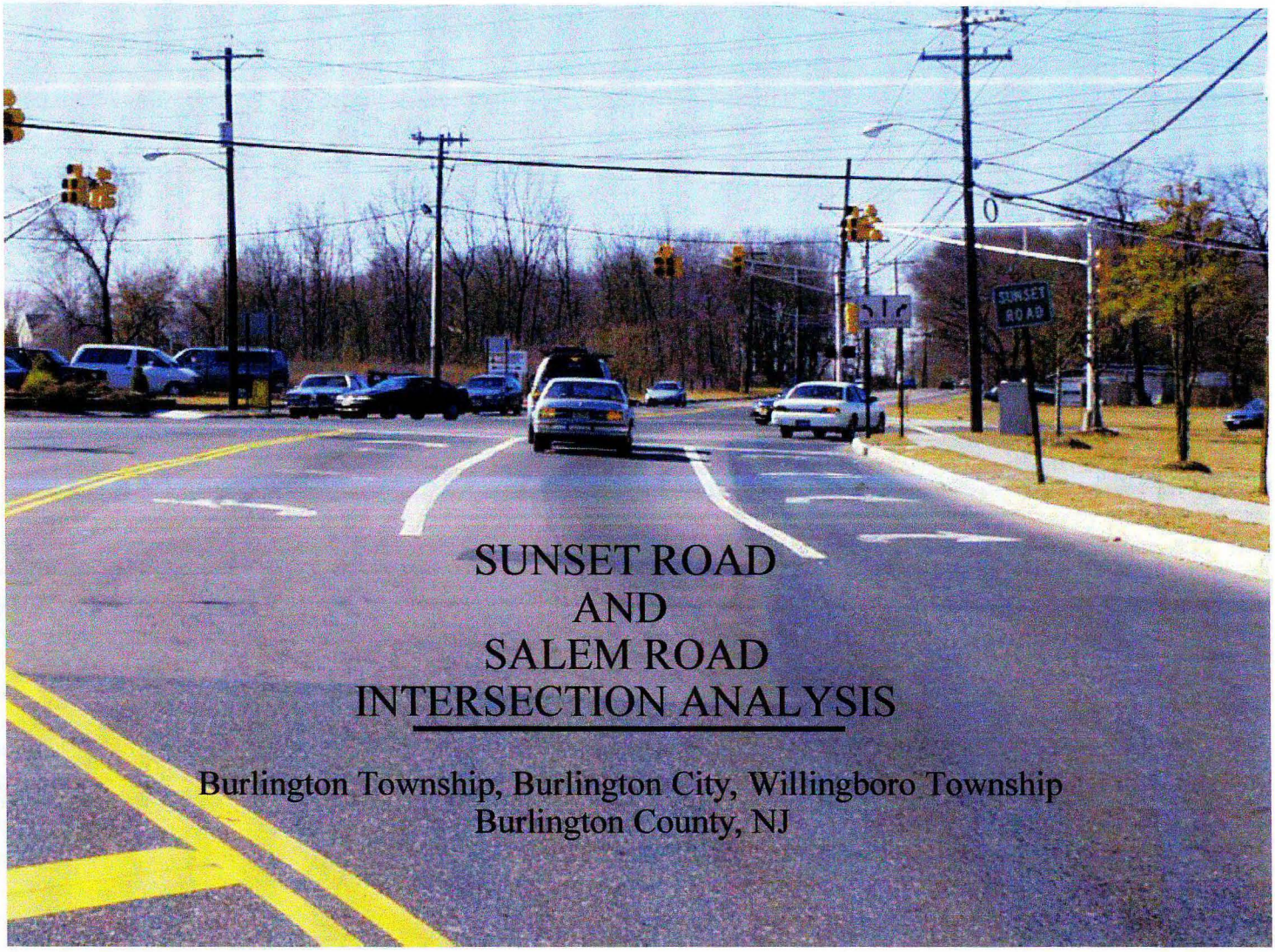

SUNSET ROAD
AND
SALEM ROAD
INTERSECTION ANALYSIS

Burlington Township, Burlington City, Willingboro Township
Burlington County, NJ

Delaware Valley
Regional Planning Commission

August 1999

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

Publication Abstract

TITLE	Date Published: August 1999
Sunset Road and Salem Road Intersection Analysis	
	Publication No. 99010

Geographic Area Covered:

Burlington Township, Burlington City and Willingboro Township in Burlington County

Key Words:

traffic counts, accident history, population growth, land development, traffic growth, level of service analysis, recommended improvements, Campus Drive Extension, traffic calming

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ABSTRACT

This report summarizes an examination of existing traffic and safety conditions at the Sunset Road (CR 634) and Salem Road (CR 633) intersection. Undertaken at the request of Burlington County, the study was conducted to determine the ability of this intersection to accommodate future traffic volumes resulting from the background growth of area traffic and changes in travel patterns resulting from the construction of an extension of Campus Drive from Sunset Road to Salem Road.

For More Information Contact:

Delaware Valley Regional Planning Commission
Regional Information Services Center
The Bourse Building - 8th Floor
111 S. Independence Mall East
Philadelphia, PA 19106-2515
(215) 592-1800

This report, prepared by the Transportation Planning Division of the Delaware Valley Regional Planning Commission, was financed in part by the Federal Highway Administration and Burlington County. The authors, however, are solely responsible for its findings and conclusions, which may not represent the official views or policies of the funding agencies.

Created in 1965, the Delaware Valley Regional Planning Commission (DVRPC) is an interstate, intercounty and intercity agency which provides continuing, comprehensive and coordinated planning for the orderly growth and development of the Delaware Valley region. The region includes Bucks, Chester, Delaware, and Montgomery counties as well as the City of Philadelphia in Pennsylvania and Burlington, Camden, Gloucester, and Mercer counties in New Jersey. The Commission is an advisory agency which divides its planning and service functions among the Office of the Executive Director, the Office of Public Affairs, and four line Divisions: Transportation Planning, Regional Information Services Center, Regional Planning, and the Office of Administration and Finance. DVRPC's mission for the 1990s is to emphasize technical assistance and services and to conduct high priority studies for member state and local governments, while determining and meeting the needs of the private sector.

The DVRPC logo is adapted from the official seal of the Commission and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River flowing through it. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey. The logo combines these elements to depict the areas served by DVRPC.

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EXECUTIVE SUMMARY

This document, prepared by the Delaware Valley Regional Planning Commission (DVRPC), summarizes the undertakings and findings of a traffic evaluation of the intersection of Sunset Road (CR 634) and Salem Road (CR 633) in Burlington Township, Burlington County. This effort was performed in cooperation with the Burlington County Engineer's Office, Burlington Township and the New Jersey Department of Transportation (NJ DOT).

The impetus for this study was a recommendation which came from the *US 130 Corridor Study* completed by DVRPC in August 1997. That study identified the Campus Drive and Sunset Road/Salem Road area as a "Transportation Problem Area". The study recommended that the county work with NJ DOT and Burlington Township to develop an improvement concept which would enhance the attractiveness of Campus Drive as an access to US 130 and also lessen the traffic impacts on Salem Road through Burlington City. The concept developed was to extend Campus Drive across Sunset Road through an undeveloped parcel and intersect with Salem Road. It would also entail the relocation of the existing traffic signal and jughandles on US 130 north of Campus Drive to Campus Drive and create an intersection which would allow all turning movements. This concept would certainly have implications on the traffic patterns through the Sunset Road and Salem Road intersection and along Salem Road in Burlington City.

This study examines the existing traffic operations and accident history at the Sunset Road and Salem Road intersection. It also analyzes the projected future (Year 2020) traffic conditions at the intersection under two scenarios: 1) Build - Campus Drive extension to Salem Road; 2) No Build - no Campus Drive extension.

In Summary, the primary recommendations for this study area include:

Safety Improvements

- A high incidence of rear-end type accidents occurs at the intersection of Sunset Road and Salem Road. The following measures should be considered to increase the visibility of the signal heads at this intersection: relocate the utility wires which cause visual clutter, add and/or reposition signal heads, install back plates on the signal housing and change the signal timing to reduce the queuing on selected approaches.
- Wet road conditions occur during a majority of the accidents at the intersection of Salem Road

and JFK Way (20 of the 29 reported accidents - 69%). The county should consider drainage, pavement and/or geometric improvements at this location

Operational Improvements

The county anticipates that Sunset Road will be improved to five lanes from VanSciver Parkway through Salem Road in the near future. Although the operational benefits of this widened Sunset Road may be minimal to the overall intersection, the Sunset Road approaches may experience a noticeable safety benefit. The addition of another travel lane on Sunset Road is expected to decrease the queue lengths on those approaches which can be a contributing factor to rear-end type accidents.

Mobility Improvements

The focal point of the mobility improvements is the construction of an extension of Campus Drive from Sunset Road to Salem Road. However this is not a stand alone improvement and the following improvements also need to be implemented as a complete program for this concept to be effective.

- Construct a full intersection on US 130 at Campus Drive including a traffic signal and jughandles.
- Remove the existing traffic signal and jughandles located on US 130 approximately 1,100 feet north of Campus Drive.
- Eliminate access to Salem Road from Keim Blvd. and redirect that traffic to the new intersection of US 130 and Campus Drive.
- Evaluate the possibility of installing a traffic signal at the intersection of Campus Drive and Sunset Road.
- Add a left turn lane on northbound Salem Road at the proposed intersection with the Campus Drive extension.
- Secure the necessary right-of-way required to extend Campus Drive.
- Modify the township master plan to show an extension of Campus Drive.
- Implement some common traffic calming strategies on Salem Road in Burlington City.

INTRODUCTION

This report examines the existing traffic conditions and accident history occurring at the intersection of Sunset Road and Salem Road in Burlington Township, Burlington County. It also presents the analyses of the projected future traffic conditions at this intersection under two scenarios.

These two future scenarios studied include a build scenario which assumes an extension of Campus Drive is built which intersects with Salem Road. This scenario would also include the relocation of the existing traffic signal and jughandles on US 130 north of Campus Drive to Campus Drive. This would create an intersection which would allow all turning movements between Campus Drive and US 130. This concept would certainly have implications on the traffic patterns through the Sunset Road and Salem Road intersection and along Salem Road in Burlington City. The second scenario is a no build scenario which assumes that there are no changes to the existing road network in the study area.

Burlington County and the municipalities in the study area are concerned about improving access to US 130 while at the same time recognizing the need to address traffic congestion at the intersection of Sunset Road and Salem Road and ease the traffic impacts on the residential area along Salem Road in Burlington City. The primary problem in this section of Salem Road is speeding and traffic congestion at the approach to US 130.

According to the US Bureau of the Census, Burlington Township has experienced a 19.75% growth in population between 1990 (12,454) and 1996 (14,914 est.). This represents the highest rate growth and the third highest absolute increase of any municipality in the county. Although Burlington Township has recently experienced a spurt in development, its neighboring municipalities such as Burlington City (-1.99%) and Willingboro (-2.33%) were estimated to be losing population between 1990 and 1996. The county as a whole is estimated to have grown at a rate of 4.02% over that same time period. The DVRPC population forecasts for the Year 2020 indicate similar trends with Burlington Township expected to grow by 38.7% between 1990 and 2020. Burlington City is projected to lose 6% of its population in that time period and Willingboro is expected to stay stable with only a 0.8% increase.

The analysis procedure for this effort consisted of the following:

- ✔ field view the study area roadways and intersections
- ✔ conduct AM and PM peak period turning movement counts at the intersection of Sunset Road and Salem Road
- ✔ collect annual average daily traffic volumes at selected locations in the study area
- ✔ obtain accident records for three full previous years and current year
- ✔ conduct level of service analysis of existing traffic volumes
- ✔ conduct accident analysis
- ✔ identify proposed development in the study area
- ✔ conduct level of service analysis of future traffic volumes for no-build and build scenario
- ✔ develop improvement recommendations.

EXISTING TRANSPORTATION CONDITIONS

Existing Physical Conditions

The intersection of Sunset Road and Salem Road is located in Burlington Township between the municipalities of Willingboro and Burlington City in the north-western portion of Burlington County, New Jersey. Figure 1 depicts a location map of the study area. Salem Road runs north-south carrying one travel lane in each direction and crosses Sunset Road, which runs east-west, at an oblique angle. The posted speed limit is 40 mph on both Sunset Road and Salem Road and the functional class is urban minor arterial for both. Commercial developments occupy three of the quadrants at the intersection with the fourth being undeveloped. A schematic diagram depicting the configuration of the intersection is presented in Figure 2.

The northbound Salem Road approach consists of three lanes: a 10 foot wide exclusive left turn lane, an 11 foot wide through lane, and a 12 foot wide right turn lane. The left turn lane is 140 feet long. The southbound Salem Road approach consists of a 12 foot wide exclusive left turn lane 150 feet in length, an 11 foot wide through lane, and an 11 foot wide right turn lane. The eastbound approach of Sunset Road consists of three lanes: an 11 foot wide exclusive left turn lane 115 feet in length, a 12 foot wide through lane, and a 22 foot wide channelized right turn lane. The westbound Sunset Road approach also has an exclusive left turn lane, a through lane, and a channelized right turn lane all 11 feet in width. The left turn lane is 140 feet long.

This intersection was improved in the fall of 1990. The improvements included the addition of left turn lanes on all four approaches and new signal equipment. The intersection is controlled by a four phase traffic signal having a variable cycle length of between 73 and 100 seconds. This intersection is scheduled to be included in Burlington County's Phase II Computerized Traffic Control System, a closed loop system of coordinated traffic signals which will include the following adjacent intersections: Sunset Road and Rancocas Road, Sunset Road and Hospital Drive, Sunset Road and VanSciver Parkway, and John F. Kennedy Way and VanSciver Parkway, among others. This project is scheduled for summer 1999.

A tire store, located in the southeastern quadrant, accesses Salem Road in two locations. The first driveway is 95 feet from the intersection stop bar and the second is 200 feet from the stop bar. A third access to the tire store is located on Sunset Road, 85 feet back from the stop bar. All turning

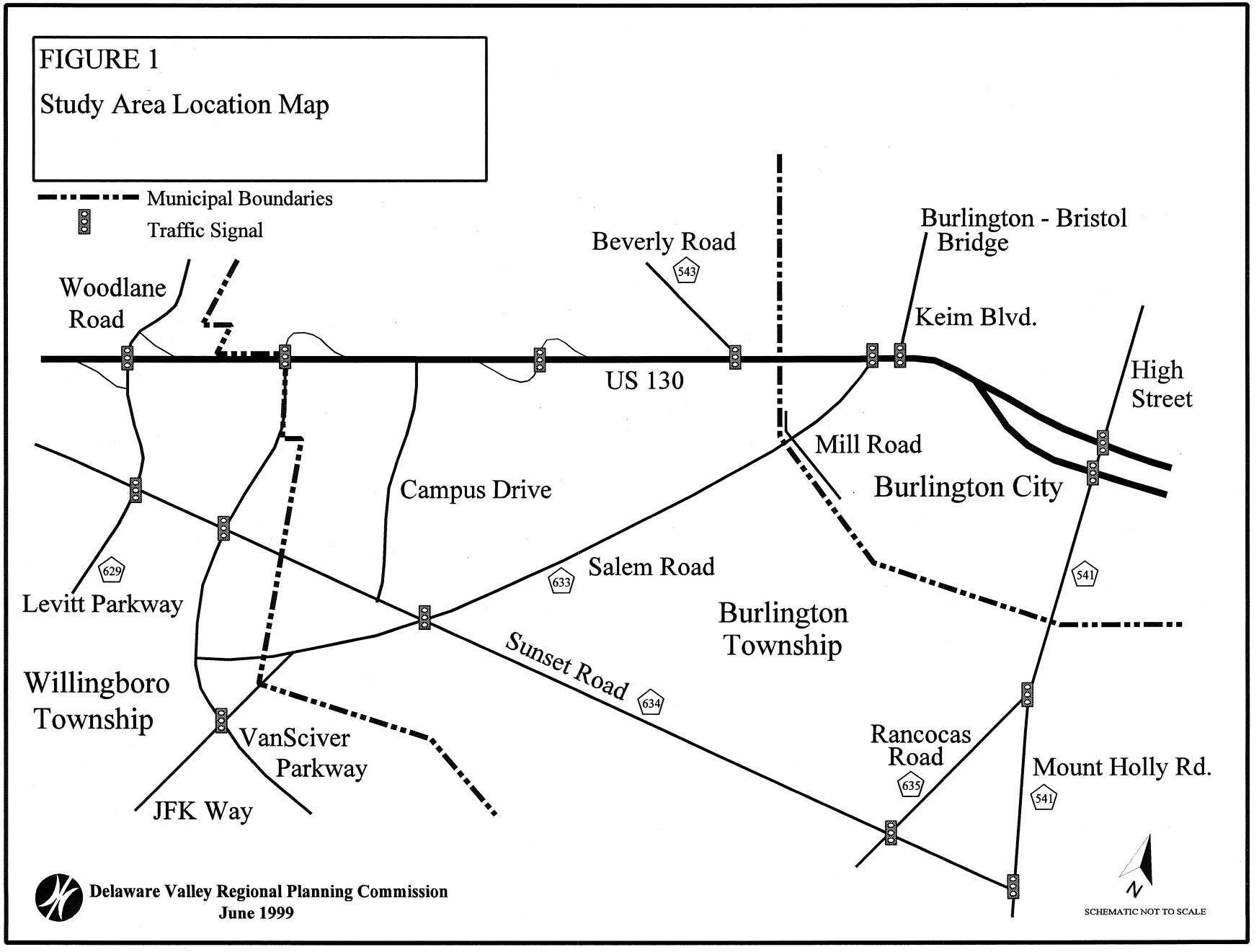
FIGURE 1
Study Area Location Map
Municipal Boundaries
Traffic Signal
Woodlane Road
Beverly Road
543
Burlington - Bristol Bridge
Keim Blvd.
High Street
US 130
Mill Road
Burlington City
Campus Drive
629
Levitt Parkway
633
Salem Road
541
Burlington Township
Sunset Road
634
Willingboro Township
VanSciver Parkway
JFK Way
Rancocas Road
635
Mount Holly Rd.
541
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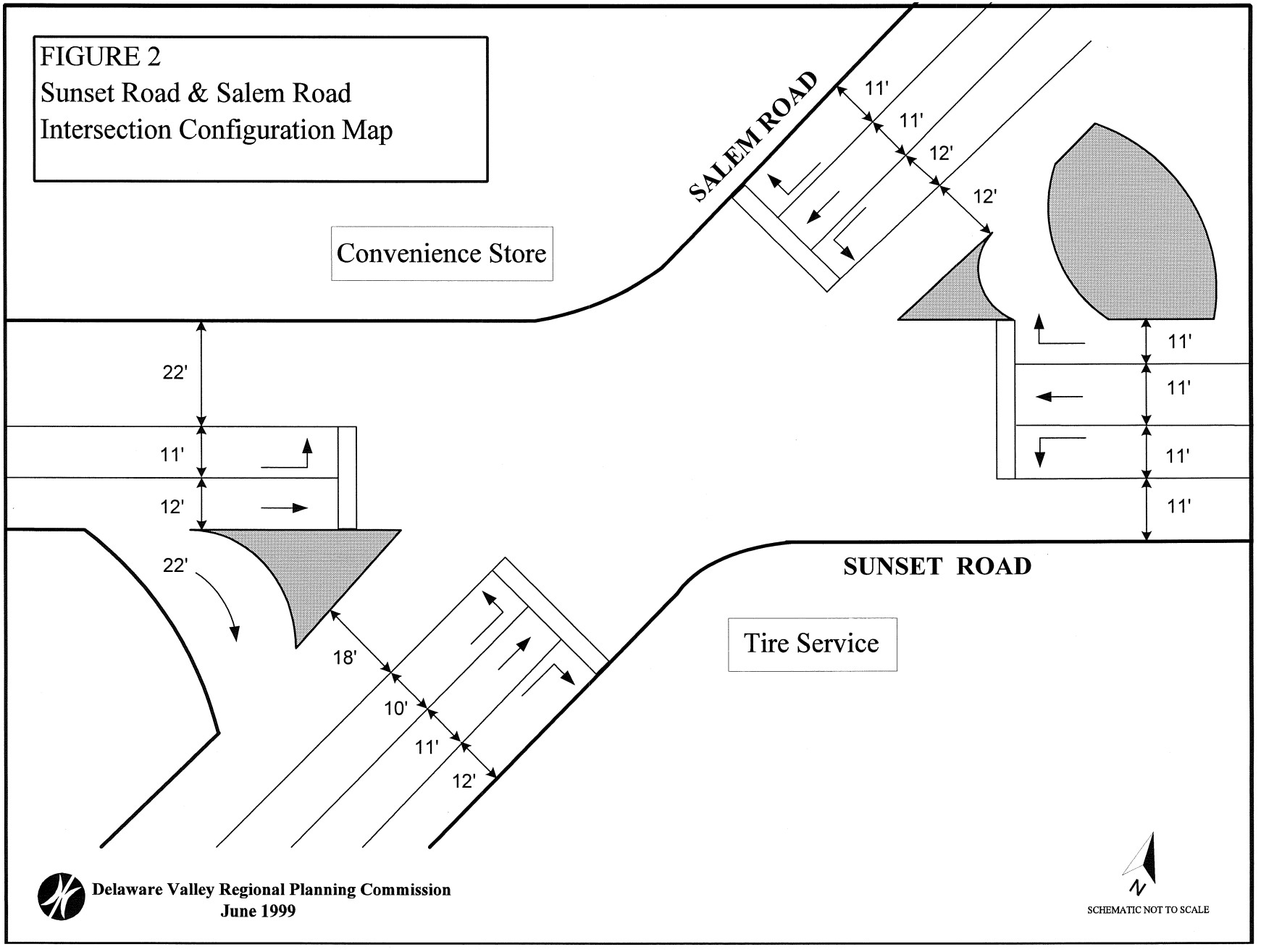
FIGURE 2
Sunset Road & Salem Road
Intersection Configuration Map
SALEM ROAD
11'
11'
12'
12'
Convenience Store
22'
11'
12'
22'
11'
11'
11'
11'
SUNSET ROAD
Tire Service
18'
10'
11'
12'
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movements are permitted into and out of these driveways.

A gas station is located in the northeast quadrant with access to both Salem Road and Sunset Road. The first Salem Road access, located only 28 feet from the stop bar, permits all turning movements into and out of this driveway. Another access point at the end of the gas station accesses Salem Road a considerable distance from the intersection. On Sunset Road, the gas station has two access points. The first is only 28 feet from the stop bar and is a right turn out only that feeds into the exclusive right turn lane on the Sunset Road westbound approach. A second access onto Sunset Road is located 175 feet from the stop line.

A convenience store is located in the northwest quadrant with one access point onto both Sunset and Salem roads. The design of this property permitted the access points to be drawn back away from the intersection. On Salem Road, the access is 280 feet from the stop bar and on Sunset Road, it is 130 feet from the stop bar. The southwestern quadrant is currently undeveloped.

Sunset Road intersects Campus Drive at a three leg intersection approximately 1000 feet west of Salem Road. Campus Drive forms the stem of the T intersection with Sunset Road. Sunset Road is one lane in each direction with an 11-foot center left turn lane. The eastbound travel lane is 11 feet wide and the westbound lane width is 12 feet. There is a 3-foot wide shoulder present on the south side on Sunset and a 14-foot wide shoulder on the north side. The 14-foot shoulder also acts as a right turn lane for motorists turning onto Campus Drive. Campus Drive serves as access to Burlington Business Campus, an industrial park, and provides access to/from northbound US 130.

Campus Drive is 40 feet wide and carries one lane in each direction. It is controlled at Sunset Road by a stop sign. On the north side of Sunset Road there is a self storage facility located between Campus Drive and Salem Road. A private home occupies the northwest corner. Directly across from Campus Drive is a patch of wooded undeveloped land which sits between two commercial businesses.

One of the primary problems in the study area involves the traffic operations on Salem Road in Burlington City. Northbound traffic on Salem Road coming through Burlington Township typically continues at the same rate of speed through Burlington City although the posted speed limit drops from 40 MPH to 25 MPH. The geometrics of the road in Burlington City contribute to this problem. Traffic is afforded a 17-foot travel lane in the northbound direction with an unimpeded flow all the

way to US 130. The design of the road in the northbound direction is conducive to a speed higher than 25 MPH. Indications are, that a significant portion of this traffic is generated in Willingboro and uses Salem Road because of its direct access to US 130 or the Burlington Bristol Bridge.

The *US 130 Corridor Study* completed by DVRPC in August 1997 identified the Campus Drive and Sunset Road area as a "Transportation Problem Area". DVRPC worked with the county and township to develop an improvement concept which would enhance the attractiveness of Campus Drive as an alternative route to serve Willingboro and Rancocas Hospital and provide access to US 130 while lessening the traffic impacts on Salem Road. The concept is to extend Campus Drive across Sunset Road through the undeveloped parcel and intersect with Salem Road. This would require the relocation of the existing traffic signal and jughandles on US 130 north of Campus Drive to Campus Drive and create an intersection which would provide all turning movements. The following activities were also recommended for this conceptual improvement.

- The Township should work with NJ DOT to relocate the existing signal and jughandles on US 130 just north of Campus Drive to Campus Drive.
- Burlington City, Burlington County and the Burlington County Bridge Commission should work together with NJ DOT to restrict access to Salem Road from Keim Blvd. and redirect that traffic to a signalized Campus Drive.
- Signalize the intersection of Campus Drive and Sunset Road.
- Investigate the need to signalize the new intersection created by Campus Drive Extension and Salem Road.
- Coordinate the signal timing of any new signals with the existing signal at Sunset Road and Salem Road.
- Add a left turn lane on westbound Salem Road at the Campus Drive extension.

These improvements would 1) create a new, more effective access to US 130 for the residents and businesses of Burlington and Willingboro Townships and 2) improve the attractiveness of the Burlington Business Campus by allowing all movements to and from US 130 at its Campus Drive entrance. This improvement would also provide the following benefits to Salem Road: 1) it would reduce the number of vehicles using Salem Road through Burlington Township and Burlington City to reach US 130 and the Burlington Bristol Bridge, 2) create gaps on Salem Road so vehicles can enter more easily from Willow Road/Adams Street, and 3) reduce congestion at the intersection of Sunset and Salem Roads.

Existing Traffic Volumes

Salem Road, which connects Willingboro with Burlington City and interchanges with US 130 at its northern terminus, provides a direct route to US 130 northbound for the neighborhoods of the central part of Willingboro. This neighborhood traffic collects on John F. Kennedy Way which terminates at Salem Road. Salem Road also serves as a collector of neighborhood traffic from the residential developments through which it passes in both Burlington Township and Burlington City. According to the 1990 census Willingboro had a population of 36,291 residents, Burlington City had a population of 9,835 residents, and Burlington Township had a population of 12,454 residents.

Traffic counts were taken on area roadways in October 1998 and the annual average daily traffic (AADT) volumes are displayed in Figure 3. The traffic data indicate that:

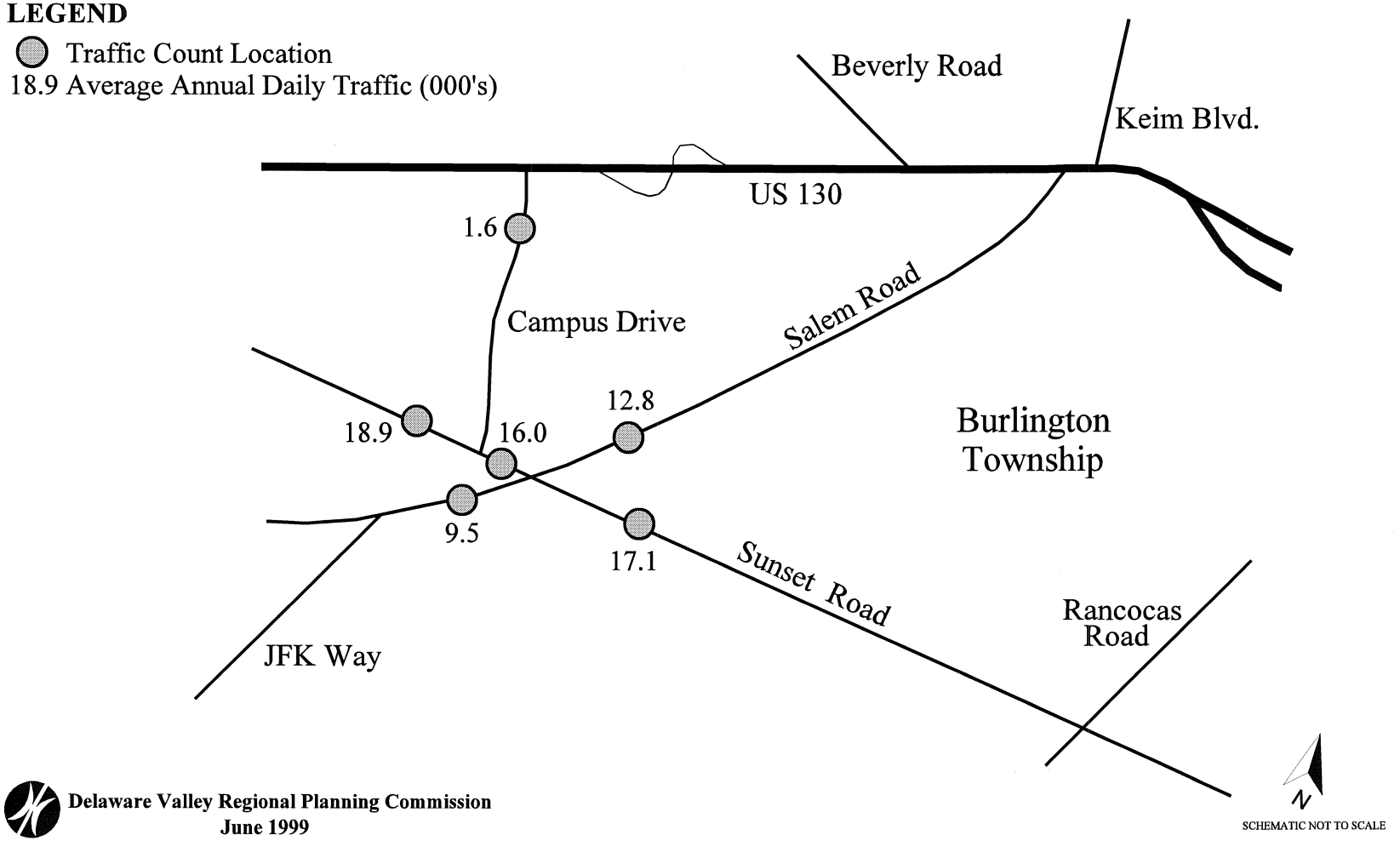
- 18,900 vehicles per day were counted on Sunset Road west of Campus Drive
- 16,000 vehicles per day were counted on Sunset Road between Campus Drive and Salem Road
- 17,100 vehicles per day were counted on Sunset Road east of Salem Road
- 9,500 vehicles per day were counted on Salem Road between Sunset Road and JFK Way
- 12,800 vehicles per day were counted on Salem Road north of Sunset Road
- 1,600 vehicles per day were counted on Campus Drive between Sunset Road and US 130

Turning movements at The intersection of Sunset Road and Salem Road were also counted in October of 1998 and serve as the analytical base for this study. The intersection's AM peak hour occurs between 7:30 and 8:30, and the PM peak hour occurs between 4:45 and 5:45. The total volume through the intersection is 1862 vehicles in the AM peak hour and 2528 vehicles during the PM peak hour. The Salem Road southbound approach leg carries the most traffic in the AM peak hour with 519 vehicles. In the PM peak hour, the 880 vehicles entering the intersection from westbound Sunset Road makes that leg the heaviest. Existing peak hour turning movement counts are depicted in Figure 4.

Existing Level of Service Analysis

Level of service analysis is a procedure which relates traffic operations to motorist's perceptions of speed, travel time, traffic operations, freedom to maneuver, comfort, convenience, etc. by means

FIGURE 3
Existing Average Annual Daily
Traffic Voulmes (AADT)



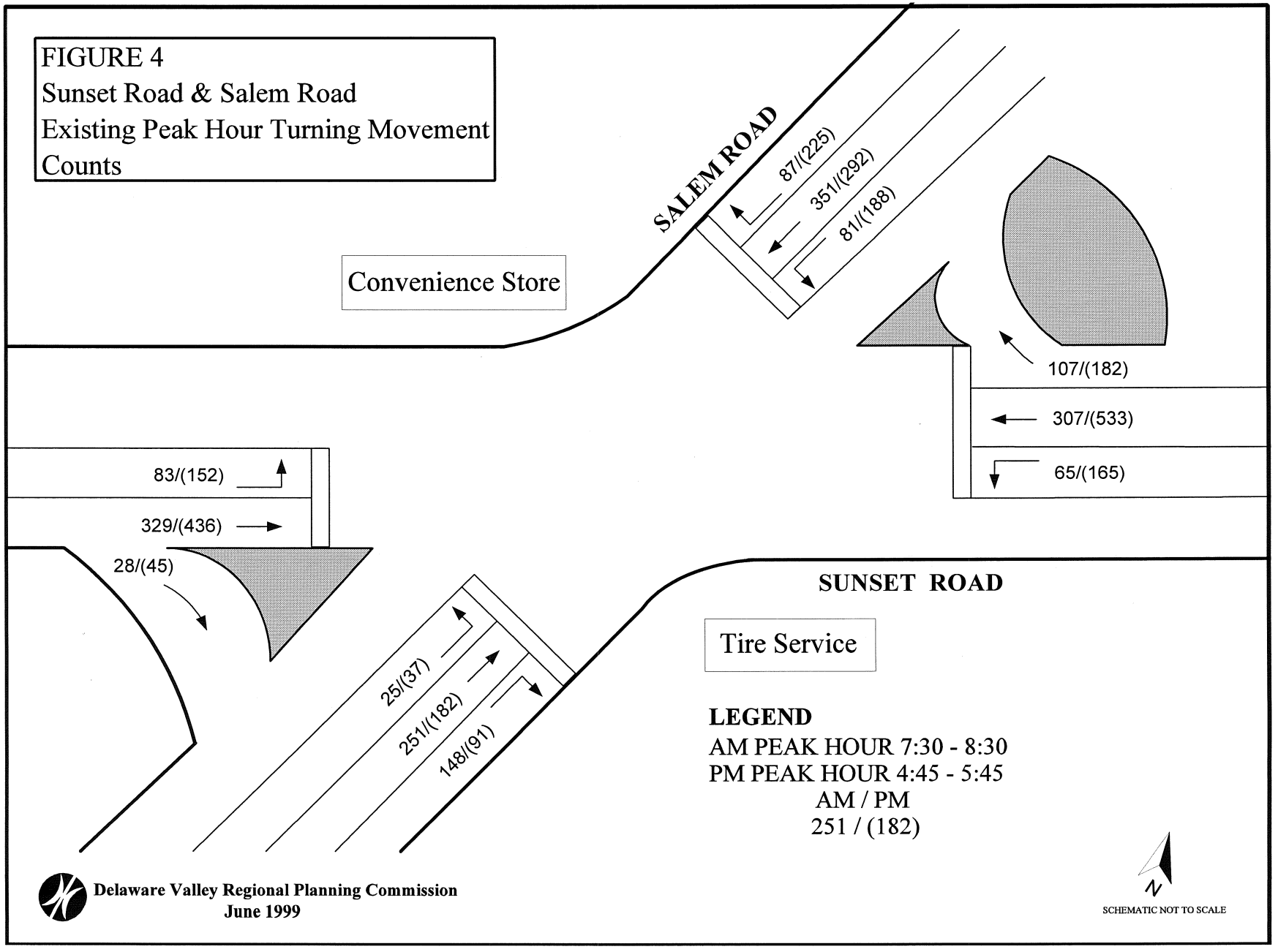


FIGURE 4
Sunset Road & Salem Road
Existing Peak Hour Turning Movement Counts
SALEM ROAD
87/(225)
351/(292)
81/(188)
Convenience Store
107/(182)
307/(533)
65/(165)
83/(152)
329/(436)
28/(45)
SUNSET ROAD
Tire Service
25/(37)
251/(182)
148/(91)
LEGEND
AM PEAK HOUR 7:30 - 8:30
PM PEAK HOUR 4:45 - 5:45
AM / PM
251 / (182)
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of six letter designations (A through F). Level A generally connotes free flowing traffic conditions, while operational breakdown or forced flow conditions are typically described as level F.

The analyses for this study were accomplished using the methodology and procedures of the Highway Capacity Manual (Special Report 209, Transportation Research Board, Washington, D.C., 1985.). The existing level of service analysis was performed assuming current peak hour traffic demands at the study intersection given existing roadway, geometry and traffic control conditions. At intersections, level of service reflects the ability to clear a traffic signal and/or the freedom to maneuver through conflicting traffic volume.

Level of service at signalized intersections is measured in terms of average stopped delays encountered by vehicles traversing the intersection. Delays in these cases are influenced by the length of the signal cycle, the amount of green time apportioned to an approach, as well as, the vehicular demand on the approach. Table 1 gives a description of each level of service and its delay range. It is important to note that delay (i.e., level of service) is not related to capacity in a direct manner. Thus, the designation of level of service F does not automatically signify that the approach is overloaded. Long cycle length and / or poor progression through adjacent traffic signals can also result in excessive delays.

All movements for each approach on both Sunset Road and Salem Road are operating at a Level Of Service (LOS) C or better for both AM and PM peak periods. The only exception is the through movement on Salem Road southbound which is operating at LOS D during the AM peak hour. A level of service D is generally acceptable in this area type. Overall, the intersection operates at level of service C in both the AM peak and PM peak. A diagram showing the existing peak hour level of service of the intersection is depicted in Figure 5.

Accident Analysis

Traffic accident reports, obtained from the Burlington Township Police Department, were collected for the years 1995, 1996, 1997 and from January 1, 1998 through October 31, 1998. During this time frame there was a total of 157 accidents reported at the intersection of Sunset and Salem or along Salem Road between VanSciver Parkway and Mill Road. For analytical purposes, the accident analysis has been divided into two sections. The first section deals with those accidents that occurred either at the Sunset Road and Salem Road intersection or in very close proximity to

TABLE 1: LEVEL OF SERVICE CRITERIA - SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE A - Very low delay, good progression; most vehicles do not stop at intersection. Average stopped delays equal 5.0 seconds or less per vehicle.

LEVEL OF SERVICE B - Generally good signal progression and / or short cycle length; more vehicles stop at intersection than level of service 'A'. The average stopped delay range is between 5.1 to 15.0 seconds per vehicle.

LEVEL OF SERVICE C - Fair progression and / or longer cycle length; significant number of vehicles stop at intersection. The delay range averages 15.1 to 25.0 seconds per vehicle.

LEVEL OF SERVICE D - Congestion becomes noticeable, many vehicles stop at signal, individual cycle failures. Longer delays from unfavorable progression and longer cycle lengths. Delay range is between 25.1 to 40.0 seconds per vehicle.

LEVEL OF SERVICE E - Considered limit of acceptable delay, indicative of poor progression, long cycle lengths. Frequent individual cycle failures. Delay range equals 40.1 to 60.0 seconds per vehicle.

LEVEL OF SERVICE F - Unacceptable delay, indication of possible oversaturation (i.e., arrival flow exceeds capacity). Average delay exceeds 60.0 seconds per vehicle.

Source: Highway Capacity Manual, Transportation Research Board, Special Report 209, 1985

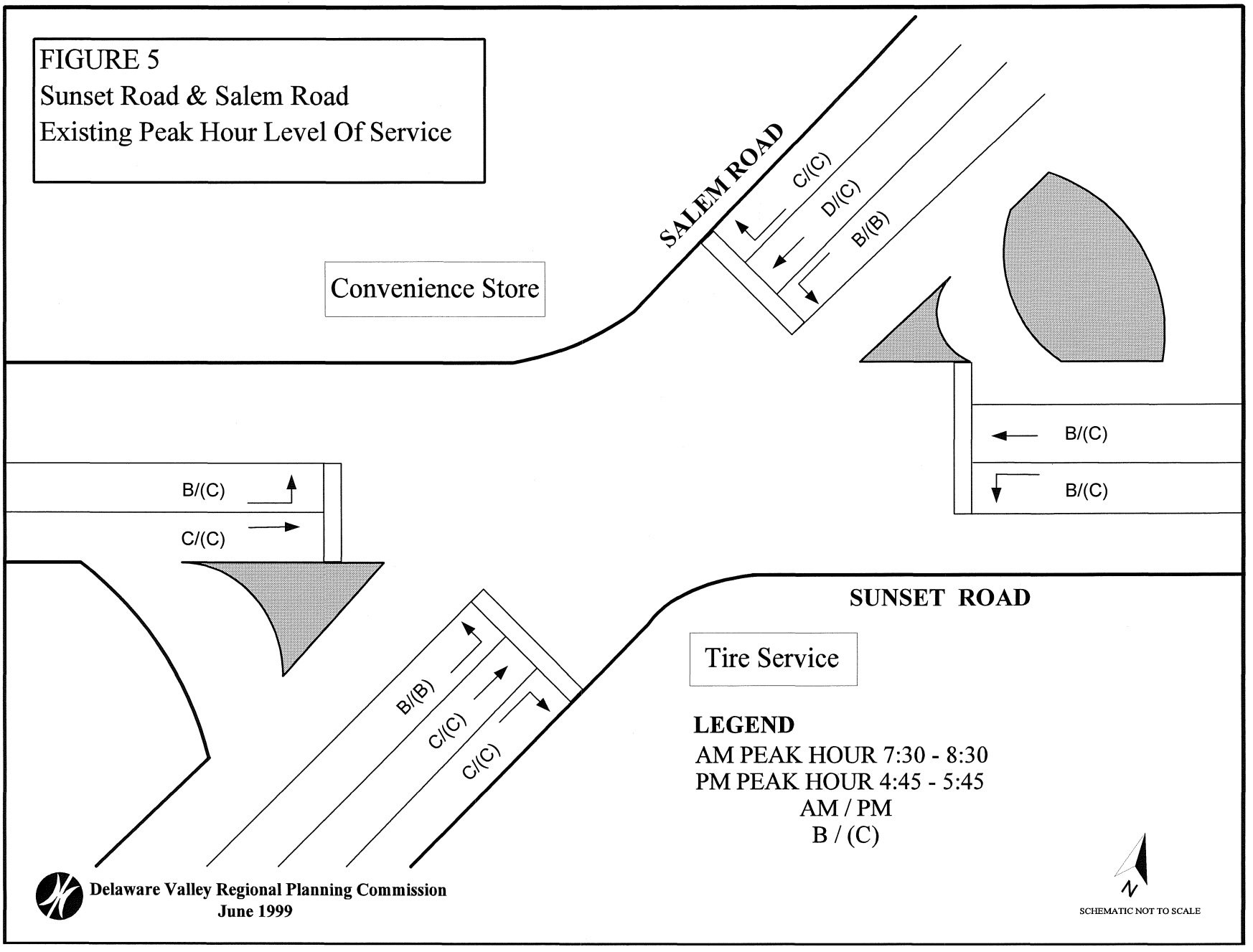
FIGURE 5
Sunset Road & Salem Road
Existing Peak Hour Level Of Service
SALEM ROAD
C/(C)
D/(C)
B/(B)
Convenience Store
B/(C)
B/(C)
B/(C)
C/(C)
SUNSET ROAD
Tire Service
B/(B)
C/(C)
C/(C)
LEGEND
AM PEAK HOUR 7:30 - 8:30
PM PEAK HOUR 4:45 - 5:45
AM / PM
B / (C)
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the intersection. The second section describes those accidents that happened along Salem Road between VanSciver Parkway and Mill Road outside the influence of the Sunset Road intersection.

Sunset Road and Salem Road Intersection

At the intersection of Sunset Road and Salem Road, there have been 75 reportable accidents from 1995 through October 31, 1998. Figure 6 displays the collision diagram for each of the accidents. The majority of the accidents occurred during day light hours under dry road conditions. There were no fatalities as a result of these accidents, however, thirty-two persons were injured. Table 2 provides a breakdown by year for the number of accidents, the injuries, and the type of accident that occurred. 1998 has seen a marked increase in the number of accidents at the intersection of Sunset Road and Salem Road. There were more accidents reported in the first 10 months of 1998 than in any of the three full previous years.

TABLE 2: SUNSET ROAD AND SALEM ROAD INTERSECTION ACCIDENT SUMMARY

	Accidents	Injuries	Fatalities	Rear End Collision	Left Turn	Angle	Side-Swipe	Fixed - Object
Jan 98 - Oct 98	25	5	0	13	6	4	2	0
1997	15	10	0	12	1	2	0	0
1996	19	7	0	16	2	0	1	0
1995	16	10	0	8	5	1	1	1
TOTAL	75	32	0	49	14	7	4	1

Each of the accidents can be placed into one of five categories. The first category is a rear-end collision . This entails the front of one vehicle crashing into the rear of another vehicle. At this intersection, 65.3% of the accidents were rear-end collisions. The next category of accidents involve a left turn movement from Sunset Road to Salem Road or vice-versa. Approximately 19% of the accidents are within this category. The third category of accidents are classified as angled accidents. These accidents transpire when one car is attempting to make a turn into or out of a driveway of an adjacent business located at this intersection and crosses a lane of traffic. The cause of these

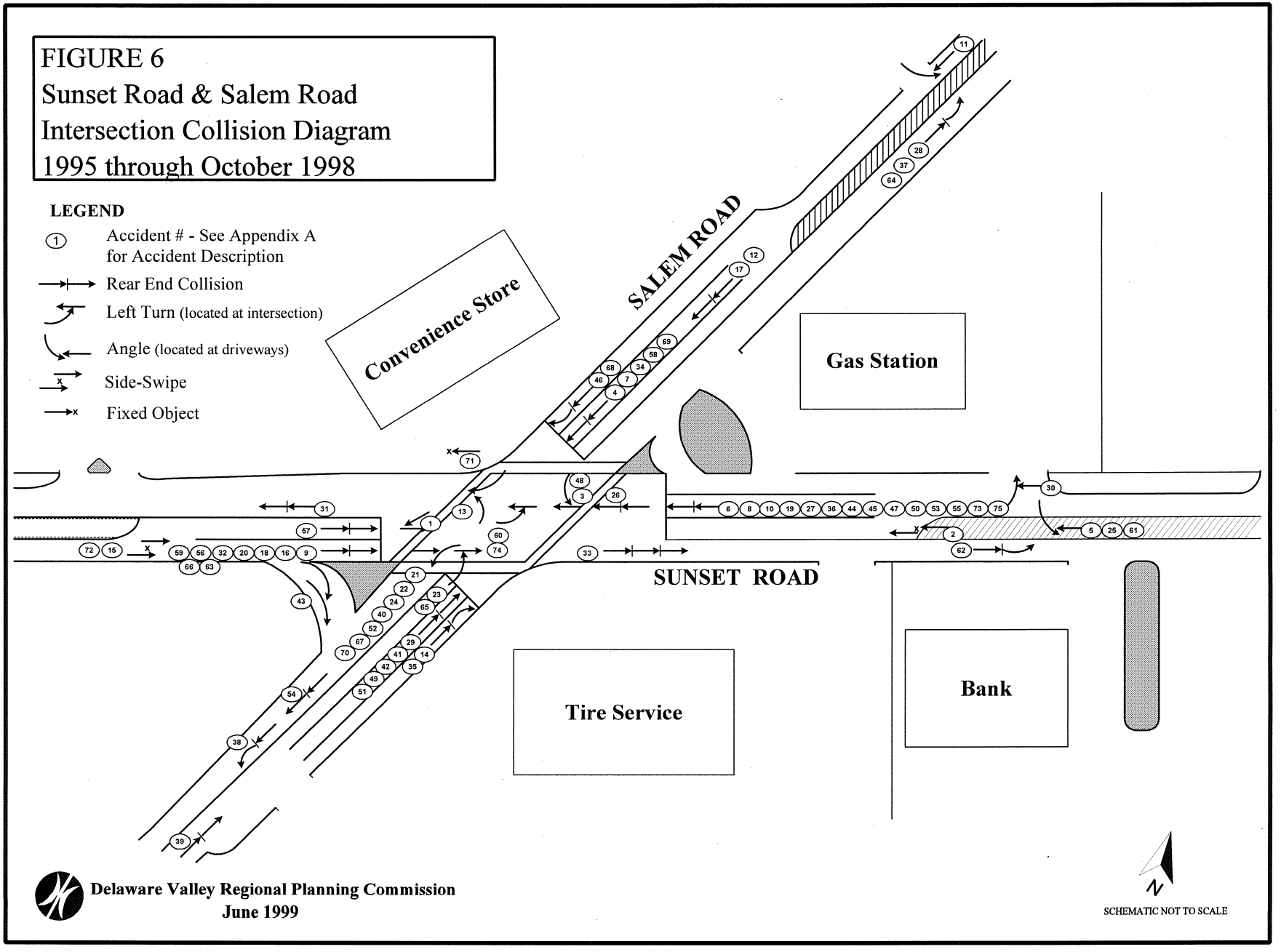
FIGURE 6
Sunset Road & Salem Road
Intersection Collision Diagram
1995 through October 1998
LEGEND
Accident # - See Appendix A for Accident Description
Rear End Collision
Left Turn (located at intersection)
Angle (located at driveways)
Side-Swipe
Fixed Object
Convenience Store
SALEM ROAD
Gas Station
SUNSET ROAD
Tire Service
Bank
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accident is often one car attempting to enter into a turning lane by driving through the painted median. The second car generally does not see this movement happening and when the second car makes its turns into or out of the driveway, the accident occurs. Approximately 9% of the accidents at this intersection fall under this category. The remaining two categories (side-swipes and fixed object) constitute less than 7% of the total accidents. A side-swipe occurs when two cars traveling in the same direction collide into each other on their sides. The last type of accidents involve a car running into a fixed object like a telephone pole or street light.

An analysis of the accident types is illustrated in Figure 7 (Refer to APPENDIX A for a description of each individual accident.). Most of these rear-end collisions take place as a vehicle approaches the intersection. Twenty percent of the total number of accidents are front-to-rear-end collisions that have occurred on the Sunset Road eastbound approach. According to the descriptions in the police reports the primary cause of these rear-end accidents is mainly a result of driver inattention.

Approximately 25% of the accidents happened between 2 - 4 p.m. and another 23% happened in the PM peak hours of 4-7 p.m. During the midday hours of 11 a.m. through 2 p.m., 17% of the accidents occurred.

Salem Road

Accident data was collected along Salem Road between VanSciver Parkway and Mill Road in Burlington Township. A total of 82 accidents occurred along this stretch of Salem Road during this time period. These 82 accidents do not include any accidents that took place within the vicinity of the Salem Road and Sunset Road intersection. These accidents are covered in the preceding section.

Figure 8 displays each accident location along Salem Road (Refer to APPENDIX B for a description of each individual accident.). Table 3 provides a breakdown by year for the number of accidents, the injuries, and the type of accident that occurred. There were no fatalities among any of the 82 accidents, although the accidents did produce 43 injuries. Most of the accidents occurred during daylight hours.

Along this corridor, each accident can be divided into one of eight categories. Several of the categories are similar to the types that occurred at the Sunset Road and Salem Road Intersection.

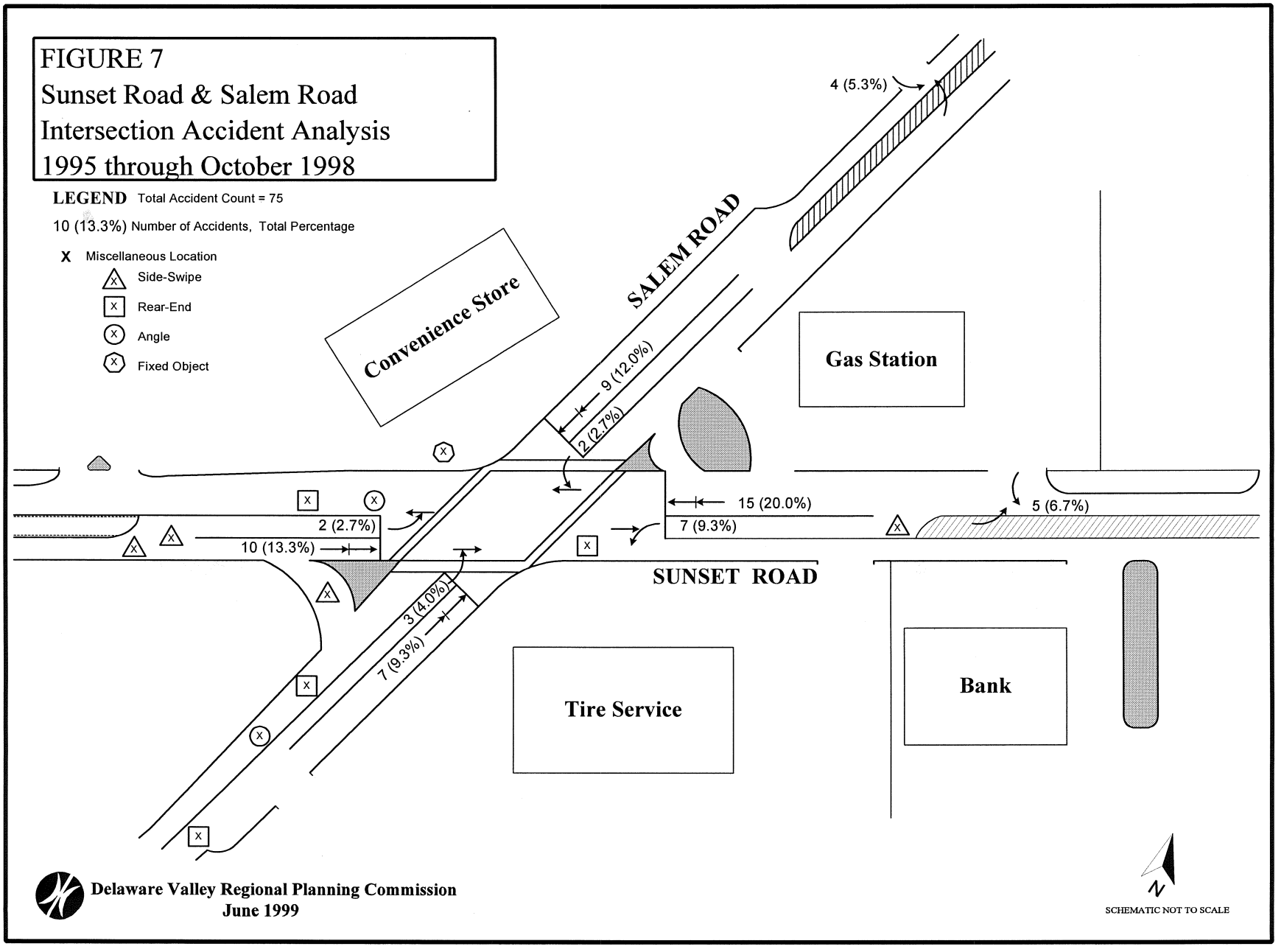
FIGURE 7
Sunset Road & Salem Road
Intersection Accident Analysis
1995 through October 1998
LEGEND Total Accident Count = 75
10 (13.3%) Number of Accidents, Total Percentage
X Miscellaneous Location
Side-Swipe
Rear-End
Angle
Fixed Object
Convenience Store
SALEM ROAD
Gas Station
4 (5.3%)
9 (12.0%)
2 (2.7%)
15 (20.0%)
7 (9.3%)
5 (6.7%)
2 (2.7%)
10 (13.3%)
SUNSET ROAD
3 (4.0%)
7 (9.3%)
Tire Service
Bank
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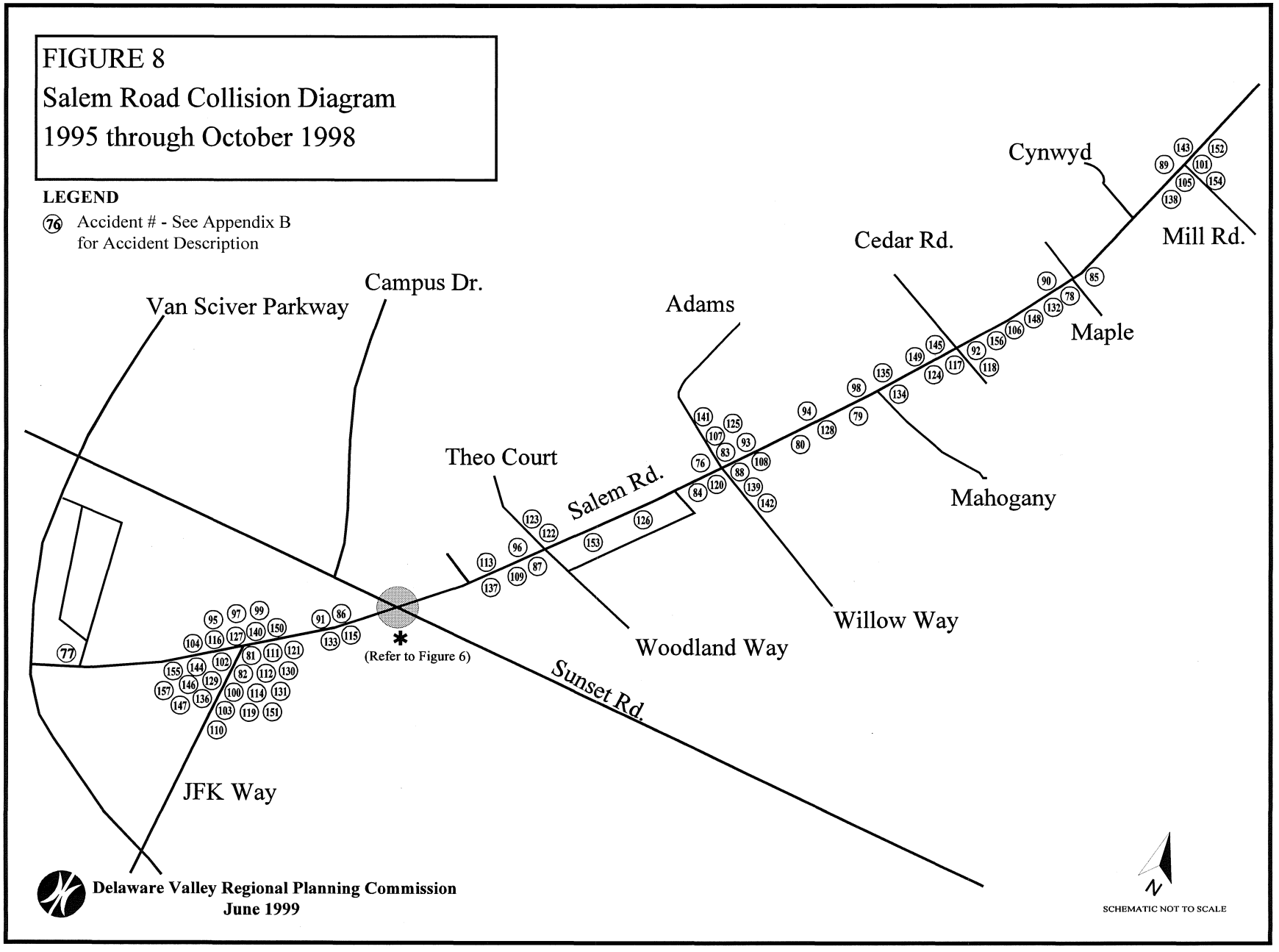
FIGURE 8
Salem Road Collision Diagram
1995 through October 1998
LEGEND
76 Accident # - See Appendix B for Accident Description
Van Sciver Parkway
Campus Dr.
Theo Court
Salem Rd.
Adams
Cedar Rd.
Cynwyd
Mill Rd.
Maple
Mahogany
Willow Way
Woodland Way
Sunset Rd.
JFK Way
(Refer to Figure 6)
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These include rear-end collisions, angle, left turn, side-swipes and fixed objects. The majority of accidents tend to be front-to-rear-end collisions, which make up approximately 33% of the total accidents in the corridor. The second most common type of accident are categorized as angled accidents. Angled accidents represent approximately 22% of the accidents and generally occur as a result of a turning movement in or out of a driveway. This differs from left turn accidents, which make up 12% of the total accidents, and are a result of a left turn movement from one street to another. Vehicles striking fixed objects like telephone poles, street lights, trees, or parked cars equal 14% of the total accidents in the corridor.

There are also three additional types of accidents along this corridor that differ from those that took place at the intersection. The first is a head-on collision where two vehicles traveling in opposite

TABLE 3: SALEM ROAD ACCIDENT SUMMARY

	Accid.	Inj.	Fatal	Rear End	Angle	Left Turn	Fixed - Object	Side-swipe	Head On	Hit a Deer	Ped.
Jan 98 - Oct 98	11	8	0	3	3	0	3	1	1	0	0
1997	20	8	0	5	3	4	4	1	0	1	2
1996	29	19	0	11	4	5	2	2	3	2	0
1995	22	8	0	8	8	1	3	1	0	1	0
TOTAL	82	43	0	27	18	10	12	5	4	4	2

directions collide and the impact point is at the front of both cars. The other two types of accidents involve a car hitting either a deer or a pedestrian. Very few of these types of accidents occurred in this corridor during this time period.

Along this 1.75 mile stretch of Salem Road, the type and number of accidents may vary depending on location. Many of the accidents are grouped around intersection locations where there are more turning movements. However, there is one location that stands out amongst the others. The accidents at the intersection of JFK Way and Salem Road comprised of approximately 35% (29) of all the accidents along Salem Road. Twenty of these accidents occurred when there were wet road conditions.

FUTURE TRAFFIC CONDITIONS

Potential Future Land Development Within Study Area

Projected land developments expected to occupy the general area surrounding the study intersection were identified by the staff of Burlington Township. Seven potential new developments were identified. The general location of each is displayed on Figure 9. The variety and magnitude of this potential development includes: 333 residential units, 207,000 sq. ft. of light industrial space, 95,000 sq. ft. of retail space, 36,000 sq. ft. of office space and 30 self storage units.

Future Traffic Volumes

Estimates of future peak hour traffic were prepared to assess traffic conditions within the study area for the horizon year of 2020. Two components of the future traffic volumes were estimated: background growth applied to through traffic, and study area development oriented traffic.

Background traffic growth occurs as a consequence of ongoing regional development. Based upon projected changes in population and employment between 1990 and the year 2020, for this portion of the region, it was estimated, through consultation with NJ DOT, that background traffic growth within the immediate study area will increase at a decreasing rate. Due to the built out nature of adjacent municipalities such as Burlington City and Willingboro Township, the potential for continued growth in the study area has some limitations as evidenced by DVRPC's population projections for those municipalities. A traffic growth rate of 0.75 percent per year was assumed for the first five years with the remaining years to 2020 growing at a rate of 0.5 percent per year. As a result, existing peak hour traffic volumes were factored upward by 13 percent to account for the area-wide traffic growth anticipated to occur by the year 2020.

Development expected to take place within the corridor will generate a limited amount of new travel demand upon the study area highways. Vehicular trip activity associated with that development was formulated by applying trip generation rates and/or formulas (obtained from: Trip Generation, 5th edition, Institute of Transportation Engineers, January 1991) to the future land development scenario described above. Table 4 summarizes the trip generation. It should be noted that the trips shown in Table 4 are the total volume of trips expected to be generated from the particular development and have not been reduced to account for existing pass-by trips.

FIGURE 9

Potential Future Land Development within Study Area

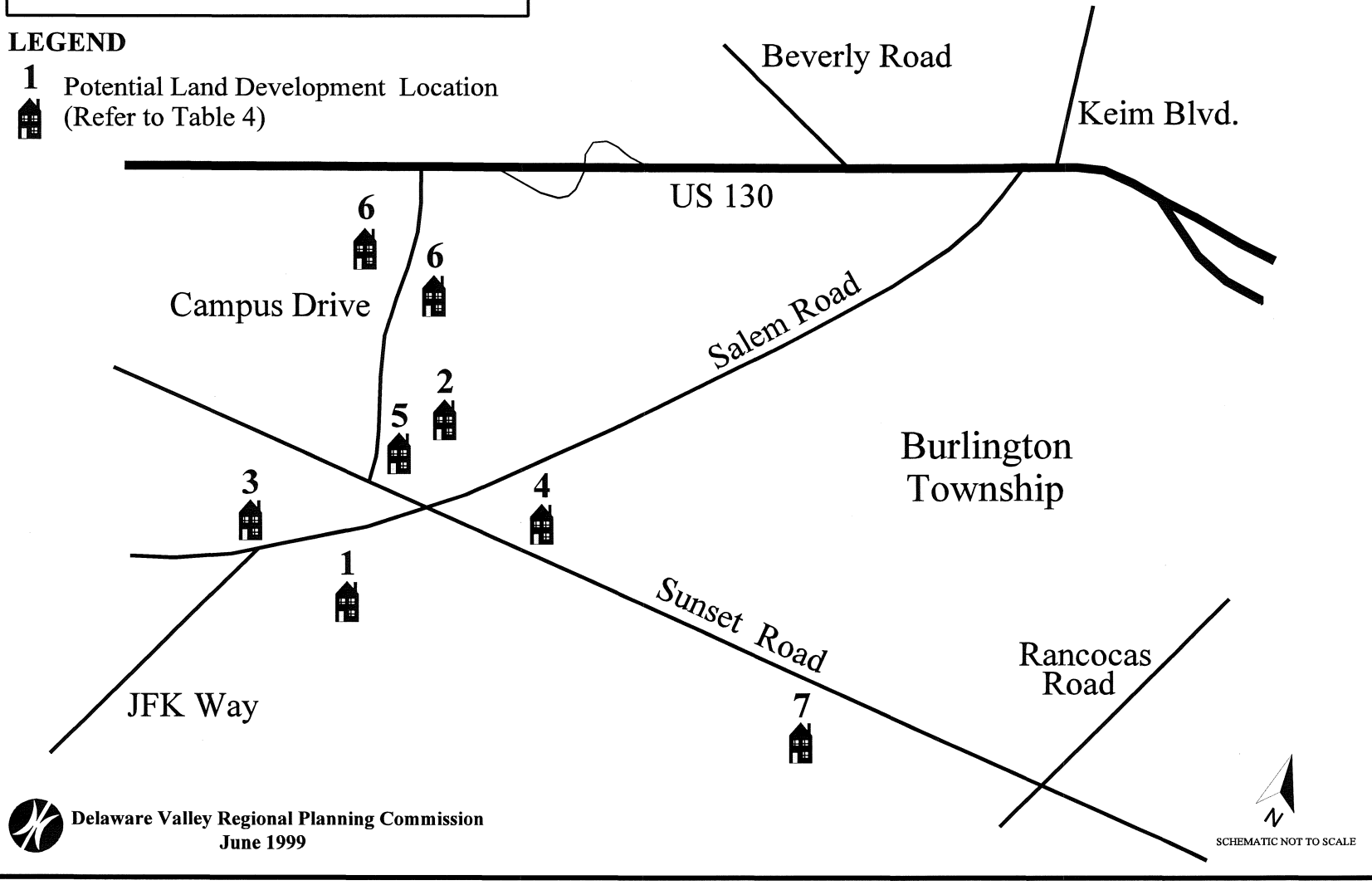

TABLE 4: NEW TRIPS GENERATED BY FUTURE DEVELOPMENT WITHIN THE SUNSET RD/SALEM RD STUDY AREA

MAP CODE	DEVELOPMENT DESCRIPTION (ITE CODE)*	AVERAGE WEEKDAY TOTAL	AM PEAK HOUR			PM PEAK HOUR		
			In	Out	Total	In	Out	Total
1	Burlington Heights, Sec. 2B 50 single family units (210)	550	11	34	45	37	21	58
2	First Plunge, Inc. 136 townhouse units (230) 10,000 square feet office (770) 30,000 square feet retail (820)	 845 855 3,143	 11 13 48	 54 2 30	 65 15 78	 53 4 136	 26 14 148	 79 18 284
3	Granary Associates Medical Offices 26,600 square feet office (720)	872	52	13	65	24	66	90
4	Super G Supermarkets 62,574 square feet retail (850) 2,500 square feet retail (820)	 6,980 636	 164 11	 105 7	 269 18	 339 26	 326 29	 665 55
5	Self-Storage Facility Expansion 30 units (151)	8	n/a	n/a	n/a	n/a	n/a	n/a
6	Campus Drive Vacant Parcels 207,000 square feet (130)	1,775	162	35	197	41	153	194
7	Sunset Road Undeveloped Parcels 147 single family units (210)	1,478	28	84	112	97	55	152
TOTAL		**17,142**	**500**	**364**	**864**	**757**	**838**	**1,595**

* Trip Generation, 5th edition, Institute of Transportation Engineers, January 1991

As a summary of Table 4, it is estimated that approximately 17,100 total new vehicular trips will be generated throughout the study area over the course of a typical weekday. During the AM peak hour almost 900 total trips are anticipated to be drawn to/from the study area. In the PM peak hour, when the strongest effects of retail shopping traffic are felt, approximately 1,600 vehicular trips will be generated within the study area. The magnitude of new vehicular trips generated from this projected development is not extraordinary for this area type and is assumed to be captured in the overall background growth and not supplemented to it.

Two future peak hour traffic volume scenarios were prepared and analyzed for the study intersection. The scenarios were identified at the outset of the study, and were chosen to investigate the impacts that an extension of Campus Drive would have on the traffic operations of the intersection of Sunset Road and Salem Road. The no-build future traffic volume scenario assumes that "present" traffic circulation patterns are maintained along the study area highway network. This serves as a baseline for comparison with existing conditions and the future build scenario. The traffic volumes for this scenario are presented in Figure 10.

The build scenario assumes that an extension of Campus Drive is constructed between Sunset Road and Salem Road along with the relocation of the existing traffic signal and jughandles on US 130 north of Campus Drive to Campus Drive thus creating an intersection which would allow all turning movements. This scenario also assumes that traffic calming measures will be implemented on Salem Road in Burlington City to reduce its attractiveness as a through route to access US 130 and/or the Burlington Bristol Bridge. The local, residential atmosphere of this section of Salem Road is not consistent with the current traffic operations and speeds of the vehicles currently traveling through this area, especially during the peak periods. These actions were assumed to produce a 30% diversion effect on the no-build traffic volumes. Because of the location of the alternative route (Campus Drive), the diversion effect on the westbound Sunset Road approach was reduced by 10%. This assumption was estimated from the "diversion curves" developed for California as a tool for traffic assignment using travel time/travel distance as a primary factor in route selection (Metropolitan Transportation Planning, John W. Dickey, 1983). The traffic volumes for this scenario are presented in Figure 11.

Future Level of Service Analysis

Level of service analyses were performed for the study intersection for both future traffic

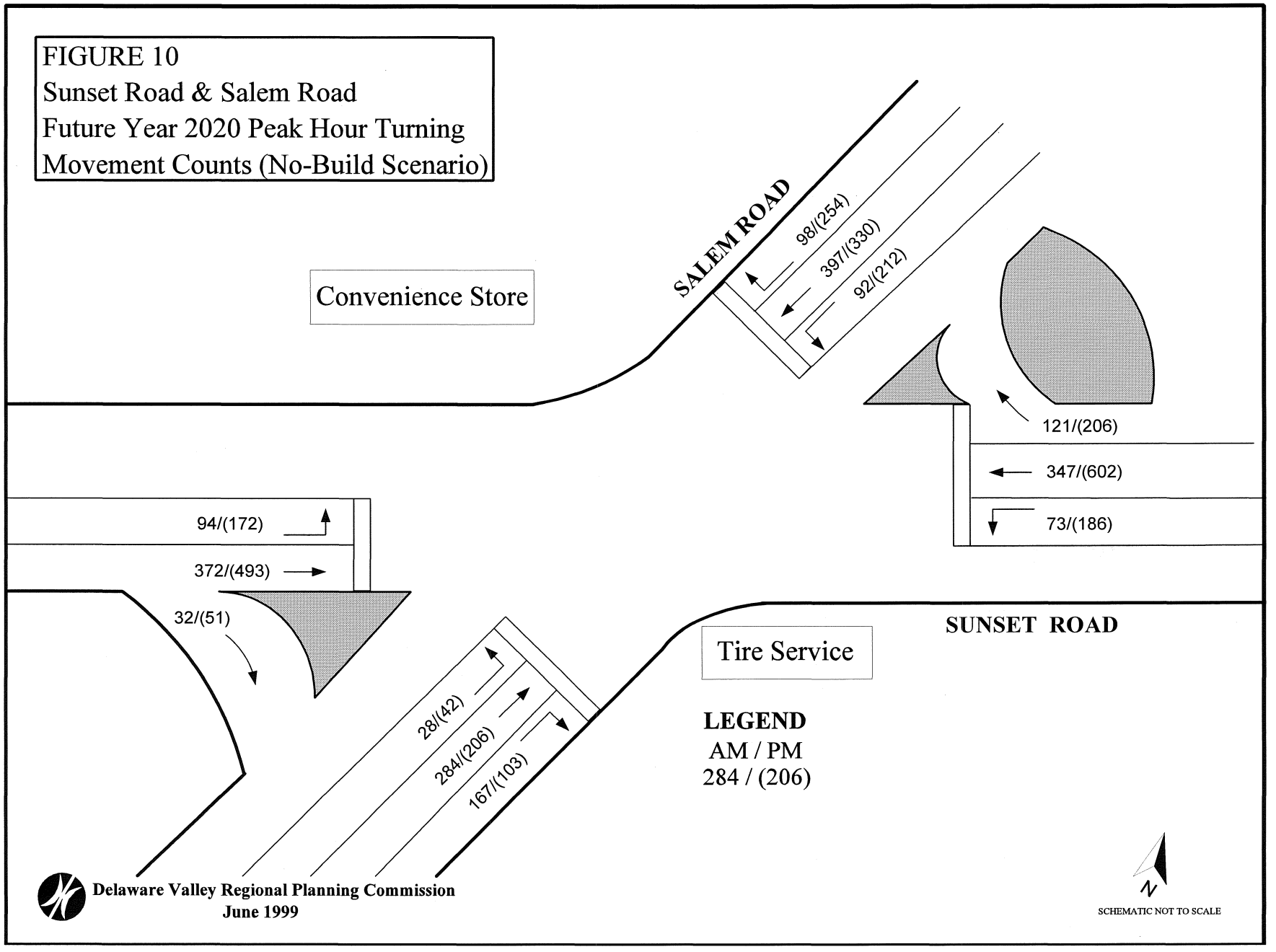
FIGURE 10
Sunset Road & Salem Road
Future Year 2020 Peak Hour Turning
Movement Counts (No-Build Scenario)
SALEM ROAD
98/(254)
397/(330)
92/(212)
Convenience Store
121/(206)
347/(602)
73/(186)
94/(172)
372/(493)
32/(51)
SUNSET ROAD
Tire Service
28/(42)
284/(206)
167/(103)
LEGEND
AM / PM
284 / (206)
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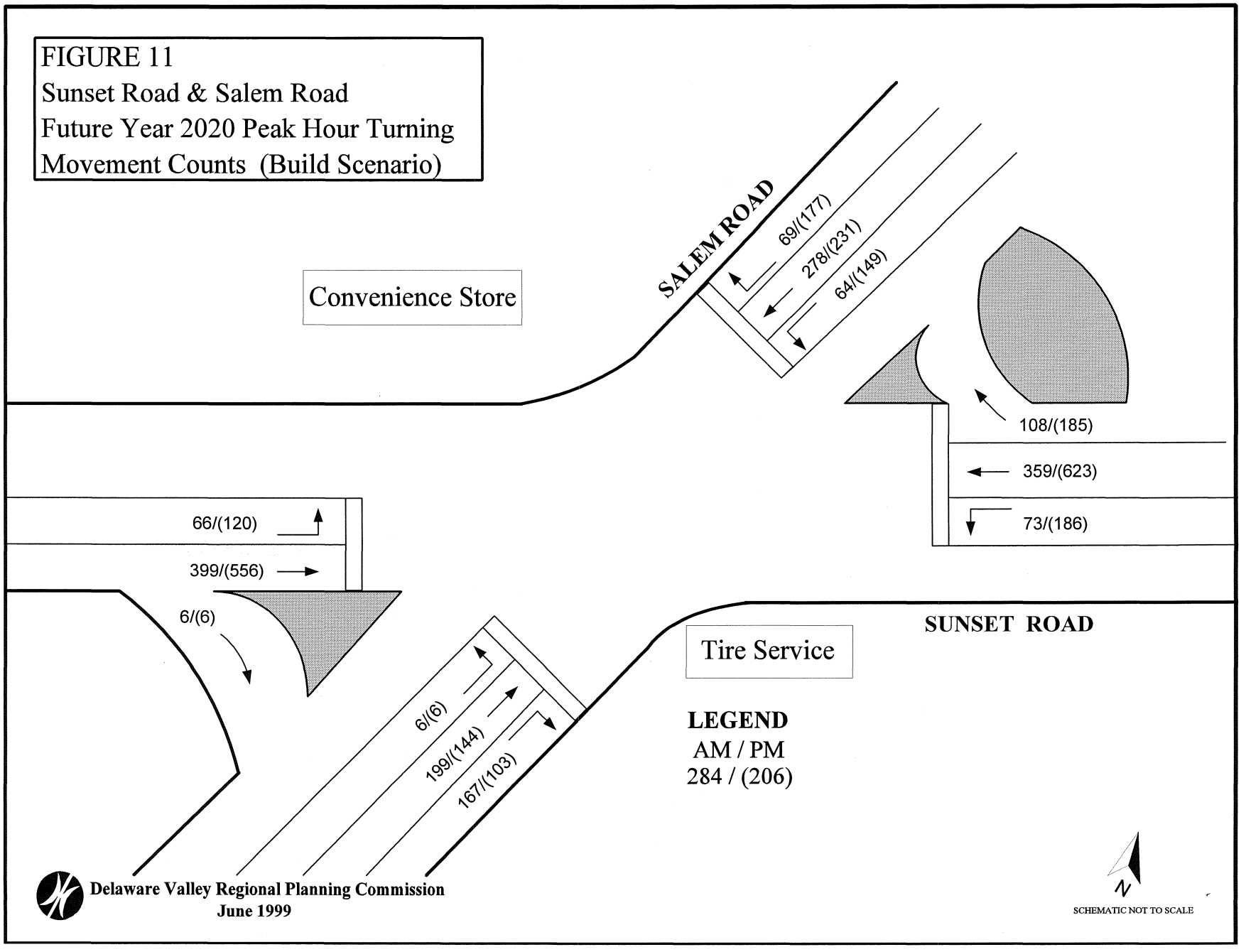
FIGURE 11
Sunset Road & Salem Road
Future Year 2020 Peak Hour Turning
Movement Counts (Build Scenario)
SALEM ROAD
69/(177)
278/(231)
64/(149)
Convenience Store
108/(185)
359/(623)
73/(186)
66/(120)
399/(556)
6/(6)
SUNSET ROAD
Tire Service
6/(6)
199/(144)
167/(103)
LEGEND
AM / PM
284 / (206)
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volume scenarios. The results of the LOS analysis for the future no-build conditions are illustrated on Figure 12 and the future build conditions are illustrated on Figure 13.

In the no-build scenario, all movements for each approach on both Sunset Road and Salem Road are operating at a Level Of Service (LOS) C or better for the AM peak period except the through movement on Salem Road southbound which is operating at LOS D. In the PM peak period, the southbound through movement, the eastbound left turn movement and the westbound approach operate at LOS D. A level of service D is generally acceptable in this area type. Overall, the intersection operates at a desirable level of service C in both the AM peak and PM peak.

In addition to the traffic volume changes occurring in the build scenario, the traffic signal timing is also assumed to change. The LOS analysis for this scenario assumes a reduced cycle length from 100 seconds to 90 seconds. The 90 second cycle length produced improved operating conditions from the 100 second cycle. In this scenario, all movements for each approach on both Sunset Road and Salem Road are operating at LOS C or better in the AM peak period. In the PM peak period, the eastbound through movement and the westbound approach operate at LOS D. Overall, the intersection operates at a desirable level of service C in both the AM peak and PM peak. The LOS analysis summary for the existing conditions and each of the future scenarios can be found in Appendix C.

In summary of the level of service analyses of future peak traffic volumes, it is concluded that — while some delays may be encountered on selected intersection approaches during the morning or evening peak traffic hours — both the no-build and build scenarios are expected to experience acceptable and stable traffic conditions for the study intersection.

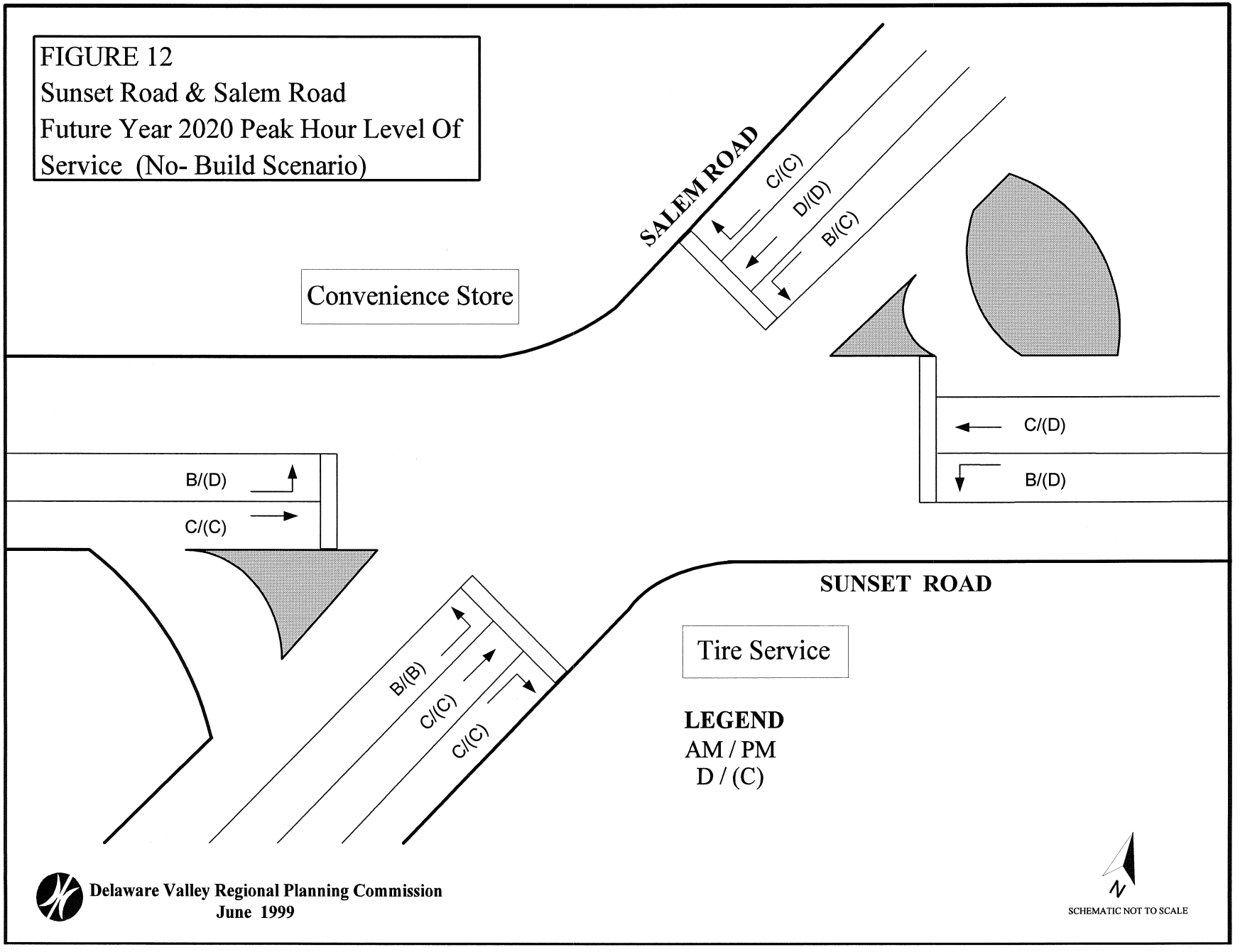
FIGURE 12
Sunset Road & Salem Road
Future Year 2020 Peak Hour Level Of Service (No- Build Scenario)
SALEM ROAD
C/(C)
D/(D)
B/(C)
Convenience Store
C/(D)
B/(D)
B/(D)
C/(C)
SUNSET ROAD
Tire Service
B/(B)
C/(C)
C/(C)
LEGEND
AM / PM
D / (C)
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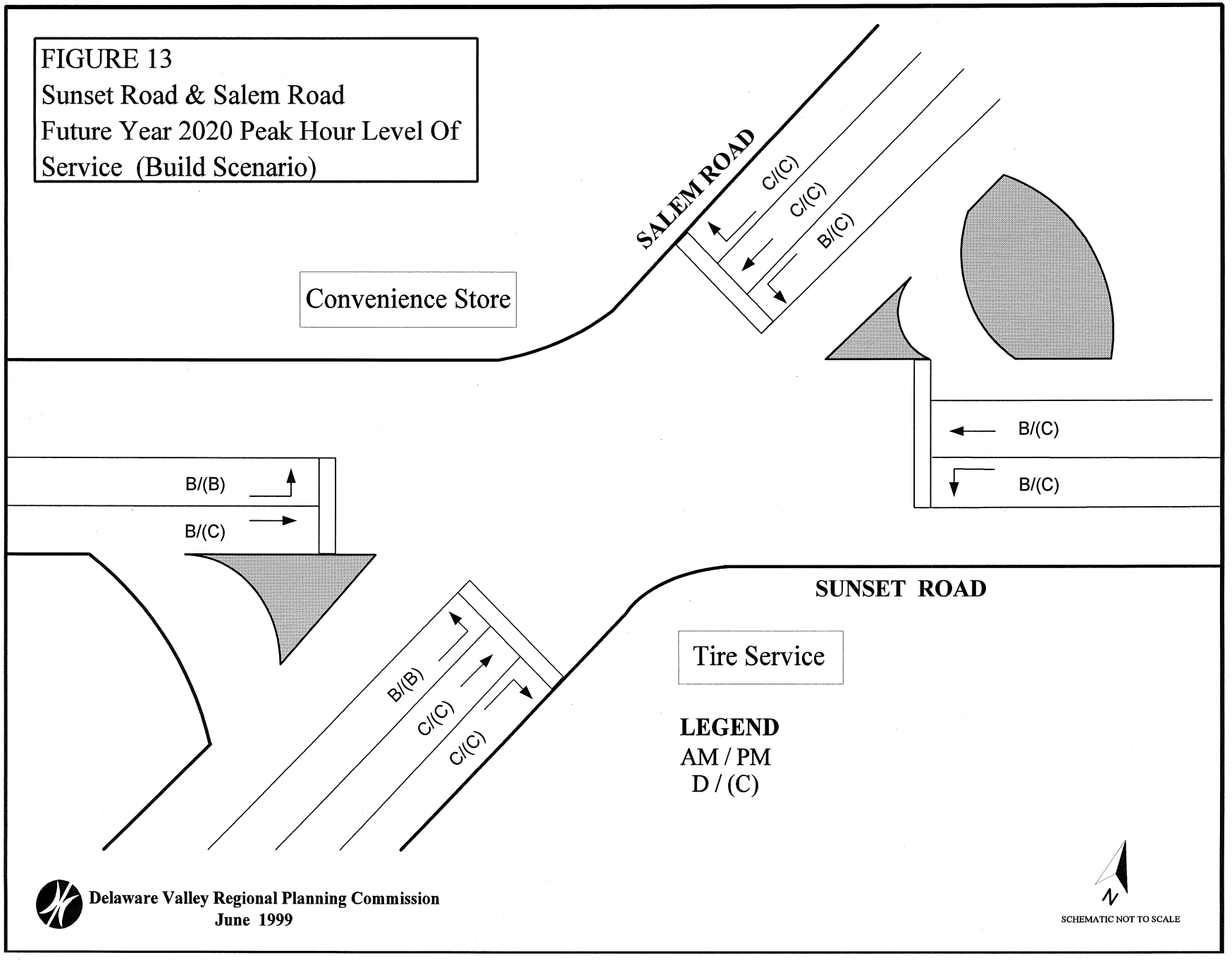
FIGURE 13
Sunset Road & Salem Road
Future Year 2020 Peak Hour Level Of Service (Build Scenario)



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CONCLUSIONS

Since the future traffic operations at the study intersection are projected to be acceptable in either scenario, no major widenings to add capacity at the intersection are recommended. However, there are improvements to the intersection and to study area roadways that are expected to have a positive effect on the safety and operations of this intersection as well as the mobility in the study area. These improvements are presented below under the headings of safety, operations and mobility and are presented graphically on Figure 14.

There are several other issues relating to the study area that must be addressed. The section of Campus Drive between Autumn Lane and Sunset Road is not a municipally-owned road and any improvements to it must be coordinated with the owner of the industrial park. If Campus Drive is extended and improved, its function will change to one which serves more regional or pass through traffic. If this is the case, Burlington County should consider taking over ownership of Campus Drive from US 130 to Salem Road. This may potentially involve a swap of Campus Drive for Salem Road and a redesignation of the county route number onto Campus Drive. The linchpin of this whole effort is the availability of the undeveloped parcel to be obtained for an extension of Campus Drive. This parcel is privately owned and has recently been listed for sale. If this parcel is developed, the likelihood of extending Campus Drive becomes very tenuous.

Safety Improvements

The accident analysis performed for this intersection identified rear-end accidents as by far the most common type of accident occurring at this location. Every approach experienced a significant number of rear-end accidents indicating that the conditions which cause this accident pattern are evident throughout the intersection. Therefore, remedial treatments must be aimed at reducing the incidence of rear-end type accidents and applied consistently throughout the intersection.

Many laymen believe that traffic signals provide the solution to all traffic problems at intersections. Traffic signal installations, even though warranted by traffic and roadway conditions, can be ill designed, ineffectively placed or poorly maintained. According to the Manual on Uniform Traffic Control Devices, (MUTCD) 1988 Edition, US Department of Transportation, Federal Highway Administration, signals installed in this manner can significantly increase accident frequency (especially rear-end type). A common cause of rear-end accidents is driver inability to clearly see and react to the appropriate traffic control device.

The following measures should be considered to increase the visibility of the signal heads at the Sunset Road and Salem Road intersection.

- As illustrated in the photos of the intersection (Figures 15-17), utility wires strung across the intersection present a noticeable visual clutter and actually obstruct the driver's line of sight for some of the overhead mounted signal heads. An investigation into the possibility of relocating the utility wires should be conducted.
- Additional and repositioned signal heads should also be constructed. The county intends to include this intersection in Phase II of their Closed Loop Signal System Project. Signal timing changes and new signal heads are planned.
- Install back plates on the signal housing. A back plate is a strip of thin material which extends outward parallel to the signal face on all sides of the signal housing to increase the signal target value. Target value enhancement should be used on signals viewed against a sky or a bright or confusing background. The back plate should have a dull black finish to minimize light reflection to the side of the signal.

A review of the accident records along Salem Road indicated a cluster of accidents at the Salem Road and JFK Way intersection.

- Wet road conditions occur during a majority of the accidents at the intersection of Salem Road and JFK Way (20 of the 29 reported accidents - 69%). The county should consider drainage, pavement and/or geometric improvements at this location

Operational Improvements

The county anticipates that Sunset Road will be improved to five lanes from VanSciver Parkway through Salem Road in the near future. Because the intersection is projected to operate at a desirable level of service even in the no-build scenario, this improvement is expected to provide only minimal operating benefits over the no-build. Both the improved Sunset Road scenario and the no-build scenario are projected to operate at LOS C, however selected approach lanes, including the Sunset Road through lanes, are expected to operate at a better level of service with a 5-lane cross section on Sunset Road. Although the operational benefits of this widened Sunset Road may be minimal to the overall intersection, the Sunset Road approaches may experience a noticeable safety benefit. The addition of another travel lane on Sunset Road is expected to decrease the queue lengths on those approaches which can be a contributing factor to rear-end type accidents.

Mobility Improvements

The goal of the mobility improvements is to improve access to/from US 130 and the Burlington Bristol Bridge as well as making it easier to travel within and through the study area. Although highways have two basic functions: 1) to provide mobility and 2) to provide land access, there is an incompatibility between these two objectives. Mobility requires high speeds for sustained travel while land access mandates low speeds for frequent turning movements. Getting the traffic to use the facility best suited to its function is occasionally a difficult task. The improvements recommended in this section are intended to improve the mobility of the study area while keeping the type of traffic compatible with the appropriate function of the facility. An important element of the mobility improvements is to reduce the volume and speed of the traffic on the residential section of Salem Road in Burlington City.

The focal point of the mobility improvements is the construction of an extension of Campus Drive from Sunset Road to Salem Road. However this is not a stand alone improvement and the following improvements also need to be implemented as a complete program for this concept to be effective.

- Construct a full intersection on US 130 at Campus Drive including a traffic signal and jughandles.
- Remove the existing traffic signal and jughandles located on US 130 approximately 1,100 feet north of Campus Drive.
- Eliminate access to Salem Road from Keim Blvd. and redirect that traffic to the new intersection of US 130 and Campus Drive.
- Evaluate the possibility of installing a traffic signal at the intersection of Campus Drive and Sunset Road. This signal, if warranted, should be interconnected with the existing signal at Sunset Road and Salem Road.
- Add a left turn lane on northbound Salem Road at the proposed intersection with the Campus Drive extension.
- Burlington Township and Burlington County need to work together to secure the necessary right-of-way required to extend Campus Drive. There is currently an undeveloped parcel across from Campus Drive that runs from Sunset Road to Salem Road. This parcel is currently posted for sale, so action should be initiated promptly in order to avoid development of this property. Burlington Township should modify their Transportation and Circulation element of the township master plan to show an extension of Campus Drive.

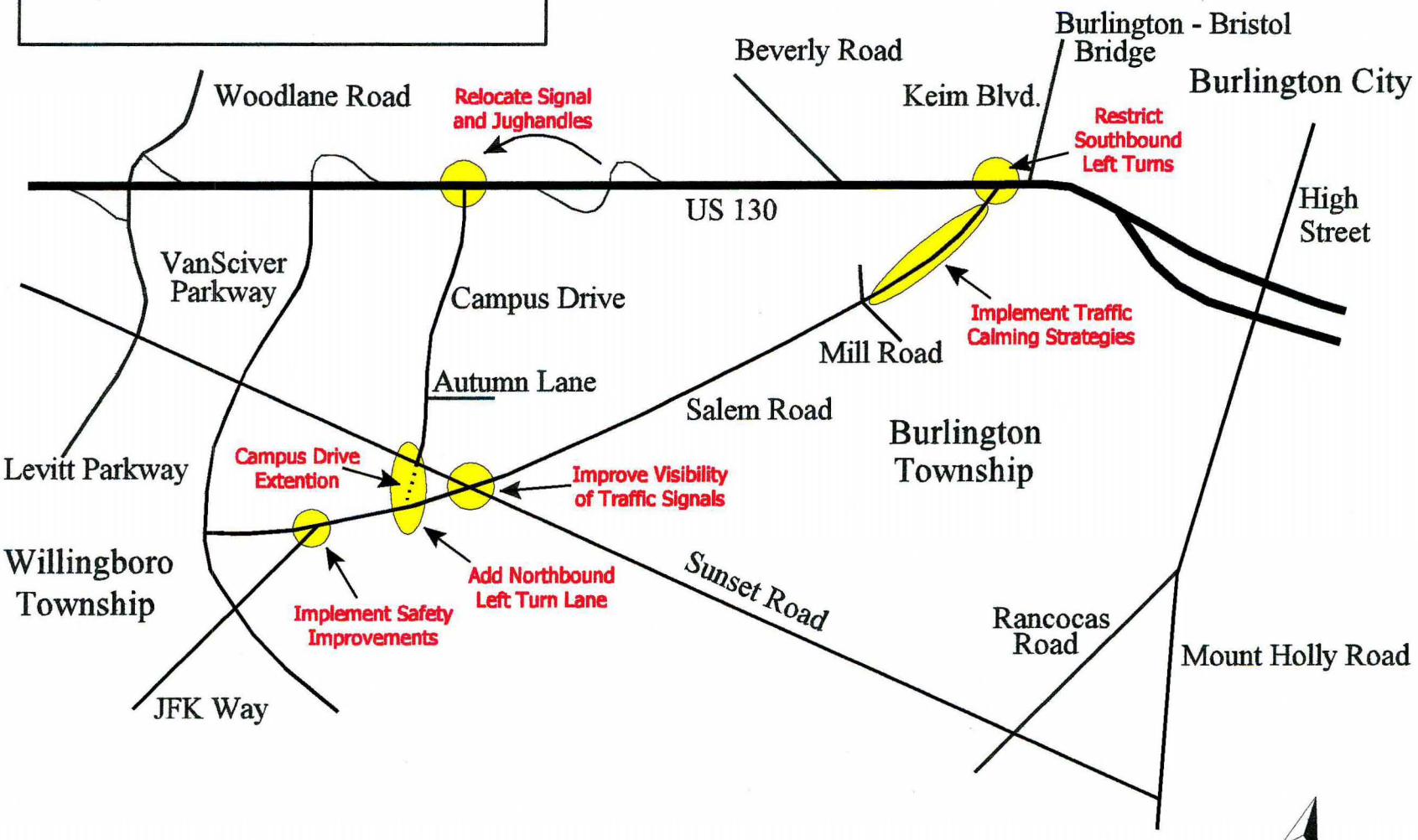
- As an alternate alignment of the extension of Campus Drive, the county may wish to evaluate extending Campus Drive to create a direct connection with the existing intersection of Salem Road and JFK Way. This alignment requires more right-of-way and effects more properties but may help provide safety benefits to the Salem Road and JFK Way intersection.

The improvements listed above are aimed at making Campus Drive a more attractive access to US 130. Its attractiveness can be further enhanced by making Salem Road unattractive as an access to US 130. This can be done by implementing some common traffic calming strategies. Prior to implementing any traffic calming strategies, the local officials are strongly encouraged to meet with the local residents to identify measures deemed acceptable and appropriate for the specific location. Examples of the types of strategies that may be appropriate for this area are identified below with a short description.

- Reconfigure the existing 29-foot cross section of Salem Road. This reconfiguration would retain the existing 29-foot cartway by providing two 11-foot travel lanes and an additional seven feet of roadway that could potentially be used in one of the following ways: a 3.5-foot shoulder in each direction or a 7-foot bicycle lane. Travel lanes reduced to a width of 11 feet give drivers the feel of a narrow street that does not lend itself to high speeds. Inherent in this improvement would be new striping/lane markings which would provide more positive lane control.
- Install an oversized speed limit sign (R2-1) in the vicinity of the speed transition area which will make people more aware of the speed change.
- Evaluate the possibility of adding stop signs (R1-1) on Salem Road at one of the intersecting streets; possibly Glenwood Avenue, Fernwood Avenue or Elm Avenue. The installation of stop signs are required to meet warrants as specified in the Manual on Uniform Traffic Control Devices.
- Install textured/high visibility crosswalks at selected locations along Salem Road. These crosswalks are designed to increase driver recognition through visual and/or audible stimulus.
- Install "Neighborhood Street" signs. These signs identify to drivers that this facility is intended to serve primarily as a local street providing access to the adjacent residences.
- The most effective method, but one that would require a considerable effort from both Burlington City and Burlington Township is random periods of local enforcement. A visible police presence increases driver awareness about speeding and enhances safety.

FIGURE 14

Recommended Improvements



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APPENDIX A

SUMMARY OF REPORTABLE ACCIDENTS AT SUNSET ROAD AND SALEM ROAD INTERSECTION

Accident Number	BTPD* Report Number	Date	Time	# Killed	# Injured	Street	Intersection	Light Cond.	Weather	Road Surface	Accident Type	Accident Description
1	98-02265	9/25/98	9:06 AM	0	1	Sunset	Salem	Daylight	Rain	Wet	Angle	V1 EB on Sunset was stopped at intersection preparing to make left on to Salem when V2 SB on Salem was making a right turn on to Sunset when it slipped due to wet conditions and slid into V1.
2	98-02264	9/25/98	7:38 AM	0	0	Sunset	Salem	Daylight	Clear	Dry	Side-Swipe	V1 WB on Sunset attempted to enter left turn lane, when collided with V2 who entered into left turn lane early through the painted median.
3	98-02251	9/23/98	9:48 AM	0	0	Salem	Sunset	Daylight	Clear	Dry	Left Turn	V1 SB on Salem made a left hand turn on to Sunset collided with V2 traveling WB on Sunset when V1 did not yield the right of way.
4	98-02048	8/30/98	3:01 PM	0	0	Salem	Sunset	Daylight	Clear	Dry	Rear-End	V1 SB on Salem was waiting at red light and was struck in the rear by V2 SB on Salem. D2's foot slipped off the pedal while also waiting at the red-light.
5	98-01996	8/26/98	3:54 PM	0	0	Sunset	Salem	Daylight	Clear	Dry	Angle	V1 making a left hand turn out of Amoco Station onto Sunset EB collided with V2 WB on Sunset who was in the painted median preparing to turn left on to Salem SB.
6	98-01959	8/22/98	2:00 PM	0	1	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 WB on Sunset was stopped at red light was hit in the rear by V2 WB on Sunset when V2 started moving forward when the left turn lane moved and the through lane was still at a standstill.
7	98-01822	8/7/98	3:08 PM	0	0	Salem	Sunset	Daylight	Clear	Dry	Rear-End	V2 SB on Salem was stopped at red light was hit in the rear by V1 SB on Salem when V1 started moving forward when the left turn lane moved and the through lane was still at a standstill.
8	98-01607	7/14/98	5:48 PM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 WB on Sunset was struck from behind by a hit and run driver traveling WB on Sunset , V1 then struck V2 who then struck V3. All three vehicles were WB on Sunset and stopped for a red light.
9	98-01462	6/29/98	8:36 AM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 EB on Sunset was stopped at red light was hit in the rear by V2 EB on Sunset when V2 was in the process of stopping for the red light.
10	98-01405	6/23/98	3:41 PM	0	0	Sunset	Salem	Daylight	Rain	Wet	Rear-End	V1 WB on Sunset was stopped at red light was hit in the rear by V2 WB on Sunset when V2 drifted forward while waiting for light to turn.
11	98-01337	6/15/98	2:00 PM	0	0	Salem	150' North of Sunset	Daylight	Rain	Wet	Angle	V1 SB on Salem put right turn signal on prior to the entrance of Wawa with the intention of continuing past Wawa and making a right onto Sunset. V2 assumed that V1 was entering into Wawa and pulled out of Wawa Parking lot to make a left turn on to NB Salem and collided with V1.
12	98-01298	6/11/98	10:08 PM	0	0	Salem	50' North of Sunset	Dark	Clear	Dry	Rear-End	V1 SB on Salem was stopped at red light was hit in the rear by V2 SB on Salem when V2 anticipated the light to turn green faster than V1.
13	98-01220	6/1/98	5:40 PM	0	0	Sunset	Salem	Daylight	Clear	Dry	Left Turn	V1 SB on Salem making a right turn onto Sunset WB during a red light and collided with V2 NB on Salem making a left turn onto to Sunset WB during a green arrow.
14	98-01190	5/27/98	2:33 PM	0	0	Salem	Sunset	Daylight	Clear	Dry	Rear-End	V1 NB on Salem was waiting at red light to make a right hand turn was struck in the rear by V2 NB on Salem who was also going to make a right hand turn.
15	98-01049	5/8/98	9:36 PM	0	0	Sunset	Salem	Dark	Rain	Wet	Side-Swipe	V1 EB on Sunset was stopped at red light was hit on the side by V2 *(Bicyclist)* EB on Sunset who was passing on side of the road.

Accident Number	BTPD* Report Number	Date	Time	# Killed	# Injured	Street	Intersection	Light Cond.	Weather	Road Surface	Accident Type	Accident Description
16	98-00898	4/21/98	11:12 AM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 EB on Sunset was stopping for a red light and was hit in the rear by V2 EB on Sunset when V2 did not stop soon enough for the red light.
17	98-00865	4/17/98	4:56 PM	0	0	Salem	Sunset	Daylight	Clear	Dry	Rear-End	V1 SB on Salem was stopped at traffic light and was either struck in the rear by V2 SB on Salem or V1 backed up into V2. (Conflicting information)
18	98-00821	4/13/98	4:51 PM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 EB on Sunset was stopped at traffic light and was struck in the rear by V2 EB on Sunset who was pushed into V1 because it was hit in the rear by V3 EB on Sunset.
19	98-00797	4/9/98	12:54 PM	0	0	Sunset	Salem	Daylight	Clear	Wet	Rear-End	V1 WB on Sunset was stopped in traffic at the red light was hit in the rear by V2 WB on Sunset who thought V1 had started to move forward.
20	98-00732	4/1/98	12:38 PM	0	2	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 EB on Sunset was stopped at red light was hit in the rear by V2 EB on Sunset when the light turned green and V2 started moving at a faster pace than V1.
21	98-00667	3/23/98	2:15 PM	0	1	Sunset	Salem	Daylight	Clear	Dry	Left Turn	V1 EB on Sunset was hit by V2 traveling WB on Sunset and was attempting a left hand turn on to Salem. V2 failed to yield the right of way to V1.
22	98-00653	3/21/98	9:36 PM	0	0	Sunset	Salem	Dark	Rain	Wet	Left Turn	V1 EB on Sunset was hit by V2 traveling WB on Sunset attempting a left hand turn on to SB Salem. V2's view of the oncoming traffic was blocked by a van turning NB on to Salem.
23	98-00265	2/6/98	3:06 AM	0	0	Sunset	Salem	Dark	Clear	Dry	Left Turn	V1 EB on Sunset was hit by V2 traveling NB on Salem attempting a left hand turn on to WB Sunset. V2 then proceeded to Hit & Run.
24	98-00256	2/5/98	6:32 PM	0	0	Sunset	Salem	Dark	Rain	Wet	Left Turn	V1 WB on Sunset and was making a left hand turn on to Salem SB when hit head on by V2 traveling EB on Sunset. V1 was making its left turn with a green arrow while, V2 ran a red light.
25	98-00148	1/19/98	6:41 PM	0	0	Sunset	Salem	Dark	Clear	Dry	Angle	V1 making a left hand turn out of Amoco Station EB onto Sunset and collided with V2 WB on Sunset who was in the painted median preparing to turn left on to Salem SB.
26	97-02671	11/14/97	6:57 PM	0	0	Sunset	Salem	Dark	Rain	Wet	Rear-End	V1 WB on Sunset was struck in the rear by V2 when V1 had to brake suddenly to avoid a car making a left turn on to Salem NB.
27	97-02310	9/29/97	9:57 AM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 WB on Sunset was stopped in traffic for a red light was hit in the rear by V2 WB on Sunset when V2 did not stop fast enough for the red light.
28	97-02183	9/10/97	9:12 PM	0	1	Salem	Sunset	Dark	Clear	Dry	Rear-End	V1 NB on Salem was preparing to make a left turn into Wawa when it was struck in the rear by V2 NB on Salem. Questionable whether left turn signal was on or not.
29	97-01932	8/11/97	12:30 PM	0	0	Salem	Sunset	Daylight	Clear	Dry	Rear-End	V1 NB on Salem was stopped at a red light and was struck in the rear by V2 NB on Salem whose foot slipped off the brake while waiting for the light to turn green.
30	97-01914	8/8/97	4:46 PM	0	1	Sunset	Salem	Daylight	Clear	Dry	Angle	V1 EB on Salem was making a left turn into the Amoco Station after a vehicle in the WB lane stopped to let V1 make the turn. V1 was then struck by V2 WB on Sunset. (possibly in shoulder)

Accident Number	BTPD* Report Number	Date	Time	# Killed	# Injured	Street	Intersection	Light Cond.	Weather	Road Surface	Accident Type	Accident Description
31	97-01743	7/21/97	5:20 PM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 WB on Sunset struck V2 WB on Sunset in the rear when V2 had stopped for other traffic and V1 did not see V2 stop.
32	97-01222	5/23/97	4:48 PM	0	1	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V2 EB on Sunset stopped during a green light to avoid hitting an unknown car who stopped suddenly to avoid hitting an EMS vehicle that was making a left turn on to WB Sunset. V1 EB on Sunset then struck V2 in the rear when it could not stop fast enough to avoid a collision.
33	97-00809	4/9/97	2:46 PM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 and V2 EB on Sunset stopped for traffic east of the intersection due to construction workers. V3 EB on Sunset did not observe the traffic was stopped and ran into V2 pushing V2 into V1.
34	97-00581	3/14/97	7:43 AM	0	0	Salem	Sunset	Daylight	Rain	Wet	Rear-End	V1 SB on Salem was stopped at traffic light and was struck in the rear by V2 SB on Salem when V2 could not stop due to wet road conditions. **Officer noted that this intersection is known to be extremely slippery in wet conditions.**
35	97-00349	2/12/97	9:15 AM	0	0	Salem	Sunset	Daylight	Clear	Dry	Rear-End	V1 NB on Salem was preparing to make a right on red when it was struck in the rear by V2 NB on Salem who accidentally rolled into V1.
36	97-00296	2/6/97	1:22 PM	0	1	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 *(Motorcycle)* WB on Sunset was stopped at traffic light, when it was struck in the rear by V2 WB on Sunset when the driver's foot slipped of the brake of V2.
37	97-00202	1/25/97	12:23 PM	0	1	Salem	Sunset	Daylight	Rain	Wet	Rear-End	V1 NB on Salem was stopped in traffic preparing to make a left turn into Wawa when it was struck in the rear by V2 NB on Salem who had just made a right turn from Sunset Rd onto Salem.
38	97-00124	1/16/97	8:15 AM	0	0	Salem	Sunset	Daylight	Clear	Dry	Angle	V1 NB on Salem struck V2 SB on Salem who had just attempted a quick left hand turn into Morgan Tire.
39	97-00069	1/8/97	11:35 AM	0	0	Salem	Sunset	Daylight	Clear	Dry	Rear-End	V1 NB on Salem stopped suddenly for traffic while it was preparing to make a left turn (U-turn) when it was struck in the rear by V2 who was following too closely.
40	97-00026	1/3/97	7:29 PM	0	5	Sunset	Salem	Dark	Clear	Dry	Left Turn	V1 EB on Sunset struck V2 WB on Sunset attempting a left turn on to SB Salem.
41	96-02686	11/6/96	2:40 PM	0	2	Salem	Sunset	Daylight	Clear	Dry	Rear-End	V1 NB on Salem was stopped at a red light and was struck in the rear by V2 NB on Salem.
42	96-02551	10/23/96	7:40 PM	0	0	Salem	Sunset	Dark	Rain	Wet	Rear-End	V1 NB on Salem was stopped at a red light was struck in the rear by V2 NB on Salem due to wet road conditions.
43	96-02419	10/10/96	7:00 AM	0	0	Sunset	Salem	Daylight	Rain	Wet	Side-Swipe	V1 EB on Sunset Rd, was making a right hand turn on to SB Salem and struck V2 EB on Sunset Rd who was also making a right hand turn SB Salem V1 was either making a wide turn with a truck or was about to miss the turn and made a sharp turn.
44	96-02390	10/6/96	4:50 PM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V2 WB on Sunset was stopped in traffic for a red light was hit in the rear by V1 WB on Sunset when V1 did not stop fast enough for the red light.
45	96-02346	10/1/96	11:19 AM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 WB on Sunset was stopped in traffic at the red light was hit in the rear by V2 WB on Sunset who started to move forward when the light turned green while V1 was still at a standstill.

Accident Number	BTPD* Report Number	Date	Time	# Killed	# Injured	Street	Intersection	Light Cond.	Weather	Road Surface	Accident Type	Accident Description
46	96-02240	9/16/96	3:30 PM	0	0	Salem	Sunset	Daylight	Rain	Wet	Rear-End	V1 SB on Salem was waiting at red light to make a right hand turn was struck in the rear by V2 SB on Salem who thought V1 had moved forward and into traffic.
47	96-02193	9/10/96	4:30 PM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V2 WB on Sunset was stopped in traffic for a red light was hit in the rear by V1 WB on Sunset when V1 did not see that V2 had stopped for the red light.
48	96-02007	8/21/96	12:03 PM	0	1	Salem	Sunset	Daylight	Clear	Dry	Left Turn	V1 SB on Salem making a left hand turn on to EB Sunset during a green arrow when V2 WB on Sunset struck V1 after going through a red light.
49	96-01927	8/11/96	2:45 PM	0	0	Salem	Sunset	Daylight	Clear	Dry	Rear-End	V1 NB on Salem was waiting at red light was struck in the rear by V2 SB on Salem who thought V1 had started to move forward when the light turned green.
50	96-01889	8/7/96	8:50 AM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 WB on Sunset stopped suddenly for a vehicle that had come to a complete stop directly in front of V1 when V2 WB on Sunset did not stop in time and ran directly into the rear of V1.
51	96-01881	8/6/96	2:43 PM	0	0	Salem	Sunset	Daylight	Clear	Dry	Rear-End	V1 NB on Salem was stopped waiting for traffic when V2 NB rear-ended V1.
52	96-01721	7/19/96	6:57 AM	0	1	Sunset	Salem	Daylight	Clear	Dry	Left Turn	V2 EB on Sunset was hit by V1 traveling WB on Sunset who attempted to make a left hand turn on to Salem. V1 failed to yield the right of way to V2 by making an abrupt left turn.
53	96-01654	7/11/96	3:15 PM	0	1	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 WB on Sunset was stopped at a red light and was struck in the rear by V2 WB on Sunset whose foot slipped off the brake while waiting for the light to turn green.
54	96-01205	5/21/96	10:13 PM	0	1	Salem	Sunset	Dark	Clear	Dry	Rear-End	V1 SB on Salem was stopped due to a traffic accident when V2 SB on Salem rear-ended V1 claiming to have been preoccupied by the accident in the distance.
55	96-01002	4/30/96	4:36 PM	0	1	Sunset	Salem	Daylight	Rain	Wet	Rear-End	V1 WB on Sunset was stopped at traffic light and was struck in the rear by V2 WB on Sunset when V2 could not stop due to wet road conditions.
56	96-00974	4/26/96	3:00 PM	0	0	Sunset	Salem	Daylight	Rain	Wet	Rear-End	V1 EB on Sunset was stopped at traffic light and was struck in the rear by V2 EB on Sunset when V2 could not stop due to wet road conditions.
57	96-00910	4/20/96	8:37 PM	0	0	Sunset	Salem	Dark	Clear	Dry	Rear-End	V1 EB on Sunset was stopped in traffic at the red light was hit in the rear by V2 EB on Sunset who started to move forward when the light turned green while V1 was still at a standstill.
58	96-00727	3/28/96	5:46 PM	0	0	Salem	Sunset	Daylight	Rain	Wet	Rear-End	V1 SB on Salem was stopped at the traffic light and was struck in the rear by V2 SB on Salem when V2 could not stop due to wet road conditions.
59	96-00230	1/28/96	12:18 PM	0	0	Sunset	Salem	Daylight	Clear	Dry	Rear-End	V1 EB on Sunset was stopped in traffic at the red light was hit in the rear by V2 EB on Sunset who started to move forward when the light turned green while V1 was still at a standstill.
60	95-02983	12/16/95	6:36 PM	0	3	Sunset	Salem	Dark	n/a	n/a	Left Turn	V1 WB on Sunset collided with V2 EB on Sunset attempting to make a left hand turn onto NB Salem

Accident Number	BTPD* Report Number	Date	Time	# Killed	# Injured	Street	Intersection	Light Cond.	Weather	Road Surface	Accident Type	Accident Description
61	95-02644	11/10/95	11:06 AM	0	0	Sunset	Salem	Daylight	n/a	n/a	Angle	V1 making a left hand turn out of Amoco Station EB onto Sunset and collided with V2 WB on Sunset who was in the painted median preparing to turn left on to Salem SB.
62	95-02306	10/6/95	3:20 PM	0	1	Sunset	Salem	Daylight	n/a	n/a	Rear-End	V2 EB on Sunset was attempting to make a left turn into the Amoco Station and was struck in the rear by V1 EB on Sunset who was not notice that V2 had stopped.
63	95-02228	9/28/95	10:16 AM	0	0	Sunset	Salem	Daylight	n/a	n/a	Rear-End	V1 EB on Sunset stopped quickly as the traffic light turned red and was struck in the rear by V2 EB on Sunset.
64	95-02112	9/14/95	10:36 AM	0	1	Salem	Exit/Ent of Wawa	Daylight	n/a	n/a	Rear-End	V1 NB on Salem was stopped waiting to turn left into Wawa when V2 NB on Salem rear-ended V1.
65	95-02060	9/7/95	9:36 AM	0	0	Sunset	Salem	Daylight	n/a	n/a	Left Turn	V2 was traveling EB on Sunset crossing the Salem intersection when it was struck on the side by V1 NB on Salem who ran a red light while attempting a left turn on to WB Sunset.
66	95-01624	7/18/95	5:35 PM	0	0	Sunset	Salem	Daylight	n/a	n/a	Rear-End	V1 EB on Sunset was waiting at a red light was struck in the rear by V2 EB on Sunset when the driver's foot slipped off the brake and onto the accelerator.
67	95-01424	6/24/95	11:02 PM	0	0	Sunset	Salem	Dark	n/a	n/a	Left Turn	V1 EB on Sunset entered the Salem intersection was struck head on by V2 WB on Sunset attempting to make a left turn onto SB Salem. V2 was distracted by a pedestrian.
68	95-01060	5/13/95	2:00 PM	0	0	Salem	Sunset	Daylight	n/a	n/a	Rear-End	V1 SB on Salem was preparing to make a right hand turn onto WB Sunset was struck in the rear by V2 SB. V1 had to stop for a vehicle in front of it, and V2 could not stop fast enough.
69	95-00783	4/8/95	2:35 PM	0	0	Salem	Sunset	Daylight	n/a	n/a	Rear-End	V1 SB on Salem was stopped at a traffic light and was struck in the rear by V2 SB on Salem
70	95-00428	2/23/95	8:31 PM	0	2	Sunset	Salem	Dark	n/a	n/a	Left Turn	V2 EB on Sunset struck V1 WB on Sunset who was making a left turn on to SB Salem. V1 failed to yield the right of way to V2.
71	95-00355	2/15/95	5:54 PM	0	0	Sunset	Salem	Dark	Rain	Wet	Fixed Object	V1 WB on Sunset, was temporarily blinded by headlights of an oncoming car. V1 attempted to stop before entering the intersection, but slid due to wet road conditions into a light pole.
72	95-00269	2/4/95	12:40 PM	0	0	Sunset	Salem	Daylight	n/a	Wet	Side-Swipe	V1 EB on Sunset was hit on the side by V2 EB on Sunset who was preparing to make a left turn, when V2 moved into the through lane to avoid another car that was sliding out of control.
73	95-00187	1/25/95	12:45 PM	0	0	Sunset	Salem	Daylight	n/a	Wet	Rear-End	V1 WB on Sunset was stopped at traffic light and was struck in the rear by V2 WB on Sunset when V2 could not stop due to wet road conditions.
74	95-00111	1/15/95	8:57 PM	0	3	Sunset	Salem	Dark	Rain	Wet	Left Turn	V1 WB on Sunset collided with V2 EB on Sunset attempting to make a left hand turn onto NB Salem. V1 could not stop to avoid accident, because of slick road conditions.
75	95-00037	1/6/95	3:15 PM	0	0	Sunset	Salem	Daylight	n/a	n/a	Same-Rear	V1 WB on Sunset was stopped in traffic for a red light and was hit in the rear by V2 WB on Sunset when V2 was distracted by a passenger.

*** BTPD = Burlington Township Police Department**

n/a = not available

APPENDIX B

SUMMARY OF REPORTABLE ACCIDENTS ALONG SALEM ROAD IN BURLINGTON TOWNSHIP

	BTPD* Report Number	Date	Time	# Killed	# Injured	Street	Intersection	Light Cond.	Weather	Road Surface	Accident Type	Accident Description
76	98-01013	5/3/1998	9:13 PM	0	0	Salem	Willow Way	Dark	Clear	Dry	Fixed Object	V1 SB on Salem attempting to make a left turn at a high rate of speed onto Willow Way veered out of control into a brick wall and several small trees. Driver fled the scene because the car was stolen.
77	98-00963	4/27/1998	4:49 PM	0	0	Salem	Hospital Dr.	Daylight	Clear	Dry	Angle	V1 SB on Salem put on its right turn signal on prior to Hospital Dr. with the intention of continuing past the first entrance and into the second entrance. V2 assumed that V1 was entering the first entrance and attempted to make a left turn out of Hospital Dr. onto Salem NB and collided with V1.
78	98-00934	4/24/1998	1:20 PM	0	0	Salem	Maple	Daylight	Clear	Dry	Angle	V1 was backing out of a driveway approx. 100' south of Maple and struck V2 NB on Salem.
79	98-00893	4/20/1998	5:59 PM	0	0	Salem	200' E of Mahogany	Daylight	Clear	Dry	Rear-End	V1 NB on Salem and had stopped for a school bus that was SB on Salem when V2 struck V1 in the rear because it did not stop fast enough.
80	98-00753	4/4/1998	12:16 PM	0	5	Salem		Daylight	Rain	Wet	Head-On	V1 NB on Salem when a traffic stopped for a car making a right hand turn into the farm market. V1 could not stop and began to slide towards the stopped traffic. At this point V1 veered into the SB lane and struck V2 head-on.
81	98-00609	3/18/1998	9:01 AM	0	1	JFK Way	Salem	Daylight	Rain	Wet	Rear-End	V1 NB on JFK preparing to make a left turn onto Salem Rd, when it was struck in the rear by V2 NB on JFK who could not stop due to wet road conditions. Road was extremely slippery and County Highway Dept. was dispatched to apply sand to the intersection.
82	98-00466	3/3/1998	9:52 AM	0	1	Salem	JFK Way	Daylight	Rain	Wet	Angle	V1 SB on Salem Rd. when it was struck by V2 who was NB on Kennedy preparing to make a right onto NB Salem, when the car slid through the intersection due to wet road conditions.
83	98-00448	3/1/1998	7:16 AM	0	0	Salem	Adams	Daylight	Clear	Dry	Side-Swipe	V1 SB on Salem Rd. and was slowing down looking for Adams St. and preparing to make a right turn, when V2 attempted to pass V1 on the right shoulder assuming V1 SB making al left into the 7/11. No turn signal was on and as V1 made a right, it collided with V2.
84	98-00248	2/4/1998	4:11 PM	0	0	Salem	Adams	Daylight	Rain	Wet	Rear-End	V1 NB on Salem Rd. and stopped due to traffic and was rear ended by V2 NB on Salem who could not stop due to wet road conditions.
85	98-00193	1/26/1998	12:22 PM	0	1	Salem	1211 Salem Rd.	Daylight	Clear	Dry	Fixed Object	V1 NB on Salem Rd. and struck a parked car. Driver was charged with DWI.
86	98-00155	1/20/1998	12:41 PM	0	0	Salem	1/4 mile So. of Sunset	Daylight	Rain	Wet	Fixed Object	V1 SB on Salem Rd. when V2 NB on Salem made a quick left turn in front of V1. V1 made an evasive maneuver to avoid V2. V1 then slid out of control on wet pavement and struck a tree.
87	97-02967	12/20/1997	10:19 PM	0	1	Salem	Woodland	Dark	Clear	Dry	Struck Pedestrian	V1 NB on Salem Rd. and was preparing to make a right hand turn onto Woodland, when V1 struck a pedestrian who had tried to make an improper crossing of the roadway.
88	97-02756	11/21/1997	8:20 AM	0	0	Salem	Willow Way	Daylight	Clear	Dry	Left Turn	V1 NB on Salem Rd. when V2 was exiting the 7/11 and making a left turn onto Salem SB, when it struck V1. V2 stated that V1 had the right turn signal on and appeared to be turning into the 7/11.
89	97-02725	11/22/1997	4:22 PM	0	1	Salem	Mill	Dark	Rain	Wet	Rear-End	V1 SB on Salem and slowed for a vehicle making a left turn onto Mill Rd. when it was struck in the rear by V2 SB on Salem who was following too close.

	BTPD* Report Number	Date	Time	# Killed	# Injured	Street	Intersection	Light Cond.	Weather	Road Surface	Accident Type	Accident Description
90	97-02507	10/24/1997	7:42 PM	0	1	Salem	1306 Salem	Dark	Rain	Wet	Angle	V1 was backing out of a driveway along Salem Rd. and was struck by V2 NB on Salem Rd. The Collision forced V1 into the other lane of traffic where it was also hit by V3 SB on Salem.
91	97-02194	9/12/1997	6:32 AM	0	0	Salem	Sunset	Daylight	Rain	Wet	Hit Deer	V1 SB on Salem struck a deer crossing the road approx. 1/4 mile South of Sunset Intersection.
92	97-02172	9/9/1997	7:55 AM	0	0	Salem	Cedar	Daylight	Clear	Dry	Fixed Object	V1 SB on Salem Rd when other vehicles began to stop. D1 applied the brakes and began to spin out of control over the curb and into the grass and small shrubs.
93	97-01654	7/2/1997	4:45 PM	0	0	Salem	Willow Way	Daylight	Clear	Dry	Side-Swipe	V1 SB on Salem Rd was preparing to make a left turn onto Willow Way. V2 did not notice V1 turning and collided with V1 as V2 attempted to pass V1 on the left in a no passing zone.
94	97-01643	7/11/1997	10:50 AM	0	1	Salem	Mahogany	Daylight	Clear	Dry	Rear-End	V1 SB on Salem Rd and stopped in traffic preparing to make a left turn into Heals Farm market when it was struck in the rear by V2 SB on Salem who was unable to stop.
95	97-01629	7/9/1997	9:41 PM	0	0	Salem	JFK Way	Dark	Rain	Wet	Left Turn	V1 NB on Salem Rd. and was stopped at intersection of JFK Way. V1 then proceeded through the intersection and struck V2 SB on Salem when V2 was attempting to turn left on to JFK Way. Road conditions played a role in the accident because the were very wet and slippery.
96	97-01608	7/7/1997	6:09 PM	0	1	Salem	Woodland	Daylight	Clear	Dry	Struck Pedestrian	V1 WB on Woodland making a left turn onto Salem SB when V1 struck a pedestrian crossing Salem Rd.
97	97-01326	6/2/1997	4:51 PM	0	0	Salem	JFK Way	Daylight	Rain	Wet	Fixed Object	V1 SB on Salem Rd. when another Vehicle entered the road from JFK and almost struck V1. V1 veered to the right to avoid the incident and went of the road into a ditch.
98	97-01209	5/22/1997	5:59 PM	0	0	Salem	Mahogany	Daylight	Clear	Dry	Rear-End	V1 SB on Salem Rd and stopped in traffic preparing to make a left turn onto Mahogany when it was struck in the rear by V2 SB on Salem who was unable to stop.
99	97-01135	5/16/1997	10:59 AM	0	0	Salem	JFK Way	Daylight	Clear	Dry	Left Turn	V1 NB on Salem Rd. and was stopped at intersection of JFK Way. V1 then proceeded through the intersection and struck V2 SB on Salem when V2 was attempting to turn left on to JFK Way.
100	97-01117	5/13/1997	3:31 PM	0	1	Salem	JFK Way	Daylight	Rain	Wet	Angle	V1 WB on JFK Way began to slow down to attempt a right turn onto NB Salem Rd., when V1 began sliding due to wet road conditions into the intersection and struck V2 SB on Salem.
101	97-01038	5/4/1997	9:51 PM	0	0	Salem	Mill	Dark	Clear	Dry	Fixed Object	V1 WB on Mill Rd. was traveling at a high rate of speed and misjudged the stopping distance before Salem Rd. and slid through the intersection over the curb and into a flower bed.
102	97-00840	4/12/1997	4:12 PM	0	1	Salem	JFK Way	Daylight	Rain	Wet	Angle	V1 NB on Salem Rd proceeded through the intersection at JFK Way when V2 WB on JFK Way attempted to stop at the intersection and began to slide through the intersection and into V1.
103	97-00725	3/31/1997	2:48 PM	0	0	Salem	JFK Way	Daylight	Rain	Wet	Rear-End	V1 WB on JFK at the intersection of Salem Rd preparing to make a Left turn onto SB Salem Rd. when it was struck in the rear by V2 who could not stop due to wet road conditions.

	BTPD* Report Number	Date	Time	# Killed	# Injured	Street	Intersection	Light Cond.	Weather	Road Surface	Accident Type	Accident Description
104	97-00708	3/29/1997	5:44 PM	0	1	Salem	JFK Way	Dusk	Rain	Wet	Fixed Object	V1 WB on JFK and was preparing to tun right onto NB Salem Rd when the vehicle slid out of control on the wet pavement and slid through the intersection and into a tree.
105	97-00466	2/27/1997	7:35 PM	0	0	Salem	Mill	Dark	Clear	Dry	Left Turn	V1 WB on Mill Rd was preparing to make a left turn onto Salem SB. By waiting for a vehicle to make a right turn from Salem onto Mill Rd. As V1 proceeded through the intersection, it did not realize V2 was behind the other car and struck it at an angle.
106	97-00357	2/13/1997	7:20 AM	0	0	Salem	Maple (100'east)	Daylight	Clear	Dry	Rear-End	V1 and V2 were both backing out driveways directly across from each other and contact was made in the center of the roadway.
107	96-3169	12/28/1996	3:01 AM	0	1	Salem	Adams	Daylight	Clear	Dry	Side-Swipe	V1 SB on Salem was stopped at intersection of Willow Way with left turn signal on while V2 SB on Salem was preparing to turn right on to Adams Dr. V1 suddenly decided to turn right instead and struck V2.
108	96-03110	12/22/1996	6:53 AM	0	2	Salem	Willow Way	Dawn	Clear	Dry	Left Turn	VI NB on Salem collided head-on with V2 making a left turn out of 7-11 parking lot onto Salem SB. Both drivers stated they didn't see the other coming.
109	96-02866	11/22/1996	8:30 PM	0	0	Salem	Sunset	Dark	Clear	Dry	Hit Deer	V1 struck by deer while travelling on Salem Rd.
110	96-02804	11/19/1996	8:56 AM	0	2	JFK Way	Salem	Daylight	Clear	Wet	Left Turn	V1 SB on Salem turning left onto JFK Way lost control due to slippery wet conditions and swerved into oncoming lane and collided with V2 moving NB on JFK way approaching Salem.
111	96-02645	11/1/1996	9:16 AM	0	0	Salem	JFK Way	Daylight	Rain	Wet	Rear-End	V1 was waiting to make right turn from Park onto Salem when V2 rear-ended V1 due to slippery conditions.
112	96-02644	11/1/1996	8:44 AM	0	1	JFK Way	Salem	Daylight	Rain	Wet	Angle	V1 SB on Salem made left turn onto JFK Way and collided into V2. V2 NB on JFK way stated that V1 swerved into them. Conditions were wet. V1 was issued a careless driving summons.
113	96-02639	10/31/1996	6:06 PM	0	0	Salem	Theo Court	Dark	Clear	Dry	Hit Deer	V1 SB on Salem hit deer between Theo Court and Sunset Rd.
114	96-02592	10/26/1996	10:16 PM	0	1	Salem	JFK Way	Dark	Clear	Dry	Head-On	V1 SB on Salem collided head-on with V2, which, although not stated or shone on diagram, apparently swerved into V1's lane and caused the collision. V2 driver passed field sobriety test.
115	96-02328	9/27/1996	4:17 PM	0	0	Salem	Sunset	Daylight	Clear	Dry	Rear-End	V1 NB on Salem was stopped waiting for traffic when V2 NB rear-ended V1 claiming not to have noticed that traffic was stopped.
116	96-02159	9/6/1996	5:29 PM	0	2	Salem	JFK Way	Daylight	Rain	Wet	Head-On	V1 NB on JFK Way swerved into SB lane of Salem colliding head-on with V2 moving SB on Salem.
117	96-01887	8/6/1996	9:30 PM	0	1	Cedar	Salem	Dark	Clear	Dry	Left Turn	V1 SB on Salem turning left onto Cedar struck V2 (bicyclist).
118	96-01797	7/28/1996	1:29 PM	0	0	Salem	Cedar	Daylight	Clear	Dry	Angle	V1 exiting driveway making a left turn onto Salem SB collided with V2 NB Salem. D1's line of sight was obstructed due to a vehicle parked on the East side on Salem NB just South of his driveway.

	BTPD* Report Number	Date	Time	# Killed	# Injured	Street	Intersection	Light Cond.	Weather	Road Surface	Accident Type	Accident Description
119	96-01771	7/25/1996	12:26 PM	0	0	Salem	JFK Way	Daylight	Clear	Dry	Head-On	V1 NB on Salem was proceeding through stop sign intersection with JFK Way when she collided with V2 NB Salem turning left onto JFK Way. V2 claimed her left turn signal was on.
120	96-01476	6/21/1996	11:35 AM	0	1	Salem	Willow Way	Daylight	Clear	Dry	Left Turn	V1 SB on Salem was turning left onto Willow Way and collided with V2 NB on Salem. V1 charged with improper left turn.
121	96-01204	5/21/1996	9:50 PM	0	1	Salem	JFK Way	Dark	Rain	Wet	Fixed Object	V1 NB on JFK Way bearing right onto Salem hit the brakes and began to slide eventually spinning out and crashing into a utility pole.
122	96-01175	5/19/1996	9:20 AM	0	0	Salem	Theo Court	Daylight	Clear	Dry	Rear-End	V1 SB on Salem was stopped in traffic when V2 SB on Salem rear-ended V1.
123	96-01146	5/16/1996	5:11 PM	0	2	Salem	Woodland	Daylight	Rain	Wet	Rear-End	V1 SB on Salem slowed down to pass over a rut in the pavement when V2 also SB on Salem behind V1 rear-ended V1.
124	96-01104	5/12/1996	2:27 PM	0	0	Salem	Cedar	Daylight	Clear	Dry	Rear-End	V1 NB on Salem slowed down suddenly upon noticing a downed telephone wire across the roadway, V2 also NB on Salem behind V1 applied brakes but still rear-ended V1 due to short notice.
125	96-01029	5/3/1996	9:27 PM	0	0	Salem	Willow Way	Dark	Clear	Dry	Rear-End	V1 SB on Salem was stopped waiting to turn left onto Wilow Way when V2 also moving South on Salem rear-ended V1 claiming not to have seen V1's turn signal. V2 received a summons.
126	96-01003	4/30/1996	6:27 PM	0	0	Salem	Willow Way	Dusk	Rain	Wet	Rear-End	V1 NB on Salem was stopped near Willow Way yielding to an ambulance when V2 NB on Salem also yielding to same ambulance slid on wet road and rear-ended V1.
127	96-00969	4/26/1996	7:55 PM	0	1	Salem	JFK Way	Dark	Clear	Wet	Angle	V1 SB on Salem approaching JFK Way when V2 NB on JFK way turning right onto Salem lost traction and collided with V1 at an angle. V2 received a summons for careless driving.
128	96-00887	4/18/1996	4:05 PM	0	0	Salem	Mahogany	Daylight	Clear	Dry	Rear-End	V1 NB on Salem was stopped in construction traffic when V2 NB on Salem rear-ended V1.
129	96-00751	4/1/1996	2:53 PM	0	0	Salem	JFK Way	Daylight	Rain	Wet	Rear-End	V2 NB on Salem was stopped waiting to make a left turn when V1 rear-ended V2. V1 received a summons for careless driving, too fast for conditions.
130	96-00672	3/20/1996	11:50 AM	0	0	Salem	JFK Way	Daylight	Clear	Dry	Side-Swipe	V1 NB on Salem after stopping proceeded through intersection at JFK Way continuing NB on Salem. V2 NB on JFK Way turning onto Salem NB was struck by V1 in the side (9) causing the vehicle to go off into a utility pole guide wire. V1 received a summons.
131	96-00632	3/16/1996	12:06 PM	0	0	Salem	JFK Way	Daylight	Clear	Dry	Left Turn	V2 turning left onto SB Salem from NB JFK Way was struck by V1 NB on Salem at intersection with JFK Way. V1 failed to stop at stop sign and struck V2 while V2 was making left turn.
132	96-00466	2/26/1996	9:46 PM	0	0	Salem	Maple	Dark	Clear	Dry	Rear-End	V1 NB on Salem was stopped waiting to turn left onto Maple when V2 also NB on Salem rear-ended V1.

	BTPD* Report Number	Date	Time	# Killed	# Injured	Street	Intersection	Light Cond.	Weather	Road Surface	Accident Type	Accident Description
133	96-00290	2/6/1996	6:48 AM	0	1	Salem	JFK Way	Dawn	Clear	Icy	Fixed Object	V1 NB on Salem North of JFK Way slid on ice patch and hit telephone pole.
134	96-00267	2/2/1996	6:50 AM	0	2	Salem	Mahogany	Dawn	Snow	Wet	Angle	V2 exiting Mahogany WB into intersection with Salem hit brakes and slid on snowy road and was struck by V2 travelling NB on Salem. V2 received summons for careless driving.
135	96-00238	1/29/1996	2:50 PM	0	1	Salem	Mahogany	Daylight	Clear	Dry	Rear-End	V1 SB on Salem rear-ended V2 also SB on Salem as V2 was stopped behind a school bus. V1 received careless driving summons.
136	95-02886	12/5/1995	12:04 PM	0	2	Salem	JFK Way	Daylight	Rain	n/a	Angle	V1 SB on Salem while making a left onto JFK Way was struck by V2. V2 was exiting Salem intersection at JFK Way onto Salem NB and failed to stop at stop sign.
137	95-02797	11/26/1995	9:03 PM	0	0	Salem	Sunset	Dark	n/a	n/a	Hit Deer	V1 NB Salem hit deer between Sunset and Woodland Way as deer entered roadway from driver's left.
138	95-02567	11/3/1995	5:07 PM	0	1	Salem	Mill	Dusk	n/a	n/a	Angle	V2 NB on Salem struck V1 exiting Mill Rd because V1 had pulled too far out into the intersection. V1 received a summons for careless driving.
139	95-02531	10/25/1995	7:20 PM	0	0	Willow Way	Salem	Dark	n/a	n/a	Angle	V1 WB on Willow Way was struck by V2 as V2 was exiting 7-11 parking lot.
140	95-02445	10/20/1995	7:15 PM	0	0	Salem	JFK Way	Dark	n/a	Wet	Angle	V1 SB on Salem was struck by V2 NB on JFK Way which slid on wet road into SB Salem lane near intersection at JFK Way.
141	95-02331	10/8/1995	2:18 PM	0	1	Salem	Adams	Daylight	Rain	n/a	Fixed Object	V1 SB on Salem passed V2 which was in front of V1 stopped waiting to turn left. During maneuver V1 encountered V3 NB on Salem turning left onto Adams, V1 then lost control and hit pole.
142	95-02248	9/30/1995	11:41 AM	0	0	Salem	Willow Way	Daylight	n/a	n/a	Rear-End	V1 NB on Salem rear-ended V2 NB on Salem while V2 was slowing to turn right into 7-11 lot.
143	95-02050	9/6/1995	10:21 AM	0	0	Salem	Mill	Daylight	n/a	n/a	Rear-End	V1 SB on Salem was stopped waiting to turn left onto Mill Rd. whn V2. Also SB on Salem rear-ended V1 claimin to have fallen asleep at the wheel. V2 received a summons.
144	95-01766	8/3/1995	5:09 PM	0	0	Salem	JFK Way	Daylight	n/a	n/a	Left Turn	V2 SB on Salem was making left turn onto JFK Way and collided with V1 proceeding through intersection at JFK Way on Salem NB. V1 received summons for failure to stop at stop sign.
145	95-01646	7/20/1995	6:21 PM	0	0	Salem	Cedar	Daylight	n/a	n/a	Rear-End	V1 making a left turn from Cedar onto Salem was rear-ended by V2 making the same turn.
146	95-01546	7/7/1995	1:07 PM	0	0	Salem	JFK Way	Daylight	n/a	n/a	Angle	V1 SB on Salem was preparing to make left onto JFK Way when V2 began to pull out of Salem turning right onto JFK Way SB. V1 attempted to stop but slid on wet road and collided with V2
147	95-01332	6/12/1995	5:46 PM	0	0	Salem	JFK Way	Daylight	n/a	Wet	Rear-End	V1 NB on Salem approaching intersection at JFK Way behind V2 who was waiting to turn (apparently) left. V1 rear-ended V2.

	BTPD* Report Number	Date	Time	# Killed	# Injured	Street	Intersection	Light Cond.	Weather	Road Surface	Accident Type	Accident Description
148	95-01288	6/9/1995	8:40 AM	0	0	Salem	Maple	Daylight	n/a	n/a	Rear-End	V1 NB on Salem was making a right turn into a driveway when V2 also NB on Salem rear-ended V1.
149	95-01249	6/5/1995	5:25 PM	0	2	Salem	Cedar	Daylight	n/a	n/a	Side-Swipe	V1 turned left from Cedar onto Salem SB became distracted and hit a tree then rolled back onto road and hit V2. V2's direction not stated but appears to be Salem SB.
150	95-01184	5/28/1995	10:10 PM	0	0	Salem	JFK Way	Dark	n/a	Wet	Fixed Object	V1 lost control when braking to make left turn and hit pole.
151	95-01183	5/28/1995	6:41 PM	0	0	Salem	JFK Way	Dusk	n/a	Wet	Fixed Object	V1 SB on Salem turning onto JFK Way SB when vehicle slid on wet road and struck curb in NB lane.
152	95-01167	5/26/1995	2:49 PM	0	0	Salem	Mill	Daylight	n/a	n/a	Angle	V1 NB on Salem was struck by V2 turning left from Mill Rd. onto SB Salem.
153	95-00927	4/26/1995	8:42 AM	0	1	Salem	Willow Way	Daylight	n/a	n/a	Rear-End	V1 NB on Salem slowed down yielding to a vehicle which pulled out from Wawa lot in front of V1, V2 NB behind V1 didn't have enough time to stop and rear-ended V1.
154	95-00780	4/8/1995	9:27 AM	0	1	Salem	Mill	Daylight	n/a	n/a	Angle	V1 NB on Salem struck V2 in an attempt to swerve out of the way of V2 which turned right out of Mill Road onto Salem NB. V2 received a summons.
155	95-00301	2/9/1995	10:55 AM	0	0	JFK Way	Salem	Daylight	n/a	n/a	Rear-End	V1 NB on Salem rear-ended V2 also NB on Salem at stop sign of intersection with JFK Way. V1 thought V2 was proceeding through the intersection, but wasn't. V1 received a summons.
156	95-00151	1/19/1995	3:50 PM	0	0	Salem	Maple	Daylight	n/a	Wet	Rear-End	V1 NB on Salem stopped to allow an ambulance to pass in the SB lane when V2 also NB on Salem tried to stop and slid on wet road and rear-ended V1.
157	95-00060	1/9/1995	4:49 PM	0	1	Salem	JFK Way	Dusk	n/a	n/a	Angle	Apparently, V1 SB on Salem was struck by V2 NB on Salem because V2 didn't stop for stop sign at intersection with JFK Way. V2 received summons for careless driving.

*** BTPD = Burlington Township Police Department**

n/a = not available

APPENDIX C

SUMMARY OF LEVEL OF SERVICE ANALYSIS

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4g 06-15-1999

Delaware Valley Regional Planning Commission

Streets: (N-S) SALEM ROAD (E-W) SUNSET ROAD

Analyst: LAC File Name: 98AM.HC9

Area Type: Other 6-11-99 PK AM

Comment: 1998 EXISTING

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Volumes	25	251	148	81	351	87	83	329		65	307	
PHF or PK15	0.80	0.80	0.88	0.81	0.89	0.81	0.80	0.85		0.86	0.95	
Lane W (ft)	10.0	11.0	12.0	12.0	11.0	11.0	11.0	12.0		11.0	11.0	
Grade		0			0			0			0	
% Heavy Veh	2	2	2	2	2	2	2	2		2	2	
Parking	N	N		N	N		N	N		N	N	
Bus Stops			0			0			0			0
Con. Peds			0			0			0			0
Ped Button	(Y/N)	N		(Y/N)	N		(Y/N)	N		(Y/N)	N	
Arr Type	3	3	3	3	3	3	3	3		3	3	
RTOR Vols			42			25			0			30
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00		3.00	3.00	
Prop. Share												
Prop. Prot.												

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
NB	Left	*	*			EB	Left	*	*		
	Thru		*				Thru		*		
	Right		*				Right				
	Peds						Peds				
SB	Left	*	*			WB	Left	*	*		
	Thru		*				Thru		*		
	Right		*				Right				
	Peds						Peds				
EB	Right					NB	Right				
WB	Right					SB	Right				
Green		10.0A	25.0A			Green		10.0A	35.0A		
Yellow/AR		3.0	7.0			Yellow/AR		3.0	7.0		

Cycle Length: 100 secs Phase combination order: #1 #2 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
NB	L	237	1652	0.131	0.420	12.4	B	19.7	C
	T	522	1801	0.601	0.290	21.1	C		
	R	459	1583	0.261	0.290	17.7	C		
SB	L	296	1770	0.338	0.420	12.6	B	21.9	C
	T	522	1801	0.755	0.290	25.1	D		
	R	444	1531	0.171	0.290	17.2	C		
EB	L	361	1711	0.288	0.520	8.7	B	14.3	B
	T	726	1863	0.533	0.390	15.8	C		
WB	L	313	1711	0.243	0.520	8.9	B	13.8	B
	T	702	1801	0.460	0.390	15.0	B		

Intersection Delay = 17.7 sec/veh Intersection LOS = C

Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.618

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4g 06-15-1999

Delaware Valley Regional Planning Commission

Streets: (N-S) SALEM ROAD (E-W) SUNSET ROAD

Analyst: LAC File Name: 98PM.HC9

Area Type: Other 6-11-99 PK PM

Comment: 1998 EXISTING

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Volumes	37	182	91	188	292	225	152	436		165	533	
PHF or PK15	0.84	0.80	0.80	0.85	0.80	0.92	0.86	0.89		0.94	0.96	
Lane W (ft)	10.0	11.0	12.0	12.0	11.0	11.0	11.0	12.0		11.0	11.0	
Grade		0			0			0			0	
% Heavy Veh	2	2	2	2	2	2	2	2		2	2	
Parking	N	N		N	N		N	N		N	N	
Bus Stops			0			0			0			0
Con. Peds			0			0			0			0
Ped Button	(Y/N)	N		(Y/N)	N		(Y/N)	N		(Y/N)	N	
Arr Type	3	3	3	3	3	3	3	3		3	3	
RTOR Vols			26			64			0			52
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00		3.00	3.00	
Prop. Share												
Prop. Prot.												

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
NB Left	*	*			EB Left *	*		
Thru		*			Thru	*		
Right		*			Right			
Peds					Peds			
SB Left	*	*			WB Left *	*		
Thru		*			Thru	*		
Right		*			Right			
Peds					Peds			
EB Right					NB Right			
WB Right					SB Right			
Green	10.0A	25.0A			Green 10.0A	35.0A		
Yellow/AR	3.0	7.0			Yellow/AR 3.0	7.0		

Cycle Length: 100 secs Phase combination order: #1 #2 #5 #6

Intersection Performance Summary

	Lane Group: Mvmts	Adj Sat Flow Cap	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
NB	L	245 1652	0.180	0.420	12.3	B	17.8	C
	T	522 1801	0.435	0.290	19.0	C		
	R	459 1583	0.179	0.290	17.2	C		
SB	L	379 1770	0.583	0.420	14.5	B	19.7	C
	T	522 1801	0.699	0.290	23.3	C		
	R	444 1531	0.394	0.290	18.7	C		
EB	L	243 1711	0.728	0.520	19.6	C	18.5	C
	T	726 1863	0.674	0.390	18.0	C		
WB	L	243 1711	0.724	0.520	18.8	C	20.9	C
	T	702 1801	0.790	0.390	21.6	C		

Intersection Delay = 19.5 sec/veh Intersection LOS = C

Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.808

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4g 06-15-1999

Delaware Valley Regional Planning Commission

Streets: (N-S) SALEM ROAD (E-W) SUNSET ROAD

Analyst: LAC File Name: NBAM.HC9

Area Type: Other 6-8-99 PK AM

Comment: 2020 PROJECTED - NO-BUILD

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Volumes	28	284	167	92	397	98	94	372		73	347	
PHF or PK15	0.80	0.80	0.88	0.81	0.89	0.81	0.80	0.85		0.86	0.95	
Lane W (ft)	10.0	11.0	12.0	12.0	11.0	11.0	11.0	12.0		11.0	11.0	
Grade		0			0			0			0	
% Heavy Veh	2	2	2	2	2	2	2	2		2	2	
Parking	N	N		N	N		N	N		N	N	
Bus Stops			0			0			0			0
Con. Peds			0			0			0			0
Ped Button	(Y/N)	N		(Y/N)	N		(Y/N)	N		(Y/N)	N	
Arr Type	3	3	3	3	3	3	3	3		3	3	
RTOR Vols			42			25			0			30
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00		3.00	3.00	
Prop. Share												
Prop. Prot.												

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
NB Left	*	*			EB Left	*	*		
Thru		*			Thru		*		
Right		*			Right				
Peds					Peds				
SB Left	*	*			WB Left	*	*		
Thru		*			Thru		*		
Right		*			Right				
Peds					Peds				
EB Right					NB Right				
WB Right					SB Right				
Green	10.0A	25.0A			Green	10.0A	35.0A		
Yellow/AR	3.0	7.0			Yellow/AR	3.0	7.0		

Cycle Length: 100 secs Phase combination order: #1 #2 #5 #6

Intersection Performance Summary

	Lane Group: Mvmts	Adj Sat Flow Cap	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
NB	L	237 1652	0.148	0.420	13.0	B	20.9	C
	T	522 1801	0.680	0.290	22.8	C		
	R	459 1583	0.309	0.290	18.0	C		
SB	L	269 1770	0.424	0.420	13.5	B	25.8	D
	T	522 1801	0.854	0.290	30.7	D		
	R	444 1531	0.203	0.290	17.3	C		
EB	L	328 1711	0.357	0.520	9.3	B	15.2	C
	T	726 1863	0.603	0.390	16.7	C		
WB	L	266 1711	0.320	0.520	9.6	B	14.5	B
	T	702 1801	0.520	0.390	15.6	C		

Intersection Delay = 19.6 sec/veh Intersection LOS = C

Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.700

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4g 06-15-1999

Delaware Valley Regional Planning Commission

Streets: (N-S) SALEM ROAD (E-W) SUNSET ROAD

Analyst: LAC File Name: NBPM.HC9

Area Type: Other 6-8-99 PK PM

Comment: 2020 PROJECTED - NO-BUILD

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Volumes	42	206	103	212	330	254	172	493		186	602	
PHF or PK15	0.84	0.80	0.80	0.85	0.80	0.92	0.86	0.89		0.94	0.96	
Lane W (ft)	10.0	11.0	12.0	12.0	11.0	11.0	11.0	12.0		11.0	11.0	
Grade		0			0			0			0	
% Heavy Veh	2	2	2	2	2	2	2	2		2	2	
Parking	N	N		N	N		N	N		N	N	
Bus Stops			0			0			0			0
Con. Peds			0			0			0			0
Ped Button	(Y/N)	N		(Y/N)	N		(Y/N)	N		(Y/N)	N	
Arr Type	3	3	3	3	3	3	3	3		3	3	
RTOR Vols			26			64			0			52
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00		3.00	3.00	
Prop. Share												
Prop. Prot.												

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
NB Left	*	*			EB Left	*	*		
Thru		*			Thru		*		
Right		*			Right				
Peds					Peds				
SB Left	*	*			WB Left	*	*		
Thru		*			Thru		*		
Right		*			Right				
Peds					Peds				
EB Right					NB Right				
WB Right					SB Right				
Green	10.0A	25.0A			Green	10.0A	35.0A		
Yellow/AR	3.0	7.0			Yellow/AR	3.0	7.0		

Cycle Length: 100 secs Phase combination order: #1 #2 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
NB	L	237	1652	0.211	0.420	12.8	B	18.2	C
	T	522	1801	0.492	0.290	19.6	C		
	R	459	1583	0.211	0.290	17.4	C		
SB	L	346	1770	0.720	0.420	18.1	C	22.5	C
	T	522	1801	0.789	0.290	26.6	D		
	R	444	1531	0.464	0.290	19.4	C		
EB	L	243	1711	0.823	0.520	28.7	D	22.6	C
	T	726	1863	0.763	0.390	20.4	C		
WB	L	243	1711	0.815	0.520	27.2	D	28.0	D
	T	702	1801	0.893	0.390	28.3	D		

Intersection Delay = 23.5 sec/veh Intersection LOS = C

Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.883

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4g 07-29-1999
Delaware Valley Regional Planning Commission

Streets: (N-S) SALEM ROAD (E-W) SUNSET ROAD
Analyst: LAC File Name: AM30.HC9
Area Type: Other 6-8-99 PK AM
Comment: 2020 PROJECTED - BUILD 30% DIVERSION (10% WB)

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Volumes	6	199	167	64	278	69	66	399		73	359	
PHF or PK15	0.80	0.80	0.88	0.81	0.89	0.81	0.80	0.85		0.86	0.95	
Lane W (ft)	10.0	11.0	12.0	12.0	11.0	11.0	11.0	12.0		11.0	11.0	
Grade		0			0			0			0	
% Heavy Veh	2	2	2	2	2	2	2	2		2	2	
Parking	N	N		N	N		N	N		N	N	
Bus Stops			0			0			0			0
Con. Peds			0			0			0			0
Ped Button	(Y/N)	N		(Y/N)	N		(Y/N)	N		(Y/N)	N	
Arr Type	3	3	3	3	3	3	3	3		3	3	
RTOR Vols			42			17			0			21
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00		3.00	3.00	
Prop. Share												
Prop. Prot.												

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
NB Left	*	*			EB Left *	*		
Thru		*			Thru	*		
Right		*			Right			
Peds					Peds			
SB Left	*	*			WB Left *	*		
Thru		*			Thru	*		
Right		*			Right			
Peds					Peds			
EB Right					NB Right			
WB Right					SB Right			
Green	5.0A	20.0A			Green 10.0A	35.0A		
Yellow/AR	3.0	7.0			Yellow/AR 3.0	7.0		

Cycle Length: 90 secs Phase combination order: #1 #2 #5 #6

Intersection Performance Summary

	Lane Group: Mvmts	Adj Sat Flow Cap	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
NB	L	188 1652	0.037	0.356	12.8	B	18.3	C
	T	480 1801	0.519	0.267	19.0	C		
	R	422 1583	0.336	0.267	17.4	C		
SB	L	255 1770	0.310	0.356	13.3	B	19.1	C
	T	480 1801	0.650	0.267	21.1	C		
	R	408 1531	0.157	0.267	16.3	C		
EB	L	372 1711	0.220	0.578	6.3	B	12.2	B
	T	807 1863	0.581	0.433	13.3	B		
WB	L	286 1711	0.297	0.578	7.1	B	11.3	B
	T	780 1801	0.484	0.433	12.2	B		

Intersection Delay = 14.9 sec/veh Intersection LOS = B

Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.599

HCM: SIGNALIZED INTERSECTION SUMMARY Version 2.4g 07-29-1999

Delaware Valley Regional Planning Commission

Streets: (N-S) SALEM ROAD (E-W) SUNSET ROAD

Analyst: LAC File Name: PM30.HC9

Area Type: Other 6-8-99 PK PM

Comment: 2020 PROJECTED - BUILD 30% DIVERSION (10% WB)

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	0	1	1	0
Volumes	6	144	103	149	231	177	120	556		186	623	
PHF or PK15	0.84	0.80	0.80	0.85	0.80	0.92	0.86	0.89		0.94	0.96	
Lane W (ft)	10.0	11.0	12.0	12.0	11.0	11.0	11.0	12.0		11.0	11.0	
Grade		0			0			0			0	
% Heavy Veh	2	2	2	2	2	2	2	2		2	2	
Parking	N	N		N	N		N	N		N	N	
Bus Stops			0			0			0			0
Con. Peds			0			0			0			0
Ped Button	(Y/N)	N		(Y/N)	N		(Y/N)	N		(Y/N)	N	
Arr Type	3	3	3	3	3	3	3	3		3	3	
RTOR Vols			26			44			0			36
Lost Time	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00		3.00	3.00	
Prop. Share												
Prop. Prot.												

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
NB Left	*	*			EB	Left	*	*		
Thru		*				Thru		*		
Right		*				Right				
Peds						Peds				
SB Left	*	*			WB	Left	*	*		
Thru		*				Thru		*		
Right		*				Right				
Peds						Peds				
EB Right					NB	Right				
WB Right					SB	Right				
Green	5.0A	20.0A			Green		10.0A	35.0A		
Yellow/AR	3.0	7.0			Yellow/AR		3.0	7.0		

Cycle Length: 90 secs Phase combination order: #1 #2 #5 #6

Intersection Performance Summary

	Lane Mvmts	Group: Cap	Adj Sat Flow	v/c Ratio	g/C Ratio	Delay	LOS	Approach: Delay	LOS
NB	L	204	1652	0.034	0.356	12.7	B	17.2	C
	T	480	1801	0.375	0.267	17.6	C		
	R	422	1583	0.230	0.267	16.7	C		
SB	L	334	1770	0.524	0.356	15.7	C	18.2	C
	T	480	1801	0.602	0.267	20.2	C		
	R	408	1531	0.353	0.267	17.5	C		
EB	L	270	1711	0.519	0.578	11.1	B	16.2	C
	T	807	1863	0.774	0.433	17.3	C		
WB	L	270	1711	0.733	0.578	18.7	C	19.7	C
	T	780	1801	0.832	0.433	19.9	C		

Intersection Delay = 18.0 sec/veh Intersection LOS = C

Lost Time/Cycle, L = 12.0 sec Critical v/c(x) = 0.793