

Lindenwold Station Transit Hub Study

OCTOBER 2009



Lindenwold
Station

 **PATCO**

 **NJ TRANSIT**



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Executive Summary

The Study

Lindenwold Station is the junction of two rail lines; the New Jersey Transit Atlantic City line and the Port Authority Transit Corporation (PATCO) High Speed Line, which terminates at Lindenwold. The Lindenwold Station has the highest number of boards for PATCO service in New Jersey. NJ Transit ridership between Philadelphia and Atlantic City has been growing steadily over recent years. Additionally, local bus routes (403, 451, 459, and 554) stop at Lindenwold.

Existing bottlenecks were evaluated, including the CR 673 overpass, and the complex intersections along CR 673 near the station.

A study advisory committee was established to guide this study with representation from both public and private entities in the area surrounding the station.

Recommendations being made by the study team to enhance the existing services available at the station and to support Lindenwold as a hub for transit service are discussed below:

- ◆ The study recommends that improvements be made to add capacity at the CR 673 intersections with Berlin Road and US 30. This can be accomplished by restricting southbound turns at the US 30 intersection and converting both southbound lanes to through lanes between Berlin and US 30.
- ◆ The operation of the intersection of CR 673 with Station Avenue and the Lindenwold station access drive can be greatly improved by installing a traffic signal that operates during the PM peak. The signal will also allow a safe access point for pedestrians and bicyclists to reach the station from the areas north and west of the station.
- ◆ Improvement in the overall delay at the US 30 and New Road intersection can be accomplished by removing the jughandle and providing left-turn lanes along US 30. This can be done without additional pavement width.
- ◆ Pedestrian access improvements outlined within the study include the addition of sidewalks along the perimeter of the station and installation of crosswalk marking and countdown signals at signalized intersections. Additionally, improvements are identified for the internal station area including curb ramps, pedestrian pathway delineation, additional sheltered bus stop waiting area, and traffic calming elements.
- ◆ Bicycle facility improvements include the installation of wayfinding signage directing cyclists to the Lindenwold station, as well as to other attractions in the area such as UMDNJ and Kennedy Hospital. "Share The Road" signage is also being recommended by the study team.

Introduction

The Lindenwold Station Transit Hub Study

Goals

The goals of this study are to improve mobility and enhance transit connections to destinations in the developing eastern end of Camden County. The study will determine ways to make access to the station more efficient and take full advantage of connections available between PATCO rail service, New Jersey Transit bus and Atlantic City rail service at the Lindenwold Station.

Background

Several previous studies have been conducted in the area. A short synopsis of the more recent studies that relate to this study are included here to give some background.

PATCO Parking Study – 2002

This study determined the current and future parking demands at PATCO rail stations and identified potential strategies for increasing parking. Some of the findings for the Lindenwold station included:

- ◆ That the overall occupancy for all 3,337 spaces was 90 percent full by 10:30 AM. The paid parking was 100 percent full and the free parking was 88 percent full. The handicap parking area was full by 8:00 AM.
- ◆ Congestion on the roadway network surrounding the station contributes to poor levels of service at the station drives. The heavy through movements on CR 673 and Berlin Road reduce the green time for exiting station traffic and limits the availability of acceptable gaps for the unsignalized intersections.
- ◆ Backups from the signalized intersections frequently extend past the station drives.
- ◆ Traffic appears to use the PATCO drives as a bypass around the congested traffic signals.

CR 673 Arterial Progression Study – 2005

This study recommended a wireless interconnect system to accomplish arterial progression along the CR 673 corridor south of US 30. Cycle lengths of 120 seconds were recommended during the peak hours to increase speeds and Level of Service for the northbound direction in the AM peak and southbound direction in the PM peak. The CR 673 and Medical Center Drive intersection was included in this study. Traffic signal timing modifications were recommended for the intersection, including different timing for AM and PM peak hours. These timing recommendations were not implemented due to the fact that the study was not advanced to the design phase.

DVRPC Increasing Intermodal Access to Transit, Phase II – 2005

This study assessed the non-motorized access to transit stations, including the Lindenwold Station. Road and sidewalk facilities surrounding the station were assessed within one mile and one quarter mile distances respectively. Bicycle Level of Service and Pedestrian Level of Service measures were used to qualify the conditions facing bicyclists and pedestrians. The large parking facility, the narrow shoulders, sidewalks without buffers, and high operating speeds all contributed to poor LOS results in the area surrounding the Lindenwold Station.

PATCO Transit Oriented Development Master Plans Study – 2006

The study examined the feasibility of replacing the current surface parking lots adjacent to the Lindenwold station with transit oriented development comprised of office, retail, and residential uses. The market and financial feasibility of this plan was determined, as well as the effects of such development on the station and the Borough of Lindenwold. Focusing mainly on the current and potential future land use patterns, the study concluded that resultant new activity would have positive effects on the pedestrian experience in the area but would likely increase current circulation issues. These issues would need to be addressed through significant infrastructure improvements, including changes to the street network, Berlin and White Horse Road updates, and new intersection signalizations.

DVRPC Survey Support for PATCO Transit Extension Study – 2008

This study analyzed the results of license plate surveys at three PATCO stations, including the Lindenwold Station, and compared them to a 2001 study in order to determine whether the geographic distribution of riders had shifted in recent years. The license plate survey results revealed that there was no significant geographic shift of patrons between 2001 and 2006, but that there was a lower level of parking occupancy in 2006.

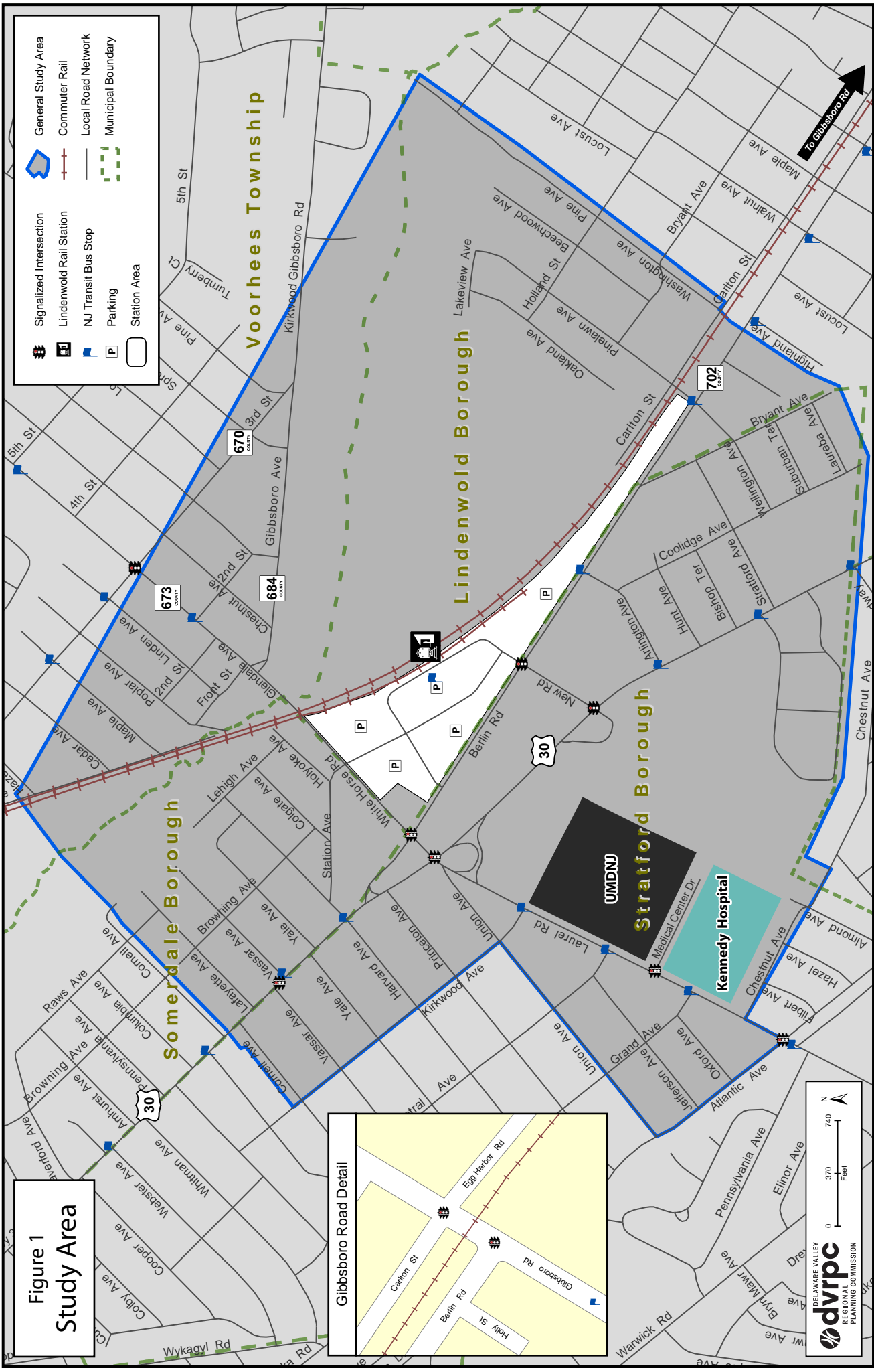
Study Area

The area being studied includes the Boroughs of Lindenwold, Somerdale, and Stratford, as well as Voorhees Township. Major employers in the area include the University of Medicine and Dentistry of New Jersey (UMDNJ) and Kennedy Hospital.

The boundaries of the study area are:

- ◆ To the East – Washington Avenue in Lindenwold
- ◆ To the West – Cornell Avenue in Somerdale
- ◆ To the North – A line between the PATCO/NJ Transit rail line and Washington Avenue in Voorhees/Lindenwold
- ◆ To the South – The Southeast boundary of Stratford
- ◆ The closely spaced intersections of CR 702 with Gibbsboro Road under the Atlantic City rail line are also included in the study.

The study area is illustrated in [Figure 1](#), shown on the next page.



Transportation Analysis

Arterial Network

The study area is served by a combination of state, county, and municipal roads that provide mobility and access to vehicular traffic traveling through the area. The principal routes are as follows:

CR 673 (Laurel Road/ White Horse Road)

CR 673 is a north-south urban minor arterial that is named Laurel Road south of US 30 and White Horse Road north of US 30. The cross section changes from two lanes to three lanes at the intersection with US 30. The posted speed limit is 25 mph throughout the study area. This roadway is particularly congested during peak periods.

CR 702 (Berlin Road/Egg Harbor Road)

CR 702 is an urban minor arterial that runs east-west through Camden County. The cross section is two lanes with auxiliary lanes at major intersections. There is no posted speed limit along the roadway within the study area.

CR 686 (Gibbsboro Road)

CR 686 is an urban minor arterial that runs north-south linking Clementon Borough with Gibbsboro and areas north. The study area includes approximately 160 feet of roadway between the Berlin Road and the Egg Harbor Road intersections under the Atlantic City rail line overpass. The posted speed limit within this area is 25 mph. This roadway sees congestion in both the AM and PM peak periods.

US 30 (White Horse Pike)

US 30 carries the name White Horse Pike throughout the study area and is classified as an urban principal arterial. This major east-west roadway is a four to five lane cross section with a posted speed of 40 mph.

Traffic Volumes

Turning Movement count data was collected by DVRPC during peak periods at the following locations. The numbers of the counts correspond to the location numbers shown on [Figure 2](#).

- ◆ 1. CR 673 at CR 702
- ◆ 2. CR 673 at US 30
- ◆ 3. CR 673 at Station Avenue
- ◆ 4. CR 702 at station access drive
- ◆ 5. CR 702 at New Road
- ◆ 6. New Road at US 30
- ◆ 7. CR 673 at Central Avenue
- ◆ 8. CR 673 at Medical Center Drive
- ◆ 9. CR 686 at CR 702 (Berlin Road)
- ◆ 10. CR 686 at CR 702 (Egg Harbor Road)

Volume count data was collected by DVRPC during peak periods at several locations including:

- ◆ 2a./2b. CR 673 at US 30 jughandle
- ◆ 5a. New Road at US 30 jughandle

In order to fully understand the operational conditions within the study area as a whole, the AM and PM peak period traffic volumes were evaluated as a system of all intersections within the corridor. This was done because each individual intersection within the study area had a peak hour that was different from other nearby intersections. To determine the system-wide peak hour, the traffic counts from individual intersections were compiled by hour and an overall peak hour was computed. This system-wide peak hour, which is 7:45 – 8:45 AM and 4:30 – 5:30 PM [8:00 – 9:00 AM and 5:00 – 6:00 PM for Gibbsboro Road (CR 686)], was used in the analysis for this report.

Raw traffic volume data, peak hour tabulations, and calculations used to determine the system-wide peak hour volumes can be found in [Appendix A](#).

[Figure 3](#), shown on the following pages, shows the system-wide peak hour turning movement volumes for each intersection.

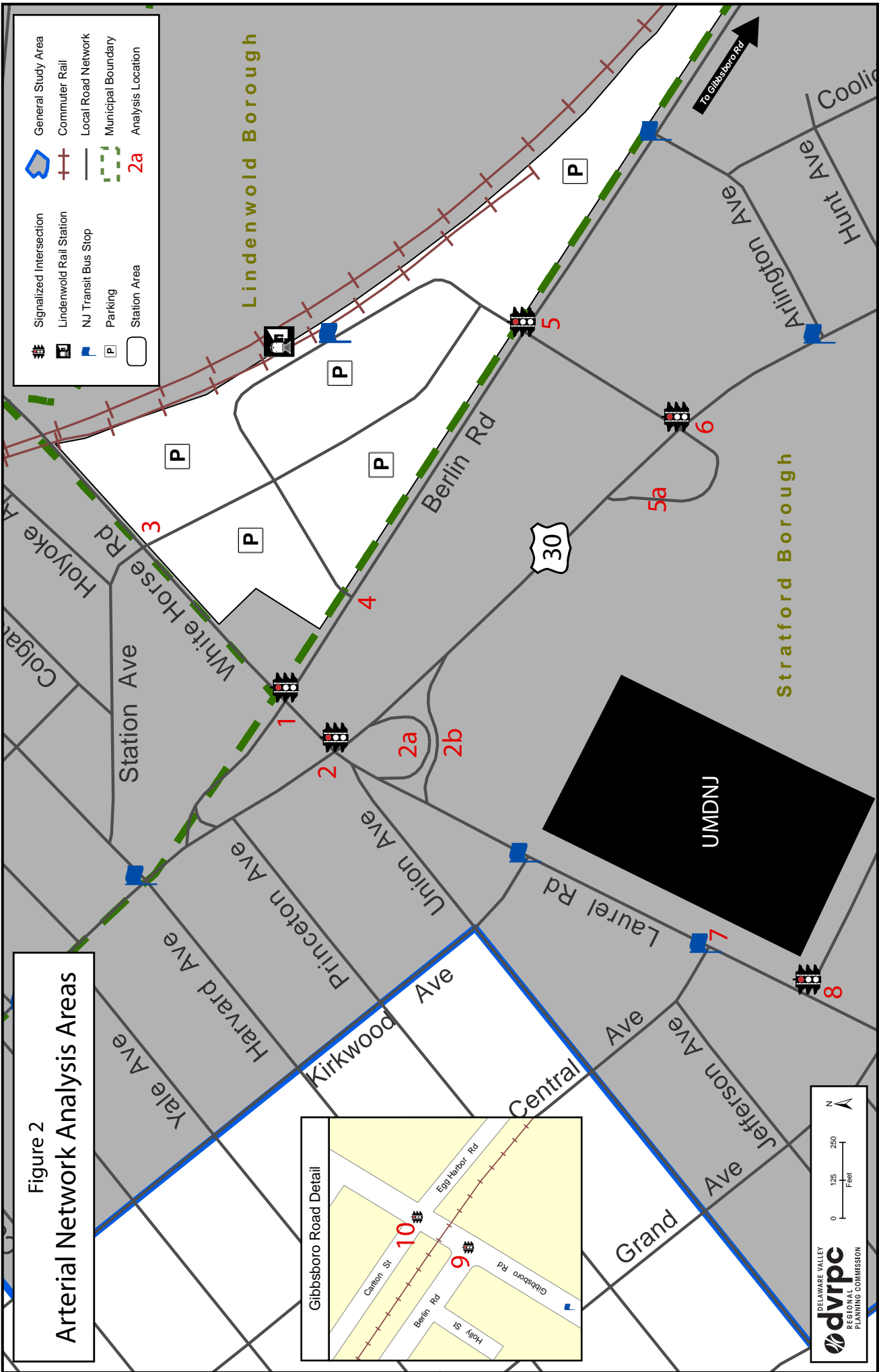


Figure 2
Arterial Network Analysis Areas

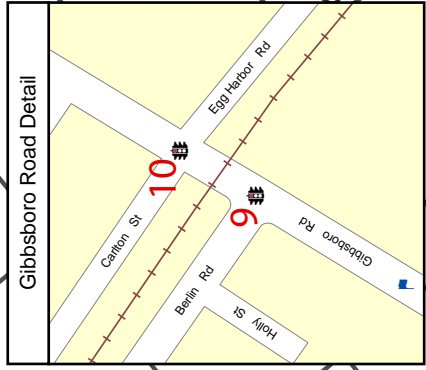


Figure 3: Turning Movement Counts

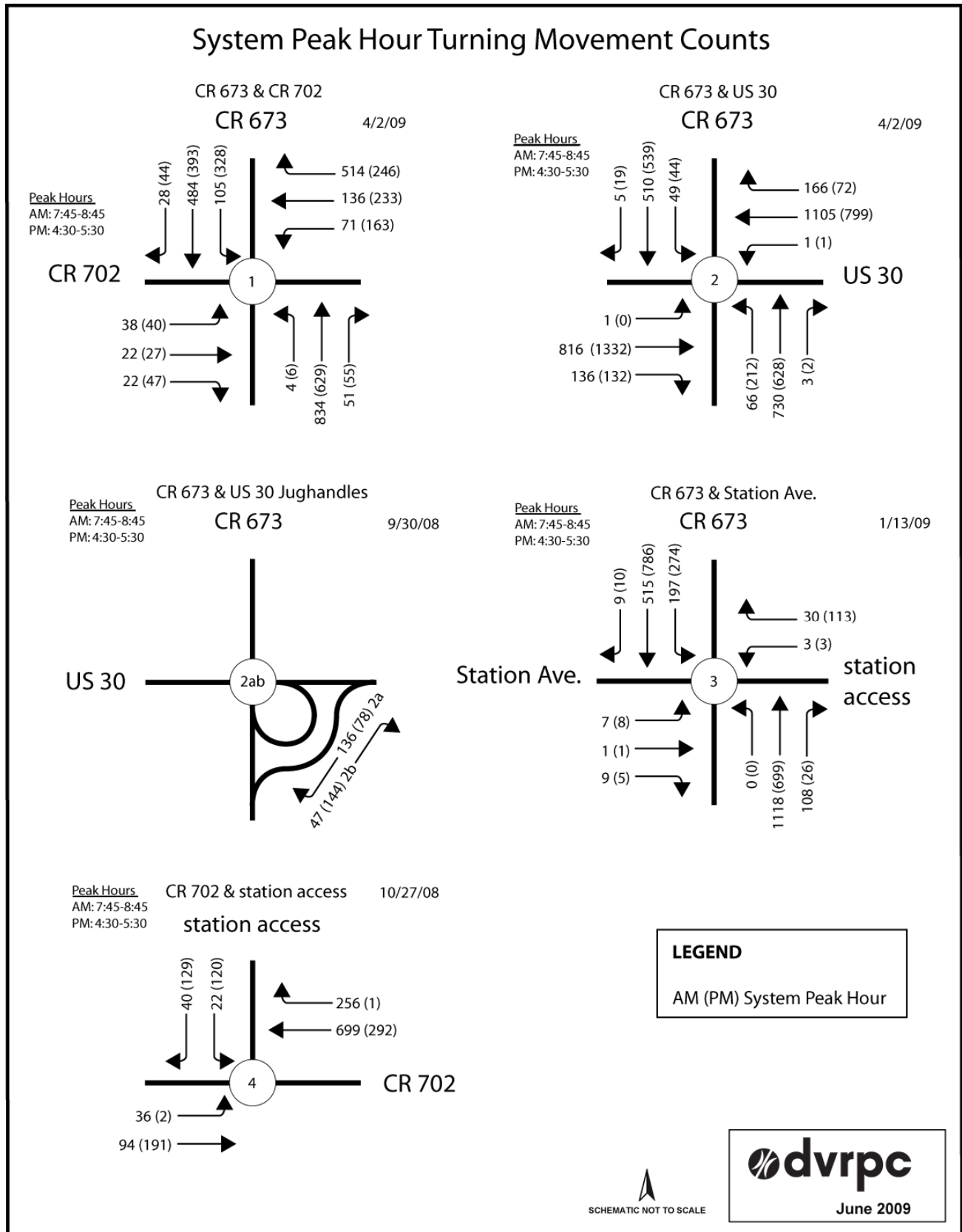


Figure 3: Turning Movement Counts (Continued)

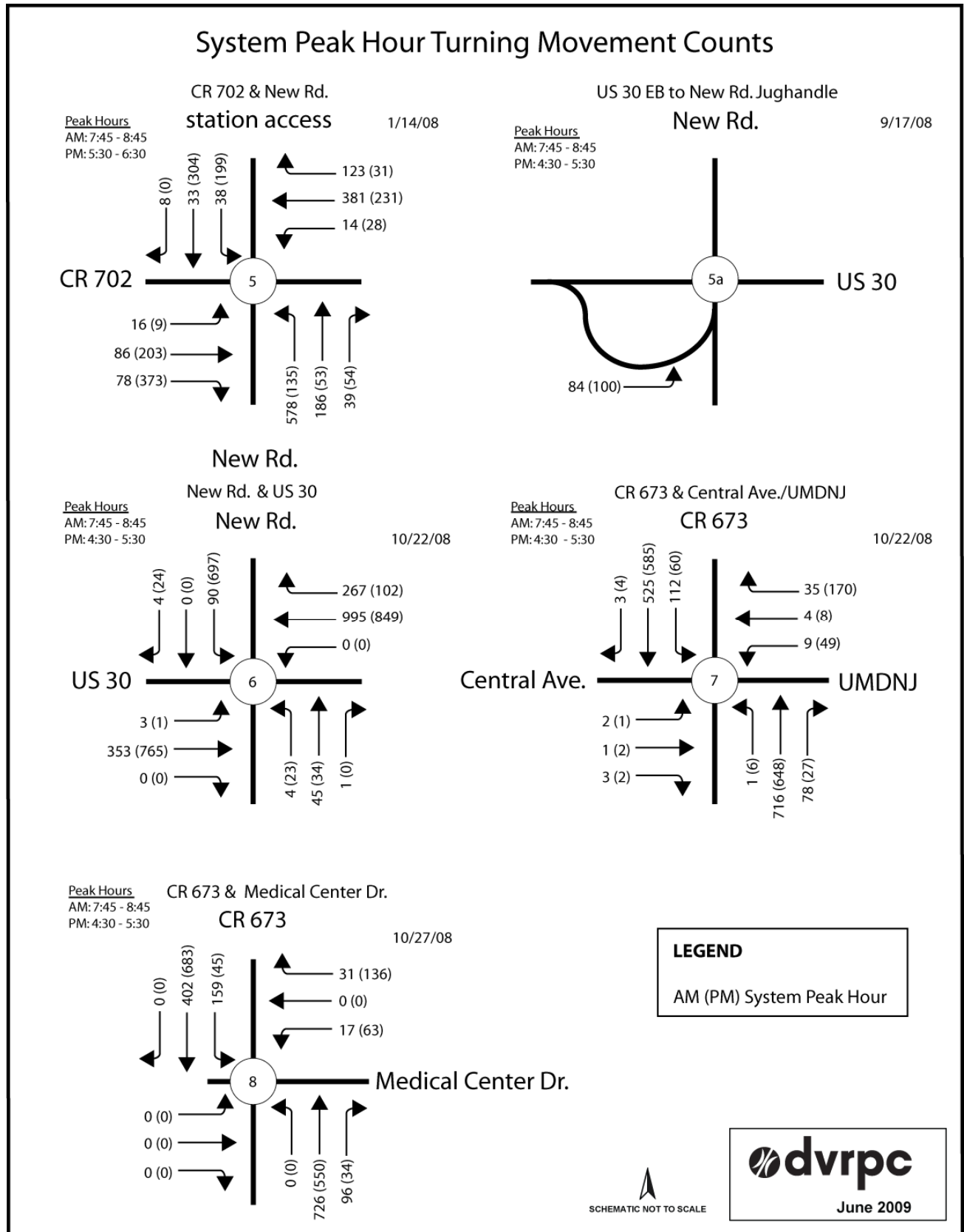
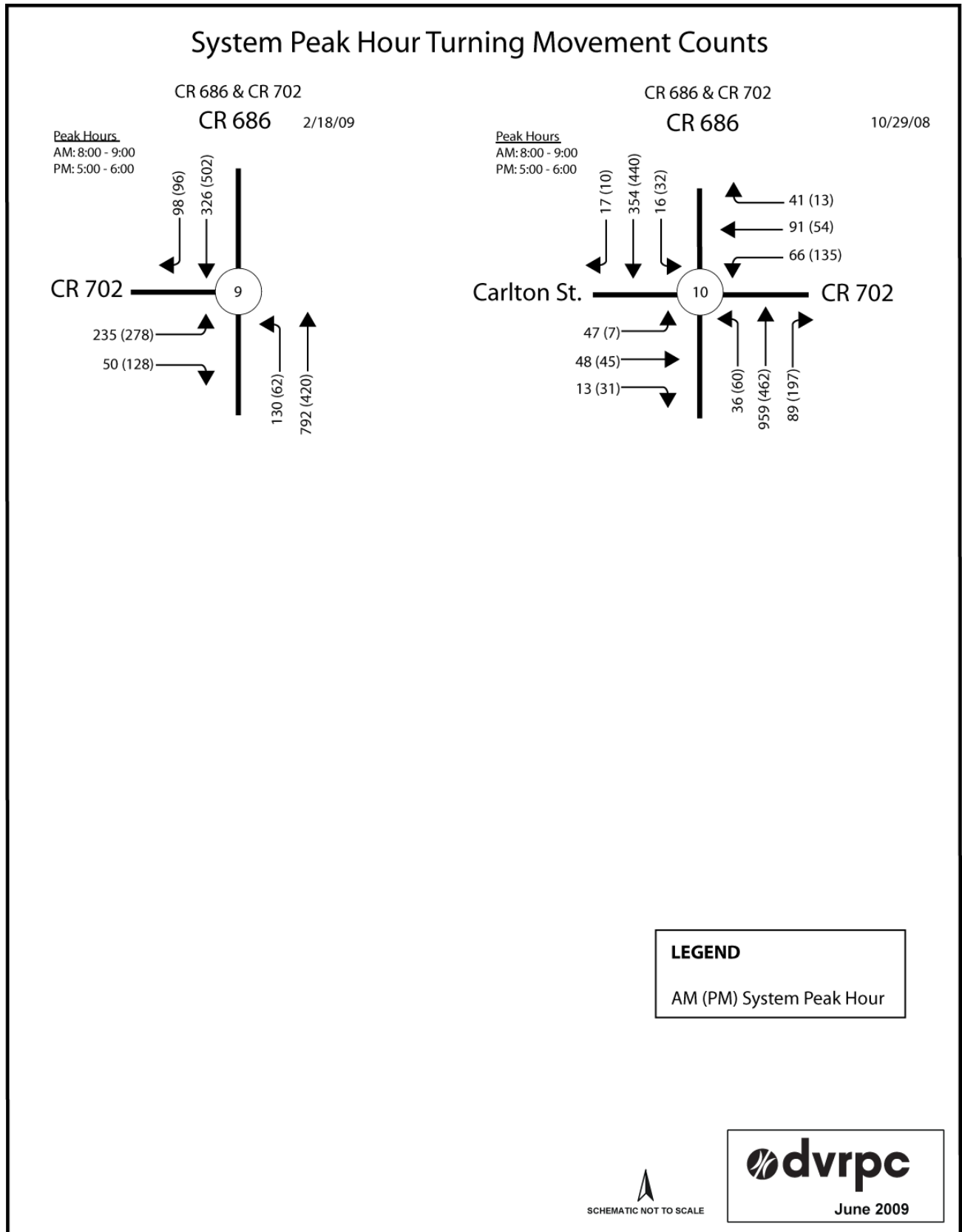


Figure 3: Turning Movement Counts (Continued)



Crash Analysis

DVRPC conducted a crash analysis for the Lindenwold Station area, utilizing data collected by the New Jersey Department of Transportation. An analysis of data over a three-year period (2005 – 2007) reveals 237 reportable crashes in the study area. **Table 1** and **Table 2** outline the major crash locations while **Figure 4** illustrates study area crash numbers along all links and main intersections within the study area. The major crash locations are the top five intersections and top five link locations within the study area. Highway crashes within the study area are concentrated primarily around major intersections, although not necessarily at the intersection, which is defined as between the stop bars. Also, the study area generally has a larger percentage of injury crashes compared to the 2007 crash summary for the entire county road system of New Jersey although no fatal crashes occurred over this period.

Intersections

The definition of an intersection for the analysis is the area between the stop bars as well as the intersection approaches.

Intersection of CR 673 (White Horse Road) and US 30 (White Horse Pike)

This intersection is the site of the most crashes in the study area. Over the three year period, 48 crashes occurred. Forty-two percent of crashes were rear-end crashes, which is considerably above the statewide county road level of only about 30 percent of crashes being rear-ends. Left-turn/U-turn crash levels are also high for this intersection at 21 percent compared to about 6 percent statewide. Finally, 25 crashes, or 52 percent, resulted in injuries at this intersection. For county roads statewide, only 28 percent of crashes result in injury.

Intersection of CR 673 (White Horse Road) and CR 702 (Berlin Road)

This intersection had the second most crashes in the study area over the three year period. Crashes here were distributed between rear-ends, left-turns/U-turns and right-angle crashes. Having 30 percent of left-turn/U-turn crashes places it well above the statewide county road percentage of about 6 percent and is likely a result of drivers making risky movements after experiencing long delays due to congestion.

Intersection of US 30 and CR 702 (Berlin Road)

At this intersection 27 crashes occurred over the three year period, making it the third largest crash cluster in the study area. Likely as a result of the geometry of the intersection and the fact that it is unsignalized, it has 30 percent of right-angle crashes. Thirty-three percent of crashes are same direction rear-end, the highest percentage for this area.

Intersection of Gibbsboro Road and Berlin Road/Egg Harbor Road

Finally, the Gibbsboro intersections had 26 crashes between 2005 and 2007. The largest numbers of crashes are right-angle crashes with nine, or 35 percent of the total crashes for the intersection. This is compared to about 20 percent statewide. Also, 19 percent of crashes were left-turn/U-turn; again well above the statewide percentage.

Intersection of US 30 and New Road

This intersection had 24 crashes total over the three year period. Compared to statewide county road crash data, it has few right-angle crashes, with only eight percent compared to about 20 percent statewide. Seventy-one percent of crashes occurred not at the intersection, meaning not between the stop bars. Finally, two crashes involving pedestrians occurred, accounting for eight percent of crashes at this intersection.

Links

The links analyzed do not include any intersections that fall within the boundaries of the link.

US 30 (MP 11.74 – 11.93) – Between the intersection areas of CR 673 and New Road

This was the site of 13 crashes over the three year period, making it the link with the highest number of crashes in the study area. Forty-six percent of these crashes were rear-end crashes. Also, one crash involving a pedestrian occurred on this segment. For all crashes, 62 percent involved injuries, well above the percentage for county roads statewide.

CR 673 (MP 4.43 – 4.57) – Between the intersection area of Medical Center Drive and Kirkwood Avenue

This link had the second highest number of crashes with ten total. Nine of the ten were rear-end crashes. All ten crashes occurred in the day time.

CR 673 (MP 4.58 – 4.66) – Between the intersection areas of Kirkwood Avenue and US 30

This link had five total crashes over the three years, 40 percent each from rear-end and side-swipe crashes.

CR 673 (MP 4.25 – 4.35) – Between the intersection of Chestnut Avenue and the intersection area of Medical Center Drive

All of the crashes on this link were attributed to the intersection of Chestnut and CR 673. There were four crashes there over the three year period.

CR 702 (MP .16 - .34) – Between the intersection areas of CR 673 and New Road

This link abuts the Lindenwold Station and its parking lots. Over the three year period, there were 4 crashes along this link. All four crashes were injury crashes, including one involving a pedestrian. Half of the crashes occurred during the day and the other half occurred at night.

Table 1: Intersection Crash Analysis

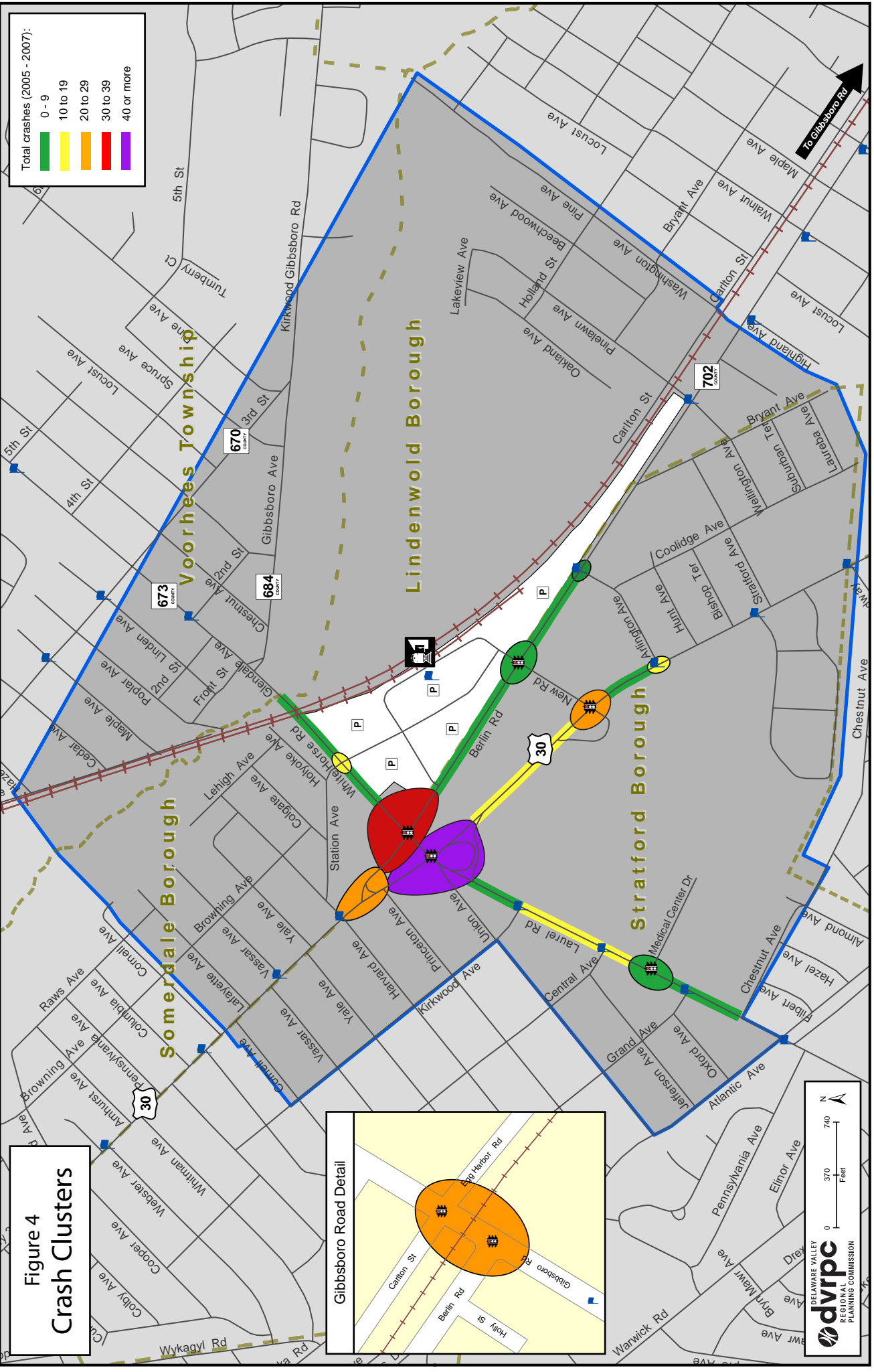
Crash Characteristics	Intersections					Total for All Intersections	Percent of Total
	673/30	672/702	30/Berlin (702)	Gibbsboro /702	30/New Rd		
Rear-End (Same Direction)	20	12	9	7	12	69	35 %
Sideswipe (Same Direction)	5	3	4	0	4	17	9 %
Right-Angle	8	10	8	9	2	51	26 %
Opposite Direction	1	0	0	1		3	2 %
Left-Turn/U-Turn	10	11	3	5	3	40	20 %
Pedestrian	2	0	0	0	2	4	2%
Other	2	1	3	4	1	13	7 %
At Intersection	16	16	12	13	7	90	46 %
Not at Intersection	32	21	15	13	17	107	54 %
Day	29	32	20	17	18	141	72 %
Dusk	0	0	1	0	0	1	1 %
Night	19	5	6	9	6	52	26 %
Dawn	0	0	0	0	0	3	2 %
Fatality	0	0	0	0	0	0	0 %
Injury	25	14	9	11	11	87	44 %
Property	23	23	18	15	13	110	56 %
Dry	34	25	21	22	18	149	76 %
Wet	14	11	5	4	6	46	23 %
Other	0	1	1	0	0	2	1 %
Total:	48	37	27	26	24	197	100 %

Source: DVRPC 2009

Table 2: Link Crash Analysis

Crash Characteristics	Links					Total for All Links	Percent of Total
	30 between 673 and New	673 between Medical Ctr. and Kirkwood	673 between Kirkwood and 30	673 between Chestnut and Medical Ctr.	702 between 673 and New		
Rear-end (Same Direction)	6	9	1	2	0	20	50 %
Sideswipe (Same Direction)	3	0	2	1	0	6	15 %
Right-Angle	1	0	2	1	1	7	18 %
Opposite Direction	0	0	0	0	0	0	0 %
Left-Turn/U-Turn	2	1	0	0	1	4	10 %
Pedestrian	1	0	0	0	1	2	5 %
Other	0	0	5	0	1	1	0 %
At Intersection	2	2	1	4	2	12	30 %
Not at Intersection	11	8	4	0	2	28	70 %
Day	7	10	5	2	2	29	73 %
Dusk	1	0	0	1	0	2	5 %
Night	5	0	0	1	2	9	23 %
Fatality	0	0	0	0	0	0	0 %
Injury	8	5	2	2	0	24	60 %
Property	5	5	3	2	4	16	40 %
Dry	12	9	4	4	4	37	93 %
Wet	1	1	1	0	0	3	8 %
Other	0	0	0	0	0	0	0 %
Total:	13	10	5	4	4	40	100 %

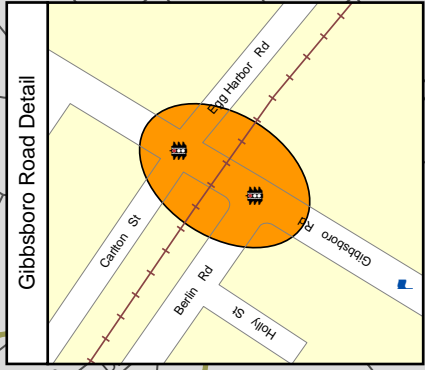
Source: DVRPC 2009



Total crashes (2005 - 2007):

- 0 - 9
- 10 to 19
- 20 to 29
- 30 to 39
- 40 or more

Figure 4
Crash Clusters



Level of Service

The existing conditions of the study area were analyzed by DVRPC in order to evaluate the current traffic operations. This evaluation was conducted using the Level of Service (LOS) procedure. LOS analysis is a qualitative measure of operational conditions within a traffic stream. There are six defined levels of service, A – F, which describe operations from best to worst for the facility under analysis. These levels are defined in terms of parameters perceived by drivers and a range of operating conditions.

Intersection LOS

LOS of intersections is based on the control delay per vehicle imposed by the intersection. **Table 3** shows the criteria for the LOS at signalized and unsignalized intersections. Although the criteria measured for both types of intersections is the control delay per vehicle, the value of the criteria vary due to the fact that drivers perceive delay differently at signalized intersections than unsignalized or stop controlled intersections. A driver expects a different level of performance for a signalized intersection, the expectation is that signalized intersections carry a higher volume of vehicles and therefore a higher value of delay is considered acceptable.

Table 3: Level of Service Criteria for Intersections

Signalized Intersection LOS	Control Delay Seconds / vehicle	Unsignalized Intersection LOS	Control Delay Seconds / vehicle
A	≤ 10	A	0-10
B	>10 - 20	B	>10 - 15
C	>20 - 35	C	>15 - 25
D	>35 - 55	D	>25 - 35
E	>55 - 80	E	>35 - 50
F	>80	F	>50

Source: Highway Capacity Manual 2000

In order to fully understand the operational conditions within the study area, the AM and PM peak period LOS was evaluated as a system of all intersections within the area. As discussed previously, peak hour turning movement counts were compiled in order to determine the peak hour of the system as a whole. This system wide peak hour was used in the analysis (the Gibbsboro Road intersections were analyzed as a separate system than the other intersections due to their distance from the station). This system peak hour volume data, as well as traffic signal information was analyzed using Synchro Software to determine the LOS.



Backup along southbound CR 673 approaching US 30 during PM peak hour

Ten intersections in the study area were analyzed. The overall LOS under existing conditions was determined for the seven signalized intersections within the study area. The results of this analysis are shown in [Table 4](#).

Table 4: Overall Existing Level of Service

Signalized Intersection	AM System Peak		PM System Peak	
	Delay (sec.)	LOS	Delay (sec.)	LOS
CR 673 & CR 702	37	D	217	F
CR 673 & US 30	22	C	26	C
CR 702 & New Road	21	C	22	C
New Road & US 30	10	A	45	D
CR 673 & Medical Center Drive	374	F	412	F
CR 686 & CR 702	32	C	22	C
CR 686 & CR 702	28	C	30	C

Source: DVRPC 2009

Additionally, analysis was broken down by approach of each intersection in order to determine which approaches were suffering the most delay. Five of the intersections were found to be experiencing delays of 80 seconds or more (LOS F) on one or more approaches. These intersections include:

- ◆ CR 673 at Berlin Road – Southbound through/right approach toward US 30 in the AM and PM peak hours; westbound approaches in the PM peak hour;
- ◆ CR 673 at Station Avenue – southbound approaches toward Berlin Road during AM and PM peak hours, as well as the westbound left-turn and eastbound side-street approaches in both the AM and PM peak hours;
- ◆ US 30 at New Road – Southbound left-turn toward Stratford Avenue and right-turn toward Laurel Road in the PM peak hour;
- ◆ CR 673 at Medical Center Drive – Northbound approaches toward Berlin Road during both the AM and PM peak hours; and

- ◆ CR 686 at CR 702 - Northbound approaches toward Gibbsboro in the AM peak and Southbound approaches toward US 30 in the PM peak hour.

Analysis and Recommended Improvements

The LOS for existing conditions was compared against potential alternative improvements to determine the best recommendation for each intersection. The Synchro Software's micro simulation model SimTraffic was used in the analysis of recommendations. Traffic signal timing and geometric information was input into the Synchro software and SimTraffic simulations were run using both existing and possible alternative scenarios. The average delay over several simulation runs was used for the LOS determination of each scenario. These results were compared in order to determine which alternative recommendation would have the greatest reduction in delay for the intersection. [Appendix B](#) contains LOS tables listing the results of this analysis for each intersection.

Location #1: CR 673 (White Horse Road) at CR 702 (Berlin Road)

Location #2: CR 673 (White Horse Road) at US 30 (White Horse Pike)

These two intersections are closely spaced and operate on the US 30 coordinated signal timing plan. Therefore, the east/west movements receive a large proportion of the green time at each intersection. Because the traffic signals at these intersections are coordinated, the controller at the Berlin Road intersection shows a yellow indication to the east/west movements of Berlin Road at the same time as the controller at US 30 shows a yellow indication to the east/west movements of US 30.

Observations made during field visits showed that vehicles making left-turns from westbound Berlin Road to southbound CR 673 fill the storage area between US 30 and Berlin Road during most cycles. This prevents through vehicles from passing through the intersection until the signal at US 30 turns green and the queue clears. The resulting backup of southbound vehicles was observed to extend past the bridge over the railroad by 4:15 PM. Rear-end accidents occurring at this location are likely due to the fact that the southbound through/right lane backs up to the railroad overpass even during mid-day traffic conditions.

The study team witnessed vehicles traveling southbound on CR 673 turning left onto Berlin Road in front of northbound vehicles during the permitted movement. This indicates that the drivers are not expecting the eventual lagging protected movement. The protected left-turn movement indication (green left-turn arrow) is shown to drivers after the completion of the north/south traffic indication and the northbound only indication. Additionally, motorists turning left onto Berlin Road from southbound CR 673 must maneuver a grade change, thus must make this turn at a slower speed.

The *Route 451* bus turns right from westbound Berlin Road to northbound CR 673 in front of the Pufferbilly Restaurant. This is a very tight turn with only ten-foot lanes, and the bus has difficulty making the turn when there is a vehicle in the southbound left-turn lane.

Potential alternatives considered for this intersection included the addition of a southbound right-turn lane at Berlin Road and restriction of southbound turns at the US 30 intersection. All of the alternative recommendations assumed that the preferred improvements discussed for the Station Avenue intersection (location #3) were implemented. Restricting all southbound turns at the US 30 intersection allows both southbound lanes to be used by through traffic. Based on the LOS analysis of the potential scenarios, the study team is recommending that the southbound right-turn lane be constructed and southbound turns be restricted at US 30. Motorists are currently using the Berlin Road jughandle to westbound US 30, and can access eastbound US 30 by turning left at the Berlin Road intersection then right at New Road and finally left onto eastbound

US 30 from southbound New Road. The addition of the left-turning traffic headed to eastbound US 30 does not adversely impact the operation of either of the New Road traffic signals.

In order to accommodate two southbound through lanes at the US 30 intersection, an additional southbound lane will need to be constructed along Laurel Road. A length of 300 feet is adequate to allow additional capacity at the signal and will only reduce the width of the existing median between Laurel Road and Union Avenue. These improvements will increase the capacity and reduce the overall delay at the CR 673 intersections.

The recommended improvements for these intersections are illustrated on [Figure 5](#).

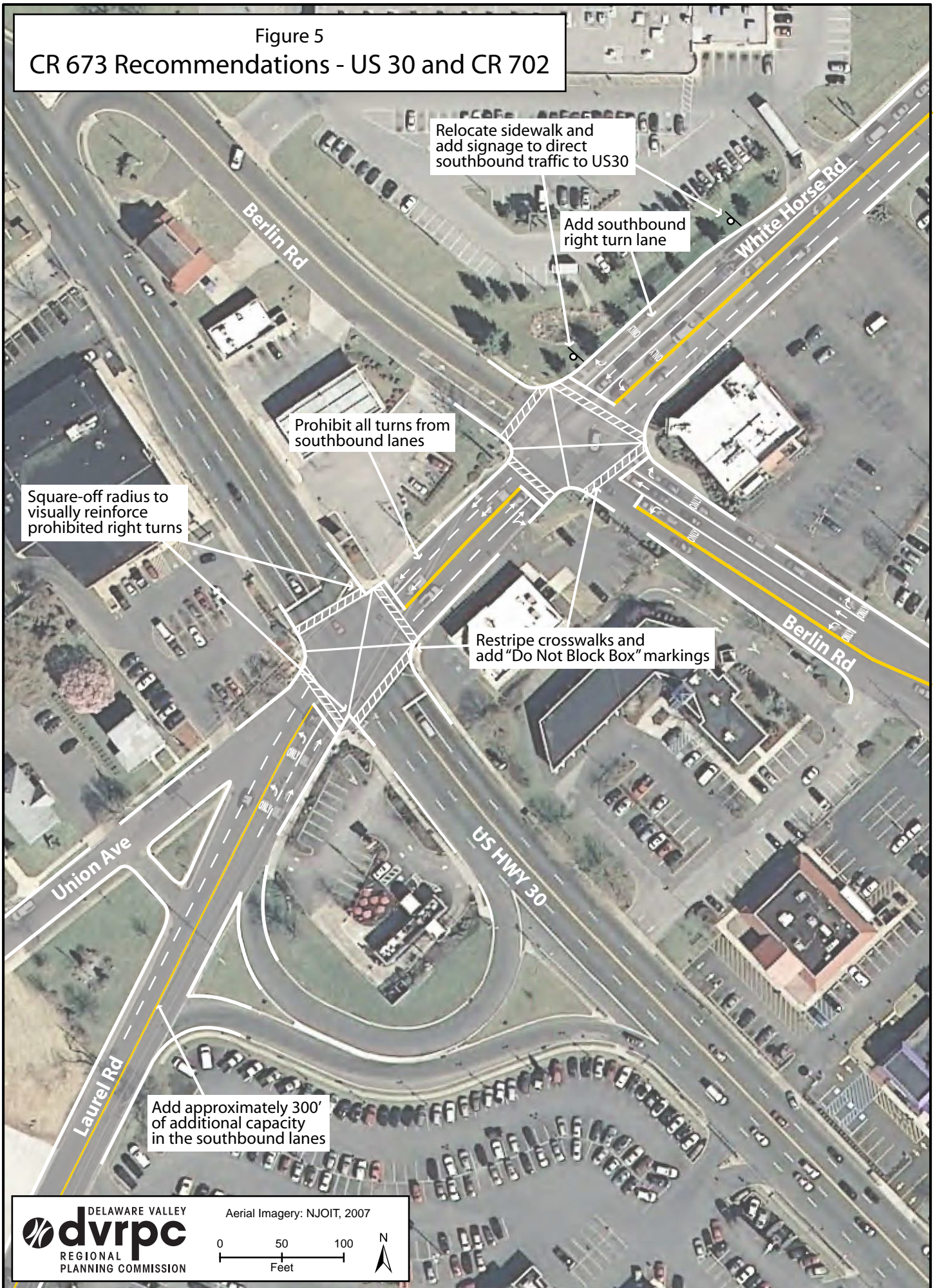
◆ Immediate Recommendations

- ◆ Restripe crosswalk markings at the intersections to make crossings more visible.
- ◆ Install curb ramps and pedestrian signals with countdown timers.
- ◆ Stripe the intersection with 'Do Not Block the Box' markings to prevent motorists from blocking the intersection.

◆ Long-Term Recommendations

- ◆ Add a southbound right-turn lane at Berlin Road.
- ◆ Install signage at the Berlin Road intersection to direct southbound CR 673 traffic to US 30. Also install signage at New Road to direct eastbound traffic to US 30.
- ◆ Install "No Turns" signage and modify curb radii to visually prohibit turns at the US 30 intersection.
- ◆ Add capacity along southbound Laurel Road by adding another southbound lane that is approximately 300 feet long.
- ◆ The Pufferbelly Restaurant site at the northeast corner of the intersection has preliminary approval for redevelopment as a Walgreen's Pharmacy. The developer is being required to provide sidewalks along the frontage. The redevelopment of this site allows for the potential modification of the intersection radius to accommodate buses turning right onto northbound CR 673.

Figure 5
CR 673 Recommendations - US 30 and CR 702



Location #3: CR 673 at Station Avenue

This unsignalized intersection is the only access drive into the Lindenwold station from CR 673. The CR 673 northbound curb lane ends just before the station entrance. Only station signing and a utility pole would need to be moved to extend this lane to the station entrance. PATCO and Camden County have discussed reconfiguring this lane drop, and PATCO is planning to extend the curb lane to the station drive as part of an upcoming pavement rehabilitation project.

The bridge over the rail lines to the north of the intersection has sidewalk only on the station side of the street; signage prohibits pedestrians on the opposite side of the roadway.



Restricted sight distance at station access drive along CR 673

The southbound left-turn movement into the station is a heavy movement, accounting for more than 25 percent of the approach traffic. This may be because of cut-through traffic attempting to avoid the signals along CR 673 at Berlin Road and US 30. Delaware River Port Authority (DRPA) Police have begun ticketing drivers that use the station area as a cut-through. The left-turn onto CR 673 from the station access drive is difficult to perform in the PM peak hour due to the backup in the southbound direction.

A traffic signal warrant analysis was conducted at this location based on current traffic volumes. Warrant #3, the Peak Hour Warrant, is the only signal warrant currently met at this location. The traffic volumes between the hours of 5:00 and 7:00 PM are such that a traffic signal is warranted only during these peak hours. The installation of a traffic signal at this location will require signage to warn drivers headed southbound on CR 673 of the traffic signal because of the sight distance restriction caused by the railroad overpass. It is recommended that "Signal Ahead" signs or electronic "Red Signal Ahead" signs be installed as a warning to drivers of possible stopped traffic ahead. Data used for the signal warrant analysis is located in [Appendix A](#).

The recommended improvements for this intersection are illustrated on [Figure 6](#).

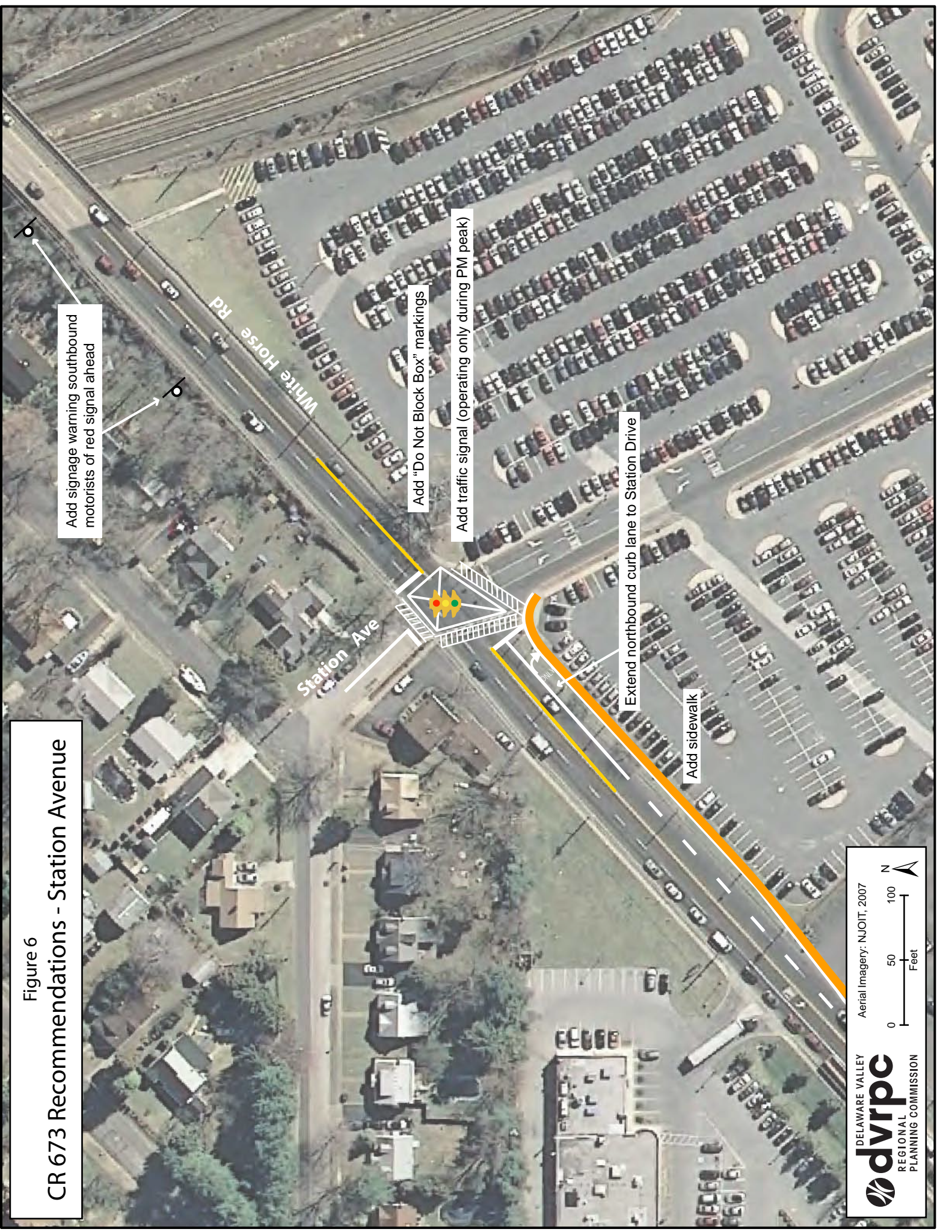
◆ Immediate Recommendations

- ◆ DRPA Police should continue ticketing drivers that cut-through the station. It is also recommended that raised intersections and/or crosswalks be installed along the station's internal roadways to further deter cut-through traffic.
- ◆ Stripe the intersection with 'Do Not Block the Box' markings to prevent motorists from blocking the intersection.
- ◆ Restripe crosswalk markings at the intersection to make crossings more visible.

◆ Long-Term Recommendations

- ◆ Extend the northbound curb lane to the station access drive.
- ◆ Install a traffic signal at the Station Avenue intersection along CR 673. Pedestrian signals with countdown timers, as well as curb ramps should be installed as part of the traffic signal installation.

Figure 6
CR 673 Recommendations - Station Avenue



Location #4: CR 702 (Berlin Road) at station access drive

This unsignalized intersection is one of the Lindenwold station's two access drives onto CR 702. Analysis by the study team indicates that the intersection approaches are operating at an LOS A or B in the AM peak hour. In the PM peak hour, the southbound left-turn and westbound through approaches experience delays of LOS D and E due to the CR 673 traffic signals.

It is recommended that a crosswalk be striped across the station access drive in order to provide a pedestrian pathway from the station area toward the intersection of CR 702 and CR 673. This intersection is the preferred location for pedestrians to cross CR 702. The combination of the Lindenwold streetscape project and the addition of crosswalk striping at this location should make pedestrians feel more comfortable walking along Berlin Road rather than jaywalking to the businesses along the south side of the roadway.

◆ Immediate Recommendations

- ◆ Stripe crosswalk markings across the station access drive at the intersection to make the crossing visible.

Location #5: CR 702 (Berlin Road) at New Road

This signalized location is the main entrance and exit to the Lindenwold station. Analysis by the study team indicates that the intersection is operating at a LOS C overall in both the AM and PM peak hour. In the PM peak hour, the southbound through approach and westbound right-turn approach experience slightly higher delay with LOS D. These levels of delay are well within the preferred range and signal modifications are not necessary.

The intersection currently has pedestrian signals and curb ramps, but it is recommended that the pedestrian signals be upgraded to countdown signals as part of the overall effort to make the station area more walkable.

◆ Immediate Recommendations

- ◆ Restripe crosswalk markings at the intersection to make crossings more visible.
- ◆ Install pedestrian signals with countdown timers.

Location #6: US 30 at New Road

This complex intersection links the Lindenwold station with US 30. The existing intersection includes a jughandle from eastbound US 30, which merges with the old Bradlee's site access drive to create the southern leg of the intersection. There is a bulb-out located at the eastern corner of the intersection, in front of CVS Pharmacy. As a result, the right-turn movement from westbound US 30 to northbound New Road is restricted making it especially difficult for buses to maneuver.

There are numerous business driveways along the section of US 30 between CR 673 and New Road. This location was identified as a crash cluster link during analysis by the study team. Access management techniques, such as consolidation of driveways and installation of Right-In Right-Out Only islands, should be applied as possible at these driveways. These measures should reduce the number of angle and left-turn crashes occurring at this location.

Additionally, this intersection will be impacted by several projects currently in the planning phase. The Borough of Stratford has redevelopment plans for the old Bradlee's Site that will impact traffic at the intersection. UMDNJ has a Master Plan that includes a connector roadway between the campus and US 30 through what was a car dealership. At its intersection with US 30, the permitted movements will be right-in, right-out only.

This connector roadway will link the campus with the Lindenwold station. The study team recommends pedestrian oriented improvements along New Road between Berlin Road and US 30. These improvements and the proposed connector will make the transit options available at the station more appealing to UMDNJ faculty and students.

The study team also met with representatives from Stratford to discuss their redevelopment plans and then created two development scenarios that were used to analyze potential recommendations at the intersection. The development scenarios are discussed in detail in [Appendix C](#).

Several potential alternatives were considered for this intersection including both removal and relocation of the New Road jughandle. Based on the LOS analysis of the potential scenarios, the study team is recommending that the jughandle be removed, left-turn lanes be added along US 30, and a southbound through/right-turn lane be added along New Road. These improvements will reduce the overall delay at the intersection and should accommodate additional trips generated by redevelopment in the area. Furthermore, the additional traffic using the intersection to access US 30 eastbound due of the recommended prohibition of turns at the CR 673 at US 30 intersection, was found to have very minimal impact on the operation of this intersection.

The recommended improvements for this intersection are illustrated on [Figure 7](#).

◆ Immediate Recommendations

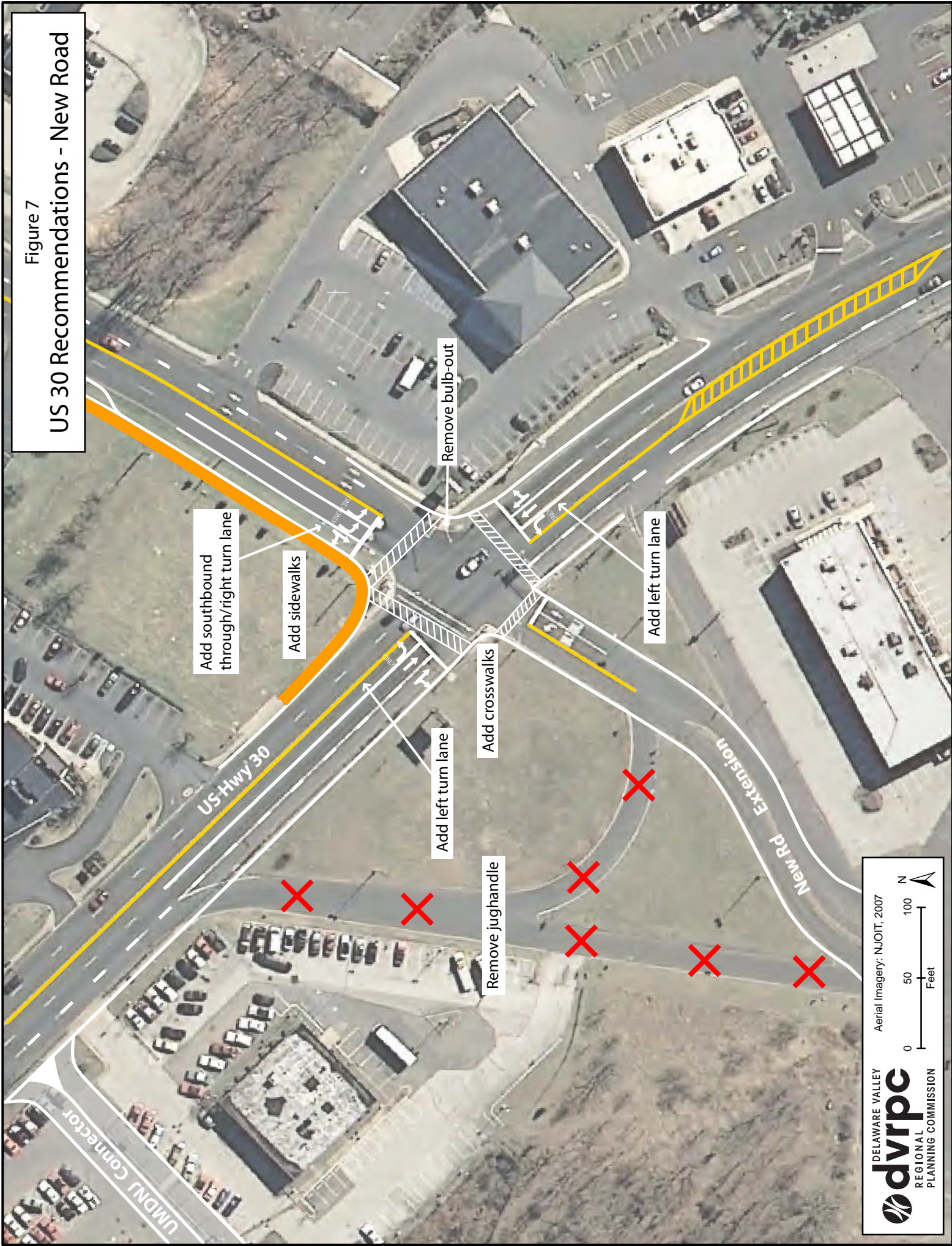
- ◆ Stripe crosswalk markings at the intersection to make crossings more visible.
- ◆ Install pedestrian signals with countdown timers.
- ◆ Install sidewalk along New Road between Berlin Road and US 30 to complete the pedestrian pathway between the UMDNJ connector roadway and the station.

◆ Long-Term Recommendations

- ◆ The jughandle from eastbound US 30 to northbound New Road should be removed.
- ◆ Left-turn lanes should be installed along eastbound and westbound US 30.
- ◆ A through/right lane should be added along southbound New Road.
- ◆ The bulb-out should be removed in order to allow for a greater turning radius at the eastern corner of the intersection.
- ◆ Access management techniques should be applied as possible at the business drives throughout the section of US 30 between CR 673 and New Road.

Figure 7

US 30 Recommendations - New Road



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Location #7: CR 673 at Central Avenue

This intersection is located at one of the two entrances into the UMDNJ campus from CR 673. This unsignalized intersection serves as the entrance to the patient complex. The university has an officer directing traffic in the AM and PM peak periods at this intersection to assist motorists in entering the CR 673 traffic stream. The crashes that are occurring along this section of CR 673 are typical for areas of congestion and no countermeasures are being recommended. The study team is recommending only that pavement markings be restriped at this intersection.

◆ Immediate Recommendations

- ◆ Restripe crosswalk markings at the intersection to make them more visible.

Location #8: CR 673 at Medical Center Drive

This signalized intersection is the second entrance to the UMDNJ campus. The four-leg intersection consists of the two CR 673 approaches, as well as the Medical Center Drive approach and a medical complex drive as the fourth approach. This intersection was included in the *CR 673 Arterial Progression Study*. The recommendations from this study moved into the preliminary engineering phase, but were not implemented. It was determined that advancing the project to the design phase would result in minimal improvement due to the fact that the US 30 signal, a pivotal signal in the corridor, would not be modified as part of the project.

UMDNJ is proposing an additional entrance into the campus. This connector roadway will connect the campus parking area with US 30 at a location west of the New Road intersection. The drive will be restricted access and will be configured as a right-in-right-out (RIRO). This connector roadway will not directly connect with Medical Center Drive in an effort to prevent cut-through traffic in the campus area. This additional entrance will alleviate some of the campus traffic along CR 673 by allowing students and faculty to use US 30 as an alternate route.

◆ Immediate Recommendations

- ◆ Upgrade to pedestrian signals with countdown timers.
- ◆ Restripe crosswalk markings at the intersection to make them more prominent.

◆ Long-Term Recommendations

- ◆ The study team recommends that the UMDNJ connector be built as proposed, with pedestrian accommodations such as pedestrian scale lighting and streetscaping.

Location #9/#10: CR 686 (Gibbsboro Road) at CR 702 (Berlin Road/Egg Harbor Road)

These two closely spaced intersections lie on either side of the NJ Transit Atlantic City rail line overpass. They currently experience a great deal of delay in the peak hours. In the AM peak hour, the northbound traffic along CR 686 is known to queue as far south as the White Horse Pike intersection. In the PM peak hour it is the southbound traffic that experiences large queues. The semi-actuated intersections, which are spaced less than 200 feet apart, are controlled by a single controller.

Several alternative recommendations were analyzed for these intersections. Alternative one maintains the existing geometry at the intersections but optimized the traffic signal timing. Other alternatives looked at increasing capacity by modifying the northbound left-turn lane at Berlin Road to a combination through/left lane and adding an additional lane north of the Egg Harbor Road intersection.



Northern approach of the Egg Harbor Road intersection

Due to the geographic limitations of the area, the logical extension of the additional lane terminates at Burrows Lane. However, due to the heavy through movements experienced along Gibbsboro Road, the addition of capacity has limited or no impact on the LOS. None of the time savings, in terms of delay, were determined to be worth the cost of construction. Therefore, only minor traffic control improvements are being recommended at these intersections.

◆ Immediate Recommendations

- ◆ Restripe crosswalk markings at the intersections to make them more prominent.
- ◆ Upgrade to pedestrian signals with countdown timers.



Eastern approach of the Berlin Road intersection

Transit Services

Existing Transit Service

In addition to the PATCO high speed line to Philadelphia, the Lindenwold station is served by NJ Transit bus and the Atlantic City Rail line. The NJ Transit bus routes that lie within the study area all make stops at the Lindenwold Station.

Passenger Rail Service

PATCO Speedline

The Port Authority Transit Corporation (PATCO) operates the Speedline from Center City Philadelphia to New Jersey and terminates at the Lindenwold Station. Trains run 24 hours a day with the shortest headways being 4 – 12 minutes during weekday rush periods and as long as 45 minutes during weekday nights. Average headways are 15 – 20 minutes. A one-way trip from Lindenwold to Philadelphia on PATCO costs \$2.70. The average time from Philadelphia's 15th/16th Street Station to Lindenwold is about 26 minutes.

New Jersey Transit Atlantic City Rail Line

The Atlantic City Line connects Philadelphia and Atlantic City while passing through major transit points including Cherry Hill and Lindenwold. Running to Atlantic City, service is offered beginning at 5:30 AM on weekdays and 6:00 AM on the weekends with service ending at 2:30 AM. Headways range from 45 minutes to 2 hours. A one way ticket from Lindenwold to either endpoint is about \$4. This trip ranges from 60 to 90 minutes.

Bus Service

Four New Jersey Transit bus lines service the Lindenwold Station stop located outside the west door of the station building. These routes are the 403, 451, 459, and 554. **Figure 8** illustrates the NJ Transit routes.

Route 403 connects Philadelphia and Turnersville, running along Haddon Avenue and White Horse Pike. Weekday service is offered from 6:46 AM until 2:31 AM to Turnersville and from 4:43 AM until 12:33 AM to Camden. For most of the day, headways range from 15 – 20 minutes. Before 8:00 AM and after 8:00 PM, headways are 45 – 50 minutes long. On the weekends, longer headways are adopted, between 45 – 60 minutes. Traveling between Lindenwold and Philadelphia by bus costs \$3.90 for a one-way trip and is approximately 1 hour and 25 minutes.

	Signalized Intersection
	Lindenwold Rail Station
	NJ Transit Bus Stop
	Parking
	Commuter Rail
	Route 403
	Route 403 Limited
	Route 451
	Route 459
	Route 554

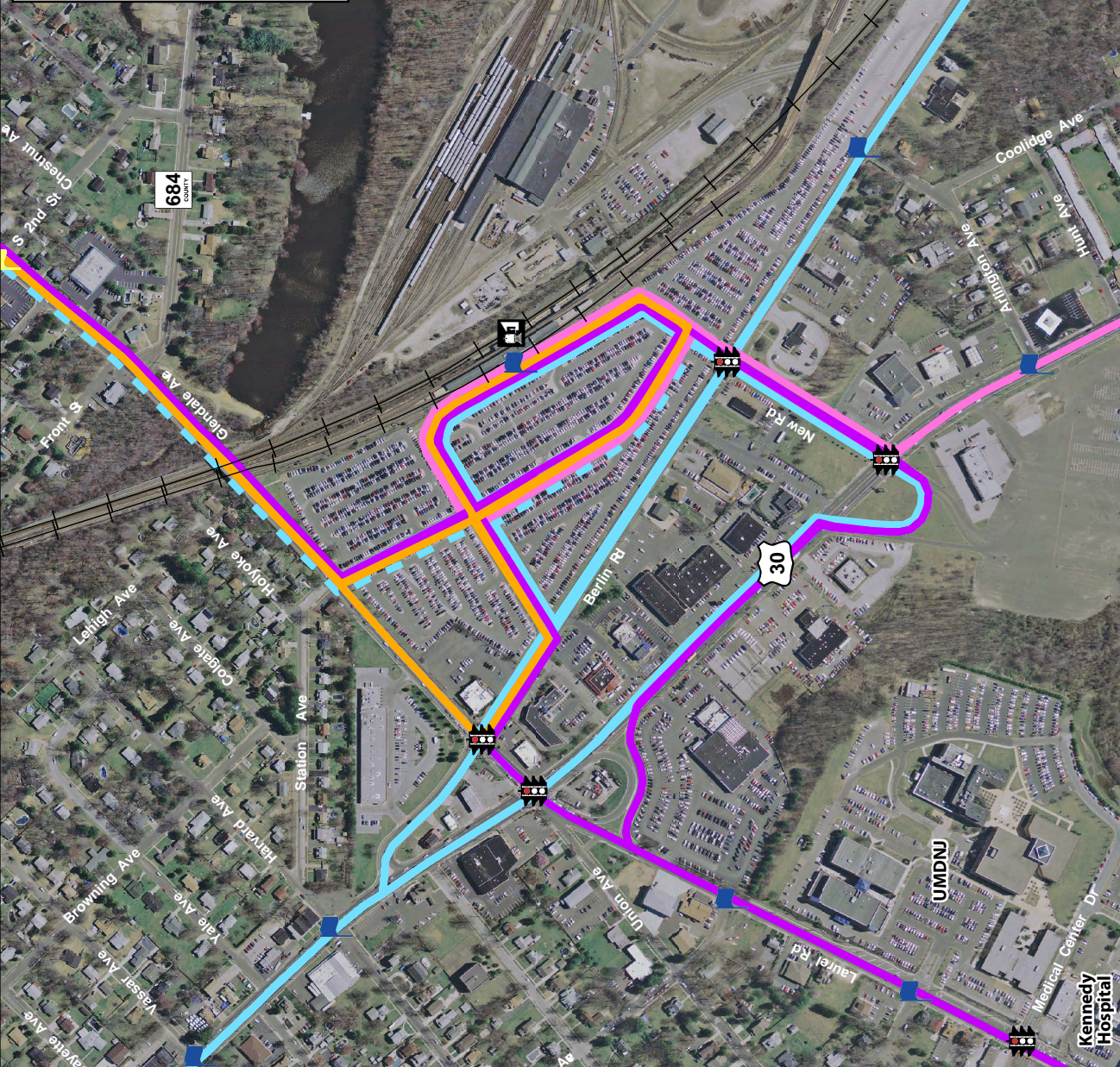


Figure 8
NJ Transit Bus Routes



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Aerial Imagery: DVRPC, 2005

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Route 451 runs from Camden to Lindenwold along Haddon Avenue and Haddonfield Berlin Road with weekday service only. Service begins at 5:47 AM and continues until 6:47 PM to Camden and from 7:17 AM until 7:22 PM to Lindenwold. Headways are 60 minutes long. The trip from Camden to Lindenwold costs \$2.30 each way and is approximately 1 hour and 20 minutes.

Route 459 connects Voorhees Town Center and the Avandale Park and Ride in Winslow Township. It runs through Lindenwold and Gloucester. During the week, service is offered from 6:19 AM until 10:54 PM to Voorhees Town Center and from 7:09 AM until 11:34 PM to Avandale. Headways during the morning rush are approximately 30 minutes and change to 60 minutes during the rest of the day. Service is abbreviated on the weekends with 1 hour and 15 minute headways, later starts and earlier finishes. The trip between Avandale and Voorhees Town Center costs \$4.35 for a one-way trip and is approximately 1 hour and 5 minutes.

Route 554 runs along US 30 (White Horse Pike) from Lindenwold to Atlantic City. This route is operated 24 hours of the day. During the week, 30 minute headways are offered during morning and afternoon rush periods. Otherwise, buses run every 60 minutes. The same service is offered on the weekends without shorter afternoon headways. The trip between Lindenwold and Atlantic City costs \$5.90 each way and is about 1 hour and 40 minutes long.

Other Services

Taxicabs

Taxicabs queue in a staging area outside the east door of the Lindenwold Station building. Taxicabs were observed to be waiting and available to passengers exiting the station building during all visits to the station within normal operating hours. Seven spaces have been designated in this location for taxicabs waiting for passengers. Signage instructs drivers to park in these spaces and limit themselves to seven at a time to accomplish this. Three different cab companies service the station including Millennium, Road Runner Cab, and Lindenwold Cab.



Taxicab staging area

Routing

The Station Avenue entrance to the station is used by buses during PM Peak Hour because of delays to the schedule by using the signal at Berlin to access the New Road entrance. The installation of a traffic signal here will assist buses entering/exiting the station at this location.

Buses were observed dwelling along Berlin Road. The location of this dwell could be relocated to DRPA/PATCO property in the farthest east parking area in order to remove the buses from the shoulder area along Berlin Road.

Transit recommendations include the following:

◆ Immediate Recommendations

- ◆ Remove the two “Speed Hump” signs in front of the station. There are no speed humps in these locations.
- ◆ Relocate the bus dwell area to the station property.

◆ Long-Term Recommendations

- ◆ Install a covered walkway or canopy from the station building to the bus stop area. This will increase the sheltered waiting area and provide a covered walkway to the station building. An additional advantage will be a covered bicycle rack area on the west side of the station.



NJ Transit bus dwelling along CR 702

Bicycle and Pedestrian Facilities

Safety and Accessibility

Americans with Disabilities Act (ADA) compliant facilities are provided within the PATCO station building. However, the building is ADA accessible through the west end of the building only. The handicapped parking area crosswalk leads to the center door, which then connects to the ramp inside the station building. There is an elevator that leads to the platform once through the fare control machines.

The Atlantic City rail line is accessible two ways, through the PATCO station building or through a tunnel located just east of the station building. NJ Transit ticket machines are located in a shelter located on the platform for the Atlantic City rail line along the rear of the PATCO station. The pedestrian tunnel at the east end of the platform provides additional sheltered waiting area.



Lindenwold Platform on the Atlantic City Rail Line

There is one bus stop shelter at the station, located at the west end of the station building. During several visits to the station, the number of people waiting at the stop was more than could be accommodated within the existing shelter or on the adjacent benches. During times of inclement weather, a large number of people were observed waiting inside the station building. *The Increasing Intermodal Access to Transit* study recommended that pedestrian striping and signage be added within the station parking area to enhance safety for pedestrians when vehicles are entering and exiting the lots.

The study team makes the following recommendations in order to improve accessibility in and around the station. These improvements will create a more pedestrian and bicycle friendly environment that will impact all users of the station by creating a safer route between parking areas and the station.



NJ Transit bus stop area

The recommended improvements for the station area are illustrated on [Figure 9](#).

◆ Immediate Recommendations

- ◆ A. Install a raised crosswalk in the designated crossing area leading from the handicap parking area to the door at the center of the station.
- ◆ B. Add curb ramps and crosswalks at all of the internal intersections and drive crossings.
- ◆ C. Create a pedestrian pathway from the west end of the station building to the edge of the south parking lot at Berlin Road.
 - ◆ Extend the existing crosswalk through the drive aisles in the south parking lot.
 - ◆ Install a raised crosswalk across the internal station drive between the paid parking lot and the south lot.
- ◆ D. Add parking blocks at parking spaces that front the major pedestrian pathways to prevent vehicles from overhanging the sidewalk.
- ◆ Install a raised intersection where the station access drive from Berlin Road crosses the Station Avenue extension drive.

◆ Long-Term Recommendations

- ◆ D. Relocate signing and light poles as feasible to eliminate sidewalk obstructions.
- ◆ E. Create a designated pedestrian pathway from the station toward the UMDNJ connector by installing a raised crosswalk at the east edge of the taxicab area.



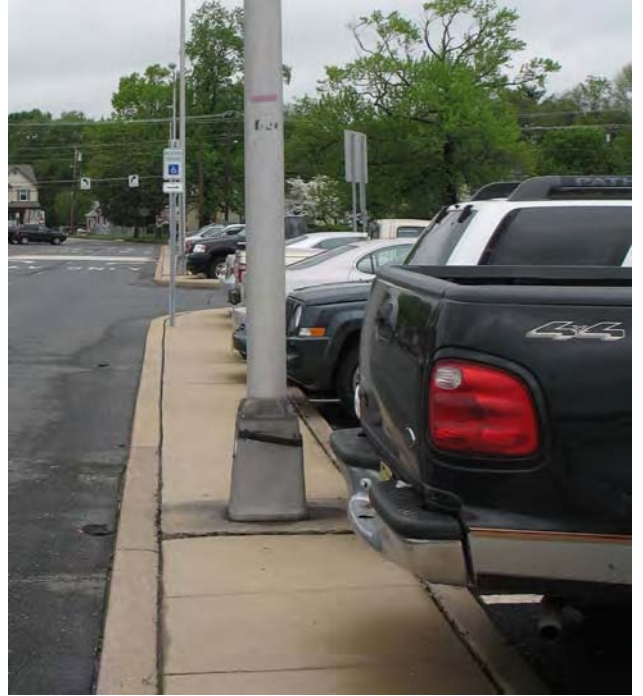
A. Raise the crosswalk between the station and the handicap parking



B. Provide curb ramps within the station parking



C. Emphasize the crossing between the paid parking area and the south lot







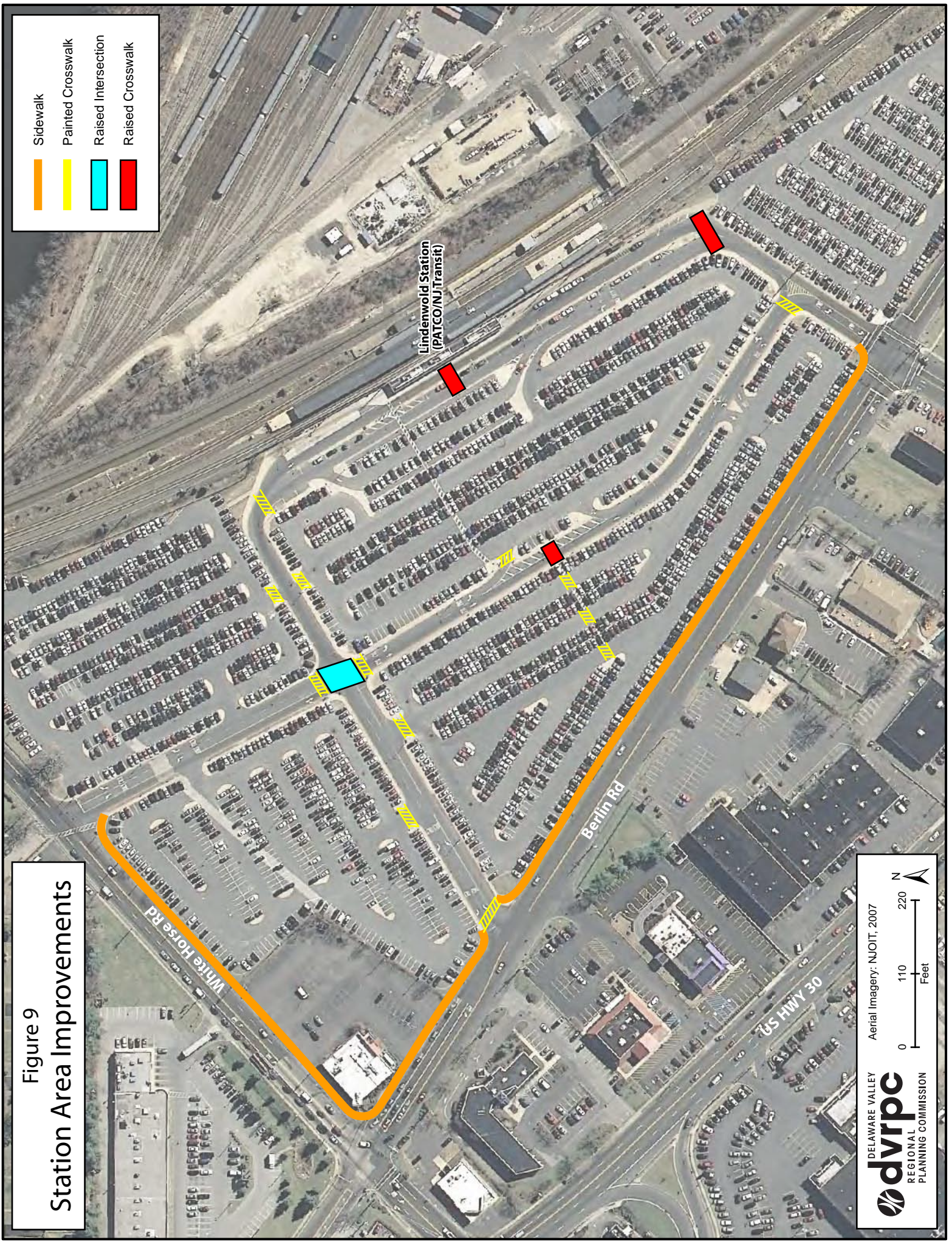
D. Relocate signs and light poles, and install parking blocks



E. Install a raised crosswalk along the east edge of the taxicab staging area

Figure 9
Station Area Improvements

	Sidewalk
	Painted Crosswalk
	Raised Intersection
	Raised Crosswalk



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Pedestrian Connectivity

The station has poor pedestrian connectivity with the surrounding area. While there are sidewalks within the station area, there are no sidewalks along Berlin Road or Laurel Road to connect the station or the businesses south of the station. There is a sidewalk along the northwest corner of the station along CR 673 that leads to Voorhees Township. However, this sidewalk is connected to the station via a stairway that is inaccessible to bicycles, baby strollers, and wheel chairs. Additionally, the CR 673 bridge over the railroad has sidewalk only on the station side of the street; signage prohibits pedestrians on the northwest side of the roadway.

There are no midblock crossings between the station and the businesses along Berlin Road. A number of pedestrians were observed jaywalking across Berlin Road to the businesses along the south side of the roadway during various site visits.

Pedestrian Level of Service (PLOS) results from the DVRPC study conducted in 2005¹ revealed that many of the residential streets within a one-quarter mile radius of the station are considered LOS B while CR 673 is LOS C and Berlin Road is LOS D. In order to improve the quality of the pedestrian facilities surrounding that station, it was recommended that sidewalks be added along Berlin Road and CR 673 and that pedestrian signals and striping be added at the intersection of Berlin with CR 673. Additionally, it was recommended that the intersection of CR 673 and Station Avenue be signalized with pedestrian actuation.

The Borough of Lindenwold has received funding from SAFETEA-LU for streetscape and pedestrian improvements along Berlin road. These improvements will include street trees, benches, and lighting and will run the length of Berlin Road and connect the station with the Gibbsboro Road corridor. The DVRPC study team recommends that these type of pedestrian friendly amenities be continued throughout the study area, especially along the walkway between the station and the proposed UMDNJ connector.

Trees should be planted along buffer areas between pedestrians and vehicles and street furniture such as benches should be placed to accommodate pedestrians. Pedestrian level lighting should also be provided to create a sense of security among pedestrians. These types of features should coordinate with those being placed by the Lindenwold SAFETEA-LU funded streetscape project.

UMDNJ is promoting the use of transit to its students and faculty, but is currently disconnected from the station due to missing sections of sidewalk. At present the path to the university is marked by dirt pathways and stepping stone blocks along CR 673 from Berlin Road to Central Avenue. The current walk to the UMDNJ campus is approximately 0.6 mile, which will be reduced to approximately 0.5 mile once the UMDNJ connector roadway is constructed. These walkways, as well as the sidewalk conditions are illustrated on [Figure 10](#). These pedestrian pathways should be designated by constructing sidewalk along with other amenities as discussed above.

¹ Increasing Intermodal Access to Transit, Phase II

The proposed recommendations will make existing connections, as well as the use of public transit more appealing.

◆ Immediate Recommendations

- ◆ Install pedestrian signals with countdown timers and highly visible crosswalk markings at signalized intersections to provide pedestrians with safer crossings.
- ◆ Designate a pedestrian pathway along internal station roadways from the station building and along Berlin Road to the signalized intersections.
 - ◆ Along Berlin Road to the signalized intersection at CR 673, then along CR 673 to UMDNJ.
 - ◆ Across Berlin Road at the New Road signalized intersection and along New Road across White Horse Road to the proposed UMDNJ connector.
- ◆ Add sidewalk along the perimeter of the PATCO property abutting CR 673.

◆ Long-Term Recommendations

- ◆ Integrate street trees, lighting, and furniture such as benches along proposed sidewalks. This is especially important in the area between the station and the proposed UMDNJ connector.

Bicycle Connectivity

Currently there is a multi-use trail along Berlin Road between Linden Avenue and Gibbsboro Road. Additionally, there is a bicycle lane along Berlin Road between New Road and Linden Avenue that connects to the trail at Linden Avenue. This bicycle network does not provide a direct connection to the station.

DVRPC's Transit, Bicycle and Pedestrian Planning unit recently conducted the *Central Camden County Bicycling & Multi-Use Trails Master Plan*. This plan included the area surrounding the Lindenwold station.

Recommendations for the area include a 'recommended route' to link the residential areas with the station. This proposed route will also connect to the existing bicycle lane along Berlin Road and the proposed redevelopment area at the New Road extension. The plan does not propose any changes to the roadways; they are bicycle friendly as they are. Improvements such as wayfinding and "Share The



Bicycle racks at the Lindenwold Station

Road" signage are recommended for these routes. The addition of a traffic signal at the intersection of CR 673 and Station Avenue would greatly improve the safety of this recommended route by providing a signalized crossing for both pedestrians and bicyclists.

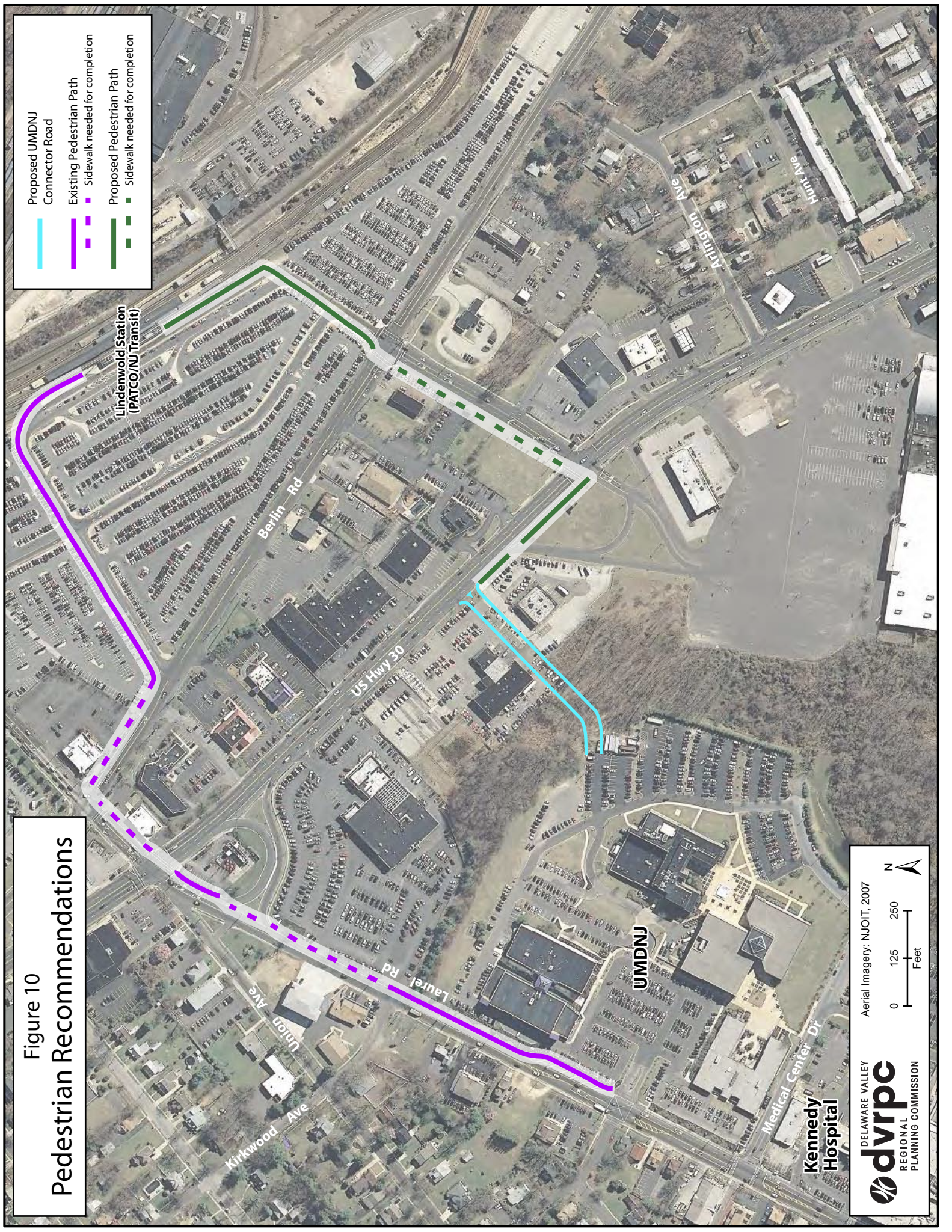
The following improvements, along with those mentioned in the preceding sections, will enhance the station's connectivity and make the use of public transit more appealing to a larger group of people.

◆ Immediate Recommendations

- ◆ Wayfinding and 'Share The Road' signage should be considered throughout the study area, especially along the internal station roadway between Station Avenue and New Road.
- ◆ Explore the feasibility of installing an accessible ramp alongside the stairway between CR 673 and the station. If this isn't determined to be feasible, a pedestrian friendly pathway along the Station Avenue entrance to the station can serve as the alternative for strollers and bicycles.
- ◆ Bicycle racks should be monitored to remove stripped or abandoned bicycle frames.

Figure 10
Pedestrian Recommendations

Proposed UMDNJ Connector Road
 Existing Pedestrian Path
 Sidewalk needed for completion
 Proposed Pedestrian Path
 Sidewalk needed for completion



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Aerial Imagery: NJGIT, 2007

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Implementation

This report’s recommendations aim to provide access and connectivity to the Lindenwold Station, in turn providing mobility to the eastern portion of Camden County. The implementation of these recommendations relies upon the study area municipalities and agencies. This section summarizes each recommendation by subsection, estimates possible project costs, and identifies the responsible agency.

The following estimates for Immediate Recommendations are for construction costs only. Estimates for Long-Term Recommendations include preliminary engineering, final design, and construction costs and are based on similar projects currently listed on the DVRPC Transportation Improvement Program (TIP).

Tables 5 – 7 chart the estimated costs and responsible agencies for the improvements outlined in the report.

Intersection Recommendations

Table 5: Intersection Recommendations

Recommendation	Responsible Agency	Project Cost Estimate
Location #1/#2: CR 673 at CR 702/US 30 Installation of countdown pedestrian signals and curb ramps	Camden County Stratford Municipal Officials	\$200,000 - \$250,000 per intersection
Installation of crosswalk and “Don’t Block the Box” markings	NJDOT	\$4,000 - \$6,000 per intersection
Radii and curb modification		\$20,000 - \$25,000
Location #3: CR 673 at Station Avenue Installation of crosswalk and “Don’t Block the Box” markings	DRPA/ PATCO Camden County Somerdale Municipal Officials	\$4,000 - \$6,000 per intersection
Extension of CR 673 NB curb lane to station	NJDOT	\$20,000 - \$25,000
Installation of traffic signal with countdown pedestrian signals and curb ramps		\$80,000 - \$100,000

Table 5: Intersection Recommendations (Continued)

Recommendation	Responsible Agency	Project Cost Estimate
Locations #4/#5: CR 702 at station access/New Road	DRPA/ PATCO Camden County	\$200,000 - \$250,000 per intersection
Installation of countdown pedestrian signals and curb ramps	Stratford Municipal Officials	
Installation of crosswalk markings	NJDOT	\$4,000 - \$6,000 per intersection
Location #6: US 30 at New Road	Camden County	\$200,000 - \$250,000 per intersection
Installation of countdown pedestrian signals	Stratford Municipal Officials	
Installation of crosswalk markings	NJDOT	\$4,000 - \$6,000 per intersection
Installation of sidewalk – New Road		\$27,000 - \$36,000
Removal of US 30 Jughandle		\$12,500 - \$18,000
Add left-turn lanes along US 30		\$28,000 - \$35,000 (both lanes)
Add through/right lane along New Road		\$16,000 - \$22,000
Removal of US 30 at New Road bulb-out		\$18,000 - \$20,000
Access Management Elements		Minimal cost to municipality
Locations #7/#8: CR 673 at Central Avenue/Medical Center Drive		\$200,000 - \$250,000 per intersection
Installation of countdown pedestrian signals		
Installation of crosswalk markings		\$4,000 - \$6,000 per intersection
Implement traffic signal timing		Minimal cost to municipality
Locations #9/#10: CR 686 at CR 702	Camden County	\$200,000 - \$250,000 per intersection
Installation of countdown pedestrian signals	Lindenwold Municipal Officials	
Installation of crosswalk markings	NJDOT	\$4,000 - \$6,000 per intersection

Source: DVRPC 2009

Transit Accessibility Recommendations

Table 6: Transit Recommendations

Recommendation	Responsible Agency	Project Cost Estimate
Removal of incorrect speed hump signage	NJ Transit	Minimal cost to agency
Relocation of bus dwell location	PATCO	Minimal cost to agency
Installation of a covered walkway or canopy		\$40,000 - \$58,000

Source: DVRPC 2009

Bicycle and Pedestrian Facility Recommendations

Table 7: Bicycle and Pedestrian Recommendations

Recommendation	Responsible Agency	Project Cost Estimate
Installation of crosswalk markings and curb ramps at internal intersections and drives	DRPA PATCO	\$2,000 - \$3,000 per location
Installation of raised crosswalks (3)		\$4,000 - \$8,000 Per location
Installation of a raised intersection		\$15,000 - \$20,000
Addition of parking blocks		Minimal cost to agency
Relocation of sign posts and light poles		\$250 - \$350 per sign \$2,500 - \$4,000 per pole
Installation of sidewalk – CR 673		\$18,000 - \$24,000 (between station drive and CR 702)
Integration of street trees, lighting, and furniture		\$2,500 - \$4,000 per item
Installation of wayfinding and “Share The Road” signage		\$1,000 - \$1,500 per sign
Explore the feasibility of a ramp along the CR 673 stairway		N/A

Source: DVRPC 2009

S O U R C E S

- DVRPC, *Central Camden County Bicycling & Multi-Use Trails Master Plan*, July 2009
- DVRPC, *Increasing Intermodal Access to Transit, Phase 2*, June 2005
- DVRPC, *Survey Support for PATCO Transit Extension Study*, February, 2008
- Environmental Resolutions for Borough of Lindenwold, *Berlin Road Streetscape Project*, 2009
- Institute of Transportation Engineers, *Trip Generation*, 7th Edition, 2003
- Orth-Rodgers for DVRPC/DRPA, *PATCO Parking Study*, December 2002
- Remington & Vernick Engineers for DVRPC, *Feasibility Study: Arterial Progression County Road 673 (Laurel Road)*, December 2005
- Wallace Roberts & Todd for DRPA, *PATCO Transit Oriented Development Master Plans Study*, July 2006

APPENDIX A



Traffic Data

Traffic Volume Data

Raw traffic volume data for the intersections where DVRPC collected data are shown on the following pages, [Figures A-1 through A-13](#).

System Peak Hour

Peak hour turning movement data and system peak hour tabulations are shown in [Tables A-1 and A-2](#) found on pages A-22 and A-23.

Signal Warrant

The signal warrant for the Station Avenue intersection with CR 673 is shown in [Figures A-14 and A-15](#) found on pages A-24 through A-27.

Figure A-1: Traffic Volume Data – CR 673 at CR 702

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: STRATFORD
INTERSECTION: North-South Street & East-West Street
STREETS: LAUREL RD / WHITE HORSE RD & CR 702 BERLIN RD

DATE: 4/2/09
DAY: THURSDAY
WEATHER: FAIR

FILE NUMBER: 2AM

AM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			LAUREL RD / WHITE HORSE RD			2-SOUTHBOUND			CR 702 BERLIN RD			3-EASTBOUND			4-WESTBOUND			N-S			E-W			TOTAL	
	L	S	R	L	R	TOTAL	L	S	R	L	R	TOTAL	L	S	R	L	S	R	L	S	R	L	S	R		
6:00 6:15	0	63	20	83	30	5	38	0	2	1	3	3	21	19	43	121	46	167								
6:15 6:30	0	81	23	104	5	29	39	1	1	2	4	4	21	47	79	143	83	226								
6:30 6:45	1	97	24	122	9	33	49	1	1	2	4	4	41	66	118	171	122	293								
6:45 7:00	0	151	17	168	14	55	74	5	0	5	10	11	28	81	120	242	130	372								
7:00 7:15	0	118	20	138	16	44	9	69	4	4	12	11	21	75	107	207	119	326								
7:15 7:30	0	157	30	187	22	84	5	111	2	1	3	6	35	106	153	298	159	457								
7:30 7:45	0	170	15	185	25	112	10	147	17	5	12	34	36	113	174	332	208	540								
7:45 8:00	1	195	10	206	28	122	8	158	15	9	7	31	24	128	167	364	198	562								
8:00 8:15	1	203	15	219	22	120	7	149	8	6	4	18	38	146	204	368	222	590								
8:15 8:30	1	193	10	204	20	122	4	146	6	4	4	14	15	113	155	350	169	519								
8:30 8:45	0	175	12	187	35	120	9	164	9	3	7	19	21	127	195	351	214	565								
8:45 9:00	2	149	16	167	30	124	6	160	7	4	5	16	15	130	171	327	187	514								
TOTALS	6	1752	212	1970	229	995	80	1304	75	40	56	171	170	365	1686	3274	1857	5131								

Peak Hour totals

7:45-8:45 am PHF	3	766	47	813	105	484	28	1304	38	22	22	71	136	514	2236
	0.75	0.94	0.78	0.75	0.99	0.78	0.63	0.61	0.79	0.85	0.72	0.88			

Figure A-1: Traffic Volume Data – CR 673 at CR 702 (Continued)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MAM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: STRATFORD
INTERSECTION: North-South Street & East-West Street
STREETS: LAUREL RD / WHITE HORSE RD CR 702 BERLIN RD

DATE: 4/2/09
DAY: THURSDAY
WEATHER: FAIR
FILE NUMBER: 2PM

PM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			LAUREL RD / WHITE HORSE RD			2-SOUTHBOUND			3-EASTBOUND			CR 702 BERLIN RD			4-WESTBOUND			N-S			E-W				
	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R		
3:00-3:15	5	144	13	69	127	16	212	6	11	20	27	33	52	112	374	132	506									
3:15-3:30	0	117	15	132	60	120	16	196	3	2	11	27	41	60	328	139	467									
3:30-3:45	2	155	12	169	63	87	28	178	4	9	18	26	57	65	347	166	513									
3:45-4:00	2	138	8	148	82	127	15	224	5	4	9	18	56	58	372	148	520									
4:00-4:15	2	154	16	172	75	115	14	204	6	4	14	24	27	65	376	195	571									
4:15-4:30	1	128	12	141	82	117	10	209	8	3	7	18	36	44	350	165	515									
4:30-4:45	3	115	11	129	67	99	13	179	5	9	10	24	34	59	308	167	475									
4:45-5:00	0	163	12	175	83	108	11	202	3	6	15	38	52	74	377	179	556									
5:00-5:15	1	148	13	162	83	80	12	175	25	6	15	46	50	75	337	230	567									
5:15-5:30	1	124	12	137	95	106	8	209	7	6	16	29	41	47	346	180	526									
5:30-5:45	1	129	10	140	114	120	13	247	6	6	7	19	34	85	387	204	591									
5:45-6:00	0	96	14	110	107	120	4	231	5	3	6	14	45	70	341	174	515									
6:00-6:15	0	91	20	111	85	115	3	203	9	5	6	20	35	57	314	160	474									
6:15-6:30	2	96	12	110	102	112	12	226	6	7	7	20	34	50	336	150	486									
6:30-6:45	1	93	14	108	101	105	10	216	7	4	6	17	33	54	324	147	471									
6:45-7:00	0	85	10	95	94	107	7	208	5	4	4	14	31	51	303	143	446									
TOTALS	21	1976	204	2201	1362	1765	192	3319	110	86	131	327	534	896	2352	2679	8199									
Peak Hour totals																										
4:45-5:45 pm PHF	3	564	47	375	414	44	44	44	41	24	44	163	259	262	2240											
5:15-5:30 pm PHF	0.75	0.87	0.90	0.82	0.86	0.85	0.85	0.85	0.41	1.00	0.69	0.82	0.76	0.89												
System 4:30-5:30 pm PHF	5	550	48	328	393	44	44	44	40	27	47	163	233	246	2124											
0.42	0.84	0.92	0.86	0.91	0.85	0.85	0.85	0.85	0.40	0.75	0.73	0.82	0.78	0.83												

Figure A-2: Traffic Volume Data – CR 673 at US 30

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: STRATFORD
INTERSECTION: North-South Street & East-West Street
STREETS: CR 673 LAUREL RD US 30 WHITE HORSE PIKE

DATE: 4/2/09
DAY: THURSDAY
WEATHER: FAIR
FILE NUMBER: IAM

AM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			2-SOUTHBOUND			3-EASTBOUND			4-WESTBOUND			N-S		E-W		
	L	S	R	L	S	R	L	S	R	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL	
6:00 6:15	17	81	0	7	24	0	31	0	59	12	12	9	138	9	147	129	218
6:15 6:30	22	90	0	5	41	0	46	0	86	13	13	6	191	6	197	158	296
6:30 6:45	17	137	0	6	45	0	51	0	122	20	142	9	241	9	250	205	392
6:45 7:00	16	160	0	176	3	63	0	66	149	28	177	11	219	11	230	242	407
7:00 7:15	23	153	0	176	8	58	0	66	135	21	156	15	338	15	353	242	509
7:15 7:30	22	193	0	215	6	78	1	85	164	26	190	0	300	27	327	300	517
7:30 7:45	21	190	1	212	16	134	0	150	193	30	223	0	297	41	338	362	561
7:45 8:00	13	187	0	200	14	102	1	117	219	33	252	0	328	45	373	317	625
8:00 8:15	10	177	1	188	13	90	3	106	198	32	231	0	260	48	308	294	539
8:15 8:30	21	186	0	207	6	103	0	109	202	39	241	0	275	39	314	316	555
8:30 8:45	22	180	2	204	6	112	0	118	197	32	229	1	242	34	277	322	506
8:45 9:00	16	165	1	182	8	115	3	126	184	38	222	0	219	30	249	308	471
TOTALS	220	1899	5	2124	98	965	8	1071	1908	324	2233	1	3048	314	3363	3195	5596

Peak Hour totals

7:30-8:30 am PHF	0.77	0.97	0.50	0.77	0.80	0.33	0.77	0.80	0.93	0.86	0.25	0.25	0.00	0.88	0.90	0.173	0.90
System 7:45-8:45 am PHF	0.75	0.98	0.38	0.70	0.91	0.33	0.70	0.91	0.93	0.87	0.25	0.25	1	1.105	0.84	1.166	0.86

Figure A-2: Traffic Volume Data – CR 673 at US 30 (Continued)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: STRAITFORD
INTERSECTION: North-South Street & East-West Street
STREETS: CR 673 LAUREL RD US 30 WHITE HORSE PIKE

DATE: 4/2/09
DAY: THURSDAY
WEATHER: FAIR

FILE NUMBER: IPM

PM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			2-SOUTHBOUND			3-EASTBOUND			4-WESTBOUND			N-S			E-W			
	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	
3:00-3:15	39	160	3	202	13	130	5	148	1	234	24	259	0	191	18	209	350	468	818
3:15-3:30	27	129	7	163	15	133	2	150	0	263	28	291	0	210	18	228	313	519	832
3:30-3:45	46	146	2	194	15	123	0	138	0	284	36	320	0	163	21	184	332	504	836
3:45-4:00	26	148	2	176	14	116	3	133	0	297	29	326	0	182	25	207	309	533	842
4:00-4:15	48	159	1	208	21	130	7	158	0	276	33	309	0	203	21	224	366	533	899
4:15-4:30	34	177	1	212	9	125	4	138	1	350	29	380	0	243	19	262	350	642	992
4:30-4:45	57	169	0	226	10	141	6	157	0	319	38	357	0	181	15	196	383	553	936
4:45-5:00	46	159	0	205	12	112	3	127	0	332	35	367	0	209	22	231	332	598	930
5:00-5:15	59	156	2	217	10	144	5	159	0	340	32	372	0	189	16	205	376	577	953
5:15-5:30	50	144	0	194	11	138	5	154	0	341	27	368	1	220	19	240	348	608	956
5:30-5:45	27	136	1	164	20	146	2	168	0	319	28	347	0	184	24	208	332	535	887
5:45-6:00	33	131	1	165	16	126	5	147	0	339	39	378	0	172	23	195	312	573	885
6:00-6:15	30	121	2	153	19	142	1	162	0	305	31	336	0	184	19	203	315	539	854
6:15-6:30	34	132	0	166	11	125	3	139	0	271	30	301	0	188	29	217	305	518	823
6:30-6:45	26	120	4	150	12	130	2	144	0	245	31	276	1	182	19	202	294	478	772
6:45-7:00	23	121	0	144	10	137	2	149	0	264	34	298	0	159	16	175	293	473	766
TOTALS	605	2308	26	2939	218	2098	55	2371	2	4779	504	5285	2	3060	324	3386	5310	8671	13981
Peak Hour totals	196	661	3	2039	41	522	18	2039	1	1341	134	1341	0	822	72	72	822	822	3811
PHF	0.83	0.93	0.38	0.85	0.85	0.91	0.75	0.85	0.25	0.96	0.88	0.88	0.00	0.85	0.82	0.82	0.85	0.85	0.82
System 4:30-5:30 pm	212	628	2	212	43	535	19	212	0	1332	132	132	1	799	72	72	799	799	3775
PHF	0.90	0.93	0.25	0.90	0.90	0.93	0.79	0.90	0.00	0.98	0.87	0.87	0.25	0.91	0.82	0.82	0.91	0.91	0.82

Figure A-3: Traffic Volume Data - CR 673 at Station Avenue

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: SOMERDALE
INTERSECTION: North-South Street & East-West Street
STREETS: STATION AVE WHITE HORSE RD

DATE: 1/13/09
DAY: TUESDAY
WEATHER: FAIR
FILE NUMBER: 3AM

AM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			STATION AVE			2-SOUTHBOUND			3-EASTBOUND			WHITE HORSE RD			4-WESTBOUND			N-S			E-W						
	L	S	R	L	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL			
6:00 6:15	0	0	3	2	3	0	2	2	7	0	55	12	67	13	25	0	38	10	105	115	1151	1342	1545	1731	1908	2034	1997	1938
6:15 6:30	0	0	6	1	6	0	1	0	2	0	115	14	129	17	33	0	50	8	179	187	1151	1342	1545	1731	1908	2034	1997	1938
6:30 6:45	0	0	7	5	10	0	4	10	10	0	149	19	168	25	62	4	91	17	259	276	1151	1342	1545	1731	1908	2034	1997	1938
6:45 7:00	0	0	13	1	13	0	2	3	3	0	219	20	239	38	50	2	90	16	329	345	1151	1342	1545	1731	1908	2034	1997	1938
7:00 7:15	0	0	5	1	5	0	4	5	5	0	196	23	219	32	81	1	114	10	333	343	1151	1342	1545	1731	1908	2034	1997	1938
7:15 7:30	1	0	12	1	13	1	2	4	4	0	201	37	238	35	88	0	123	17	361	378	1151	1342	1545	1731	1908	2034	1997	1938
7:30 7:45	2	0	13	1	15	1	4	5	5	1	273	40	314	55	90	0	145	20	459	479	1151	1342	1545	1731	1908	2034	1997	1938
7:45 8:00	1	0	11	1	12	1	3	4	4	0	290	31	321	54	138	2	194	16	515	531	1151	1342	1545	1731	1908	2034	1997	1938
8:00 8:15	0	0	3	1	3	1	2	4	4	0	294	42	336	58	117	2	177	7	513	520	1151	1342	1545	1731	1908	2034	1997	1938
8:15 8:30	0	0	8	2	10	2	2	4	4	0	288	16	304	48	136	4	188	12	492	504	1151	1342	1545	1731	1908	2034	1997	1938
8:30 8:45	2	0	8	10	18	3	0	2	5	0	246	19	265	37	124	1	162	15	427	442	1151	1342	1545	1731	1908	2034	1997	1938
8:45 9:00	1	0	7	8	15	1	0	3	4	0	263	22	285	41	132	2	175	12	460	472	1151	1342	1545	1731	1908	2034	1997	1938
TOTALS	7	0	96	20	103	7	30	57	57	1	2589	295	2885	453	1076	18	1547	160	4432	4592	1151	1342	1545	1731	1908	2034	1997	1938

Peak Hour totals

7:30-8:30 am PHF	3	0	35	5	11	1	11	1	1145	129	8	2034
	0.38	0.00	0.67	0.63	0.25	0.69	0.77	0.25	0.97	0.77	0.50	0.56
7:45-8:45 am PHF	3	0	30	7	9	0	108	0	1118	108	9	1997
	0.38	0.00	0.68	0.58	0.25	0.75	0.64	0.00	0.95	0.64	0.93	0.56

Figure A-3: Traffic Volume Data – CR 673 at Station Avenue (Continued)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: SOMERDALE
INTERSECTION: North-South Street & East-West Street
STREETS: STATION AVE WHITE HORSE RD

DATE: 1/13/09
DAY: TUESDAY
WEATHER: FAIR

FILE NUMBER: 3PM

PM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			STATION AVE			2-SOUTHBOUND			3-EASTBOUND			WHITE HORSE RD			E-W			
	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	
3:00-3:15	0	0	7	0	0	0	0	0	0	0	122	2	166	2	196	7	320	327	
3:15-3:30	1	0	11	2	0	2	0	2	4	0	148	2	150	2	195	16	345	361	
3:30-3:45	1	0	12	1	1	0	2	0	2	0	156	4	160	3	237	15	397	412	
3:45-4:00	0	0	17	1	0	0	1	0	1	0	182	1	183	2	240	18	423	441	
4:00-4:15	0	0	15	1	0	1	0	1	2	0	178	3	181	3	246	17	427	444	
4:15-4:30	0	0	14	2	1	0	1	0	3	0	170	6	176	3	263	17	439	456	
4:30-4:45	1	0	29	30	3	0	1	198	4	0	181	5	186	58	198	2	258	34	444
4:45-5:00	0	0	26	26	2	1	3	0	0	0	190	8	198	78	196	2	276	26	474
5:00-5:15	1	0	34	35	2	0	1	3	0	0	190	9	199	75	208	2	285	38	484
5:15-5:30	1	0	24	25	1	0	0	1	0	0	138	4	142	63	184	4	251	26	393
5:30-5:45	1	0	44	45	2	0	1	3	0	0	142	2	144	66	218	2	286	48	478
5:45-6:00	1	0	40	41	0	0	1	1	0	0	95	2	99	42	184	8	234	42	333
6:00-6:15	3	0	50	53	1	0	2	3	0	0	160	8	168	56	226	11	293	56	461
6:15-6:30	1	0	44	45	0	0	1	1	0	0	160	5	165	37	213	13	263	46	428
6:30-6:45	0	6	35	41	2	0	7	9	0	0	130	2	132	26	164	6	196	50	328
6:45-7:00	1	0	22	23	1	0	2	3	0	0	114	1	115	30	142	7	179	26	294
TOTALS	12	6	424	442	21	3	22	40	2	2456	64	3015	72	3898	482	6420	6902		
Peak Hour totals																			
4:15-5:15 pm PHF	2	0	103	9	2	5	0	731	28	0.50	0.00	0.42	0.78	0.88	0.96	0.75	798	9	1956
4:30-5:30 pm PHF	3	0	113	8	1	5	0	699	26	0.75	0.00	0.42	0.72	0.88	0.94	0.63	786	10	1919

Figure A-4: Traffic Volume Data – CR 702 at station access drive

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: SOMERDALE
INTERSECTION: North-South Street & East-West Street
STREETS: BERLIN RD STATION ENTRANCE

DATE: 10/16/08
DAY: THURSDAY
WEATHER: FAIR
FILE NUMBER: 4AM

AM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			BERLIN RD			2-SOUTHBOUND			3-EASTBOUND			STATION ENTRANCE			4-WESTBOUND			E-W					
	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	TOTAL		
6:00 6:15	0	21	12	33	11	6	0	17	0	0	0	0	4	0	5	9	0	0	0	0	0	50	9	59
6:15 6:30	0	44	24	68	20	8	0	28	0	0	0	0	7	0	11	18	0	0	0	0	0	96	18	114
6:30 6:45	0	113	31	144	14	12	0	26	0	0	0	0	2	0	6	8	0	0	0	0	0	170	8	178
6:45 7:00	0	144	45	189	23	23	0	46	0	0	0	0	3	0	9	12	0	0	0	0	0	235	12	247
7:00 7:15	0	52	26	78	16	12	0	28	0	0	0	0	6	0	7	13	0	0	0	0	0	106	13	119
7:15 7:30	0	65	49	114	18	11	0	29	0	0	0	0	2	0	11	13	0	0	0	0	0	143	13	156
7:30 7:45	0	159	74	233	18	14	0	32	0	0	0	0	1	0	12	13	0	0	0	0	0	265	13	278
7:45 8:00	0	160	41	201	9	15	0	24	0	0	0	0	6	0	5	11	0	0	0	0	0	225	11	236
8:00 8:15	0	186	99	285	7	37	0	44	0	0	0	0	4	0	15	19	0	0	0	0	0	329	19	348
8:15 8:30	0	141	66	207	8	17	0	25	0	0	0	0	7	0	16	23	0	0	0	0	0	232	23	255
8:30 8:45	0	212	50	262	12	25	0	37	0	0	0	0	5	0	4	9	0	0	0	0	0	299	9	308
8:45 9:00	0	187	62	249	9	19	0	28	0	0	0	0	6	0	11	17	0	0	0	0	0	277	17	294
TOTALS	0	1484	579	2063	165	199	0	364	0	0	0	0	53	0	112	165	0	0	0	0	0	2427	165	2592
8:00-9:00 am PHF	0	0.726	0.277	0.70	0.36	0.75	0.66	0.00	0	0	0	0	0.22	0.79	0.46	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.1205	0.1205
7:45-8:45 am PHF	0	0.699	0.256	0.65	0.36	0.75	0.64	0.00	0	0	0	0	0.22	0.79	0.40	0.63	0.00	0.00	0.00	0.00	0.00	0.1147	0.1147	0.1147

Figure A-4: Traffic Volume Data - CR 702 at station access drive (Continued)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: SOMERDALE
INTERSECTION: North-South Street & East-West Street
STREETS: BERLIN RD STATION ENTRANCE

DATE: 10/16/08
DAY: THURSDAY
WEATHER: FAIR
FILE NUMBER: 4PM

PM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			BERLIN RD			2-SOUTHBOUND			3-EASTBOUND			STATION ENTRANCE			4-WESTBOUND			N-S			E-W									
	L	S	R	L	R	TOTAL	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	TOTAL	TOTAL	TOTAL	
3:00-3:15	0	83	3	2	89	0	91	0	0	0	0	0	10	0	16	26	177	26	26	177	26	26	177	26	26	177	26	26	177	26	203
3:15-3:30	0	72	0	3	67	0	70	0	0	0	0	0	9	0	18	27	142	27	27	142	27	27	142	27	27	142	27	27	142	169	
3:30-3:45	0	92	2	2	82	0	84	0	0	0	0	0	16	0	31	47	178	47	47	178	47	47	178	47	47	178	47	47	178	225	
3:45-4:00	0	77	3	6	64	0	70	0	0	0	0	0	22	0	22	44	150	44	44	150	44	44	150	44	44	150	44	44	150	194	
4:00-4:15	0	68	2	1	55	0	56	0	0	0	0	0	18	0	7	25	126	25	25	126	25	25	126	25	25	126	25	25	126	151	
4:15-4:30	0	41	0	41	27	0	27	0	0	0	0	0	23	0	19	42	68	42	42	68	42	42	68	42	42	68	42	42	68	110	
4:30-4:45	0	68	0	68	32	0	32	0	0	0	0	0	29	0	34	63	100	63	63	100	63	63	100	63	63	100	63	63	100	163	
4:45-5:00	0	71	1	72	58	0	0	0	0	0	0	0	27	0	28	55	72	55	55	72	55	55	72	55	55	72	55	55	72	127	
5:00-5:15	0	84	0	84	2	41	0	43	0	0	0	0	24	0	34	58	127	58	58	127	58	58	127	58	58	127	58	58	127	185	
5:15-5:30	0	69	0	69	0	60	0	60	0	0	0	0	40	0	33	73	129	73	73	129	73	73	129	73	73	129	73	73	129	202	
5:30-5:45	0	100	0	100	50	0	50	0	0	0	0	0	64	0	78	142	150	142	142	150	142	142	150	142	142	150	142	142	292		
5:45-6:00	0	80	1	81	3	48	0	51	0	0	0	0	29	0	58	87	132	87	87	132	87	87	132	87	87	132	87	87	132	219	
6:00-6:15	0	92	2	94	5	62	0	67	0	0	0	0	44	0	36	80	161	80	80	161	80	80	161	80	80	161	80	80	161	241	
6:15-6:30	0	125	1	126	0	100	0	100	0	0	0	0	26	0	33	59	226	59	59	226	59	59	226	59	59	226	59	59	226	285	
6:30-6:45	0	175	0	175	2	79	0	81	0	0	0	0	24	0	27	51	256	51	51	256	51	51	256	51	51	256	51	51	256	307	
6:45-7:00	0	145	2	147	1	68	0	69	0	0	0	0	17	0	22	39	216	39	39	216	39	39	216	39	39	216	39	39	216	255	
TOTALS	0	1442	17	1459	27	982	0	951	0	0	0	0	422	0	496	918	2410	918	918	2410	918	918	2410	918	918	2410	918	918	2410	3328	

Peak Hour totals

6:00-7:00 pm PHF	0	537	5	8	309	0	0	0	0	0	0	0	111	0	118	0	118	0	118	0	118	0	118	0	118	0	118	0	118	1088
4:30-5:30 pm PHF	0	292	1	2	191	0	0	0	0	0	0	0	120	0	129	0	129	0	129	0	129	0	129	0	129	0	129	0	129	677
	0.00	0.77	0.63	0.40	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.82	0.00	0.82	0.00	0.82	0.00	0.82	0.00	0.82	0.00	0.82	0.00	0.82	0.00	0.82	
	0.00	0.87	0.25	0.25	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.95	0.00	0.95	0.00	0.95	0.00	0.95	0.00	0.95	0.00	0.95	0.00	0.95	0.00	0.95	

Figure A-5: Traffic Volume Data – CR 702 at New Road

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: LINDENWOLD
INTERSECTION: North-South Street & East-West Street
STREETS: NEW RD / STATION ENT BERLIN AVE

DATE: 1/14/08
DAY: WEDNESDAY
WEATHER: FAIR

FILE NUMBER: 5AM

AM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			NEW RD / STATION ENT			2-SOUTHBOUND			3-EASTBOUND			BERLIN AVE			4-WESTBOUND			N-S			E-W			
	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	
6:00 6:15	33	19	11	63	5	3	1	9	7	11	5	5	21	0	25	11	36	72	57	129					
6:15 6:30	51	16	12	79	5	2	0	7	1	11	9	9	21	0	39	7	46	86	67	153					
6:30 6:45	80	20	4	104	2	5	1	8	2	19	3	24	1	1	78	16	95	112	119	231					
6:45 7:00	96	39	15	150	9	2	1	12	1	23	7	31	1	62	21	84	162	115	277						
7:00 7:15	124	46	6	176	8	7	0	15	2	18	13	33	0	78	26	104	191	137	328						
7:15 7:30	151	57	15	223	10	11	5	26	1	21	6	28	2	95	36	133	249	161	410						
7:30 7:45	158	58	17	233	9	11	2	22	4	27	9	40	2	117	40	159	255	199	454						
7:45 8:00	179	67	13	259	7	10	2	19	3	25	27	55	2	108	51	161	278	216	494						
8:00 8:15	154	56	10	220	9	6	4	19	4	17	17	38	5	104	41	150	239	188	427						
8:15 8:30	115	32	9	156	11	9	0	20	3	25	20	48	4	86	19	109	176	157	333						
8:30 8:45	130	31	7	168	11	8	2	21	6	19	14	39	3	83	12	98	189	137	326						
8:45 9:00	113	12	8	133	12	4	1	17	2	28	28	58	5	79	13	97	150	155	305						
TOTALS	1384	453	127	1964	98	78	19	195	34	244	158	436	25	954	293	1272	2159	1708	3867						

Peak Hour totals

7:15-8:15 am PHF	0.90	0.89	0.81	0.88	0.86	0.65	0.75	0.83	0.55	0.82	0.55	0.91	0.82	0.72	0.86	0.72	0.86	0.72	0.86	0.72	0.86	0.72	0.86	0.72	0.86	0.72
7:45-8:45 am PHF	0.81	0.69	0.75	0.86	0.83	0.50	0.67	0.83	0.50	0.67	0.86	0.72	0.70	0.88	0.60	0.70	0.88	0.60	0.70	0.88	0.60	0.70	0.88	0.60	0.70	0.88

Figure A-5: Traffic Volume Data – CR 702 at New Road (Continued)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: LINDENWOLD

INTERSECTION: North-South Street & East-West Street
STREETS: NEW RD / STATION ENT BERLIN AVE

DATE: 1/14/09
DAY: WEDNESDAY
WEATHER: FAIR

FILE NUMBER: 5PM

PM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			NEW RD / STATION ENT			2-SOUTHBOUND			3-EASTBOUND			BERLIN AVE			4-WESTBOUND			N-S			E-W			
	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	
3:00-3:15	36	8	7	51	10	28	0	38	0	33	66	100	3	51	3	57	89	157	246						
3:15-3:30	39	12	8	59	30	29	0	59	0	41	69	111	6	57	6	69	118	180	298						
3:30-3:45	25	9	11	45	16	39	0	55	0	44	57	103	6	86	12	104	100	207	307						
3:45-4:00	43	14	12	69	26	38	0	64	0	56	60	119	10	66	12	88	133	207	340						
4:00-4:15	30	8	2	40	22	24	0	46	0	26	41	72	1	43	6	50	86	122	208						
4:15-4:30	47	7	9	63	25	46	0	71	0	59	84	147	8	90	6	104	134	251	385						
4:30-4:45	25	9	16	50	35	62	0	97	0	41	75	117	9	63	7	79	147	196	343						
4:45-5:00	42	11	9	62	39	67	0	106	0	52	73	128	6	70	7	83	168	211	379						
5:00-5:15	28	13	19	60	41	65	0	106	0	52	107	161	7	39	6	52	166	213	379						
5:15-5:30	40	20	10	70	84	110	0	194	0	58	118	179	6	59	11	76	264	254	519						
5:30-5:45	38	21	17	76	80	106	0	186	0	62	112	176	5	64	9	78	262	254	516						
5:45-6:00	33	18	14	65	87	91	0	178	0	67	116	188	10	47	16	73	243	261	504						
6:00-6:15	26	23	17	66	98	109	0	207	0	72	107	183	6	60	16	82	273	265	538						
6:15-6:30	38	13	8	59	36	66	0	102	0	64	73	142	12	42	10	64	161	206	367						
6:30-6:45	27	7	6	40	32	45	0	77	0	39	66	109	7	55	10	72	117	181	298						
6:45-7:00	21	11	6	38	27	52	0	79	0	31	53	86	5	40	7	52	117	138	255						
TOTALS	538	204	171	913	688	977	0	1665	0	797	1277	2121	107	932	144	1183	2578	3304	5882						

Peak Hour totals

5:15-6:15 pm	137	82	58	349	416	0	14	259	453	27	230	52	0.68	0.90	0.81				2077						
PHF	0.86	0.89	0.85	0.89	0.95	0.00	0.70	0.90	0.96	0.78	0.83	0.70													
4:30-5:30 pm	135	53	54	199	304	0	9	203	373	28	231	31	0.75	0.88	0.79				1620						
PHF	0.80	0.66	0.71	0.59	0.69	0.00	0.75	0.88	0.79	0.78	0.83	0.70													

Figure A-6: Traffic Volume Data – US 30 at New Road

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M.A.M INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: LINDENWOLD
INTERSECTION: North-South Street & East-West Street
STREETS: WHITE HORSE PIKE JUGHANDLE / NEW ST

DATE: 10/22/08
DAY: WEDNESDAY
WEATHER: FAIR
FILE NUMBER: 6AM

AM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			WHITE HORSE PIKE			2-SOUTHBOUND			JUGHANDLE / NEW ST			3-EASTBOUND			4-WESTBOUND			N-S		E-W		
	L	S	R	L	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	TOTAL	TOTAL		
6:00 6:15	0	137	25	0	162	0	54	0	54	0	0	0	0	3	0	0	3	6	6	12	216	12	228
6:15 6:30	0	187	67	0	254	0	61	0	61	0	0	0	0	6	0	0	6	4	4	10	315	10	325
6:30 6:45	0	197	55	0	252	0	64	0	64	0	3	0	3	0	0	0	3	6	6	9	316	9	325
6:45 7:00	0	209	54	0	263	0	68	0	68	2	4	0	6	0	0	0	6	18	18	24	331	24	355
7:00 7:15	0	134	44	1	178	1	37	0	38	0	0	0	0	6	1	1	7	5	5	13	216	13	229
7:15 7:30	0	176	38	1	214	1	42	0	43	0	9	4	13	10	0	0	10	10	10	257	23	280	
7:30 7:45	0	227	62	0	289	0	61	0	61	1	10	0	11	14	0	0	14	14	14	350	25	375	
7:45 8:00	0	282	60	3	342	3	92	0	95	1	12	1	14	18	0	3	21	18	18	437	35	472	
8:00 8:15	0	231	72	0	303	0	89	0	89	2	18	0	20	23	0	1	24	26	24	392	44	436	
8:15 8:30	0	243	67	0	310	0	83	0	83	1	6	0	7	26	0	0	26	26	26	393	33	426	
8:30 8:45	0	239	68	0	307	0	89	0	89	0	9	0	9	23	0	0	23	23	23	396	32	428	
8:45 9:00	0	180	51	0	231	0	78	0	78	0	2	1	3	14	0	1	15	14	14	309	18	327	
TOTALS	0	2442	663	5	3105	7	818	0	823	7	88	7	102	167	0	9	176	167	167	3928	278	4206	

7:45-8:45 am
PHF
0.00 0.88 0.93
0.25 0.96 0.00
0.50 0.63 0.25
0.87 0.00 0.33
0.90 0 4
90 0 4
0.87 0.00 0.33

Figure A-6: Traffic Volume Data – US 30 at New Road (Continued)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: LINDENWOLD
INTERSECTION: North-South Street & East-West Street
STREETS: WHITE HORSE PIKE JUGHANDEL / NEW ST

DATE: 10/22/08
DAY: WEDNESDAY
WEATHER: FAIR
FILE NUMBER: 6PM

PM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			2-SOUTHBOUND			3-EASTBOUND			4-WESTBOUND			N-S		E-W		TOTAL
	L	S	R	L	S	R	L	S	R	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL	
3:00-3:15	0	156	23	0	147	0	147	4	13	0	17	28	0	28	326	45	371
3:15-3:30	0	209	24	0	220	0	220	4	11	1	16	88	0	91	453	107	560
3:30-3:45	0	216	30	0	246	0	246	7	17	0	24	123	0	127	531	151	682
3:45-4:00	0	252	22	1	186	0	187	6	26	3	35	145	0	148	461	183	644
4:00-4:15	0	258	38	1	184	0	185	1	13	0	14	141	0	157	481	171	652
4:15-4:30	0	225	34	0	259	0	259	7	9	3	19	148	0	152	476	171	647
4:30-4:45	0	265	32	0	297	0	297	10	13	0	23	185	0	189	552	212	764
4:45-5:00	0	187	16	1	120	0	121	2	9	0	11	124	0	130	324	141	465
5:00-5:15	0	198	24	0	222	0	222	9	10	0	19	194	0	196	427	215	642
5:15-5:30	0	199	30	0	229	0	229	2	2	0	4	194	0	206	414	210	624
5:30-5:45	0	181	22	0	203	6	113	0	9	2	11	162	0	162	316	173	489
5:45-6:00	0	178	18	2	196	0	200	10	15	1	26	147	0	150	396	176	572
6:00-6:15	0	216	13	0	229	0	229	6	4	5	15	177	0	189	450	204	654
6:15-6:30	0	180	18	0	198	0	198	0	13	5	18	193	0	200	366	218	584
6:30-6:45	0	173	14	1	187	1	188	5	11	4	20	169	0	177	371	197	568
6:45-7:00	0	164	12	0	176	0	176	7	7	3	17	145	0	151	317	168	485
TOTALS	0	3257	370	12	3022	0	3034	80	182	27	289	2363	0	2453	6661	2742	9403
Peak Hour totals																	
3:45-4:45 pm PHF	0	1000	126	2	842	0	842	24	61	6	619	0	27	0	0	0	2707
	0.00	0.94	0.83	0.50	0.83	0.00	0.83	0.60	0.59	0.50	0.84	0.00	0.42	0.00	0.00	0.00	
4:30-5:30 pm PHF	0	849	102	1	765	0	765	23	34	0	697	0	24	0	0	0	2495
	0.00	0.80	0.80	0.25	0.75	0.00	0.75	0.58	0.65	0.00	0.90	0.00	0.50	0.00	0.00	0.00	

Figure A-7: Traffic Volume Data – CR 673 at Central Avenue

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: STRATFORD
INTERSECTION: North-South Street & East-West Street
STREETS: LAUREL RD CENTRAL AVE / UMDNJ ENTRANCE

DATE: 10/22/08
DAY: WEDNESDAY
WEATHER: FAIR
FILE NUMBER: 7AM

AM INTERVAL COUNTS

STARTING TIME	LAUREL RD			2-SOUTHBOUND			3-EASTBOUND			CENTRAL AVE / UMDNJ ENTRANCE 4-WESTBOUND			N-S		E-W		TOTAL
	L	S	R	L	S	R	L	S	R	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL	
6:00 6:15	1	112	3	4	35	0	39	2	0	0	1	0	1	2	155	4	159
6:15 6:30	0	124	1	0	47	0	47	1	0	0	0	0	0	0	172	1	173
6:30 6:45	0	177	4	2	64	0	66	0	0	1	1	0	1	1	247	2	249
6:45 7:00	1	178	2	7	78	0	85	0	0	0	0	0	0	0	266	0	266
7:00 7:15	0	170	7	3	101	0	104	0	1	0	1	0	4	5	281	6	287
7:15 7:30	1	181	3	185	11	119	0	130	0	1	0	1	2	3	315	4	319
7:30 7:45	3	190	10	14	135	0	149	2	0	3	5	0	1	1	352	6	358
7:45 8:00	1	184	14	199	12	151	0	163	0	0	0	1	3	4	362	4	366
8:00 8:15	0	154	13	167	32	138	0	170	1	0	2	1	3	5	337	8	345
8:15 8:30	0	182	25	207	36	113	1	150	0	1	1	4	1	17	357	23	380
8:30 8:45	0	196	26	222	32	123	2	157	1	0	2	4	1	12	379	19	398
8:45 9:00	0	163	24	187	36	116	1	153	1	0	0	2	0	7	340	10	350
TOTALS	7	2011	132	2150	189	1220	4	1413	8	3	7	18	16	69	3563	87	3650

Peak Hour totals
7:45-8:45 am PHF 0.25 0.91 0.75 0.78 0.87 0.38 0.50 0.25 0.38 0.56 1.00 0.51 1.489

Figure A-7: Traffic Volume Data - CR 673 at Central Avenue (Continued)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: STRAITFORD
INTERSECTION: North-South Street & East-West Street
STREETS: LAUREL RD CENTRAL AVE / UMDNJ ENTRANCE

DATE: 10/22/08
DAY: WEDNESDAY
WEATHER: FAIR

FILE NUMBER: 7PM

PM INTERVAL COUNTS

STARTING TIME	LAUREL RD			2-SOUTHBOUND			3-EASTBOUND			CENTRAL AVE / UMDNJ ENTRANCE 4-WESTBOUND			CENTRAL AVE / UMDNJ ENTRANCE 4-EASTBOUND					
	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R			
3:00-3:15	2	139	7	18	134	3	155	1	1	2	4	8	0	15	23	303	27	330
3:15-3:30	5	124	8	10	103	7	120	2	1	0	3	3	2	39	44	257	47	304
3:30-3:45	2	172	7	181	13	157	3	173	2	0	3	6	2	31	39	354	42	396
3:45-4:00	2	193	10	205	15	171	4	190	2	0	3	1	0	28	29	395	32	427
4:00-4:15	0	145	9	154	20	114	2	136	1	0	1	12	1	36	49	290	50	340
4:15-4:30	2	172	6	180	14	140	0	154	2	0	2	10	3	22	35	334	37	371
4:30-4:45	1	175	7	183	17	158	2	177	0	0	1	14	2	31	47	360	48	408
4:45-5:00	2	167	5	174	19	146	0	165	0	0	0	8	3	35	46	339	46	385
5:00-5:15	2	162	12	176	16	138	1	155	1	0	2	15	1	56	72	331	74	405
5:15-5:30	1	144	3	148	8	143	1	152	0	1	2	12	2	48	62	300	64	364
5:30-5:45	4	149	6	159	6	144	1	151	0	0	1	5	2	19	26	310	27	337
5:45-6:00	2	162	5	169	8	124	0	132	0	0	0	5	0	16	21	301	21	322
6:00-6:15	0	152	3	155	6	161	0	167	1	0	3	2	2	14	18	322	21	343
6:15-6:30	2	170	5	177	10	159	1	170	0	1	1	6	2	19	27	347	28	375
6:30-6:45	1	148	5	154	9	133	2	144	1	1	2	7	1	15	23	298	25	323
6:45-7:00	1	155	4	160	7	117	1	125	0	0	0	4	2	15	21	285	21	306
TOTALS	29	2529	102	2660	196	2242	28	2466	13	5	10	28	118	25	439	582	610	5736
Peak Hour totals	7	676	30	66	582	3	3	1	1	1	1	47	9	144	0.64	0.25	0.78	1569
4:15-5:15 pm PHF	0.88	0.97	0.63	0.87	0.92	0.38	0.38	0.25	0.25	0.25	0.25	0.75	0.75	0.64				
4:30-5:30 pm PHF	0.75	0.93	0.56	0.79	0.93	0.50	0.50	0.50	0.25	0.50	0.50	0.82	0.67	0.76				1562

Figure A-8: Traffic Volume Data – CR 673 at Medical Center Drive

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: STRAITFORD
INTERSECTION: North-South Street & East-West Street
STREETS: LAUREL RD KENNEDY HOSPITAL ENTRANCE

DATE: 10/27/08
DAY: MONDAY
WEATHER: FAIR
FILE NUMBER: 8AM

AM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			LAUREL RD			2-SOUTHBOUND			3-EASTBOUND			KENNEDY HOSPITAL ENTRANCE 4-WESTBOUND			N-S			E-W			
	L	S	R	L	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	
6:00 6:15	0	87	9	11	96	23	0	0	34	0	0	0	0	0	0	3	3	0	0	0	130	3
6:15 6:30	0	130	13	15	143	25	0	0	40	0	0	0	0	0	0	0	0	0	0	0	183	0
6:30 6:45	0	144	16	31	160	44	0	0	75	0	0	0	0	1	2	1	2	235	2	237	2	
6:45 7:00	0	174	45	54	219	35	0	0	89	0	0	0	0	1	0	5	6	308	6	314	6	
7:00 7:15	0	168	18	34	186	48	0	0	82	0	0	0	0	1	0	4	5	268	5	273	5	
7:15 7:30	0	172	20	21	192	76	0	0	97	0	0	0	0	1	0	7	7	289	7	296	7	
7:30 7:45	0	191	14	30	205	111	0	0	141	0	0	0	0	6	0	15	21	346	21	367	21	
7:45 8:00	0	157	31	47	188	101	0	0	148	0	0	0	0	8	0	13	21	336	21	357	21	
8:00 8:15	0	179	31	50	210	97	0	0	147	0	0	0	0	3	0	4	7	357	7	364	7	
8:15 8:30	0	200	23	24	223	105	0	0	129	0	0	0	0	5	0	7	12	352	12	364	12	
8:30 8:45	0	190	11	38	201	99	0	0	137	0	0	0	0	1	0	7	8	338	8	346	8	
8:45 9:00	0	134	5	20	139	72	0	0	92	0	0	0	0	1	0	6	7	231	7	238	7	
TOTALS	0	1926	236	375	2162	836	0	0	1211	0	0	0	0	27	0	72	99	3373	99	3472	99	3472

Peak Hour totals

7:30-8:30 am PHF	0	727	99	151	414	0	0	0	0	0	0	0	0	22	0	39	0	0.69	0.00	0.65	1452
7:45-8:45 am PHF	0	726	96	159	402	0	0	0	0	0	0	0	0	17	0	31	0	0.53	0.00	0.60	1431

Figure A-8: Traffic Volume Data - CR 673 at Medical Center Drive (Continued)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: STRAITFORD
INTERSECTION: North-South Street & East-West Street
STREETS: LAUREL RD KENNEDY HOSPITAL ENTRANCE

DATE: 10/28/08
DAY: TUESDAY
WEATHER: FAIR

FILE NUMBER: 8PM

PM INTERVAL COUNTS

STARTING TIME	LAUREL RD			2-SOUTHBOUND			3-EASTBOUND			KENNEDY HOSPITAL ENTRANCE 4-WESTBOUND			KENNEDY HOSPITAL ENTRANCE 4-EASTBOUND						
	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R				
3:00-3:15	0	160	5	17	139	0	156	0	0	0	0	0	33	0	36	69	321	69	390
3:15-3:30	0	148	3	9	137	0	146	0	0	0	0	0	14	0	37	51	297	51	348
3:30-3:45	0	184	2	186	6	119	0	125	0	0	0	0	25	0	49	74	311	74	385
3:45-4:00	0	187	4	191	10	147	0	157	0	0	0	0	17	0	23	40	348	40	388
4:00-4:15	0	119	15	134	7	151	0	158	0	0	0	0	25	0	34	59	292	59	351
4:15-4:30	0	147	3	150	8	148	0	156	0	0	0	0	39	0	41	80	306	80	386
4:30-4:45	0	141	14	155	16	156	0	172	0	0	0	0	17	0	29	46	327	46	373
4:45-5:00	0	125	10	135	8	160	0	168	0	0	0	0	16	0	37	53	303	53	356
5:00-5:15	0	136	3	139	11	188	0	199	0	0	0	0	13	0	36	49	338	49	387
5:15-5:30	0	148	7	155	10	179	0	189	0	0	0	0	17	0	34	51	344	51	395
5:30-5:45	0	157	8	165	9	177	0	186	0	0	0	0	17	0	33	50	351	50	401
5:45-6:00	0	143	6	149	8	164	0	172	0	0	0	0	10	0	22	32	321	32	353
6:00-6:15	0	157	6	163	6	164	0	170	0	0	0	0	6	0	23	29	333	29	362
6:15-6:30	0	163	6	169	7	152	0	159	0	0	0	0	11	0	25	36	328	36	364
6:30-6:45	0	142	7	149	5	141	0	146	0	0	0	0	7	0	17	24	295	24	319
6:45-7:00	0	133	5	138	5	133	0	138	0	0	0	0	5	0	20	25	276	25	301
TOTALS	0	2390	104	2494	142	2455	0	2597	0	0	0	0	272	0	496	768	5091	768	5859
Peak Hour totals																			
4:45-5:45 pm PHF	0	566	28	594	38	704	0	742	0	0	0	0	63	0	140	153	501	140	1539
	0.00	0.90	0.70	0.86	0.94	0.00							0.93	0.00	0.95				
4:30-5:30 pm PHF	0	550	34	584	45	683	0	728	0	0	0	0	63	0	136	159	501	136	1511
	0.00	0.93	0.61	0.70	0.91	0.00							0.93	0.00	0.92				

Figure A-9: Traffic Volume Data – CR 686 at CR 702-Berlin Road

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: LINDENWOLD
INTERSECTION: North-South Street & East-West Street
STREETS: BERLIN RD GIBBSBORO RD

DATE: 2/18/09
DAY: WEDNESDAY
WEATHER: FAIR
FILE NUMBER: 9AM

AM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			BERLIN RD			2-SOUTHBOUND			3-EASTBOUND			GIBBSBORO RD			4-WESTBOUND			N-S			E-W								
	L	S	R	L	R	TOTAL	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	TOTAL		
6:00 6:15	0	0	0	0	0	0	11	0	2	13	2	48	0	50	0	17	3	20	13	70	83									
6:15 6:30	0	0	0	13	0	13	17	9	22	39	27	108	0	125	0	40	12	52	22	177	199									
6:30 6:45	0	0	0	27	0	27	27	12	39	27	114	0	141	0	56	18	74	39	215	254										
6:45 7:00	0	0	0	13	0	13	16	11	24	16	82	0	98	0	28	4	32	24	130	154										
7:00 7:15	0	0	0	29	0	29	16	3	32	16	92	0	108	0	57	17	74	32	182	214										
7:15 7:30	0	0	0	31	0	31	26	5	36	26	116	0	142	0	46	28	74	36	216	252										
7:30 7:45	0	0	0	41	0	41	36	14	55	36	135	0	171	0	54	37	91	55	262	317										
7:45 8:00	0	0	0	26	0	26	19	7	33	19	94	0	113	0	55	25	80	33	193	226										
8:00 8:15	0	0	0	16	0	16	12	3	19	12	79	0	91	0	59	14	73	19	164	183										
8:15 8:30	0	0	0	13	0	13	19	6	19	12	80	0	92	0	42	20	62	19	154	173										
8:30 8:45	0	0	0	59	0	59	17	8	67	17	127	0	144	0	75	26	101	67	245	312										
8:45 9:00	0	0	0	29	0	29	24	8	37	24	109	0	133	0	87	19	106	37	239	276										
TOTALS	0	0	0	308	0	308	224	88	396	224	1184	0	1408	0	616	223	839	396	2247	2643										
Peak Hour totals	0	0	0	127	0	127	97	0.52	29	0.67	437	0	0.81	0	0.93	107	0.72	1009												
System Peak	0	0	0	117	0	117	65	0.78	25	0.68	395	0	0.78	0	0.76	79	0.76	944												
8:00-9:00 am PHF																														

Figure A-9: Traffic Volume Data – CR 686 at CR 702-Berlin Road (Continued)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN CO
MUNICIPALITY: LINDENWOLD
INTERSECTION: North-South Street & East-West Street
STREETS: BERLIN RD GIBBSBORO RD

DATE: 2/18/09
DAY: WEDNESDAY
WEATHER: FAIR

FILE NUMBER: 9PM

PM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			BERLIN RD			2-SOUTHBOUND			3-EASTBOUND			GIBBSBORO RD			4-WESTBOUND			N-S			E-W					
	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R	L	S	R			
3:00-3:15	0	0	0	27	0	17	44	0	32	0	41	0	51	12	63	44	104	148									
3:15-3:30	0	0	0	31	0	26	57	0	21	0	28	0	40	11	51	57	79	136									
3:30-3:45	0	0	0	43	0	30	73	0	90	0	109	0	124	19	143	73	252	325									
3:45-4:00	0	0	0	25	0	32	57	0	106	0	114	0	97	21	118	57	232	289									
4:00-4:15	0	0	0	35	0	31	66	0	81	0	88	0	107	23	130	66	218	284									
4:15-4:30	0	0	0	28	0	20	48	0	58	0	69	0	56	21	77	48	146	194									
4:30-4:45	0	0	0	25	0	15	40	0	26	0	35	0	71	19	90	40	125	165									
4:45-5:00	0	0	0	49	0	24	73	0	38	0	47	0	65	11	76	73	123	196									
5:00-5:15	0	0	0	26	0	23	49	0	81	0	95	0	98	21	119	49	214	263									
5:15-5:30	0	0	0	63	0	38	101	0	68	0	80	0	128	21	149	101	229	330									
5:30-5:45	0	0	0	52	0	26	78	0	62	0	78	0	108	18	126	78	204	282									
5:45-6:00	0	0	0	63	0	41	104	0	99	0	119	0	105	24	129	104	248	352									
6:00-6:15	0	0	0	48	0	28	76	0	71	0	90	0	138	30	168	76	258	334									
6:15-6:30	0	0	0	43	0	26	69	0	75	0	94	0	88	30	118	69	212	281									
6:30-6:45	0	0	0	56	0	40	96	0	76	0	90	0	83	9	92	96	182	278									
6:45-7:00	0	0	0	46	0	37	83	0	63	0	78	0	79	11	90	83	168	251									
TOTALS	0	0	0	660	0	454	1114	0	1047	0	1255	0	1438	301	1739	1114	2994	4108									
5:15-6:15 pm PHF	0	0	0	226 0.90	0	133 0.81	300 0.76	0	479 0.87	0	93 0.78	0	1298														
System Peak 5:00-6:00 pm PHF	0	0	0	204 0.81	0	128 0.78	310 0.78	0	439 0.86	0	84 0.88	0	1227														

Figure A-10: Traffic Volume Data – CR 686 at CR 702-Egg Harbor Road

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: LINDENWOLD
INTERSECTION: North-South Street & East-West Street
STREETS: GIBBSBORO RD CARLTON ST / EGG HARBOR RD

DATE: 10/29/08
DAY: WEDNESDAY
WEATHER: FAIR
FILE NUMBER: 10AM

AM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			2-SOUTHBOUND			3-EASTBOUND			CARLTON ST / EGG HARBOR RD 4-WESTBOUND			N-S		E-W		TOTAL		
	L	S	R	L	S	R	L	S	R	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL			
6:00 6:15	5	111	17	1	44	0	45	1	7	2	10	11	7	3	21	178	31	209	
6:15 6:30	7	133	23	1	53	1	55	2	9	1	12	9	7	4	20	218	32	250	
6:30 6:45	8	159	31	198	4	67	1	72	4	11	19	17	9	5	31	270	50	320	
6:45 7:00	8	157	27	192	1	49	1	51	0	9	2	11	18	5	41	243	52	295	
7:00 7:15	4	160	47	211	1	40	2	43	0	10	5	15	30	0	54	254	69	323	
7:15 7:30	0	157	67	224	0	40	1	41	2	26	4	32	16	29	6	51	265	348	
7:30 7:45	5	171	17	193	7	69	0	76	2	12	2	16	23	4	41	269	57	326	
7:45 8:00	2	155	22	179	0	44	1	45	1	16	5	22	27	4	47	224	69	293	
8:00 8:15	5	165	19	189	3	51	1	55	0	13	2	15	12	17	2	31	244	46	290
8:15 8:30	12	313	16	341	0	78	2	80	14	16	3	33	25	38	12	75	421	108	529
8:30 8:45	13	267	19	299	2	77	2	81	25	11	3	39	18	21	20	59	380	98	478
8:45 9:00	6	214	35	255	11	148	2	161	8	8	5	21	11	15	7	33	416	54	470
TOTALS	75	2162	340	2577	31	760	14	805	59	148	38	245	217	215	72	504	3382	749	4131
8:00-9:00 am PHF	0.69	0.77	0.64	0.69	0.36	0.60	0.88	0.69	0.47	0.75	0.65	0.66	0.66	0.60	0.51				1767
System Peak 7:45-8:45 am PHF	32	900	76	0.42	5	250	6	0.75	40	56	13	82	92	38	0.61	0.48			1590

Figure A-10: Traffic Volume Data – CR 686 at CR 702-Egg Harbor Road (Continued)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M/AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: LINDENWOLD
INTERSECTION: North-South Street & East-West Street
STREETS: GIBBSBORO RD CARLTON ST / EGG HARBOR RD

DATE: 10/29/08
DAY: WEDNESDAY
WEATHER: FAIR
FILE NUMBER: 10PM

PM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			GIBBSBORO RD			2-SOUTHBOUND			3-EASTBOUND			CARLTON ST / EGG HARBOR RD 4-WESTBOUND			E-W TOTAL		
	L	S	R	L	TOTAL	L	S	R	L	TOTAL	L	S	R	L	TOTAL	N-S TOTAL	TOTAL	
3:00-3:15	3	56	11	2	70	2	32	0	34	2	0	2	5	2	12	104	16	120
3:15-3:30	2	93	22	6	117	6	52	1	59	7	6	2	14	8	36	176	51	227
3:30-3:45	4	96	25	8	125	8	78	0	86	1	7	2	10	12	21	211	31	242
3:45-4:00	11	146	27	9	184	9	47	0	56	4	13	4	21	25	48	240	69	309
4:00-4:15	12	116	20	1	148	1	91	4	96	20	22	6	48	34	59	244	107	351
4:15-4:30	4	127	29	8	160	8	86	3	97	4	14	7	25	21	35	257	60	317
4:30-4:45	14	148	19	6	181	6	123	0	129	1	11	7	19	44	65	310	84	394
4:45-5:00	10	81	34	6	125	6	105	0	111	13	20	14	40	47	60	236	107	343
5:00-5:15	17	112	50	7	179	7	95	2	104	1	11	8	20	34	48	283	68	351
5:15-5:30	9	103	40	5	152	5	97	1	103	1	11	6	18	52	72	255	90	345
5:30-5:45	18	135	64	7	217	7	115	3	125	0	11	11	22	25	40	342	60	402
5:45-6:00	16	112	43	13	171	13	133	4	150	5	12	6	23	24	42	321	65	386
6:00-6:15	2	94	38	6	134	6	82	0	88	0	8	1	9	19	31	222	40	262
6:15-6:30	7	106	22	5	135	5	106	0	111	0	0	0	18	10	29	246	29	275
6:30-6:45	5	103	14	1	122	1	81	0	82	2	11	5	18	15	37	204	55	259
6:45-7:00	5	91	23	3	119	3	72	1	76	1	7	3	11	20	34	195	45	240
TOTALS	139	1719	481	93	2339	93	1395	19	1507	62	164	84	402	310	669	3846	979	4825

Peak Hour totals

5:00-6:00 pm PHF

0.83	462	197	0.62	32	440	10	0.83	0.63	7	45	31	0.35	135	54	13	0.65	0.79	0.36	1486
------	-----	-----	------	----	-----	----	------	------	---	----	----	------	-----	----	----	------	------	------	------

Table A-1: AM System Peak Hour Volumes

Lindenwold Station Transit Hub Study
AM Peak Hour of System

STARTING TIME	INTERSECTION #1 - White Horse	#2 - Laurel	#2a - Laurel	#2b - White Horse	#3 - Station	#4 - Berlin	#5 - Berlin	#5a - New	#6 - White Horse	#7 - Laurel	#8 - Laurel	TOTALS	HOURLY TOTALS
6:00 6:15	167	347	4	2	6	59	118	2	228	159	133	1225	
6:15 6:30	226	454	4	7	11	114	159	4	325	173	183	1660	
6:30 6:45	293	597	2	7	9	178	229	8	325	249	237	2134	
6:45 7:00	372	649	4	8	12	247	118	10	355	266	314	2355	7374
7:00 7:15	326	751	7	6	13	119	206	18	229	287	273	2235	8384
7:15 7:30	457	817	14	10	24	156	157	15	280	319	296	2545	9269
7:30 7:45	540	923	21	10	31	278	210	24	375	358	367	3137	10272
7:45 8:00	562	942	18	7	25	236	226	29	472	366	357	3240	11157
8:00 8:15	590	833	30	14	44	348	317	18	436	345	364	3339	12261
8:15 8:30	519	871	39	11	50	255	152	27	426	380	364	3094	12810
8:30 8:45	565	828	49	15	64	308	221	10	428	398	346	3232	12905
8:45 9:00	514	779	29	9	38	294	277	13	327	350	238	2868	12533

STARTING TIME	INTERSECTION #9 - Berlin	#10 - Egg Harbor	TOTALS	HOURLY TOTALS
6:00 6:15	83	209	292	
6:15 6:30	199	250	449	
6:30 6:45	254	320	574	
6:45 7:00	154	295	449	1764
7:00 7:15	214	323	537	2009
7:15 7:30	252	348	600	2160
7:30 7:45	317	326	643	2229
7:45 8:00	226	293	519	2299
8:00 8:15	183	290	473	2235
8:15 8:30	173	529	702	2337
8:30 8:45	312	478	790	2484
8:45 9:00	276	470	746	2711

Table A-2: PM System Peak Hour Volumes

STARTING TIME	INTERSECTION										TOTALS	HOURLY TOTALS
	#1 - White Horse	#2 - Laurel	#2a - Laurel	#2b - White Horse	#3 - Station	#4 - Berlin	#5 - Berlin	#5a - New	#6 - White Horse	#7 - Laurel		
3:00 3:15	506	818	16	26	42	203	116	7	371	330	390	2825
3:15 3:30	467	832	18	32	50	169	123	8	560	304	348	2911
3:30 3:45	513	836	19	32	51	225	111	8	682	396	385	3258
3:45 4:00	520	842	15	39	54	194	155	16	644	427	388	3294
4:00 4:15	571	899	17	31	48	151	191	14	652	340	351	3265
4:15 4:30	515	992	11	25	36	110	217	22	647	371	386	3332
4:30 4:45	475	936	19	36	55	163	166	18	764	408	373	3413
4:45 5:00	556	930	22	36	58	127	296	29	465	385	356	3260
5:00 5:15	567	953	18	44	62	185	234	28	642	405	387	3525
5:15 5:30	526	956	19	28	47	202	251	25	624	364	395	3437
5:30 5:45	591	887	19	34	53	292	255	15	489	337	401	3373
5:45 6:00	515	885	18	36	54	219	199	32	572	322	353	3205
6:00 6:15	474	854	17	30	47	241	201	20	654	343	362	3243
6:15 6:30	486	823	20	22	42	285	174	14	584	375	364	3189
6:30 6:45	471	772	14	37	51	307	180	13	568	323	319	3055
6:45 7:00	446	766	20	25	45	255	249	28	485	306	301	2926

STARTING TIME	INTERSECTION		TOTALS	HOURLY TOTALS
	#9 - Berlin	#10 - Egg Harbor		
3:00 3:15	148	120	268	
3:15 3:30	136	227	363	
3:30 3:45	325	242	567	
3:45 4:00	289	309	598	1796
4:00 4:15	284	351	635	2163
4:15 4:30	194	317	511	2311
4:30 4:45	165	394	559	2303
4:45 5:00	196	343	539	2244
5:00 5:15	263	351	614	2223
5:15 5:30	330	345	675	2387
5:30 5:45	282	404	686	2514
5:45 6:00	352	386	738	2713
6:00 6:15	334	262	596	2695
6:15 6:30	281	275	556	2576
6:30 6:45	278	259	537	2427
6:45 7:00	251	240	491	2180

Figure A-14: Station Avenue Signal Warrant Volumes

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL M AM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: SOMERDALE
INTERSECTION: North-South Street & East-West Street
STREETS: STATION AVE WHITE HORSE RD

DATE: 1/13/09
DAY: TUESDAY
WEATHER: FAIR

FILE NUMBER: 3AM

AM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			STATION AVE			2-SOUTHBOUND			3-EASTBOUND			WHITE HORSE RD			4-WESTBOUND			N-S			E-W		
	L	S	R	L	TOTAL	L	S	R	L	TOTAL	L	S	R	L	TOTAL	L	S	R	L	TOTAL	L	S	R	L
6:00 6:15	0	0	3	2	3	2	3	2	7	0	0	55	12	67	13	25	0	38	10	105	115	115	0	105
6:15 6:30	0	0	6	1	6	1	1	0	2	0	115	14	129	17	33	0	50	8	179	187	187	0	179	
6:30 6:45	0	0	7	5	7	5	1	4	10	0	149	19	168	25	62	4	91	17	259	276	276	4	259	
6:45 7:00	0	0	13	1	13	1	0	2	3	0	219	20	239	38	50	2	90	16	329	345	345	2	329	
7:00 7:15	0	0	29	9	5	8	538	65	170	6	538	65	170	93	170	6	114	10	333	343	343	1	333	
7:15 7:30	1	0	12	1	13	1	201	37	238	0	196	23	219	32	81	1	123	17	361	378	378	0	361	
7:30 7:45	2	0	13	1	15	1	273	40	314	1	273	40	314	55	90	0	145	20	459	479	479	0	459	
7:45 8:00	1	0	11	1	12	1	290	31	321	0	290	31	321	54	138	2	194	16	515	531	531	2	515	
8:00 8:15	4	0	41	4	41	4	960	131	1091	1	960	131	1091	176	397	3	285	12	460	472	472	3	460	
8:15 8:30	0	0	3	1	3	1	294	42	336	0	294	42	336	58	117	2	177	7	513	520	520	2	513	
8:30 8:45	2	0	8	2	10	2	288	16	304	0	288	16	304	48	188	4	212	12	492	504	504	4	492	
8:45 9:00	1	0	7	1	8	1	246	19	265	0	246	19	265	37	124	1	162	15	427	442	442	1	427	
	3	0	26	7	26	7	1091	99	1190	1	1091	99	1190	184	509	9	460	12	572	584	584	9	572	

Figure A-14: Station Avenue Signal Warrant Volumes (Continued)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MAM INTERVAL COUNTS

COUNTY: CAMDEN
MUNICIPALITY: SOMERDALE
INTERSECTION: North-South Street & East-West Street
STREETS: STATION AVE WHITE HORSE RD

DATE: 1/13/09
DAY: TUESDAY
WEATHER: FAIR
FILE NUMBER: 3PM

PM INTERVAL COUNTS

STARTING TIME	1-NORTHBOUND			STATION AVE			2-SOUTHBOUND			3-EASTBOUND			WHITE HORSE RD			4-WESTBOUND			N-S			E-W					
	L	S	R	L	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL		
3:00 3:15	0	0	7	0	7	0	0	0	0	0	0	2	122	2	2	2	124	28	166	2	196	7	320	2	196	7	327
3:15 3:30	1	0	11	2	12	0	0	2	4	0	0	2	148	2	2	150	36	157	2	195	16	345	2	195	16	361	
3:30 3:45	1	0	12	1	13	1	1	0	2	0	0	4	156	4	0	160	52	182	3	237	15	397	3	237	15	412	
3:45 4:00	0	0	17	1	17	1	0	0	1	0	0	1	182	1	0	183	47	191	2	240	18	423	2	240	18	441	
4:00 4:15	2	0	47	4	53	1	1	2	2	0	0	608	9	9	163	696	9	696	9	705	17	427	3	705	17	444	
4:15 4:30	0	0	14	2	14	2	1	0	3	0	0	170	6	6	176	64	196	3	263	17	439	3	263	17	456		
4:30 4:45	1	0	29	3	30	3	0	1	4	0	0	181	5	5	186	58	198	2	258	34	444	2	258	34	478		
4:45 5:00	0	0	26	2	26	2	1	3	0	0	0	190	8	8	198	78	196	2	276	26	474	2	276	26	500		
5:00 5:15	1	0	84	8	92	8	2	5	22	0	0	719	22	22	780	253	780	10	790	38	484	2	790	38	522		
5:15 5:30	1	0	34	2	35	2	0	1	3	0	0	190	9	9	199	75	208	2	285	26	484	4	285	26	522		
5:30 5:45	1	0	24	1	25	1	0	0	1	0	0	138	4	4	142	63	184	4	251	26	393	2	251	26	419		
5:45 6:00	1	0	44	2	45	2	0	1	3	0	0	142	2	2	144	66	218	2	286	48	430	2	286	48	478		
6:00 6:15	1	0	40	0	40	0	0	1	1	2	2	95	2	2	99	42	184	8	234	42	333	8	234	42	375		
6:15 6:30	4	0	142	5	147	5	0	3	17	0	0	565	17	17	246	794	16	246	16	262	56	461	16	262	56	517	
6:30 6:45	3	0	50	1	53	1	0	2	3	0	0	160	8	8	168	56	226	11	293	46	428	11	293	46	474		
6:45 7:00	1	0	44	0	45	0	0	1	1	0	0	160	5	5	165	37	213	13	263	46	328	13	263	46	428		
	0	6	35	4	41	2	0	7	9	0	0	130	2	2	132	26	164	6	196	50	328	6	196	50	378		
	1	0	22	1	23	1	0	2	3	0	0	114	1	1	115	30	142	7	179	26	294	7	179	26	320		
	5	6	151	4	155	4	0	12	16	0	0	564	16	16	745	149	745	37	782	26	294	37	782	26	320		

Figure A-15: Station Avenue Signal Warrant Summary

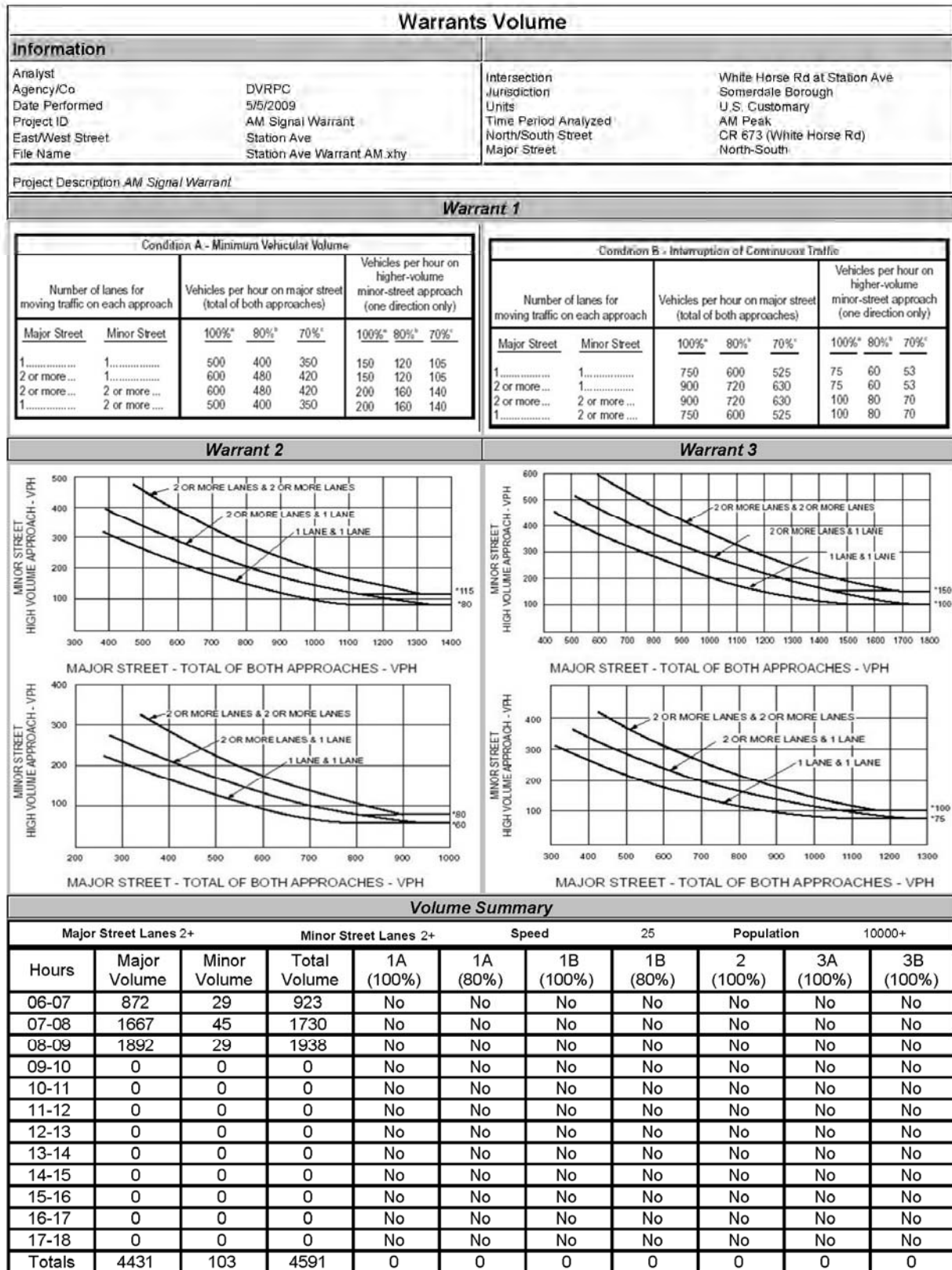
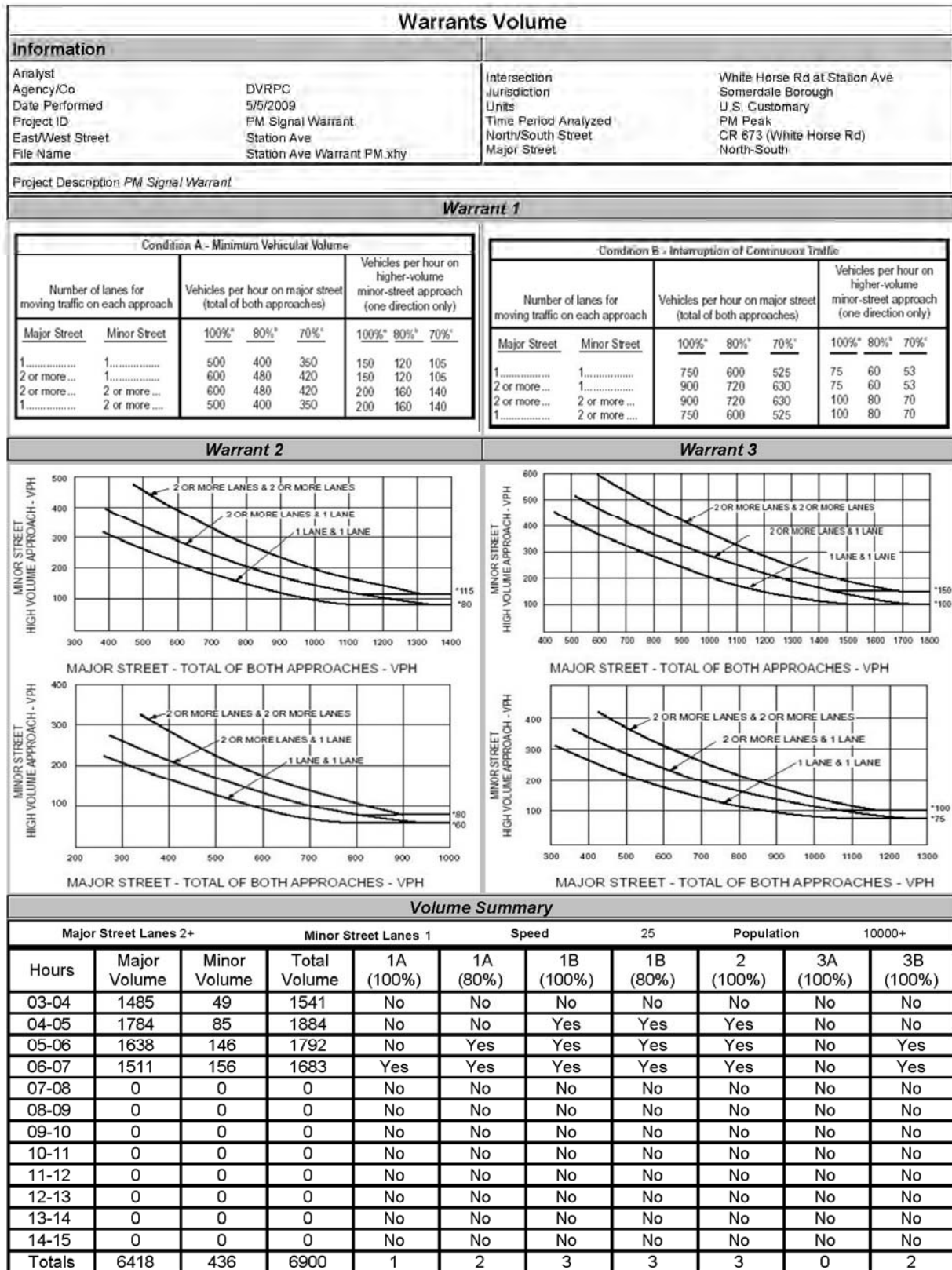


Figure A-15: Station Avenue Signal Warrant Summary (Continued)



APPENDIX B



Alternative Recommendation Analysis

Analysis of Possible Alternative Recommendations

As discussed in the Analysis and Recommended Improvements section, the LOS for existing conditions was compared against potential alternative improvements to determine the best recommendation for each intersection. The following tables show the average delay and corresponding LOS for each scenario at the intersections analyzed.

Table B-1: CR 673 (White Horse Road) at CR 702 (Berlin Road)

		Possible Alternative Recommendations											
Existing		Add SB Right-Turn Lane (250'); Assume Curb Lane Extended and PM Signal Added at Station Ave.				Restrict Turns at US 30; Assume Curb Lane Extended and PM Signal Added at Station Ave.				Add SB Right-Turn Lane (250'); Restrict Turns at US 30; Assume Curb Lane Extended and PM Signal Added at Station Ave.			
Existing (120 Sec. CL)		Optimize Timing and Modify Phasing to Leading Left (120 sec. CL)				Existing (120 sec. CL)				Optimize Timing and Modify Phasing to Leading Left (120 sec. CL)			
Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
AM Peak Hour													
CR 673 (NB)	15	B	15	B	B	15	B	17	B	15	B	17	B
CR 673 (SB)	92	F	79	E	E	67	E	41	D	46	D	39	D
CR 702 (EB)	30	C	40	D	D	47	D	21	C	21	C	23	C
CR 702 (WB)	15	B	17	B	C	21	C	13	B	11	B	12	B
Overall Intersection	37	D	34	C	C	33	C	24	C	24	C	22	C
PM Peak Hour													
CR 673 (NB)	13	B	15	B	B	16	B	14	B	14	B	15	B
CR 673 (SB)	80	E	71	E	E	76	E	44	D	44	D	34	C
CR 702 (EB)	35	D	41	D	F	150	F	27	C	27	C	27	C
CR 702 (WB)	649	F	757	F	F	1660	F	27	C	27	C	26	C
Overall Intersection	217	F	220	F	F	360	F	30	C	30	C	27	C

Alt. 2a

Alt. 2

Alt. 3a

Alt. 3

Alt. 1a

Alt. 1

Table B-2: US 30 at CR 673 (White Horse Road)

		Possible Alternative Recommendations												
Existing		Add SB Right-Turn Lane (250'); Restrict Turns at US 30; Assume Curb Lane Extended and PM Signal Added at Station Ave.				Restrict Turns at US 30; Assume Curb Lane Extended and PM Signal Added at Station Ave.				Add SB Right-Turn Lane (250'); Restrict Turns at US 30; Assume Curb Lane Extended and PM Signal Added at Station Ave.				
AM Peak Hour	Existing Timing and Geometry													
	Existing (120 Sec. CL)	Existing (120 sec. CL)				Existing (120 sec. CL)				Existing (120 sec. CL)				
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
	33	C	32	C	34	C	40	D	41	D	39	D	41	D
	34	C	32	C	39	D	37	D	52	D	30	C	52	D
15	B	15	B	15	B	10	B	10	B	11	B	12	B	
19	B	19	B	19	B	13	B	13	B	13	B	13	B	
Overall Intersection	22	C	22	C	24	C	20	C	23	C	19	B	24	C
PM Peak Hour	Existing (120 Sec. CL)	Existing (120 sec. CL)				Existing (120 sec. CL)				Existing (120 sec. CL)				
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
	43	D	44	D	60	E	41	D	44	D	41	D	43	D
	55	D	54	D	84	F	39	D	66	E	29	C	70	E
	18	B	18	B	135	F	17	B	16	B	17	B	15	B
14	B	14	B	14	B	13	B	13	B	13	B	11	B	
Overall Intersection	26	C	26	C	83	F	24	C	28	C	22	C	28	C
		Alt. 1				Alt. 1a				Alt. 2				
		Alt. 1				Alt. 3a				Alt. 2a				
		Alt. 1				Alt. 3				Alt. 2				

Table B-3: CR 673 (White Horse Road) at Station Avenue

		Existing		Possible Alternative Recommendations			
		Existing Timing and Geometry		Install Traffic Signal and extend NB curb lane to station			
AM Peak Hour		unsignalized					
		Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
	CR 673 (NB)	6	A				
	CR 673 (SB)	65	F				
	Station Ave (EB) station access (WB)	478	F				
		52	F				
	Overall Intersection	31	D				
PM Peak Hour		unsignalized					
		Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
	CR 673 (NB)	2	A	4	A	2	A
	CR 673 (SB)	322	F	341	F	323	F
	Station Ave (EB) station access (WB)	2079	F	30	C	1077	F
		30	D	7	A	19	C
	Overall Intersection	N/A		183	F	179	F

Alt. 1

Alt. 1a

Table B-4: US 30 at New Road

		Possible Alternative Recommendations																							
Existing		Remove Jughandle, add EB Left-Turn Lane, and modify SE corner radius				Remove Jughandle, Add E/W Left-Turn Lanes, and modify SE corner radius				Remove Jughandle, Add E/W Left-Turn Lanes, add SB Thru/Right Lane, and modify SE corner radius															
Existing (120 sec. CL)		Existing (120 sec. CL)		Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)		Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)		Add E/W Left Phase Optimized Signal Plan (120 sec. CL)		Remove Split Phasing, Add E/W & N/S leads Signal Plan (120 sec. CL)		Existing (120 sec. CL)		Optimized (still split) Signal Plan (105 sec. CL)		Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)		All Protected Left Phases Optimized Signal Plan (120 sec. CL)							
Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS						
AM Peak Hour																									
Existing (120 sec. CL)		25	C	50	D	46	D	48	D	55	D	58	E	53	D	51	D	47	D	53	D	54	D		
New St (NB)		43	D	8	A	7	A	6	A	8	A	8	A	7	A	8	A	7	A	6	A	7	A	7	A
New St (SB)		3	A	4	A	3	A	4	A	4	A	3	A	3	A	4	A	3	A	4	A	5	A	3	A
US 30 (EB)		8	A	10	B	6	A	9	A	9	A	14	B	11	B	10	B	10	B	9	A	9	A	12	A
US 30 (WB)		10	A	8	A	6	A	7	A	8	A	9	A	8	A	8	A	9	A	8	A	8	A	8	A
Overall Intersection																									
Existing (120 sec. CL)		Existing (120 sec. CL)		Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)		Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)		Add E/W Left Phase Optimized Signal Plan (120 sec. CL)		Remove Split Phasing, Add E/W & N/S leads Signal Plan (120 sec. CL)		Existing (120 sec. CL)		Optimized (still split) Signal Plan (105 sec. CL)		Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)		All Protected Left Phases Optimized Signal Plan (120 sec. CL)							
Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
39	D	51	D	27	C	47	D	47	D	50	D	91	F	55	D	50	D	57	E	46	D	56	E	56	E
New St (NB)		120	F	129	F	61	E	41	D	122	F	115	F	47	D	117	F	220	F	41	D	59	E	59	E
New St (SB)		16	B	13	B	9	A	11	B	12	B	9	A	10	A	11	B	8	A	11	B	10	A	10	A
US 30 (EB)		15	B	16	B	13	B	16	B	15	B	19	B	18	B	16	B	12	B	16	B	20	B	20	B
US 30 (WB)		45	D	40	D	21	C	20	B	37	D	38	C	20	C	37	D	51	D	20	C	25	C	25	C
Overall Intersection																									
Existing (120 sec. CL)		Existing (120 sec. CL)		Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)		Remove Split Phasing, Add E/W & N/S leads Signal Plan (120 sec. CL)		Add E/W Left Phase Optimized Signal Plan (120 sec. CL)		Remove Split Phasing, Add E/W & N/S leads Signal Plan (120 sec. CL)		Existing (120 sec. CL)		Optimized (still split) Signal Plan (105 sec. CL)		Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)		All Protected Left Phases Optimized Signal Plan (120 sec. CL)							
Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
67	E	91	F	48	D	48	D	91	F	122	F	105	F	12	B	122	F	72	E	72	E	72	E	72	E
New St (NB)		132	F	48	D	36	D	36	D	105	F	105	F	12	B	117	F	82	F	82	F	82	F	82	F
New St (SB)		19	B	36	D	54	D	54	D	21	C	21	C	21	C	21	C	15	B	15	B	15	B	15	B
US 30 (EB)		30	C	54	D	54	D	54	D	21	C	21	C	21	C	21	C	24	C	24	C	24	C	24	C
US 30 (WB)		57	E	48	D	48	D	48	D	41	D	41	D	41	D	41	D	36	D	36	D	36	D	36	D
Overall Intersection																									
Existing (120 sec. CL)		Existing (120 sec. CL)		Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)		Remove Split Phasing, Add E/W & N/S leads Signal Plan (120 sec. CL)		Add E/W Left Phase Optimized Signal Plan (120 sec. CL)		Remove Split Phasing, Add E/W & N/S leads Signal Plan (120 sec. CL)		Existing (120 sec. CL)		Optimized (still split) Signal Plan (105 sec. CL)		Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)		All Protected Left Phases Optimized Signal Plan (120 sec. CL)							
Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
67	E	83	F	43	D	43	D	83	F	115	F	49	D	115	F	70	E	70	E	70	E	70	E	70	E
New St (NB)		107	F	17	B	17	B	17	B	49	D	49	D	49	D	52	D	52	D	52	D	52	D	52	D
New St (SB)		18	B	17	B	17	B	17	B	12	B	14	B	12	B	14	B	14	B	14	B	14	B	14	B
US 30 (EB)		24	C	28	C	28	C	28	C	20	B	20	B	20	B	27	C	27	C	27	C	27	C	27	C
US 30 (WB)		50	D	31	C	31	C	31	C	29	C	29	C	29	C	29	C	29	C	29	C	29	C	29	C
Overall Intersection																									
Existing		Existing		1A		1B		1		2		2A		2B		3		3A		3B		3C		3C	

Table B-5: US 30 at New Road (continued)

Possible Alternative Recommendations													
AM Peak Hour	Keep Jughandle, Add SB Thru/Right-Turn Lane, and modify SE corner radius	Relocate Jughandle and modify SE corner radius	Relocate Jughandle, add W Left-Turn Lane, and modify SE corner radius	Relocate Jughandle, add W Left-Turn Lane, and modify SE corner radius	Relocate Jughandle, add W Left-Turn Lane, and modify SE corner radius	Relocate Jughandle, add W Left-Turn Lane, and modify SE corner radius	Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)	Add WB Left Phase Optimized Signal Plan (120 sec. CL)	Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)	Add WB Left Phase Optimized Signal Plan (120 sec. CL)	Remove Split Phasing (protected N/S) Signal Plan (120 sec. CL)		
												Delay (sec) LOS	Delay (sec) LOS
AM Peak Hour	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	
	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	
	62 E	57 E	58 E	56 E	50 D	57 E	50 D	57 E	60 E	57 E	60 E	57 E	
	New St (NB)	New St (SB)	US 30 (EB)	US 30 (WB)	Overall Intersection	New St (NB)	New St (SB)	US 30 (EB)	US 30 (WB)	Overall Intersection	New St (NB)	New St (SB)	US 30 (EB)
	7 A	4 A	8 A	9 A	Existing (120 sec. CL)	7 A	2 A	7 A	2 A	7 A	2 A	7 A	2 A
PM Peak Hour	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	
	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	
	40 D	35 C	71 E	72 E	91 F	62 E	91 F	62 E	91 F	62 E	91 F	62 E	
	New St (NB)	New St (SB)	US 30 (EB)	US 30 (WB)	Overall Intersection	New St (NB)	New St (SB)	US 30 (EB)	US 30 (WB)	Overall Intersection	New St (NB)	New St (SB)	US 30 (EB)
	88 F	15 B	16 B	14 B	42 D	77 E	8 A	15 B	14 B	27 C	77 E	8 A	15 B
Development #1 PM	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	
	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	
	36 D	42 D	27 C	26 C	22 C	19 B	21 C	19 B	21 C	19 B	21 C	19 B	
	New St (NB)	New St (SB)	US 30 (EB)	US 30 (WB)	Overall Intersection	New St (NB)	New St (SB)	US 30 (EB)	US 30 (WB)	Overall Intersection	New St (NB)	New St (SB)	US 30 (EB)
	15 B	14 B	15 B	14 B	42 D	15 B	14 B	15 B	14 B	15 B	14 B	15 B	14 B
Development #2 PM	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	
	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	
	40 D	35 C	71 E	72 E	91 F	62 E	91 F	62 E	91 F	62 E	91 F	62 E	
	New St (NB)	New St (SB)	US 30 (EB)	US 30 (WB)	Overall Intersection	New St (NB)	New St (SB)	US 30 (EB)	US 30 (WB)	Overall Intersection	New St (NB)	New St (SB)	US 30 (EB)
	88 F	15 B	16 B	14 B	42 D	77 E	8 A	15 B	14 B	27 C	77 E	8 A	15 B
Development #3 PM	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	Existing (120 sec. CL)	
	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	Delay (sec) LOS	
	36 D	42 D	27 C	26 C	22 C	19 B	21 C	19 B	21 C	19 B	21 C	19 B	
	New St (NB)	New St (SB)	US 30 (EB)	US 30 (WB)	Overall Intersection	New St (NB)	New St (SB)	US 30 (EB)	US 30 (WB)	Overall Intersection	New St (NB)	New St (SB)	US 30 (EB)
	15 B	14 B	15 B	14 B	42 D	15 B	14 B	15 B	14 B	27 C	15 B	14 B	15 B

Table B-6: CR 686 (Gibbsboro Road) at CR 702 (BerlinRoad/Egg Harbor Road)

	Possible Alternative Recommendations																																	
	Existing Existing Timing and Geometry	Optimize Signal Timing			Add NB lane at Egg Harbor (to Jefferson); Modify NB at Berlin to Through/left			Add NB lane at Egg Harbor (to Burrows); Modify NB at Berlin to Through/left			Add NB lane at Egg Harbor (to Jefferson); Modify NB at Berlin to Through/left; Extend SB left			Add NB& SB lane to Burrows; Modify NB at Berlin																				
		Delay (sec)	LOS	LOS	Delay (sec)	LOS	LOS	Delay (sec)	LOS	LOS	Delay (sec)	LOS	LOS	Delay (sec)	LOS	LOS	Delay (sec)	LOS																
AM Peak Hour	NB at Berlin	88	F	65	E	37	D	115	F	89	F	46	D			90	F	42	D	115	F													
	SB at Berlin	3	A	3	A	3	A	3	A	3	A	3	A			3	A	3	A	3	A													
	EB Berlin	31	C	37	D	35	D	37	D	34	C	37	D			35	C	37	D	86	D													
	Overall Intersection #9	32	C	30	C	55	D	68	E	56	E	33	C			57	E	31	C	68	E													
	NB at Egg Harbor	5	A	5	A	10	A	7	A	9	A	7	A			10	A	7	A	6	A													
	SB at Egg Harbor	48	D	28	C	59	E	30	C	54	C	31	C			59	E	30	C	40	D													
	EB Carleton	41	D	93	F	54	D	43	D	52	D	74	E			51	D	77	E	42	D													
	WB Egg Harbor	37	D	46	D	41	D	41	D	40	D	46	D			40	D	46	D	38	D													
	Overall Intersection #10	28	C	27	C	27	C	24	B	23	C	21	C			26	C	21	C	20	C													
PM Peak Hour	Existing Signal Plan (118s CL)	Delay (sec)	LOS	Optimized Plan (150s CL)	Delay (sec)	LOS	Existing Signal Plan (118s CL)	Delay (sec)	LOS	Optimized Plan (150s CL)	Delay (sec)	LOS	Existing Signal Plan (118s CL)	Delay (sec)	LOS	Move NB lead green to SB (120s CL)	Delay (sec)	LOS	Existing Signal Plan (118s CL)	Delay (sec)	LOS	Optimized Plan (150s CL)	Delay (sec)	LOS	Existing Signal Plan (118s CL)	Delay (sec)	LOS	SB Lead Optimized Plan (120s CL)	Delay (sec)	LOS	Optimized Plan (150s CL)	Delay (sec)	LOS	
	NB at Berlin	32	C	30	C	32	C	37	D	43	D	27	C	29	C	39	D	47	D	47	D	40	D	40	D	47	D	47	D	40	D	40	D	
	SB at Berlin	4	A	5	A	1	A	4	A	4	A	4	A	5	A	4	A	4	A	4	A	4	A	4	A	4	A	4	A	4	A	4	A	
	EB Berlin	35	C	47	D	4	A	35	C	41	D	35	C	42	D	32	C	33	C	33	C	33	C	37	D	33	C	33	C	37	D	37	D	
	Overall Intersection #9	22	C	24	C	20	B	24	C	27	C	20	B	23	C	23	C	25	C	25	C	25	C	24	C	25	C	25	C	24	C	24	C	
	NB at Egg Harbor	4	A	4	A	4	A	5	A	6	A	3	A	4	A	5	A	6	A	6	A	6	A	5	A	6	A	6	A	5	A	5	A	
	SB at Egg Harbor	65	E	31	C	62	E	30	C	29	C	64	E	29	C	25	C	26	C	26	C	26	C	42	D	26	C	26	C	42	D	42	D	
	EB Carleton	31	C	49	D	32	C	46	D	45	D	30	C	45	D	39	D	37	D	37	D	37	D	29	C	37	D	37	D	29	C	29	C	
	WB Egg Harbor	48	D	86	F	46	D	91	F	82	F	47	D	82	F	63	E	48	D	70	E	70	E	47	D	70	E	70	E	47	D	47	D	
	Overall Intersection #10	30	C	26	C	28	C	27	C	26	C	25	C	27	C	21	C	23	C	23	C	23	C	24	C	23	C	23	C	24	C	24	C	
				Alt. 1			Alt. 2		Alt. 3		Alt. 3A		Alt. 4		Alt. 4A		Alt. 4B		Alt. 4C		Alt. 4D		Alt. 5											

APPENDIX C



Potential Redevelopment Areas

Analysis of Potential Redevelopment Areas

There are several potential redevelopment areas located within the study area. These areas are illustrated on [Figure C-1](#).

Development between Berlin Road and White Horse Pike

The Borough of Stratford indicated that there is potential for redevelopment in the area between Berlin Road and White Horse Pike along Hunt and Coolidge Avenues. While the specifics of this redevelopment are unknown, it was noted that the area will likely continue as a residential use and therefore should be connected with the Lindenwold Station. Elements such as sidewalks with curb ramps and crosswalks will provide needed connectivity to Berlin Road and the station.

Development scenarios for the former Bradlee's site

The area at the south end of New Road, the former site of Bradlee's discount department store, has also been designated as a potential redevelopment area by the Borough of Stratford. In order to account for the development potential of this site in this study a range of expected trips was calculated. This range of trips generated was used to determine the impact of development on the intersection of U.S. 30 and New Road and how the recommendations made earlier for the intersection. [Table C-1](#) shows the breakdown of trip ends for the two assumed scenarios used in the analysis.

The low value of the range assumed that the site would remain developed as it is now, with no additional construction. This scenario assumes that the vacant Bradlee's building, which is approximately 125,000 square feet, would be reused as a retail store. If this building were to be reused as a Discount Club (ITE Land Use Code # 861¹), it would be reasonable to see 600 trips generated during the AM and PM peak hours combined.

The high value of the range assumed that the site would be redeveloped with a mixed-use consisting of office, retail, and residential uses. This scenario assumes that the parcel is redeveloped as office space, a supermarket, and a high turnover restaurant; all with second floor residential apartments (ITE Codes # 710, 850, 932, 220). Additionally, it was assumed that the restaurant would not be open during the AM peak hour. The mixed-use scenario would reasonably produce 1,219 trips in the combined AM and PM peak hours each day.

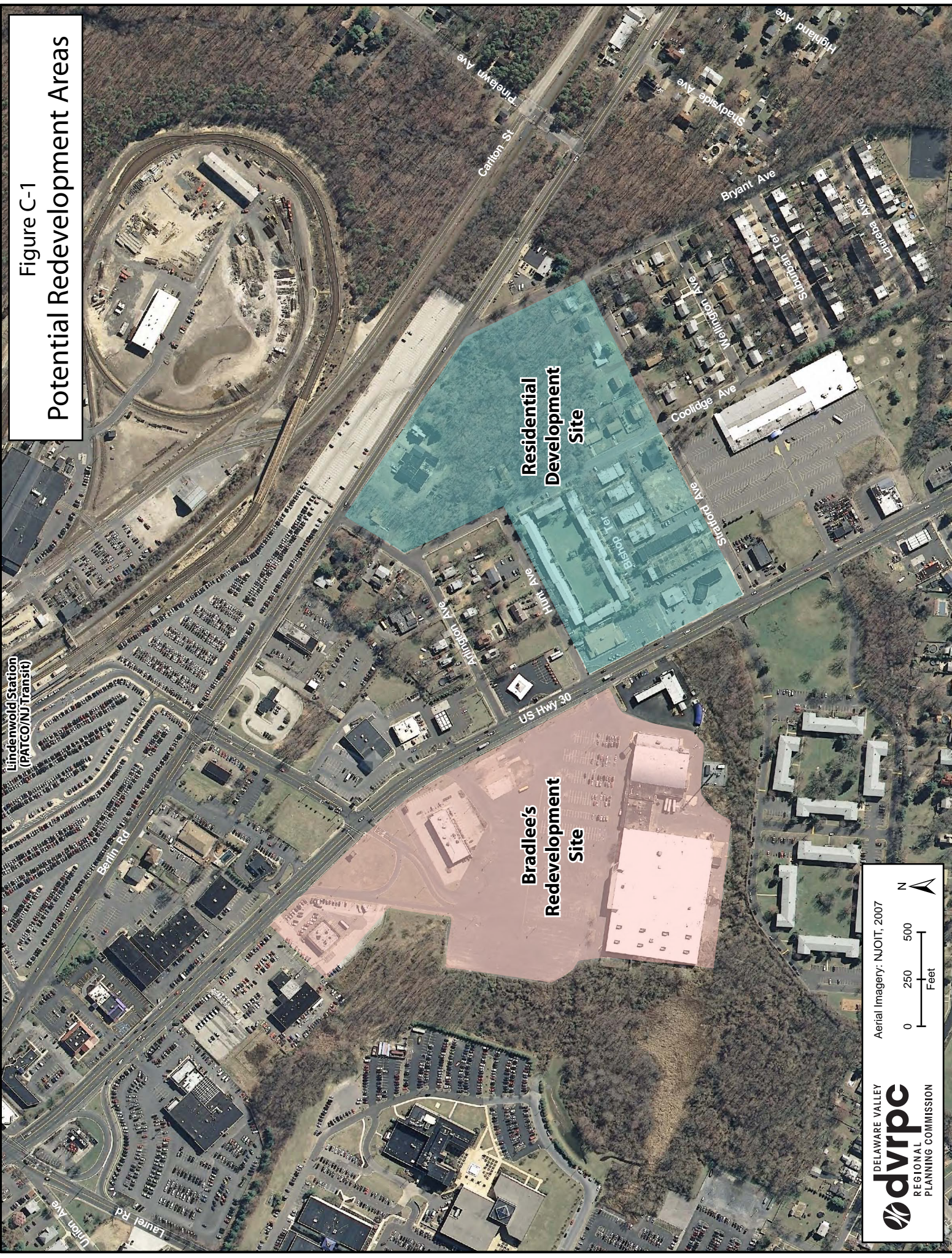
¹ ITE Trip Generation, 7th Edition.

Table C-1: Trips Generated by Development Scenarios

ITE Land Use	Assumed Independent Variable	Total Trips	Trips	
			Entering	Exiting
Scenario #1				
#861 Discount Club	125,000 Sq.Ft.	70 - AM	35	35
		530 - PM	256	256
Scenario #2				
#710 General Office	125,000 Sq.Ft.	194 - AM	171	23
		187 - PM	32	155
#850 Supermarket	40,000 Sq.Ft.	130 - AM	79	51
		418 - PM	213	205
#932 High Turn-Over Restaurant	8,980 Sq.Ft.	98 - PM	51	47
#220 Apartment	170 Units	87 - AM	17	70
		105 - PM	68	37

Source: DVRPC 2009

Figure C-1
Potential Redevelopment Areas



Lindenwood Station
(PATCO/NJ Transit)

Residential
Development
Site

Bradlee's
Redevelopment
Site



Aerial Imagery: NUOIT, 2007

Publication Title: Lindenwold Station Transit Hub Study
Publication Number: 09068
Date Published: October 2009
Geographic Area Covered: Lindenwold Borough, Somerdale Borough, Stratford Borough, Voorhees Township, Camden County

Key Words: transportation, transit service, PATCO, High Speed Line, NJ Transit, Lindenwold Station, intersection improvements, solutions, pedestrian access, level of service, bicycle facilities, connectivity, intersection analysis, crash analysis

Abstract: Lindenwold Station is the junction of two rail lines; the NJ Transit Atlantic City line and the Port Authority Transit Corporation (PATCO) High Speed Line, which terminates at Lindenwold. The Lindenwold Station has the highest number of boards for PATCO service in New Jersey. NJ Transit ridership between Philadelphia and Atlantic City has been growing steadily over recent years. Recommendations are made by the study team to enhance the existing services at the station and to support Lindenwold as a hub for transit service. These include improving pedestrian and bicycle access to the station, creating an integrated multimodal transportation network and evaluating the existing bottlenecks and complex intersections along CR 673 near the station.

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Lindenwold Station

