

APPENDIX H

Interchange 12A Alternative Analysis

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INTERCHANGE 12A ALTERNATIVES ANALYSIS

1.0 Introduction

In April 1999, Union County developed a Port Master Plan as a strategic plan for the economic development of the eastern portion of Union County, which includes Tremley Point. The Port Master Plan included a new connection to the New Jersey Turnpike. The new connection to the Turnpike was envisioned to provide the following benefits to Union County and the City of Linden:

- Direct access to the Tremley Point Area to allow for redevelopment of the extensive brownfields;
- Reduction of traffic on Routes 1 & 9 between Linden Airport and Interchange 13 to allow for future development along the corridor; and
- Restriction of truck traffic through the residential neighborhoods on South Wood Avenue between Routes 1 & 9 and the Tremley Point area.

As a means to achieve these benefits, a new connection to the Turnpike, Interchange 12A, was proposed between Interchanges 12 and 13. Interchange 12A was proposed in the area where Tremley Point Road and South Wood Avenue intersect and was to provide direct access to the Turnpike close to the actual patrons in the Tremley Point area. The Turnpike mainline section through this area consists of two roadways in both the northbound and southbound direction. Under normal operating conditions, the inner roadways are designated for cars only and the outer lanes accommodate both cars and trucks. To provide a full Interchange 12A in this location requires exit and entrance ramps from both the inner and outer roadway and a new toll plaza.

There were two fundamental problems associated with providing a full Interchange 12A. The first, and most important, is the insufficient distance between the proposed interchange and the existing Interchanges 12 and 13. The high-speed design of a limited access facility, such as the Turnpike, requires long distances for the acceleration lanes at the entrance ramps and deceleration lanes for the exits. In addition, a sufficient distance is required for vehicles approaching an exit to move to the right lane in advance of the exit ramp. Similarly, vehicles entering the Turnpike require a sufficient distance to accelerate and distribute themselves into the multiple lanes of the mainline. The distance on the Turnpike mainline between the existing and proposed interchanges is insufficient to safely accommodate the entrance, exit and weaving distances from both the inner and outer lanes.

If the safe operating conditions of the mainline were allowed to be compromised to accommodate Interchange 12A, the infrastructure requirements for a full interchange at this location are extensive from a monetary and environmental perspective. In order to construct the necessary ramps for Interchange 12A, the Authority would be required to widen the Turnpike mainline several thousand feet in either direction of the new interchange. This results in significant impacts to the wetland areas on both sides of the mainline and in the areas of the new ramps. In order to construct an interchange at this

location, several existing bridges over the mainline would have to be reconstructed which in turn results in significant utility impacts to the numerous pipelines located throughout the area (i.e., Transco, Getty, Texas Eastern, PSE&G, Elizabethtown Water, Sohio Buckeye, BP and Sun).

To address the identified problems of a full Interchange 12A, a “truck only” interchange using electronic toll collection (ETC) was proposed. The proposed interchange would need to be combined with a new Lower Airport Road to be constructed by Union County.

A total of five (5) alternate designs/alignments (see below) were developed for the “truck only” Interchange 12A and reviewed for impacts and constructability. The partial Interchange 12A “truck only” concept was considered for ramp connections only to the outer roadways as the interchange was to be primarily used by trucks.

2.0 Truck-Only Interchange 12A

Interchange 12A was originally proposed by Union County as a means to provide a direct access to the Tremley Point section of Linden. The proposed new partial “truck only” Interchange 12A, in combination with Union County directed improvements to Lower Airport Road, was designed to aid in reducing traffic related impacts to the residents of Linden from the redevelopment of Tremley Point. Three of the alternatives for Interchange 12A use the South Wood Avenue/Tremley Point Road structure adjacent to an existing U-turn on the Turnpike that is used by the State Police and Authority maintenance staff.

Based upon geometry, environmental impacts and right-of-way acquisitions, only one of the 12A alternatives (Alternate C) was selected for further evaluation, especially due to projected traffic impacts. The traffic analyses indicated that between the adjacent Turnpike Interchanges 12 and 13 the weaving movements of vehicles result in unacceptable queuing lengths on the Turnpike itself, which would introduce safety issues. In addition, with only the outer roadways connected to Interchange 12A, it is impossible to maintain the required reliable access between the Turnpike and the Tremley Point area when the outer roadways are closed to balance Turnpike mainline traffic flows or due to accidents or needed maintenance activities. During the year 2006, the outer roadways were closed 59 times with varying durations. With the outer roadway closed, drivers directed into the inner lanes and destined for Interchange 12A may stop on the shoulder to determine how to get to Interchange 12A or, even worse, attempt a Z-turn (i.e., drive between openings in guardrails from inner roadway to outer roadway) to reach the interchange. This results in a very hazardous situation if a tractor-trailer were to attempt to cross four lanes of active traffic. Of even greater concern, the traffic queues for accessing Interchanges 12 and 13 will extend beyond Interchange 12A and result in extreme traffic congestion and would require trucks to use the local streets of Linden to access Tremley Point.

In addition, with the purpose and need for Interchange 12A being to aid in providing a means for traffic to gain access to Tremley Point, the southeast side on the project area was not considered for a full interchange due to the numerous bulk petroleum storage tanks managed by Mobil situated at this location. The costs associated with land acquisition and relocation of the numerous utility lines and tanks is prohibitive. In addition, the relocation of the tanks would be severely disruptive to Mobil’s operations. As such, the alternative locations for Interchange 12A are north of Tremley Point Road and on the western side of the project area. With each of these potential project construction areas, there are no exclusive upland areas that can be used to avoid potential impacts to wetlands or which do not have other adverse consequences, such as economic impacts to pipelines or industrial operations.

3.0 Interchange 12A Alignment Alternatives

The following is a discussion of each of the five alignments evaluated for the “truck only” Interchange 12A Alternative. The construction cost estimates and wetlands impacts for each alternative include the elements necessary to be consistent with the full interchange functions that the TPCR alternatives provide. A summary of this discussion is provided in Table 3-1 of the Environmental Assessment.

The following terminology is used by the Authority to describe the ramps that were considered for the Interchange 12A Alternatives:

- NOT – North Outer Roadway to Toll
- TNO – Toll to North Outer Roadway
- SOT – South Outer Roadway to Toll
- TSO – Toll to South Outer Roadway
- SNO – South to Northern Outer Roadway
- NSO – North to Southern Outer Roadway

3.1 Interchange 12A – Alternate A

3.1.1 Description

Alternate A – New Interchange North of South Wood Avenue (Figure No. A): At the Alternate A location, the Turnpike is a “dual-dual” roadway (4-3-3-4 lane configuration), flanked on each side by railroad tracks. The area on each side of the Turnpike is composed of wetlands. This alternative creates a new interchange, connecting to only the outer roadways. It consists of the construction of four new ramps (Ramps NOT, TNO, SOT and TNO) along with a new structure carrying two of the ramps over the Turnpike. This interchange connects with Grasselli Road which is currently a private road located on the east side of the Turnpike, north of the South Wood Avenue/Tremley Point Road. Grasselli Road will become a municipal or county roadway when the Tremley Point area is developed.

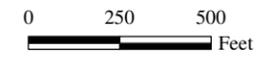
Eight new structures need to be constructed and include the following:

- Ramp SOT over the railroad;
- Ramp TNO over the railroad;
- Ramp TSO over the railroad;
- Ramp NOT over the railroad;
- Ramps NOT and TSO over the railroads, Turnpike and Piles Creek;
- Ramps NOT and TSO over Piles Creek;
- Local road to Grasselli Point over Winans Creek; and
- Local road over Piles Creek.



Legend
 — Alternate A

Source:
 Interchange 12A Studies, prepared
 by HNTB Corp, April 2, 2001
 ESRI StreetMap USA, 2007.
 Pictometry Online Imagery, 4/22/07.
 ArcGIS Online – Aerials Express, 2006.



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 CITY OF LINDEN
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**INTERCHANGE 12A
 ALTERNATE A**

Drn By: JFA Scale: 1" = 500' Project: 02595.003.004

Chkd By: IPD Date: 8/15/08 Figure No. : A

The existing SNO and NSO structures over Piles Creek will also have to be widened.

3.1.2 Geometry

A “trumpet” interchange has been proposed for this alternative, with the following specifications:

- Ramp TNO
 - central radius of 460 feet; and
 - Due to the location of the railroad tracks and the distance to the Interchange 13 Ramp SOT, vertical grades of 3% up and 4.6% down are used to provide proper clearance over the tracks.
- Ramp SOT
 - central radius of 360 feet; and
 - Due to the location of the railroad tracks, vertical grades of 3.3% up and 3% down are used to give proper clearance over the tracks.
- Ramp NOT
 - central radius of 187 feet;
 - A vertical grade of 3.5% up is used to provide proper clearance above the tracks on the west side of the Turnpike; and
 - After crossing the Turnpike, the profile is controlled by the 3% grades of Ramps SOT and TNO.
- Ramp TSO
 - central radius of 150 feet;
 - Traversing from east to west over the Turnpike and Piles Creek, the profiles for Ramps TSO and NOT are the same; and
 - After crossing over the railroad tracks on the west side, a 4.6% downgrade is used to meet the profile of the NSO roadway and provide proper clearance under the new ramp structure.

3.1.3 Environmental Impacts

Alternate A severely impacts existing wetlands; using embankment construction, approximately 13.2 acres of wetlands are impacted through a combination of shading and filling. The American Cyanamid Landfill which was closed in 1980 and located on South Wood Avenue needs to be further investigated. Groundwater sampling at this landfill indicated volatile organic, heavy metal and pesticide contamination.

3.1.4 Construction Cost

The estimated construction costs for a full interchange for Alternate A are \$320,800,000. The property acquisitions (uplands, wetlands and riparian) necessary for this alternate alignment are estimated to be approximately 38 acres. An order of magnitude combined cost for both the property acquisitions and mitigation needed for this alternate, based on local tax records and recent sales information, is estimated to be \$11,670,000. The resulting total cost estimate for Alternate A (i.e., including construction, property acquisition and mitigation costs) is \$334,400,000.

3.1.5 Advantages

- No major impacts to South Wood Avenue/Tremley Point Road bridge structure; and
- No known contaminated sites in footprint of project, but additional investigation of the closed American Cyanamid Landfill will likely be required.

3.1.6 Disadvantages

- Alternate A has the second highest wetlands impacts (13.2 acres) as compared to other 12A alternates;
- A number of pipelines and other utilities (Transco, Getty, Texas Eastern, PSE&G, Elizabethtown Water, Sohio and Buckeye) are affected by construction and some require relocation;
- Due to queuing concerns with the close proximity of ramps and the mainline, a revised signing sequence and spacing has to be developed to avoid driver confusion;
- Impacts upon wetlands preserved as part of USACE permit for previous Interchange 11 to 15E widening program;
- Eight structures need to be constructed and two local road structures also need to be replaced;
- Easements will be required from the railroads; and,
- Causes a significant adverse impact to traffic operations and safety of the Turnpike mainline.

3.2 Interchange 12A – Alternate B

3.2.1 Description

Alternate B – Diamond Interchange at South Wood Avenue/Tremley Point Road (Figure No. B): This alternative is a proposed diamond interchange connecting the outer roadways with South Wood Avenue/Tremley Point Road. Alternate B consists of the construction of four new ramps connecting to the existing overpass. The new ramps will create two



Legend

— Alternate B

Source:
 Interchange 12A Studies, prepared
 by HNTB Corp, April 2, 2001
 ESRI StreetMap USA, 2007.
 Pictometry Online Imagery, 4/22/07.
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**INTERCHANGE 12A
 ALTERNATE B**

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Chkd By: IPD	Date: 8/15/08	Figure No.: B

signalized intersections. Construction of Alternate B also includes combining the existing South Wood Avenue and U-Turn structures which is necessary to provide the necessary lane width at the new intersections due to the additional required turning lanes. Although the existing U-Turn structure is eliminated, Turnpike personnel and the State Police are able to utilize the new interchange for U-Turns. Retaining walls are necessary along each of the ramps to minimize slope and right-of-way impacts. In addition to the signalized intersections created by the proposed ramps, a separate intersection situated west of the intersection of South Wood Avenue and Ramps NOT/TSO is needed for Lower Airport Road. The vast majority of the wetlands impacts for this alternate design are associated with the modification of Lower Airport Road.

3.2.2 Geometry

Ramps SOT and TNO create a signalized intersection on the east side of the Turnpike while Ramps NOT and TSO create a signalized intersection on the west side. Each of the new ramps are on tangent alignments. Ramp NOT has a vertical upgrade of 3.3%. Ramp TSO has a vertical downgrade of 4.5%. Ramp TNO has a vertical downgrade of 4.9%. Ramp SOT has a vertical upgrade of 3.3%.

3.2.3 Environmental Impacts

Alternate B has approximately 7.9 acres of wetlands impacts, with the vast majority of the impacts being from the realignment of Lower Airport Road. None of the wetlands that are currently preserved as part of the mitigation for the Interchange 11 to 15E widening program are impacted. Ramp NOT is adjacent to the American Cyanamid Landfill - a listed hazardous site. Additional soil and groundwater investigations will be needed prior to construction.

3.2.4 Construction Cost

The estimated construction costs for a full interchange for Alternate B are \$293,400,000. The property acquisitions (uplands, wetlands and riparian) necessary for this alternate alignment, are estimated to be approximately 28 acres. An order of magnitude combined cost for both the property acquisitions and mitigation needed for this alternate, based on local tax records and recent sales information, is estimated to be \$7,617,500.

The resulting total cost estimate for Alternate B (i.e., including construction, property acquisition and mitigation costs) is \$301,000,000.

3.2.5 Advantages

- As compared to other 12A alternates, lesser amount of wetlands are impacted under this alternative; and
- The wetlands preserved as mitigation for construction of the Interchange 11 to 15E widening program are not impacted.

3.2.6 Disadvantages

- One of the proposed ramps to be constructed is next to an American Cyanamid hazardous waste site;
- A number of pipelines and other utilities (i.e., Transco, Getty, BP, Texas Eastern, Sun, PSE&G and Buckeye) are affected by construction and some require relocation;
- The distance between the new intersections formed by the diamond interchange configurations may be insufficient, no matter how many turning lanes are provided;
- As the ramp movements and the Lower Airport Road are not in line, special intersection treatments will be required to prevent trucks from traveling on South Wood Avenue instead of using Lower Airport Road; and,
- Causes a significant adverse impact to traffic operations and safety of the Turnpike mainline.

3.3 Interchange 12A – Alternate C

3.3.1 Description

Alternate C – Half-Diamond (East Side) with Loop/Slip Ramp in Northwest Quadrant (Figure No. C): This alternative creates a new interchange between the outer roadways and South Wood Avenue/Tremley Point Road. Of the four proposed ramps, two will be in a diamond configuration connecting to the existing Tremley Point Road structure. The other two ramps connect to South Wood Avenue in the northwest quadrant of the interchange by means of an at-grade intersection. This layout creates two new signalized intersections.

3.3.2 Geometry

Ramps SOT and TNO create a signalized intersection on the east side of the Turnpike. Ramp TNO has a vertical downgrade of 4.9% while Ramp SOT has a vertical upgrade of 3.3%. Another signalized intersection needs to be created at South Wood Avenue and Ramps TSO/NOT and Lower Airport Road on the west side.



Legend

— Alternate C

Source:
 Interchange 12A Studies, prepared
 by HNTB Corp, April 2, 2001
 ESRI StreetMap USA, 2007.
 Pictometry Online Imagery, 4/22/07.
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**INTERCHANGE 12A
 ALTERNATE C**

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The central radius for Ramp TSO is 200 feet. The ramp profile will be a 1.7% downgrade from South Wood Avenue to the Turnpike mainline. Ramp NOT is a slip ramp with reverse central radii of 500 feet and 225 feet. The profile will be a 1.7% upgrade from the mainline to South Wood Avenue.

3.3.3 Environmental Impacts

Alternate C has approximately 7.2 acres of wetlands impacts. None of the wetlands that are currently preserved as part of the mitigation for the Interchange 11 to 15E widening program are to be impacted. Ramp NOT is adjacent to the American Cyanamid Landfill - a listed hazardous site. Additional soil and groundwater investigations are needed prior to construction.

3.3.4 Construction Cost

The estimated construction costs for a full interchange for Alternate C are \$279,500,000. The property acquisitions (uplands, wetlands and riparian) necessary for this alternate alignment are estimated to be approximately 31 acres. An order of magnitude combined cost for both the property acquisitions and mitigation needed for this alternate, based on local tax records and recent sales information, is estimated to be \$7,950,000. The resulting total cost estimate for Alternate C (i.e., including construction, property acquisition and mitigation costs) is \$287,400,000.

3.3.5 Advantages

- As compared to other 12A alternates, the least amount of wetlands are impacted under this alternative;
- The wetlands preserved as mitigation for construction of the Interchange 11 to 15E widening program are not impacted; and
- The distance between the new intersections along South Wood Avenue provides sufficient storage length on South Wood Avenue for turning movements.

3.3.6 Disadvantages

- One of the proposed ramps to be constructed is next to an American Cyanamid hazardous waste site;
- A number of pipelines and other utilities (i.e., Transco, Getty, BP, Texas Eastern, Sun, PSE&G and Buckeye) will be affected by construction and some require relocation;
- This alternative requires right-of-way acquisitions and affects access to the Transco facility;

- The west abutment of South Wood Avenue has to be shifted to the west to make room for one of the new ramps; and,
- Causes a significant adverse impact to traffic operations and safety of the Turnpike mainline.

3.4 Interchange 12A – Alternate D

3.4.1 Description

Alternate D – Half Diamond (East Side) with Loop/Slip Ramp in Southwest Quadrant (Figure No. D): This alternative creates a new interchange between the outer roadways and South Wood Avenue/Tremley Point Road. Of the four proposed ramps, two will be in a diamond configuration connecting to the existing Tremley Point Road structure on the east side of the Turnpike. The other two ramps connect to South Wood Avenue in the southwest quadrant of the interchange by means of an at-grade intersection. The ramps avoid the Transco facility adjacent to the southbound Turnpike on the south side of South Wood Avenue. This layout creates three new signalized intersections.

3.4.2 Geometry

Ramps SOT and TNO create a signalized intersection on the east side of the Turnpike. Ramp TNO has a vertical downgrade of 4.9% while Ramp SOT has a vertical upgrade of 3.3%.

The central radius for Ramp NOT is 275 feet. The ramp profile has a 1.0% upgrade from the mainline to South Wood Avenue and Ramp TSO will be a slip ramp with reverse central radii of 320 feet and 300 feet. The profile is a 1.0% downgrade from South Wood Avenue to the Turnpike mainline.

3.4.3 Environmental Impacts

Alternate D has approximately 9.1 acres of wetlands impacts. Most of the utilities to be impacted under Alternate D are perpendicular crossings and require an extension of the protective sleeve. The Transco pipeline situated parallel to the Turnpike will have to be relocated.

3.4.4 Construction Cost

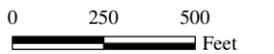
The estimated construction costs for a full interchange for Alternate D are \$429,900,000. The property acquisitions (uplands, wetlands and riparian) necessary for this alternate alignment are estimated to be approximately 35 acres.



Legend

— Alternate D

Source:
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 ESRI StreetMap USA, 2007.
 Pictometry Online Imagery, 4/22/07.
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**INTERCHANGE 12A
 ALTERNATE D**

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An order of magnitude combined cost for both the property acquisitions and mitigation needed for this alternate, based on local tax records and recent sales information, is estimated to be \$9,147,500. The resulting total cost estimate for Alternate D (i.e., including construction, property acquisition and mitigation costs) is estimated as \$439,000,000.

3.4.5 Advantages

- No known contaminated sites impacted by this alternative; and,
- The utilities impacted under this alternative are perpendicular crossings, and will require the extension of a protective sleeve. Only one pipeline requires relocation.

3.4.6 Disadvantages

- Approximately 9.1 acres of wetlands are impacted;
- The existing U-Turn structure has to be removed;
- This alternative requires right-of-way acquisitions for the ramps in the southwest quadrant. Right-of-way acquisitions are also required for the intersection improvements at South Wood Avenue. In addition, access to the Transco facility has to be arranged. An easement is also required from the railroad for the bridge modifications;
- A number of pipelines and other utilities (i.e., BP, Texas Eastern, PSE&G, Sohio and Buckeye) are affected by construction of this alternative and the Transco pipeline requires relocation;
- Although there is sufficient distance between the ramp intersections, the intersection of Lower Airport Road is too close to the western ramp intersection with South Wood Avenue; and,
- Causes a significant adverse impact to traffic operations and safety of the Turnpike mainline.

3.5 Interchange 12A – Alternate E

3.5.1 Description

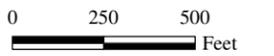
Alternative E – New Interchange South of South Wood Avenue (Figure No. E): This alternative is similar to Alternate A. Located between Interchange 12 and South Wood Avenue, the Turnpike is a “dual-dual” roadway (4-3-3-4 lane configuration) flanked by railroad tracks only on the east side of the Turnpike. The area on each side of the Turnpike is composed of wetlands. This alternative creates a new interchange connecting to only the outer roadways and consists of the construction of four new ramps along a new structure to carry two of the ramps over the Turnpike.



Legend

— Alternate E

Source:
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**INTERCHANGE 12A
 ALTERNATE E**

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Chkd By: IPD	Date: 8/15/08	Figure No. : E

This new interchange connects with Tremley Point Road on the east side of the Turnpike. Four structures are needed to support this alternative:

- Ramp SOT over the railroad;
- Ramp TNO over the railroad;
- Ramps NOT and TSO over Marshes Creek, the railroad, the Turnpike and Ramp TSO; and
- Ramps SOT and NOT over Marshes Creek.

3.5.2 Geometry

This alternative is a “trumpet” interchange. The horizontal and vertical geometry for this alternative are similar to that for Alternate A.

3.5.3 Environmental Impacts

Using embankment construction techniques, Alternate E impacts 14.2 acres of existing wetlands located on each side of the Turnpike. In addition, a portion of Marshes Creek will have to be relocated. Most of the utilities impacted under this alternative are perpendicular crossings and require an extension of the protective sleeve. The Transco pipeline situated parallel to the Turnpike needs to be relocated. Several box culverts are required for Ramps TSO and NOT on the west side of the Turnpike.

3.5.4 Construction Cost

The estimated construction costs for a full interchange for Alternate E are \$349,500,000. The property acquisitions (uplands, wetlands and riparian) that are necessary for this alternate alignment are estimated to be approximately 40 acres. An order of magnitude combined cost for both the property acquisitions and mitigation needed for this alternate, based on local tax records and recent sales information, is estimated to be \$11,935,000. The resulting total cost estimate for Alternate E (i.e., including construction, property acquisition and mitigation costs) is estimated as \$361,400,000.

3.5.5 Advantages

- Most efficient design from a traffic operations perspective.

3.5.6 Disadvantages

- This alternative impacts a total of 14.2 acres of existing wetlands situated on each side of the Turnpike. In addition, a portion of Marshes Creek requires relocation;

- Most of the utilities impacted under this alternative are perpendicular crossings requiring an extension of a protective sleeve. The Getty pipeline on the east side of the Turnpike will be spanned by the new structure. The Transco Pipeline on the west side of the Turnpike, however, requires relocation;
- Several box culverts are needed for the ramps; and,
- Causes a significant adverse impact to traffic operations and safety of the Turnpike mainline.

4.0 Conclusion

Due to the limited area to construct a full interchange, Interchange 12A only has ramp connections to the outer roadways (truck lanes) that are focused upon providing trucks with direct access to Tremley Point. An interchange from the outer roadways presents several operational issues to both the Authority and potential patrons. In the “dual-dual” section of the Turnpike, existing interchanges connect to both the inner and outer roadways. This allows for continuous access to the interchanges for all traffic in the event the Authority has to close a roadway due to construction needs or accidents. In the event an outer roadway is closed, an interchange connecting to only the outer roadway will not be accessible during the roadway closing. In the case of the “truck only” Interchange 12A Alternative, this means that trucks destined for or leaving Tremley Point will not be able to get to their destinations. They will have to find alternate routes using Interchanges 12 or 13 and ultimately the local streets of Linden.

In addition to closing an entire roadway for construction or an accident, the Authority routinely closes access to a roadway at interchanges to balance traffic flows. As an example, if the southbound outer roadway is congested between Interchanges 9 to 13, traffic entering the Turnpike from Interchanges 8A to 12 is diverted to the southbound inner roadway. Under this scenario, access to Interchange 12A would be denied to all vehicles on the inner roadway. This can result in driver confusion and potentially dangerous situations if drivers attempt to conduct an illegal Z-turn to gain access to Interchange 12A. With the need to balance traffic flow as a priority, the Authority would not be able to provide advance notification that Interchange 12A is not accessible during these situations. It is not uncommon for the Authority to close the outer lanes several times a day. Therefore, the “truck only” concept is not a reliable and consistent means of access to the Tremley Point area.

In addition to the closing of the outer lanes for specified purposes, the traffic analysis for the Interchange 12A Alternative indicated that due to the proximity of Interchanges 12 and 13 to 12A, the weaving requirements result in an unacceptable LOS. There will be a conflict between the vehicles slowing down for Interchange 12 or 13 and those trying to speed up and access the Turnpike from Interchange 12A. This results in an unacceptable LOS on the Turnpike mainline that in turn introduces safety issues. Traffic queues on the ramps create a stop condition on the ramp much closer to the mainline than what is considered acceptable. As not all drivers use the full length of a deceleration lane to slow down, drivers begin decelerating on the mainline, disrupting the mainline flow and increasing the potential for accidents. The resulting unacceptable LOS impacts the mainline in both directions for several miles before standard traffic speeds can be regained.

All of the Interchange 12A alternative alignments that have been evaluated herein are deemed not viable due to: the proximity of Interchanges 12 and 13 to 12A; the extensive wetland impacts; existing utility lines in the project area; and construction costs necessary

to build a full interchange. Traffic entering and exiting Interchange 12A would have an adverse impact upon the adjacent travel lanes of the Turnpike, which results in unacceptable LOS on the Turnpike itself.