

Attachment AB

**Revised Exhibit 16.
Effect on Transportation**



RIVERSIDE SOLAR, LLC

Case No. 21-00752

900-2.17 Exhibit 16

Effect on Transportation

Contents

Acronym List iii

Glossary Terms iv

Exhibit 16: Effect on Transportation 1

 16(a) Conceptual Site Plan 1

 (1) Horizontal and Vertical Geometry, Approach Lanes, Lane and Shoulder Widths, Traffic Control Devices, and Sight Distances 1

 (2) Access Road Locations and Widths and Road Intersection Suitability for Wind Facilities 4

 16(b) Description of the Pre-construction Characteristics of Roads in the Vicinity of the Facility 4

 (1) Traffic Volumes and Accident Data 4

 (2) Transit Facilities and School Bus Routes 7

 (3) Emergency Service Approach and Departure Routes 7

 (4) Load Bearing Structural Rating Information 8

 16(c) Facility Trip Generation 13

 (1) Number, Frequency, and Timing of Vehicle Trips 13

 (2) Cut-and-Fill Activity 18

 (3) Conceptual Employee Approach and Departure Routes 18

 16(d) Traffic and Transportation Impacts 20

 (1) Analysis of Future Traffic Conditions for Wind Facilities 20

 (2) Evaluation of the Road System to Accommodate the Projected Traffic 20

 (3) Route Evaluation - Over-Size Load Deliveries and Roadway Restrictions 27

 (4) Measures to Avoid or Minimize for Impacts to Traffic and Transportation and Road Use and Restoration Agreements 28

 16(e) Public Transportation, School Bus Routes, and Aeronautical and Military Operations 30

 16(f) FAA Notice of Proposed Construction 31

 (1) Statements of Review 31

 (2) Wind Facility Location Requiring FAA Review 31

 (3) Responses to FAA Facility Operator Reviews and Consultation 31

Conclusions 32

References.....33

Tables

Table 16-1. Design Intersection Sight Distance for Left-Turning Vehicles2
 Table 16-2. Design Intersection Sight Distance for Right-Turning Vehicles2
 Table 16-3. Expected Number of Loaded Trips17
 Table 16-4. Available Traffic Data within the Facility Site Area21
 Table 16-5. LOS Criteria for Multilane Highway Segments23
 Table 16-6. Follower Density Thresholds25
 Table 16-7. Existing Traffic Volumes & Characteristics for Two-Lane Highways26
 Table 16-8. Traffic Volumes & Characteristics for Two-Lane Highways During Construction.....26
 Table 16-9. NYSDOT Over-size/Over-weight Vehicle Dimensions.....29

Graphics

Graphic 16-1. Facility Site Area Accident Maps.....6
 Graphic 16-2. Facility Site Distribution Percentages.....19
 Graphic 16-3. LOS Criteria and Speed-Flow Curves for Multilane Highway Segments24
 Graphic 16-4. Follower Density Equation25

Appendices

Appendix 16-1 AASHTO Tables and Sight Distance Diagrams
 Appendix 16-2 NYSDOT Average Annual Daily Traffic (AADT) Volumes
 Appendix 16-3 Accident Summary Data 2018-2020
 Appendix 16-4 School Bus Routes and Transit Routes
 Appendix 16-5 Emergency Access Routes
 Appendix 16-6 Posted Bridge and Culvert Data
 Appendix 16-7 Construction Access Routes
 Appendix 16-8 Highway Capacity Software (HCS) Level of Service Output
 Appendix 16-9 Truck Turning Templates

Acronym List

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
AES	The AES Corporation, Inc.
ALIS	Accident Location Information System
ATVs	All-Terrain Vehicles
CFR	Code of Federal Regulations
DoD	Department of Defense
FAA	Federal Aviation Administration
FD	“Follower Density”
FHWA	Federal Highway Administration
FOIL	Freedom of Information Law
GSU	generator step-up unit
HCM	Highway Capacity Manual 6th edition
HCS	Highway Capacity Software
HDM	Highway Design Manual
IFP	Issued for Permit
ITE	Institute of Transportation Engineers
LOS	levels of service
NCHRP	National Cooperative Highway Research Program
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
ORES	Office of Renewable Energy Siting
RUAs	Road Use Agreements
SSDs	Stopping Sight Distances
USCs	Uniform Standards and Conditions

Glossary Terms

Applicant	Riverside Solar, LLC, a subsidiary of The AES Corporation, Inc. (AES), and entity seeking a siting permit for the Facility from the Office of Renewable Energy Siting (ORES) under Section 94-c of the New York State Executive Law.
Facility	The proposed components to be constructed for the collection and distribution of energy for the Riverside Solar Project, which includes solar arrays, inverters, electric collection lines, and the collection substation.
Facility Site	The parcels encompassing Facility components which totals 1,168 acres in the Towns of Lyme and Brownville, Jefferson County, New York (Figure 2-1).
Study Area	In accordance with the Section 94-c Regulations, the Study Area for the Facility includes a radius of five miles around the Facility Site boundary, unless otherwise noted for a specific resource study or Exhibit. The 5-mile Study Area encompasses 79,169 acres, inclusive of the 1,168-acre Facility Site.
Towns	The Towns of Lyme and Brownville, Jefferson County, New York.

Exhibit 16: Effect on Transportation

This Exhibit provides information required in accordance with the requirements of §900-2.17 of the Section 94-c Regulations.

16(a) Conceptual Site Plan

Issued for Permit (IFP) Design Drawings, including the Conceptual Site Plans for the Facility, are included in Appendix 5-1 of Exhibit 5 (IFP Design Drawings). The conceptual site plans, drawn at an appropriate scale, depict all Facility Site driveways and roadway intersections, showing:

(1) Horizontal and Vertical Geometry, Approach Lanes, Lane and Shoulder Widths, Traffic Control Devices, and Sight Distances

Details specific to Facility access roads and driveway and roadway intersections showing horizontal and vertical geometry, number of approach lanes, lane widths, shoulder widths, and traffic control devices by approaches are included in Appendix 5-1. Intersection sight distances at the proposed access roads are discussed below and additional information is included in Appendix 16-1 (Sight Distance Diagrams and the American Association of State Highway and Transportation Officials [AASHTO] Tables). According to the requirements of the Section 94-c regulations, characterization of public road intersection suitability is required for facilities which include wind turbines. The proposed Facility is a solar facility and therefore characterization of the public road intersection suitability outside of the Facility Site is not applicable.

Sight distance diagrams were developed for the proposed access roads at the entrance/exits for the Facility at the following locations illustrated in Appendix 16-1:

1. Morris Tract Road – west side, northeast of East Main Street
2. Case Road – west side, northeast of West Main Street
3. Case Road – north side, east of West Main Street
4. Weaver Road – north side, north of Case Road
5. Weaver Road – south side, north of Case Road

The recommended setback for the decision point is 14.5 feet from the edge of the roadway, plus half the distance to the required travel lane.

The New York State Department of Transportation (NYSDOT) Highway Design Manual (HDM) Chapter 5 Appendix 5C Table 5C-3 and Table 5C-4 recommend sight distances for left-turning vehicles and for right-turning vehicles for passenger cars and for combination trucks based upon the Design Speed. These recommended distances reduce significantly at lower speeds. These tables are shown below.

Table 16-1. Design Intersection Sight Distance for Left-Turning Vehicles

Table 5C-3 Design Intersection Sight Distance (in feet) - Case B1 - Left Turn From Stop

Design speed (mph)	Passenger Car Lanes Crossed			Single-Unit Truck Lanes Crossed			Combination Truck Lanes Crossed		
	1	2	3	1	2	3	1	2	3
15	170	180	190	210	225	245	255	270	285
20	225	240	250	280	300	325	340	360	380
25	280	295	315	350	375	405	425	450	475
30	335	355	375	420	450	485	510	540	570
35	390	415	440	490	525	565	595	630	665
40	445	475	500	560	600	645	680	720	760
45	500	530	565	630	675	725	765	810	855
50	555	590	625	700	750	805	850	900	950
55	610	650	690	770	825	885	930	990	1045
60	665	710	750	840	900	965	1015	1080	1140
65	720	765	815	910	975	1045	1100	1170	1235
70	775	825	875	980	1050	1125	1185	1260	1330

Table 16-2. Design Intersection Sight Distance for Right-Turning Vehicles

Table 5C-4 Design Intersection Sight Distance (in feet) - Case B2 - Right Turn From Stop and - Case B3 - Crossing Maneuver

Design Speed (mph)	Passenger Car Case B2-- Lane Entered Case B3 – Lanes Crossed			Single-Unit Truck Case B2-- Lane Entered Case B3 – Lanes Crossed			Combination Truck Case B2-- Lane Entered Case B3 – Lanes Crossed		
	1	2	3	1	2	3	1	2	3
15	145	155	170	190	205	220	235	250	265
20	195	210	225	250	275	295	310	330	350
25	240	260	280	315	340	365	390	415	440
30	290	310	335	375	410	440	465	495	525
35	335	365	390	440	475	510	545	580	615
40	385	415	445	500	545	585	620	660	700
45	430	465	500	565	610	655	695	745	790
50	480	515	555	625	680	730	775	825	875
55	530	570	610	690	745	805	850	910	965
60	575	620	665	750	815	875	930	990	1050
65	625	670	720	815	880	950	1005	1075	1140
70	670	725	775	875	950	1020	1085	1155	1225

Additional Sight Distance Tables from the AASHTO – A Policy on Geometric Design of Highways and Streets, Seventh Edition, 2018, which forms the basis for the NYSDOT Sight Distances referenced above are contained in Appendix 16-1. The AASHTO tables show the Stopping Sight Distances (SSDs), which are the minimum Sight Distances and are the required Sight Distances. It is noted that some of the sight distances were determined based upon photos and aerials. In the vicinity of the Facility Site, the speed limit on CR-125 is 25 mph south of East Main Street, and the speed limit on Morris Tract Road is 30 mph just northeast of East Main Street but then is unposted to the north so it is assumed to be 55 mph. Case Road and Weaver Road are unposted and assumed to be 55 mph. NY-12E east of Star School House Road has a 40 mph speed limit. There are signs indicating a 30 mph Village-wide speed limit. It is unlikely that vehicles are traveling at 55 mph on some of the local roads due to roadway width and curvature, but 55 mph was utilized in the sight distance analysis when no speed limit was posted. The following are the standard SSDs as per AASHTO for level roadways, with the additional information contained in Appendix 16-1:

Design Speed: 30 mph	SSD Design: 200 feet
Design Speed: 35 mph	SSD Design: 250 feet
Design Speed: 40 mph	SSD Design: 305 feet
Design Speed: 45 mph	SSD Design: 360 feet
Design Speed: 50 mph	SSD Design: 425 feet
Design Speed: 55 mph	SSD Design: 495 feet

All SSDs and most Design Sight Distances will be met for each of the access points. Thus, the minimum required sight distances will be met for all conditions. There are some locations that may require trimming and/or removal of some vegetation to provide the proper sight distances. There are some locations where the roadway curvature somewhat limits the sight distance but there could be an increase in the sight distance by the trimming and/or clearance of some vegetation along the roadway. In addition, because of the height of the seated truck driver and the height of the trucks, truck drivers can generally see a farther distance and trucks can generally be seen at a farther distance, thus further increasing the available Sight Distance. If the driver pulls up closer to the road, the sight distance is improved. Signage could be added if deemed necessary and each location should be field checked prior to/during construction to determine if any signage is needed or vegetation is needed to be cleared or if the driveway location should be slightly shifted, particularly at Driveway locations 1, 3 and 5.

(2) Access Road Locations and Widths and Road Intersection Suitability for Wind Facilities

The proposed Facility is a solar facility. Therefore, this section is not applicable.

16(b) Description of the Pre-construction Characteristics of Roads in the Vicinity of the Facility

As determined through pre-application meetings with Town representatives, traffic within the vicinity of the Facility Site is generally minimal. The Applicant has discussed the pertinent road use information with the Towns and, specifically, has considered the Town of Lyme's requests with regards to track-out of mud and dirt and concerns regarding specific roads, such as Weaver Road and Morris Tract Road. The Applicant has begun working with the Towns to enter into Road Use Agreements (RUAs) which will address the Town's concerns. Further detail regarding the pre-construction characteristics of the public roadways in the vicinity of the Facility, as determined pursuant to the pre-application meeting(s) required pursuant to section 900-1.3(a) of this Part have been included in the sections below.

(1) Traffic Volumes and Accident Data

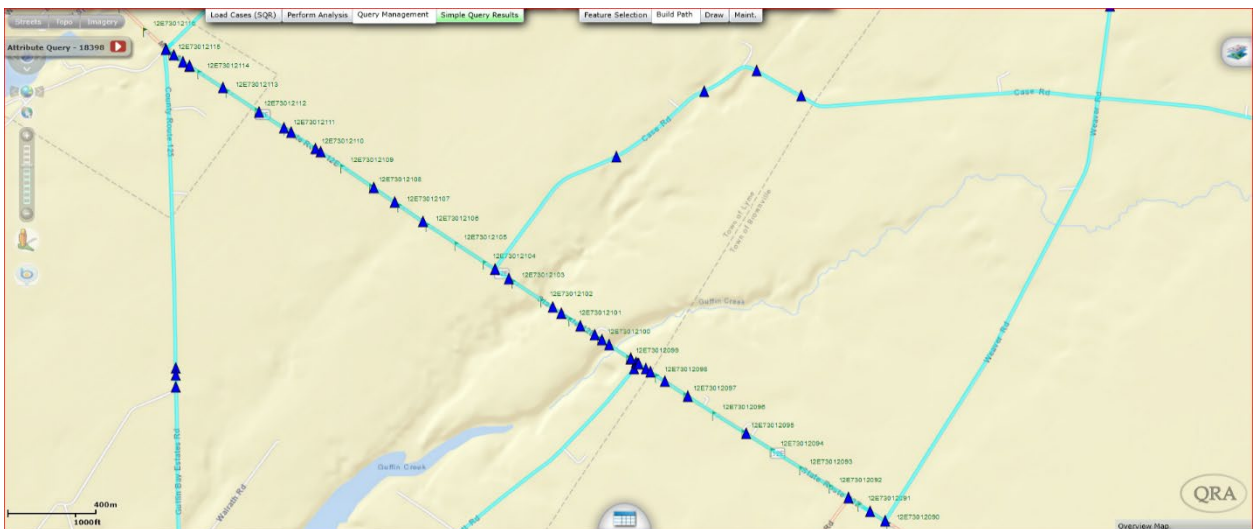
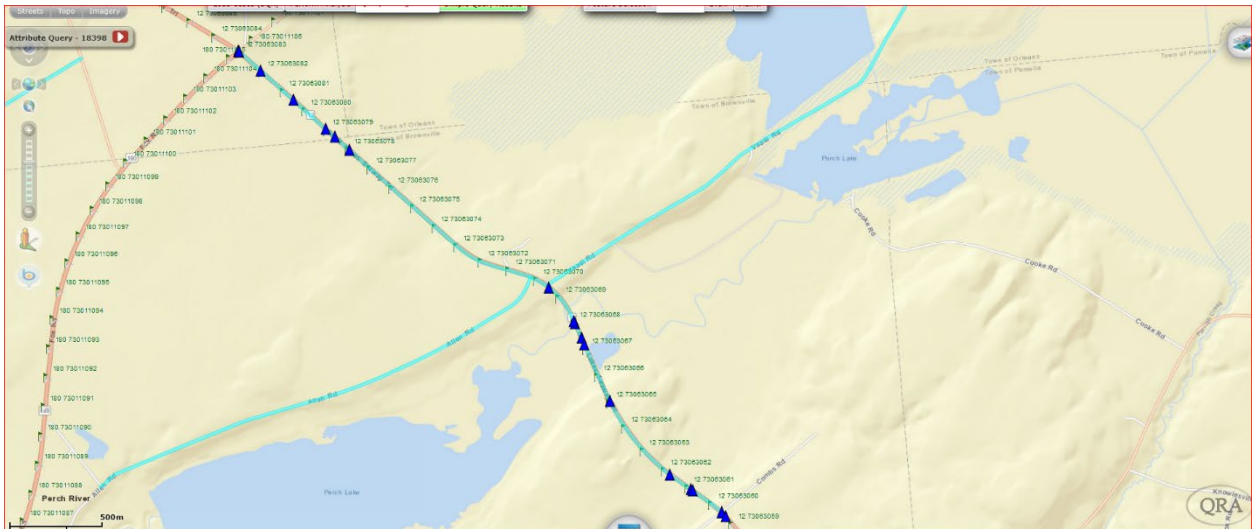
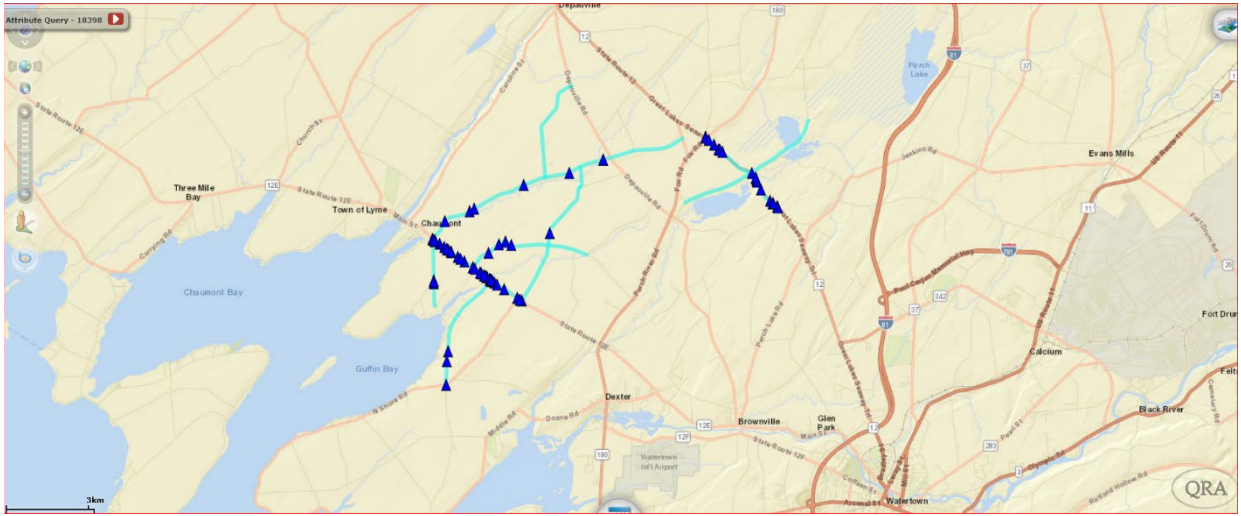
Existing traffic volume data along the proposed approach and departure routes for the Facility was obtained from the NYSDOT Traffic Data Viewer and NYSDOT Highway Data Services Bureau, where historical traffic count data is available online. Average Annual Daily Traffic (AADT) volumes for roads within the Facility Site are provided by route in Appendix 16-2. Additional detailed information is also contained in Section 16(d)(2) below including vehicle traffic and use levels.

Existing accident data for the Facility Site was obtained from NYSDOT from the Accident Location Information System (ALIS) through a Freedom of Information Law (FOIL) Request. Accident data was obtained for segments in the vicinity of the Facility Site and the locations of the accidents are illustrated with blue triangles on Graphic 16-1 for a three-year period from 2018 to 2020. The details of the accident data by case number are summarized in Appendix 16-3. During the three-year period, there were a total of 79 accidents, including 49 accidents (62%), thus more than half, involving a deer or other animal, 12 (15%) involving a fixed object, and 11 (14%) involving a collision with another motor vehicle, among others. Of the 79 accidents, 65

(82%) accidents were listed as property damage only, six (8%) accidents involved some type of injury, and seven (9%) accidents were non-reportable. There was also one fatal accident which occurred along State Route 12E in 2020 involving a collision with a pedestrian, listed as on a dark road/unlighted and on wet pavement.

Graphic 16-1. Facility Site Area Accident Maps

▲ : Location of Accidents



(2) Transit Facilities and School Bus Routes

There are limited transit facilities in the area. The Watertown Citibus Public Transit serves the Watertown area, approximately eight miles east of the Facility Site. Information about the Citibus Public Transit, including routes and schedules, is contained in Appendix 16-4. While transit vehicles and some construction related vehicles may share some of the same roadways, any impacts to the local transit routes during construction are expected to be minimal. The Applicant will coordinate with the bus company to avoid any impacts and delays of routes throughout the construction process.

In addition to public transit routes, the Applicant also reviewed areas of school bus service in the vicinity of the Facility Site. School bus transportation information was obtained from the General Brown Central School District, Thousand Islands Central School District, and the Lyme Central School District. Though road closures are not anticipated, should any local roadways need to be temporarily closed during construction for a short period of time, the contractor (or Applicant) will contact the appropriate local agencies to provide notifications including the School Districts who establish the school bus routes for their respective School Districts. Construction of the Facility is not expected to impact school bus stop locations, but in the event that any stops are impacted, the contractor (or Applicant) will provide safe accessible waiting areas. The Lyme District stated that their bus will likely travel on NY Route 12E at approximately 7:10 AM to Smith Road, then to Case Road, and onto Weaver Road until approximately 7:45 AM and then back NY Route 12E to the Chaumont end of Case Road, while in the afternoon, buses leave at 3:05 PM and follow the same route as in the AM, with two runs at the end of each day, per bus. Additional information regarding the school transportation and bus routes is contained in Appendix 16-4.

(3) Emergency Service Approach and Departure Routes

Emergency services, if necessary, would possibly be provided by various entities including, but not limited to:

- Chaumont Volunteer Fire Department: 11385 NY-12E, Chaumont, NY 13622
- Brownville Fire Department: 121 Brown Blvd., Brownville, NY 13165
- Three Mile Bay Fire Department: 8581 NY-12E, Three Mile Bay, NY 13693

- NY State Police Department: 25873 NY-37, Watertown, NY 13601
- NY State Police Troop D Headquarters: Route 5, Oneida, NY 13421
- Jefferson County Fire and Emergency Management: 735 Waterman Drive, Watertown, NY 13601
- Jefferson County Sheriff's Office: 35 Waterman Drive, Watertown, NY 13601

In the event of an emergency, the local emergency service providers will take the most direct/fastest available route to the Facility Site, depending upon current conditions and their starting locations as their origin points may change due to other emergencies, whether a police vehicle is on patrol at the time, and the location of the incident at the Facility Site. Descriptions and illustrations of the routes to/from each of the above Emergency Services facility are contained in Appendix 16-5.

The Applicant consulted with local emergency service providers, including the Town of Lyme and Town of Brownville, Jefferson County, New York (Towns) local fire departments to inform them of the potential Facility and answer questions (see Exhibit 6). The Applicant will continue to reach out and coordinate with the local emergency service providers throughout the development and construction process, so that they are aware of road closures (if necessary) that may impact their routing decisions. They will also be kept informed of expected Site work and number of workers so they can plan accordingly. The Applicant and contractors will adhere to the Emergency Response Plan included in Appendix 6-1. There is a bridge/culvert along Morris Tract Road approximately 2,100 feet north of NY-12E that is signed as a Narrow Bridge.

(4) Load Bearing Structural Rating Information

No bridges with weight restrictions that vehicles traveling to or from the Facility would utilize were identified in the Facility Site; however, the NYSDOT may issue weight and speed restrictions when weather conditions dictate.

Some bridges with weight restrictions in the general area were identified, however any large construction traffic would verify the utilization of these routes. The identified posted bridge weight limits within the general surrounding area in the vicinity of the Facility Site were obtained from the NYSDOT. There are State-Owned R-Posted (Non-Waivered) Bridges including one (BIN 1000590) on NY 3 crossing the Power Canal in the Village of Deferiet as well one on NY-

12E (BIN 1010120) crossing the Chaumont River in the Village of Chaumont (see additional information below), one along NY-180 (BIN 1039500) crossing the Chaumont River in the Town of Orleans, one (BIN 3338900) along Route 971H crossing Black River in the Town of Hounsfield and one along NY-12E 0.3 miles southwest of NY-12 crossing French Creek in the Village of Clayton. There is a Load Posted Bridge (BIN 2259300) of 22 tons along Cayuga Avenue crossing Kelsey Creek in the City of Watertown, one (BIN 339350) posted at 18 tons along Schell Road over Otter Creek in the Town of Theresa, one (BIN 3339390) posted for 11 tons on Garden Road crossing Indian River in the Village of Philadelphia, as well as one (BIN 5523840) posted for 8 tons on Perch Lake Extension crossing Gillette Creek in the Town of Pamela. There is a bridge (BIN 2220040) closed on Taylor Road crossing Mill Creek in the Town of Champion as well as one (BIN 3363430) closed on Main Street crossing Indian River in the Village of Philadelphia. The location and additional information of these bridges is contained in Appendix 16-6. None of these bridges are projected to be utilized during construction or operation of the Facility and none are in the immediate vicinity of the Facility Site. There was no available description of existing culverts in poor condition or with a posting that would be impacted by the Facility, other than a culvert on Interstate 81, as discussed below.

The NYSDOT has proposed a bridge replacement project for the NY-12E Bridge (BIN 101020) over Chaumont River in the Village of Chaumont and Town of Lyme. Construction is proposed to be staged to provide alternating one-way traffic with temporary traffic signals for the duration of the construction which is anticipated to begin in the summer of 2022 and be completed in the fall of 2023. Prior to construction of the Facility, discussions and coordination will be held with the NYSDOT regarding the bridge replacement. As stated, two-way traffic will be maintained so any construction workers utilizing this route, which are to be a limited amount (10% or less), would be able to continue on this route. Construction vehicles are not projected to use this route and thus would not likely be impacted.

Additional information on bridges including Posted Bridges and Non-Posted Bridges as well as culverts obtained from the NYSDOT is provided in Appendix 16-6.

There is a 12-ton Weight Limit posted on CR-125 south of East Main Street, not on the Morris Tract Road portion which is now a Town Road where there is a Facility Driveway proposed. There is a bridge/culvert on Morris Tract Road approximately 2,100 feet north of NY-12E that is signed as a Narrow Bridge. There is also a posting of 14 tons at a bridge/culvert on Vaadi Road about 1.25 miles north of NY-12.

Existing Culverts

The NYSDOT maintains an inventory of Bridges and Large Culverts. The NYSDOT only Load Posts Bridges and Large Culverts that have a span greater than 20 feet.

The following are the Bridge and Large Culvert Inspection Ratings Scales as per the NYSDOT Bridge and Large Culvert Inventory Manual and the NYSDOT Culvert Inventory and Inspection Manual/Culvert Field Instruction Guide:

- Inspection Rating Scale for Individual Culvert Items
 - 9 - Condition and/or existence unknown.
 - 8 - Not applicable. Used to rate an item the culvert does not have.
 - 7 - New condition. No deterioration.
 - 6 - Used to shade between ratings of 5 and 7.
 - 5 - Minor deterioration but functioning as originally designed.
 - 4 - Used to shade between ratings of 3 and 5. Functioning as originally designed.
 - 3 - Serious deterioration or not functioning as originally designed.
 - 2 - Used to shade between ratings of 1 and 3.
 - 1 - Totally deteriorated or in failed condition. Potentially hazardous.
- Inspection Rating Scale for Entire Culvert Structure
 - 7 - Like new condition. No repairs required.
 - 6 - May require very minor repairs to pavement, guiderail, shoulders, etc.
 - 5 - May require minor repairs to the headwalls or wingwalls. May require removal of light vegetation growth around culvert openings.
 - 4 - Pavement may require replacement with the addition of backfill material to correct minor roadway settlement problems yet the structure shows no signs of deformation or

settlement. Wingwalls and headwalls may require significant repair work. Some minor work to the channel may be required.

3 - Significant repairs to the pavement are required due to settlement. Slight deformation and settlement of the structure exists. Significant deterioration of wingwalls and/or headwalls exists. Extensive work on the culvert is required. Replacement could be considered a better long term option.

2 - Replacement of the structure is necessary due to serious deformation and settlement of the structure. Short-term, remedial action such as pavement replacement or installation of additional backfill material is required. Temporary shoring may be needed or already exist. A vehicle load restriction is probably posted. Replacement of wingwalls and/or headwalls is required. Alignment of waterway is such that significant, measurable and progressive, general and /or localized scour is occurring. Constriction or obstruction of the culvert opening greatly restricts water flow.

1 - Pavement has settled as a result of significant structure deformation or settlement. Structure has collapsed or collapse is likely. Culvert opening is closed or nearly closed due to embankment soil failure, structure deformation, channel sedimentation, debris accumulation, or vegetation growth. Roadway should have traffic restrictions or be closed to traffic entirely.

Appendix 16-6 contains a map of the culverts along the State Roads in the vicinity of the Site or on possible off-site haul routes for the Facility as provided by the NYSDOT. These roads are not intended to be used by the Facility traffic but are included for reference purposes. A State Culvert Attribute Table of the culverts referenced on the map, as provided by the NYSDOT, including the culvert identification number along with various information including, but not limited to, the year built, the feature crossed, the material type, the design type, the inspection date, the location, and the condition rating.

Based upon a preliminary review of the State culverts in the vicinity of the Facility Site, there is one culvert on a State Roadway that NYSDOT has given a rating of 2 where replacement will be required, unrelated to the Facility. This culvert is located on Interstate 81 crossing an unnamed creek in the vicinity of Perch Creek. The culvert BIN is C730157. There are two culverts on a State Roadway that NYSDOT have been given a rating of 3 where significant repairs could be

required. These are C730132 along NY-12E west of CR-8 crossing a tributary to Chaumont Bay and C730084 along NY-12E just west of Fox Road crossing the Perch River. No other existing culverts along the construction or delivery routes were considered to be in poor condition requiring upgrading or replacing at this time. Prior to construction of the Facility, discussions and coordination will be held with the NYSDOT regarding these culverts. The culvert C730157 that is listed as needing replacement is on an Interstate, so it is currently handling truck traffic. Any re-construction of the culvert would likely be performed with the maintenance of travel in both directions during construction. If re-construction is to occur on the two culverts along NY-12E, it is also likely that traffic will be maintained in both directions. Otherwise, the NYSDOT will establish appropriate detours. If detours are required, they will likely involve NY-180.

The following is a list of the culverts identified along County Roads in the vicinity of the Facility Site or on the portions of the roadways that are possible but not definite off-site Haul Routes to the Facility Site. The County Road number along with the location and feature crossed are provided. A review of the available information did not indicate any posted culverts and there was no available information indicating any needed repair. Culvert locations along Morris Tract Road are included below, however, Morris Town Road was formerly part of CR-125 but is now a Town Road and is no longer under the jurisdiction of the County.

- A) Morris Tract Road (formerly CR-125): The following are the culvert locations along Morris Tract Road between NY 12E (East Main Street) and CR-128:
- 1) Crosses Horse Creek 2,100 ft north of NY-12E (there is a Narrow Bridge sign at this location as was discussed above regarding bridges)
 - 2) Crosses Horse Creek 1,900 ft west of Depauville Road
 - 3) Crosses unnamed stream 1,770 ft east of Sternberg Road
- B) CR 54: The following are the culvert locations along CR 54 between NY-12E and Morris Tract Road:
- 1) Crosses unnamed stream 570 ft north of Copake Lake Rd Exd
 - 2) Crosses unnamed stream 900 ft north of Mullin Road
 - 3) Crosses Sucker Creek 4,000 ft north of Star Schoolhouse Road
 - 4) Crosses unnamed stream 1,200 ft north of Buckminster Road

- 5) Crosses unnamed stream 3,400 ft north of Witt Road

16(c) Facility Trip Generation

An estimate of the trip generation characteristics of the Facility during construction, including:

(1) Number, Frequency, and Timing of Vehicle Trips

To better understand how the construction of the Facility will potentially impact the adjacent roadway system, trips were generated for the Facility Site based on the peak construction workforce and construction equipment deliveries. Typically, these trips would be calculated using the Institute of Transportation Engineers (ITE) Trip Generation Manual, where data from similar sites has been collected and aggregated to provide estimates for peak hour and daily Site traffic volumes. However, there are no published trip generation rates for solar farm construction or similar type construction. The peak daily construction workforce for this Facility is expected to be approximately 130 workers which will be distributed to/from the Facility Site, conservatively assuming one worker per vehicle per day. In addition to construction workforce trips, construction equipment delivery trips were included in the traffic analysis for the construction period. Table 16-3 provides a detailed summary of the expected construction and Facility material delivery vehicles with a brief overview in the subsequent section. Load trips for the “Equipment and Installation” phase (69 trips) were added to the peak construction workforce to conservatively simulate the worst-case traffic operation scenario during the construction period.

During the operational phase of the Facility, approximately four employees will be onsite periodically for vegetation management and routine Facility component maintenance. Heavy vehicles/equipment will not be traveling to and from the Site regularly. This workforce will not affect traffic around the Facility Site and will have no impact adjacent roadways.

The Applicant anticipates entering into RUA's with the Towns and County concerning repairs to any roads damaged by construction of the Facility. Agreements with these agencies will need to be reached in regard to the any weight restrictions or truck restrictions on certain roadways. Construction hours are to be limited to 7 a.m. to 8 p.m. Monday through Saturday and 8 a.m. to 8 p.m. on Sunday and national holidays, with the exception of construction and delivery activities, which may occur during extended hours beyond this schedule on an as-needed basis.

The actual time of day and day of the week for the various construction equipment deliveries will be determined when the construction schedule is finalized.

Site Preparation and Grading Equipment

To be conservative, the capacity analyses contain a high percentage of trucks/equipment in the peak hour calculations to ensure that there is no traffic impact, as illustrated in 16(d)(2) below. Most of the equipment described below will stay on the Facility Site for the days needed, and thus would not be going back and forth to the Facility Site each day.

Graders – It is expected that there will be two graders used for the Facility Site preparation and grading of the Facility. Each grader will have a 174-horsepower engine and have an approximate weight of 43,000 lbs. per vehicle.

Rubber-Tired Loaders – It is expected that there will be two rubber-tired loaders in use. Each loader will have a bucket capacity of approximately 2.1 to 5.0 cubic meters and a 164-horsepower engine. The weight of the rubber-tired loader is approximately 31,000 lbs.

Scrapers – It is anticipated that there will be three scrapers used with approximately 313 horsepower each. The approximate operating weight is 80,000 lbs for each scraper.

Water Trucks – It is expected that there will be two water trucks in use at the Facility Site. Each truck will be equipped with a 189-horsepower engine. Depending on the size of the tank, the average weight can be 50,000 lbs. to 75,000 lbs. for every 2,500 gallons of liquid the average approximate weight will be an additional 25,000 lbs. over the weight of the vehicle carrying the tank, which can range from 17,000 lbs. to 25,000 lbs.

Generator Sets – Two generator sets will be delivered and used for the construction of the Facility.

Trenching and Road Construction Equipment

Excavators – Three excavators will be delivered and used for the construction of the Facility. It is approximated that each excavator will weigh roughly 50,000 lbs. The net power for each excavator will be approximately 168 horsepower.

Trencher – There will be four trenchers used at the Facility Site. These trenchers will have an operating power of approximately 63 horsepower and weigh approximately 8,000 lbs.

Equipment Installation

Crane – It is expected that a Lattice Crawler Crane will be used to construct the Facility. Typical transportation of these cranes requires disassembly and placement on a trailer. It is expected that each crane set up will require approximately seven trailer loads with the main transport load weighing approximately 80,000 lbs.

Forklifts – Eight forklifts will be used during construction of the Facility. The weight of each forklift is approximately 25,000 lbs. The horsepower of each forklift is approximately 145 horsepower.

Pile Drivers – It is estimated that ten pile drivers will be in use at the Facility Site. Each pile driver will have an approximate weight of 30,000 lbs.

Pickup Trucks/ATVs – There will be approximately 45 pickup trucks and All-Terrain Vehicles (ATVs) entering the Facility Site during construction. Each pickup truck will weigh approximately 3,000 lbs. and each ATV will weigh approximately 700 lbs.

Construction Equipment and Materials

Aggregate Trucks – Temporary and permanent access roads will be constructed at the Facility Site to provide access from the existing roadways. The access roads will be constructed of approximately 15,070 cubic yards gravel aggregate material while approximately 9,280 cubic yards will be used for the inverter pads, and substation pads. A total of approximately 1,107 large dump trucks with an approximate carrying capacity of 22 cubic yards and a weight of 80,000 lbs. will be used to deliver the materials to the Facility Site. Construction is expected to occur during the first three - four months, which equates to approximately 15 truck trips per day.

Based on the preliminary cut and fill calculations performed in Exhibit 10 (Geology, Seismology and Soils) no soil is expected to be removed during construction and approximately 1,238 cubic yards of clean fill will be brought in. This will result in approximately 57 truck trips dispersed during the construction period.

Concrete Trucks – Concrete will be necessary for perimeter fencing, inverters and substation foundation associated with the Facility. Approximately 527 cubic yards of concrete will be needed for the substation foundation and approximately 740 cubic yards of concrete will be needed for the fence posts. Trucks with an approximate capacity of eight cubic yards and a weight of 70,000 lbs. will be used to deliver the material to the Facility Site. These vehicles will be of legal size and weight, not exceeding 80,000 lb. load limits. Construction of the substation foundation is not expected during the peak construction period but is expected to occur during the last couple of months of construction, and therefore are not included in the traffic analysis but equates to approximately 2-5 truck trips per day.

Conventional Semi-Trailers – Semi-Trailers will be used to transport the solar array components and construction equipment to the Facility Site. These vehicles will be of legal size and weight, not exceeding 80,000 lb. load limits.

Special equipment Components including substation control rooms, substation poles, generator step-up unit (GSU), inverters, etc. will exceed the legal weight and/or size up to 200,000 lbs. Special hauling permits and/or RUAs along the Facility off-site haul routes will be obtained prior to delivery.

Based on the expected transportation methods and proposed construction work, Table 16-3, below, summarizes the expected number of loaded trips generated entering the Facility Site.

Table 16-3. Expected Number of Loaded Trips

Equipment/Activity	Construction Equipment	Trips Per Piece of Equipment
Site Preparation and Grading	Graders (174 hp)	2
	Rubber Tired Loaders (164 hp)	2
	Scrapers (313 hp)	3
	Water Trucks (189 hp)	2
	Generator Sets	2
	Roller/Compactor	1
Trenching and Road Construction	Excavators (168 hp)	3
	Graders (174 hp)	3
	Water Trucks (189 hp)	2
	Trencher (63 hp)	4
	Rubber Tired Loader (164 hp)	2
	Generator Sets	2
Equipment and Installation	Crane (399 hp)	1
	Crane (165 hp)	1
	Forklifts (145 hp)	8
	Pile Drivers	10
	Pickup Trucks/ATVs	45
	Water Trucks (189 hp)	2
	Generator Sets	2
Commissioning	Pickup Trucks/ATVs	5
Access Roads	Dump Trucks (22 yd ³)	1,164
Fencing & Substation	Concrete Trucks	159

Earthwork activity, construction of access roads, and fencing installation will not occur at the same time as the peak workforce and equipment installation construction period. Added trips for these activities are expected to be approximately 20 trips per day during the first three months and during the final two months, which does not exceed the conservative peak workforce of 130 trips per day and equipment/installation phase of 69 trips. Therefore, dump trucks for earthwork/access roads and concrete trucks for fencing were not specifically factored into the traffic analysis, which only analyzed the peak construction traffic volumes.

(2) Cut-and-Fill Activity

As described above, 7 a.m. to 8 p.m. Monday through Saturday and 8 a.m. to 8 p.m. on Sunday and national holidays, with the exception of construction and delivery activities, which may occur during extended hours beyond this schedule on an as-needed basis. The actual time of day and day of the week for the delivery/removal of any cut and fill, as will the delineation of approach and departure routes, will be determined when the construction schedule is finalized. The routes will likely be similar to those described in Section 16(c)(3) below. Trucks carrying any cut/fill would handle about 22 cubic yards of material and weigh about 80,000 lbs. To be conservative, the capacity analyses contain a high percentage of trucks/equipment in the peak hour calculations to ensure that there is no traffic impact, as illustrated in 16(d)(2) below.

Estimates using the IFP Design Drawings (Appendix 5-1) indicate approximately 1,238 cubic yards of soil fill (not gravel) will be required and imported. The fill is derived from excavations associated with Facility construction. Excess material from excavations will be distributed across the disturbed areas and blended into existing topography to return each area to its approximate original condition. As described above, approximately 24,350 cubic yards of gravel fill will be imported to the Facility Site for roads, inverter pads, and substation pads. There will also be approximately 527 cubic yards of concrete for the substation foundation and approximately 740 cubic yards of concrete for the fence posts. Please see Appendix 5-1 for the IFP Design Drawings and Exhibit 10 for additional information on cut and fill activity.

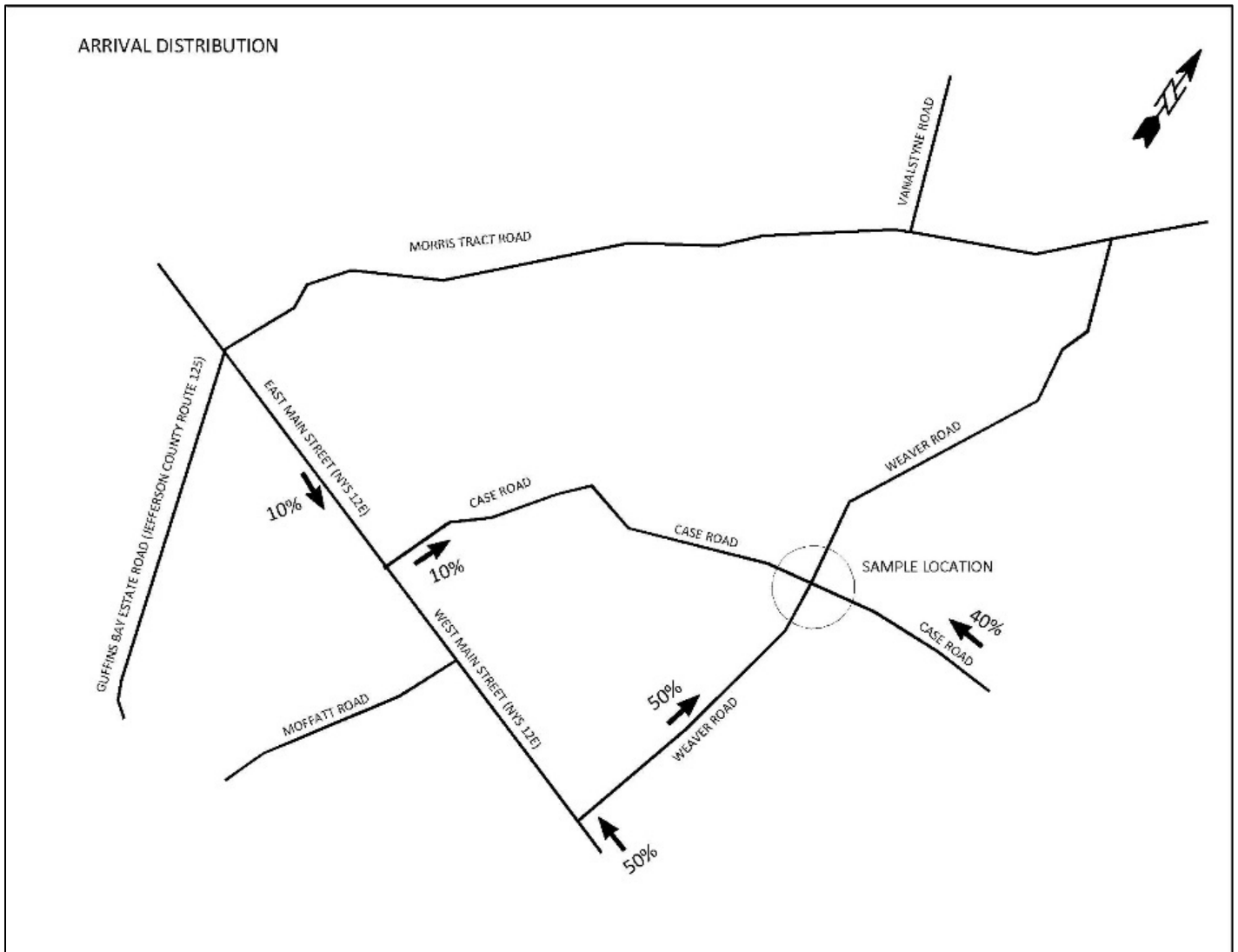
(3) Conceptual Employee Approach and Departure Routes

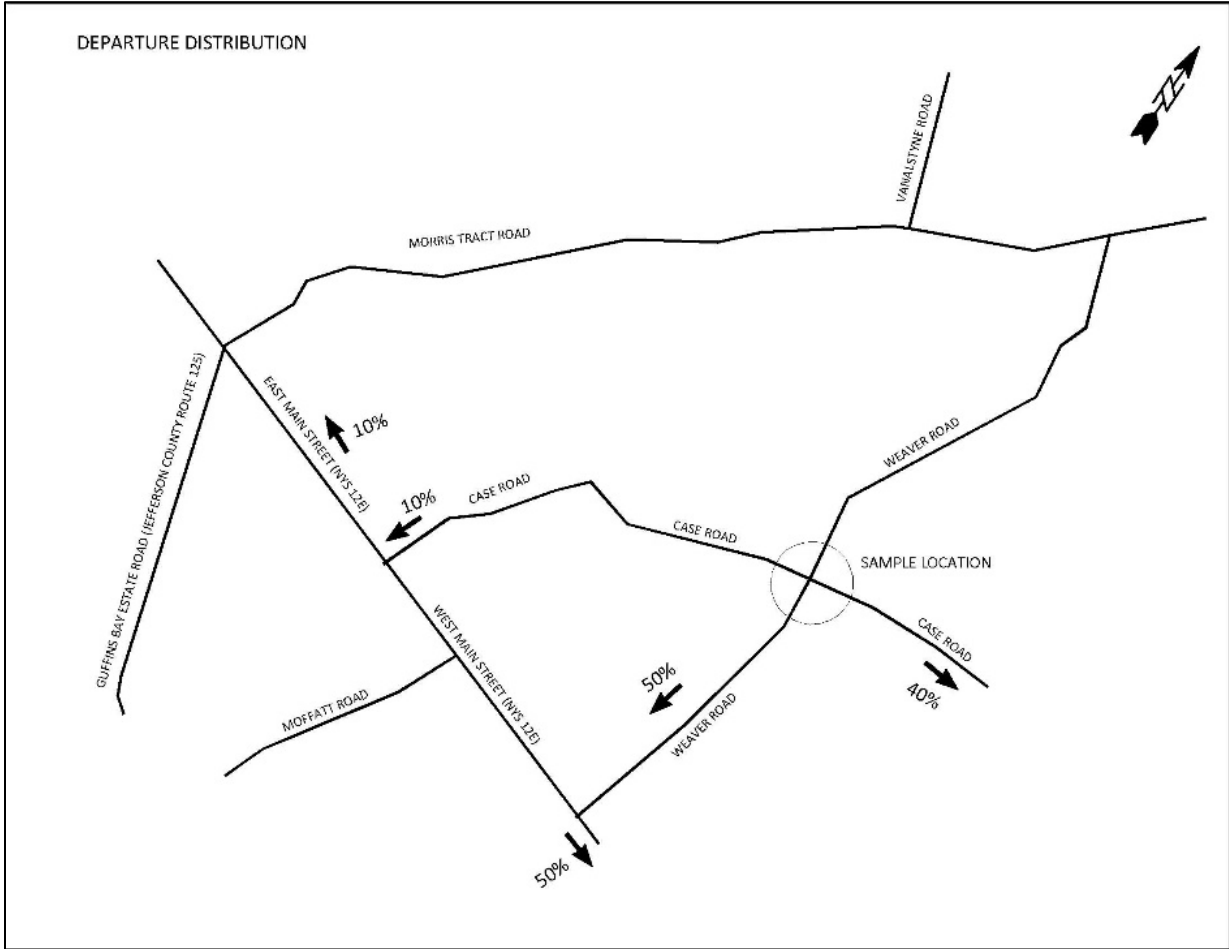
There are various regional routes to reach and depart from the Facility. Interstate 81, about nine miles away, and Interstate 781 are located east of the Facility Site. In the vicinity of the Site, there are different State Routes including NY-12, NY-12E and NY-180. There are also different County Routes including CR-54, as well as local roadways.

Illustrations of preliminary potential key routes from major centers are contained in Appendix 16-7. These include details of the possible routes including turn by turn movements and account for other locations along the routes. For consistency purposes, all of the routes are shown to end at the intersection of Case Road and Weaver Road or the intersection of NY-12 and Allen Road/Vaadi Road.

Graphic 16-2 shows the estimated distribution percentages used in calculating construction worker trips and construction equipment deliveries to and from the Facility Site. There are other potential routes that some vehicles may take but the routes illustrated were utilized to be conservative in the Traffic Analyses.

Graphic 16-2. Facility Site Distribution Percentages





16(d)Traffic and Transportation Impacts

An analysis and evaluation of the traffic and transportation impacts of the Facility, including:

(1) Analysis of Future Traffic Conditions for Wind Facilities

The proposed Facility is a solar project. Therefore, this section is not applicable.

(2) Evaluation of the Road System to Accommodate the Projected Traffic

Any potential traffic impacts will be short-term and primarily due to the temporary influx of personnel and investment during construction. Potential long-term effects to maintain and operate the solar farm are anticipated to be minimal. As mentioned previously in section 16(c)(1), four employees will be onsite periodically for various management/maintenance work, which is significantly fewer trips than the peak construction period of approximately 199

additional trips; therefore, no impacts on future traffic conditions are anticipated as a result of the operation of the Facility. As previously stated, details on frequency of employee visits to the Facility for operation and maintenance will be included in the O&M Plan which will be submitted a Compliance Filing prior to construction.

With the additional trips generated by the construction of the solar farm, the levels of service (LOS) are evaluated for both the existing traffic volumes and construction level traffic volumes to express the performance of the existing roadway facilities. Identification of the anticipated delivery routes is described in 16(c)(3) above. As illustrated below, the extent and duration of traffic interferences during construction of the Facility and any interconnections will be minimal.

Existing Traffic Data

Existing traffic volume data was obtained from the NYSDOT Traffic Data Viewer and NYSDOT Highway Data Services Bureau, where historical traffic count data is available. AADT volumes are provided by route for some of the County and State Routes in the area. Traffic count data was sporadically available for some of the local roads within the Facility Site. The table below summarizes the available traffic data within the Facility Site:

Table 16-4. Available Traffic Data within the Facility Site Area

Site No.	Route/ Road Name	From	To	AADT	Count Station	Count Year
A	Morris Tract Road	North of NY-12E	-	233	736089	2015
B	NY-12	South of Perch Lake Road	-	4912	730213	2018
C	NY-12E	South of Case Road	-	4348	730365	2018
D	NY-180	South of Route 54	-	824	730220	2018
E	Pillar Pint Road (CR-59)	NY-12E	Moffett	208	738152	2015
F	Vaadi Road	West of Vaadi Road Ex	-	303	736092	2019

Roadway Characteristics

Existing roadways within the Facility Site fall into the following functional classifications as defined by NYSDOT Office of Technical Services and Federal Highway Administration (FHWA).

Principal Arterial Interstate – There are two Principal Arterial Interstates located in the vicinity of the Facility Site. Principal Arterial Interstates are roadways classified as an interstate that carry multiple travel lanes and are designated for high rates of speed between major points. Interstate I-81 is located approximately nine miles east of the Site and Interstate I-81 connects to Interstate 81 to the north.

Principal Arterial Other – There are no Principal Arterial Other found within the Facility Site. Principal Arterials Other are roadways classified as a non-interstate that consist of a connected rural network of continuous routes that serve corridor movement having trip length and travel density characteristics indicative of substantial statewide or interstate travel and provide an integrated network without stub connections except where unusual geographic or traffic flow conditions dictate otherwise.

Minor Arterial – There are three Minor Arterial roadways classified by the NYSDOT in the vicinity of the Facility Site: NY-12E, NY-12 (portion) and NY-342. Minor Arterials are often moderate length and usually provide a connection to a higher-level roadway, such as a Principal Arterial. In rural areas, such as the Facility Site, Minor Arterials provide high travel speeds with minimal disruption to the through traveling vehicles.

Major Collector – There are two Major Collector roadways within the Facility Site as classified by the NYSDOT. These are NY-12 (majority) and NY-180. Major Collectors generally have few driveways and also allow for minimal disruption to the through traveling vehicles. Major Collectors can be shorter in length and have fewer daily traffic than Minor Arterials.

Local Road – The rest of the roadways within the Facility Site are identified as Local Roads including Morris Tract Road, Case Road and Weaver Road. Local roads account for the largest percentage of total roadway miles. These roadways are short and are intended for specific local access. Local roads primarily facilitate direct access to adjacent property owners with many driveways and access points.

In addition to the classifications, most of the roadways in the Facility Site are generally rural in nature and generally provide one travel lane in each direction with limited shoulder and roadside treatments. The majority of the existing intersections are stop-controlled. There are very limited signalized intersections in the area. The intersection of NY-12E with CR-180 is signalized.

Performance Methodology

Based on the functional classifications of the roadways in the Facility Site, roadway performance was analyzed by methods described in Chapter 12 and Chapter 15 of the Highway Capacity Manual 6th edition (HCM). Chapter 12 covers the guidance necessary for determining the performance of Multilane Highways, defined as highways with two or more lanes of travel in one direction. Chapter 15 of the HCM provides guidance for determining the performance of Two-Lane Highways, defined as roadways where passing maneuvers take place in the opposing lane of traffic and where segments are in excess of two miles from the nearest signalized intersection. Chapter 15 was recently amended by the National Cooperative Highway Research Program (NCHRP) and calculations for the LOS of two-lane highways were performed using the methodology from their findings.

Chapter 12 of the HCM states that multilane highways can be characterized by three performance measures. Each of the three measures are indicators of how well traffic is being accommodated by the multilane highway segment. The three measures are listed below.

- Density in passenger car per mile per lane
- Space mean speed in miles per hour
- Ratio of demand flow rate to capacity (v/c)

Exhibit 12-15 from the HCM visually depicts the ranges of the density of the multilane highway that determines the LOS. This is illustrated below.

Table 16-5. LOS Criteria for Multilane Highway Segments

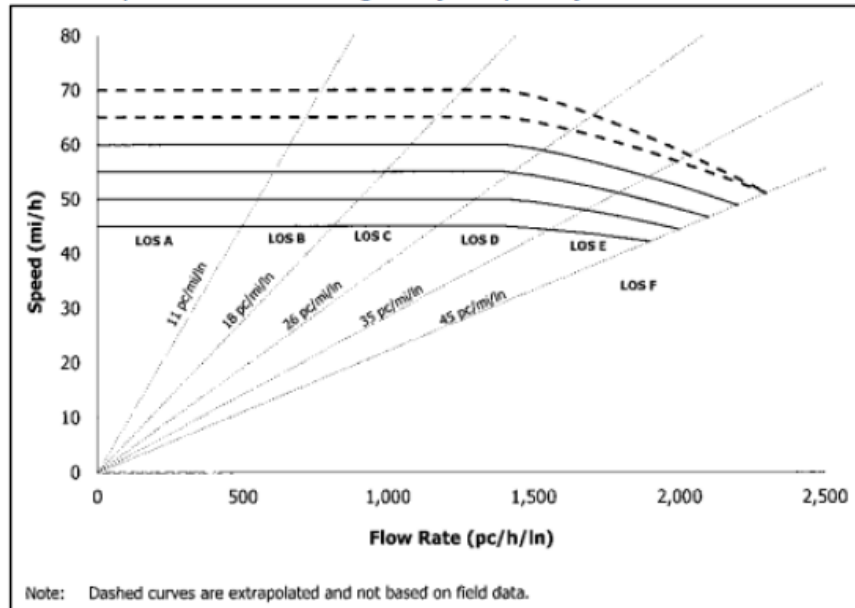
[Taken from Chapter 12 of the Highway Capacity Manual 6th Edition (HCM)]

LOS	Density (pc/mi/ln)
A	≤11
B	>11-18
C	>18-26
D	>26-35
E	>35-45
F	Demand exceeds capacity OR density > 45

Exhibit 12-17 from the HCM graphically represents the speed of the passenger car verses flow rate of the multilane highway segment. This graphic can be seen below.

Graphic 16-3. LOS Criteria and Speed-Flow Curves for Multilane Highway Segments

[Taken from Chapter 12 of the Highway Capacity Manual 6th Edition (HCM)]



Two-lane highway LOS calculations were recently updated within Highway Capacity Software (HCS) 7 based on new studies performed by the NCHRP and published in the *“Improved Analysis of Two-Lane Highway Capacity and Operational Performance (2018)”*. Calculating the LOS for a two-lane highway includes the analysis of the “Follower Density” (FD). FD is calculated by examining the percent follower in the analysis direction and multiplied by the ratio of the flow rate vs. average speed in the analysis direction. This formula is illustrated below in Graphic 16-4. When calculated, the LOS can be determined by comparing the FD value received to the range of values for the LOS as seen in Table 16-6 below.

Graphic 16-4. Follower Density Equation

[Taken from “Improved Analysis of Two-Lane Highway Capacity and Operational Performance (2018)”]

Follower density, for use with Table F-35 is calculated as follows.

$$FD = \frac{PF}{100} \times \frac{v_d}{S} \tag{F-25}$$

where:
FD = follower density in the analysis direction (followers/mi),
PF = percent follower in the analysis direction,
v_d = flow rate in the analysis direction (veh/h), and
S = average speed in the analysis direction (mi/h).

Table 16-6. Follower Density Thresholds

[Taken from “Improved Analysis of Two-Lane Highway Capacity and Operational Performance (2018)”]

LOS	Follower Density (followers/mi/ln)	
	High-Speed Highways Posted Speed Limit ≥ 50 mi/h	Low-Speed Highways Posted Speed Limit < 50 mi/h
	A	≤ 2.0
B	> 2.0 – 4.0	> 2.5– 5.0
C	> 4.0 – 8.0	> 5.0– 10.0
D	> 8.0 – 12.0	> 10.0 – 15.0
E	> 12.0	> 15.0

Existing Level of Service

Based on the existing traffic volumes and existing roadway characteristics, the existing LOS was calculated. It was assumed that the design hour of the roadway accounts for 10% of the AADT and that the directional distribution is 60% of the combined two-way design hour volume.

As shown in Table 16-7 below, under base conditions all roadways within the Facility Site are currently operating as LOS B or better during the design hour which indicates that there are no capacity problems.

Table 16-7. Existing Traffic Volumes & Characteristics for Two-Lane Highways

Site No.	Route/Road Name	Speed Limit (MI/HR)	Design Hour Volume (V/H)	Opposing Direction Volume (V/H)	Follower Density (FOLLOWERS/MI/LN)	LOS
A	Morris Tract Road	55	12	18	0.0	A
B	NY-12	55	389	436	2.9	B
C	NY-12E	45	418	418	4.2	B
D	NY-180	55	41	44	0.1	A
E	CR-159	55	18	18	0.0	A
F	Vaadi Road	45	24	24	0.0	A

Construction Level of Service

To evaluate the impacts that the construction of the solar farm will have on the roadway system, roadways within the Facility Site were evaluated with the additional construction traffic, which can then be compared to the existing roadway traffic capacity analysis. The previously developed 130 peak hour construction worker trips and 69 equipment delivery trips were added to the existing design hour traffic volumes to develop the total traffic volumes during construction. The peak construction trips were combined with the roadway peak hours for analysis purposes to be conservative. Table 16-8 below summarizes the HCS outputs for two-lane highways. Refer to Appendix 16-8 for additional information on HCS outputs for two-lane highways.

Table 16-8. Traffic Volumes & Characteristics for Two-Lane Highways During Construction

Site No.	Route/Road Name	Speed Limit (MI/HR)	Design Hour Volume (V/H)	Opposing Direction Volume (V/H)	Follower Density (FOLLOWERS/MI/LN)	LOS
A	Morris Tract Road	55	12	18	0.0	A
B	NY-12	55	389	436	2.9	B
C	NY-12E	45	528	428	6.0	C
D	NY-180	55	41	44	0.1	A

Table 16-8. Traffic Volumes & Characteristics for Two-Lane Highways During Construction

Site No.	Route/Road Name	Speed Limit (MI/HR)	Design Hour Volume (V/H)	Opposing Direction Volume (V/H)	Follower Density (FOLLOWERS/MI/LN)	LOS
E	CR-159	55	18	18	0.0	A
F	Vaadi Road	45	24	24	0.0	A

It is expected that all roadways will operate at LOS C or better within the vicinity of the Facility Site Area during the peak hour during the peak construction period. Additional construction related vehicles traveling the roadways will have little impact on the roadways due to the minimal existing demand. Future traffic analysis for the operating condition was not performed since that period is expected to have significantly fewer daily trips than the construction period. The construction period represents the absolute worst case in terms of total traffic volumes. Given that the construction period is not expected to have any traffic impacts, with LOS C or better at each segment analyzed, the future operations will function with equal or less traffic operational impacts than the construction period.

(3) Route Evaluation - Over-Size Load Deliveries and Roadway Restrictions

As mentioned at the beginning of this Exhibit, no bridge weight limits were identified within the vicinity of the Facility Site that construction vehicles would utilize. RUAs will be sought with the appropriate agencies, as necessary, to use local roadways. Turning template diagrams for trucks are contained in Appendix 16-9. The roadway system is adequate to accommodate oversize/overweight vehicles without additional mitigation. If a proposed oversize/overweight route is not feasible, then the condition and load rating of the roadway will be checked during the haul route evaluation. Should the review find reason for concern, the structure will be temporarily reinforced for the oversize/overweight component delivery or a different route will be utilized. No other improvements are necessary to accommodate oversize/overweight vehicles that will be used.

(4) Measures to Avoid or Minimize for Impacts to Traffic and Transportation and Road Use and Restoration Agreements

An identification and evaluation of practicable mitigation measures regarding traffic and transportation impacts, including time restrictions, the use of alternative technologies, the construction of physical roadway improvements, the installation of new traffic control devices, and the repair of local roads or other features due to damage by heavy equipment or construction activities during construction or operation of the Facility was performed and is summarized below.

Transit and School Busing – The Applicant has and will continue to coordinate with the local school districts to avoid impacts and delays to bus routes throughout the construction process. Local school districts will be advised in advance of any road closures so that alternative routes can be developed. It is expected that overall impacts to the local school districts busing program will be minimal and no significant mitigation exceeding ongoing coordination is recommended. Similar coordination will be performed with the pertinent Public Transportation bus providers, although there are none near the Facility Site.

Emergency Response – The Applicant has and will continue to coordinate with local emergency service providers throughout the construction process, so that they are aware of any sporadic road closures that may impact their routing decisions during the duration of the closure. They will also be kept informed of expected site work and number of workers so that emergency response can be planned for in advance. It is expected that overall impacts to the local emergency service providers will be minimal and no significant mitigation exceeding ongoing coordination is recommended.

Traffic Impacts – It is expected that all roadways will operate at LOS B or better within the Facility Site during the peak hour of the day. The results of the traffic analysis indicate that no new traffic control devices (such as road signage) are required and that there will be minimal impacts to the traveling public during the peak construction period and virtually no impact to the traveling public during off-peak periods. Thus, measures such as timing restrictions are not required. No capacity improvements or roadway upgrades are required to accommodate the construction of the proposed facilities. The Applicant anticipates entering into RUAs with the Towns and County concerning repairs to any roads damaged by construction of the Facility. Agreements with these agencies will need to be reached in regard to the any weight restrictions

or truck restrictions on certain roadways. If any oversize/overweight permitting and road feasibility issues arise, RUAs and Restoration Agreements as well as the necessary Permits, as described below.

Road Use and Restoration Agreements – A copy of all road use and restoration agreements, if any, between the Applicant and the Towns and County regarding repair of local roads damaged by heavy equipment, construction or maintenance activities during construction and operation of the facility will be provided as part of Traffic Control Plan submitted as a compliance filing.

The Applicant anticipates that the large dimension and weight of several components (control rooms, substation poles, GSU, etc.) will require special hauling permits and/or RUAs along the Facility haul routes. The types of NYSDOT and County permits required depend on the characteristics of the vehicle and its cargo, number of trips, distance traveled, and trip duration. NYSDOT defines oversize/overweight vehicles as those exceeding the dimensions provided in Table 16-8 below (e.g., overall, inclusive of load, bumpers, etc.).

Any vehicle exceeding 16 feet wide, 160 feet long, 15 feet 11 inches high or 199,999 lbs. will require a superload permit. The application/permit process can be done online through the NYSDOT website. The fee structure for the superload permit is also published online and is cumulative based on load configuration and weight.

Table 16-9. NYSDOT Over-size/Over-weight Vehicle Dimensions

		State Highway	Qualifying or Access Highway
A.	Width of Vehicle, inclusive of load	8 feet	8 feet 6 inches
B.	Height of vehicle from underside of tire to top of vehicle, inclusive of load	13 feet 6 inches	13 feet 6 inches
C.	Length of single vehicle inclusive of load and bumpers	40 feet	40 feet
D.	Length of a combination of vehicles inclusive of load and bumpers	65 feet	Unlimited
E.	Length of a single trailer	48 feet	53 feet
F.	Length of a single twin trailer	28 feet 6 inches	28 feet 6 inches

Prior to construction, the Applicant and/or contractor will obtain all necessary permits from the NYSDOT. RUAs with the Towns will be sought, as applicable.

The Applicant is requesting in this Application delegation to NYSDOT for any required NYSDOT highway work/use/hauling permits. The Applicant plans to enter into any other required approvals from the Towns and Jefferson County for the installation of collection lines, as applicable. The Applicant will discuss with the County any potential permitting for County rights of way. Exhibits 24 and 25 provide a further discussion of any potential approvals.

In accordance with the anticipated RUAs, directly prior to construction, a survey of the local roadways used to access the Facility Site will be carried out by appropriately qualified engineers (and NYSDOT, County Highway, and Town Highway Departments as available) to assess and document current existing road conditions as requested by the Towns or County. Any extraordinary damage or over-run caused by vehicles during the construction period is to be documented and repaired to agreeable standards under a RUA with the relevant authority (State, County, or Town, as applicable). The Applicant will repair damage done to roads affected by heavy equipment or construction activities thereby restoring the affected roads to a condition equal to or better than documented by the pre-construction survey. Roads will also be maintained in good working order during construction and operation.

16(e) Public Transportation, School Bus Routes, and Aeronautical and Military Operations

The Facility is designed to avoid and mitigate impacts to mass transit, and aeronautical and military operations. Mass transit systems are limited within the Study Area; therefore, impacts are not anticipated, and mitigation measures will not be required.

As noted above, the Applicant will coordinate with local school districts and the Public Bus providers to avoid impacts and delays to bus routes throughout the construction process.

The Federal Aviation Administration (FAA) evaluates potential impacts on air navigation for proposed structures that exceed certain criteria, such as heights greater than 200 feet above ground level and in close proximity to public use and military airports (14 Code of Federal Regulations [CFR] §77.9(a-e)).

Watertown International Airport in Dexter, NY is the main airport in the area, about five miles southwest of the Facility Site, and serves the public as well as military personnel from Fort Drum

and the 10th Mountain Division. There is a military airport at Fort Drum, approximately 18 miles east of the Site.

Small local airports in the area include John Gonzales Field Airport (NY69) in Cape Vincent.

16(f) FAA Notice of Proposed Construction

Based on the finding of the FAA Notice Criteria Tool, the proposed Facility does trigger the need to consult with the FAA due to its proximity to the Watertown International Airport. The Applicant submitted the FAA form 7460-1 Notice of Proposed Construction or Alteration on July 28, 2021 for the proposed solar facility to the administrator of the FAA in accordance with 14 Code of Federal Regulations (CFR), Part 77. An aeronautical space study associated (ASN: 2021-AEA-9650-OE) with the Project, and aeronautical and military operations impacts will be evaluated and determined through the FAA's Form 7460-1 process. The Applicant received a letter of determination to no hazard to air navigation on August 16, 2021 which has been included in Appendix 6-3.

(1) Statements of Review

The Applicant submitted a request to the Department of Defense (DoD) on July 28, 2021 for an informal review in accordance with 32 Code of Federal Regulations Section 211.7. The Applicant received a response on September 3, 2021 stating that the proposed Facility will have minimal impact on military operations conducted in the area. The response has been included in Appendix 6-3.

(2) Wind Facility Location Requiring FAA Review

The proposed Facility is a solar facility. Therefore, this section is not applicable.

(3) Responses to FAA Facility Operator Reviews and Consultation

As previously stated in Sections 16(e)(1) and 16(e)(2), on July 28, 2021, the Applicant submitted the FAA form 7460-1 Notice of Proposed Construction or Alteration for the proposed solar facility to the administrator of the FAA and requested an informal review by the DoD regarding construction of the Facility. A response from the DoD was received on September 3, 2021 stating that the proposed Facility will have minimal impact on military operations

conducted in the area. A response from FAA of determination of no hazard to air navigation was received on August 16, 2021, as previously stated (Appendix 6-3).

On March 27, 2020 the Applicant consulted with the Fort Drum Military Base located approximately 18 miles east of the Facility Site in order to determine potential impacts to the Base associated with the proposed Facility. Maps of the Facility Site and surrounding region were provided for review. Following this review a response was received on March 30, 2020 indicating that Fort Drum did not identify any potential impacts to their operations associated with the proposed Facility.

Conclusions

While there will be a temporary increase in traffic in the vicinity of the Facility during construction, that traffic will be short-term, and will mostly be due to commuting personnel. Most equipment will stay on Site for the duration of time in which it is needed, to reduce the amount of equipment transportation trips. The Applicant will enter into Road Use Agreements with Towns and County concerning any necessary road repairs. There will be no traffic impacts during Facility operation. The Facility has been designed to comply with 19 NYCRR § 900-2.17 and the Uniform Standards and Conditions (USCs) and impacts related to transportation have been avoided and minimized to the maximum extent practicable.

References

- American Association of State Highway and Transportation Officials (AASHTO) – A Policy on Geometric Design of Highways and Streets, Seventh Edition, 2018, 44 North Capital Street, N.W., Suite 249, Washington, D.C. 20001 Accessed May 2021
- Brownville Fire Department. <https://www.facebook.com/brownvillefd/> Accessed May 2021
- Chaumont Volunteer Fire Department. <https://www.facebook.com/Chaumont-Volunteer-Fire-Department-227911064000/> Accessed May 2021
- General Brown Central School District. <https://www.gblions.org/> Accessed June 2021
- Jefferson County Fire and Emergency Management.
<https://co.jefferson.ny.us/departments/FireDepartment> Accessed May 2021
- Jefferson County Sheriff's Office. <https://co.jefferson.ny.us/departments/SheriffsOffice> Accessed May 2021
- Lyme Central School District. <https://www.lymecsd.org/> Accessed June 2021
- National Academies of Sciences, Engineering, and Medicine. 2018. Improved Analysis of Two-Lane Highway Capacity and Operational Performance. Washington, D.C.: The National Academies Press. Available at <https://doi.org/10.17226/25179> . Accessed May 2021.
- New York State GIS Clearinghouse (<https://gis.ny.gov/> and <http://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1255>), Accessed May 2021.
- New York State Department of Environmental Conservation (NYSDEC) Region 6
<https://www.dec.ny.gov/> Access June 2021
- New York State Department of Transportation (NYSDOT). Engineering Division – Office of Design. Highway Design Manual Available at <https://www.dot.ny.gov/divisions/engineering/design/dqab/hdm>. Accessed May 2021.
- NYSDOT. FOIL Request New York State Department of Transportation Records Through the New York State Freedom of Information Law. Available at <https://www.dot.ny.gov/main/foil-form-challenge>. Accessed May 2021.

NYSDOT. Functional Class Viewer and Class Map. Available at gis.dot.ny.gov/fc. and <https://www.dot.ny.gov/gisapps/functional-class-maps> Accessed June 2021.

NYSDOT. Functional Classifications. Available at <https://www.dot.ny.gov/divisions/engineering/applications/traffic-data-viewer/tdv-definitions/Functional-Classifications.htm> . Accessed June 2021.

NYSDOT. New York State Highway Bridge Data. Available at <https://www.dot.ny.gov/main/bridgedata> . Accessed May 2021.

NYSDOT. NY State Highway Bridge Data. Available at <https://www.dot.ny.gov/postedbridges>. Accessed May 2021.

NYSDOT. NY State Highway Bridge Data: Available at <https://www.dot.ny.gov/gisapps/posted-bridges/r-posted-bridge-limitation>

NYSDOT. Culvert Inventory and Inspection Manual/Culvert Inspection Field Guide, May 2006. Accessed May 2021.

NYSDOT. Bridge and Large Culvert Inventory Manual, July 2020. Accessed May 2021.

NYSDOT. Large Truck Restrictions Available at <https://www.dot.ny.gov/portal/page/portal/nypermits/large-truck-restrictions> Accessed May 2021.

NYSDOT. Letter from Kent E. Collier, P.E., NYSDOT Project Manager regarding Public Information Meeting for replacement of NY-12E Bridge over Chaumont River, dated May 26, 2021. Accessed June 2021.

NYSDOT. Over Size/Over Weight Vehicle Pre-Screening Tool. Available at <https://gis.dot.ny.gov/html5viewer/?viewer=osowscreen> . Accessed May 2021.

NYSDOT. Over Size/Over Weight Vehicle Dimensions Available at <https://www.dot.ny.gov/nypermits/repository/PERM30.pdf> . Accessed May 2021.

NYSDOT. Posted Bridges. Available at <https://www.dot.ny.gov/postedbridges> Accessed May 2021.

NYS DOT. Traffic Data Viewer. Available at <https://www.dot.ny.gov/tdv> . Accessed May 2021.

New York State Police Troop D Headquarters. <https://troopers.ny.gov/location/troop-d> Accessed May 2021

Thousand Islands Central School District. <http://www.1000islandsschools.org/> Accessed June 2021

Three Mile Bay Fire Company Inc. <https://www.facebook.com/ThreeMileBayFireCompanyInc/> Accessed May 2021

Transportation Research Board. 2016. Highway Capacity Manual, Chapter 15. Washington, D.C. Accessed May 2021

United States Department of Defense (DoD) (2019). Military Aviation and Installation Assurance Siting Clearinghouse. Available at <https://www.acq.osd.mil/dodsc/index.html> . Accessed May 2021.

Watertown CitiBus. <https://www.watertown-ny.gov/index.asp?NID=110>. Accessed May 2021

Watertown International Airport. 22564 Airport Drive, Dexter, NY 13634
<https://www.watertownairport.com/> Accessed June 2021