

**AIR QUALITY REEVALUATION**

**I-95 NEWARK TOLL PLAZA  
HIGH SPEED E-Z PASS LANES**

**DELDOT CONTRACT NO. 25-090-03**

**NEW CASTLE COUNTY, DELAWARE**



**DELAWARE DEPARTMENT OF TRANSPORTATION**

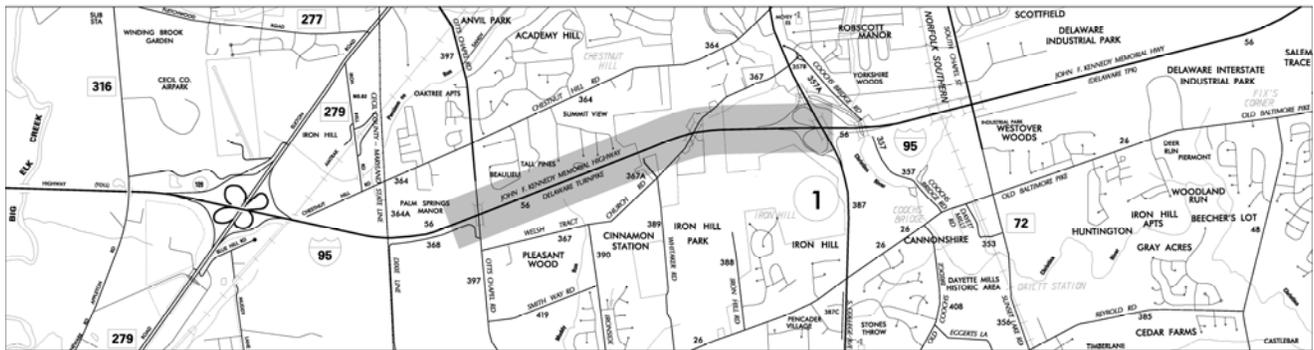
**JUNE 4, 2009**

## INTRODUCTION

### **General**

The Delaware Department of Transportation is completing design studies for the I-95 Newark Toll Plaza project in New Castle County, Delaware (see **Figure 1**). This project entails construction of four (two per direction) Highway Speed E-Z Pass lanes through the I-95 Turnpike Toll Plaza. The E-Z Pass lanes will be similar to what DelDOT has incorporated at both the Biddles Toll Plaza and the Dover Toll Plaza along SR 1. The project will also include other upgrades to the plaza as discussed under Project Description.

This Air Quality Reevaluation is provided as a result of updated air quality rules and design changes incorporated into the final design for the project. It provides an updated carbon monoxide (CO) analysis, a discussion of Mobile Source Air Toxics (MSAT) and an analysis of fine particulate matter (PM<sub>2.5</sub>).



**Figure 1**

### **Project History**

#### January 8, 2003 - Draft Purpose and Need

A draft Purpose and Need for a combination of two I-95 Turnpike projects (the I-95/SR 1 Interchange/Turnpike Mainline Project and I-95 Newark Toll Plaza Project) was submitted for agency review in January 2003. Subsequent effort resulted in the separation of the Newark Toll Plaza Project from the I-95/SR 1 Interchange/Turnpike Mainline Project.

#### January 2004 – Air Quality Technical Report

The results air quality analyses were included in a report entitled “I-95: Delaware Turnpike from MD/DE Line to SR 141, Air Quality Analysis”, dated January 2004. This 2004 analysis consisted of determination of Carbon Monoxide (CO) concentrations for the I-95/SR 1 Interchange/Turnpike Mainline Project and I-95 Newark Toll Plaza Project. The alternatives analyzed consisted of the following:

1. Alternative 1: No Build
2. Alternative 2: New Plaza at Existing Location
3. Alternative 3: New Plaza between Existing Plaza and Otts Chapel Road
4. Alternative 4: New Plaza between Otts Chapel Road and State Line

#### April 8, 2004

DelDOT provided copies of the DRAFT Categorical Exclusion for the I-95 Newark Toll Plaza Project.

## **Changes in Air Quality Analysis Regulations Relevant to the Project**

On March 10, 2006, EPA issued amendments to the Transportation Conformity Rule to address localized impacts of particulate matter: *PM<sub>2.5</sub> and PM<sub>10</sub> Hot-Spot Analyses in Project-level Transportation Conformity Determinations for the New PM<sub>2.5</sub> and Existing PM<sub>10</sub> National Ambient Air Quality Standards* (71 FR 12468). These rule amendments require the assessment of localized air quality impacts of Federally-funded or approved transportation projects in PM<sub>10</sub> and PM<sub>2.5</sub> nonattainment and maintenance areas deemed to be *projects of air quality concern*. The project is in the PA-NJ-DE PM<sub>2.5</sub> non-attainment area. A PM<sub>2.5</sub> Project-Level Hotspot analysis was not included in the January 2004 Air Quality Technical Report which was prepared prior to the 2006. The PM<sub>2.5</sub> analysis will be included herein to provide a complete conformity determination.

## **PROJECT DESCRIPTION**

The current project is an update of the selected alternative, Alternative 2: New Plaza at existing location, as discussed above (See Figures 2 and 3). The primary objective of this project is to upgrade the Newark Toll Plaza to provide a combination of highway speed toll collection and cash collection. The project area is a 2.0-mile section of Interstate 95 in New Castle County. The project limits for the road work are from south of Otts Chapel Road to north of the SR 896 (College Avenue) overpass. Advance signing will be located beyond these limits at locations to be determined. The work will include:

- Construction of two barrier-separated, highway-speed E-Z Pass lanes in each direction using HMA
- NB and SB approach roadways widened into the median from Otts Chapel Road to SR 896 (College Avenue) overpass
- Construction of a highway speed toll gantry that will allow maintenance of overhead toll equipment to be done from above without closing lanes
- Widening of the NB approach to the CASH lanes to 3 lanes
- Construction of stormwater management facilities
- Convert the existing piers of the Welsh Tract Road overpass to web walls
- New signing and pavement marking
- Upgrades to the lighting systems
- Expansion of the NB satellite CASH plaza to seven lanes with overhead access to the Lane 5 island for toll collectors
- Removal of Lanes 6-13 at the existing main plaza leaving SB CASH lanes at main plaza
- Construction of a reinforced concrete slab over the existing toll collector access tunnel within limits of highway speed E-Z Pass lanes
- Tolling system integration and upgrades
- Maintenance of traffic
- Erosion and sediment control



Figure 2 (Part 1 of 2): January 2004 Build Alternative

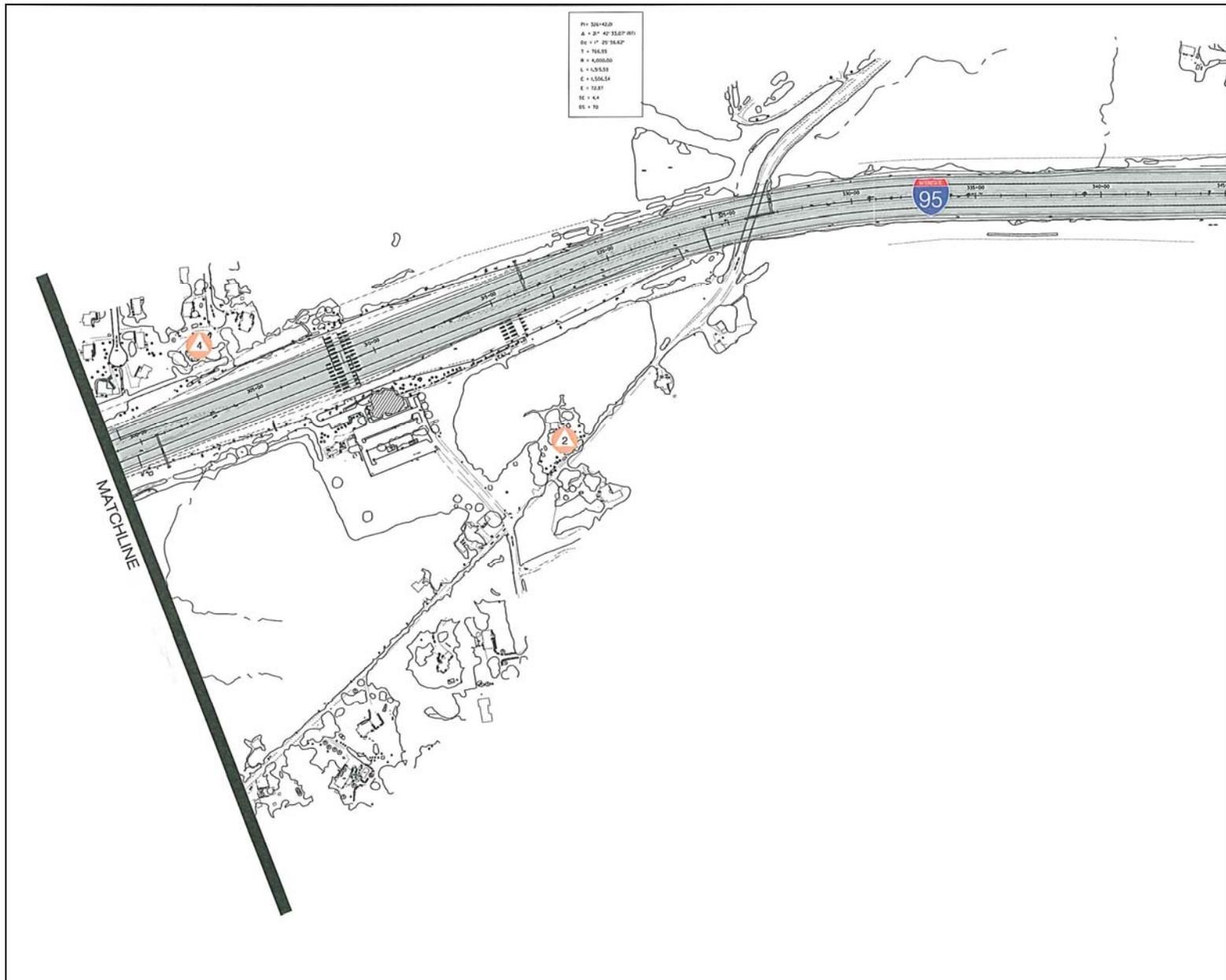


Figure 2 (Part 2 of 2): January 2004 Build Alternative

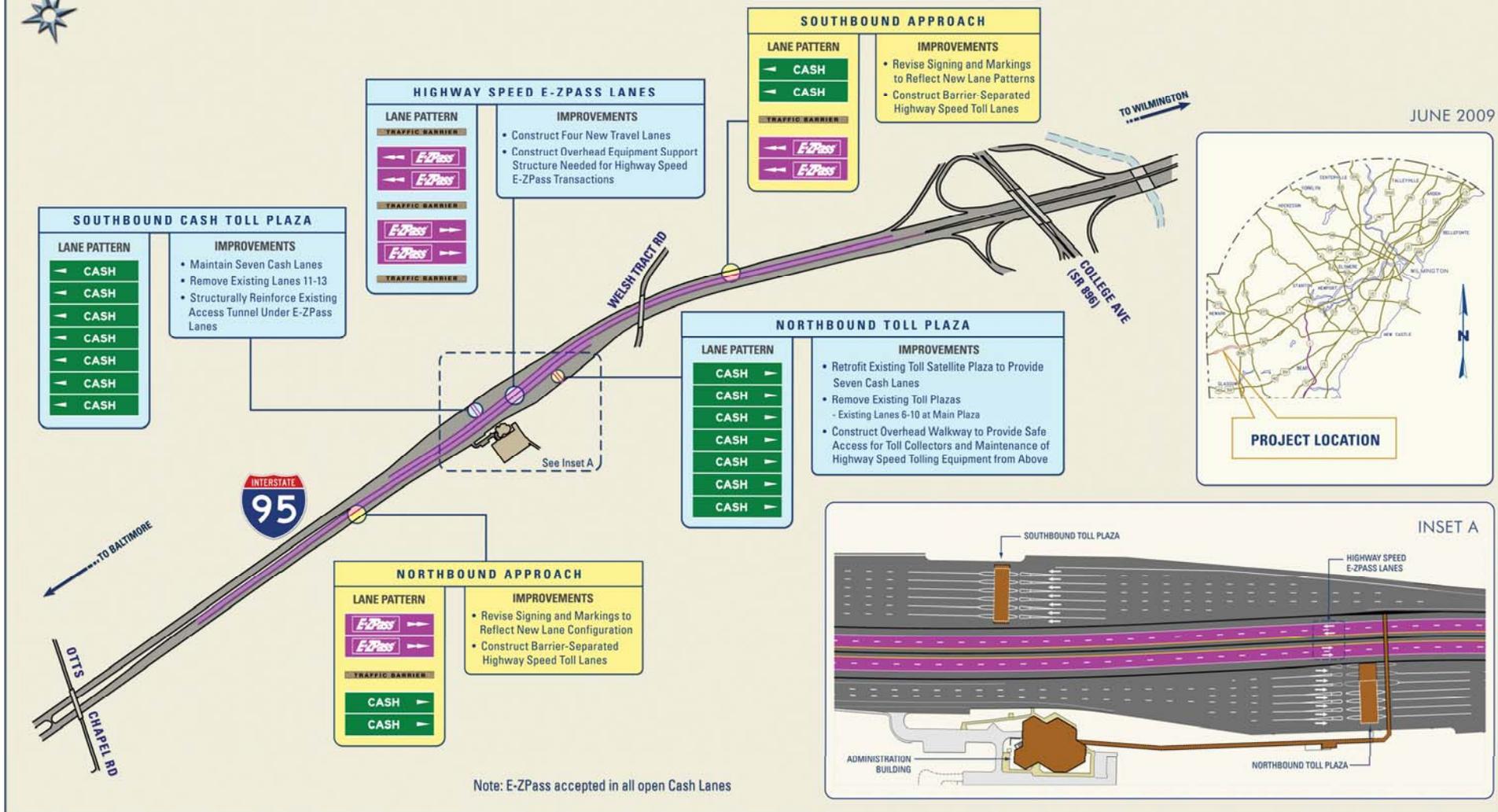


Figure 3: 2009 Build Alternative

## AIR QUALITY ANALYSIS

### General

As part of previous environmental studies, an analysis of air quality was performed which included the I-95 Newark Toll Plaza reconstruction. The results this analysis are included in a report entitled “*I-95: Delaware Turnpike from MD/DE Line to SR 141, Air Quality Analysis*”, dated January 2004. This 2004 analysis consisted of determination of Carbon Monoxide (CO) concentrations.

On March 10, 2006, EPA issued amendments to the Transportation Conformity Rule to address localized impacts of particulate matter: *PM<sub>2.5</sub> and PM<sub>10</sub> Hot-Spot Analyses in Project-level Transportation Conformity Determinations for the New PM<sub>2.5</sub> and Existing PM<sub>10</sub> National Ambient Air Quality Standards* (71 FR 12468). These rule amendments require the assessment of localized air quality impacts of Federally-funded or approved transportation projects in PM<sub>10</sub> and PM<sub>2.5</sub> nonattainment and maintenance areas deemed to be *projects of air quality concern*. The I-95 Newark Toll Plaza project is in the PA-NJ-DE PM<sub>2.5</sub> non-attainment area. As discussed in the Transportation Conformity Guidance, “*The March 10, 2006 final rule requires a qualitative PM<sub>2.5</sub> hot-spot analysis to be completed for project-level conformity determinations for projects of air quality concern completed on or after April 5, 2006, when PM<sub>2.5</sub> conformity requirements apply and the final rule is effective*”, except as discussed below. On March 29, 2006, the FHWA published *Guidance on Qualitative Hot-Spot Analysis for PM<sub>2.5</sub> and PM<sub>10</sub>* in non-attainment areas. Although the project is in a non-attainment area for PM<sub>2.5</sub>, a PM<sub>2.5</sub> Project-Level Hotspot analysis was not included in the air quality analysis.

Federal regulations provide the requirements for determining the frequency of air quality conformity determinations. Specifically, 40CFR93.104(d) requires a redetermination of conformity “*if one of the following occurs: a significant change in the project's design concept and scope; three years elapse since the most recent major step to advance the project; or initiation of a supplemental environmental document for air quality purposes. Major steps include NEPA process completion; start of final design; acquisition of a significant portion of the right-of-way; and, construction (including Federal approval of plans, specifications and estimates).*” Because all steps have not been completed, included hereinafter is a summary and update of the previous CO analysis for the I-95 Newark Toll Plaza Project. Analyses of Mobile Source Air Toxics (MSAT) and Fine Particulate Matter (PM<sub>2.5</sub>) are also included for the I-95 Newark Toll Plaza. These analyses were not required at the time that the January 2004 air quality analyses were completed, but have been added to this assessment to provide a complete analysis of air quality.

### CO Analysis

Traffic volumes were projected for the years 2000 and 2025 for the January 2004 air quality analysis, and for the years 2009, 2012 and 2030 for this current reevaluation. Traffic volumes were provided by Whitman, Reardon & Associates, LLP. A comparison of traffic volumes between those reported in the January 2004 *Air Quality Report for I-95: Delaware Turnpike from MD/DE Line to SR 141* and the current reevaluation is shown on **Table 1**. This table demonstrates that projected 2030 weekday traffic volumes for the I-95 Toll Plaza area are essentially the same as the 2025 weekday volumes used for the January 2004 analysis. Holiday volumes were not presented in the 2004 analysis. Current holiday volumes are approximately 130% greater than the 200 weekday volumes.

**Table 1: Traffic Comparison**

	Traffic from January 2004 Air Quality Analysis			Updated Traffic (February 2009)		Percent Change	
	2000 ADT	2005 ADT	2025 ADT	2012 ADT	2030 ADT	2012/ 2005	2030/ 2025
Weekday – No-build	70,935	73,847	85,493	61,558	84,865	83%	99%
Weekday - Build	70,935	73,847	85,493	61,958	87,440	84%	102%
Holiday – No-build	-	-	-	139,806	194,875	189% <sup>1</sup>	228% <sup>1</sup>
Holiday – Build	-	-	-	140,355	198,556	190% <sup>1</sup>	232% <sup>1</sup>

<sup>1</sup> Based on comparison to weekday volumes

In the January 2004 Air Quality Analysis, emission factors were predicted for 2005 and 2025 using the EPA's MOBILE6 (Version 6.2.01) emissions model. These emissions factors have been recalculated for 2012 and 2030 using the current version of MOBILE6 (Version 6.2.03). A comparison of predicted CO emissions using the two versions show that 2012 emissions from Version 6.2.03 are 55% (±) of the 2005 emissions from Version 6.2.01; and 2030 emissions from Version 6.2.03 are 90% (±) of the 2025 emissions from Version 6.2.01.

**Table 2: Comparison of emission factors used in the 2004 Air Quality Technical Report and the Current Reevaluation.**

	Emission Factors used in the January 2004 Air Quality Analysis at Toll Plaza MOBILE 6.02.01		Emission Factors used for Current Reevaluation MOBILE 6.02.03		Percent Difference MOBILE 6.02.01 to MOBILE 6.02.03	
	2005	2025	2012	2030	2012/2005	2030/2025
Freeway						
10	50.2	23.7	25.4	20.7	51%	87%
20	25.5	12.9	13.9	11.7	53%	89%
30	21.9	11.2	12.0	10.2	55%	91%
35	21.3	10.8	11.7	9.9	55%	91%
40	21.4	10.8	11.7	9.9	55%	92%
45	22.1	11.1	12.0	10.1	55%	92%
50	22.8	11.4	12.3	10.4	54%	91%
55	23.5	11.8	12.7	10.7	54%	91%
60	24.4	12.2	13.0	11.0	54%	91%

Two air quality receptors from the 2004 air quality analysis are in the vicinity of the existing and proposed toll plaza. The locations of these receptors are shown on the included Figure 2, Parts 1 and 2, from the 2004 report. CO concentrations from the 2004 report along with estimated concentration based on current traffic volumes are shown in Tables 3 and 4.

**Table 3: CO Concentrations from January 2004 Air Quality Technical Report**

RECEPTOR	2005				2025			
	No-Build		Build		No-Build		Build	
	1 Hour	8 Hour	1 Hour	8 Hour	1 Hour	8 Hour	1 Hour	8 Hour
R-1: 356 Welsh Tract - Weeekday	1.9	1.4	1.8	1.3	1.8	1.3	1.6	1.2
R-1: 356 Welsh Tract - Holiday	-	-	-	-	-	-	-	-
R-2: 6 Welsh Tract - Weeekday	2.2	1.8	1.9	1.5	2.0	1.5	1.8	1.4
R-2: 6 Welsh Tract - Holiday	-	-	-	-	-	-	-	-
R-3: 35 Montague - Weekday	2.1	1.6	2.0	1.5	2.0	1.5	1.8	1.4
R-3: 35 Montague - Holiday	-	-	-	-	-	-	-	-
R-4: 1035 Summit View - Weekday	2.7	2.1	2.3	1.7	2.2	1.8	2.0	1.6
R-4: 1035 Summit View - Holiday	-	-	-	-	-	-	-	-

**Table 4: CO Concentrations Based on Current (2009) Design**

RECEPTOR	2012				2030			
	No-Build		Build		No-Build		Build	
	1 Hour	8 Hour	1 Hour	8 Hour	1 Hour	8 Hour	1 Hour	8 Hour
R-1: 356 Welsh Tract - Weeekday	1.7	1.3	1.7	1.2	1.8	1.3	1.6	1.2
R-1: 356 Welsh Tract - Holiday	1.9	1.4	1.8	1.3	2.0	1.4	1.6	1.2
R-2: 6 Welsh Tract - Weeekday	1.9	1.5	1.7	1.3	2.0	1.5	1.8	1.4
R-2: 6 Welsh Tract - Holiday	2.2	1.8	1.9	1.5	2.4	1.8	2.0	1.6
R-3: 35 Montague - Weekday	1.8	1.4	1.8	1.3	2.0	1.5	1.8	1.4
R-3: 35 Montague - Holiday	1.7	1.6	2.0	1.5	2.4	1.8	2.0	1.6
R-4: 1035 Summit View - Weekday	2.1	1.6	1.9	1.4	2.1	1.7	2.0	1.6
R-4: 1035 Summit View - Holiday	2.3	2.1	2.3	1.7	2.8	2.4	2.4	2.0

The maximum 2025 1-hour CO concentration for the No-build or Build alternate at I-95 Newark Toll Plaza determined by the January 2004 analysis was 2.2 ppm, which included a 1.6 ppm background concentration. The maximum 2025 8-hour concentration was 1.8, which included a 1.2 ppm background concentration. The maximum estimated 2030 1-hour CO concentrations for the No-build or Build alternate based on the current I-95 Newark Toll Plaza design is 2.8 ppm, which includes a 1.6 ppm background concentration. The maximum estimated 2030 8-hour concentration is 2.4 ppm, which includes a 1.2 ppm background concentration. The 1-hour National Ambient Air Quality Standard (NAAQS) is 35.0 ppm and the 8-hour NAAQS is 9.0 ppm.

A review of the above demonstrates that the construction of the I-95 Newark Toll Plaza modifications will not result in violations of the NAAQS for CO for the following reasons:

- No predicted CO violations were predicted to result from the No-Build or Build Alternative in the January 2004 Air Quality Analysis. The maximum 1-hour concentration was only 7.7% of the 1-Hour NAAQS and the maximum 8-Hour concentration was only 23.3% of the 8-Hour NAAQS.

- No predicted CO violations were estimate to result from the No-Build or Build Alternative in the current Newark Toll Plaza design. The maximum estimated 1-hour concentration is only 8.0% of the 1-hour NAAQS and the maximum estimated 8-hour concentration was only 26.6% of the 8-Hour NAAQS.
- The study area is not within a CO non-attainment or Maintenance area.

**MSAT Analysis**

General

FHWA Guidance on Air Toxic Analysis in NEPA Documents<sup>1</sup> requires analysis of Mobile Source Air Toxics (MSAT) under specific conditions. The EPA has designated six prioritized MSATs, which are known or probable carcinogens or can cause chronic respiratory effects. The six prioritized MSATs are: Benzene; Acrolein; Formaldehyde; 1,3-Butadiene, Acetaldehyde; and Diesel Exhaust (Diesel Exhaust Gases and Diesel Particulate Matter). The I-95 Newark Toll Plaza project would be a project that “serve[s] to improve operations of highway, transit or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase emissions”<sup>2</sup>. Therefore, the I-95 Newark Toll Plaza project would be considered a **Project with Low Potential MSAT Effects** as discussed in the referenced guidance

As demonstrated by the traffic analysis, which is summarized in **Table 5**, the 2030 Build traffic volumes are not significantly greater than the 2030 No-Build traffic volumes.

**Table 5: Average Daily Traffic (AADT) and Average Daily Truck Traffic (ADTT for the Existing (2009), Year 2030 No-Build, and Year 2030 Build Conditions for the I-95 Newark Toll Plaza**

<b>Project Area</b>	<b>Existing (2009)</b>	<b>2030 No-Build</b>	<b>2030 Build</b>	<b>No-build/Build Increase Number/Percent</b>
<b>Weekday</b>				
Average Daily Traffic (ADT)	58,364	84,865	87,440	2,575 / 3%
Average Daily Truck Traffic (ADTT)	13,543	18,144	19,336	1,192 / 6.5%
<b>Peak Holiday</b>				
Average Daily Traffic (ADT)	132,297	139,806	140,355	549 / 0.4%
Average Daily Truck Traffic (ADTT)	4,162	5,569	5,957	388 / 7.0%

Because the traffic analysis demonstrates that the Build traffic volumes are less than 150,000 and are not significantly greater than the No-Build traffic volumes, the I-95 Newark Toll Plaza project will not result in any meaningful changes in traffic volumes, vehicle mix, or any other factor that would cause an increase in emissions impacts. As such, it is determined that this project will generate minimal air quality impacts for the Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns.

Unavailable Information for Project Specific MSAT Impact Analysis

Included herein is a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated

<sup>1</sup> Interim Guidance on Air Toxic Analysis in NEPA Documents, February 3, 2006

<sup>2</sup> ibid

with the Build Alternative. Due to these limitations, the following discussion is included in accordance with CEQ regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information.

Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

The EPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. The tools to predict how MSATs disperse are also limited. Even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude reaching meaningful conclusions about project-specific health impacts. Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses. The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants.

#### *Project Specific MSAT Discussion*

As discussed above, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from MSAT emissions, it can give a basis for identifying and comparing the potential differences among MSAT emissions -if any- from any build alternative.

For each alternative (No-Build and Build), the amount of MSATs emitted would be proportional to the annual average daily traffic (AADT), or vehicle miles traveled (VMT). The Vehicle Miles Traveled (VMT) within the study area estimated for the Build Alternative are slightly greater than that of the No-Build, because the Build Alternative will reduce congestion and increase efficiency of the roadway, and may attract additional trips from elsewhere in the transportation network. This slight increase in VMT may lead to slightly higher MSAT emissions at the I-95 Newark Toll Plaza for the Build Alternative. The emissions increase due to increased VMT is offset somewhat by lower MSAT emission rates due to increased speeds and reduced idling, since according to EPA's MOBILE6 emissions model, emissions of all of the priority MSATs, except for diesel particulate matter, decrease as speed increases. The extent to which these speed-related emissions decreases will offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

The shifted lanes, contemplated as part of the Build Alternative, will have the effect of moving some traffic closer to nearby homes and businesses; therefore, there may be localized areas where ambient concentrations of MSATs could be higher under the Build Alternative than the No-Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the side where the roadways and lanes shift towards the residences and businesses. However, as discussed above, the magnitude and the duration of these potential increases compared to the No-Build Alternative cannot be accurately quantified due to the inherent deficiencies of current models.

#### *Sensitive Receptor Assessment*

As discussed above, there may be localized areas where ambient concentrations of MSAT are slightly higher in the Build scenario than in the No-Build scenario. Dispersion studies have shown that air toxics from the

roadway start to drop off at about 100 meters. By 500 meters, most studies have found it very difficult to distinguish the roadway air toxic concentrations from background air toxic concentrations in any given area. Sensitive receptors include those facilities most likely to contain large concentrations of the more sensitive population (hospitals, schools, licensed day cares, and elder care facilities). An assessment of potential sensitive receptors within both 100 and 500 meters reveals that there are no sensitive receptors within 100 meters of the I-95 Newark Toll Plaza, and there is one sensitive receptor (D1) within 500 meters of the interchange as shown in **Table 6** and on **Figure 4**.

**Table 6: Sensitive Receptors**

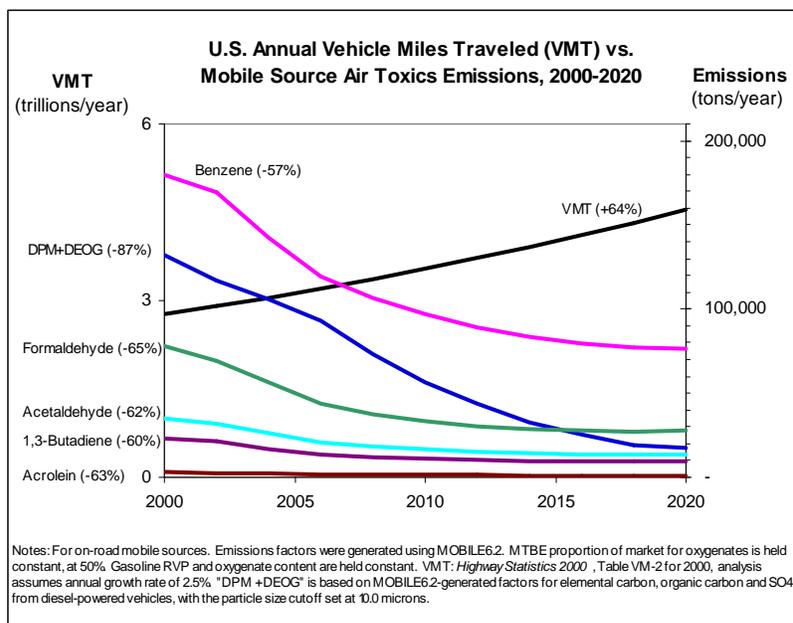
<b>Map ID</b>	<b>Name</b>	<b>Address</b>	<b>City</b>	<b>Zip Code</b>
D1	Exceptional Care For Children, Inc. - Healthcare Facility	11 Independence Way	Newark, DE	19713



**Figure 4**

Summary

In summary, when a highway is widened the localized level of MSAT emissions for the Build Alternative could be higher relative to the No-Build Alternatives, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs will be lower in other locations when traffic shifts away from them. Furthermore, both at the project location and regionally, MSAT concentrations will decrease in future years due to EPA's vehicle emission and fuel regulations. It has been shown that as a result of EPA's national emissions control programs MSAT emissions are projected to be reduced by 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases. Refer to **Figure 5**.



**Reference:** Interim Guidance on Air Toxic Analysis in NEPA Documents, February 3, 2006

**Figure 5**

## PM2.5 Analysis

### General

This project is located in the PA-NJ-DE PM<sub>2.5</sub> nonattainment area. The area was designated as nonattainment for PM<sub>2.5</sub> on January 5, 2005 by the US EPA. This designation became effective on April 5, 2005, 90 days after EPA's published action in the Federal Register. Transportation conformity for the PM<sub>2.5</sub> standards applied on April 5, 2006, after the one-year grace period provided by the Clean Air Act. Although much of the overall I-95 construction is complete, the I-95 Newark Toll Plaza still requires additional FHWA authorization and or approval. As discussed on FHWA's frequently asked questions website for "PM<sub>2.5</sub> Project-Level Conformity and Hot-Spot Analyses," if a project still requires a FHWA approval or authorization, a project-level conformity determination is required prior to the first such action on or after April 5, 2006, even if the project has already completed the NEPA process, or for multi-phase projects, even if other phases of the project have already been constructed. Therefore, the PM<sub>2.5</sub> hot-spot analysis for this reevaluation will focus on the I-95 Newark Toll Plaza.

On March 10, 2006, EPA issued amendments to the Transportation Conformity Rule to address localized impacts of particulate matter: "*PM<sub>2.5</sub> and PM<sub>10</sub> Hot-Spot Analyses in Project-level Transportation Conformity Determinations for the New PM<sub>2.5</sub> and Existing PM<sub>10</sub> National Ambient Air Quality Standards*" (71 FR 12468). These rule amendments require the assessment of localized air quality impacts of Federally-funded or approved transportation projects in PM<sub>10</sub> and PM<sub>2.5</sub> nonattainment and maintenance areas deemed to be *Projects of Air Quality Concern*. Projects that require hotspot analysis for PM<sub>2.5</sub> are those projects that are *Projects of Air Quality Concern* as enumerated in 40 CFR 93.123(b)(1):

- (i) *New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;*
- (ii) *Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;*

- (iii) *New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;*
- (iv) *Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and*
- (v) *Projects in or affecting locations, areas, or categories of sites which are identified in the PM<sub>10</sub> or PM<sub>2.5</sub> applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.*

As discussed in the examples to the preamble to the March 10, 2006 *Final Rule for PM<sub>2.5</sub> and PM<sub>10</sub> Hot-Spot Analyses in Project-Level Transportation Conformity Determinations* (71FR12491), for projects involving the expansion of an existing highway, 40 CFR 93.123(b)(1) has been interpreted as applying only to projects that would involve a significant increase in the number of diesel transit buses and diesel trucks on the existing facility. This has been further clarified in a proposed rule amendment as *"EPA is proposing to clarify this provision as "New highway projects that have a significant number of diesel vehicles, and expanded projects that have a significant increase in the number of diesel vehicles."*<sup>3</sup>

### PM<sub>2.5</sub> Analysis

DELDOT has prepared the following analysis of the proposed improvements:

- The I-95 Newark Toll Plaza project is considered under 40CFR 93.123(b)(1)(i) which includes *"New or expanded highway projects that have a significant number of or significant increase in diesel vehicles.*
- The I-95 Newark Toll Plaza project does not meet the criteria set forth in 40 CFR 93.123(b)(1)(i), as amended, to be considered a *project of air quality concern* because it affects an expanded highway that does not have a significant increase in diesel vehicles. Refer to Table 3.
- The I-95 Newark Toll Plaza reconstruction will improve traffic flow and reduce congestion as well as increase associated safety on the roadways. Thus, it would be expected to have a neutral or positive influence on PM<sub>2.5</sub> emissions.
- As discussed below the construction will not result in any meaningful changes between No-Build and Build traffic volumes, vehicle mix, or location of the existing facility:
  - A review of the traffic data in Table 3 demonstrates that there will not be a "significant" increase in the number of trucks from the No-Build condition to the Build. The projected 2030 No-Build ADT for I-95 and for the I-95 Turnpike Toll Plaza as shown in Table 3 represents the unconstrained user demand. This demand will not change under a Build scenario, assuming that the real demand includes traffic that has previously shifted to alternate routes in the network due to congestion at the Toll Plaza and returns with the availability of additional capacity. Depicted truck volumes represent the amount of light, medium and heavy truck activity along a given roadway segment. Unless predicated by significant land use changes (heavy truck generators), existing truck percentages are used as the primary factor in determining future percentages. The Build condition will improve operation of the interchange, relieving system congestion, but will not necessarily inducing new truck traffic origin-destination patterns.
  - There are no functionally comparable, parallel facilities from which to draw additional traffic.
    - Users will take the shortest origin-destination path; user unfamiliarity with alternative routes and conditions encourages drivers to remain on I-95
    - During peak traffic periods, diversion to alternate routes would not be attractive to the majority of

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<sup>3</sup> Transportation Conformity Rule Amendments to Implement Provisions Contained in the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) [Federal Register: May 2, 2007 (Volume 72, Number 84)] [Proposed Rules] [Page 24489]

users. Traffic conditions on these alternative routes are generally as bad as or worse during these peak travel periods, with significant congestion, slower speeds and numerous traffic lights, all factors translating into longer travel times.

- Trucks, which are the primary emitter of mobile source PM<sub>2.5</sub>, will tend to stay on I-95 since the alternative routes would require frequent stop/start conditions due to traffic signals, and may not have lane widths, roadway grades, and curves that suit these types of vehicles.
- Section 176(c) of the Clean Air Act and the federal conformity rule requires that transportation plans and programs conform to the intent of the state air quality implementation plan (SIP) through a regional emissions analysis in PM<sub>2.5</sub> nonattainment areas. The project is located in the PA-NJ-DE PM<sub>2.5</sub> nonattainment area and is under the jurisdiction of the Wilmington Area Planning Council (WILMAPCO). WILMAPCO is the federally recognized Metropolitan Planning Organization (MPO) for transportation planning in New Castle County, Delaware and Cecil County, Maryland. The FY 2009 – 2012 Transportation Improvement Program (TIP) and the 2030 Regional Transportation Plan (RTP) were created by the WILMAPCO staff and member agencies. The 2030 RTP was adopted by the WILMAPCO Council on March 22, 2007, and the FY 2009-2012 TIP was adopted on April 10, 2008.<sup>4</sup>, Emission totals calculated for each analysis year were tested against the 2002 Base Year budget for PM<sub>2.5</sub>, and thus there is a currently conforming transportation plan and TIP in accordance with 40 CFR 93.114. The current conformity determination is consistent with the final conformity rule found in 40 CFR Parts 51 and 93. The I-95 Newark Toll Plaza project is included in the TIP and the regional emissions analysis as line item 90 and there have been no significant changes in the project's design concept or scope, as used in the conformity analyses. The project description included in the TIP is: *"This project will reconfigure the Newark Toll plaza to incorporate Highway Speed E-Z Pass lanes"*. Therefore, this project comes from a conforming plan and program in accordance with 40 CFR 93.115. Conformity means that the transportation activity will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant national ambient air quality standards (NAAQS or "standards").

### Summary

Based on review and analysis as discussed above, it is determined that the I-95 Newark Toll Plaza reconstruction meet the Clean Air Act and 40 CFR 93.109 requirements. These requirements are met for particulate matter (PM<sub>2.5</sub>) without a project-level hot-spot analysis, since the project has been found **not to be a project of air quality concern** as defined under 40 CFR 93.123(b)(1)(i). Since the project meets the Clean Air Act and 40 CFR 93.109 requirements, the project will not cause or contribute to a new violation of the PM<sub>2.5</sub> NAAQS, or increase the frequency or severity of a violation.

This assessment will be sent to FHWA, WILMAPCO, DNREC and EPA for interagency review and approval. Upon approval by the Interagency Consultation group, this analysis will be placed on the I-95 web site for public review.

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<sup>4</sup> New Castle County Air Quality Conformity Determination for the FY 2009-2012 Transportation Improvement Program and 2030 Regional Transportation Plan, WILMAPCO, April 10, 2008.