248	7	0	0	N	01	04	02	13		02	04
N	17	5.17	10.82	4	0109061473	7/13/09	0724	2	0	0	N	01	01	01	13		02	04
N	17	0.38	0.38	3	0109024670	3/25/09	1124	4	0	0	N	01	01	01	13		02	04
N	17	0.52	0.52	3	0109013608	2/17/09	0710	3	0	0	N	01	01	01	13		02	01
N	17	0.52	0.52	3	0109019394	3/7/09	1932	7	0	0	N	05	01	01	13		02	03
N	214	4.95	4.95	5	0109096321	10/30/09	1115	6	0	0	N	01	01	01	13		02	01
N	17	0.52	0.52	3	0109043974	5/22/09	2112	6	0	0	N	04	01	01	13		02	01
N	17	5.64	11.29	4	0109030749	4/13/09	1826	2	0	0	N	01	02	01	13		02	01

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## 2009

N	4	5.37	5.37	1	0109047782	6/2/09	2150	3	0	0	N	04	01	01	13		03	03
N	17	5.17	10.82	4	0109060024	7/8/09	1900	4	0	0	N	01	01	01	13		02	01
N	17	4.59	10.24	4	0109028355	4/5/09	1633	1	0	0	N	01	01	01	13		02	01
N	17	4.78	10.43	4	0109040507	5/13/09	1003	4	0	0	N	01	01	01	13		02	01
N	17	1.03	1.03	3	0109045234	5/26/09	1757	3	0	0	N	01	02	01	13		02	04
N	17	5.05	10.7	4	0109100677	11/13/09	1215	6	0	0	N	01	02	02	13		03	01
N	17	5.65	11.3	4	0109044268	5/23/09	1553	7	0	0	N	01	01	01	13		02	01
N	17	4.59	10.24	4	0109099410	11/9/09	1144	2	0	0	N	01	01	01	40		02	00
N	17	0.22	0.22	3	0109048468	6/4/09	2116	5	0	0	N	05	04	02	13		02	01
N	17	5.66	11.31	4	0109106647	12/2/09	2121	4	0	0	N	04	04	02	13		02	03
N	17	4.57	10.22	4	0109088509	10/5/09	1151	2	0	0	N	01	01	01	13		02	01
N	214	4.95	4.95	5	0109107995	12/7/09	1111	2	0	0	N	01	01	01	13		02	02
N	17	1.09	1.09	3	0109081722	9/12/09	2206	7	0	0	N	04	02	02	13		02	01
N	17	5.55	11.2	4	0109109884	12/12/09	1817	7	0	0	N	05	01	01	13		02	01
N	17	5.61	11.26	4	0109098239	11/5/09	1843	5	0	0	N	04	01	01	13		02	01
N	17	4.59	10.24	4	0109091255	10/14/09	0748	4	0	0	N	01	01	01	13		02	01
N	17	5.61	11.26	4	0109084133	9/20/09	2146	1	0	0	Y	05	01	01	08		02	01
N	17	5.42	11.07	4	0109103997	11/24/09	0819	3	0	0	N	01	04	02	13		02	01
N	00017	11.1			0109114266	12/24/09	1554	5	0	2	N	01	02 -	01	13	04	03	03
N	00214	4.96			0109115287	12/28/09	1339	2	0	0	N	01	01 -	01	13	11	02	01
N		-9.95			0109115392	12/28/09	1907	2	0	0	N	05	02 -	01	13	07	02	01
N	17	4.59	10.24	4	0109110494	12/14/09	2030	2	0	0	Y	04	01	01	13		02	01

## 2010

N	00017	0.75			0110003707	1/14/10	1400	5	0	0	N	01	01 -	01	13	08	02	01
N	00017	10.8			0110003774	1/14/10	1813	5	0	0	N	04	01 -	01	13	88	02	07
N	00017	0.88			0110015039	2/20/10	2149	7	0	0	N	04	01 -	01	13	02	02	03
N	00017	10.8			0110004967	1/19/10	0754	3	0	0	N	01	01 -	01	13	12	02	01
N	00017	0.52			0110024807	3/25/10	1406	5	0	0	N	01	02 -	01	13	08	02	01
N	00017	0.2			0110016159	2/24/10	1903	4	0	3	N	04	01 -	01	13	08	03	01
N	00017	1.05	1.05	3	0110053556	6/18/10	0000	6	0	0	N	01	01 -	01	13	07	02	04
N	00017	5.47			0110016173	2/24/10	1900	4	0	0	N	04	01 -	01	13	99	02	01
N	00017	4.99			0110036160	4/29/10	1431	5	0	0	N	01	01 -	01	13	11	02	01
N	00017	0.87			0110037111	5/2/10	0001	1	0	2	Y	05	01 -	01	13	10	03	01
N	00017	4.79			0110018421	3/4/10	1311	5	0	2	N	01	01 -	01	13	02	03	03
N	00017	5.63	11.28	4	0110063946	7/18/10	1338	1	0	1	N	01	01 -	01	13	11	03	01
N	00017	4.58	10.23	4	0110082683	9/13/10	0710	2	0	0	N	01	02 -	01	13	11	02	01
N	00017	5.16	10.81	4	0110098046	10/27/10	1824	4	0	0	N	03	02 -	02	13	99	02	01
N		-9.95			0110000416	1/2/10	1643	7	0	0	N	05	02 -	01	13	11	02	01
N	00017	0.49	0.49	3	0110065019	7/21/10	1908	4	0	1	N	01	01 -	01	13	11	03	01

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## 2010

N	00017	5.17	10.82	4	0110104843	11/16/10	1613	3	0	0	N	01	04 -	02	31	12	02	88
N	00017	5.47	11.12	4	0110059545	7/5/10	1439	2	0	0	N	01	01 -	01	13	11	02	01
N	00017	5.05	10.70	4	0110098351	10/28/10	1653	5	0	0	N	01	01 -	01	13	08	02	01
N		-9.95			0110040647	5/12/10	0141	4	0	0	N	04	01 -	01	40	07	02	03
N	00017	5.46	11.11	4	0110076093	8/23/10	1257	2	0	0	N	01	02 -	01	13	08	02	01
N	00017	5.42			0110020750	3/12/10	0934	6	0	1	N	01	04 -	02	13	04	03	02
N	00004	5.37			0110001595	1/6/10	1800	4	0	0	N	04	01 -	01	13	11	02	01
N	00017	5.45	11.10	4	0110092453	10/11/10	0642	2	0	0	N	02	01 -	01	13	08	02	07
N	00004	5.37	5.37	1	0110117853	12/26/10	1017	1	0	0	N	01	01 -	01	13	07	02	04
N	00017	4.59			0110031395	4/14/10	1723	4	0	1	Y	01	01 -	01	13	10	03	01
N	00004	5.37	5.37	3	0110112259	12/10/10	1148	6	0	1	N	01	02 -	01	13	09	03	04
N	00017	4.41	10.06	4	0110041992	5/15/10	2305	7	0	2	N	04	01 -	01	13	11	03	01
N	00017	0.5	0.50	3	0110106707	11/22/10	1627	2	0	1	N	03	01 -	01	13	08	03	01
N	00017	5.33			0110013142	2/14/10	1633	1	0	0	N	01	01 -	07	13	08	02	01
N	00017	0.54	0.54	3	0110068114	7/30/10	1724	6	0	0	N	01	01 -	01	13	11	02	01
N	00017	0.52	0.52	3	0110068221	7/30/10	2321	6	0	0	N	04	01 -	01	13	08	02	01
N	00017	0.21	0.21	3	0110086648	9/24/10	1639	6	0	0	N	01	01 -	01	13	04	02	03
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N	00017	5.1	10.75	4	0110101151	11/5/10	1449	6	0	0	N	01	01 -	01	13	88	02	01
N	00017	0.02	0.02	3	0110079326	9/2/10	1051	5	0	1	N	01	01 -	01	13	11	03	01
N	00017	4.5	10.15	4	0110101252	11/5/10	1854	6	0	0	N	05	01 -	01	13	11	02	01
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N	00017	0.52	0.52	3	0110089941	10/3/10	1644	1	0	0	N	01	02 -	01	13	12	02	01
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N	00204	0	0.00	1	0110115946	12/20/10	1128	2	0	0	N	01	01 -	01	13	12	02	01
N	00004	5.37	5.37	1	0110070930	8/7/10	2132	7	0	0	N	04	01 -	01	13	11	02	01
N	00017	0.24	0.24	3	0110116447	12/21/10	1757	3	0	0	N	04	01 -	01	13	11	02	01

## 2011

N	00017	5.1	10.75	4	0111000405	1/2/11	1510	1	0	0	N	01	05 -	02	13	11	02	01
N	00017	0.01	0.01	3	0111036553	4/30/11	0000	7	0	0	N	04	01 -	01	34	02	02	88

"Disclaimer for CARS: Crash data and associated police reports are intended for DelDOT use only and shall not be transmitted, copied, distributed or provided to any entity other than DelDOT unless written approval is received from the DelDOT Legal Section. Police reports are the property of the Delaware State Police."

CTY	RD	MP	C-MP	DIR	COMP/HQ#	Date	Time	Day	Fat	Inj	AL	LC	WC	SC	FHE	PC	Class	MOI
-----	----	----	------	-----	----------	------	------	-----	-----	-----	----	----	----	----	-----	----	-------	-----

2011

N	00017	4.79	10.44	4	0111022715	3/16/11	1035	4	0	0	N	01	02 - 04	02	13	11	02	01
N	00017	5.46	11.11	4	0111023072	3/17/11	1311	5	0	0	N	01	01 -	01	13	11	02	01

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CTY	RD	MP	C-MP	DIR	COMP/HQ#	Date	Time	Day	Fat	Inj	AL	LC	WC	SC	FHE	PC	Class	MOI
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2011

N	00004	0.77	6.92	2	0111030389	4/11/11	0723	2	0	0	N	01	02 -	01	13	08	02	01
N	00017	0.19	0.19	3	0111023219	3/17/11	2009	5	0	0	N	04	01 -	01	13	08	02	01
N	00017	5.63	11.28	4	0111015542	2/20/11	1004	1	0	0	N	01	01 -	01	13	12	02	01
N	00017	5.46	11.11	4	0111038634	5/7/11	1229	7	0	0	N	01	01 -	01	13	11	02	01
N		-9.95			0111023635	3/18/11	2235	6	0	0	N	04	01 -	01	13	11	02	04
N	00017	5.21	10.86	4	0111031721	4/15/11	1416	6	0	0	N	01	01 -	01	13	08	02	01
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N	00004	5.37	5.37	1	0111041487	5/16/11	1359	2	0	0	N	01	02 -	01	13	04	02	03
N	00017	0.82	0.82	3	0111004916	1/17/11	1718	2	0	0	N	04	01 -	01	13	11	02	01
N	00017	5.65	11.30	1	0111018771	3/2/11	1824	4	0	0	N	04	01 -	01	13	04	02	03
N	00017	5.21	10.86	4	0111035799	4/28/11	1714	5	0	0	N	01	02 -	01	13	11	02	01

Report generated by tdtsswn at 2011-05-24 06:47:04.832

#### Report Legend

Cty - County  
 Rd - Maintenance Road  
 MP - Milepoint  
 C-MP - Continuous Milepoint  
 Dir - Direction of Highway  
 COMP/HQ# - Complaint Number/Headquarters Number  
 DAY - Day Of Week Code  
 Fat - Fatality  
 Inj - Injury  
 AL - Alcohol Involved  
 LC - Lighting Condition  
 WC - Weather Condition  
 SC - Surface Condition  
 MHE - Most Harmful Event  
 PC - Primary Contributing Circumstance  
 Class - Report Classification  
 MOI - Manner of Impact

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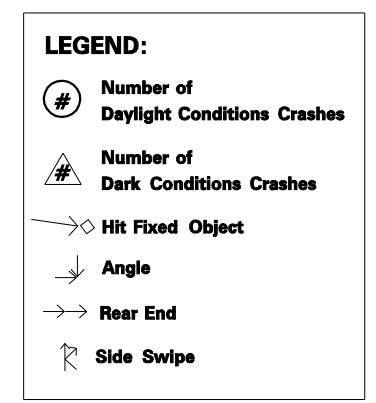
## **APPENDIX B: Crash Diagrams**

*Site #1: SR 92 @ US 202 (Concord Pike) Intersection (M.P. 0)*

*Site #2: SR 92 @ Stratford Apartments Entrance/Brandywine Town Center Entrances  
Intersection (M.P. 0.26)*


*Site #3: SR 92 @ Shipley Road Intersection (M.P. 0.52)*

*Site #4: SR 92 @ Grubb Road Intersection (M.P. 0.89)*

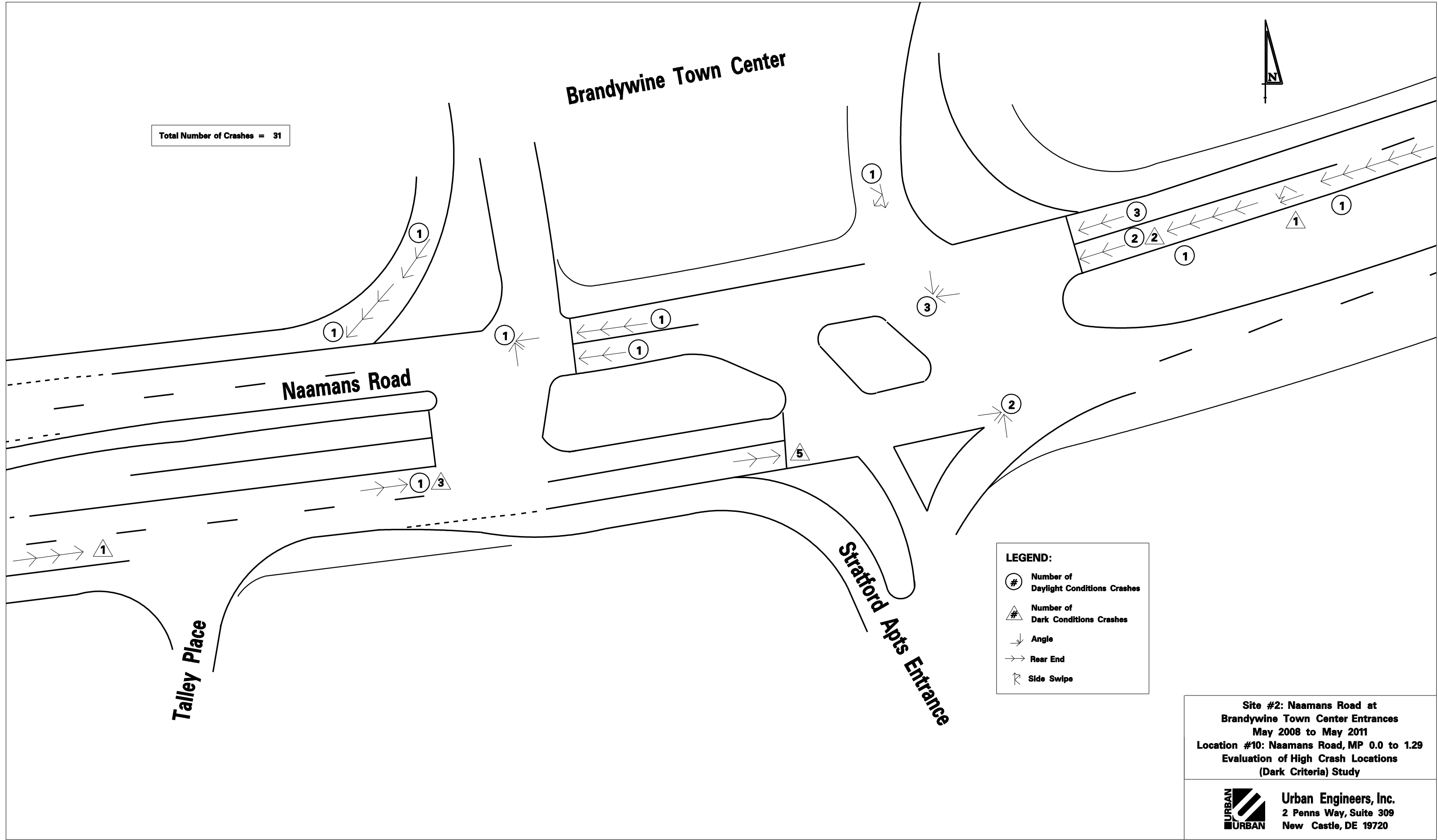


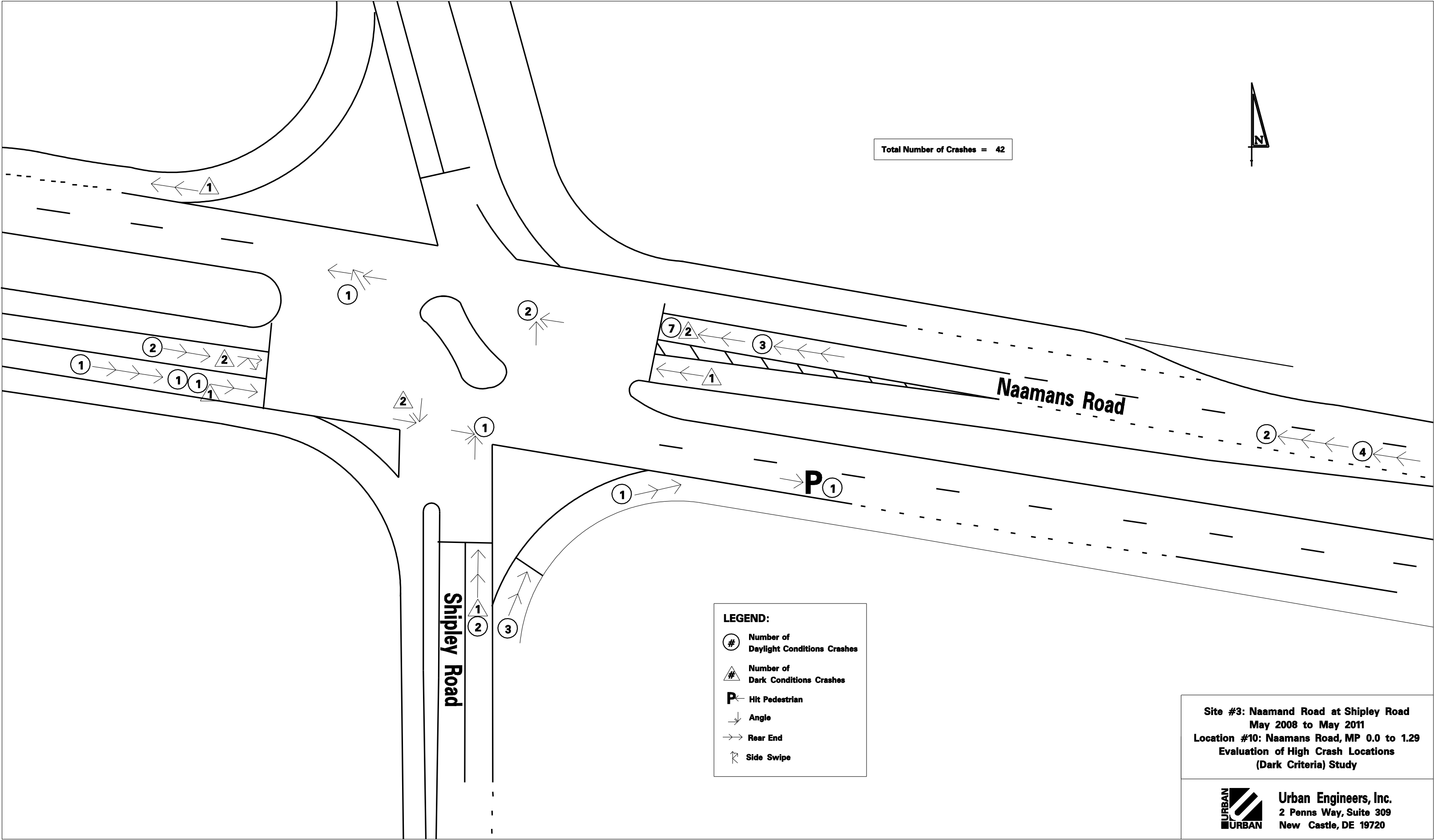
**Site #1: Naamans Road at US 202  
May 2008 to May 2011  
Location #10: Naamans Road, MP 0.0 to 1.29  
Evaluation of High Crash Locations  
(Dark Criteria) Study**

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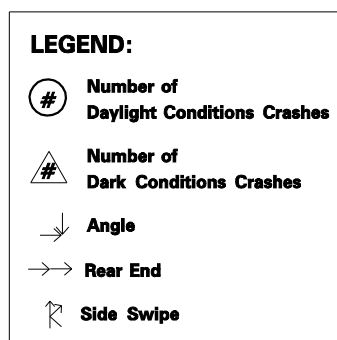
**Urban Engineers, Inc.**  
2 Penns Way, Suite 309  
New Castle, DE 19720







**Total Number of Crashes = 20**



**Site #4: Naamans Road at Grubb Road  
May 2008 to May 2011  
Location #10: Naamans Road, MP 0.0 to 1.29  
Evaluation of High Crash Locations  
(Dark Criteria) Study**



**Urban Engineers, Inc.**  
2 Penns Way, Suite 309  
New Castle, DE 19720

## **APPENDIX C: Previous Study**

*2004 HSIP – Site M Report*

## INTRODUCTION

Site M is a 1.49-mile corridor located north of Wilmington along SR 92/Naamans Road (N17) from U.S. 202/Concord Pike to 0.01-mile east of Brandywood Drive. Naamans Road is a four-lane, divided, closed-section roadway with shoulders. The posted speed limit is 45 miles per hour east of Shipley Road and 40 miles per hour west of Shipley Road. The ADT is approximately 27,100. Within the limits of the site, there are the following signalized and unsignalized intersections:

### Signalized

- U.S. 202/Concord Pike
- Brandywine Town Center (English-Tee)
- Shipley Road
- Grubb Road
- Ebright Road

### Unsignalized

- Brandywood Drive
- Channin Drive
- Dartmouth Woods Road
- Cinder Road
- Ross Road
- Talley Place
- Perry Place

## ACCIDENT DATA SUMMARIES

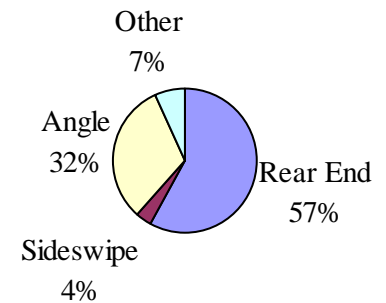
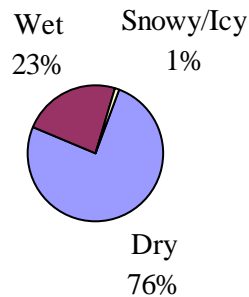
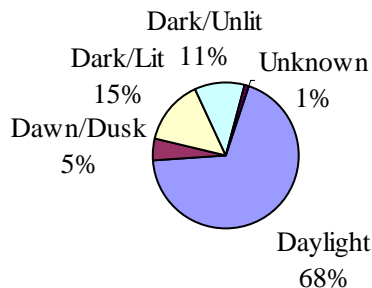
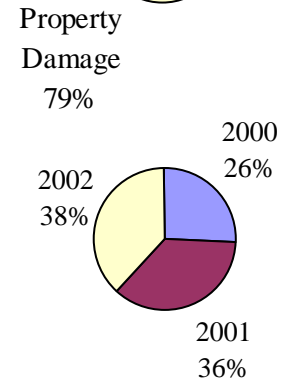
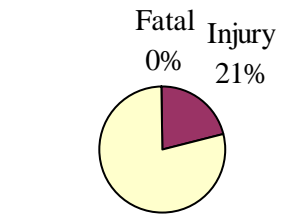
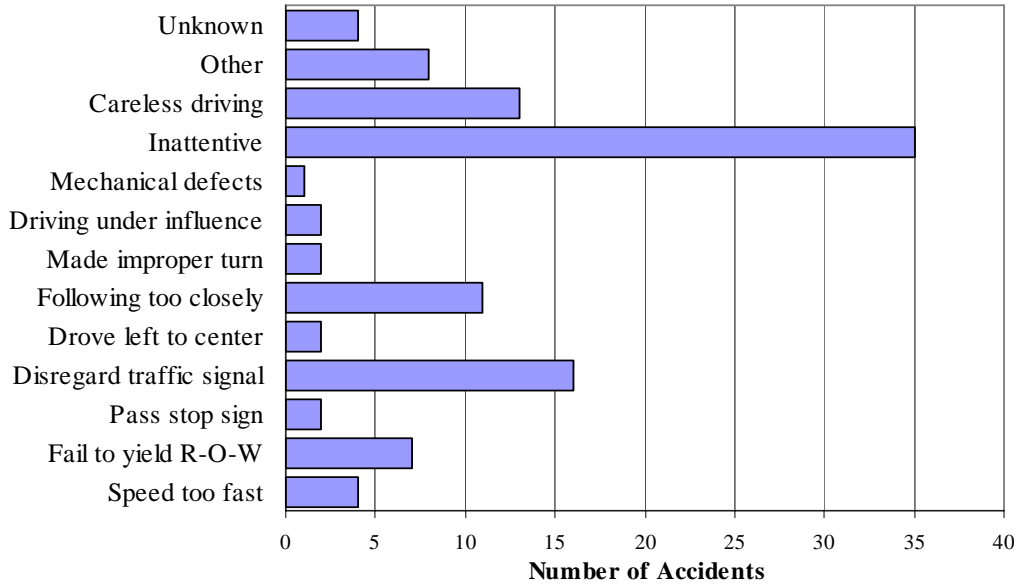
A total of 107 accidents was reported during the three-year study period between January 2000 and December 2002 including 62 (58 percent) rear end accidents and 34 (32 percent) angle accidents. At the SR 92/Naamans Road and Grubb Road intersection several eastbound drivers complained that sun glare restricted their view of the traffic signal. The following is a summary of the accidents by location and type:

- Shipley Road - 26 accidents
  - 8 westbound rear end accidents
  - 6 eastbound rear end accidents
  - 2 westbound/southbound angle accidents
  - 2 southbound right-turn rear end accidents
  - 1 eastbound/southbound angle accident
  - 1 eastbound/northbound angle accident
- Grubb Road - 20 accidents
  - 6 eastbound/northbound angle accidents (4 caused by sun glare)
  - 5 eastbound rear end accidents
  - 4 westbound rear end accidents
  - 3 westbound left-turn accidents
- U.S. 202 (east leg) - 19 accidents
  - 9 westbound rear end accidents
  - 4 eastbound rear end accidents
- Brandywine Town Center - 14 accidents
  - 5 eastbound rear end accidents
  - 2 westbound rear end accidents
  - 3 westbound/southbound angle accidents
  - 2 eastbound left-turn accidents
- Ebright Road - 13 accidents
  - 5 westbound rear end accidents
  - 2 eastbound rear end accidents
  - 2 eastbound sideswipe accidents
  - 1 eastbound left-turn accident
- Perry Place - 3 accidents
- Dartmouth Woods Road - 2 accidents
- Brandywood Drive - 2 accidents

A categorical summary of the accidents by type, severity, surface condition, lighting condition, year, and primary cause is shown in Table 1.



**TABLE 1**  
**ACCIDENT DATA SUMMARY**



### FIELD OBSERVATIONS

- Street lighting is provided on Naamans Road east of Grubb Road, at Shipley Road, and west of Shipley Road.

### Naamans Road/Shipley Road

- This intersection operates with protected left-turn phasing on the eastbound and westbound approaches. Northbound and southbound Shipley Road/Brandywine Shopping Center operate concurrently with turning movements restricted to left-turns and right-turns only.
- The eastbound and the westbound approaches include a left-turn lane, two thru lanes and a right-turn lane. The northbound and southbound approaches include two left-turn lanes and a channelized right-turn lane. The eastbound left-turn into the Brandywine Shopping Center is prohibited, but u-turns are permitted. A "No Left-turn" sign is mounted in conjunction with a "U-turn Lane" sign and a directional route marker for "U.S. 202" on the eastbound approach.
- There is a two-stage signalized pedestrian crossing diagonally spanning the intersection as well as a signalized pedestrian crossing on the north and south legs. Activated by pushbuttons, the pedestrian

“WALK” indications only allow enough time to get to the center island where pedestrians must wait for the next northbound/southbound green cycle to complete the crossing.

- During the PM peak, the eastbound platoons consistently arrived on the red signal indication.
- While all sight distance criteria are met, the eastbound sight distance is slightly restricted by a horizontal curve.
- There is a bus stop located on the nearside of the intersection on the westbound Naamans Road.

### **Naamans Road/Grubb Road**

- This three-legged intersection includes two thru lanes and a right-turn lane on the eastbound approach and two thru lanes and a left-turn lane on the westbound approach. The northbound approach has a left-turn lane and a channelized right turn lane. This intersection operates with protected/permissive left-turn phasing (lag left) on the westbound approach.
- Pedestrian cross walks are located on the south and the east legs of the intersection
- Street lighting is located on the southeast corner and the north side of the intersection.
- Brandywine Hunt, a single-family home subdivision (up to 102 luxury homes), is planned between Grubb Road and Shipley Road along the northern side of Naamans Road.
- During both peak hours, northbound left-turning vehicles reach a maximum queue of six cars. During the PM peak, heavy eastbound/westbound traffic makes it difficult for northbound right-turning vehicles to make their turn on red.
- Signal detectors seem to be working well and the eastbound/westbound queues consistently clear the intersection during the clearance interval. Platoons generally arrive on the green signal indication.

### **Naamans Road/U.S. 202**

- The westbound Naamans Road approach to U.S. 202 includes two left-turn lanes, two thru lanes, and a right-turn lane. All four approaches to the intersection operate with protected left-turn phasing.

### **Naamans Road/Brandywine Shopping Center**

- The western entrances into the Brandywine Shopping Center operate as an “English Tee” intersection with the west most driveway serving southbound right-turns and eastbound left-turns while the eastern driveway prohibits eastbound left-turns from entering the shopping center. The eastern intersection also serves the Stratford Apartments on the south leg. The two intersections operate simultaneously with protected eastbound left-turns at the west most driveway and concurrent northbound and southbound left-turns at the eastern intersection. Westbound left-turns into the Stratford Apartments are prohibited.
- There is a two-stage signalized pedestrian crossing diagonally spanning the eastern intersection as well as a signalized pedestrian crossing on the north and south legs. While pushbuttons are provided, the

pedestrian “WALK” indications operate with the northbound and southbound left-turn phase each cycle.

- No advanced signal warnings are provided on eastbound or westbound Naamans Road as drivers approach this intersection.

#### **Naamans Road/Ebright Road**

- This intersection is located on a vertical crest. The eastbound approach to this intersection includes two left-turn lanes and two thru lanes. The westbound approach includes a U-turn lane, two thru lanes and a right-turn lane. The eastbound and westbound approaches operate with a protected left-turn phase.
- During the PM peak high eastbound left-turning volumes were observed.

#### **REMEDIAL IMPROVEMENTS**

- Install a pedestal mounted signal indication within the concrete island located on the southeast corner of the intersection for eastbound Naamans Road at Grubb Road.

#### **ADDITIONAL STUDIES**

The HSIP committee recommends no additional studies.

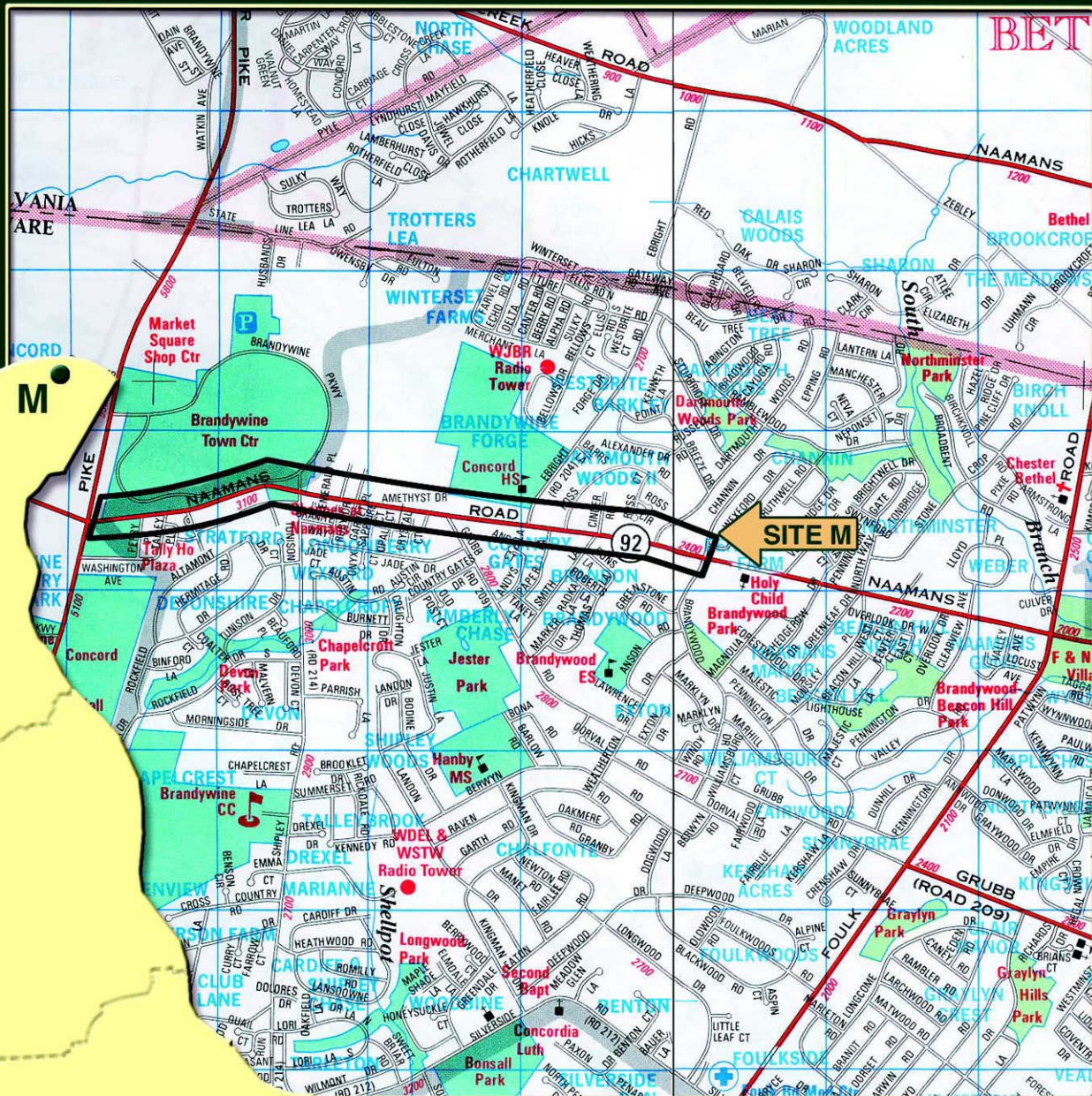
**TOTAL COST OF REMEDIAL IMPROVEMENTS - \$10,000**



# 2004 Highway Safety Improvement Program - SITE M

N17 (SR 92/Naamans Road) - MP 0.00 - 1.49

From US 202/Concord Pike to 0.01 miles east of Brandywood Drive



SITE M

2004

WR&A

Whitman, Requardt and Associates, LLP  
801 South Caroline Street, Baltimore, MD 21231





In-House Working Document (Not for external distribution)



Eastbound SR 92/Naamans Road  
approaching the east Brandywine Town  
Center driveway



Westbound SR 92/Naamans Road  
approaching the east Brandywine Town  
Center driveway



Eastbound SR 92/Naamans Road  
approaching Shipley Road/west Brandywine  
Town Center driveway



Westbound SR 92/Naamans Road  
approaching Shipley Road/ west Brandywine  
Town Center driveway



Eastbound SR 92/Naamans Road  
approaching Grubb Road



Westbound SR 92/Naamans Road  
approaching Grubb Road

## **APPENDIX D: Statewide 1.0 Mile Corridors Ranked by Critical Ratio**

**Delaware - Statewide**

**Accident Date Range**

01/01/2007 - 12/31/2009

**Interval Length**

1.0 mile

**Parameters**

AMBIENT\_LIGHT\_PARAMETER-05

Rank	Crit. Ratio	County	Road	Road Name	Beg MP	End MP	# Accs	Notes
1	10.12	1	355D	Harmony Road	0	0.05	1	<10 accidents - Did not meet criteria
2	5.93	1	34H	US 13	0	0.1	1	<10 accidents - Did not meet criteria
3	4.48	1	367	Welsh Tract Road	0	0.99	19	Location #1
4	4.48	1	367	Welsh Tract Road	0.1	1.09	19	Location #1
5	4.01	1	367	Welsh Tract Road	0.2	1.19	17	Location #1
6	4.01	1	367	Welsh Tract Road	0.3	1.29	17	Location #1
7	3.78	1	367	Welsh Tract Road	0.4	1.39	16	Location #1
8	3.76	1	367	Welsh Tract Road	0.5	1.49	16	Location #1
9	3.7	3	199	Fowlers Beach Road	1.2	2.15	4	<10 accidents - Did not meet criteria
10	3.6	1	11A	Delaware Park Road	0	0.15	4	<10 accidents - Did not meet criteria
11	3.56	3	246	Albury Avenue	0.9	1.89	7	<10 accidents - Did not meet criteria
12	3.55	3	199	Fowlers Beach Road	1.1	2.09	4	<10 accidents - Did not meet criteria
13	3.51	3	396		1.8	2.79	6	<10 accidents - Did not meet criteria
14	3.51	3	396		1.9	2.89	6	<10 accidents - Did not meet criteria
15	3.46	2	14	SR 42	3	3.91	5	<10 accidents - Did not meet criteria
16	3.43	1	31A	Old Limestone Road	0	0.31	1	<10 accidents - Did not meet criteria
17	3.43	3	14C		0	0.29	1	<10 accidents - Did not meet criteria
18	3.27	3	60	SR 54	3.1	4.09	7	<10 accidents - Did not meet criteria
19	3.27	3	60	SR 54	3.2	4.19	7	<10 accidents - Did not meet criteria
20	3.27	3	60	SR 54	3.3	4.29	7	<10 accidents - Did not meet criteria
21	3.25	1	38	St. Andrews School Road	0	0.99	7	<10 accidents - Did not meet criteria
22	3.23	2	429	Mechanic Street	3.1	4.09	6	<10 accidents - Did not meet criteria
23	3.23	2	429	Mechanic Street	3.2	4.19	6	<10 accidents - Did not meet criteria
24	3.23	2	429	Mechanic Street	3.3	4.29	6	<10 accidents - Did not meet criteria
25	3.18	1	429	Mechanic Street	3.8	4.79	7	<10 accidents - Did not meet criteria
26	3.14	2	14	SR 42	2.9	3.89	5	<10 accidents - Did not meet criteria
27	3.09	2	14	SR 42	2.8	3.79	5	<10 accidents - Did not meet criteria
28	3.05	2	14	SR 42	2.7	3.69	5	<10 accidents - Did not meet criteria
29	3.05	3	246	Albury Avenue	1	1.99	6	<10 accidents - Did not meet criteria
30	3.04	2	14	SR 42	2.6	3.59	5	<10 accidents - Did not meet criteria
31	3.02	1	367	Welsh Tract Road	0.6	1.59	13	Location #1
32	3.02	3	396		2.2	3.16	5	<10 accidents - Did not meet criteria
33	3	3	542A		0	0.18	1	<10 accidents - Did not meet criteria
34	2.93	3	396		2	2.99	5	<10 accidents - Did not meet criteria
35	2.93	3	396		2.1	3.09	5	<10 accidents - Did not meet criteria
36	2.83	1	355B		0	0.26	1	<10 accidents - Did not meet criteria
37	2.83	3	361	West Avenue	2.3	3.29	8	<10 accidents - Did not meet criteria
38	2.81	1	12A	Farrand Drive Ext.	0	0.1	2	<10 accidents - Did not meet criteria
39	2.8	3	60	SR 54	4.8	5.79	6	<10 accidents - Did not meet criteria
40	2.8	3	60	SR 54	4.9	5.89	6	<10 accidents - Did not meet criteria
41	2.8	3	60	SR 54	5	5.99	6	<10 accidents - Did not meet criteria
42	2.79	3	361	West Avenue	2.2	3.19	8	<10 accidents - Did not meet criteria
43	2.78	3	361	West Avenue	2.1	3.09	8	<10 accidents - Did not meet criteria
44	2.75	3	261		1.1	2.09	8	<10 accidents - Did not meet criteria
45	2.71	1	429	Mechanic Street	3.7	4.69	6	<10 accidents - Did not meet criteria
46	2.71	3	544		0.2	1.19	6	<10 accidents - Did not meet criteria
47	2.69	1	224	Upper Snuffmill Road	0	0.95	6	<10 accidents - Did not meet criteria
48	2.69	1	429	Mechanic Street	3.6	4.59	6	<10 accidents - Did not meet criteria
49	2.69	2	429	Mechanic Street	2.8	3.79	5	<10 accidents - Did not meet criteria
50	2.69	2	429	Mechanic Street	2.9	3.89	5	<10 accidents - Did not meet criteria
51	2.69	2	429	Mechanic Street	3	3.99	5	<10 accidents - Did not meet criteria
52	2.66	3	199	Fowlers Beach Road	0.8	1.79	3	<10 accidents - Did not meet criteria
53	2.66	3	199	Fowlers Beach Road	0.9	1.89	3	<10 accidents - Did not meet criteria
54	2.66	3	199	Fowlers Beach Road	1	1.99	3	<10 accidents - Did not meet criteria
55	2.65	1	315A		0	0.08	1	<10 accidents - Did not meet criteria
56	2.65	3	261		1.2	2.19	7	<10 accidents - Did not meet criteria
57	2.58	1	318A	St. James Church Road	0	0.24	1	<10 accidents - Did not meet criteria
58	2.58	3	246		0.5	1.49	5	<10 accidents - Did not meet criteria
59	2.58	3	544		0.1	1.09	6	<10 accidents - Did not meet criteria
60	2.56	3	246	Albury Avenue	0.6	1.59	5	<10 accidents - Did not meet criteria
61	2.55	2	127		0	0.41	1	<10 accidents - Did not meet criteria
62	2.55	3	246	Albury Avenue	0.7	1.69	5	<10 accidents - Did not meet criteria
63	2.55	3	246	Albury Avenue	0.8	1.79	5	<10 accidents - Did not meet criteria
64	2.55	3	246	Albury Avenue	1.1	2.09	5	<10 accidents - Did not meet criteria

**Delaware - Statewide**

**Accident Date Range**

01/01/2007 - 12/31/2009

**Interval Length**

1.0 mile

**Parameters**

AMBIENT\_LIGHT\_PARAMETER-05

Rank	Crit. Ratio	County	Road	Road Name	Beg MP	End MP	# Accs	Notes
65	2.55	3	261		1	1.99	8	<10 accidents - Did not meet criteria
66	2.51	3	28	US 9	6	6.99	14	Location #2
67	2.5	2	295		0	0.99	3	<10 accidents - Did not meet criteria
68	2.5	2	295		0.1	1.09	3	<10 accidents - Did not meet criteria
69	2.46	3	361	West Avenue	1.9	2.89	8	<10 accidents - Did not meet criteria
70	2.44	2	88		0.2	1.19	4	<10 accidents - Did not meet criteria
71	2.43	2	14	SR 42	2.4	3.39	4	<10 accidents - Did not meet criteria
72	2.43	2	14	SR 42	2.5	3.49	4	<10 accidents - Did not meet criteria
73	2.42	2	88		0.3	1.29	4	<10 accidents - Did not meet criteria
74	2.4	2	88		0.4	1.39	4	<10 accidents - Did not meet criteria
75	2.4	3	544		0.3	1.29	5	<10 accidents - Did not meet criteria
76	2.38	2	14	SR 42	2.3	3.29	4	<10 accidents - Did not meet criteria
77	2.37	1	454	Sawmill Branch Road	0.5	1.46	3	<10 accidents - Did not meet criteria
78	2.37	3	28	US 9	5.9	6.89	13	Location #2
79	2.35	1	275	Golden Ring Road	1.4	2.39	8	<10 accidents - Did not meet criteria
80	2.35	1	275	Golden Ring Road	1.5	2.49	8	<10 accidents - Did not meet criteria
81	2.35	3	261		0.9	1.89	8	<10 accidents - Did not meet criteria
82	2.34	2	88		0.5	1.49	4	<10 accidents - Did not meet criteria
83	2.34	3	396		1.7	2.69	4	<10 accidents - Did not meet criteria
84	2.34	3	60	SR 54	3	3.99	5	<10 accidents - Did not meet criteria
85	2.34	3	60	SR 54	3.4	4.39	5	<10 accidents - Did not meet criteria
86	2.34	3	60	SR 54	3.5	4.49	5	<10 accidents - Did not meet criteria
87	2.34	3	60	SR 54	3.6	4.59	5	<10 accidents - Did not meet criteria
88	2.34	3	60	SR 54	3.7	4.69	5	<10 accidents - Did not meet criteria
89	2.34	3	60	SR 54	3.8	4.79	5	<10 accidents - Did not meet criteria
90	2.34	3	60	SR 54	5.1	6.09	5	<10 accidents - Did not meet criteria
91	2.32	3	361		2	2.99	7	<10 accidents - Did not meet criteria
92	2.31	2	271		3.1	4.01	2	<10 accidents - Did not meet criteria
93	2.28	1	260	Brecks Lane Road	0	0.57	2	<10 accidents - Did not meet criteria
94	2.28	2	384		3	3.99	7	<10 accidents - Did not meet criteria
95	2.27	2	88		0.1	1.09	4	<10 accidents - Did not meet criteria
96	2.22	1	429	Mechanic Street	3.5	4.49	5	<10 accidents - Did not meet criteria
97	2.22	2	207		2.9	3.89	4	<10 accidents - Did not meet criteria
98	2.22	2	207		3	3.99	4	<10 accidents - Did not meet criteria
99	2.21	1	429	Mechanic Street	3.3	4.29	5	<10 accidents - Did not meet criteria
100	2.21	1	82	SR 1	5.5	6.49	12	Location #3
101	2.19	3	261		0.8	1.79	8	<10 accidents - Did not meet criteria
102	2.17	1	275	Golden Ring Road	1.6	2.59	7	<10 accidents - Did not meet criteria
103	2.17	1	469	Black Diamond Road	0.4	1.39	3	<10 accidents - Did not meet criteria
104	2.17	1	469	Black Diamond Road	0.5	1.49	3	<10 accidents - Did not meet criteria
105	2.17	1	469	Black Diamond Road	0.6	1.59	3	<10 accidents - Did not meet criteria
106	2.17	1	469	Black Diamond Road	0.7	1.69	3	<10 accidents - Did not meet criteria
107	2.16	3	28	US 9	9.1	10.09	13	Location #4
108	2.15	2	30	Main Street	1.5	2.49	9	<10 accidents - Did not meet criteria
109	2.15	2	429		2.7	3.69	4	<10 accidents - Did not meet criteria
110	2.15	2	429		3.4	4.39	4	<10 accidents - Did not meet criteria
111	2.15	2	429		3.6	4.59	4	<10 accidents - Did not meet criteria
112	2.15	3	353		2.3	3.29	3	<10 accidents - Did not meet criteria
113	2.15	3	525		1.8	2.79	7	<10 accidents - Did not meet criteria
114	2.15	3	525		1.9	2.89	7	<10 accidents - Did not meet criteria
115	2.15	3	525		2	2.99	7	<10 accidents - Did not meet criteria
116	2.15	3	525		2.1	3.09	7	<10 accidents - Did not meet criteria
117	2.15	3	525		2.2	3.19	7	<10 accidents - Did not meet criteria
118	2.14	3	28	US 9	6.1	7.09	12	Location #2
119	2.14	3	361		2.4	3.39	6	<10 accidents - Did not meet criteria
120	2.13	1	452	Fieldsboro Road	0	0.99	3	<10 accidents - Did not meet criteria
121	2.13	1	452	Fieldsboro Road	0.1	1.09	3	<10 accidents - Did not meet criteria
122	2.13	1	452	Fieldsboro Road	0.2	1.19	3	<10 accidents - Did not meet criteria
123	2.13	1	452	Fieldsboro Road	0.3	1.29	3	<10 accidents - Did not meet criteria
124	2.13	1	452	Fieldsboro Road	0.4	1.39	3	<10 accidents - Did not meet criteria
125	2.13	1	452	Fieldsboro Road	0.5	1.49	3	<10 accidents - Did not meet criteria
126	2.13	1	452	Fieldsboro Road	0.6	1.59	3	<10 accidents - Did not meet criteria
127	2.13	2	30	Main Street	1.6	2.59	9	<10 accidents - Did not meet criteria
128	2.13	3	353		2.4	3.39	3	<10 accidents - Did not meet criteria



**Delaware - Statewide**

**Accident Date Range**

01/01/2007 - 12/31/2009

**Interval Length**

1.0 mile

**Parameters**

AMBIENT\_LIGHT\_PARAMETER-05

Rank	Crit. Ratio	County	Road	Road Name	Beg MP	End MP	# Accs	Notes
129	2.12	2	8	US 113	9.6	10.59	13	Location #5
130	2.12	3	24	SR 24	18.2	19.19	7	<10 accidents - Did not meet criteria
131	2.12	3	24	SR 24	18.4	19.39	7	<10 accidents - Did not meet criteria
132	2.12	3	24	SR 24	18.5	19.49	7	<10 accidents - Did not meet criteria
133	2.11	3	246	Albury Avenue	0.3	1.29	4	<10 accidents - Did not meet criteria
134	2.11	3	261		1.3	2.29	5	<10 accidents - Did not meet criteria
135	2.11	3	353		2.1	3.09	3	<10 accidents - Did not meet criteria
136	2.11	3	477		0	0.99	3	<10 accidents - Did not meet criteria
137	2.1	1	26	Old Baltimore Pike	2.5	3.49	21	Location #6
138	2.1	3	48		7.2	8.19	7	<10 accidents - Did not meet criteria
139	2.1	3	48		7.3	8.29	7	<10 accidents - Did not meet criteria
140	2.1	3	48		7.4	8.39	7	<10 accidents - Did not meet criteria
141	2.1	3	48		7.5	8.49	7	<10 accidents - Did not meet criteria
142	2.1	3	48		7.6	8.59	7	<10 accidents - Did not meet criteria
143	2.1	3	48		7.7	8.69	7	<10 accidents - Did not meet criteria
144	2.1	3	48		7.8	8.79	7	<10 accidents - Did not meet criteria
145	2.1	3	48		7.9	8.89	7	<10 accidents - Did not meet criteria
146	2.1	3	48		8	8.99	7	<10 accidents - Did not meet criteria
147	2.09	2	30	Main Street	0.7	1.69	7	<10 accidents - Did not meet criteria
148	2.09	3	246	Albury Avenue	0.4	1.39	4	<10 accidents - Did not meet criteria
149	2.09	3	28	US 9	8.9	9.89	12	Location #4
150	2.07	3	246	Albury Avenue	1.8	2.7	3	<10 accidents - Did not meet criteria
151	2.07	3	326	State Street	0.8	1.79	8	<10 accidents - Did not meet criteria
152	2.06	2	188		0	0.32	1	<10 accidents - Did not meet criteria
153	2.06	3	353		2	2.99	3	<10 accidents - Did not meet criteria
154	2.06	3	353		2.5	3.49	3	<10 accidents - Did not meet criteria
155	2.05	1	26	Old Baltimore Pike	2.8	3.79	21	Location #6
156	2.05	3	594		0	0.99	6	<10 accidents - Did not meet criteria
157	2.04	2	30	Main Street	0.4	1.39	7	<10 accidents - Did not meet criteria
158	2.04	3	246		1.2	2.19	4	<10 accidents - Did not meet criteria
159	2.04	3	28	US 9	9	9.99	12	Location #4
160	2.04	3	544		0.4	1.39	4	<10 accidents - Did not meet criteria
161	2.03	2	303		1.2	2.19	2	<10 accidents - Did not meet criteria
162	2.02	1	301	Thompson's Station Road	0.3	1.29	9	<10 accidents - Did not meet criteria
163	2.02	1	301	Thompson's Station Road	0.4	1.39	9	<10 accidents - Did not meet criteria
164	2.02	2	54	Main Street	0.1	1.09	6	<10 accidents - Did not meet criteria
165	2.02	2	54	Main Street	0.2	1.19	6	<10 accidents - Did not meet criteria
166	2.02	2	54	Main Street	0.3	1.29	6	<10 accidents - Did not meet criteria
167	2.02	2	54	Main Street	0.4	1.39	6	<10 accidents - Did not meet criteria
168	2.02	2	54	Main Street	0.5	1.49	6	<10 accidents - Did not meet criteria
169	2.01	3	28	US 9	5.8	6.79	11	Location #4
170	2.01	3	488		2.8	3.79	4	<10 accidents - Did not meet criteria
171	2.01	3	488		2.9	3.89	4	<10 accidents - Did not meet criteria
172	2	1	82	SR 1	5.6	6.59	12	Location #3
173	2	1	9	SR 52	3.2	4.19	16	Location #7
174	2	2	8	US 113	9.7	10.69	12	Location #5
175	1.99	3	361		1.8	2.79	7	<10 accidents - Did not meet criteria
176	1.99	3	479A		0	0.6	2	<10 accidents - Did not meet criteria
177	1.98	1	26	Old Baltimore Pike	2.6	3.59	20	Location #6
178	1.98	1	26	Old Baltimore Pike	2.9	3.89	20	Location #6
179	1.98	1	9	SR 52	3.1	4.09	16	Location #7
180	1.98	2	325	Big Oak Road	1.4	2.39	4	<10 accidents - Did not meet criteria
181	1.98	2	73	North Street	4.3	5.29	7	<10 accidents - Did not meet criteria
182	1.98	3	207		1.3	2.29	7	<10 accidents - Did not meet criteria
183	1.98	3	353		1.9	2.89	3	<10 accidents - Did not meet criteria
184	1.98	3	544		1	1.99	2	<10 accidents - Did not meet criteria
185	1.97	1	26	Old Baltimore Pike	2.7	3.69	20	Location #6
186	1.97	2	30	Main Street	1.4	2.39	8	<10 accidents - Did not meet criteria
187	1.97	3	2	US 13	3.6	4.59	18	Location #8
188	1.96	1	383	Church Road	0.4	1.37	8	<10 accidents - Did not meet criteria
189	1.96	2	30	Main Street	0.3	1.29	7	<10 accidents - Did not meet criteria
190	1.96	2	384		3.1	4.09	6	<10 accidents - Did not meet criteria
191	1.96	3	16	SR 16	25.8	26.79	5	<10 accidents - Did not meet criteria
192	1.96	3	16	SR 16	25.9	26.89	5	<10 accidents - Did not meet criteria

**Delaware - Statewide****Accident Date Range**

01/01/2007 - 12/31/2009

**Interval Length**

1.0 mile

**Parameters**

AMBIENT\_LIGHT\_PARAMETER-05

Rank	Crit. Ratio	County	Road	Road Name	Beg MP	End MP	# Accs	Notes
193	1.96	3	16	SR 16	26	26.99	5	<10 accidents - Did not meet criteria
194	1.96	3	16	SR 16	26.1	27.09	5	<10 accidents - Did not meet criteria
195	1.96	3	353		2.6	3.59	3	<10 accidents - Did not meet criteria
196	1.95	2	73	North Street	4.2	5.19	7	<10 accidents - Did not meet criteria
197	1.95	3	326	State Street	0.7	1.69	8	<10 accidents - Did not meet criteria
198	1.94	1	32	US 40	4.2	5.19	25	Location #9
199	1.94	2	73	North Street	4.4	5.39	7	<10 accidents - Did not meet criteria
200	1.94	3	213	Walnut Street	8.1	9.09	5	<10 accidents - Did not meet criteria
201	1.94	3	484		2.7	3.69	4	<10 accidents - Did not meet criteria
202	1.92	1	17	SR 92	0	0.99	17	Location #10