Freight Movement Around NJ Turnpike Interchange 6A

March 2018

DELAWARE VALLEY
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REGIONAL
PLANNING COMMISSION

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Executive Summary

This study examines traffic circulation along the US 130 corridor in the industrial area by NJ Turnpike Interchange 6A. The study area is one of the Delaware Valley Regional Planning Commission's (DVRPC's) designated Freight Centers. It encompasses parts of Florence Township, Burlington Township, and Burlington City zoned for light/heavy industry and manufacturing. This freight center is growing rapidly, and the area is expected to accommodate approximately 10 million square feet of additional warehouse and industrial space by 2025. This study is a response to the need for further planning to accommodate future traffic volumes; the primary focus is to identify roadway improvements that can support greater traffic volumes generated by new development.

The following report serves as a guide for the three interested municipalities to easily identify freight mobility needs; it includes both short-term and long-term roadway improvement recommendations. These recommendations support the movement of goods and services that are critical to regional economic competitiveness. This study also considers the importance of job growth and consequential need to provide employees and public safety personnel with safe and convenient access to these major regional employment centers.

Data regarding existing traffic conditions was collected and analyzed. Turning movement counts and heavy vehicle percentages were collected at 12 key intersections in the study area. Utilizing microsimulation traffic engineering software, a comprehensive trip generation exercise was performed. Existing traffic conditions (base year 2015) were compared with projected conditions (horizon year 2025). Software output and stakeholder input led to the identification of various improvements. These improvements were tested, and those deemed viable were included in this report as recommendations.

Additional enhancements related to pedestrian and vehicular safety in the study area are also highlighted. Local traffic patterns were identified, and a safety analysis was conducted. Pedestrian facilities connecting the NJ Transit River LINE stations to US 130 and nearby industrial sites are suggested.

It is important to note that Florence Township was one of three municipalities selected to participate in the first round of DVRPC's Safe Routes to Transit Program in 2017. As part of that separate effort, DVRPC is working with municipal, county, and transit agency representatives to identify and evaluate a variety of strategies designed to provide safe and convenient pedestrian access from the River LINE to new and emerging local employment destinations along Cedar Lane and Railroad Avenue.

Numerous short- and long-term concepts were formulated to address current or expected transportation deficiencies. Most improvement concepts were analyzed in detail, and benefits were quantified where possible. Numerous meetings were held with stakeholders, and several improvement alternatives emerged from stakeholder feedback. Stakeholder alternatives include improvements to both the road and pedestrian infrastructure networks. Some stakeholder recommendations and pedestrian network improvements included in this study are preliminary recommendations. Ideas that emerged through stakeholder collaboration in the final stages of this project are included; however, they were not tested and thus require further study. With regard to pedestrian infrastructure improvements, the Safe Routes to Transit Program study will identify more detailed strategies for travel to and from the Florence River LINE station.

The following recommended improvements were analyzed in depth:

Roadway Network Improvements

- Roundabout at Neck Road (CR 658) & Dultys Lane:
  A single-lane roundabout at the currently stop-controlled intersection would reduce vehicular delay in the future;
- Add right-turn-only lane on northbound US 130 at Columbus Road (CR 543):
  To reduce delay in the future with expected development;
- Build new road to connect Columbus Road (CR 543) to US 130 just north of existing US 130 and Jones Street intersection:
  To accommodate left-turn movements from Jones Street onto northbound US 130;
- Optimize signal timing at US 130 & La Gorce Boulevard:
  To improve intersection efficiency;
- Add dual left-turn lane from northbound US 130 to Neck Road (CR 658) and right-turn-only lane on westbound Neck Road (CR 658):
  To provide more capacity for turning vehicles;
- US 130 & Dultys Lane:
  Signal optimization and right-turn overlap phase;
- US 130 & John Galt Way:
  Signal optimization;
- US 130 & Cedar Lane (CR 659):
  Add far-side jug handle and through lane on northbound US 130;
- US 130 & Florence-Columbus Road/Delaware Avenue (CR 656):
  Add turning lane capacity on all four approaches to US 130;
- Widen Hornberger Avenue to two lanes in each direction, and add dual left-turn lanes on northbound US 130, and eastbound Hornberger Avenue;
- Add through lane on Florence-Columbus Road (CR 656) northbound and southbound approaches at Old York Road (CR 660):
  To improve overall intersection performance given additional volumes in the future;
- Widen southbound US 130 to Cedar Lane (CR 659) off-ramp:
  Add a second lane that would separate left-turning and right-turning traffic;
- A new two-way connector road from River Road to Daniels Way:
  To provide relief for Dultys Lane; and
- Connector Road from John Galt Way to Cedar Lane (CR 659):
  To provide more direct access from the Florence River LINE station to the warehouses along Railroad Avenue.

Pedestrian Network and Transit Access Improvements

- Pedestrian walkway from Florence River LINE station to Railroad Avenue to provide pedestrian access to warehouses and other employment centers from the station;
- Sidewalk connecting Florence River LINE station to US 130 to provide a direct connection along the south side of John Galt Way to warehouses on US 130;
- Sidewalks connecting the Florence River LINE station with warehouses within at least 1/2-mile of the station; and
- Sidewalk along US 130 connecting the Fairbrook Drive community to Hornberger Avenue.

An Implementation Plan was developed with order-of-magnitude cost estimates for implementing the recommended mobility improvements. Projects to improve mobility in the study area are grouped based on high, medium, and low priority. Responsible agencies are listed based on facility ownership and maintenance. Potential funding programs are based on the relevance of a particular program to the recommended improvement.

1 PURPOSE AND NEED

Study Purpose

This study examines traffic circulation in the industrial area by NJ Turnpike Interchange 6A along the US 130 corridor. The purpose of this study is to identify methods to improve the efficiency of the study area's transportation network to accommodate goods movement along US 130. The study also addresses the need to provide employees and public safety personnel with safe and convenient access to the major regional employment centers contained within the Burlington Township/Haines Industrial Center.

The study emphasizes the ability to serve current demand and planned growth with existing transportation infrastructure. Synonymous with regional trends, trucks are the primary mode of freight transportation to and from sites in the study area. As a result, the study focuses on outlining roadway improvements, and the freight rail network was not analyzed.

Existing and future traffic conditions were compared and evaluated to identify sound, feasible recommendations. As part of the analysis, intersections and roadway segments that may reach congestion in the 2025 horizon year were identified, and the safety and efficiency of the network were measured. Staff performed a traffic analysis to identify existing and future-year operational improvements needed at intersections, interchanges, and identified bottlenecks. A traffic analysis projected changes in freight movement based on expected growth in warehouse space. The resulting roadway improvement suggestions aim to sustain the future growth and competitiveness of this freight center.

Study Need

Direct access from the new NJ Turnpike Interchange 6A to the Burlington Township/Haines Industrial Center has made this freight center a significantly more desirable location for freight and warehouse facilities. Convenient access to key transportation facilities, such as I-295, US 130, and the NJ Turnpike has fostered significant growth in warehouse activity. The study area is home to over 13 million square feet of industry. By 2025, the area is expected to accommodate approximately 10 million square feet of additional warehouse and industrial space. In December 2017, almost five million square feet were approved, under construction, or vacant (existing buildings not currently occupied) within the study area. The total area of potential development sites in the study area is almost 11 million square feet. As the freight center grows, it will remain a crucial pillar of the local economy in this part of Burlington County, New Jersey.

New industrial development will also have a significant impact on the area's transportation network, particularly US 130 (the only Principal Arterial in the study area). Furthermore, the generation of new warehouse and manufacturing jobs at the Burlington Township/Haines Industrial Center underscores the importance of safe and convenient access to, from, and within the center for pedestrians, transit riders, and emergency services.

Related Studies

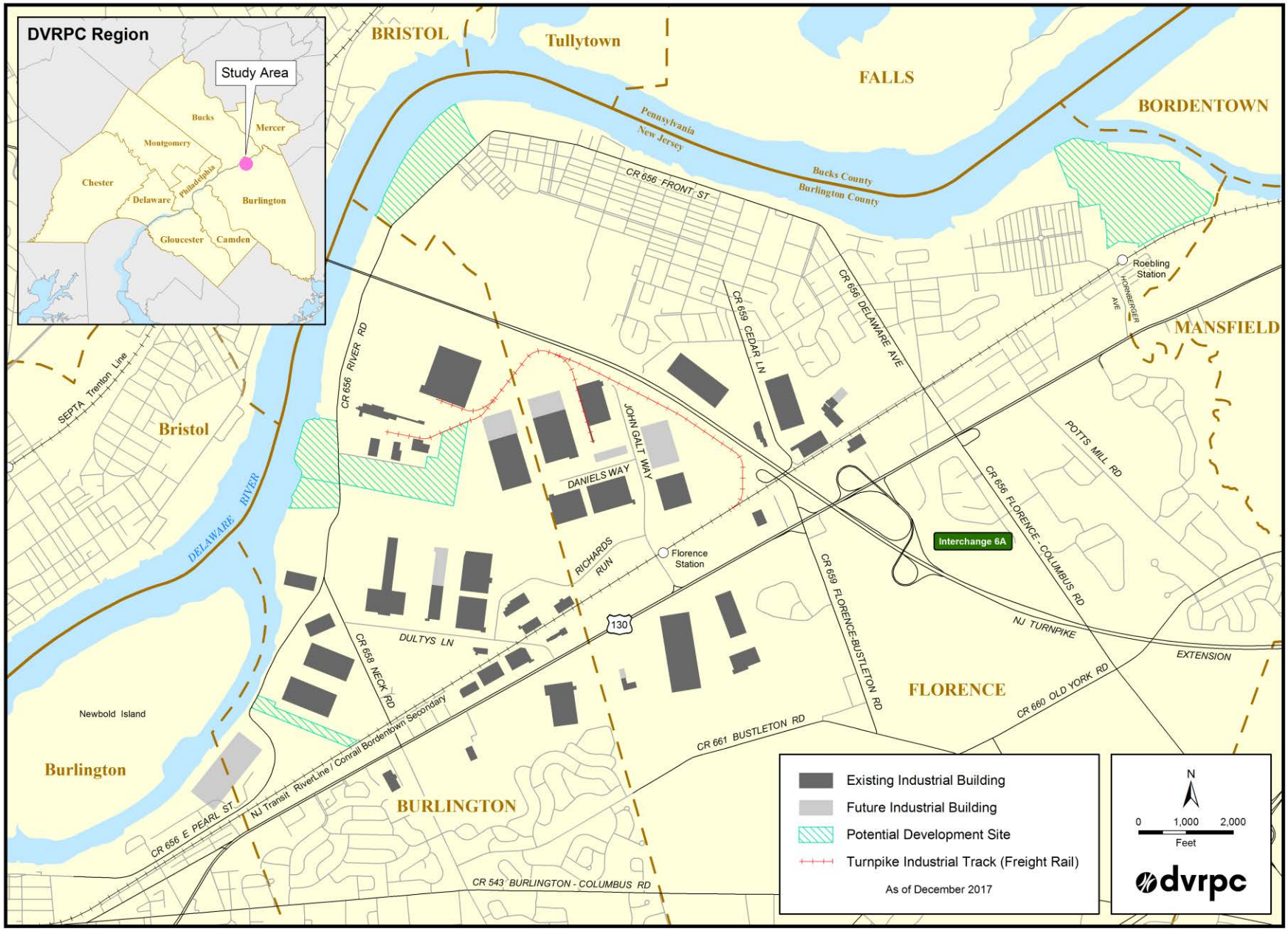
DVRPC has assessed goods movement and transportation needs in this area in a variety of past studies. The *US 130 Corridor Study* was conducted in 1997 (DVRPC Pub #97010). This report presents a transportation improvement plan for the US 130 Corridor in Burlington County. In June 2001, the *US 130 NJ Turnpike Infrastructure Needs Analysis* was completed (DVRPC Pub #01019). This study analyzed the NJ Turnpike Interchange 6A impacts on the surrounding local area. *The Delaware Valley Freight Center Inventory* (DVRPC Pub #11011, April 2012) was developed to advance the status of freight-related land uses by inventorying and categorizing areas where this activity is clustered and most pronounced.

2 STUDY AREA DESCRIPTION

The study area spans across Florence Township, Burlington Township, and Burlington City in Burlington County, New Jersey. It encompasses the Burlington Township/Haines Industrial Freight Center and nearby waterfront properties. This designated DVRPC Mega Freight Center is served by three types of transportation facilities: highway (NJ Turnpike and US 130), freight rail via the New Jersey Transit (NJ Transit)-owned Bordentown Secondary, and water (the Delaware River). It is bounded by the Delaware River in the north, US 130 in the east, the former US Pipe site in the south, and the former Roebling Steel site in the north (**Figure 1**).

The Burlington Township/Haines Industrial Freight Center is a Distribution and Logistics Freight Center that is comprised primarily of warehouse distribution centers, but it also contains light and heavy manufacturing facilities. The highest concentration of activities is located at the Haines Industrial Center, which was developed and is currently owned by the Whitesell Construction Company. Its major tenants include distribution centers for BJ's and the Christmas Tree Store. Other major sites include a Burlington Stores Distribution Center (this facility is also the corporate headquarters) and a parcel of land south of the Haines Industrial Center for which new distribution centers are planned. Next to the Haines Industrial Center is the National Gypsum facility, which has a dock on the Delaware River.

Figure 1: Regional Setting



Burlington Township/Haines Industrial Center

The designated study area is located within one of DVRPC's 67 Regional Freight Centers, the Burlington Township/Haines Industrial Freight Center. The DVRPC-designated Freight Centers are defined as significant aggregations of freight-generating land uses that play a vital role in the region's economy. These centers represent areas in the region that use shared transportation systems to support intensive freight activities, such as warehouse and distribution facilities, mining, manufacturing, and other freight-related industries.

The vitality of the Burlington Township/Haines Industrial Freight Center is supported by the access to key freight corridors. At the core of this system is local access to the NJ Turnpike, I-295, and US 130. Collectively, these facilities grant this area access to vast trade markets in northern New Jersey, Philadelphia, and other locations to the south and west.

In addition, the center is served by Conrail via the Bordentown Secondary, NJ Transit's right-of-way through the corridor. NJ Transit has exclusive access to run light rail passenger service on its River LINE from 5:30 AM to 10:10 PM Sunday through Friday. The River LINE also runs all of Saturday night and Sunday morning. NJ Transit leases to Conrail exclusive access for freight rail at the other times on its main rail lines. Conrail's service provides connection with CSX and Norfolk Southern out of the Pavonia Yard in Camden, New Jersey. NJ Transit also leases to Conrail other rail lines adjacent to the main passenger rail line between Jones Street in Burlington City through Burlington Township to Dultys Lane in Florence Township. These other rail lines are utilized for rail car storage and assembly of rolling stock; as a result, access between the Stevens Station neighborhood in Florence Township and US 130 is sometimes closed.

The center is also home to the only port terminal in Burlington County. This single-use, bulk terminal is owned and operated by National Gypsum and receives on average less than one ship call per month.

The Burlington Township/Haines Industrial Freight Center is one of the region's largest centers at over 1,500 acres. Based on 2011 National Establishment Time-Series employment data, the center was 23rd in the region for employment with 2,619 employees. In addition to employment, freight trip generation is influenced by the square footage of industrial space. In 2016, the Burlington Township/Haines Industrial Freight Center ranked third in the region for square footage of industrial space.

For Burlington County communities and residents, the importance of warehouse and distribution center developments cannot be understated. An analysis of commodity flows demonstrates that by value and weight, warehouse and distribution activity is the largest flow in and out of the county. With a combined 3.5 million tons of annual freight activity, the economic impact is significant. These commodities have an estimated value of $4 billion. The significance of this activity from a transportation perspective is that these commodities are transported primarily by truck. The Burlington Township/Haines Industrial Freight Center is one of the larger, more concentrated locations in Burlington County, and is responsible for a substantial share of this activity. Projected development at the center will contribute to economic activity. However, this growth will continue to strain the existing transportation network.

Context of Industrial Development Patterns

The demand for industrial land for use as distribution centers is not unique to the study area. This development pattern has placed increasing pressure on industrial markets in northern New Jersey and the Lehigh Valley, as well as parts of southern New Jersey. While planned development suggests a near doubling of warehouse space in the next few years, this growth is behind other markets located along the NJ Turnpike freight corridor. However, this location does have specific attributes that will continue to provide a competitive edge to these other markets, driving further growth in distribution center development.

Access

The location is very well situated with access to one of the largest consumer bases in the United States. This location provides access to the City of Philadelphia, as well as large portions of the Philadelphia and New York suburbs. In addition, NJ Turnpike Interchange 6A provides direct access to the PA Turnpike and western markets. Within a one-day drive, this location has access to over one third of the U.S. population. The growing consumer economy has continued to spur growth of new and evermore expansive distribution centers to keep up with new trends in e-commerce.

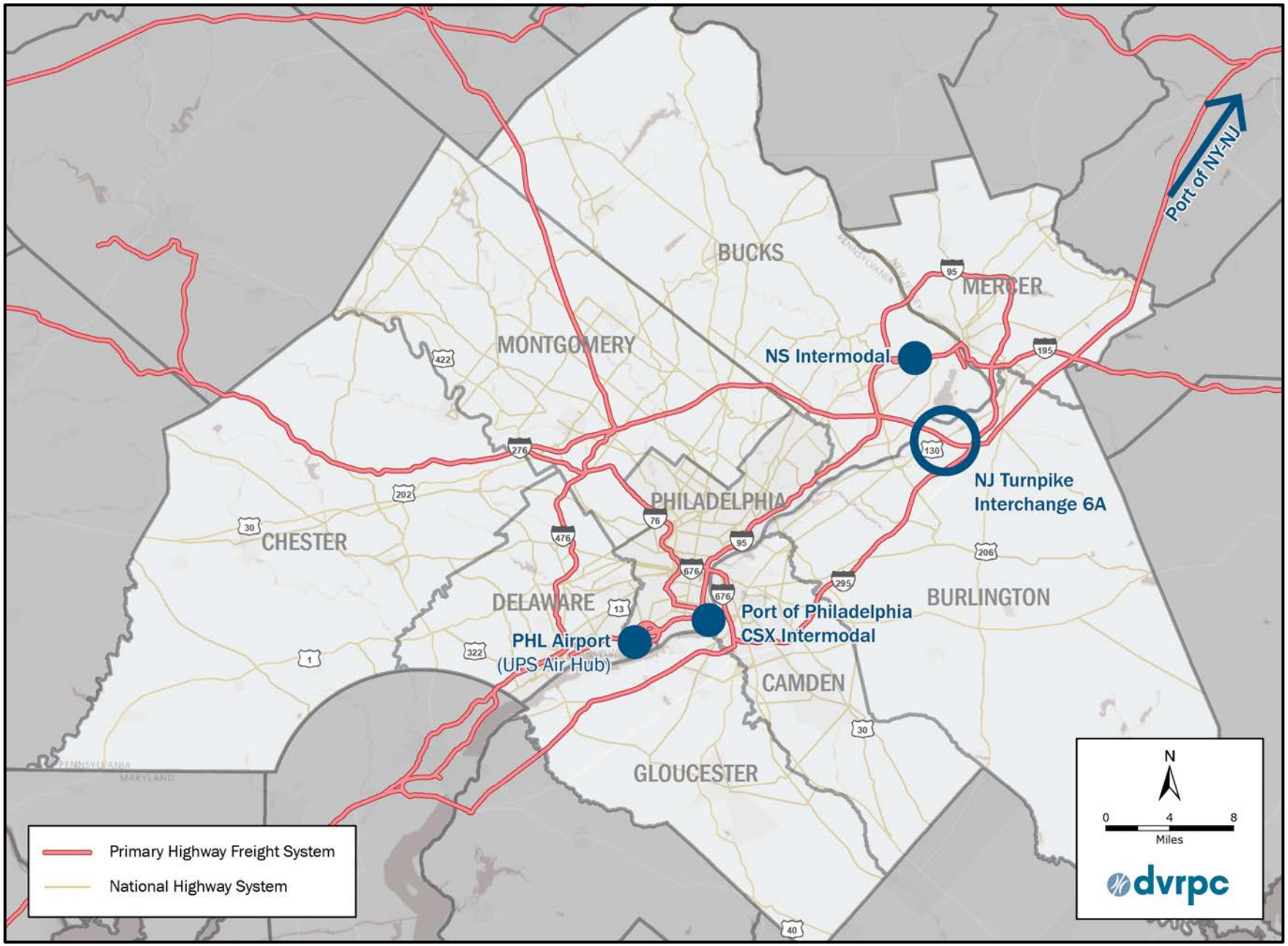
Connectivity

One of the major driving forces for development within the study area is the connectivity provided by the transportation system from this location. The study area is served by two key interchanges: NJ Turnpike 6A and I-295 Exit 52. Through these interchanges, the study area has direct access to the federally identified Primary Highway Freight System (PHFS), highlighted in red in **Figure 2**. These highways serve as the core system through which interstate commerce occurs on our nation's highways. In addition, they afford businesses in the study area connections to far-reaching domestic and foreign markets. As illustrated in **Figure 2** on Page 9, major air and water ports are within hours of the study area, when accessed by the PHFS. At the heart of this demand is the second-largest consumer goods handling port, the Port of New York and New Jersey, and growing container operation at the Port of Philadelphia. There are also several intermodal rail terminals located in the region that give customers in the study area better options for domestic and international trade routes.

Cost

The final factor that is helping to draw development to this location is the business cost advantages found in the study area. The primary cost advantages are related to lower congestion in the area and better land availability and pricing. The highway congestion at and near the study area remains comparatively less than that of areas in North Jersey or closer to the urban core of Philadelphia. This results in fewer hours of delay for inbound and outbound truck movements. Additionally, the current amount of available land, combined with a generally more affordable real estate market (versus North Jersey) results in a lower cost per square foot for industrial development.

Figure 2: Freight Development Context



3 TRANSPORTATION NETWORK

Roadway Network

The roadway hierarchy in the study area is diverse and includes interstate highways, toll facilities, and local roads (**Figure 3**). An analysis of traffic patterns conducted for this study primarily focused on the major arterials. The following are brief descriptions of the key roadway facilities within the study area.

I-276 (NJ Turnpike Extension) is an interstate, and it is the major highway in the study area. Its full interchange with US 130, Interchange 6A, permits access to Pennsylvania and northern and southern New Jersey.

I-295 is a north-south interstate located just east of the study area. Florence-Columbus Road provides direct access to this interstate highway at the cloverleaf interchange (Exit 52). I-295 is often used as an alternate route to I-276.

US 130 is a north-south Other Principal Arterial. For the majority of its length through the study area, US 130 has four travel lanes and a wide center median. US 130 connects communities across the Delaware Valley region, and it provides local access to the municipalities along the Delaware River from Camden to Trenton. It is the primary access route to many employment centers in the study area.

River Road (CR 656) is a two-lane Major Collector that runs parallel to the Delaware River. This roadway extends from Neck Road (CR 658) to the town of Florence.

Delaware Avenue (CR 656) is a Major Collector that extends from Front Street in Florence to US 130.

Florence-Columbus Road (CR 656) is also a Major Collector, and this road serves as a direct route between US 130 in Florence Township and I-295 in Mansfield Township.

Dultys Lane is a Minor Collector. This road, located in Burlington Township, provides access to the industrial sites along River Road and Neck Road from US 130. In 2017, Dultys Lane served the following major employers: BJ Wholesale Club Distribution Center, Tachen International, and NFI.

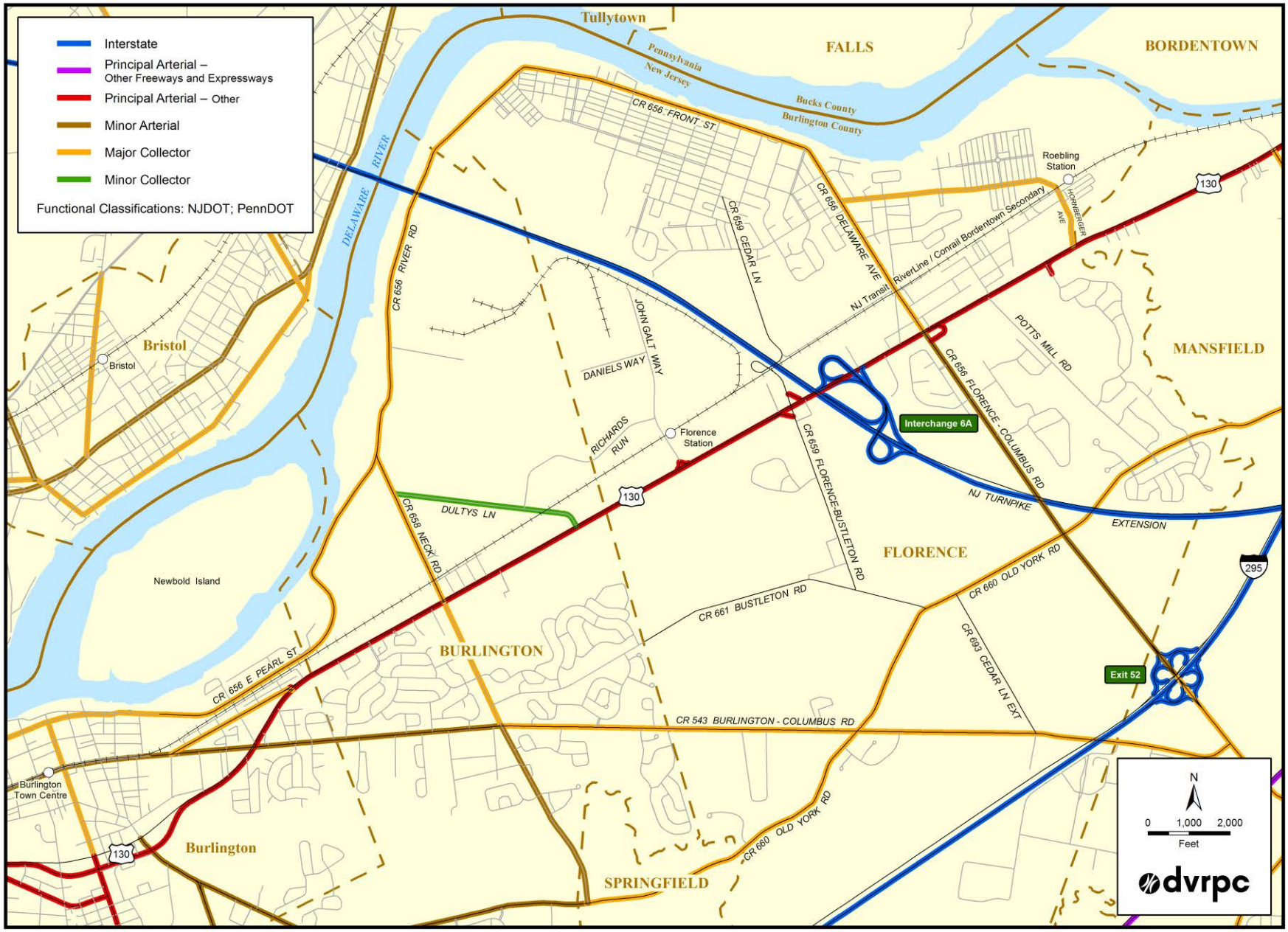
Neck Road (CR 658) is a Major Collector extending from Old York Road (CR 660) to River Road (CR 656). It is bisected by the Bordentown Secondary rail line. Therefore, it is closed to through traffic from 8:00 PM to 11:00 PM on weekdays.

Cedar Lane (CR 659) is a two-lane local road that provides direct access to US 130 from residential and industrial areas of Florence Township. It is the major access route to the new Amazon fulfillment center and Cream-O-Land Dairy.

John Galt Way is also a local road and provides direct access from US 130 into the Haines Industrial Center. It also provides local access to the Florence River LINE station.

Hornberger Avenue is a Major Collector that connects US 130 to residential areas of Florence Township and the Roebling Steel Mill redevelopment area. It also serves the Roebling River LINE station.

Figure 3: Functional Classification of Roadways



Rail Service

As mentioned previously, NJ Transit owns the railroad right-of-way through the corridor. NJ Transit has exclusive access to run light rail passenger service on its River LINE from 5:30 AM to 10:10 PM Sunday through Friday and all of Saturday night and Sunday morning. NJ Transit leases exclusive access to Conrail for freight rail operations on its main rail lines during the other times. The Florence River LINE station provides a connection to the BurLink shuttle that serves area employment sites from Delaware Avenue in the north to Dultys Lane in the south. The River LINE links into the Delair Bridge, via Pavonia Yard in Camden, which connects with the North American rail network.

Bus Service

NJ Transit

The NJ Transit 409 bus, which runs between Trenton and Philadelphia, provides weekday and weekend service through the area. Hornberger Avenue in Roebling and Dultys Lane in Burlington Township are served by the 409. At Hornberger Avenue, there are 23 weekday buses between the hours of 5:01 AM to 10:23 PM (**Figure 4**).

BurLink

The BurLink Route B5 bus provides service between the Florence River LINE station and employment centers in the Burlington Township/Haines Industrial Center. It provides weekday service between the hours of 5:45 AM to 8:00 AM, and 3:25 PM to 6:15 PM. Major stops include Dultys Lane near Route 130, the Amazon center on Cedar Lane (CR 659), Railroad Avenue near Cedar Lane (CR 659), and Route 130 at Delaware Avenue (**Figure 5**).

Corporate Shuttles

Some employers in the study area run private shuttles to the Florence River LINE station; shuttle service coincides with light rail service.

Figure 4: NJ Transit 409 Bus Route

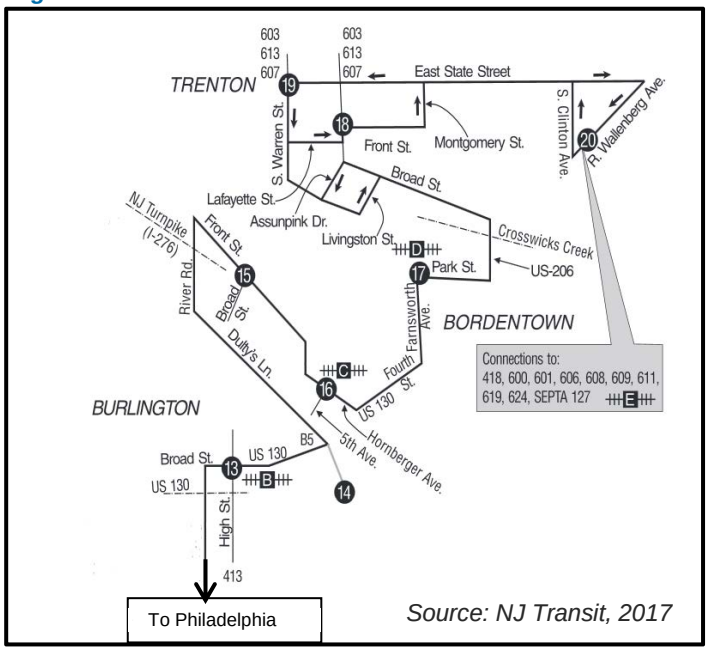
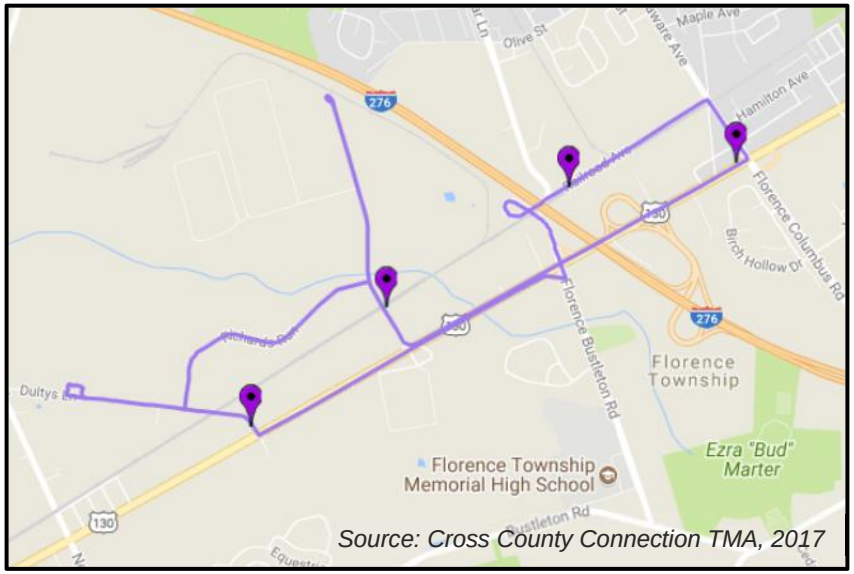


Figure 5: BurLink B5 Route



4 EXISTING ROADWAY TRAFFIC CONDITIONS

Traffic Patterns (Local Destinations for Trips Passing Through Interchange 6A)

To determine peak period movement, traffic entering the study area from the NJ Turnpike Interchange 6A was tracked through several key intersections and road segments using Bluetooth detecting devices. Travel patterns were mined for data for a two-hour period in both the AM peak (6:30 AM to 8:30 AM) and PM peak (3:30 PM to 5:30 PM).

A single BlueTOAD device placed at the NJ Turnpike exit served as the origin. Several other devices were placed throughout the study area, serving destinations. By matching pairs of anonymous unique ID addresses, origin and destination patterns were developed.

Several distinct trends were observed in both the AM and PM peak periods. In the AM (**Figure 6** on page 16), the primary destination of traffic from the Turnpike's interchange was southbound US 130. Twenty-eight percent of traffic was headed in this direction. John Galt Way and Florence-Columbus Road (CR 656) (approaching the I-295 Interchange 52A) accounted for 26 percent of trips from NJ Turnpike Interchange 6A. In the PM peak period, 42 percent of all trips were destined for southbound US 130, while northbound US 130 accounted for 22 percent of all trips from NJ Turnpike Interchange 6A (**Figure 7** on page 17). Florence-Columbus Road (CR 656) received roughly 20 percent of vehicles in the PM peak.

Figure 6: AM Peak Period Traffic Distribution (6:30 AM to 8:30 AM)

Figure 7: PM Peak Period Traffic Distribution (3:30 PM to 5:30 PM)

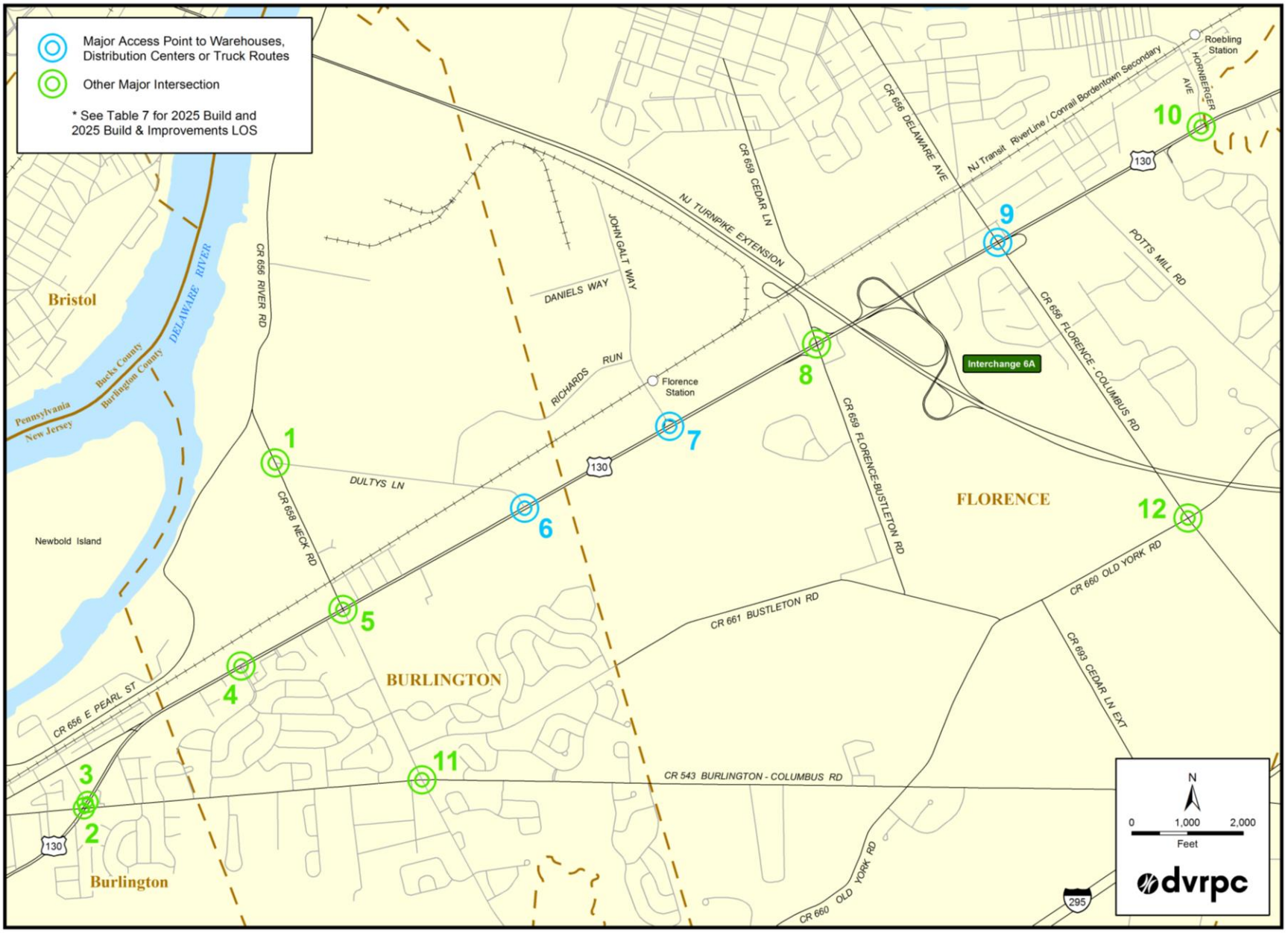
Truck Movement

In order to understand the impact of freight activity, truck percentages were examined and quantified for the AM and PM peak periods at several key intersections. The data collected revealed that trucks account for a high percentage of traffic in the AM and PM peak periods, particularly at three intersections along US 130: Dultys Lane, John Galt Way, and Florence-Columbus Road (CR 656). These three intersections are labeled with the numbers 6, 7, and 9, and they are highlighted in blue in **Figure 8** on the following page. All evaluated intersections and corresponding map label numbers are listed below.

1 Neck Road (CR 658) & Dultys Lane
2 US 130 & Columbus Road (CR 543/CR 655)
3 US 130 & Jones Street
4 US 130 & La Gorce Boulevard
5 US 130 & Neck Road (CR 658)
6 US 130 & Dultys Lane
7 US 130 & John Galt Way
8 US 130 & Cedar Lane (CR 659)
9 US 130 & Florence-Columbus Road/ Delaware Avenue (CR 656)
10 US 130 & Hornberger Avenue
11 Neck Road (CR 658) & Columbus Road (CR 543)
12 Florence-Columbus Road (CR 656) & Old York Road (CR 660)

These locations are major access points to several warehouses and distribution centers or truck routes. Detailed descriptions of truck movement at these three locations follow.

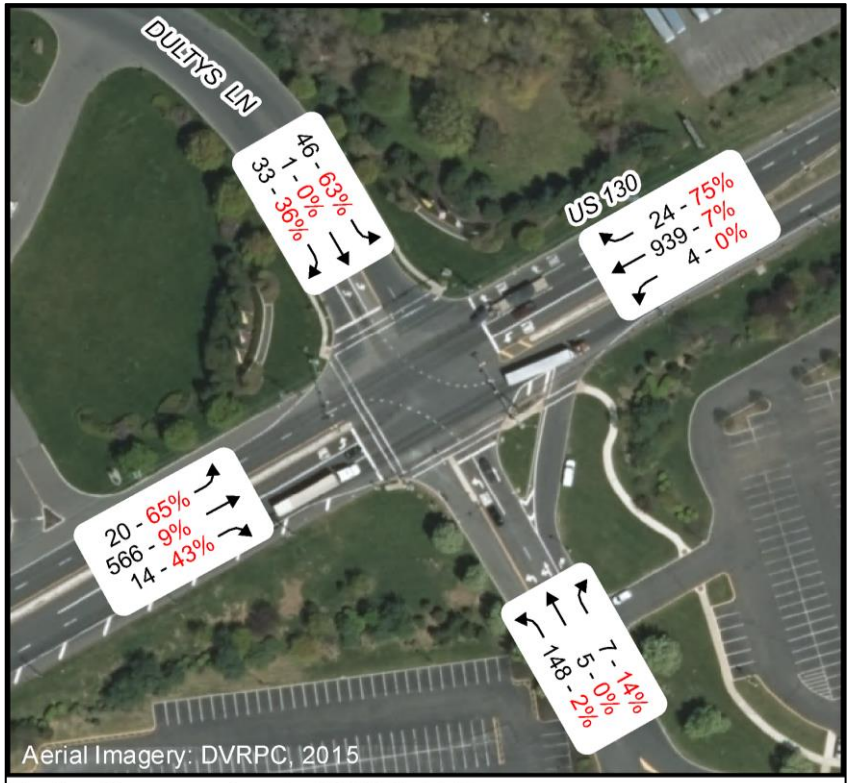
Figure 8: Evaluated Intersections/Turning Movement Count Locations



6. US 130 & Dultys Lane

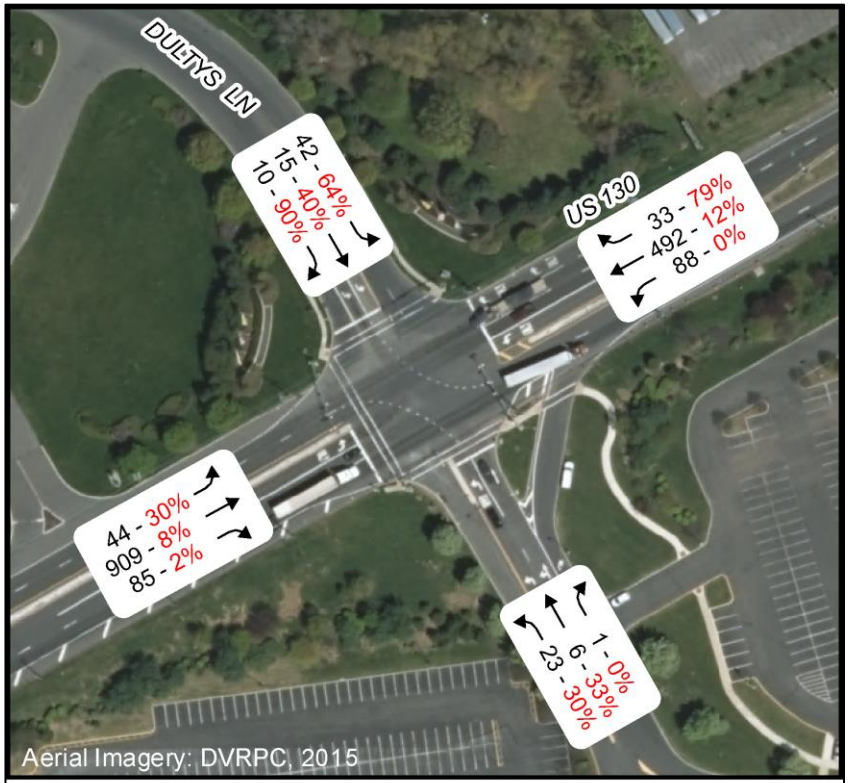
Dultys Lane provides direct access to the largest concentration of warehouses in the study area. This intersection at US 130 is perhaps the most critical for freight movement, resulting in the highest observed truck percentages in the study area. The primary truck turning movement in the AM is a left turn from Dultys Lane onto northbound US 130 (**Figure 9**). It is also the primary truck turning movement in the PM (**Figure 10**), along with the right turn from southbound US 130 to Dultys Lane.

Figure 9: US 130 & Dultys Lane Turning Movement Counts – AM Peak Period (7:30 AM to 8:30 AM)



Turning Movement Counts: DVRPC, 2015
(Percentage of trucks per movement in RED)

Figure 10: US 130 & Dultys Lane Turning Movement Counts – PM Peak Period (4:30 PM to 5:30 PM)

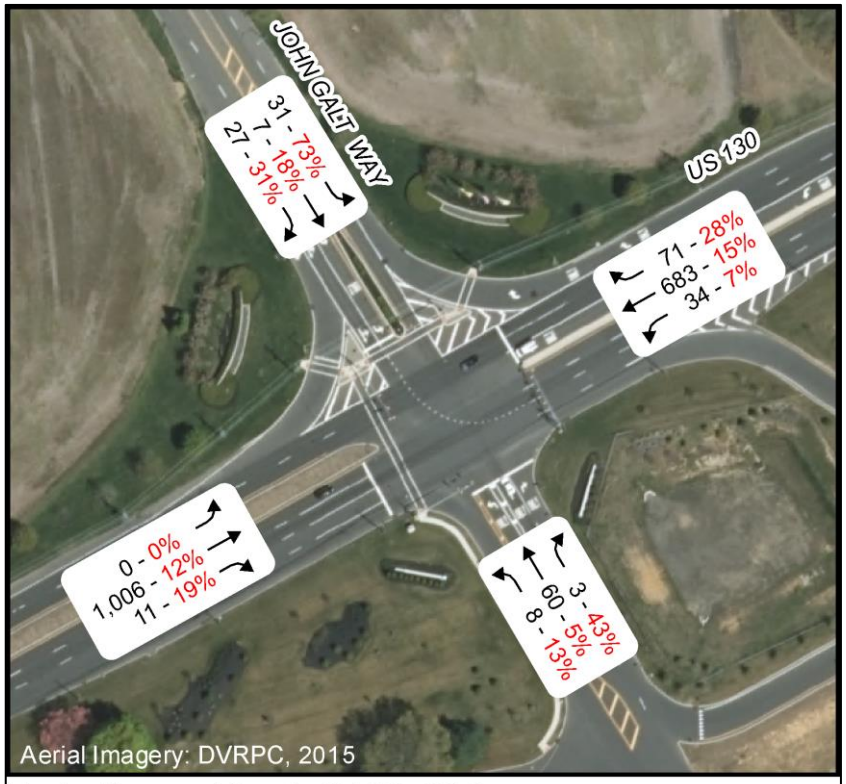


Turning Movement Counts: DVRPC, 2015
(Percentage of trucks per movement in RED)

7. US 130 & John Galt Way

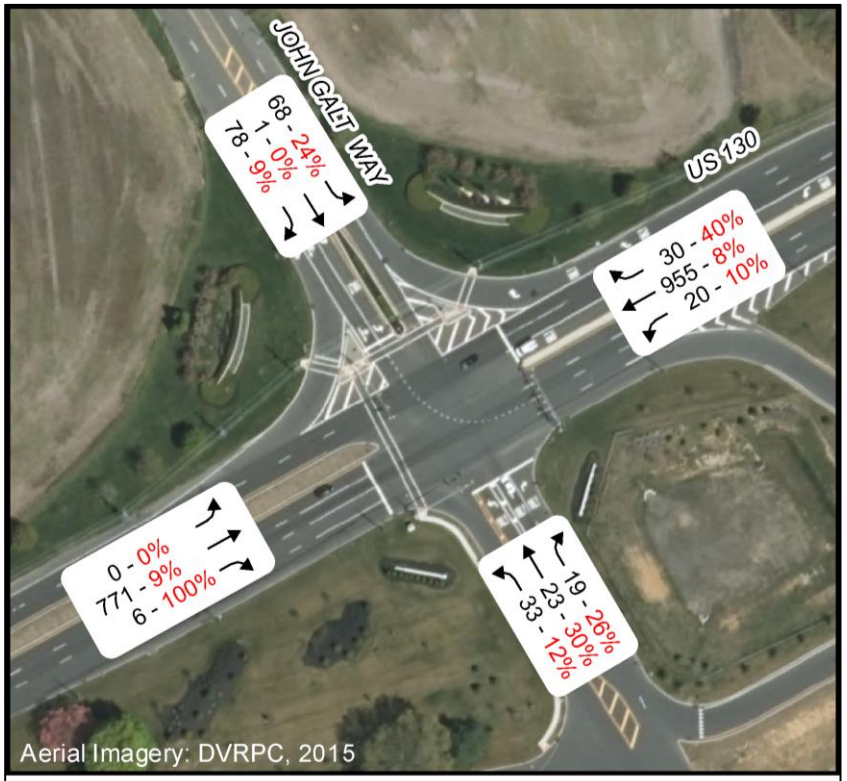
John Galt Way is also a primary access point from US 130 for many large warehouses and distribution centers. The NJ Turnpike Interchange 6A is just to the north of this intersection. As a result, the highest truck turning movements are from eastbound John Galt Way to northbound US 130, and from southbound US 130 to westbound John Galt Way in both AM and PM peaks (**Figure 11** and **Figure 12**).

Figure 11: US 130 & John Galt Way Turning Movement Counts – AM Peak Period (7:30 AM to 8:30 AM)



Turning Movement Counts: DVRPC, 2015
(Percentage of trucks per movement in RED)

Figure 12: US 130 & John Galt Way Turning Movement Counts – PM Peak Period (4:30 PM to 5:30 PM)



Turning Movement Counts: DVRPC, 2015
(Percentage of trucks per movement in RED)

9. US 130 & Florence-Columbus Road/Delaware Avenue (CR 656)

Florence-Columbus Road (CR 656) is the primary link between the NJ Turnpike Extension and I-295. Therefore, the highest truck turning movements are from northbound US 130 to eastbound Florence-Columbus Road and westbound Florence-Columbus Road to southbound US 130 (**Figure 13** and **Figure 14**). One of the recommended improvements identified for this intersection is to modify the right-turn lane on northbound US 130. This recommendation is discussed further in Chapter 6.

Figure 13: US 130 & CR 656 Florence-Columbus Road Turning Movement Counts – AM Peak Period (7:30 AM to 8:30 AM)

Turning Movement Counts: DVRPC, 2015
(Percentage of trucks per movement in RED)

Figure 14: US 130 & CR 656 Florence-Columbus Road Turning Movement Counts – PM Peak Period (4:30 PM to 5:30 PM)

Turning Movement Counts: DVRPC, 2015
(Percentage of trucks per movement in RED)

Traffic Safety Analysis

Analysis of historical crash statistics can indicate problematic locations where highway safety improvements may be necessary. For this reason, crashes that occurred within the study area from 2011 through 2013 were analyzed. 2013 is the last year for which crash data was available at the time this analysis was conducted. While several crashes occurred at non-signalized intersections and at mid-block during this time frame, the majority of the crashes occurred at the signalized intersections along US 130 (**Figure 15**). The highest numbers of crashes were recorded within a 300-foot buffer of the following four intersections along US 130.

Intersection of US 130 & Burlington-Columbus Road (CR 543) and Jones Street (CR 655)

This complex five-leg intersection accounted for the highest number of crashes among the signalized intersections along US 130 within the study area. A total of 64 crashes occurred at this intersection. Of these crashes, 31 were categorized as Same Direction Rear End, and 13 were Right Angle crashes. Forty-six of the crashes were Property Damage Only, and 18 crashes resulted in injury.

US 130 & Neck Road (CR 658)

The second highest number of crashes during this period was recorded at the intersection of US 130 and Neck Road (CR 658). Twenty-eight crashes occurred here within the three-year period. Same Direction Rear End crashes were the most common at this location and accounted for 10 crashes. Six Right Angle crashes occurred within the same time period, making Right Angle crashes the second most common type at this location. Twenty crashes at this intersection involved Property Damage Only, and eight crashes resulted in injury.

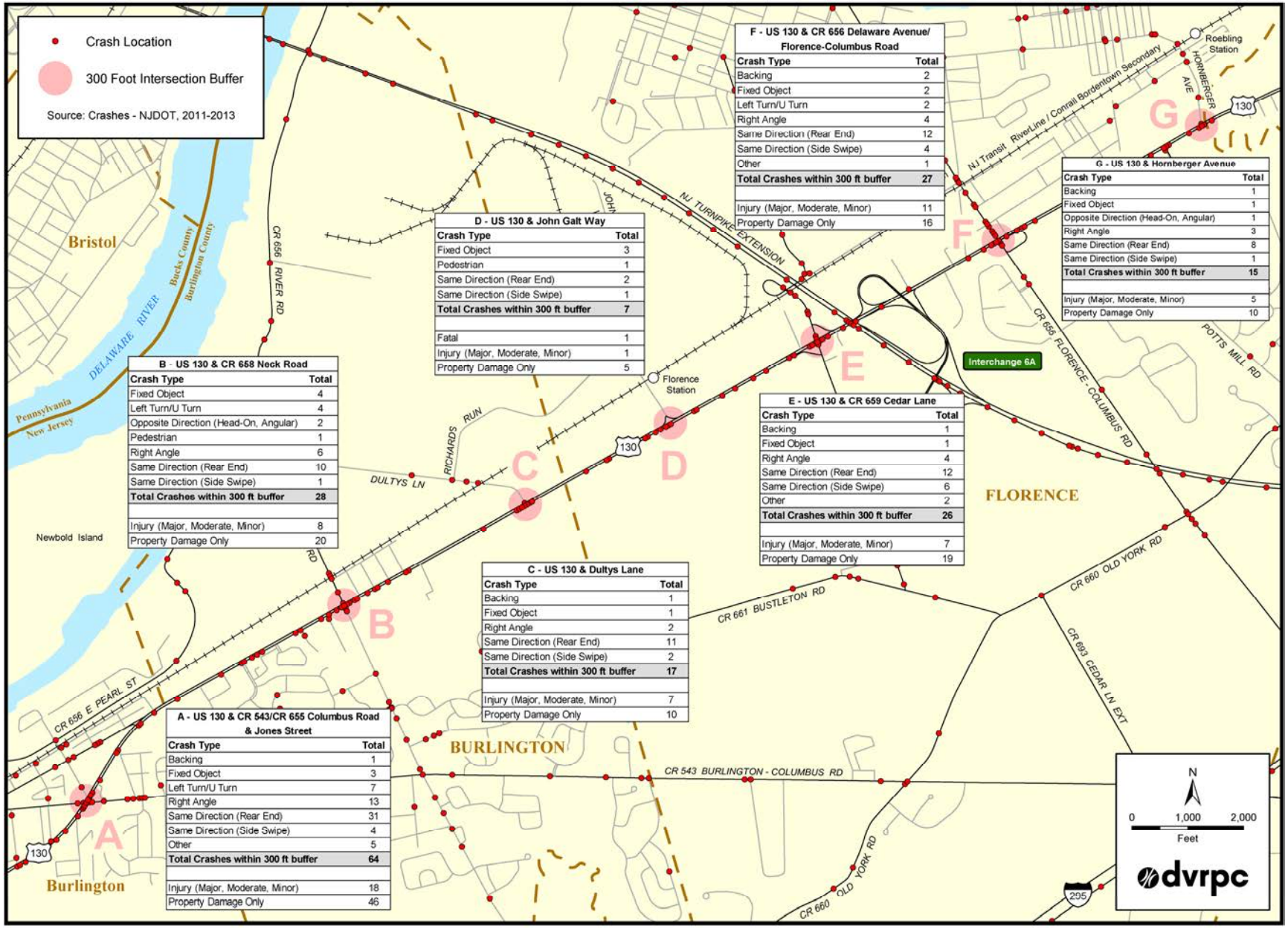
US 130 & Cedar Lane (CR 659)

This intersection is located just south of the NJ Turnpike interchange at US 130. A total of 26 crashes occurred at this intersection, with 12 being Rear End crashes, the most common type. The second most common crash type was Same Direction Side Swipe, and six of these crashes occurred at this location. Nineteen crashes were Property Damage Only, while seven crashes resulted in injury.

US 130 & Delaware Avenue/Florence-Columbus Road (CR 656)

Located north of the NJ Turnpike Interchange, Florence-Columbus Road (CR 656) provides direct access to I-295 from US 130. The intersection of US 130 & Delaware Avenue/Florence-Columbus Road (CR 656) experienced a total of 27 crashes over the three-year period. Twelve of these crashes were Same Direction Rear End crashes. The second most common crash types were Same Direction Side Swipe and Right Angle crashes; four of each crash type occurred at this intersection between 2011 and 2013. Overall, 16 crashes were Property Damage Only, while 11 crashes resulted in injury.

Figure 15: Crashes at Select Intersections



F - US 130 & CR 656 Delaware Avenue/ Florence-Columbus Road

Crash Type	Total
Backing	2
Fixed Object	2
Left Turn/U Turn	2
Right Angle	4
Same Direction (Rear End)	12
Same Direction (Side Swipe)	4
Other	1
Total Crashes within 300 ft buffer	**27**
Injury (Major, Moderate, Minor)	11
Property Damage Only	16

G - US 130 & Hornberger Avenue

Crash Type	Total
Backing	1
Fixed Object	1
Opposite Direction (Head-On, Angular)	1
Right Angle	3
Same Direction (Rear End)	8
Same Direction (Side Swipe)	1
Total Crashes within 300 ft buffer	**15**
Injury (Major, Moderate, Minor)	5
Property Damage Only	10

D - US 130 & John Galt Way

Crash Type	Total
Fixed Object	3
Pedestrian	1
Same Direction (Rear End)	2
Same Direction (Side Swipe)	1
Total Crashes within 300 ft buffer	**7**
Fatal	1
Injury (Major, Moderate, Minor)	1
Property Damage Only	5

B - US 130 & CR 658 Neck Road

Crash Type	Total
Fixed Object	4
Left Turn/U Turn	4
Opposite Direction (Head-On, Angular)	2
Pedestrian	1
Right Angle	6
Same Direction (Rear End)	10
Same Direction (Side Swipe)	1
Total Crashes within 300 ft buffer	**28**
Injury (Major, Moderate, Minor)	8
Property Damage Only	20

E - US 130 & CR 659 Cedar Lane

Crash Type	Total
Backing	1
Fixed Object	1
Right Angle	4
Same Direction (Rear End)	12
Same Direction (Side Swipe)	6
Other	2
Total Crashes within 300 ft buffer	**26**
Injury (Major, Moderate, Minor)	7
Property Damage Only	19

C - US 130 & Dultys Lane

Crash Type	Total
Backing	1
Fixed Object	1
Right Angle	2
Same Direction (Rear End)	11
Same Direction (Side Swipe)	2
Total Crashes within 300 ft buffer	**17**
Injury (Major, Moderate, Minor)	7
Property Damage Only	10

A - US 130 & CR 543/CR 655 Columbus Road & Jones Street

Crash Type	Total
Backing	1
Fixed Object	3
Left Turn/U Turn	7
Right Angle	13
Same Direction (Rear End)	31
Same Direction (Side Swipe)	4
Other	5
Total Crashes within 300 ft buffer	**64**
Injury (Major, Moderate, Minor)	18
Property Damage Only	46

Existing and Planned Development

The study area located near Interchange 6A of the NJ Turnpike has been a preferred location for warehouse development for many years. The DVRPC-designated Freight Center, the Burlington Township/Haines Industrial Center, has seen a steady upward trend in development since the mid-1980s. These warehouse developments have become increasingly more dependent on highway access and less dependent on freight rail, as the nature of freight activity has changed over time.

The existing development has seen variable vacancy rates in recent years, as large tenants like the U.S. General Service Administration vacated some larger facilities in the study area. The Burlington Township/Haines Industrial Center contains 33 warehouses and flex-use buildings, along with a handful of supporting developments, such as truck service operations. The location by NJ Turnpike Interchange 6A continues to draw large national brands, including major distribution centers for BJ's Wholesale Markets, Subaru of America, Destination Maternity, Burlington Coat Factory, and most recently Amazon. Based on floor area, it is one of the fastest-growing Freight Centers in the region.

The number and size of new warehouses and distribution centers is expected to grow for the foreseeable future. The study area is home to over 13 million square feet of industry. By 2025, the area is expected to accommodate approximately 10 million square feet of additional warehouse and industrial space. In December 2017, almost five million square feet were approved, under construction, or vacant (existing buildings not currently occupied) within the study area. The total area of potential development sites in the study area is almost 11 million square feet. **Figure 16** and the accompanying **Table 1** illustrate the location and footprints of 51 existing or future structures, as well as six potential development sites, within the study area boundaries. New developments are a mix of large footprint distribution and fulfillment centers and smaller flex buildings.

Figure 16: Study Area Buildings and Sites (December 2017)

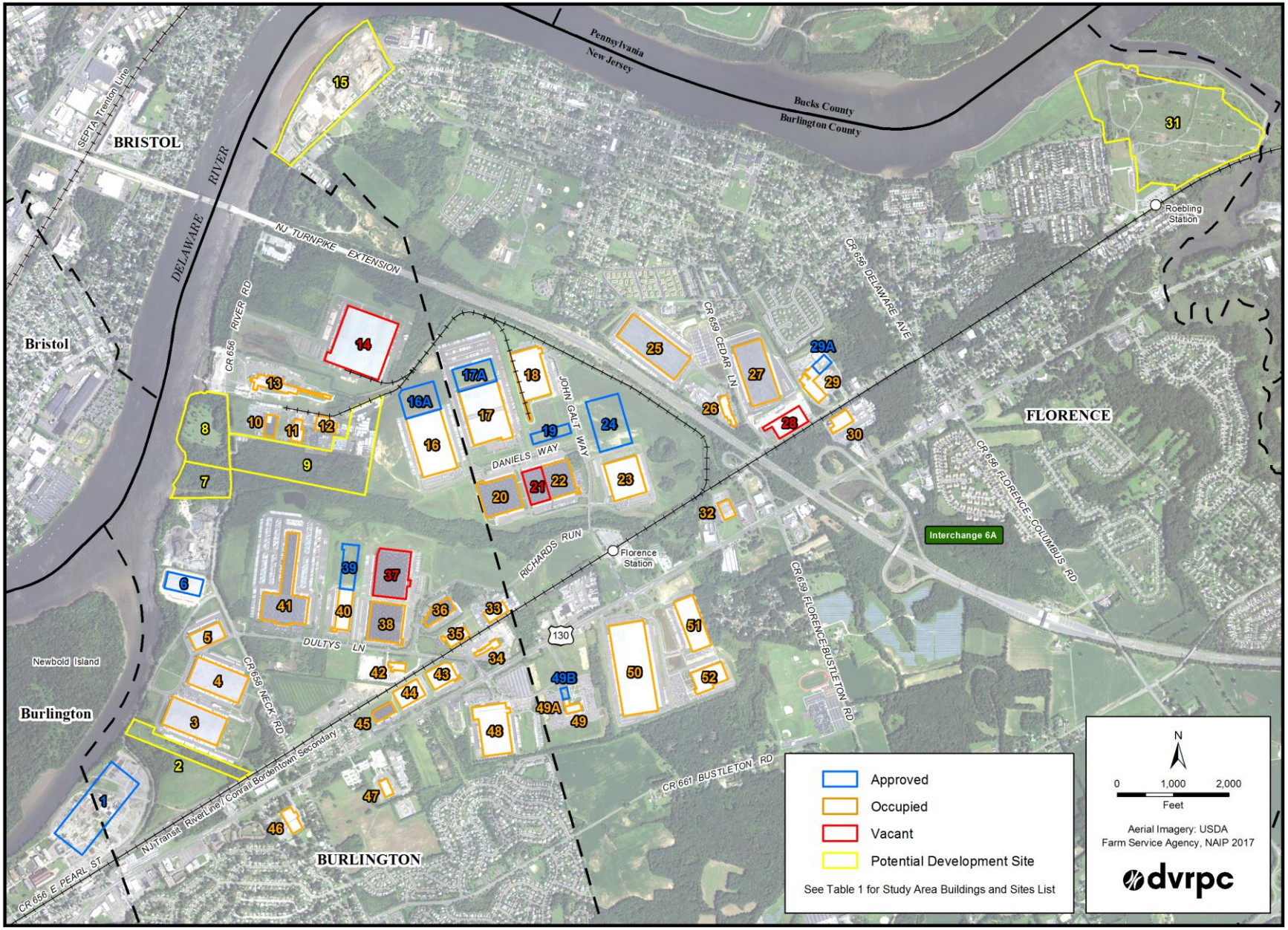


Table 1: Study Area Buildings and Sites (December 2017)

MAP NUMBER	LABEL	STATUS	TOTAL SQUARE FOOTAGE	BUILDING	ADDRESS	MUNICIPALITY
1	Future Building	Approved	1,015,740	Matrix Realty (former US Pipe Site) - Amazon	1101 E Pearl Street	Burlington City/Burlington Township
2	Potential Development Site			502 River Rd	502 River Road	Burlington Township
3	Existing Building	Occupied	543,292	1600 River Rd - Bldg 1	1600 River Road	Burlington Township
4	Existing Building	Occupied	484,573	1620 River Rd - Bldg 2	1620 River Road	Burlington Township
5	Existing Building	Occupied	176,400	1640 River Rd - Bldg 3	1640 River Road	Burlington Township
6	Future Building	Approved	195,000	1660 River Rd - Bldg 4	1660 River Road	Burlington Township
7	Potential Development Site			River Rd Site		Burlington Township
8	Potential Development Site			1804 River Rd	1804 River Road	Burlington Township
9	Potential Development Site			1804 River Rd	1804 River Road	Burlington Township
10	Existing Building	Occupied	76,035	North East Trailer Services	1808 River Road	Burlington Township
11	Existing Building	Occupied	67,684	1810 River Rd	1810 River Road	Burlington Township
12	Existing Building	Occupied	81,282	1812 River Rd	1812 River Road	Burlington Township
13	Existing Building	Occupied	183,886	National Gypsum	1818 River Road	Burlington Township
14	Existing Building	Vacant	1,048,631	1900 River Road	1900 River Road	Burlington Township
15	Potential Development Site			Former Griffin Pipe Site	1100 W Front Street	Florence Township
16	Existing Building	Occupied	700,000	Burlington Stores	250 Daniels Way	Burlington Township
16A	Future Building	Approved	321,000	250 Daniels Way (future expansion)	250 Daniels Way	Burlington Township
17	Existing Building	Occupied	720,000	270 Daniels Way	270 Daniels Way	Florence Township
17A	Future Building	Approved	299,620	270 Daniels Way (future expansion)	270 Daniels Way	Florence Township

Sources: CoStar, 2016; Burlington County, 2017; DVRPC, 2017

MAP NUMBER	LABEL	STATUS	TOTAL SQUARE FOOTAGE	BUILDING	ADDRESS	MUNICIPALITY
18	Existing Building	Occupied	431,000	International Paper	1500 John Galt Way	Florence Township
19	Future Building	Approved	102,086	290 Daniels Way (future building)	290 Daniels Way	Florence Township
20	Existing Building	Occupied	416,000	Burlington Stores	280 Daniels Way	Florence Township
21	Existing Building	Vacant	213,000	HD Supply Facilities Maintenance	1100 John Galt Way	Florence Township
22	Existing Building	Occupied	300,000	HD Supply & Saddle Creek	1100 John Galt Way	Florence Township
23	Existing Building	Occupied	400,000	Destination Maternity	1000 John Galt Way	Florence Township
24	Future Building	Approved	556,400	1200 John Galt Way (future building)	1200 John Galt Way	Florence Township
25	Existing Building	Occupied	638,000	Amazon Fulfillment ABE8	309 Cedar Lane South	Florence Township
26	Existing Building	Occupied	72,586	Cream-O-Land Dairy	529 Cedar Lane	Florence Township
27	Existing Building	Occupied	577,200	B&H Photo	400 Cedar Lane	Florence Township
28	Existing Building	Vacant	206,696	500 Cedar Ln - Bldg 1	500 Cedar Lane	Florence Township
29	Existing Building	Occupied	139,613	Ready Pac	700 Railroad Avenue	Florence Township
29A	Future Building	Approved	58,785	Ready Pac (future expansion)	700 Railroad Avenue	Florence Township
30	Existing Building	Occupied	92,528	Tuscan Dairy Farms	117 Cumberland Boulevard	Florence Township
31	Potential Development Site			Roebling Site		Florence Township
32	Existing Building	Occupied	69,036	Jet Fresh Fulfillment Center	2041 Route 130 North	Florence Township
33	Existing Building	Occupied	86,916	FFE Transportation	700 Richards Run	Burlington Township
34	Existing Building	Occupied	44,922	403 Dultys Ln	403 Dultys Lane	Burlington Township
35	Existing Building	Occupied	86,530	Barton & Cooney	300 Richards Run	Burlington Township
36	Existing Building	Occupied	126,484	Nippon PGM	500 Richards Run	Burlington Township

Sources: CoStar, 2016; Burlington County, 2017; DVRPC, 2017

MAP NUMBER	LABEL	STATUS	TOTAL SQUARE FOOTAGE	BUILDING	ADDRESS	MUNICIPALITY
37	Existing Building	Vacant	510,566	NFI	400 Richards Run	Burlington Township
38	Existing Building	Occupied	416,440	Sports Authority Distribution Center	200 Richards Run	Burlington Township
39	Future Building	Approved	209,000	321 Dultys Lane (future building)	321 Dultys Lane	Burlington Township
40	Existing Building	Occupied	188,294	Ta Chen International	321 Dultys Lane	Burlington Township
41	Existing Building	Occupied	633,000	BJ's Wholesale Club Distribution Center	309 Dultys Lane	Burlington Township
42	Existing Building	Occupied	39,947	IFCO Systems	320 Dultys Lane	Burlington Township
43	Existing Building	Occupied	165,126	1819 Route 130 S	1819 Route 130 South	Burlington Township
44	Existing Building	Occupied	163,173	1817 Route 130 S	1817 Route 130 South	Burlington Township
45	Existing Building	Occupied	77,400	BakeMark USA	1815 Route 130 South	Burlington Township
46	Existing Building	Occupied	188,564	QPSI	5 Cooper Street	Burlington Township
47	Existing Building	Occupied	45,802	McCollisters Transportation Group Inc.	1800 Route 130 North	Burlington Township
48	Existing Building	Occupied	984,988	Burlington Stores	1830 Route 130 North	Burlington Township
49	Existing Building	Occupied	141,674	Burlington Stores	2006 Route 130 North	Florence Township
49A	Existing Building	Occupied	38,637	Burlington Stores	2006 Route 130 North	Florence Township
49B	Future Building	Approved	72,000	Burlington Stores (future expansion)	2006 Route 130 North	Florence Township
50	Existing Building	Occupied	1,000,000	Subaru of America	2020 Route 130 North	Florence Township
51	Existing Building	Occupied	377,440	Future Building	2020 Route 130 North	Florence Township
52	Existing Building	Occupied	210,000	Future Building	2020 Route 130 North	Florence Township

Sources: CoStar, 2016; Burlington County, 2017; DVRPC, 2017

5 FUTURE ROADWAY TRAFFIC CONDITIONS

Traffic Data

A comprehensive traffic analysis was conducted for the project study area; all 12 key intersections shown in **Figure 8** on page 19 were evaluated. This exercise yielded a selection of transportation improvements to manage future traffic conditions.

Future Development

In order to gauge the impacts of new developments, DVRPC worked with project stakeholders to inventory planned developments. The size and location of each development was documented. This detailed information included the square footage of the site, the number of employees, development types, and the access points to the roadway network. The study area is home to over 13 million square feet of existing industry. Over 30 new developments were identified in the project area. These included developments just outside the immediate study area that would affect traffic in the study area once constructed.

Trip Generation

The *Trip Generation Manual* (9th Edition, Institute of Transportation Engineers, 2012) was used to approximate the number of future trips that will be generated by each new development. The Manual estimates trips based on samples gathered from other similar land uses. Where applicable, each component use was generated as an individual and isolated use and then summed for the total development. This exercise yields the expected number of total vehicular trips that would be generated by each completed development. With this information, the inbound and outbound trips for the AM and PM peak hours were subsequently calculated. **Table 2** summarizes the additional trips expected to be generated by new developments in the peak hours.

Table 2: Additional Future Peak Hour Trips

AM		PM	
Inbound	Outbound	Inbound	Outbound
3,888	1,211	1,396	3,334

Trip Distribution

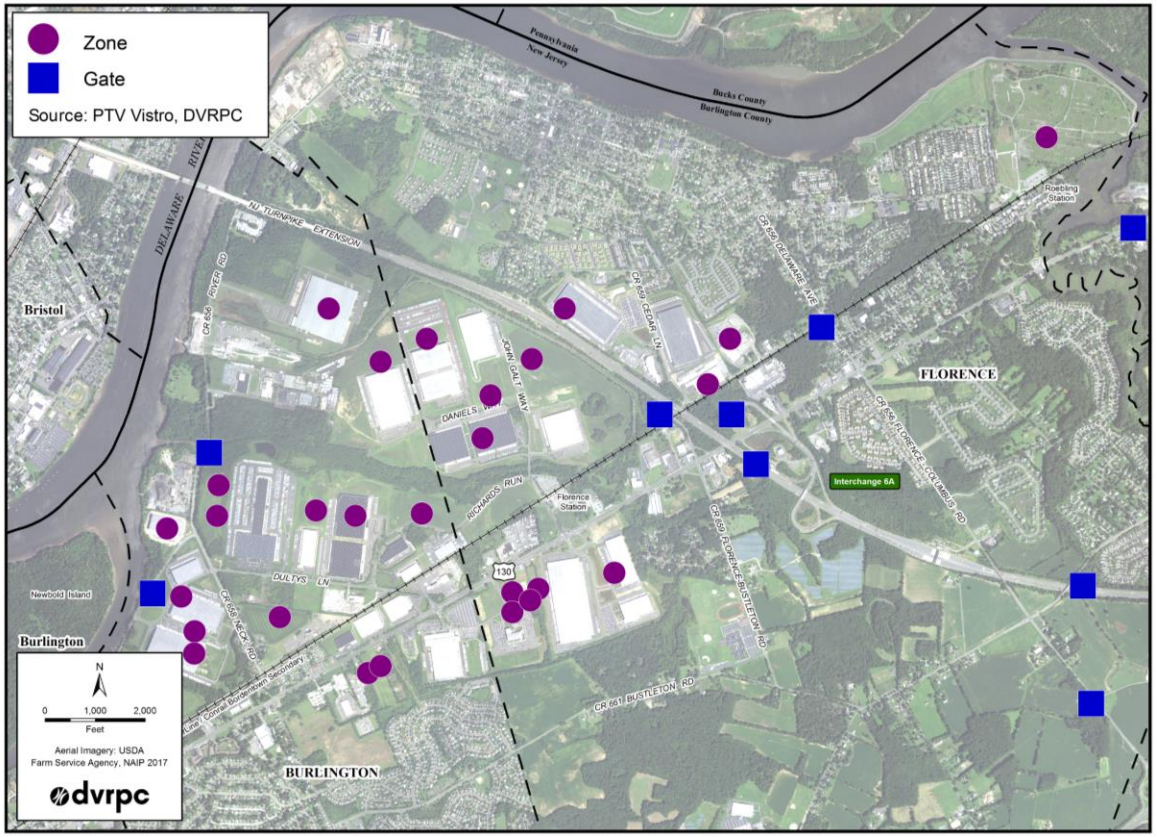
The flow of vehicular trips generated by the new developments will largely follow current traffic patterns in and out of the study area. To capture this trip distribution, “gates” were created in the simulated network at all of the major existing entry/exit points. Each new development, on the other hand, was defined as a “zone.” In total, 13 gates and 31 zones were defined. Trips were distributed from each gate to each zone (inbound) and from each zone to each gate (outbound). No zone to zone trips were defined in the network. The gates (points of entry or exit: blue squares) and zones (new development: purple circles) are shown in **Figure 17** on page 32. The inbound/outbound trips generated by the zones were assigned to flow proportionally to the gates. The greater the volume at the gate, the greater the proportion of zonal trips use that particular gate.

Trip Assignment

Trip assignment is the process of assigning vehicular trips to an actual path through the highway network. The default path is that with the shortest distance (shortest path). Some adjustments were made to the paths during the trip assignment process to account for circuity, prohibited turning movements, jug handles, and the limitations of one-way access points within the network. The 13 gates and 31 zones yielded approximately 400 unique assignments.

The volumes generated by new development are overlaid on top of existing volumes. This creates the network used for the 2025 horizon year analysis.

Figure 17: Origin and Destination for Trip Assignments in PTV Vistro



Assessment of Peak Hour Traffic Operations

Manual turning movement counts (MTMCs) were conducted for the major intersections throughout the study area. Via an examination of the turning counts, the network peak hours were determined to be 8:00 to 9:00 in the AM and 4:00 to 5:00 in the PM. Other recent MTMCs and Automatic Traffic Recorder (ATR) counts from DVRPC's database were also used to supplement the 2015 counts.

Existing Conditions: Base Year

PTV's Vistro traffic simulation software was used to perform a comprehensive AM and PM peak hour traffic study for this project. Vistro is an all-in-one software tool that allows users to perform traffic analyses, evaluate new development impacts, optimize signal timings, and identify mitigation strategies.

The Vistro network was built on top of scaled aerial photos. Geometric parameters, including lane widths, lane configurations, channelization, and major driveways, were entered. Detailed traffic signal information was incorporated for the respective time period. Heavy vehicle percentages were added to the networks where available.

The MTMCs were entered into the Vistro program for the respective peak-hour conditions. Because the turning movement and ATR counts were not all counted on the same day, efforts were made to keep the integrity of peak-hour conditions. However, small adjustments were made to the raw counts for balance and flow within the network.

Once all of the background information was entered into the traffic model, current conditions were evaluated. Intersection Level of Service (LOS) was used as the primary performance measure. At signalized intersections, average delay per vehicle is the definitive parameter of LOS. A letter grade of A through F is assigned in the Highway Capacity manual (HCM) to convey a qualitative measure for specified ranges of delay (**Table 3**).

Table 3: LOS Criteria for Signalized Intersections

LOS (v/c ≤ 1.0)	Control Delay (seconds per vehicle)	Qualitative Description of Traffic Operations
A	≤ 10	Stable and Predictable
B	> 10 - 20	
C	> 20 - 35	
D	> 35 - 55	Predictable, but Approaching Unstable
E	> 55 - 80	Unstable and Unpredictable
F	> 80	

Sources: Highway Capacity Manual, 2010; DVRPC

No Build

Traffic volumes for the future scenarios were developed using an area-wide growth rate to reflect 2025 conditions. This factor was based on an examination of current and forecast traffic volumes, historical trends in traffic volumes, and DVRPC's Board-adopted population and employment forecasts in the study area. From this, a total growth rate of 3.0 percent was added to existing traffic volumes to reflect background traffic growth for the year 2025.

Build

The Build scenario represents background growth derived in the No Build plus the traffic volumes generated by the new developments. This scenario represents conditions that can be expected in 2025 once all of the planned developments have been built.

Build + Improvements

This iteration represents the Build scenario plus a host of identified improvements. These improvements are generally focused at intersections and are in response to the increased demand future development will impose on the arterial network.

Results

AM and PM peak hour traffic models were built in Vistro for the Base Year, No Build, Build, and Build + Improvements scenarios. LOS data was obtained from the Vistro models for comparison. **Table 6** on page 51 and **Table 7** on page 52 show the recommended improvements and intersection LOS for the 12 key study area intersections for the 2025 Build and 2025 Build + Improvements scenarios. All of the intersections listed below and shown in **Figure 8** on page 19 were evaluated for this study.

1 Neck Road (CR 658) & Dultys Lane
2 US 130 & Columbus Road (CR 543/CR 655)
3 US 130 & Jones Street
4 US 130 & La Gorce Boulevard
5 US 130 & Neck Road (CR 658)
6 US 130 & Dultys Lane
7 US 130 & John Galt Way
8 US 130 & Cedar Lane (CR 659)
9 US 130 & Florence-Columbus Road/Delaware Avenue (CR 656)
10 US 130 & Hornberger Avenue
11 Neck Road (CR 658) & Columbus Road (CR 543)
12 Florence-Columbus Road (CR 656) & Old York Road (CR 660)

6 IMPROVEMENT PLAN

Roadway Network Improvements

As shown in **Tables 6 and 7** (located on pages 51 and 52, respectively), many of the signalized intersections will see a drop in LOS under the Build scenario. In aggregate, the new developments will significantly increase the volumes of vehicular traffic throughout the study area.

The Vistro software allows quick testing and evaluating for intersection improvements and signal optimization. The results of the Build scenario for each intersection were carefully examined, and a systematic approach was used to identify improvements.

The first step was to perform a signal timing analysis. The trips generated by the new developments increased traffic volumes, but volumes did not increase at the same rate for all approaches at a given intersection. Some approaches became overwhelmed, while others experienced only a slight increase in traffic volumes. Based on these new traffic patterns, traffic signal optimization can reprioritize allowable green times. The current cycle length was not changed when signal optimization was performed because changing signal cycle length in isolation has local benefits, but can disrupt corridor traffic flow.

The second step was to assess the need for additional capacity. Where applicable, exclusive through, left-turn, and right-turn lanes were added. In addition to a detailed analysis of the corridor study's 12 major intersections, the highway network improvement plan includes recommendations for four larger-scale improvement projects that could also enhance the roadway network. These recommendations involve realigning jug handles, converting intersections to roundabouts, introducing connector roads, and other improvements identified by project stakeholders. Detailed output from the Vistro traffic analysis can be found in **Appendix A**. Volume and delay information for the Base Year, No Build, Build, and Build + Improvements scenarios is presented by approach for each intersection.

Because stakeholders suggested some recommendations that did not directly affect the corridor study's 12 major intersections, they were not analyzed in detail or incorporated into the study's highway network traffic modeling. They were, however, included in the recommendations because, if implemented, these changes will affect roadway network operation.

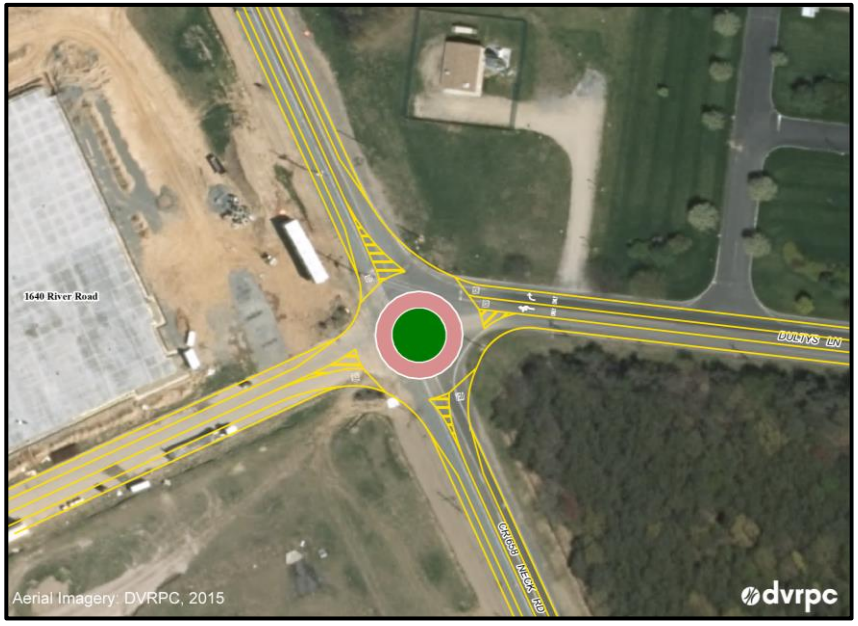
The following is a summary of the analysis for the locations of primary concern within the study area. The existing and future LOS and recommendations for all intersections are listed **Tables 6 and 7**. An in-depth description of improvements is provided for 10 of the 12 intersections. Intersections 4, US 130 & La Gorce Boulevard, and 11, Neck Road (CR 658) & Columbus Road (CR 543) are not discussed in depth in this chapter. The sole recommendation for the intersection of US 130 & La Gorce Boulevard is signal optimization. The intersection of Neck Road (CR 658) & Columbus Road (CR 543) currently operates at LOS A and is projected to operate at LOS A in the 2025 Build scenario. As a result, no improvements were recommended or tested for this intersection.

1. Neck Road (CR 658) & Dultys Lane

The Neck Road (CR 658) and Dultys Lane intersection is currently a "T" intersection. Dultys Lane is stop controlled while Neck Road (CR 658) has a free movement. Due to recent development, an additional approach leg is to be added on the west side of the intersection to access an industrial site. The construction of this new approach will require the upgrade of the intersection control type.

The primary recommendation for this intersection is the installation of a roundabout, which would increase the capacity of the intersection (**Figure 18**). Volumes on westbound Dultys Lane are expected to increase significantly in the future; therefore, an additional right-turn lane on Dultys Lane to turn onto northbound Neck Road (CR 658) is recommended.

Figure 18: Neck Road & Dultys Lane



Currently, Neck Road (CR 658) is the only access route to warehouses between Dultys Lane and Jones Street, which are almost two miles apart. However, this road is also a residential street. County and municipal stakeholders recommend closing Neck Road (CR 658) to through truck traffic from US 130. To do this, Burlington Township would agree to take ownership of Neck Road (CR 658) from US 130 to Dultys Lane, and Burlington County would agree to take ownership of Dultys Lane. County and municipal stakeholders recommend opening a new southern entrance to the industrial center at US 130 and La Gorce Boulevard (see page 38) as an alternative access point. Closing Neck Road to through truck traffic would gravely affect the LOS of US 130 & Dultys Lane. Thus, the impacts of this roadway closure should be carefully studied and considered before implementation. Stakeholders also recommend the installation of a chicane and emergency vehicle access on Neck Road (CR 658) south of the Dultys Lane intersection. These improvements are needed to allow egress to the 36 households in the Stevens Station neighborhood for residents and emergency vehicles when Neck Road is closed at night for freight rail movements. These improvements were not analyzed as part of this study.

Improvements Summary

- Install a roundabout with an additional approach leg on the west side of the intersection.
- Close Neck Road (CR 658) to through truck traffic from US 130 (stakeholders' recommendation–not analyzed).
- Install chicane and emergency vehicle access on Neck Road (CR 658) (stakeholders' recommendation–not analyzed).

LOS Summary

- Existing: LOS B in AM; LOS B in PM
- No Build: LOS B in AM; LOS B in PM
- Build: LOS F in AM; LOS F in PM
- Build + Improvements: LOS C in AM; LOS B in PM

2.-3. US 130 & Jones Street/Columbus Road (CR 543/CR 655)

Short-Term Improvements

The intersection of US 130 & Jones Street/Columbus Road (CR 543/CR 655) is a five-leg intersection. This intersection experienced the highest number of crashes of all signalized intersections within the study area between 2011 and 2013. While the primary movement of traffic is east-west along Columbus Road (CR 543/CR 655) and north-south along US 130, there is a small volume of traffic entering and leaving Jones Street. Traffic along Jones Street is expected to grow exponentially once the proposed 1 million square foot industrial building is opened at the former US Pipe site located in Burlington City and Burlington Township (building labeled as 1 in **Figure 16**). The site is owned by Matrix Realty, and the building is expected to open as an Amazon fulfillment center in 2018. It will add hundreds more trips to the local road network.

The volumes on the westbound Columbus Road (CR 543) approach are significantly higher than the eastbound Columbus Road (CR 655) approach. The disparity in volume is roughly 3:1 for both the AM and PM peak hours. Therefore, one of the recommended improvements for this intersection is to upgrade the westbound phasing from a permitted left-turn to a protected plus permitted phase. Providing an advanced protected left-turn phase creates a safer and more efficient environment for left-turning vehicles. Adding a right-turn lane on US 130 would also significantly reduce delay on this approach (**Figure 19**).

An existing NJDOT project, which is to be advertised in the spring of 2018, involves the redesign of the US 130 & Columbus Road/Jones Street intersection. The new design will provide a median left-turn lane for northbound US 130 traffic turning onto Jones Street. Americans with Disabilities Act (ADA)-compliant ramps and countdown pedestrian signals will be installed as part of the NJDOT project. The effects of this NJDOT project on traffic circulation at this intersection were not analyzed for this study.

Short-Term Improvements Summary

- Add a right-turn lane on northbound US 130.
- Add a protected and permitted phasing to the westbound Columbus Road approach.
- Optimize the signal at US 130 & Jones Street.
- Add left-turn lane on northbound US 130 at Jones Street (NJDOT programmed project–not analyzed).

Long-Term Improvements

This study proposes a new road connecting Columbus Road (CR 543) to

Figure 19: US 130 at Jones Street & Columbus Road (CR 543/CR 655)

US 130 just north of the existing intersection (**Figure 20** on page 39). This road would extend westward across US 130 at a new signalized intersection, and connect to Jones Street. Currently, vehicles cannot turn left from Jones Street onto northbound US 130. The new intersection would accommodate left-turn movements from Jones Street onto northbound US 130. The current signal at Jones Street and US 130 would be eliminated, and northbound Columbus Road would become right-in/right-out only where it intersects with US 130. This new configuration would streamline traffic entering and leaving US 130 from Columbus Road (CR 543) and Jones Street. It would also provide the necessary capacity to accommodate the expected increase in volume from the future Amazon fulfillment center. **Tables 4** and **5** on pages 40 and 41 summarize the current performance measures for the intersection of US 130 and Jones Street and the performance of the new alignment during peak travel periods.

County and municipal stakeholders have discussed another alternative for this intersection: making Jones Street right-in/right-out only and constructing a new connector road from the intersection of US 130 at La Gorce Boulevard to New Pearl Street (CR 656). Stakeholders are also exploring the feasibility of building a bridge over the Conrail freight rail yard in Burlington Township to connect La Gorce Boulevard and New Pearl Street (CR 656) without interfering with the alignment of the rail yard. This stakeholder recommendation needs further study, and the proposal requires coordination with Conrail and NJ Transit.

Long-Term Improvements Summary

- Build a new road to connect Columbus Road (CR 543) to US 130 just north of the existing intersection.
- Right-in/right-out on Jones Street and connector road from La Gorce Boulevard to New Pearl Street (CR 656) (stakeholders' recommendation–not analyzed).

LOS Summary (Jones Street)

- Existing: LOS C in AM; LOS B in PM
- Build: LOS E in AM; LOS F in PM
- Build + Improvements: LOS C in AM; LOS C in PM

LOS Summary (Columbus Road)

- Existing: LOS B in AM; LOS C in PM
- No Build: LOS B in AM; LOS C in PM
- Build: LOS F in AM; LOS F in PM
- Build + Improvements: LOS F in AM; LOS E in PM

Figure 20: US 130 at Jones Street & Columbus Road (CR 543/CR 655)

Table 4: Performance Measures for AM Peak Hour

Approach	Performance Measures	Existing	2025 Build (with existing road configuration)	2025 Build + Improvements
NB US 130	LOS	B	F	B
	Delay (seconds)	18.8	93.7	16.8
	Volume (vehicles)	1,329	2,075	2,439
	Queue (feet)	62	922	195
SB US 130	LOS	B	B	A
	Delay (seconds)	19.6	14.2	8.2
	Volume (vehicles)	651	837	838
	Queue (feet)	28	31	17
EB	LOS	D	E	F
	Delay (seconds)	42.1	55.4	123.1
	Volume (vehicles)	83	146	142
	Queue (feet)	13	27	137
WB	LOS	D	D	F
	Delay (seconds)	39.3	45.1	121.8
	Volume (vehicles)	264	307	303
	Queue (feet)	55	69	238
Jones Street	LOS	F	E	N/A
	Delay (seconds)	83.0	72.6	N/A
	Volume (vehicles)	30	44	N/A
	Queue (feet)	6	10	N/A
Overall	LOS	C	E	C
	Delay (seconds)	23.0	67.9	27.6
	Volume (vehicles)	2,357	3,409	3,722
	Queue (feet)	33	198	147

Note: Build = Existing roadway conditions with future traffic volumes applied. Future volumes based on 3 percent growth rate and volumes from new developments.
Build + Improvements= Roadway improvements implemented with future traffic volumes applied. Future volumes based on 3 percent growth rate and volumes from new developments.

Table 5: Performance Measures for PM Peak Hour

Approach	Performance Measures	Existing	2025 Build (with existing road configuration)	2025 Build + Improvements
NB US 130	LOS	B	F	C
	Delay (seconds)	17.7	253.3	20.5
	Volume (vehicles)	1,031	1,030	1,080
	Queue (feet)	43	1034	66
SB US 130	LOS	B	F	C
	Delay (seconds)	15.6	85.6	22.0
	Volume (vehicles)	1,231	2,152	2,288
	Queue (feet)	47	650	174
EB	LOS	C	F	E
	Delay (seconds)	28.9	132.6	72.9
	Volume (vehicles)	105	133	137
	Queue (feet)	12	62	73
WB	LOS	C	F	F
	Delay (seconds)	33.4	201.9	86.0
	Volume (vehicles)	311	373	429
	Queue (feet)	55	487	245
Jones Street	LOS	D	F	N/A
	Delay (seconds)	54.6	202.9	N/A
	Volume (vehicles)	51	137	N/A
	Queue (feet)	8	190	N/A
Overall	LOS	B	F	C
	Delay (seconds)	19.7	145.1	30.5
	Volume (vehicles)	2,729	3,825	3,934
	Queue (feet)	31	507	140

Note: Build = Existing roadway conditions with future traffic volumes applied. Future volumes based on 3 percent growth rate and volumes from new developments.

Build + Improvements= Roadway improvements implemented with future traffic volumes applied. Future volumes based on 3 percent growth rate and volumes from new developments.

5. US 130 & Neck Road (CR 658)

Neck Road (CR 658) provides the first opportunity to make the turn into the Burlington Township/Haines Industrial Center area for northbound traffic on US 130. Although truck traffic is restricted along sections of Neck Road (CR 658), it has become a popular route for trucker drivers because it provides direct access to many warehouses. During the AM peak, the number of vehicles turning left from northbound US 130 onto westbound Neck Road (CR 658) is expected to increase by over 500 percent in the year 2025.

Figure 21: US 130 & Neck Road (CR 658)

In order to accommodate future volumes, a dual left-turn lane is recommended on northbound US 130 (**Figure 21**). This would provide more capacity for turning vehicles without requiring more green time.

Adding a right-turn lane on the westbound Neck Road (CR 658) approach presents an opportunity to further reduce congestion and delay at this intersection. By adding additional capacity to the westbound approach, less green time will be needed to process the queued vehicles. This unused green time can then be allocated to other, more critical movements.

As mentioned previously, county and municipal stakeholders recommend closing Neck Road (CR 658) to through truck traffic from US 130. Closing Neck Road to through truck traffic would gravely affect the LOS of US 130 & Dultys Lane. Thus, the impacts of this roadway closure should be carefully studied and considered before implementation.

Improvements Summary

- Add a right-turn-only lane to westbound Neck Road (CR 658).
- Add dual left-turn lanes on northbound US 130.
- Add a receiving lane on westbound Neck Road (CR 658).
- Close Neck Road (CR 658) to through truck traffic from US 130 (stakeholders' recommendation–not analyzed).

LOS Summary

- Existing: LOS B in AM; LOS B in PM
- No Build: LOS B in AM; LOS B in PM
- Build: LOS F in AM; LOS F in PM
- Build + Improvements: LOS D in AM; LOS E in PM

6. US 130 & Dultys Lane

Dultys Lane at US 130 (**Figure 22**) is the gateway to the Haines Industrial Center, one of the region's largest industrial centers at more than 1,500 acres. There are three eastbound approach lanes from Dultys Lane to US 130: two lanes for northbound traffic and one lane for southbound and through traffic. There are two receiving lanes from US 130. Currently, the overall intersection performs at LOS B in both AM and PM peaks. Given increased development in the area, the intersection is expected to fail (LOS F) in 2025 during both the AM and PM peak periods. As a result, the primary recommendation for this intersection is to optimize the signal and add a right-turn overlap phase.

In addition, county and municipal stakeholders recommend adding turning lanes from southbound US 130 onto Dultys Lane, straightening the bend in Dultys Lane to reduce sight triangle safety issues, and adjusting the driveway access points to Dultys Lane between US 130 and the railroad. These recommendations are not analyzed in this study.

Improvements Summary

- Optimize signal and add a right-turn overlap phase.
- Add turning lanes from southbound US 130 onto Dultys Lane (stakeholders' recommendation–not analyzed).
- Straighten the bend in Dultys Lane (stakeholders' recommendation–not analyzed).
- Adjust driveway access points to Dultys Lane between US 130 and the railroad (stakeholders' recommendation–not analyzed).

LOS Summary

- Existing: LOS B in AM; LOS B in PM
- No Build: LOS B in AM; LOS B in PM
- Build: LOS F in AM; LOS F in PM
- Build + Improvements: LOS E in AM; LOS D in PM

Figure 22: US 130 & Dultys Lane

7. US 130 & John Galt Way

Signal optimization was tested and is recommended for this particular intersection (**Figure 23**). County and municipal stakeholders recommend also adding a deceleration lane and slip ramp from southbound US 130. However, the latter recommendations require further analysis and were not tested in this study.

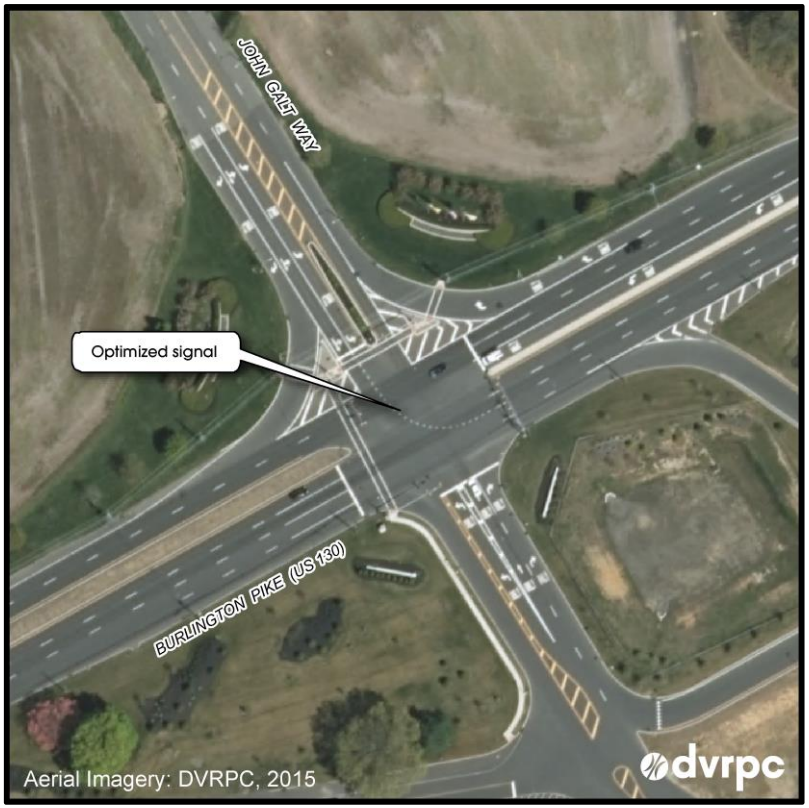
Improvements Summary

- Optimize signal.
- Add a deceleration lane and slip ramp from southbound US 130 (stakeholders' recommendation–not analyzed).

LOS Summary

- Existing: LOS A in AM; LOS B in PM
- No Build: LOS A in AM; LOS B in PM
- Build: LOS C in AM; LOS F in PM
- Build + Improvements: LOS C in AM; LOS D in PM

Figure 23: US 130 & John Galt Way

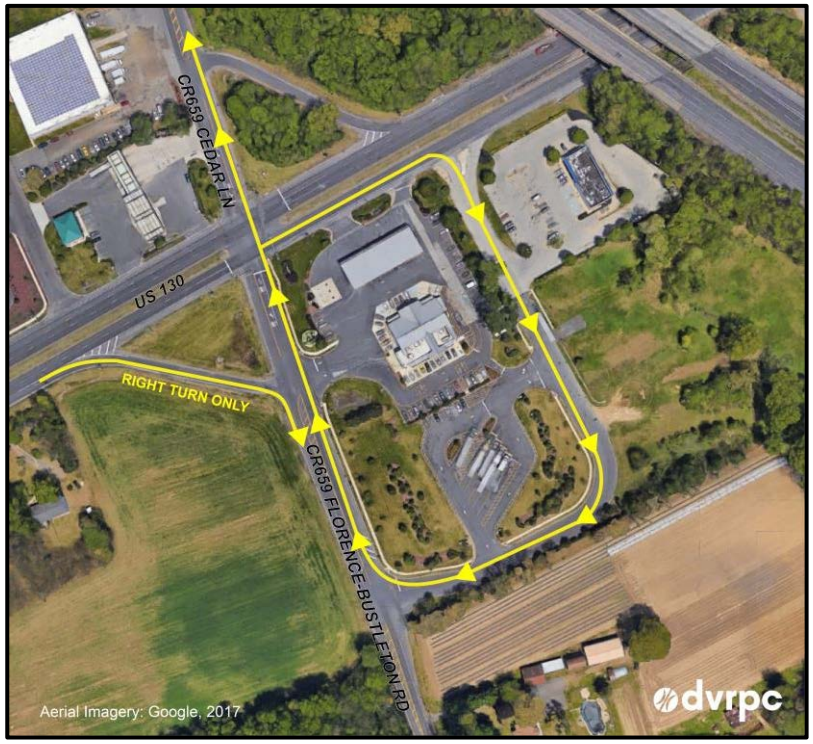


8. US 130 & Cedar Lane (CR 659)

Currently, no turns are permitted from US 130 at this intersection. Opposing jug handles from US 130 to Cedar Lane (CR 659) accommodate left-turning volumes. There are stop signs that control traffic exiting southbound US 130 at westbound Cedar Lane (CR 659) or northbound US 130 at eastbound Cedar Lane (CR 659).

In the Build scenario, future volumes are expected to overwhelm the near-side jug handles, especially on northbound US 130. To better accommodate left turns under future conditions, this study proposes a far-side jug handle on the northbound side (**Figure 24).** The service road around Wawa would provide enough storage to handle future traffic growth. In addition, jug handle traffic would enter onto westbound Cedar lane (CR 659) farther south, resulting in less interference with queued traffic on the westbound side. Only right turns onto Cedar Lane (CR 659) from northbound US 130 would be permissible and accommodated by the current near-side jug handle in order to reduce queuing at the intersection. A “Right Turn Only” sign would need to be installed at Cedar Lane (CR 659). Because eastbound traffic would enter the jug handle south of the intersection, interaction between westbound and eastbound traffic on Cedar Lane (CR 659) would be reduced.

Figure 24: Far-side Jug Handle on US 130



In conjunction with moving the jug handle, an additional through lane on northbound US 130 should be introduced (**Figure 25**). This lane would better accommodate the jug handle traffic going through the Cedar Lane (CR 659) intersection and provide better access to the NJ Turnpike entrance. The through lane could also be introduced south of the intersection if traffic volumes warranted.

County and municipal stakeholders recommend another alternative: the removal of the jug handle on northbound US 130, widening of the turning lanes at the intersection, and installation of a roundabout on Cedar Lane (CR 659) on the northbound side of US 130. This alternative was not analyzed or modeled as part of this study, and its effects on traffic circulation should be evaluated for consideration.

Improvements Summary

- Add far-side jug handle on northbound US 130.
- Add through lane on northbound US 130.
- Remove jug handle on northbound US 130 and install a roundabout on Cedar Lane (CR 659) (stakeholders' recommendation–not analyzed).

LOS Summary (Columbus Road)

- Existing: LOS B in AM; LOS B in PM
- No Build: LOS B in AM; LOS B in PM
- Build: LOS E in AM; LOS F in PM
- Build + Improvements: LOS C in AM; LOS C in PM

Figure 25: Northbound US 130 Widening

9. US 130 & Florence-Columbus Road/Delaware Avenue (CR 656)

Florence-Columbus Road provides the shortest and most direct link between the NJ Turnpike interchange at US 130 and I-295. As a result, the two movements serving this link—left-turning vehicles from westbound Florence-Columbus Road (CR 656) to southbound US 130 and northbound US 130 vehicles turning right onto eastbound Florence-Columbus Road (CR 656)—are particularly congested. Fifteen percent of heavy vehicles make one of these two movements at this location during peak hours (as shown in **Figure 13** and **Figure 14**).

The right-turn volume from northbound US 130 to eastbound Florence-Columbus Road (CR 656) is particularly problematic. The narrow turning radius makes it difficult for large trucks to make the right turn. Trucks frequently mount the curb on the southeast corner and cross the center line on Florence-Columbus Road (CR 656) when making the turn.

This intersection currently performs at LOS D for both the AM and PM peak hours. Under the Build scenario, traffic volumes are expected to double by year 2025. In order to accommodate future demand, several geometric changes are recommended for this intersection (**Figure 26)**.

The first recommendation is to add a right-turn ramp to connect westbound Florence-Columbus Road (CR 656) to northbound US 130. Removing right-turning vehicles from the intersection would reduce queuing and delay on the Florence-Columbus Road (CR 656) approach. Second, the reduction in vehicles on this approach also allows for the reallocation of the green time serving this movement to other phases.

Thirdly, a right-turn-only lane, from northbound US 130 to eastbound Florence-Columbus Road (CR 656), would improve the turning radius for the heavy truck volumes. Property acquisition at the southeast quadrant of the intersection would be required.

Stakeholders are considering another alternative to remove the existing jug handle and replace it with a larger jug handle with increased stacking length. This particular alternative was not evaluated as part of this study and requires further analysis.

Improvements Summary

- Add a right-turn ramp from Florence-Columbus Road to northbound US 130.
- Reallocate green time currently serving right-turn to other phases.
- Add a right-turn-only lane on northbound US 130.
- Add left-turn lane on southbound US 130.
- Add a left-turn lane on westbound Florence-Columbus Road.
- Add a right-turn-only lane on eastbound Delaware Avenue.
- Remove existing jug handle and replace it with a larger jug handle with increased stacking length (stakeholders' recommendation–not analyzed).

LOS Summary

- Existing: LOS D in AM; LOS D in PM
- No Build: LOS D in AM; LOS D in PM
- Build: LOS F in AM; LOS F in PM
- Build + Improvements: LOS D in AM; LOS D in PM

Figure 26: US 130 & Florence-Columbus Road/Delaware Avenue (CR 656)

10. US 130 & Hornberger Avenue

Hornberger Avenue provides the most direct access to US 130 from the Roebling neighborhood of Florence Township. The former Roebling site is expected to be entirely redeveloped. As part of the redevelopment process, and to accommodate future traffic growth, Maser Consulting conducted a traffic impact study for the site.

In both the AM and PM, the majority of vehicles on Hornberger Avenue travel southbound on this roadway. The highest volumes at this intersection are comprised of vehicles traveling northbound on US 130 in the AM (1,157 vehicles/hour) and southbound on US 130 in the PM (1,081 vehicles/hour). Turning movements counts are low from northbound and southbound US 130 onto Hornberger Avenue. In the Build or Build + Improvements scenarios, turning movements at this intersection multiply by 10 in the AM and more than double in the PM.

The following improvements at US 130 & Hornberger Avenue were identified in the recent Maser Consulting report and are shown in **Figure 27**. If implemented, the reconstruction project should include the installation of a new sidewalk.

Improvements Summary

- Widen Hornberger Avenue at Route 130 from one lane to two in each direction.
- Add dual left turns on northbound US 130 and eastbound Hornberger Avenue.
- Add right-turn signal overlaps for southbound US 130 and eastbound Hornberger Avenue.

LOS Summary

- Existing: LOS B in AM; LOS A in PM
- No Build: LOS B in AM; LOS A in PM
- Build: LOS F in AM; LOS F in PM
- Build + Improvements: LOS B in AM; LOS C in PM

Figure 27: US 130 & Hornberger Avenue

12. Florence-Columbus Road (CR 656) & Old York Road (CR 660)

Because Florence-Columbus Road (CR 656) serves as the primary link between the new industrial developments and I-295, volumes on this roadway are expected to increase more than volumes on Old York Road (CR 660). To accommodate future volumes, through lanes are recommended on the northbound and southbound approaches on Florence-Columbus Road (CR 656) (**Figure 28**). The through lanes would serve to process more vehicles during the green time. Florence-Columbus Road (CR 656) would return to a two-lane cross section just past the intersection.

Improvements Summary

- Add through lanes on northbound and southbound approaches on Florence-Columbus Road (CR 656).
- Change left on Old York Road (CR 660) from protected plus permitted to protected-only phase.
- Optimize signal.

LOS Summary

- Existing: LOS B in AM; LOS B in PM
- No Build: LOS B in AM; LOS B in PM
- Build: LOS F in AM; LOS D in PM
- Build + Improvements: LOS C in AM; LOS C in PM

Figure 28: Florence-Columbus Road & Old York Road (CR 660)

Table 6: Summary of Identified and Modeled Improvements by Intersection

#	Intersection Description	Modeled Improvements
1	Neck Road (CR 658) & Dultys Lane	• Converted stop control to roundabout with additional WB right turn lane
2	US 130 & Columbus Road (CR 543/ CR 655)	• Added right-turn-only lane to NB US 130 • Added protected lead left-turn phase to WB Columbus Rd (CR 543) • Optimized signal
3	US 130 & Jones Street (long-term)	• Designed new road to connect Columbus Road (CR 543) to US 130
4	US 130 & La Gorce Boulevard	• Optimized signal
5	US 130 & Neck Road (CR 658)	• Added dual left turn on NB US 130 • Added right-turn-only lane on WB Neck Road • Added receiving lane on WB Neck Road • Optimized signal
6	US 130 & Dultys Lane	• Added right turn overlap • Optimized signal
7	US 130 & John Galt Way	• Optimized signal
8	US 130 & Cedar Lane (CR 659)	• Added additional through lane on NB US 130 • Introduced a far-side jug handle on NB US 130 • Optimized signal
9	US 130 & Florence-Columbus Road/Delaware Avenue (CR 656)	• Added dual lefts on SB US 130 • Added dual lefts on WB Florence-Columbus Rd (CR 656) • Added right-turn-only lane on EB Delaware Ave (CR 656) • Added right-turn ramp from Florence-Columbus Road to northbound US 130 • Optimized signal
10	US 130 & Hornberger Avenue	• Added dual left turns on EB Hornberger and NB US 130 • Added right-turn-only lane to EB Hornberger • Optimized signal
11	Neck Road (CR 658) & Columbus Road (CR 543)	• None
12	Florence-Columbus Road (CR 656) & Old York Road (CR 660)	• Changed lefts on York from protected + permitted to protected only • Added through lane to WB Florence-Columbus Road (CR 656) • Added through lane to EB Florence-Columbus Road (CR 656) • Optimized signal

A summary of peak hour LOS is shown in **Table 7**. This table compares intersection LOS in 2025 with and without the improvements highlighted in **Table 6**.

Table 7: Intersection LOS

		2025 Build		2025 Build + Improvements	
#	**Intersection**	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
1	Neck Road (CR 658) & Dultys Lane	F	F	C	B
2	US 130 & Columbus Road (CR 543/ CR 655)	F	F	F	E
3	US 130 & Jones Street (long-term)	E	F	C	C
4	US 130 & La Gorce Boulevard	C	C	B	B
5	US 130 & Neck Road (CR 658)	F	F	D	E
6	US 130 & Dultys Lane	F	F	E	D
7	US 130 & John Galt Way	C	F	C	D
8	US 130 & Cedar Lane (CR 659)	E	F	C	C
9	US 130 & Florence-Columbus Road/Delaware Avenue (CR 656)	F	F	D	D
10	US 130 & Hornberger Avenue	F	F	B	C
11	Neck Road (CR 658) & Columbus Road (CR 543)	A	A	A	A
12	Florence-Columbus Road (CR 656) & Old York Road (CR 660)	F	D	C	C

Additional Enhancements to the Roadway Network

Roundabout at Cedar Lane (CR 659) & Railroad Avenue

Currently, Railroad Avenue is a stop-controlled intersection at Cedar Lane (CR 659). Significant warehouse development has taken place over the past year, which has exacerbated the traffic problems in the area. A roundabout is able to handle future volumes while minimizing delay. It also represents a significant cost savings over constructing a traffic signal. This recommended improvement is under construction as a condition of county planning board site approval for a Cedar Lane (CR 659) industrial site (**Figures 29 and 30**).

Figure 29: Cedar Lane (CR 659) & Railroad Avenue Roundabout

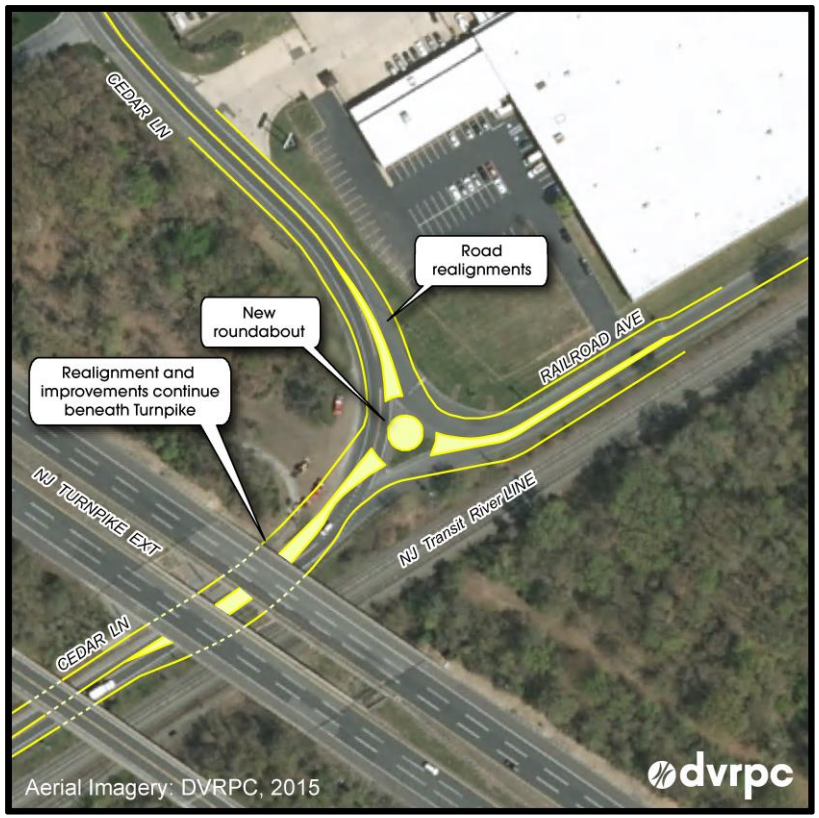
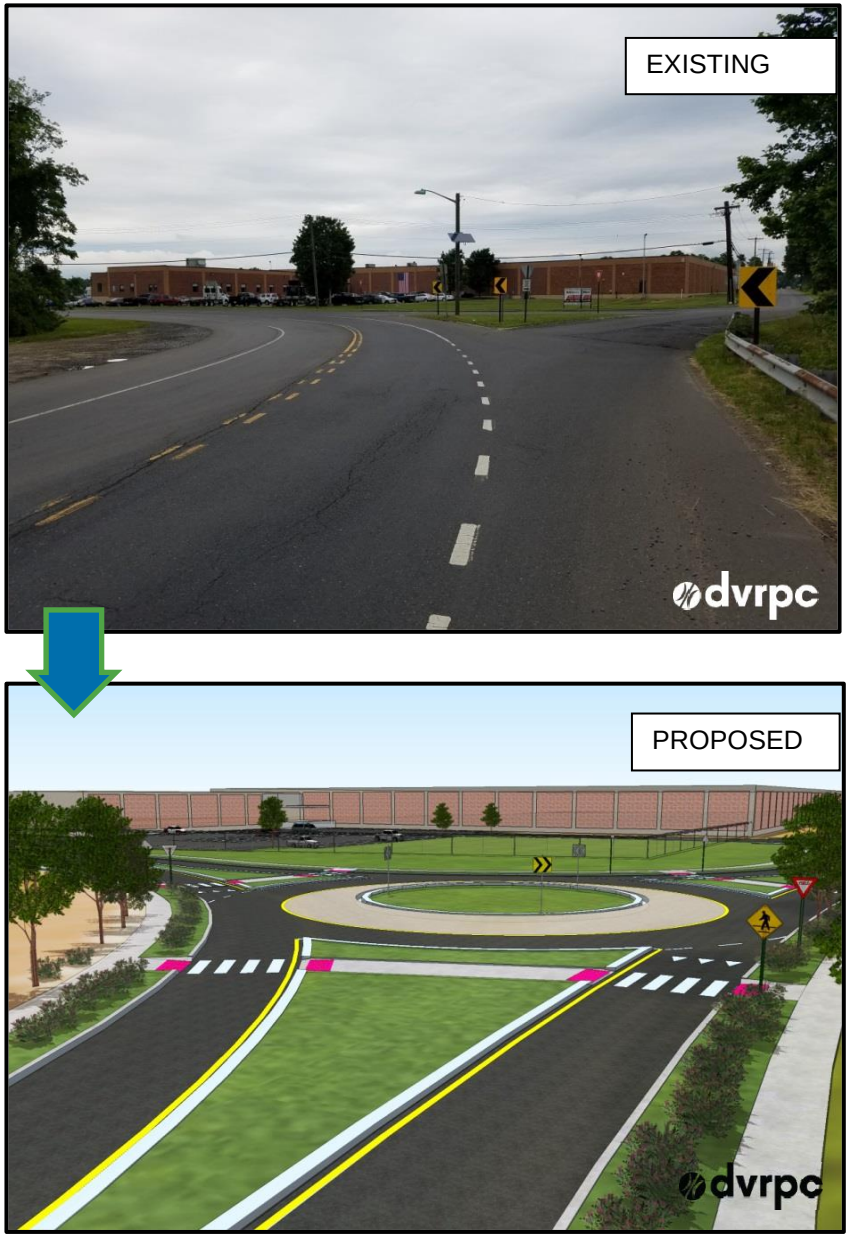


Figure 30: Roundabout at Cedar Lane & Railroad Avenue

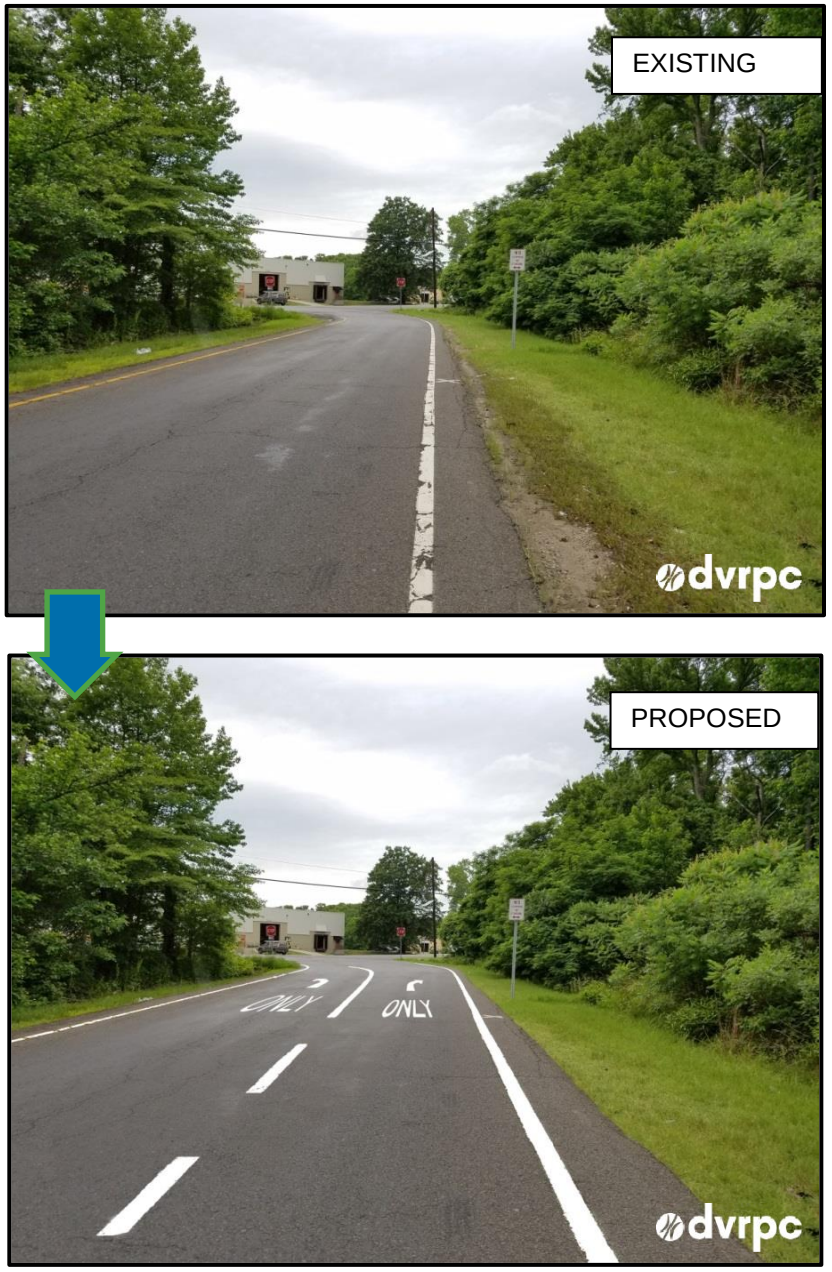


Southbound US 130 exit ramp to Cedar Lane (CR 659)

With warehouse expansion along Cedar Lane (CR 659), traffic volumes have increased significantly. Widening the exit lane from US 130 westbound at the Cedar Lane (CR 659) exit, from one lane to two, would increase the capacity of the ramp and prevent spill-back onto southbound US 130. The proximity of the NJ Turnpike interchange acceleration exit ramp just north leads to spill-back onto US 130. One lane would be exclusively for right turning traffic and the other would be assigned for left turning traffic. Formalizing the lanes with striping also creates a safer environment for motorists as they would better align themselves within the appropriate lane and thus minimize conflict.

Figure 31: Exit Ramp from US 130 to Cedar Lane (CR 659)

Figure 32: Existing and Proposed at US 130 to Cedar Lane (CR 659)



Connector Road from River Road (CR 656) to Daniels Way

Neck Road (CR 658) is the most direct route to US 130 for truck traffic from industries along River Road (CR 656). However, Neck Road (CR 658) is lined with residential properties, and the local population is exposed to noise and safety concerns. As a result, this study proposes a new connector road, beginning at the Daniels Way cul-de-sac in Florence Township and ending at a proposed roundabout on River Road (CR 656) in Burlington Township (**Figure 33**). This road could provide an alternate route for truck traffic on River Road (CR 656) and Neck Road (CR 658). Trucks could use Daniels Way and John Galt Way to access US 130. This road would also serve as an alternative to Dultys Lane and have the potential to provide access between multiple industrial parks without requiring travel on US 130. This connector road should include a sidewalk for safe pedestrian travel.

Figure 33: Connector Road from River Road (CR 656) to Daniels Way

Connector Road from John Galt Way to Cedar Lane (CR 659)

This roadway extension would serve as a connection between Cedar Lane (CR 659) and John Galt Way (**Figure 34**). Only right turns would be permitted from the connector road onto Cedar Lane (CR 659) so that trucks can access the new warehouse site just north of the NJ Turnpike from the freight-related land uses south of the interstate. This connector should also have a sidewalk.

If implemented, the two connector roads described—River Road (CR 656) to Daniels Way and John Galt Way to Cedar Lane (CR 659)—would provide new vehicular and pedestrian links from River Road (CR 656) to Cedar Lane (CR 659).

County and municipal stakeholders are exploring another alignment alternative for the connector road from John Galt Way to Cedar Lane (CR 659): a more direct connection from Cedar Lane (CR 659) to the NJ Transit River LINE Florence station parking lot. This alternative would require crossing Bustleton Creek.

Figure 34: Connector Road from John Galt Way to Cedar Lane (CR 659)

Pedestrian Network and Transit Access Improvements

There are several warehouses within walking and bicycling distance of the Florence and Roebling River LINE light rail stations in the study area. Bus service along US Route 130 also provides access to the major employment centers within the study area. However, bicycle and pedestrian infrastructure and amenities are too inadequate to serve as connections to these sites.

The following recommendations are preliminary recommendations that stemmed from this traffic study. However, it is important to note that in 2017, Florence Township was among three municipalities selected to partner with DVRPC for the Safe Routes to Transit Program. This technical assistance program is aimed at identifying ways to enhance bicycle and pedestrian access to transit stations. Specifically, DVRPC is working with municipal, county, and transit agency representatives to identify and evaluate a variety of strategies designed to provide safe and convenient pedestrian access from the River LINE to new and emerging local employment destinations along Cedar Lane and Railroad Avenue.

More targeted recommendations will emerge at the conclusion of the Safe Routes to Transit analysis, but both studies support bicycle and pedestrian connections to warehouses within a half-mile radius of the Florence River LINE station, as well as pedestrian connections to the Dultys Lane/US 130 bus stop, and upgrades to the existing sidewalks along Neck Road (CR 658).

Walkway from Florence River LINE Station to Railroad Avenue

If the connector road from John Galt Way to Cedar Lane (CR 659) is not constructed, the construction of a pedestrian walkway along the River LINE tracks between Florence River LINE station and the Pinacle warehouse to the north of Cedar Lane (CR 659) should be considered. Pedestrians currently use this space along the tracks as an unprotected path. A walkway along the east side of the tracks up to Cedar Lane (CR 659), where it would cross the tracks, would make these pedestrian trips much safer. The proposed walkway would proceed along Cedar Lane (CR 659) to the proposed roundabout at Railroad Avenue (**Figure 35** on page 58). A fence should be constructed to separate pedestrians from the railroad (see **Figure 36** on page 58).

Figure 35: Florence River LINE Station to Rail Road

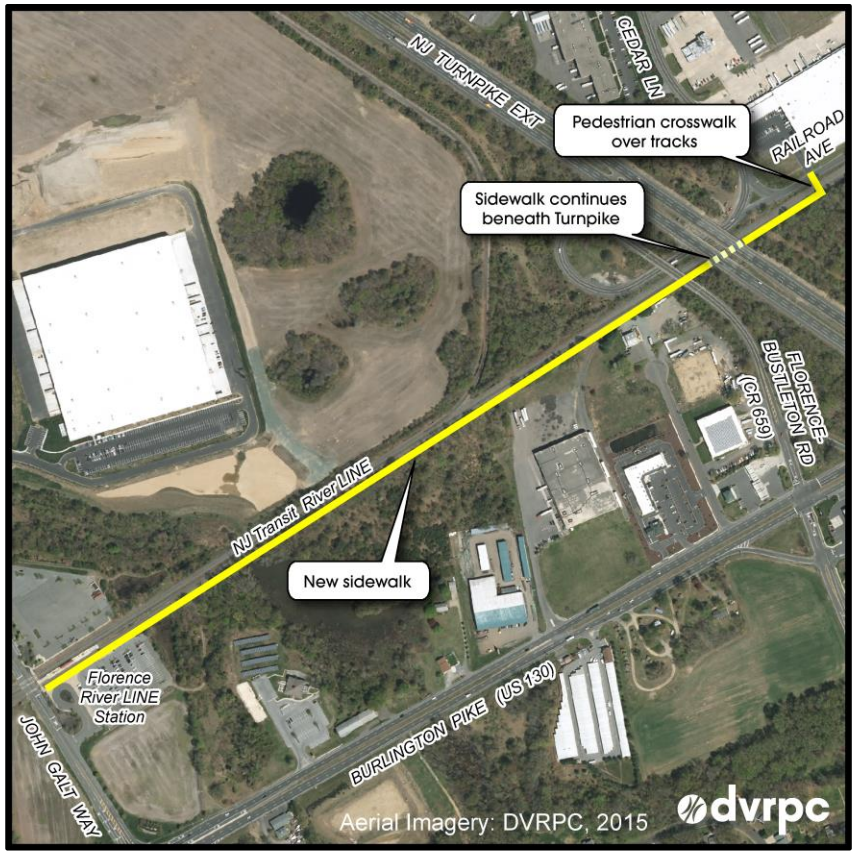


Figure 36: Sidewalks from NJ Transit River LINE Florence Station to Railroad Avenue

Sidewalk Connecting Florence River LINE Station to US 130

A sidewalk is proposed on the south side of John Galt Way connecting the Florence River LINE station with US 130 (**Figures 37 and 38**). This provides direct pedestrian access to warehouses on the east side of US 130, including Subaru, QPSI, and Express Scripts. Pedestrian safety can be enhanced with high-visibility crosswalks across US 130 with pedestrian signal heads, countdown timers, and ADA-compliant curb ramps.

Figure 37: Florence River LINE Station to US 130

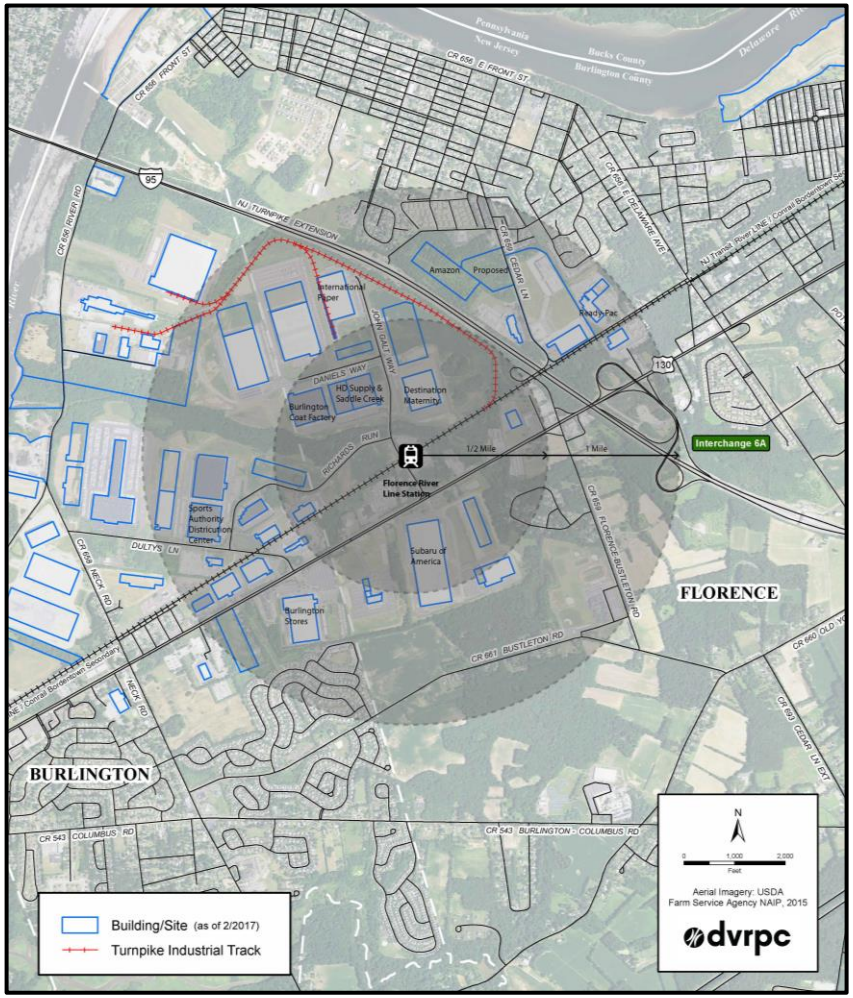
Figure 38: Sidewalk from Florence River LINE Station to US 130

Sidewalks Connecting Florence River LINE Station to Warehouses

There are several warehouses within a half-mile radius of the Florence River LINE station, as shown in **Figure 39** (half-mile radius delineated by outer buffer ring). A sidewalk network within a half-mile of the Florence River LINE station would provide pedestrian access to several more warehouses, such as Amazon and Burlington Stores, from the station.

Furthermore, all future development approvals, new roads, and rebuilt roads throughout the study area should have sidewalks. The three municipalities and Burlington County should work together to retrofit all existing collector roads with pedestrian facilities.

Figure 39: Warehouses within ½ Mile of Florence River LINE Station



Sidewalk along US 130 Connecting Fairbrook Drive to Hornberger Avenue

A sidewalk along US 130 from Fairbrook Drive to Hornberger Avenue would improve pedestrian access to the Roebling River LINE station on Hornberger Avenue (**Figures 40 and 41**). The Roebling River LINE station is located by the US 130 & Hornberger Avenue intersection. As a result, this intersection plays a critical role in providing transit access.

Figure 40: US 130 from Fairbrook Drive to Hornberger Ave

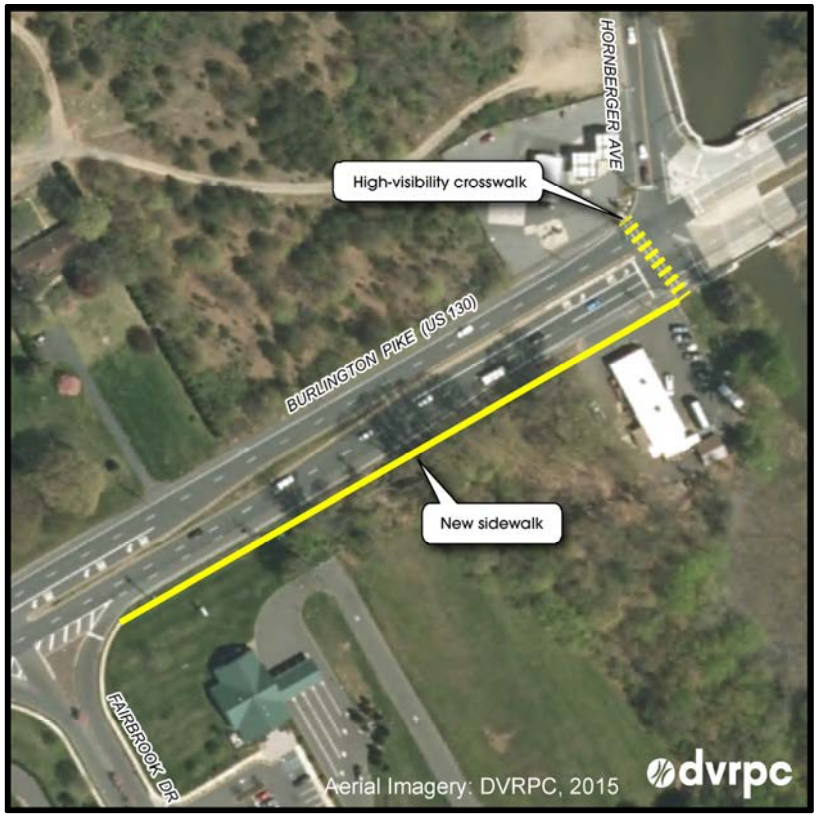


Figure 41: Sidewalk along US 130 from Fairbrook Drive to Hornberger Avenue

7 IMPLEMENTATION AND RECOMMENDATIONS

Implementation

Order-of-magnitude cost estimates for constructing or implementing the mobility improvements were prepared for budgeting and programming purposes. Although priorities have been assigned, funding availability needs to be determined prior to budgeting and programming. It is recommended to concurrently implement improvements where mobility projects overlap with safety-deficient locations.

Recommendations

The following recommendations are more specific to each community in the study corridor. Cost estimates for long-term improvements include preliminary engineering, final design, and construction costs and are based on similar projects currently listed on the DVRPC Transportation Improvement Program (TIP).

The *Prioritization of Recommended Improvements* **(Table 8** on page 66**)** can be used as a dynamic long-range tool for the systematic selection of projects to create a significantly improved transportation system within the study area. This document can serve as a punch list for the government agencies with a stake in the implementation of improvements. The text generally offers a more elaborate description of each recommendation.

In choosing which projects should advance first, stakeholders can be guided by the information presented in this chapter. Each improvement scenario identified is evaluated in terms of project phasing, cost range, and project benefits.

Project Cost Estimate

Costs are also assigned to categories of high, moderate, and low. High-cost projects usually involve a major commitment from one or more funding sources, lengthy public involvement, and several years' lead time in programming the required funds. They are typically large scale, complex, or multiphase improvements and can entail the construction of new facilities. In general, a project in this category is estimated to cost in excess of $2 million. An improvement estimated to have a moderate cost could involve a major reconstruction of an intersection, construction of a short connector road, or a widening of an existing road. In general, a project in this category is estimated to cost between $100,000 and $2 million. Low-cost projects can often be fast tracked with maintenance or pool funding. They are often operational-type improvements at isolated locations and typically cost less than $100,000. These cost ranges are generalized estimates and could be significantly changed for a specific location due to environmental, right-of-way, or other factors uncovered during detailed design of the improvement.

Responsible Agency

Municipalities make land use decisions in the corridor that ultimately affect traffic levels. Many of the cross streets are local streets that are designed, built, and maintained by the local municipalities. The New Jersey Department of Transportation (NJDOT) has jurisdiction over the

state highways in the corridor. The state ultimately makes the decision on what improvements are done to their facilities, but often coordinates with the respective county or local municipalities.

Planning and Regulatory Provisions

The New Jersey Municipal Land Use Law permits municipalities to identify existing conditions and recommendations for the improvement of all modes of transportation required for the efficient movement of people and goods into, about, and through the municipality. Such recommendations are used by municipalities in developing capital improvement plans, by municipal planning boards and zoning boards of adjustment in the review of development applications, and by municipalities in the development of official maps.

The Municipal Land Use Law provides municipalities the authority to reserve the location of future roads and other required public infrastructure when a municipal governing body adopts or amends its official map consistent with the approved master plan. Similarly, the County Planning Act provides New Jersey counties with the authority to reserve the location of future roads and other required public infrastructure when a county governing body adopts or amends its official county map consistent with the approved county master plan. When a municipality or county adopts an official map, it formally reserves the future locations, widths, layouts, courses, and openings of future streets. Municipal planning boards and zoning boards of adjustment and county planning boards use official maps in their review of development applications. Before approving a subdivision or site plan, the planning board may require that such streets, ways, basins, or areas be shown on the plat in the locations and sizes suitable to their intended uses. The planning board may reserve the location and extent of such streets, ways, basins, or areas shown on the plat for a period of one year after the approval of the final plat or within such further time as may be agreed to by the developer (NJSA 40:55D-32 and 44).

Possible Funding Options

This section details possible funding sources, ranging from traditional economic development mechanisms available to municipalities, to competitive grant programs administered by state and regional agencies.

Capital Improvement Program (CIP)

CIPs outline plans for future capital improvements, such as roads and other public facilities. The New Jersey Capital Budget Law requires municipalities and counties to adopt annually a CIP for the upcoming year and the following five years, as part of their annual budget. The range and scope of these vary, but most cover a six-year period and can be scoped for up to 20 years. A successful CIP should include a schedule of implementation with a projected budget. If a municipality or county CIP is consistent with the master plan and zoning ordinance, they can be useful tools, allowing the county or municipality to plan for future growth and improvements and lowering costs by anticipating the future demands of the municipal infrastructure system. The CIP can also provide developers and the public with more certainty concerning future public improvements, thereby improving opportunities for participation and increasing accountability. The adoption and updating of the CIP is no small task, but should be considered an immediate priority for municipalities and counties.

Pro-Rata Share of Off-Tract Improvements

New Jersey municipalities (under the Municipal Land Use Law) and counties (under the County Planning Act) may require, as a condition of subdivision or site plan approval, developers to pay their pro-rata share of off-tract improvements to the local water, sewer, drainage, and street infrastructure necessitated by a proposed development. This type of revenue provides a better quality of life for residents by financing the infrastructure needed to support additional population, employment, and development. It ultimately reduces the need to impose higher taxes on existing residents to finance additional facilities. An off-tract improvement

ordinance requires modification to the master plan and subdivision and zoning codes.

Transportation and Community Development Initiative (TCDI)

The TCDI is an opportunity for DVRPC to support growth in individual municipalities of the Delaware Valley through planning initiatives that implement the region's long-range plan. TCDI grants support early stage planning, design, and feasibility studies. Eligible projects reinforce and implement improvements in designated centers and improve the overall character and quality of life within the region. Among the eligible activities are wayfinding plans and mobility elements of master plans. Funding for the TCDI program comes from a combination of state transportation dollars and federal funds.

Transportation Alternatives Program (TAP)

TAP is administered by NJDOT. TAP provides federal funds for community based "non-traditional" surface transportation projects designed to strengthen the cultural, aesthetic, and environmental aspects of the nation's intermodal system. Projects must be directly related to surface transportation and be accessible to the public. TAP funds are provided on a reimbursement basis. Eligible projects include design and construction of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation. Projects must be authorized for construction within two years of the grant notification, and they must have formal community support.

TIP

The TIP is the regionally agreed-upon list of priority transportation projects, as required by federal law (Intermodal Surface Transportation Efficiency Act; Transportation Equity Act for the 21st Century; Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users; Moving Ahead for Progress in the 21st Century Act; and Fixing America's Surface Transportation Act). The draft TIP is adopted by the DVRPC Board and goes into effect upon the federal approval of the NJDOT Statewide Transportation Improvement Program (STIP). The TIP document must list all projects that intend to use federal funds, along with all non-federally funded projects that are regionally significant. The projects are multimodal, and they include freight-related projects as well as highway projects. In order for a project to receive federal funding, it must be on the TIP.

Economic Redevelopment and Growth (ERG) Program

This program is administered by the New Jersey Economic Development Authority (EDA). The ERG Program is an incentive for developers and businesses to address revenue gaps in development projects. Eligible applications include commercial, residential, or mixed-use parking projects in areas targeted for growth in New Jersey. Residential projects can receive a tax credit of up to 20 percent of the total project cost with 10 percent bonus possible if the project constructs and reserves at least 10 percent of the residential units for moderate-income housing. Commercial projects can receive an incentive grant reimbursement of up to 20 percent of the total project cost, with additional grant funding possible based on project type and/or location. Mixed-use parking projects can receive a tax credit of up to 100 percent of the parking component project costs and up to 40 percent of the non-parking component project costs. The EDA online mapping tool identifies the study area as an Economic Opportunity Act (EOA) "Priority Area" for basic eligibility.

Redevelopment Area Bond Financing

This type of financing provides tax-exempt bonds to fund the infrastructure and remediation components of redevelopment projects for New Jersey municipalities with designated redevelopment areas. This option may not be appropriate in the study area because many of the completed and approved redevelopment projects have redevelopment agreements that have already accounted for the distribution of the project's special assessment of payment-in-lieu-of-taxes (PILOT), which otherwise could have been used for RAB payments.

Table 8: Prioritization of Recommended Improvements

	Intersection Number or Improvement Category	Recommendation	Responsible Agency	Possible Funding Options	Project Cost Estimate
HIGH Priority	9	US 130 & Florence-Columbus Road (CR 656) intersection improvement	Municipal Officials Burlington County NJDOT	TIP Pro-Rata Share of Off-Tract Improvements	High
	2-3	Right-turn lane on Northbound US 130 at Columbus Road (CR 543) and signal timing improvements at US 130 & Jones Street/Columbus Road (CR 543)	Municipal Officials Burlington County NJDOT	TIP CIP Pro-Rata Share of Off-Tract Improvements	High
	6	US 130 & Dultys Lane optimized signal	Municipal Officials Burlington County NJDOT	CIP Pro-Rata Share of Off-Tract Improvements	Low
	8	Northbound US 130 & Cedar Lane (CR 659) jug handle	Municipal Officials Burlington County NJDOT	TIP CIP Pro-Rata Share of Off-Tract Improvements	Low
	8	Widen southbound US 130 to Cedar Lane (CR 659) off-ramp	Municipal Officials Burlington County NJDOT	TIP	Medium
MEDIUM Priority	Additional Enhancement	Connector road from Daniels Way to River Road (CR 656)	Municipal Officials Burlington County NJDOT	CIP Pro-Rata Share of Off-Tract Improvements TIF	High
	5	Turn lanes from US 130 to Neck Road (CR 658)	Municipal Officials NJDOT	TIP	Medium
	10	Add dual left turns on northbound US 130 and eastbound Hornberger Avenue	Municipal Officials NJDOT	Pro-Rata Share of Off-Tract Improvements	Medium

	Intersection Number or Improvement Category	Recommendation	Responsible Agency	Possible Funding Options	Project Cost Estimate
MEDIUM Priority (cont.)	**10**	Widen Hornberger Avenue to two lanes in each direction from US 130 to Railroad Avenue	Municipal Officials	Pro-Rata Share of Off-Tract Improvements TIP	High
	Additional Enhancement	Connector Road from John Galt Way to Cedar Lane (CR 659) with Sidewalks	Municipal Officials Burlington County	CIP TIF	High
	Pedestrian Network and Transit Access	Pedestrian walkway from Florence River LINE station to Railroad Avenue (if above recommendation not implemented)	Municipal Officials Developer	TAP	Low
LOW Priority	**Pedestrian Network and Transit Access**	Sidewalk connecting buildings within a mile of Florence River LINE station to the station	Municipal Officials Burlington County	TAP Safe Routes to Transit	Medium
	Pedestrian Network and Transit Access	Sidewalk along US 130 connecting Fairbrook Drive to Hornberger Avenue	NJDOT	TIP TAP	Medium
	Pedestrian Network and Transit Access	Sidewalk on south side of John Galt Way connecting Florence River LINE station to US 130	Municipal Officials NJDOT	TAP	Low
	1	Neck Road (CR 658) & Dultys Lane roundabout	Municipal Officials Burlington County	CIP Pro-Rata Share of Off-Tract Improvements	Medium
	4	US 130 & La Gorce Boulevard optimized signal timing	NJDOT	Pro-Rata Share of Off-Tract Improvements	Low
	2	Right-in/right-out only on NB Columbus Road at intersection with US 130	Municipal Officials Burlington County NJDOT	TIP	Medium
	12	Additional through lane on Florence-Columbus Road (CR 656) at Old York Road (CR 660)	Municipal Officials Burlington County	CIP Pro-Rata Share of Off-Tract Improvements	Medium

Appendix A

Appendix A: **Intersection Level of Service (LOS)**

Intersection Level Of Service Report
US 130 & Florence-Columbus Road / Delaware Avenue -- AM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	US 130			130			Florence-Columbus Road			Delaware Avenue		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	842	249	29	405	50	208	93	86	208	208	22
Approach Delay [s/veh]	15.99			14.54			96.27			75.45		
Approach LOS	B			B			F			E		
Intersection Delay [s/veh]	39.50											
Intersection LOS	D											
Intersection V/C	0.627											

No Build

Name	US 130			130			Florence-Columbus Road			Delaware Avenue		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	863	255	30	415	51	213	95	88	213	213	23
Approach Delay [s/veh]	16.17			14.63			102.46			78.49		
Approach LOS	B			B			F			E		
Intersection Delay [s/veh]	41.13											
Intersection LOS	D											
Intersection V/C	0.643											

Build

Name	US 130			130			Florence-Columbus Road			Delaware Avenue		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	1445	423	87	931	73	789	160	261	223	268	199
Approach Delay [s/veh]	26.44			18.93			3365.68			927.96		
Approach LOS	C			B			F			F		
Intersection Delay [s/veh]	984.32											
Intersection LOS	F											
Intersection V/C	1.515											

Build + Improvements

Name	US 130			130			Florence-Columbus Road			Delaware Avenue		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	1445	423	87	931	73	789	160	0	223	268	199
Approach Delay [s/veh]	51.44			32.81			52.07			57.79		
Approach LOS	D			C			D			E		
Intersection Delay [s/veh]	48.10											
Intersection LOS	D											
Intersection V/C	1.023											

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Intersection Level Of Service Report

US 130 & Florence-Columbus Road / Delaware Avenue -- PM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	US 130			130			Florence-Columbus Road			Delaware Avenue		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	527	264	85	618	156	266	224	41	140	168	24
Approach Delay [s/veh]	17.27			17.43			90.03			143.65		
Approach LOS	B			B			F			F		
Intersection Delay [s/veh]	49.40											
Intersection LOS	D											
Intersection V/C	0.618											

No Build

Name	US 130			130			Florence-Columbus Road			Delaware Avenue		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	540	271	87	633	160	273	230	42	144	172	25
Approach Delay [s/veh]	16.95			17.73			96.64			159.75		
Approach LOS	B			B			F			F		
Intersection Delay [s/veh]	52.97											
Intersection LOS	D											
Intersection V/C	0.634											

Build

Name	US 130			130			Florence-Columbus Road			Delaware Avenue		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	1196	698	253	1188	170	484	479	131	150	189	72
Approach Delay [s/veh]	179.92			33.09			2692.59			154.07		
Approach LOS	F			C			F			F		
Intersection Delay [s/veh]	679.26											
Intersection LOS	F											
Intersection V/C	1.344											

Build + Improvements

Name	US 130			130			Florence-Columbus Road			Delaware Avenue		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	1196	698	253	1188	170	484	479	0	150	189	72
Approach Delay [s/veh]	45.37			31.72			75.29			104.44		
Approach LOS	D			C			E			F		
Intersection Delay [s/veh]	51.74											
Intersection LOS	D											
Intersection V/C	1.119											

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Intersection Level Of Service Report
US 130 & Columbus Road -- AM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	Columbus Road			Columbus Road			US 130			US 130		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	23	47	10	219	43	4	0	1119	181	0	650	2
Approach Delay [s/veh]	30.14			42.21			16.00			10.51		
Approach LOS	C			D			B			B		
Intersection Delay [s/veh]	17.97											
Intersection LOS	B											
Intersection V/C	0.750											

No Build

Name	Columbus Road			Columbus Road			US 130			US 130		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	24	48	10	224	44	4	0	1147	186	0	666	2
Approach Delay [s/veh]	30.45			43.20			16.37			10.57		
Approach LOS	C			D			B			B		
Intersection Delay [s/veh]	18.32											
Intersection LOS	B											
Intersection V/C	0.837											

Build

Name	Columbus Road			Columbus Road			US 130			US 130		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	74	57	10	242	46	4	0	2303	338	0	862	3
Approach Delay [s/veh]	49.10			39.62			421.94			11.42		
Approach LOS	D			D			F			B		
Intersection Delay [s/veh]	290.10											
Intersection LOS	F											
Intersection V/C	1.330											

Build + Improvements

Name	Columbus Road			Columbus Road			US 130			US 130		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	74	57	10	242	46	4	0	2303	338	0	862	3
Approach Delay [s/veh]	29.11			22.14			170.23			11.42		
Approach LOS	C			C			F			B		
Intersection Delay [s/veh]	119.32											
Intersection LOS	F											
Intersection V/C	1.130											

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Intersection Level Of Service Report
US 130 & Columbus Road -- PM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	Columbus Road			Columbus Road			US 130			US 130		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	22	75	8	263	49	3	0	721	278	0	1269	3
Approach Delay [s/veh]	25.77			98.52			12.63			13.60		
Approach LOS	C			F			B			B		
Intersection Delay [s/veh]	23.66											
Intersection LOS	C											
Intersection V/C	0.963											

No Build

Name	Columbus Road			Columbus Road			US 130			US 130		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	23	77	8	270	50	3	0	739	285	0	1301	3
Approach Delay [s/veh]	30.87			135.09			12.84			14.00		
Approach LOS	C			F			B			B		
Intersection Delay [s/veh]	28.41											
Intersection LOS	C											
Intersection V/C	1.294											

Build

Name	Columbus Road			Columbus Road			US 130			US 130		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	45	81	8	362	57	3	0	1021	307	0	2305	26
Approach Delay [s/veh]	103.84			249.88			16.63			222.02		
Approach LOS	F			F			B			F		
Intersection Delay [s/veh]	156.34											
Intersection LOS	F											
Intersection V/C	1.496											

Build + Improvements

Name	Columbus Road			Columbus Road			US 130			US 130		
Approach	Eastbound			Westbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	45	81	8	362	57	3	0	1021	307	0	2305	26
Approach Delay [s/veh]	45.63			228.24			8.97			79.24		
Approach LOS	D			F			A			E		
Intersection Delay [s/veh]	70.95											
Intersection LOS	E											
Intersection V/C	1.339											

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Intersection Level Of Service Report

US 130 & Florence-Bustleton Road / Cedar Lane -- AM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	Florence-Bustleton Road			Cedar Lane			US 130			US 130		
Approach	Northbound			Southbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	64	95	75	84	130	67	0	892		0	706	0
Approach Delay [s/veh]	46.22			45.15			7.65			6.13		
Approach LOS	D			D			A			A		
Intersection Delay [s/veh]	16.40											
Intersection LOS	B											
Intersection V/C	0.607											

No Build

Name	Florence-Bustleton Road			Cedar Lane			US 130			US 130		
Approach	Northbound			Southbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	66	97	77	86	133	69	0	914		0	724	0
Approach Delay [s/veh]	46.09			45.02			7.95			6.33		
Approach LOS	D			D			A			A		
Intersection Delay [s/veh]	16.56											
Intersection LOS	B											
Intersection V/C	0.622											

Build

Name	Florence-Bustleton Road			Cedar Lane			US 130			US 130		
Approach	Northbound			Southbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	105	272	77	192	145	206	0	1649	0	0	1978	0
Approach Delay [s/veh]	37.35			37.38			111.74			33.19		
Approach LOS	D			D			F			C		
Intersection Delay [s/veh]	62.10											
Intersection LOS	E											
Intersection V/C	1.141											

Build + Improvements

Name	Florence-Bustleton Road			Cedar Lane			US 130			US 130		
Approach	Northbound			Southbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	105	272	77	192	145	206	0	1649	0	0	1978	0
Approach Delay [s/veh]	47.86			53.88			17.13			22.83		
Approach LOS	D			D			B			C		
Intersection Delay [s/veh]	26.90											
Intersection LOS	C											
Intersection V/C	1.065											

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Version 4.00-03

Intersection Level Of Service Report

US 130 & Florence-Bustleton Road / Cedar Lane -- PM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	Florence-Bustleton Road			Cedar Lane			US 130			US 130		
Approach	Northbound			Southbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	35	170	38	66	124	62	0	849	0	0	965	0
Approach Delay [s/veh]	33.03			31.10			7.43			6.71		
Approach LOS	C			C			A			A		
Intersection Delay [s/veh]	12.41											
Intersection LOS	B											
Intersection V/C	0.663											

No Build

Name	Florence-Bustleton Road			Cedar Lane			US 130			US 130		
Approach	Northbound			Southbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	36	174	39	68	127	64	0	870	0	0	989	0
Approach Delay [s/veh]	32.89			30.91			7.72			6.95		
Approach LOS	C			C			A			A		
Intersection Delay [s/veh]	12.58											
Intersection LOS	B											
Intersection V/C	0.680											

Build

Name	Florence-Bustleton Road			Cedar Lane			US 130			US 130		
Approach	Northbound			Southbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	107	312	39	169	181	164	0	1938	5	0	1752	0
Approach Delay [s/veh]	34.54			29.39			430.53			20.64		
Approach LOS	C			C			F			C		
Intersection Delay [s/veh]	193.36											
Intersection LOS	F											
Intersection V/C	1.402											

Build + Improvements

Name	Florence-Bustleton Road			Cedar Lane			US 130			US 130		
Approach	Northbound			Southbound			Northeastbound			Southwestbound		
Lane Configuration												
Base Volume Input [veh/h]	107	312	39	169	181	164	0	1938	5	0	1752	0
Approach Delay [s/veh]	35.08			32.08			21.84			20.34		
Approach LOS	D			C			C			C		
Intersection Delay [s/veh]	23.71											
Intersection LOS	C											
Intersection V/C	1.111											

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report
US 130 & Hornberger Avenue -- AM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	Hornberger Avenue		US 130		US 130	
Approach	Southbound		Northeastbound		Southwestbound	
Lane Configuration						
Base Volume Input [veh/h]	211	41	34	1157	505	38
Approach Delay [s/veh]	52.81		7.14		5.50	
Approach LOS	D		A		A	
Intersection Delay [s/veh]	12.49					
Intersection LOS	B					
Intersection V/C	0.617					

No Build

Name	Hornberger Avenue		US 130		US 130	
Approach	Southbound		Northeastbound		Southwestbound	
Lane Configuration						
Base Volume Input [veh/h]	216	42	35	1186	518	39
Approach Delay [s/veh]	53.13		7.43		5.70	
Approach LOS	D		A		A	
Intersection Delay [s/veh]	12.74					
Intersection LOS	B					
Intersection V/C	0.632					

Build

Name	Hornberger Avenue		US 130		US 130	
Approach	Southbound		Northeastbound		Southwestbound	
Lane Configuration						
Base Volume Input [veh/h]	281	184	480	1471	965	122
Approach Delay [s/veh]	73.47		594.22		23.84	
Approach LOS	E		F		C	
Intersection Delay [s/veh]	348.10					
Intersection LOS	F					
Intersection V/C	1.073					

Build + Improvements

Name	Hornberger Avenue		US 130		US 130	
Approach	Southbound		Northeastbound		Southwestbound	
Lane Configuration						
Base Volume Input [veh/h]	281	184	480	1471	965	122
Approach Delay [s/veh]	49.96		14.51		15.03	
Approach LOS	D		B		B	
Intersection Delay [s/veh]	19.38					
Intersection LOS	B					
Intersection V/C	0.752					

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report
US 130 & Hornberger Avenue -- PM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	Hornberger Avenue		US 130		US 130	
Approach	Southbound		Northeastbound		Southwestbound	
Lane Configuration						
Base Volume Input [veh/h]	93	49	94	619	1081	223
Approach Delay [s/veh]	41.27		7.31		6.47	
Approach LOS	D		A		A	
Intersection Delay [s/veh]	9.04					
Intersection LOS	A					
Intersection V/C	0.614					

No Build

Name	Hornberger Avenue		US 130		US 130	
Approach	Southbound		Northeastbound		Southwestbound	
Lane Configuration						
Base Volume Input [veh/h]	95	50	96	634	1108	229
Approach Delay [s/veh]	41.17		7.48		5.81	
Approach LOS	D		A		A	
Intersection Delay [s/veh]	8.68					
Intersection LOS	A					
Intersection V/C	0.629					

Build

Name	Hornberger Avenue		US 130		US 130	
Approach	Southbound		Northeastbound		Southwestbound	
Lane Configuration						
Base Volume Input [veh/h]	178	458	251	1036	1430	302
Approach Delay [s/veh]	322.38		65.19		98.34	
Approach LOS	F		E		F	
Intersection Delay [s/veh]	125.65					
Intersection LOS	F					
Intersection V/C	1.302					

Build + Improvements

Name	Hornberger Avenue		US 130		US 130	
Approach	Southbound		Northeastbound		Southwestbound	
Lane Configuration						
Base Volume Input [veh/h]	178	458	251	1036	1430	302
Approach Delay [s/veh]	47.29		19.55		26.73	
Approach LOS	D		B		C	
Intersection Delay [s/veh]	27.78					
Intersection LOS	C					
Intersection V/C	1.092					

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report
US 130 & John Galt Way -- AM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	US 130			130			John Galt Way			John Galt Way		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	1006	11	34	682	71	8	60	3	31	7	27
Approach Delay [s/veh]	5.90			6.47			52.37			50.54		
Approach LOS	A			A			D			D		
Intersection Delay [s/veh]	9.33											
Intersection LOS	A											
Intersection V/C	0.343											

No Build

Name	US 130			130			John Galt Way			John Galt Way		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	1031	11	35	699	73	8	62	3	32	7	28
Approach Delay [s/veh]	5.99			6.55			52.41			50.54		
Approach LOS	A			A			D			D		
Intersection Delay [s/veh]	9.42											
Intersection LOS	A											
Intersection V/C	0.353											

Build

Name	US 130			130			John Galt Way			John Galt Way		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	2053	65	104	1663	470	18	323	27	164	7	73
Approach Delay [s/veh]	24.78			25.45			57.18			51.97		
Approach LOS	C			C			E			D		
Intersection Delay [s/veh]	28.82											
Intersection LOS	C											
Intersection V/C	0.976											

Build + Improvements

Name	US 130			130			John Galt Way			John Galt Way		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	2053	65	104	1663	470	18	323	27	164	7	73
Approach Delay [s/veh]	23.13			24.84			59.20			69.45		
Approach LOS	C			C			E			E		
Intersection Delay [s/veh]	28.85											
Intersection LOS	C											
Intersection V/C	0.976											

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report
US 130 & John Galt Way -- PM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	US 130			130			John Galt Way			John Galt Way		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	771	6	20	955	30	33	23	19	68	1	78
Approach Delay [s/veh]	6.77			7.09			37.92			35.53		
Approach LOS	A			A			D			D		
Intersection Delay [s/veh]	10.21											
Intersection LOS	B											
Intersection V/C	0.544											

No Build

Name	US 130			130			John Galt Way			John Galt Way		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	790	6	21	979	31	34	24	19	70	1	80
Approach Delay [s/veh]	6.92			7.29			37.88			35.44		
Approach LOS	A			A			D			D		
Intersection Delay [s/veh]	10.36											
Intersection LOS	B											
Intersection V/C	0.557											

Build

Name	US 130			130			John Galt Way			John Galt Way		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	1725	17	39	1780	146	73	80	68	371	1	287
Approach Delay [s/veh]	20.38			94.90			38.23			268.75		
Approach LOS	C			F			D			F		
Intersection Delay [s/veh]	88.84											
Intersection LOS	F											
Intersection V/C	1.214											

Build + Improvements

Name	US 130			130			John Galt Way			John Galt Way		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	0	1725	17	39	1780	146	73	80	68	371	1	287
Approach Delay [s/veh]	17.79			51.96			49.77			70.44		
Approach LOS	B			D			D			E		
Intersection Delay [s/veh]	41.53											
Intersection LOS	D											
Intersection V/C	1.245											

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Version 4.00-03

Intersection Level Of Service Report
US 130 & Dultys Lane -- AM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	US 130			US 130						Dultys Lane		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	44	909	85	88	492	33	23	6	41	42	15	10
Approach Delay [s/veh]	11.12			13.11			51.39			53.85		
Approach LOS	B			B			D			D		
Intersection Delay [s/veh]	14.98											
Intersection LOS	B											
Intersection V/C	0.493											

No Build

Name	US 130			US 130						Dultys Lane		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	45	932	87	90	504	34	24	6	42	43	15	10
Approach Delay [s/veh]	11.34			13.17			51.38			53.89		
Approach LOS	B			B			D			D		
Intersection Delay [s/veh]	15.12											
Intersection LOS	B											
Intersection V/C	0.505											

Build

Name	US 130			US 130						Dultys Lane		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	159	1771	87	90	847	637	24	6	42	287	15	34
Approach Delay [s/veh]	40.01			262.72			51.25			56.47		
Approach LOS	D			F			D			E		
Intersection Delay [s/veh]	129.25											
Intersection LOS	F											
Intersection V/C	1.265											

Build + Improvements

Name	US 130			US 130						Dultys Lane		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	159	1771	87	90	847	637	24	6	42	287	15	34
Approach Delay [s/veh]	42.45			76.63			51.25			53.83		
Approach LOS	D			E			D			D		
Intersection Delay [s/veh]	57.02											
Intersection LOS	E											
Intersection V/C	0.884											

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Version 4.00-03

Intersection Level Of Service Report
US 130 & Dultys Lane -- PM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	US 130			US 130						Dultys Lane		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	20	566	14	4	939	24	128	5	117	46	1	33
Approach Delay [s/veh]	8.91			10.86			35.95			38.53		
Approach LOS	A			B			D			D		
Intersection Delay [s/veh]	14.71											
Intersection LOS	B											
Intersection V/C	0.581											

No Build

Name	US 130			US 130						Dultys Lane		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	21	580	14	4	962	25	131	5	120	47	1	34
Approach Delay [s/veh]	9.08			11.18			35.86			38.51		
Approach LOS	A			B			D			D		
Intersection Delay [s/veh]	14.92											
Intersection LOS	B											
Intersection V/C	0.596											

Build

Name	US 130			US 130						Dultys Lane		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	45	1056	14	4	1749	278	131	5	120	446	1	153
Approach Delay [s/veh]	15.79			35.42			53.17			408.02		
Approach LOS	B			D			D			F		
Intersection Delay [s/veh]	86.95											
Intersection LOS	F											
Intersection V/C	1.105											

Build + Improvements

Name	US 130			US 130						Dultys Lane		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	45	1056	14	4	1749	278	131	5	120	446	1	153
Approach Delay [s/veh]	17.51			45.68			80.55			69.91		
Approach LOS	B			D			F			E		
Intersection Delay [s/veh]	43.69											
Intersection LOS	D											
Intersection V/C	1.105											

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Version 4.00-03

Intersection Level Of Service Report

Neck Road & Dultys Lane -- AM

Control Type: Two-way stop (turn to roundabout in the build + improvement scenario) Analysis Period: 1 hour

Existing

Name	Dultys Lane						Neck Road			Neck Road		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	3	10	37	0	0	0	2	65	18	39	50	0
Approach Delay [s/veh]	9.70			9.76			0.17			3.48		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	3.61											
Intersection LOS	B											
Intersection V/C												

No Build

Name	Dultys Lane						Neck Road			Neck Road		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	3	10	38	0	0	0	2	67	18	40	50	0
Approach Delay [s/veh]	9.71			9.79			0.17			3.54		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	3.63											
Intersection LOS	B											
Intersection V/C												

Build

Name	Dultys Lane						Neck Road			Neck Road		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	3	145	364	1	17	8	108	301	57	234	100	13
Approach Delay [s/veh]	1432.20			10000.00			1.76			6.63		
Approach LOS	F			F			A			A		
Intersection Delay [s/veh]	737.54											
Intersection LOS	F											
Intersection V/C												

Build + Improvements

Name	Dultys Lane						Neck Road			Neck Road		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	3	145	364	1	17	8	108	301	57	234	100	13
Approach Delay [s/veh]	18.96			5.45			18.47			15.54		
Approach LOS	C			A			C			C		
Intersection Delay [s/veh]	17.65											
Intersection LOS	C											
Intersection V/C												

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report

Neck Road & Dultys Lane -- PM

Control Type: Two-way stop (turn to roundabout in the build + improvement scenario) Analysis Period: 1 hour

Existing

Name	Dultys Lane						Neck Road			Neck Road		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	20	1	25	0	0	0	0	71	7	34	69	0
Approach Delay [s/veh]	9.91			9.72			0.00			2.62		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	3.20											
Intersection LOS	B											
Intersection V/C												

No Build

Name	Dultys Lane						Neck Road			Neck Road		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	21	1	26	0	0	0	0	73	7	35	71	0
Approach Delay [s/veh]	9.96			9.76			0.00			2.62		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	3.23											
Intersection LOS	B											
Intersection V/C												

Build

Name	Dultys Lane						Neck Road			Neck Road		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	21	40	209	4	34	28	24	136	14	294	266	3
Approach Delay [s/veh]	40.53			28.77			1.08			4.72		
Approach LOS	E			D			A			A		
Intersection Delay [s/veh]	14.62											
Intersection LOS	F											
Intersection V/C												

Build + Improvements

Name	Dultys Lane						Neck Road			Neck Road		
Approach	Westbound			Northeastbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	21	40	209	4	34	28	24	136	14	294	266	3
Approach Delay [s/veh]	7.98			8.42			9.30			18.59		
Approach LOS	A			A			A			C		
Intersection Delay [s/veh]	13.79											
Intersection LOS	B											
Intersection V/C												

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report
US 130 & Neck Road -- AM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	US 130			130			Neck Road			Neck Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	78	1098	10	26	554	6	41	18	87	6	13	35
Approach Delay [s/veh]	9.28			8.58			48.54			45.23		
Approach LOS	A			A			D			D		
Intersection Delay [s/veh]	12.96											
Intersection LOS	B											
Intersection V/C	0.556											

No Build

Name	US 130			130			Neck Road			Neck Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	80	1125	10	27	568	6	42	18	89	6	13	36
Approach Delay [s/veh]	9.50			8.78			48.42			45.05		
Approach LOS	A			A			D			D		
Intersection Delay [s/veh]	13.12											
Intersection LOS	B											
Intersection V/C	0.569											

Build

Name	US 130			130			Neck Road			Neck Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	507	1904	10	72	711	162	42	87	176	89	45	90
Approach Delay [s/veh]	394.21			25.97			39.84			49.32		
Approach LOS	F			C			D			D		
Intersection Delay [s/veh]	257.29											
Intersection LOS	F											
Intersection V/C	1.072											

Build + Improvements

Name	US 130			130			Neck Road			Neck Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	507	1904	10	72	711	162	42	87	176	89	45	90
Approach Delay [s/veh]	38.23			25.61			38.06			49.52		
Approach LOS	D			C			D			D		
Intersection Delay [s/veh]	35.81											
Intersection LOS	D											
Intersection V/C	1.028											

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report
US 130 & Neck Road -- PM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	US 130			130			Neck Road			Neck Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	83	658	49	100	1106	11	38	32	29	7	39	57
Approach Delay [s/veh]	14.17			16.35			38.63			38.78		
Approach LOS	B			B			D			D		
Intersection Delay [s/veh]	17.62											
Intersection LOS	B											
Intersection V/C	0.625											

No Build

Name	US 130			130			Neck Road			Neck Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	85	674	50	103	1134	11	39	33	30	7	40	58
Approach Delay [s/veh]	14.37			16.72			38.71			38.80		
Approach LOS	B			B			D			D		
Intersection Delay [s/veh]	17.90											
Intersection LOS	B											
Intersection V/C	0.642											

Build

Name	US 130			130			Neck Road			Neck Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	161	902	50	227	1859	62	39	66	93	200	111	360
Approach Delay [s/veh]	27.18			258.53			34.28			1244.17		
Approach LOS	C			F			C			F		
Intersection Delay [s/veh]	345.57											
Intersection LOS	F											
Intersection V/C	1.596											

Build + Improvements

Name	US 130			130			Neck Road			Neck Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	161	902	50	227	1859	62	39	66	93	200	111	360
Approach Delay [s/veh]	27.14			83.95			25.82			43.26		
Approach LOS	C			F			C			D		
Intersection Delay [s/veh]	59.24											
Intersection LOS	E											
Intersection V/C	1.212											

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report
Neck Road & Columbus Road -- AM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	Columbus Road			Columbus Road			Neck Road			Neck Road		
Approach	Eastbound			Westbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	46	165	52	45	90	18	39	92	43	13	115	32
Approach Delay [s/veh]	5.38			3.80			8.45			8.40		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	6.41											
Intersection LOS	A											
Intersection V/C	0.689											

No Build

Name	Columbus Road			Columbus Road			Neck Road			Neck Road		
Approach	Eastbound			Westbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	47	169	53	46	92	18	40	94	44	13	118	33
Approach Delay [s/veh]	5.43			3.82			8.52			8.47		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	6.47											
Intersection LOS	A											
Intersection V/C	0.698											

Build

Name	Columbus Road			Columbus Road			Neck Road			Neck Road		
Approach	Eastbound			Westbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	47	330	53	47	95	45	40	223	66	37	175	50
Approach Delay [s/veh]	6.61			4.29			9.86			9.44		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	7.75											
Intersection LOS	A											
Intersection V/C	1.022											

Build + Improvements

Name	Columbus Road			Columbus Road			Neck Road			Neck Road		
Approach	Eastbound			Westbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	47	330	53	47	95	45	40	223	66	37	175	50
Approach Delay [s/veh]	6.61			4.29			9.86			9.44		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	7.75											
Intersection LOS	A											
Intersection V/C	1.022											

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report
Neck Road & Columbus Road -- PM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	Columbus Road			Columbus Road			Neck Road			Neck Road		
Approach	Eastbound			Westbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	78	144	65	56	141	28	61	132	70	17	171	77
Approach Delay [s/veh]	6.22			4.15			8.96			9.07		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	7.19											
Intersection LOS	A											
Intersection V/C	0.796											

No Build

Name	Columbus Road			Columbus Road			Neck Road			Neck Road		
Approach	Eastbound			Westbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	80	148	67	57	145	29	63	135	72	17	175	79
Approach Delay [s/veh]	6.27			4.15			9.08			9.19		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	7.26											
Intersection LOS	A											
Intersection V/C	0.809											

Build

Name	Columbus Road			Columbus Road			Neck Road			Neck Road		
Approach	Eastbound			Westbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	80	174	67	61	162	55	63	205	79	46	361	161
Approach Delay [s/veh]	10.65			7.41			8.41			10.55		
Approach LOS	B			A			A			B		
Intersection Delay [s/veh]	9.50											
Intersection LOS	A											
Intersection V/C	0.991											

Build + Improvements

Name	Columbus Road			Columbus Road			Neck Road			Neck Road		
Approach	Eastbound			Westbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	80	174	67	61	162	55	63	205	79	46	361	161
Approach Delay [s/veh]	10.65			7.41			8.41			10.55		
Approach LOS	B			A			A			B		
Intersection Delay [s/veh]	9.50											
Intersection LOS	A											
Intersection V/C	0.991											

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report
US 130 & La Gorce Blvd -- AM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	US 130		US 130		La Gorce Blvd	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Base Volume Input [veh/h]	1060	60	78	552	69	123
Approach Delay [s/veh]	7.16		8.36		49.95	
Approach LOS	A		A		D	
Intersection Delay [s/veh]	11.78					
Intersection LOS	B					
Intersection V/C	0.526					

No Build

Name	US 130		US 130		La Gorce Blvd	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Base Volume Input [veh/h]	1087	62	80	566	71	126
Approach Delay [s/veh]	7.46		8.41		49.83	
Approach LOS	A		A		D	
Intersection Delay [s/veh]	11.96					
Intersection LOS	B					
Intersection V/C	0.540					

Build

Name	US 130		US 130		La Gorce Blvd	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Base Volume Input [veh/h]	2293	62	80	763	71	126
Approach Delay [s/veh]	25.51		7.02		49.83	
Approach LOS	C		A		D	
Intersection Delay [s/veh]	22.33					
Intersection LOS	C					
Intersection V/C	0.943					

Build + Improvements

Name	US 130		US 130		La Gorce Blvd	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Base Volume Input [veh/h]	2293	62	80	763	71	126
Approach Delay [s/veh]	16.90		8.30		77.72	
Approach LOS	B		A		E	
Intersection Delay [s/veh]	18.29					
Intersection LOS	B					
Intersection V/C	0.943					

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report
US 130 & La Gorce Blvd -- PM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	US 130		US 130		La Gorce Blvd	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Base Volume Input [veh/h]	679	40	83	1158	60	111
Approach Delay [s/veh]	7.16		8.36		49.95	
Approach LOS	A		A		D	
Intersection Delay [s/veh]	11.78					
Intersection LOS	B					
Intersection V/C	0.526					

No Build

Name	US 130		US 130		La Gorce Blvd	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Base Volume Input [veh/h]	696	41	85	1187	62	114
Approach Delay [s/veh]	7.46		8.41		49.83	
Approach LOS	A		A		D	
Intersection Delay [s/veh]	11.96					
Intersection LOS	B					
Intersection V/C	0.540					

Build

Name	US 130		US 130		La Gorce Blvd	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Base Volume Input [veh/h]	1000	41	85	2214	62	114
Approach Delay [s/veh]	25.51		7.02		49.83	
Approach LOS	C		A		D	
Intersection Delay [s/veh]	22.33					
Intersection LOS	C					
Intersection V/C	0.943					

Build + Improvements

Name	US 130		US 130		La Gorce Blvd	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Base Volume Input [veh/h]	1000	41	85	2214	62	114
Approach Delay [s/veh]	16.90		8.30		77.72	
Approach LOS	B		A		E	
Intersection Delay [s/veh]	18.29					
Intersection LOS	B					
Intersection V/C	0.943					

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report

Florence-Columbus Road & Old York Road -- AM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	Old York Road			Old York Road			Florence-Columbus Road			Florence-Columbus Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	84	51	16	13	37	163	6	512	14	65	306	30
Approach Delay [s/veh]	16.85			22.26			14.22			10.84		
Approach LOS	B			C			B			B		
Intersection Delay [s/veh]	14.80											
Intersection LOS	B											
Intersection V/C	0.871											

No Build

Name	Old York Road			Old York Road			Florence-Columbus Road			Florence-Columbus Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	86	52	16	13	38	167	6	525	14	67	314	31
Approach Delay [s/veh]	16.86			22.35			14.75			11.12		
Approach LOS	B			C			B			B		
Intersection Delay [s/veh]	15.12											
Intersection LOS	B											
Intersection V/C	0.888											

Build

Name	Old York Road			Old York Road			Florence-Columbus Road			Florence-Columbus Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	98	52	16	45	38	349	27	1116	18	96	565	31
Approach Delay [s/veh]	26.46			75.18			600.68			22.57		
Approach LOS	C			E			F			C		
Intersection Delay [s/veh]	305.95											
Intersection LOS	F											
Intersection V/C	1.344											

Build + Improvements

Name	Old York Road			Old York Road			Florence-Columbus Road			Florence-Columbus Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	98	52	16	45	38	349	27	1116	18	96	565	31
Approach Delay [s/veh]	22.62			49.72			29.11			20.00		
Approach LOS	C			D			C			C		
Intersection Delay [s/veh]	29.73											
Intersection LOS	C											
Intersection V/C	0.959											

Generated with PTV VISTRO

Version 4.00-03

Intersection Level Of Service Report

Florence-Columbus Road & Old York Road -- PM

Control Type: Signalized Analysis Period: 1 hour

Existing

Name	Old York Road			Old York Road			Florence-Columbus Road			Florence-Columbus Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	35	66	40	27	34	61	22	433	43	163	460	73
Approach Delay [s/veh]	16.69			21.94			10.89			9.44		
Approach LOS	B			C			B			A		
Intersection Delay [s/veh]	11.68											
Intersection LOS	B											
Intersection V/C	0.800											

No Build

Name	Old York Road			Old York Road			Florence-Columbus Road			Florence-Columbus Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	36	68	41	28	35	63	23	444	44	167	472	75
Approach Delay [s/veh]	16.76			22.03			11.16			9.70		
Approach LOS	B			C			B			A		
Intersection Delay [s/veh]	11.92											
Intersection LOS	B											
Intersection V/C	0.819											

Build

Name	Old York Road			Old York Road			Florence-Columbus Road			Florence-Columbus Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	46	68	41	32	35	98	125	755	66	326	923	75
Approach Delay [s/veh]	23.74			32.85			28.32			69.39		
Approach LOS	C			C			C			E		
Intersection Delay [s/veh]	49.33											
Intersection LOS	D											
Intersection V/C	1.134											

Build + Improvements

Name	Old York Road			Old York Road			Florence-Columbus Road			Florence-Columbus Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Base Volume Input [veh/h]	46	68	41	32	35	98	125	755	66	326	923	75
Approach Delay [s/veh]	19.21			26.00			21.35			39.65		
Approach LOS	B			C			C			D		
Intersection Delay [s/veh]	30.87											
Intersection LOS	C											
Intersection V/C	0.878											

FREIGHT MOVEMENT AROUND NJ TURNPIKE INTERCHANGE 6A

Publication Number: 18008

Date Published: March 2018

Geographic Area Covered:

Florence Township, Burlington Township, Burlington City, Burlington County

Key Words:

Intersection Analysis, Improvement Options, Truck Volumes, Station Access, Trip Generators, Warehouse Development, Pedestrian Amenities

Abstract:

This study examines traffic circulation along the US 130 corridor in the industrial area by NJ Turnpike Interchange 6A. The study area encompasses parts of Florence Township, Burlington Township, and Burlington City zoned for light/heavy industry and manufacturing. This DVRPC-designated Mega Freight Center is growing rapidly, and the area is expected to accommodate approximately 10 million square feet of additional warehouse and industrial space by 2025. This study identifies roadway improvements that can support greater traffic volumes generated by new development. The study also addresses the need to provide safe pedestrian access to, from, and within the study area. Staff collected turning movement counts for and analyzed 12 key intersections. Microsimulation traffic engineering software was utilized to perform a comprehensive trip generation exercise. In combination with stakeholder input, these analyses led to the identification of short-term and long-term operational improvements needed at intersections, interchanges, and identified bottlenecks.

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