



Engineering
& Design

Air Quality Study

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Dewpoint North and Dewpoint South
Town of Wawayanda, Orange County, NY

Prepared for:
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Table of contents

1.0 Existing Conditions	1
Project Sites & Immediate Vicinity	1
Emission Sources	1
Environmental Protection Agency (EPA) Air Quality Data	4
New York State Department of Environmental Conservation (NYSDEC) Air Quality Data	6
2.0 Future Conditions without Proposed Action	7
3.0 Potential Impacts	8
Short Term (Construction Phase).....	8
Long Term (Operational Phase).....	9
Particulate Matter	13
Ozone	13
Carbon Dioxide.....	13
4.0 Conclusion	14

Appendix

Appendix A | Supporting Calculations

1.0 Existing Conditions

The Proposed Action involves the development of two parcels that are currently vacant and largely undeveloped, totaling 26.26 acres in size and located in the Town of Wawayanda. This report summarizes the cumulative air quality assessment of all projects in the study. The analysis evaluates air quality by reviewing nearby emission sources, and reviewing the effects of air emission sources generated by the Proposed Action on the ambient environment.

Project Sites & Immediate Vicinity

Dewpoint South:

The proposed southern parcel is approximately 20.17 acres in size, a result of a proposed lot line change & lot consolidation between four (4) existing tax lots in the Town of Wawayanda (4-1-50.32, 6-1-107, 6-1-90.22, & 6-1-90.24) to create the proposed parcel. The project site has frontage along Dolsontown Road to the north and along Caskey Lane to the east. The subject property is currently mostly undeveloped with two (2) small buildings along Caskey Lane on the east side of the parcel. The project is within the Town of Wawayanda MC-1 (Mixed Commercial) zoning district. The proposed project will consist of construction of a 234,900 square foot warehouse/distribution facility. Other associated site improvements include 173 vehicle parking spaces (78 of which are proposed to be banked, in response to comments made by the Planning Board's technical professionals), 57 loading docks, and 44 trailer storage spaces. The development has a truck & car access driveway at the western end to Dolsontown Road and a car access driveway from a shared driveway between the adjacent parcel known as "Simon". The project also includes the abandonment of a current Town Road, Caskey Ln, which is to be removed as part of this project.

Dewpoint North:

The existing northern parcel is approximately 6.09 acres in size and has frontage along Dolsontown Road to the south. The parcel is currently undeveloped with a mixture of woodlands and wetlands. The project site is located within the Town of Wawayanda MC-1 (Mixed Commercial) zoning district. The proposed project consists of the construction of a 32,000 square foot warehouse/distribution facility along with associated site stormwater & utility improvements. Other associated site improvements include 28 vehicle parking spaces and six (6) loading docks. The lot has a proposed driveway entrance on Dolsontown Road suitable for vehicular and truck access to the facility. A roadway dedication is also proposed as part of this project which will be a portion of the current parcel to the Dolsontown Road Right-of-Way (ROW) and create a minimum 66' wide ROW across the frontage.

Emission Sources

The New York State Department of Environmental Conservation (NYSDEC) regulated air facility database indicated there are six (6) significant stationary emission sources near the project sites. Prevailing wind is to the northeast around the project sites and identified facilities are located to the southwest, north, and northeast of the project sites (refer to the below figure). A summary and a figure of the listed resources is provided below:

- **Name: Slate Hill Mine**
NYSDEC # 3-3356-00015
Distance: Located 1.50 miles southwest of the Project Sites.
About: A modular fixed plant with an overall capacity of 500 tons per hour. The modular fixed plant consists of three crushers, four screens, and eighteen conveyors. There are three (3) emission points for this facility, one for each crusher:
 1. Terex Cedarapids JC2236 Jaw Crusher- 265 tons per hour
 2. Nordberg HP200 Cone Crusher- 275 tons per hour
 3. Barmac B9000 Duopactor VSI Crusher- 295 tons per hour.This facility is electing to Cap By Rule for Particulates (Actuals must be less than 50 tons per year) and is subject to additional monitoring and record keeping requirements as per 201-4.5.
- **Name: Javelin Mine**
NYSDEC # 3-3356-00128
Distance: Located 1.85 miles southwest of the Project Sites.
About: The mining operation at the Javelin site entails the excavation and on-site processing of approximately 2.0 million cubic yards of sand and gravel, glacial till, and 440,00 cubic yards of consolidated rock from roughly 69.6 of the site's 86 acres. Mining is carried out in three individual phases. As consolidated materials are encountered, mechanical tractor rippers and fragmentation blasting are used to reduce excavated materials to sizes suitable for transportation to the on-site, mobile processing plant. The plant consists of standard unconsolidated material processing equipment including conveyors, hoppers, screens, and crushers. Front end loaders or hydraulic excavators are utilized to excavate raw material and feed it into the stockpiles for processing; front end loaders then pick up the material and feed it into the processing plant through a receiving hopper incorporating a scalping screen which will allow small particles of material to pass through. Materials pass through a diesel powered primary jaw crusher, screens, and a secondary cone crusher for further processing. In addition to the jaw crusher, the principal emission points are a Caterpillar Genset powered by a CAT C18 diesel, and a smaller Kohler Genset, used to power the office trailer/scale house, and well. Mobile equipment emissions are commensurate with similar operations.
- **Name: CPV Valley Energy Center**
NYSDEC # 3-3356-00136/00010
Distance: Located 0.67 miles southwest of the Project Sites.
About: The CPV facility generates approximately 630 megawatts (MW) of electricity, fueled primarily by natural gas. The CPV facility uses "combined cycle" generation technology comprised of two combine-cycle units, each consisting of a combustion turbine generator (CTG), a Heat Recovery Steam Generator (HRSG) with supplemental duct firing, and a steam turbine generator (STG). The facility uses ultra-low sulfur distillate oil for back-up reliability purposes. Auxiliary equipment includes a low nitrogen oxides (NOx) natural gas-fired auxiliary boiler, necessary to keep the HRSGs warm during periods of turbine shutdown and to provide sealing steam during startups. The project is equipped with emissions control technology including dry low NOx (DLN) burners and selective catalytic reduction (SCR) technology to control emissions of NOx, and an oxidation catalyst to control carbon monoxide (CO) and volatile organic compounds (VOC)

emissions. A continuous emissions monitoring system (CEMS) is utilized to ensure and document facility compliance with applicable emissions standards.

- **Name: Middletown STP**
NYSDEC # 3-3309-00038
Distance: Located 0.21 miles north of the Project Sites.
About: The Wastewater Treatment Plant in the City of Middletown operates at a monthly average of 8.5 million gallons per day. There are two (2) emissions points at this facility. An odor control system, consisting of a carbon canister with two carbon beds, is used to reduce hydrogen sulfide emissions from processes in the Operations Building. The other emission point at the facility is a flare used to burn gas generated by the digesters. Exempt emission sources at the facility include boilers and an emergency generator.
- **Name: Alliance Energy - Shoemaker Gas Turbine Facility**
NYSDEC # 3330900040
Distance: Located 0.40 miles northeast of the Project Sites.
About: The Shoemaker Gas Turbine Facility is a peaking station with three (3) primary emission points. The first emission point is one (1) Worthington P/WGG4-7 D/F Gas Turbine Twin Pac. The Twin Pac consists of two jet engines to turn a simple-cycle gas turbine rated at 512 mmBtu/hr (40 MW). The other sources on-site include a natural gas-fired (560 kW) internal combustion engine and one natural gas-fired (45 kW) emergency generator.
- **Name: Genpak LLC Middletown Main Plant**
NYSDEC # 3330900064
Distance: Located 0.50 miles northeast of the Project Sites.
About: Genpak LLC is a manufacturer of foamed polystyrene food trays and containers. Polystyrene pellets are extruded where talc and a blowing agent (isopentane or butane) are added to produce an expanded polystyrene foam sheet. The foam sheet is thermoformed and cut to final product. Air emission sources include various storage silos, two (2) repelletizers, four (4) extruders, thermoformers, two (2) printers, and a storage area for the foam sheets. The thermoformers, printers, and 11 of the storage silos are exempt from air permitting. The facility's potential to emit volatile organic compounds (VOC) exceeds the major source threshold of 50 tons per year. Regulations which apply to the facility include 6NYCRR Parts 200, 201, 202, 211, and 212, and 40 CFR 64. Potential VOC emissions from each of the two repelletizers and storage silos no. 3 and no. 13 are greater than 3.0 pounds per hour. In accordance with Part 212-3(c), the facility must comply with reasonably available control technology requirements for VOC emissions from these repelletizers and silos. A thermal oxidizer is utilized at the facility to comply with these requirements. VOC emissions from all other emission sources at the facility are less than 3.0 pounds per hour, and thus, are not subject to Part 212-3(c).

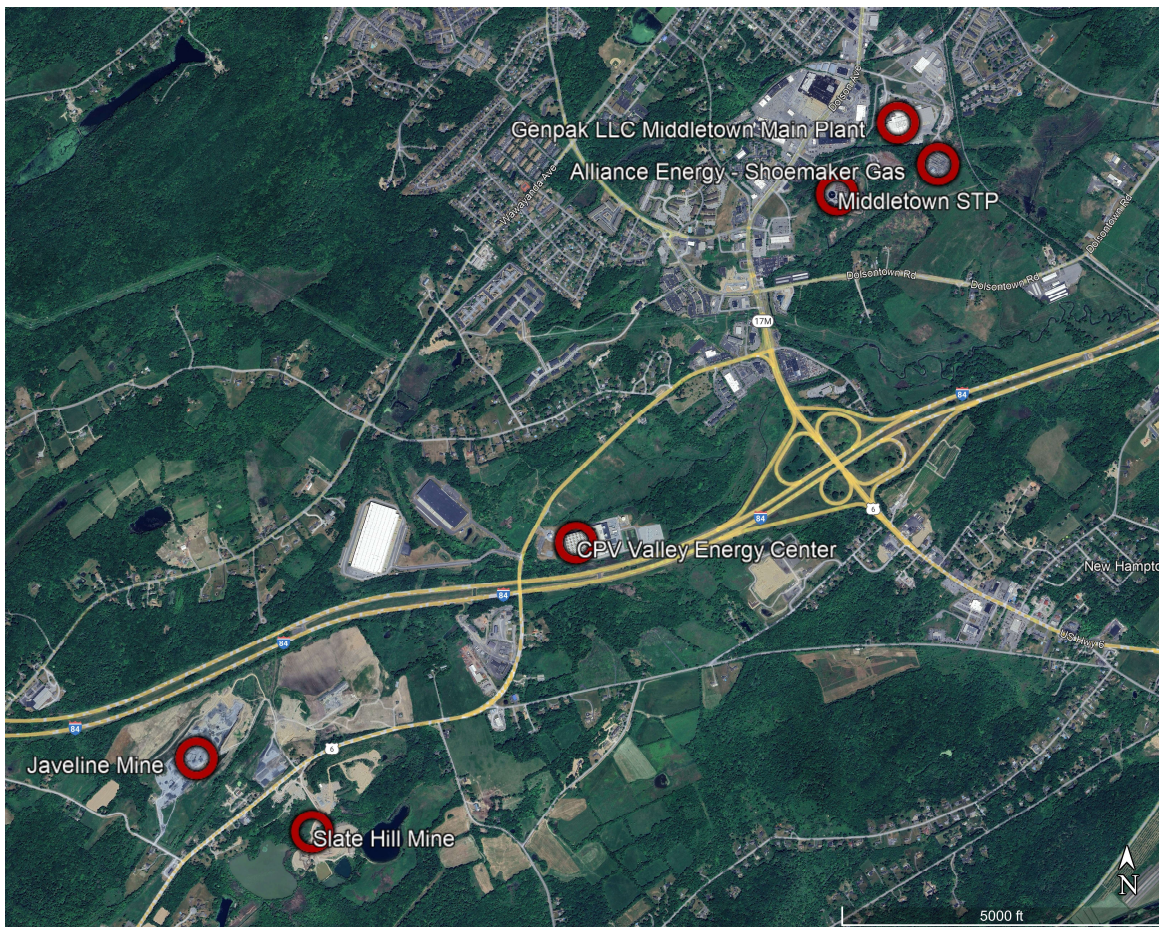


Figure 1: NYSDEC Air State Facilities and Air Facility Registrations

Environmental Protection Agency (EPA) Air Quality Data

The National Clean Air Act (CAA), as amended in 1990, requires the EPA to establish National Ambient Air Quality Standards (NAAQS) for six major pollutants of concern: CO, NO₂, ozone, Particulate Matter (PM 2.5 and PM 10), SO₂, and lead. The CAA defines non-attainment areas (NAA) as geographic regions that do not meet one or more of the NAAQS. When an area is designated as NAA, states are required to develop and implement a State Implementation Plan (SIP) which documents the plan to achieve compliance with NAAQS. Areas that formerly violated NAAQS but currently meet federal standards are designated as maintenance areas.

The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation, and buildings. The Clean Air Act requires periodic review of the science upon which the standards are based and the standards themselves.

The NAAQS has six (6) principal pollutants, which are called “criteria” pollutants, they include: Carbon Monoxide (CO), Lead (Pb), Nitrogen Dioxide (NO₂), Ozone (O₃), Particulate Pollution (PM_{2.5}, PM₁₀), and Sulfur Dioxide (SO₂). Below are the National Ambient Air Quality Standards.

Pollutant [links to historical tables of NAAQS reviews]	Primary/ Secondary	Averaging Time	Level	Form	
Carbon Monoxide (CO)	primary	8 hours	9 ppm	Not to be exceeded more than once per year	
		1 hour	35 ppm		
Lead (Pb)	primary and secondary	Rolling 3 month average	0.15 µg/m ³ ⁽¹⁾	Not to be exceeded	
Nitrogen Dioxide (NO₂)	primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years	
	primary and secondary	1 year	53 ppb ⁽²⁾	Annual Mean	
Ozone (O₃)	primary and secondary	8 hours	0.070 ppm ⁽³⁾	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years	
Particle Pollution (PM)	PM _{2.5}	primary	1 year	9.0 µg/m ³	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m ³	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m ³	98th percentile, averaged over 3 years
	PM ₁₀	primary and secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO₂)	primary	1 hour	75 ppb ⁽⁴⁾	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	
	secondary	1 year	10 ppb	annual mean, averaged over 3 years	

Figure 2: National Ambient Air Quality Standards

According to the EPA Green Book, Orange County, New York is not currently listed as a Nonattainment County for all criteria pollutants as of December 31, 2024. However, Orange County is part of the NY-NJ-CT air quality maintenance area for fine particulate matter (PM 2.5) and is also part of the Poughkeepsie, NY 1997 ozone “orphan” nonattainment area comprised of Dutchess, Orange, and Putnam counties. This area was designated as nonattainment under the 1997 NAAQS criteria, but the EPA has since established two more stringent NAAQS ozone standards in 2008 and 2015 that Orange County now meets. Court rulings under the South Coast II decision established that EPA could not waive the 1997 NAAQS maintenance plan requirements and is still subject to requirements under the 1997 standards.

New York State Department of Environmental Conservation (NYSDEC) Air Quality Data

The NYSDEC measures air quality at 50 sites within New York State using continuous and/or manual instrumentation. These sites are a mix of federally mandated and supplemental monitoring networks. Real-time direct reading measurements include:

- Criteria pollutants (ozone (O₃), sulfur dioxide (SO₂), oxides of nitrogen (NO_x), carbon monoxide (CO)).
- PM 2.5 and PM10 (fine particulate)
- Black carbon
- Ultrafine particulate (UFP) count
- Meteorological data

Two air quality monitoring stations were referenced for the Project: Queens College Near Road (NR) (Site 36-081-0125) and Rockland (Site 36-087-0005), located approximately 55 miles and 25 miles southeast of the Project, respectively. According to the EPA AirData Air Quality Monitors website, the Queens College NR site monitors carbon monoxide, oxides of nitrogen, and PM 2.5 hourly, and the Rockland site monitors Ozone levels hourly. Although the Queens NR station was not the closest to the Project, it was selected due to its proximity to heavy traffic in order to conservatively estimate pollutant levels.

Review of the Environmental Public Health Tracking database for Orange County indicates the annual average concentration of fine particulate matter (PM2.5) is 5.88 micrograms/cubic meter (µg/m³) as of 2017. Refer to the image below.

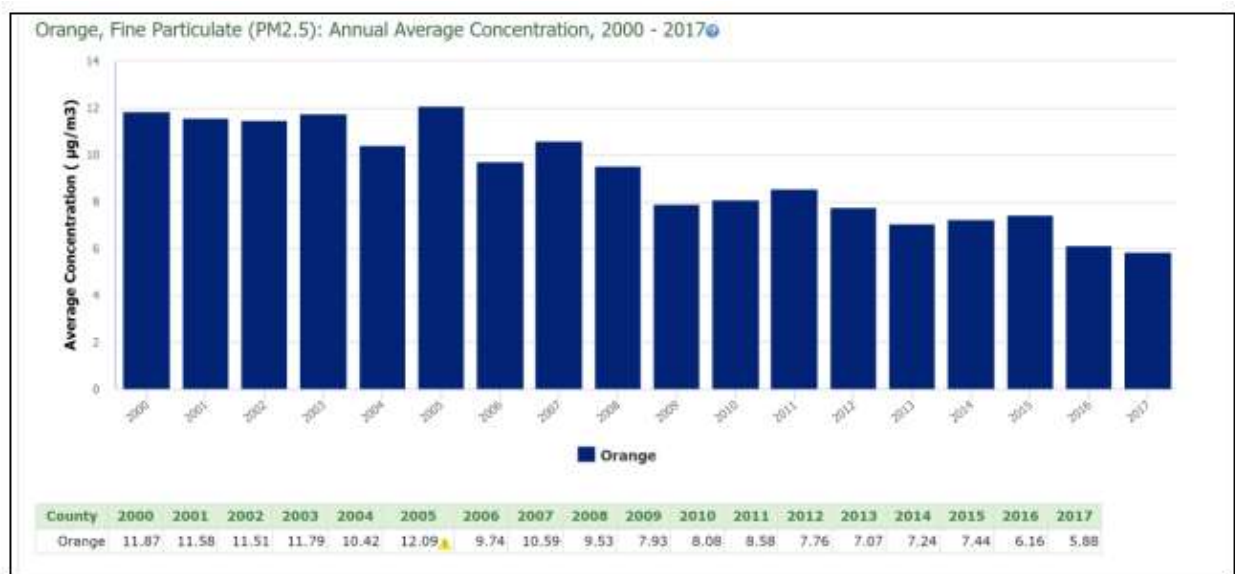


Figure 3: Orange County Historical Annual Average PM2.5 Background Concentration

2.0 Future Conditions without Proposed Action

Without the Proposed Action, the project sites would remain vacant with no activity occurring. Based on the Traffic Impact Study (TIS) prepared by Colliers Engineering and Design¹, the level of service (LOS) for intersections near the Proposed Action indicates there will be a negative change to the LOS rating regardless of the projects being built. The LOS ratings represented in Table 1 below are of the weekday morning and evening peak street hour for each intersection. Note that the 2027 No Build values listed in the tables correspond with the 2027 “Projected” data in the TIS. Additionally, the ETC 2027 Build values include all improvements recommended in the TIS. This is consistent throughout the rest of this document and supporting calculations. The TIS used for this analysis is the most recent and most comprehensive traffic study performed and includes all intersections that may be relevant to the projects. Traffic was included from other specific potential developments in the area including RDM 1081, Project Bluebird, Dolsontown Road East, RDM Simon, Marangi Solid Waste Handling Facility, RDM C.R. 56, Project Liberty, 3333 Route 6 Logistics, as well as the approved Slate Hill Commerce Center.

¹ CED, *Traffic Impact Study*, Project Bluebird, December 9, 2024.

Intersection #	Intersection Name	Type	2024 Existing		2027 No Build		ETC 2027 Build	
			AM	PM	AM	PM	AM	PM
1*	U.S Route 6 and NYS Route 284	Unsignalized	C	C	F	F	E	F
2*	U.S. Route 6 & Ridgebury Hill Road	Unsignalized	B	C	D	E	C	D
3*	U.S. Route 6 & McBride Road	Unsignalized	C	C	E	E	E	E
4	U.S. Route 6 & Hoops Road	Unsignalized	C	C	-	-	-	-
5	U.S. Route 6 & Creedon Hill Road	Unsignalized	B	B	C	B	C	B
6	U.S. Route 6 & C.R. 56	Unsignalized	C	C	C	C	B	B
7	U.S. Route 6 & NYS Route 17M	Signalized	C	C	F	F	F	F
8	NYS Route 17M & I-84 Interchange	Unsignalized	F	F	D	D	D	D
9	U.S. Route 6 & Bluebird/Liberty Site Access	Unsignalized	-	-	C	D	B	B
10	U.S. Route 6 & Seward Road	Unsignalized	B	B	C	C	C	C
11	NYS Route 17M & Dolsontown Road	Signalized	D	D	D	E	D	E

*Note: These intersections are conservatively included in this analysis because they may be impacted by one or more projects considered in the TIS; however, they are not anticipated to be significantly impacted by traffic from either the Dewpoint North or South projects.

3.0 Potential Impacts

Emission sources and potential short-term (Construction Phase) and long-term (Operation Phase) impacts resulting directly from the proposed projects were evaluated in this study as part of the NYSDEC State Environmental Quality Review Act (SEQR) process. The projects are Type 1 actions.

Short Term (Construction Phase)

Potential short-term and localized impacts could occur during construction through the use of mobile sources like heavy equipment. Heavy equipment will be used during construction and could

temporarily impact the air quality. Mobile air pollutants that may be present include carbon monoxide (CO), carbon dioxide (CO₂), hydrocarbons, nitrogen oxides (NO_x), sulfur oxides (SO₂) and particulate matter (PM). Other potential concerns of poor air quality may result from fugitive dust. Locations downwind of construction activities may be temporarily impacted. The prevailing wind direction is generally to the northeast in the vicinity of the projects.

Short term impacts may be mitigated through engineering controls. Mitigation measures may include dust suppression, such as applying water to unvegetated areas and access roads and securely covering staged soil with polyethylene sheeting. All soil erosion and sediment control measures will be implemented throughout the duration of construction. Work may also be paused during windy/adverse weather conditions when visible dust is observed leaving the project areas. All construction vehicles are required to comply with 6 NYCRR Subpart 217.3 which prohibits heavy vehicles (including both diesel and non-diesel) from idling for more than five (5) minutes.

Although construction of the sites could have potential short-term impacts to air quality, the clean alternative fuel and new emission standards for heavy equipment published by the EPA on June 7, 2023 will greatly reduce short-term air quality impacts generated by the projects. The new fuel requirements and integrating engine and fuel controls into heavy equipment has allowed for the greatest emissions reductions by decreasing the sulfur levels by more than 99%.

Long Term (Operational Phase)

On-site stationary sources of emissions such as facility HVAC equipment would be generally nominal and do not include manufacturing. The warehouses do not require air permits or air registrations from DEC.

An assessment of the potential air quality effects of mobile CO emissions that would result from additional on-road vehicle traffic, including trucks, generated by the proposed Project Sites, was performed following the procedures outlined in the New York State Department of Transportation (NYSDOT) Transportation Environmental Manual (TEM), revised March 2020.

The TEM lists three screening steps to initially determine whether the action would increase traffic volumes or idling, and if any other roadway changes (e.g., changes in speed, roadway width, sidewalk locations, etc.) could potentially increase in air pollutant concentrations. Eleven (11) intersections, including one (1) new unsignalized driveway, were determined to be potentially affected by the projects and were analyzed for changes in traffic. The screening procedure described below utilized data from the traffic impact study for the 2024 Existing, 2027 No Build, and ETC 2027 Build analysis years. Results of the initial three-step screening are discussed below:

Level of Service Screening (Step 1):

According to the TEM, intersections with a LOS of A, B, or C are generally excluded from a CO microscale analysis. Results from the traffic modeling study indicate five (5) out of eleven (11) analyzed intersections will experience a LOS rating of C or better for the ETC 2027 build year during both AM and PM peak hours. The following intersections have a LOS rating of D or worse, as presented in Table 2, and are required to move on to Step 2, Capture Criteria Screening:

- U.S Route 6 and NYS Route 284
- U.S. Route 6 & Ridgebury Hill Road
- U.S. Route 6 & McBride Road
- U.S. Route 6 & NYS Route 17M
- NYS Route 17M & I-84 Interchange
- NYS Route 17M & Dolsontown Road

Other than the existing 2024 data, there was no documented Level of Service information for the intersection of U.S. Route 6 & Hoops Road. The intersection would therefore be assumed to have a Level of Service of D or worse and would move onto step two. However, Hoops Road is abandoned and therefore does not require further analysis.

Intersection #	Intersection Name	Type	2024 Existing		2027 No Build		ETC 2027 Build	
			AM	PM	AM	PM	AM	PM
1*	U.S Route 6 and NYS Route 284	Unsignalized	C	C	F	F	E	F
2*	U.S. Route 6 & Ridgebury Hill Road	Unsignalized	B	C	D	E	C	D
3*	U.S. Route 6 & McBride Road	Unsignalized	C	C	E	E	E	E
4	U.S. Route 6 & Hoops Road	Unsignalized	C	C	-	-	-	-
5	U.S. Route 6 & Creedon Hill Road	Unsignalized	B	B	C	B	C	B
6	U.S. Route 6 & C.R. 56	Unsignalized	C	C	C	C	B	B
7	U.S. Route 6 & NYS Route 17M	Signalized	C	C	F	F	F	F
8	NYS Route 17M & I-84 Interchange	Unsignalized	F	F	D	D	D	D
9	U.S. Route 6 & Bluebird/Liberty Site Access	Unsignalized	-	-	C	D	B	B
10	U.S. Route 6 & Seward Road	Unsignalized	B	B	C	C	C	C
11	NYS Route 17M & Dolsontown Road	Signalized	D	D	D	E	D	E

*Note: These intersections are conservatively included in this analysis because they may be impacted by one or more projects considered in the TIS; however, they are not anticipated to be significantly impacted by traffic from either the Dewpoint North or South projects.

Capture Criteria (Step 2):

The six (6) intersections that would experience an LOS rating of D, E, or F have been screened by the criteria below:

- 1) A 10% or more increase in traffic volume of affected roadways.

Traffic Volume at all six (6) of the intersections in the Capture Criteria Screening increase by greater than 10% as a result of the projects, as presented in Table 3. All six (6) of the intersections in the Capture Criteria Screening move on to step 3, Volume Threshold Screening.

Intersection #	Intersection Name	(2027) Build Traffic Increase (AM)%
1*	U.S Route 6 and NYS Route 284	35.4
2*	U.S. Route 6 & Ridgebury Hill Road	35.1
3*	U.S. Route 6 & McBride Road	36.5
7	U.S. Route 6 & NYS Route 17M	22.4
8	NYS Route 17M & I-84 Interchange	13.3
11	NYS Route 17M & Dolsontown Road	20.0

*Note: These intersections are conservatively included in this analysis because they may be impacted by one or more projects considered in the TIS; however, they are not anticipated to be significantly impacted by traffic from either the Dewpoint North or South projects.

Volume Threshold Screening (Step 3):

The following intersections exceeded the 10% or more increase in traffic volume during the build condition for ETC:

- U.S Route 6 and NYS Route 284
- U.S. Route 6 & Ridgebury Hill Road
- U.S. Route 6 & McBride Road
- U.S. Route 6 & NYS Route 17M
- NYS Route 17M & I-84 Interchange
- NYS Route 17M & Dolsontown Road

Volume Threshold Screening is required for each of these intersections to determine if a microscale air quality analysis is required. Free Flow and Queue Emission Factors were calculated for the six (6) intersections with EPA’s Motor Vehicle Emission Simulator (MOVES4) software. Information including traffic speed, PM (worst case) peak hour vehicle volumes, vehicle mix, meteorology, signal cycles, and link length were used to determine the Emission Factors. The calculated Free Flow Emission Factors, Queue Emission Factors, Peak Hour Traffic Volume Thresholds, and the peak vehicle volume at ETC are presented in Table 4:

Table 4: Volume Threshold Screening

Intersection Name	Intersection Type	Queue Emission Factor (g/hr)	Free Flow Emission Factor (g/mi)	Peak Hour Traffic Volume Threshold	Peak Vehicle Link Volume at ETC (2027)
*U.S Route 6 and NYS Route 284	Unsignalized	-	4.41	8000	852
*U.S. Route 6 & Ridgebury Hill Road	Unsignalized	-	4.97	8000	852
*U.S. Route 6 & McBride Road	Unsignalized	-	4.89	8000	845
U.S. Route 6 & NYS Route 17M	Signalized	1.18	3.63	4000	1607
NYS Route 17M & I-84 Interchange	Signalized	0.79	4.28	4000	1609
NYS Route 17M & Dolsontown Road	Signalized	1.12	4.98	4000	1598
*Note: These intersections are conservatively included in this analysis because they may be impacted by one or more projects considered in the TIS; however, they are not anticipated to be significantly impacted by traffic from either the Dewpoint North or South projects.					

- The peak vehicle volume link at ETC (2027) for the intersection of U.S Route 6 and NYS Route 284 was 852, and the calculated Peak Hour Volume threshold was 8000. Therefore, this intersection does not exceed the applicable threshold, and no microscale air quality analysis is necessary.
- The peak vehicle link volume at ETC (2027) for the intersection of U.S. Route 6 & Ridgebury Hill Road was 852, and the calculated Peak Hour Volume threshold was 8000. Therefore, this intersection does not exceed the applicable threshold, and no microscale air quality analysis is necessary.
- The peak vehicle link volume at ETC (2027) for the intersection of U.S. Route 6 & McBride Road was 845, and the calculated Peak Hour Volume threshold was 8000. Therefore, this intersection does not exceed the applicable threshold, and no microscale air quality analysis is necessary.
- The peak vehicle link volume at ETC (2027) for the intersection of U.S. Route 6 & NYS Route 17M was 1607, and the calculated Peak Hour Volume threshold was 4000. Therefore, this intersection does not exceed the applicable threshold, and no microscale air quality analysis is necessary.
- The peak vehicle link volume at ETC (2027) for the intersection of NYS Route 17M & I-84 Interchange was 1609, and the calculated Peak Hour Volume threshold was 4000. Therefore, this intersection does not exceed the applicable threshold, and no microscale air quality analysis is necessary.

- The peak vehicle link volume at ETC (2027) for the intersection of NYS Route 17M & Dolsontown Road was 1598, and the calculated Peak Hour Volume threshold was 4000. Therefore, this intersection does not exceed the applicable threshold, and no microscale air quality analysis is necessary.

Based on available traffic and NYSDOT information, the projects are below the thresholds established in the NYSDOT TEM Air Quality manual and no Microscale analysis is required.

Particulate Matter

Although neither project is a federally supported highway or transit project that is subject to a conformity determination under Section 93.123(b)(1) of 40 CFR 51.390, the "Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas" published by EPA was used to determine if the projects would be considered transportation projects of local air quality concern that would require a quantitative analysis. It was determined that the six (6) intersections with a LOS of D, E, or F in the ETC 2027 Build case did not meet the criteria that would warrant modeling of particulate matter. Although the projects will increase the number of diesel vehicles, the increase in heavy truck traffic is minor compared to the 2027 No Build condition. The majority of site-generated traffic will consist of personal vehicles rather than diesel-fueled heavy haul trucks.

Ozone

Ozone concentrations are not typically estimated as part of an environmental analysis for a transportation project since motor vehicles do not emit ozone. Although they do emit precursors of ozone (volatile organic compounds and nitrogen oxides), the amount of these emissions is negligible compared to the total emissions for the entire urban area and would not affect ozone concentrations at or in the vicinity of the project sites. In addition, these emissions are transported many miles before the action of sunlight and atmospheric chemistry causes ozone to be formed. Ozone problems are regional problems that are addressed on a scale much larger than the typical transportation project. Ozone concentrations in the project areas will not be meaningfully affected by the projects themselves.

Carbon Dioxide

Potential long-term mobile sources such as delivery vehicles were evaluated for post-construction operations. The project sites will potentially be emitting CO₂ due to the trucks that will be traversing the sites as part of operations.

The following calculations were done to estimate the amount of greenhouse gas emissions trucks on each site will produce. The greenhouse gas emissions from trucks are calculated based on the distance the shipment is traveling (D) multiplied by the weight of the shipment (W) multiplied by the mode's specific emissions factor (EF). The distance (D) the trucks travel when entering the South site via the Dolsontown Road driveway, turning into a loading dock, and then leaving via the driveway onto Dolsontown Road is approximately 1,980 feet, or 0.375 miles. The distance (D) the trucks will travel when similarly traversing the North site is approximately 1,260 feet, or 0.239 miles.

The maximum legal weight (W) for a fully loaded tractor trailer is 80,000lbs, or 40 tons. Not every truck entering or moving around the site will weigh this much, but the maximum was used to be conservative in the estimation. The average tractor trailer in the US emits (EF) 161.8 grams of CO₂ per ton-mile. Based on the TIS prepared by Colliers Engineering and Design, the PM (worst case) Peak hour will result in 12 trucks entering/exiting the South site and five (5) trucks entering/exiting the North site. That is the PEAK hour. If we conservatively assume the peak hour volume of trucks for 24 hours per day, every day of the year, the total CO₂ emissions in grams is as follows:

South Site: 0.375 miles x 40 tons x 161.8 grams x 288 trucks per day x 365 days =
255,126,240 grams of CO₂ per year

North Site: 0.239 miles x 40 tons x 161.8 grams x 120 trucks per day x 365 days =
67,647,109 grams of CO₂ per year

To convert from grams to tons, simply divide by 1,000,000 which means on an extremely conservative basis, the trucks related to both sites combined will contribute less than 323 tons of CO₂ per year total. The SEQR Environmental Assessment Form (EAF) Part 2 lists the threshold for CO₂ at 1,000 tons per year. The sites combined do not contribute more than 33% of the threshold value as a very conservative estimate.

The projects are subject to all regulatory permits and laws such as truck idling restrictions that are enforced by NYSDEC.

Since the traffic impacts are considered small, the existing roads have the capacity to handle the traffic projected from the projects, and the calculated CO₂ emissions for the trucks post-construction falls below the threshold, no further air quality analysis needs to be completed.

4.0 Conclusion

This analysis is a cumulative air quality assessment for all projects in the study. The projects are not anticipated to adversely impact background air quality conditions based on the minimal long-term emissions originating from site operations and a review of traffic data. Based on surrounding facility information, it is unlikely that air pollution (above background levels) will occur that affects the projects.

Further air quality analysis is not necessary since the projects will not change existing conditions to such a degree as to jeopardize attainment of the National Ambient Air Quality Standards (NAAQS) established by the EPA to protect public health and welfare. The projects will not have a significant adverse air impact.

Appendix

Appendix A | Supporting Calculations

2027 Build Traffic Volumes

Peak PM Hour

Traffic Impact Study (TIS) for Project Bluebird, U.S. Route 6						Car Traffic	Truck Traffic	Heavy Vehicle %
Intersection No.	Road Name	Direction	Turn	Intersecting Road	Traffic Volume			
1	US Route 6	East	Through	NYS Route 284	239	229	10	4%
1	US Route 6	East	Right (S)	NYS Route 284	56	55	1	2%
1	US Route 6	West	Through	NYS Route 284	555	544	11	2%
1	US Route 6	West	Left (S)	NYS Route 284	297	285	12	4%
1	NYS Route 284	North	Left (W)	US Route 6	45	45	0	0%
1	NYS Route 284	North	Right (E)	US Route 6	157	151	6	4%
2	US Route 6	East	Through	Ridgebury Hill Rd.	366	351	15	4%
2	US Route 6	East	Right (S)	Ridgebury Hill Rd.	19	19	0	0%
2	US Route 6	West	Through	Ridgebury Hill Rd.	791	767	24	3%
2	US Route 6	West	Left (S)	Ridgebury Hill Rd.	61	58	3	5%
2	Ridgebury Hill Rd.	North	Left (W)	US Route 6	48	45	3	6%
2	Ridgebury Hill Rd.	North	Right (E)	US Route 6	74	74	0	0%
3	US Route 6	East	Through	McBride Road	392	376	16	4%
3	US Route 6	East	Left (N)	McBride Road	26	26	0	0%
3	US Route 6	West	Through	McBride Road	785	761	24	3%
3	US Route 6	West	Right (N)	McBride Road	60	60	0	0%
3	McBride Road	South	Left (E)	US Route 6	30	28	2	7%
3	McBride Road	South	Right (W)	US Route 6	26	24	2	8%
4	US Route 6	East	Through	Hoops Road		0	0	
4	US Route 6	East	Left (N)	Hoops Road		0	0	
4	US Route 6	West	Through	Hoops Road		0	0	
4	US Route 6	West	Right (N)	Hoops Road		0	0	
4	Hoops Road	South	Left (E)	US Route 6		0	0	
4	Hoops Road	South	Right (W)	US Route 6		0	0	
5	US Route 6	East	Through	Creedon Hill Rd.	469	446	23	5%
5	US Route 6	East	Right (S)	Creedon Hill Rd.	0	0	0	0%
5	US Route 6	West	Through	Creedon Hill Rd.	800	768	32	4%
5	US Route 6	West	Left (S)	Creedon Hill Rd.	11	3	8	73%
5	Creedon Hill Rd.	North	Left (W)	US Route 6	0	0	0	0%
5	Creedon Hill Rd.	North	Right (E)	US Route 6	11	7	4	36%
9	US Route 6	East	Through	Bluebird/Liberty	408	384	24	6%
9	US Route 6	East	Left (N)	Bluebird/Liberty	72	69	3	4%
9	US Route 6	West	Through	Bluebird/Liberty	665	638	27	4%
9	US Route 6	West	Right (N)	Bluebird/Liberty	130	105	25	19%
9	Bluebird/Liberty	South	Left (E)	US Route 6	251	213	38	15%
9	Bluebird/Liberty	South	Right (W)	US Route 6	146	142	4	3%
10	US Route 6	East	Through	Seward Road	659	593	66	10%
10	US Route 6	East	Right (S)	Seward Road	0	0	0	0%
10	US Route 6	West	Through	Seward Road	793	745	48	6%
10	US Route 6	West	Left (S)	Seward Road	22	22	0	0%
10	Seward Road	North	Left (W)	US Route 6	2	2	0	0%
10	Seward Road	North	Right (E)	US Route 6	11	11	0	0%
6	US Route 6	East	Through	CR 56	583	531	52	9%
6	US Route 6	East	Right (S)	CR 56	87	81	6	7%
6	US Route 6	West	Through	CR 56	594	558	36	6%
6	US Route 6	West	Left (S)	CR 56	14	14	0	0%
6	CR 56	Northwest	Left (W)	US Route 6	221	219	2	1%
6	CR 56	Northwest	Right (E)	US Route 6	61	59	2	3%
7	US Route 6	East	Through	NYS RT 17M	7	6	1	14%
7	US Route 6	East	Left (N)	NYS RT 17M	405	393	12	3%
7	US Route 6	East	Right (S)	NYS RT 17M	479	426	53	11%
7	Sunrise Park Road	West	Through	NYS RT 17M	10	10	0	0%
7	Sunrise Park Road	West	Left (S)	NYS RT 17M	37	37	0	0%
7	Sunrise Park Road	West	Right (N)	NYS RT 17M	37	36	1	3%
7	NYS RT 17M	North	Through	US Route 6 / Sunrise Park Rd.	1155	1120	35	3%
7	NYS RT 17M	North	Left (W)	US Route 6	437	398	39	9%
7	NYS RT 17M	North	Right (E)	Sunrise Park Rd.	15	12	3	20%
7	NYS RT 17M	South	Through	US Route 6 / Sunrise Park Rd.	1122	1088	34	3%
7	NYS RT 17M	South	Left (E)	Sunrise Park Rd.	15	15	0	0%
7	NYS RT 17M	South	Right (W)	US Route 6	402	390	12	3%

2027 Build Traffic Volumes

Peak PM Hour

Traffic Impact Study (TIS) for Project Bluebird, U.S. Route 6								
Intersection No.	Road Name	Direction	Turn	Intersecting Road	Traffic Volume	Car Traffic	Truck Traffic	Heavy Vehicle %
8a	I-84 WB Exit Ramp	West	Right (N)	NYS RT 17M	579	538	41	7%
8b	I-84 EB Exit Ramp	East	Right (N)	NYS RT 17M	157	135	22	14%
8b	NYS RT 17M	North	Through	I-84 WB Entrance Ramp	1030	958	72	7%
8b	NYS RT 17M	North	Right (W)	I-84 WB Entrance Ramp	254	241	13	5%
8c	NYS RT 17M	North	Through	I-84 EB Entrance Ramp	1127	1071	56	5%
8c	NYS RT 17M	North	Right (E)	I-84 EB Entrance Ramp	137	127	10	7%
8d	NYS RT 17M	South	Through	I-84 WB Entrance Ramp	1356	1261	95	7%
8d	NYS RT 17M	South	Right (W)	I-84 WB Entrance Ramp	282	243	39	14%
8e	NYS RT 17M	South	Through	I-84 EB Entrance Ramp	846	795	51	6%
8e	NYS RT 17M	South	Right (E)	I-84 EB Entrance Ramp	651	592	59	9%
8e	I-84 WB Exit Ramp	West	Right (S)	NYS RT 17M	142	128	14	10%
8f	I-84 EB Exit Ramp	East	Right (S)	NYS RT 17M	117	101	16	14%
11	James P Kelly Way	East	Through	NYS RT 17M	197	193	4	2.0%
11	James P Kelly Way	East	Left (N)	NYS RT 17M	50	50	0	0.0%
11	James P Kelly Way	East	Right (S)	NYS RT 17M	357	350	7	2.0%
11	Dolsontown Road	West	Through	NYS RT 17M	302	293	9	3.0%
11	Dolsontown Road	West	Left (S)	NYS RT 17M	425	391	34	8.0%
11	Dolsontown Road	West	Right (N)	NYS RT 17M	254	244	10	4.0%
11	NYS RT 17M	North	Through	James P Kelly Way/Dolsontown Rd	814	806	8	1.0%
11	NYS RT 17M	North	Left (W)	James P Kelly Way	490	480	10	2.0%
11	NYS RT 17M	North	Right (E)	Dolsontown Road	294	270	24	8.0%
11	NYS RT 17M	South	Through	James P Kelly Way/Dolsontown Rd	662	655	7	1.0%
11	NYS RT 17M	South	Left (E)	Dolsontown Road	168	163	5	3.0%
11	NYS RT 17M	South	Right (W)	James P Kelly Way	44	44	0	0.0%

Level 2 Screening
 Traffic Volume Increase

PM Level of Service

Intersection	Intersection Name	2027 Projected Volume	2027 Build Volume	Volume Increase	Percent Volume Increase
1	U.S Route 6 and NYS Route 284	996	1349	353	35.4%
2	U.S. Route 6 & Ridhebury Hill Road	1006	1359	353	35.1%
3	U.S. Route 6 & McBride Road	966	1319	353	36.5%
4	U.S. Route 6 & Hoops Road	Eliminated in Level 1			
5	U.S. Route 6 & Creedon Hill Road	Eliminated in Level 1			
6	U.S. Route 6 & C.R. 56	Eliminated in Level 1			
7	U.S. Rotute 6 & NYS Route 17M	3368	4121	753	22.4%
8	NYS Route 17M & I-84 Interchange	5896	6678	782	13.3%
9	U.S. Route 6 & Bluebird/Liberty	Eliminated in Level 1			
11	U.S. Route 6 & Seward Road	Eliminated in Level 1			
12	NYS Route 17M & Dolsontown Road	3382	4057	675	20.0%

MOVES4 Intersection Links

linkID	countyID	zoneID	roadTypeID	linkLength	linkVolume	linkAvgSpeed	linkDescription	linkAvgGrade
3	36071	360710	3	0.015909096	295	55	RT284 EB Q	0
5	36071	360710	5	0.013825762	852	55	RT284 WB Q	0
8	36071	360710	5	0.01325758	202	35	RT284 NB Q	0
12	36071	360710	5	0.019128794	385	55	Ridgebury NB Q	0
14	36071	360710	5	0.015284096	852	55	Ridgebury SB Q	0
17	36071	360710	5	0.02462122	122	30	Ridgebury WB Q	0
21	36071	360710	5	0.021969704	418	55	McBride NB Q	0
23	36071	360710	5	0.030871222	845	55	McBride SB Q	0
26	36071	360710	5	0.017159096	56	30	McBride EB Q	0
69	36071	360710	5	0.906439684	891	55	RT6 to 17M EB C	0
71	36071	360710	5	0.07765154	891	3.205708	17M EB Q	0
73	36071	360710	5	0.0757576	84	45	17M WB C	0
74	36071	360710	5	0.05871214	84	2.094931	17M WB Q	0
78	36071	360710	5	0.061363656	1539	45	17M SB C	0
79	36071	360710	5	0.05871214	1539	3.068004	17M SB Q	0
81	36071	360710	5	0.058333335	1607	45	17M NB C	0
82	36071	360710	5	0.05871214	1607	3.996069	17M NB Q	0
84	36071	360710	5	0.049810622	1598	45	Dolsontown NB C	0
85	36071	360710	5	0.05871214	1598	2.785026	Dolsontown NB Q	0
88	36071	360710	5	0.111363672	874	45	Dolsontown SB C	0
89	36071	360710	5	0.05871214	874	2.612883	Dolsontown SB Q	0
91	36071	360710	5	0.042992438	604	30	Dolsontown EB C	0
92	36071	360710	5	0.03030304	604	1.137209	Dolsontown EB Q	0
94	36071	360710	5	0.066666666	981	45	Dolsontown WB C	0
95	36071	360710	5	0.05871214	981	2.713516	Dolsontown WB Q	0
97	36071	360710	4	0.326325862	1609	30	8a I84 WB Off C	0
98	36071	360710	4	0.03030304	1609	1.605964	8a I84 WB Off Q	0
99	36071	360710	4	0.113447006	1030	45	17M NB I84 C	0
100	36071	360710	4	0.564202726	137	35	8c 17M WB to I84 EB C	0
101	36071	360710	4	0.497348644	282	35	8d 17M EB to I84 WB C	0
102	36071	360710	4	0.13162883	1284	49	8b 17M WB Weave C	0
103	36071	360710	4	0.116666704	1497	46	8e 17M EB Weave C	0
104	36071	360710	4	0.5018941	117	35	8f I84 EB to 17M EB C	0

Level 3 Volume Screening

linkID	Intersection	Description	Freeflow/ Queue	Calculated January Emissions (g)	Calculated July Emissions (g)	Link Length (mi)	Traffic Volume	Freeflow Emission Factor (g/mi)	Freeflow EF per Vehicle (g/mi/veh)	Queue EF per vehicle (g/h/veh)	Highest Freeflow EF/veh (g/mi/veh)	Highest Queue EF/veh (g/h/veh)	Freeflow Volume threshold (veh)	Intersection Volume threshold (veh)	Highest Directional Volume
3	RT 284	RT6 at RT284 EB QU	Freeflow	10.462	15.888	0.01590910	295	998.7	3.3854						
5	RT 284	RT6 at RT284 WB QU	Freeflow	26.441	40.310	0.01382576	852	2915.5	3.4220						
8	RT 284	RT6 at RT 284 NB QU	Freeflow	7.797	11.816	0.01325758	202	891.3	4.4122		4.4122		8000		852
12	Ridgebury Hill	RT6 at Ridgebury NB QU	Freeflow	16.492	25.056	0.01912879	385	1309.9	3.4023						
14	Ridgebury Hill	RT6 at Ridgebury SB QU	Freeflow	29.204	44.461	0.01528410	852	2908.9	3.4143						
17	Ridgebury Hill	RT6 at Ridgebury WB QU	Freeflow	9.852	14.918	0.02462122	122	605.9	4.9665		4.9665		8000		852
21	McBride	RT6 at McBride NB QU	Freeflow	20.568	31.255	0.02196970	418	1422.6	3.4034						
23	McBride	RT6 at McBride SB QU	Freeflow	58.539	89.206	0.03087122	845	2889.6	3.4197						
26	McBride	RT6 at McBride EB QU	Freeflow	3.153	4.696	0.01715910	56	273.7	4.8874		4.8874		8000		845
69	RT6 & 17M	RT6 Logistics to 17M EB CR	Freeflow	1796.179	2701.020	0.90643968	891	2979.8	3.3443						
71	RT6 & 17M	RT6 at 17M EB QU	Queue	674.029	987.251	0.07765154	891			1.108026079					
73	RT6 & 17M	RT6 at 17M WB CR	Freeflow	15.118	23.113	0.07575760	84	305.1	3.6320		3.6320				
74	RT6 & 17M	RT6 at 17M WB QU	Queue	65.745	99.250	0.05871214	84			1.181550053		1.181550053		4000	1607
78	RT6 & 17M	RT6 at 17M SB CR	Freeflow	224.110	340.600	0.06136366	1539	5550.5	3.6066						
79	RT6 & 17M	RT6 at 17M SB QU	Queue	887.660	1328.395	0.05871214	1539			0.863154879					
81	RT6 & 17M	RT6 at 17M NB CR	Freeflow	222.218	335.699	0.05833335	1607	5754.8	3.5811						
82	RT6 & 17M	RT6 at 17M NB QU	Queue	792.980	1177.296	0.05871214	1607			0.732605095					
84	Dolsontown	17M at Dolsontown NB CR	Freeflow	188.938	287.550	0.04981062	1598	5772.9	3.6126						
85	Dolsontown	17M at Dolsontown NB QU	Queue	980.670	1470.285	0.05871214	1598			0.920077996					
88	Dolsontown	EOP to Dolsontown SB CR	Freeflow	231.198	353.256	0.11136367	874	3172.1	3.6294						
89	Dolsontown	17M at Dolsontown SB QU	Queue	556.917	839.839	0.05871214	874			0.960914308					
91	Dolsontown	17M at Dolsontown EB CR	Freeflow	85.163	129.249	0.04299244	604	3006.3	4.9774		4.9774				
92	Dolsontown	17M at Dolsontown EB QU	Queue	450.300	677.899	0.03030304	604			1.122349095		1.122349095		4000	1598.000
94	Dolsontown	17M at Dolsontown WB CR	Freeflow	154.976	233.640	0.06666669	981	3504.6	3.5725						
95	Dolsontown	17M at Dolsontown WB QU	Queue	620.926	917.852	0.05871214	981			0.935628819					
97	17M & I-84	8a 17M at I-84 WB Off CR	Freeflow	1510.742	2246.775	0.32632586	1609	6885.1	4.2791		4.2791				
98	17M & I-84	8a 17M at I-84 WB Off QU	Queue	866.128	1272.714	0.03030304	1609			0.790996649		0.790996649		4000	1609
99	17M & I-84	17M NB at I-84 CR	Freeflow	265.484	397.379	0.11344701	1030	3502.8	3.4008						
100	17M & I-84	8c 17M WB ramp to I84 EB CR	Freeflow	201.913	303.453	0.56420473	137	537.8	3.9259						
101	17M & I-84	8d 17M EB ramp to I84 WB CR	Freeflow	366.726	547.119	0.49734864	282	1100.1	3.9010						
102	17M & I-84	8b 17M WB Weave over I84 CR	Freeflow	370.948	556.905	0.13162883	1284	4230.9	3.2951						
103	17M & I-84	8e 17M EB Weave over I84 CR	Freeflow	392.227	586.642	0.11666670	1497	5028.4	3.3590						
104	17M & I-84	8f I84 EB ramp to 17M EB CR	Freeflow	153.524	229.258	0.50189410	117	456.8	3.9042						



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