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September 4, 2020

Supervisor Linda Puglisi and Town of Cortlandt Board
Town of Cortlandt
1 Heady Street
Cortlandt Manor, NY 10567

Subject: Port Cortlandt Update – Technical Memoranda

Dear Supervisor Puglisi and Town of Cortlandt Board Members:

AKRF is submitting five technical memoranda for your consideration with regard to the proposed Port Cortlandt project:

- Port Operations
- Traffic Impact Assessment
- Noise Impact Assessment (this memo will be forthcoming next week due to important data we are incorporating that was received last minute)
- Economic and Fiscal Impact Assessment
- Visual Impact Assessment

As stated in our August 12 letter to the Town, we are providing these preliminary studies to provide the Town with quality technical memoranda based on over one year's concentrated effort and understanding of the primary areas of concern associated with the project. We understand the project does not conform to the typical SEQRA schedule to which the Town is accustomed; New York State's expedited schedule reflects the priority it is placing on its offshore wind development program as articulated by its U.S. industry-leading goals for renewable energy generation.

We want to be as transparent as possible, and thereby keep the Town and other stakeholders supplied with any information we learn. To be consistent with such, provided below is a description of the major assumptions in each of these memoranda, and the basis for each:

OVERVIEW

Prior to securing a tenant, we have been researching the field and working with two separate Tier 1 offshore wind turbine manufacturers, plus offshore wind developers, to investigate the potential for manufacturing large-sized offshore wind components at Port Cortlandt. "Tier 1" wind turbine manufacturers, of which there are only three outside of China, represent the top level of the supply chain and supply the largest final components ready for installation for offshore wind turbine generators. This is the scale of manufacturing we see potential for at the Port Cortlandt site.

From these discussions, we gleaned that the Port Cortlandt site would be most suitable for the fabrication of offshore wind blades or nacelles. Both of these components are very large and must be assembled in proximity to water for marine transport. The two components also present distinctively different issues related to their production, delivery of materials, storage, and transport.

In these technical memoranda, we have included the latest information available. In some cases, due to an initial dearth of data, we made very conservative assumptions (see the attached "Traffic Impact Assessment" as an example). In other cases, we have been able to incorporate very recent data that made us change original assumptions: at the end of August, we received "next generation" confidential specifications from one manufacturer indicating the manufacturing building height could be more on the order of 60 feet tall, not 40 or 50 feet (see the attached "Visual Impact Assessment"). Since the height of any structure on the site would be a function of the use (blade or nacelle) and the equipment required to fabricate such, it appears that the design requirements for a facility designed to meet offshore wind's next generation requirements would likely be taller, because internal cranes taller than the final products would be needed to move materials within the facility. While certainly the final building structure and layout will be tenant- and use-determined, these technical memoranda use the best available information to reveal the key issues at hand, the means to address potential impacts on the community, and provide as full a look as currently possible of key technical areas that will be further examined in the Draft Generic Environmental Impact Statement (DGEIS). The DGEIS will also look at potential impacts of subsequent development that may be facilitated by the proposed actions associated with the project.

GENERAL PROJECT DESCRIPTION ASSUMPTIONS

As noted in the proposed Draft Scope of Work submitted to the Town on August 21, 2020, the general project description that we have based these memoranda on is the following:

- Approximately 5 acres of the Town's 34-acre upland "parcel" would be utilized to construct a 220,000-square-foot, 50-foot-tall manufacturing building on the eastern (i.e., upland) portion of the site (note that we chose a 50-foot-tall building for analysis purposes as a result of our own observations of offshore wind manufacturing buildings, which we discerned to be taller than 40 feet and due to the need to be conservative in our assumptions; we did not at that time know that newer generation buildings would likely require buildings of 60 feet and the scope and proposed text amendments will need to reflect such). Large-scale wind turbine components would be manufactured/fabricated inside the building.
- Approximately 12 acres of the Town's 34-acre upland "parcel" would be utilized for temporary outdoor storage of manufactured wind turbine components.
- Approximately 8 acres of the Town's 20-acre riverfront "parcel" would be utilized for a port facility, where manufactured components can be loaded via crane onto barges for transport south through New York Harbor to staging ports in the region or directly out to sea for assembly at wind farms off the coast of New York State. The proposed berth at the port is currently envisioned to accommodate one barge at a time, with a reinforced shoreline consisting of sheet pile bulkhead and rip-rap revetment. It is important to note that now with Waterson Terminal Services (introduced in greater detail below) on the team as the Port Operator and only recent discussions with a second Tier 1 manufacturer, plus recommendations from offshore wind developers in the first week of September to "future-proof" the port and manufacturing building (e.g., invest and prepare for the "next generation" of nacelles/blades), we will continue to take a hard look at the port options for flexibility.
- A 50-foot-wide (two-lane) internal private road, connecting the site's primary access/egress point on Broadway (approximately 975 feet north of 16th Street) to the manufacturing building/storage area and the riverfront port area.

- An approximately 300-space open-air surface parking lot for use by facility staff, proposed on the upland portion of the site to the west of the manufacturing building. This lot would be accessible via a 25-foot-wide driveway extending off the main access road.

We continually share with the Town any new information we receive. Most recent examples of such include such questions as "Will there be large cranes in or near the river especially when loading barges?" "How high are they?" and "How many will there be?" As we noted in our response, we are learning more every day, and will provide information as we learn of it. With respect to these questions, it will depend on the tenant. One offshore wind developer has suggested we re-look at finger piers with lower-height gantry cranes that would be used to lift heavy loads onto barges. Another developer suggested we look only at roll on/roll off devices, so no significant cranes (or investments for such) would be required near the water for nacelles. Moving forward, we will provide answers to all questions about these options as they develop.

PORT OPERATIONS

Chris Waterson, of Waterson Terminal Services (WTS), has recently joined our team. Chris was at the site visit on September 2 and has drafted the memorandum of the expected port operations. Chris is a great resource for our team and as described below, has first-hand experience with the inside operations of blade and nacelle facilities from his previous travels to Europe. He is able to provide insights from such visits and has been working directly with us and with one Tier 1 supplier's logistical personnel to better lay out the likely port operations for that potential tenant. The attached memorandum provides WTS's qualifications as a privately owned full-service port management and stevedoring company with a wide breadth of industry experience. The firm is certified under the Green Marine program, which is a voluntary initiative by the maritime industry to exceed environmental regulations and increase community engagement.

As mentioned previously, Chris has had the opportunity to visit both a blade and nacelle manufacturing facilities in Europe. The blade facility was owned by Siemens-Gamesa, located in Hull, UK. The facility is known as Greenport, Hull. Blades are manufactured in a large building (see **Image 1**), and there was a large outdoor area to store finished product. Due to proprietary manufacturing techniques, they do not allow visitors inside of the facility, but the area outside of the building was very quiet. This particular facility supports 1,000 direct jobs, mostly blue collar.

Image 1 Blade manufacturing, Hull, UK

In Denmark, Chris visited the MHI Vestas nacelle assembly facility in the Port of Odense and was able to tour the inside of the facility. **Image 2**, provided by the manufacturer, shows the facility and the size of

their 400-ton, 8-megawatt (MW) nacelle relative to the workers standing next to it. While touring with a group of about six people, he could engage in normal conversation; no hearing protection was required inside. Outside, the facility looked like a large warehouse with very little activity. This particular assembly site produces a completed nacelle every 4 to 5 days and employs roughly 500 blue- and white-collar workers.

Image 2 MHI Vestas nacelle facility, Port of Odense, Denmark

The attached "Port Operations" memorandum develops the current vision for the Port Cortlandt operations that would most likely support supply chain logistics, both inbound and outbound, for either a nacelle or a blade manufacturing facility for offshore wind turbines. The memorandum describes the likely operations, expected hours of operation, and estimated frequency and sizes of trucks/barges/ships and cranes at the port. The current estimate is for about 75 nacelles manufactured per year on the Town of Cortlandt property with most of the outbound transportation occurring between March and October. Chris has also provided estimates of port activity if blades were fabricated in the future on upland Indian Point Energy Center (IPEC) properties in addition to nacelles at the Town property, in case such a future scenario arises.

Chris will be available for further questions at the meeting with Town Staff on September 10 (even though he is on vacation), the September 14 Town Board meeting, the Town Board September 20 work session and the Town Board September 21 meeting. He and the rest of the project team are available before such meetings to address any additional questions related to port operations.

TRAFFIC IMPACT ASSESSMENT

The traffic impact assessment follows the methodology described in the proposed Draft Scope of Work.[1] We made conservative assessments for the number of employees (more than 300), number of shifts, and the truck traffic associated with either a blade or nacelle manufacturing facility. The key project assumptions are a manufacturing facility including:

[1] **Appendix A** to the Traffic Impact Assessment will be provided to the Town under separate cover by September 13, 2020.

- Up to three shifts and 24-hour operation
- A total of 400 employees (200 during the AM work shift and 100 each in the other two shifts)
- Approximately 80 truck trips per day (which assumes half the number of truck trips currently handled by the adjacent Continental Products Operations, a 24-hour day, and five to six days per week operation with no outdoor work).

The Tier 1 manufacturers we consulted for this traffic impact assessment used two different business models. The first indicated that no deliveries would originate from the waterside/barges, and all supply materials would be delivered by truck. As of September 5, 2020, we do not have formal estimates of such from this manufacturer but will try to provide any updates at the September 14 meeting. In late August/early September, the other Tier 1 manufacturer indicated that to start and for the foreseeable future, most deliveries would be large, pre-assembled nacelle components delivered by either barge or ship, and that absent FedEx/UPS types of deliveries, they would expect two truck deliveries per day during normal business hours. This represents a significant reduction between what is modelled in the attached memorandum and what would be expected from truck traffic if this Tier 1 manufacturer were to lease the site.

NOISE IMPACT ASSESSMENT

The noise impact assessment memorandum will be submitted before our meeting with the Town Staff on September 10, and will highlight the likely key sources of noise, including vehicular traffic to and from the proposed project site and noise from on-site sources both internal and external to the offshore wind turbine manufacturing facility. The primary reason for the delay is that we are now confident that the upland operations would not require any outdoor operations/movement of materials during non-daylight conditions, and are reflecting the analyses to note such restrictions. In addition, based on the limited production rates (see the attached "Port Operations" memorandum), there is great flexibility for the movement of finished products from the manufacturing building and for coordination movements of such to the shorefront port. The assessment of operational noise impacts will account for attenuation of manufacturing noise expected from working within an enclosed facility (indoors). We are reaching out to Tier 1 suppliers before the September 14 meeting to get additional anecdotal information on how often doors open/close to such a facility during normal working hours or outside normal working hours. Both Tier 1 manufacturers consulted thought noise from fabrication would not be significant. One Tier 1 manufacturer for a nacelle facility did not think that indoor work would require ear protection per OSHA guidelines, and that for indoor work, the largest noise sources would be cranes, air tools, and electrical testing. For the September 14 meeting, we will provide any additional information we discover in the interim.

ECONOMIC AND FISCAL IMPACT ASSESSMENT

The attached memorandum uses the best information currently available to address the key issues identified in the proposed Draft Scope of Work. The memorandum focuses on the proposed offshore wind manufacturing facility; an analysis of economic and fiscal impacts of the associated proposed actions outlined in the Draft Scope of Work will be provided within the chapter of the DGEIS dedicated to potential future phases/buildout of select waterfront areas/parcels.

The economic benefits analysis assumes lower-than-anticipated construction cost ($100 million) and direct operational employment (300 on-site workers) to model the direct, indirect, and induced jobs; labor income; and economic output generated by the project during construction and annual operations. As AKRF continues to work with developer interests and prospective tenants, the economic benefits modeling will be

refined to more accurately reflect the level of construction and operational site activities. Even with these conservative assumptions, the economic benefits of the project would be substantial, the jobs generated would span a wide range of industry sectors and skill sets, and the economic development opportunities facilitated by the project are consistent with the *2016 Sustainable Comprehensive Plan.*

With respect to fiscal impacts, the memorandum details a contemplated Port Cortlandt payment-in-lieu-of-taxes (PILOT) or Host Community agreements that, as proposed, would over an initial five-year period (2021–2025) provide the funds necessary to fill the annual budget gaps left by the Indian Point Energy Center PILOT to local entities that are not met through available grants funds from the New York State Electric Generation Facility Cessation Mitigation Program. As detailed in the memorandum, the proposed Port Cortlandt PILOT or Host Community agreement revenues are projected to exceed $50 million over this first five-year period, with an estimated $49.9 million for the Hendrick Hudson School District and $1.7 million for the Town. Verplanck Fire and the Hendrick Hudson Free Library also would receive Port Cortlandt revenues to fully offset budget gaps remaining after cessation grant funds. The Port Cortlandt PILOT or Host Community agreement as proposed would eliminate a short-term need to reduce budgets, which could jeopardize the quality of municipal and school services. It also would eliminate a short-term need to increase property taxes, which would erode housing affordability and the Town's attractiveness as a place to live, work, and play. While these payments would only be for five years (since it will be tied to an energy solicitation award from 1,000 to 2,500 Megawatts for offshore wind for New York), once a hub is invested in, future PILOTs and/or Host Community agreements afterwards would be tied to further energy solicitation awards, securing a long term commitments to PILOTs and/or Host Community agreements over time.

VISUAL IMPACT ASSESSMENT

The attached memorandum summarizes the results of the visual impact assessment from four representative vantage points around the proposed project site:

- Broadway north of 16th Street looking southwest
- Broadway at 14th Street looking west
- Broadway between 11th and 13th streets (at Letteri Ballfield) looking west
- 11th Street at St. Patrick's Church looking northeast

The selection of these initial vantage points was based on our familiarity with topographic conditions in the area and the publicly accessible view corridors presented by the roadway network and land uses in the vicinity of the site. The methodology presented compares existing with proposed views, reflecting the methodology currently contained in the Draft Scope of Work dated August 21, 2020. The accompanying photo simulations and renderings depict the upland manufacturing facility at the maximum height of 40 feet from one Tier 1 manufacturer. As previously mentioned, it is possible that this building could be on the order of 20 feet taller, so additional photo/video simulations will be developed for a building on the order of 60 feet tall. The photo simulations are discussed and include observations of seasonal variations in visibility (leaf-on vs. leaf-off), existing vegetative cover on the site to remain, and elements of the proposed landscaping/buffering plan that could provide additional visual screening from neighboring properties. Such screening measures would be in conformance with the guidelines found within the Town Code for manufacturing districts abutting residential districts. Lastly, two "bird's eye" view renderings of a proposed project (also included in the Draft Scope of Work) are presented. These figures depict the proposed port and manufacturing facilities from a northeasterly aerial view, and provide context for how the proposed project will be located and operated in relation to the surrounding community. In coordination with the Town, the details of the proposed landscaped berm and plantings on the site's perimeter will be further refined as part of the DGEIS and Site Plan approval process, to minimize potential adverse visual impacts.

CLOSING REMARKS

We hope that you find the attached quality technical memoranda provide a good foundation for understanding how the introduction of a state-of-the-art offshore wind turbine manufacturing facility may affect your community. As previously stated, we are open to any questions you may have prior to and during the next scheduled meeting with the Town Board on September 14.

We also reiterate our request for your letter of support for inclusion in the October 2020 proposal to the New York State Energy Research and Development Authority for ORECRFP20-1 ("Purchase of Offshore Wind Renewable Energy Certificates"), which must include Port Infrastructure Investment Plans that demonstrate a path for site control. AKRF would greatly appreciate receiving this letter by at the September 21 Town Board meeting at the latest , so that we can supply the letter to the offshore wind energy developers—each of whom is taking significant risks with the port commitments they include in their submissions due October 20 with awards expected in December.

We can be reached at 646-388-9721 and mlee@akrf.com or 914-922-2359 and arusso@akrf.com for questions or additional information. We will continue to keep you informed of the latest updates and information pertaining to Port Cortlandt.

Sincerely,

Michael P. Lee
President
AKRF, Inc.

Anthony P. Russo
Vice President
AKRF, Inc.

Cc: Hon. Theresa Knickerbocker, Mayor, Village of Buchanan
Joseph Hochreiter, Hendrick Hudson School District
Trustees of the Village of Buchanan
Michael Preziosi, P.E., Director of Technical Services for the Town of Cortlandt
Bridget Gibbons, Director, Westchester County Office of Economic Development
Tom Carey, President, Westchester/Putnam Central Labor Body AFL-CIO
Karen Franz, P.E., Chief Executive Officer, AKRF, Inc.

Port Cortlandt Technical Memorandum

Port Operations

Waterson
Terminal Services

Port Cortlandt Technical Memorandum
Port Operations

A. INTRODUCTION

This technical memorandum provides a look at potential port operations proposed on the Port Cortlandt site. It should be noted that the description of port operations presented herein will be subject to further amendment and clarification as the Proposed Project evolves, to include additional information about the potential tenant on site as such becomes available, and any details requested by the Town and the public through the Draft Generic Environmental Impact Statement (DGEIS). The description of offshore wind manufacturing in this technical memorandum is based on the Applicant's—specifically Chris Waterson's—familiarity with such facilities based on his broad professional experience, particularly as general manager at Waterson Terminal Services (WTS), and from his site visits to offshore wind manufacturing facilities in Europe as detailed in the cover letter. WTS is the proposed Port Operator for the Port Cortlandt project.

ABOUT WATERSON TERMINAL SERVICES

WTS is a privately owned, full-service port management and stevedoring (marine cargo handling and logistics) company with a wide breadth of industry experience. WTS manages ProvPort, a 120-acre general cargo marine terminal located in Providence, Rhode Island, and specializes in dry and liquid bulk, roll on/roll off, and project cargo handling. WTS has full responsibility for the management of all terminal operations, including tenant relations, safety, scheduling of vessels, berths management, capital improvements and compliance with regulatory agencies. WTS is also a licensed stevedore at the ports of Davisville, RI and New Bedford, MA.

QUALIFICATIONS

WTS has developed a wealth of experience in the port management industry since its inception and is highly qualified to manage all aspects of port operations. Qualifications include:

- An executive team with over 75 combined years of port management and stevedoring experience, including the direct cargo handling management of tens of millions of tons.
- A highly skilled and trained workforce with flexible scheduling allowing for 24/7 operations.
- A stellar health and safety record, with zero lost time incidents in the company's 11-year history.
- An equipment fleet including two mobile-harbor cranes (124-megaton [MT] capacity each) with a barge for transport between port facilities.

- Access to capital through a network of potential debt and equity partners.
- Highly developed relationships within the offshore wind industry, including developers, foundation fabricators, and turbine original equipment manufacturers (OEMs).

Green Marine Certification

In 2018, WTS was certified under the Green Marine program, which is a voluntary initiative by the maritime industry to exceed environmental regulations and increase community engagement. Through that program, WTS has pledged to continuously improve its performance in a number of categories, including greenhouse gas emissions, spill prevention, waste management and community impacts. Currently, WTS has policies and procedures in place to limit the impact of port operations on the community, including:

- Posting a phone number to receive complaints related to port activities, and swiftly dispatch a responsible individual to address the issue and take corrective action where possible.
- Adopting procedures to reduce noise from warning signals without limiting safety, limiting machine idling when possible, and making every effort to purchase equipment with the lowest noise impacts.
- Developing procedures for limiting local road congestion, including designated truck waiting areas and appointment systems.
- Directing lights to illuminate only necessary zones and switching off lights when no operations are underway.

OFFSHORE WIND EXPERIENCE

WTS worked closely with Deepwater Wind (now Orsted) in the years leading up to the construction of the Block Island Wind Farm to utilize ProvPort as the country's first staging and assembly port for offshore wind turbine components. WTS is currently the only port manager and stevedore in the U.S. with the hands-on experience of handling these large components and understanding the unique needs of this industry.

BLOCK ISLAND WIND FARM

In the fall of 2015, WTS facilitated a lease between ProvPort and GE Renewables, in conjunction with Deepwater Wind, for approximately six acres of port land to establish the nation's first offshore wind preassembly facility. Over the next year, WTS provided services for the import of tower and blade components as well as the critical path shuttle barge loading during turbine assembly in the summer of 2016. Through this process, valuable lessons were learned, including unique lifting and rigging techniques, equipment requirements, and the value of labor flexibility. Despite being the first in the country, the project was delivered on time, and the construction process supported by WTS was considered a major success. The activities and cargo handled for this project would be similar in scope to the required services at Port Cortlandt (see photos, below).


Photos of blade and tower loading operations at ProvPort that were managed by WTS

B. PORT CORTLANDT OPERATIONS

The current vision for the Port Cortlandt facility is to support the supply chain logistics, both inbound and outbound, for either a nacelle or blade manufacturing facility for offshore wind turbines. The following is a summary of the potential operations:

INBOUND VESSELS

For nacelle manufacturing, components may arrive by truck or via vessel from outside the region to be assembled at the potential Port Cortlandt manufacturing facility. Assuming by vessel, the frequency would likely be 1 to 2 times per month and could be at the port unloading for 2 to 3 days at a time, generally during daylight hours, however flexibility for 24-hour operations is required. These vessels would likely be less than 500 feet long, smaller than the vessels currently arriving to the Continental Building Products dock on the abutting property. A vessel-based inbound supply chain would reduce the inbound truck traffic to the facility. One Tier 1 manufacturer indicated a marine inbound supply chain would result in only 1 to 2 truck deliveries per day. Blade manufacturing is currently not expected to generate any inbound vessel traffic.

OUTBOUND VESSELS

Both nacelles and blades would need to be loaded onto barges roughly 400 feet in length for delivery either to a marshalling port in another location or directly to the offshore construction site. For nacelles, one Tier 1 manufacturer indicated the facility would likely produce 75 nacelles per year (1.4 per week). It is expected that one barge can carry 2 “next generation” or smaller nacelles, resulting in 38 outbound barges per year generally between the months of March and October. Due to the weight of the nacelles (500+ tons) the loading operation is very slow and careful and loading one unit would take several hours. It is expected a typical barge load would take 24 hours. In some cases, continuous operations are not necessary, but the flexibility is required. For blades, 75 to 100 blade sets of 3 would be loaded onto barges during a similar

March–October time frame. Assuming 4 sets per barge, there would be 19 to 25 outbound barge loadings per year.

EQUIPMENT

The following is a summary of typical equipment used in offshore wind port operations:

- Cranes—crawler cranes up to 1,350-ton capacity (Liebherr LR-11350 for reference) for barge/ship loading/unloading. Diesel engine power and boom height approximately 150' high, depending on application. Some vessels have their own cranes on board and do not require shore cranes.
- Self-propelled modular transport (SPMT)—multi-axel transporter capable of moving 500+ tons nacelles (Goldhofer PST/SL for reference). Hydraulic lifting capability so components can be moved within the facility without crane lifting.
- Forklifts/Reachstakers—standard equipment for handling smaller/lighter equipment associated with large components (Hyster H-360HD or Liebherr LRS-545 as reference).

GENERAL OPERATIONAL INFORMATION

Port operations may require 24-hour operations when vessels are actively loading. Marine logistics is one of the highest-cost items of the offshore wind supply chain and it is critical that vessels are loaded/unloaded in a timely fashion. It is, however, important to note that when no vessels are at the dock, very little activity will take place.

Furthermore, the outbound cargo loading will be highly planned and scheduled per the offshore turbine installation schedule, which is one of the most critical scopes of offshore wind construction. Components will only be moved to the port area in the days leading up to the vessel arrival. This movement from the uplands area to the port will be planned during daylight hours for safety purposes.

Given the expected inbound/outbound cargo schedules described above, and assuming a nacelle facility on the Port Cortlandt site the port would be expected to have active vessel operations as follows:

- Inbound deliveries – 2 vessels per month/3 days per vessel – 72 working days per year
- Outbound nacelles – 38 barges per year/1 day per barge – 38 working days per year
- Total port operations days per year – 110 days (30 percent of the year)

If a blade facility is added on the adjacent IPEC site in the future, resulting in a total of two buildings (one on the currently Town owned property and one in the future on current IPEC property), the incremental port activity is assumed to be:

- Outbound blades – 25 barges per year – 25 working days per year
- Total port operations days per year – 135 days (38 percent of the year)

Based on this high-end estimate of marine activity, there would be 230 days of the year when there is little to no activity at the port facility.

Port Cortlandt Technical Memorandum

Traffic Impact Assessment

Port Cortlandt Technical Memorandum
Traffic Impact Assessment

A. INTRODUCTION

This technical memorandum summarizes AKRF's initial assessment of potential effects on the traffic and transportation systems associated with the Proposed Project. This assessment consists of an analysis of baseline traffic conditions comparing future potential traffic conditions in 2023, both with and without the Proposed Project. It should be noted that the traffic analysis presented in this memorandum will be subject to further refinement as the Proposed Project evolves, to include any additional intersections requested by the Town and the public through the Draft Generic Environmental Impact Statement (DGEIS). The selection of these initial intersections for analysis was based on the Applicant's familiarity with area traffic and transportation conditions in the vicinity of the project site.

B. SUMMARY OF FINDINGS

Traffic conditions were evaluated at 14 intersections (plus the proposed project site on Broadway, located just south of the Continental driveway), for the Weekday AM, Weekday PM, and Saturday Midday (Weekend) peak hours.

Table 1 identifies the locations of potential traffic impacts (based on the Town of Cortlandt's traffic impact criteria) with the Proposed Project in place and potential mitigation measures recommended for those impacts. No impacts were identified for vehicular and pedestrian safety, parking, pedestrians, or public transit.

Each of the intersection lane groups where the potential for impacts were identified operate at or over capacity during their respective peak hours under existing and conditions without the Proposed Project. As identified in **Table 1**, potential design options for mitigation could include traffic signal retimings and traffic signal upgrades (vehicle detection equipment, signal hardware, and/or signal software). The goal of these design options proposed improvements to be funded by the Proposed Project would be to optimize traffic operations at each intersection, which would be similar to the improvements installed on U.S. Route 6 as part of the Cortlandt Crossing project. As each of the intersections where design options are being contemplated is under New York State Department of Transportation (NYSDOT) jurisdiction, any proposed mitigation measures at these locations would require discussions and approval from NYSDOT.

Table 1

Summary of Traffic Impacts

Intersection		Impacted Lane Group			
EB/WB Street	**NB/SB Street**	**Weekday AM Peak Hour**	**Weekday PM Peak Hour**	**Saturday Midday Peak Hour**	**Potential Mitigation Measures**
Welcher Avenue	Route 9A/Route 9 Southbound Off-Ramp	WB-L	NB-R	WB-L	-Retime Traffic Signal[1] -Traffic Signal upgrades including vehicle detection, signal hardware, signal communication and/or software[1]
		SB-LTR	SB-LTR		
Welcher Avenue	Route 9 Northbound Ramps	Not Impacted	EB-L	Not Impacted	-Retime Traffic Signal[1] -Traffic Signal upgrades including vehicle detection, signal hardware, signal communication and/or software[1]
Route 9 (Jans Peeck Bridge)	Route 9/Bear Mountain Parkway	SB-T	NB-L	Not Impacted	-Retime Traffic Signal[1] -Traffic Signal upgrades including vehicle detection, signal hardware, signal communication and/or software[1]

Notes: L = Left Turn, T = Through, R = Right Turn, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound

1. Potential improvement measures that would require discussion and approval from NYSDOT.

It is expected that the DGEIS for the Proposed Project would include a refined traffic analysis based on additional details pertaining to site activity and equipment usage as well as a more comprehensive program of baseline traffic data collection.

C. METHODOLOGY

GENERAL TRAFFIC IMPACT ASSESSMENT METHODOLOGY

- Establish existing baseline traffic conditions at the selected study area intersections, including traffic volumes, roadway and intersection geometries, and intersection traffic controls;
- Utilize Synchro traffic analysis software to analyze peak hour intersection capacity and delay conditions for baseline conditions;
- Estimate future traffic volumes without the Proposed Project and analyze peak hour intersection capacity and delay conditions;
- Based on estimated vehicle trips associated with the Proposed Project (project-generated trips), superimpose the project generated trips onto the future without the Proposed Project traffic network volumes based on projected vehicle trip patterns;

- Based on the Town's traffic impact criteria identify potential impacts at the study area intersections based on a comparison of the analysis results between the future without and with the Proposed Project; and
- Identify potential mitigation measures for any identified impacts.

Details of the traffic analysis methodologies utilized in the Synchro software are provided in **Appendix A**.[1]

TOWN IMPACT CRITERIA

For the purpose of this analysis, impacts are identified as: (1) any change in Level of Service (LOS) D or better to LOS E or F; (2) any change from LOS E to LOS F; or (3) any increase of 10 percent or greater in delay for LOS F. The impact criteria are applied to the approach/lane group LOS for signalized intersections and approach/movement group LOS for unsignalized intersections.

D. EXISTING CONDITIONS

TRAFFIC CONDITIONS

The roadways in the area surrounding the project site are a mix of municipally and privately owned and NYSDOT roadways. As presented in **Figure 1**, 14 locations were identified for analysis:

- John Walsh Boulevard at Louisa Street (1)
- Louisa Street at Route 9 southbound ramps (2A)
- Louisa Street at Route 9 northbound ramps (2B)
- Louisa Street and Lower South Street (2C)
- Broadway at Bleakley Avenue (3)
- Bleakley Avenue at Route 9A (4)
- Broadway at Continental Driveway (5)
- Broadway at Entergy Driveway (2 driveways) (6)
- Welcher Avenue at Route 9A/Route 9 southbound off-ramp (7)
- Welcher Avenue at Route 9 northbound ramps (8)
- Route 9A at Route 9 southbound on-ramp/Belock Avenue (9)
- Route 9/Bear Mountain Parkway at Jans Peeck Bridge (10)
- Route 6 at Route 9 southbound ramps (11A)
- Route 6 at Route 9 northbound ramps (11B)

To establish baseline traffic volumes, manual turning movement counts (TMC) and vehicle classification counts (VCC) were collected at the study area intersections during the weekday AM (7:00 – 9:00 AM) weekday PM (4:00 – 6:00 PM) and Saturday Midday (12:00 – 2:00 PM) peak periods in July and August 2020. In addition, 24-hour Automatic Traffic Recorder (ATR) counts

[1] **Appendix A** to this memorandum will be provided to the Town under separate cover by September 13, 2020.

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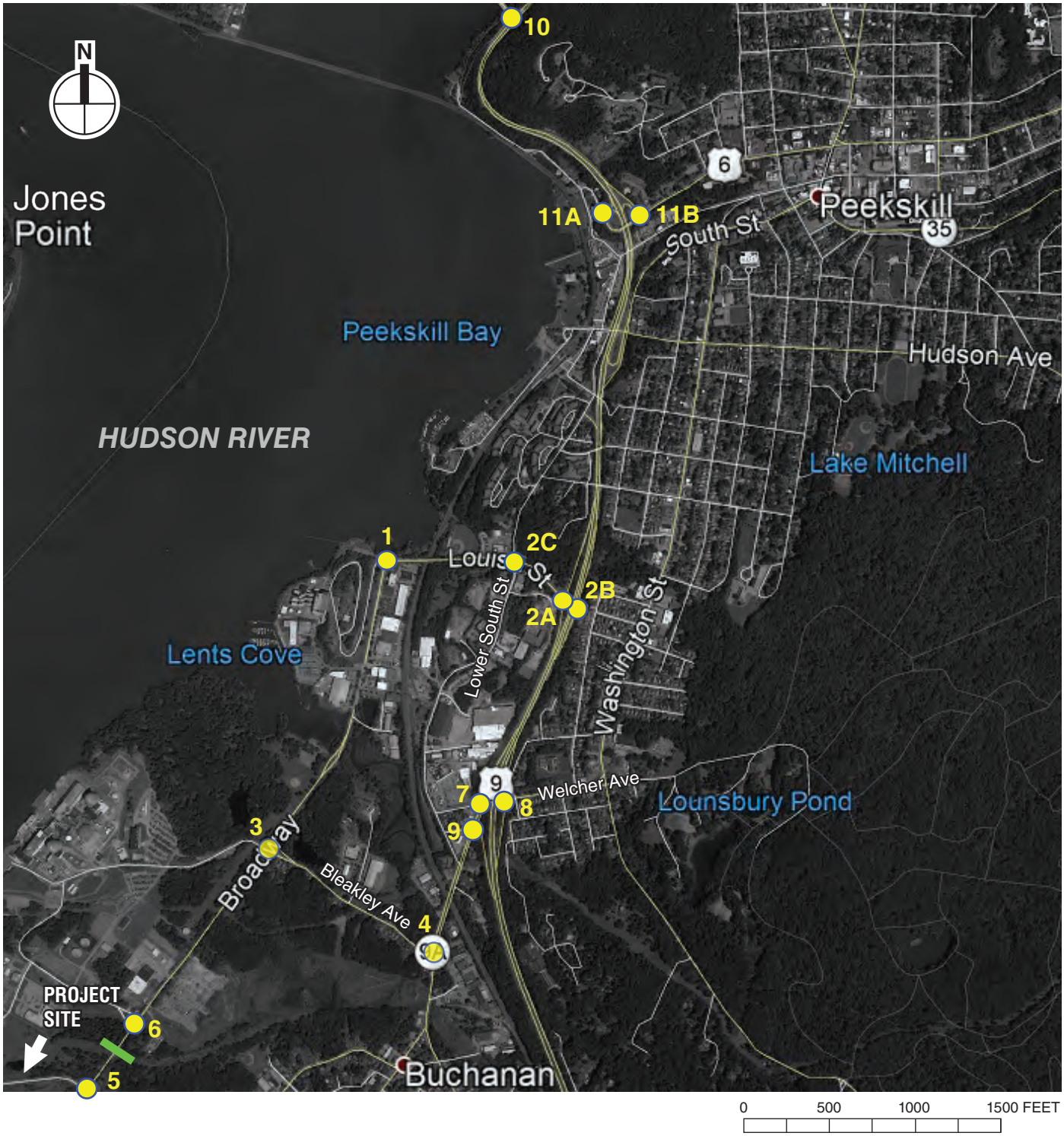

Traffic Analysis Locations

Automatic Traffic Recorder (ATR) Count Location

Note: Traffic analysis locations are listed in this Technical Memorandum

Traffic Study Area

PORT CORTLANDT

Figure 1

were conducted for approximately one week along Broadway, between the Continental and Entergy Driveways, in July and August 2020. Data collection sheets will be provided in **Appendix A**.

In order to establish baseline traffic volumes which would reflect pre-pandemic conditions, historical traffic volume data were sourced from the StreetLight data platform (see forthcoming **Appendix A** for a description of the StreetLight platform and methodology) for selected study area roadways for both 2019 (pre-pandemic) and summer 2020 conditions. Based on a comparison of the 2019 and 2020 StreetLight data, adjustment factors were developed for each of the peak hours applied to the 2020 TMC data to establish baseline traffic volumes reflective of pre-pandemic conditions (**Appendix A** will present the methodology to calculate the adjustment factors).

Based on a review of all the traffic count data, the peak hours for the study area were determined to be as follows:

- Weekday AM: 7:30 – 8:30 AM
- Weekday PM: 4:45 – 5:45 PM
- Saturday Midday: 12:30 – 1:30 PM

Traffic volumes for the 2020 existing peak hours analyzed are presented in **Figure 2**.

Traffic operating conditions at each study area intersection were analyzed using the Synchro traffic analysis software (see forthcoming **Appendix A** for Synchro output reports for all study area intersections) to compute delays, volume-to-capacity (v/c) ratios, and LOS.

During peak hours, LOS D operations are generally considered to be acceptable operating conditions for signalized and unsignalized intersections. As shown in **Table 2**, most of the study area intersection lane groups/approaches operate at LOS D or better under 2020 existing conditions during the peak hours analyzed. The following are exceptions:

- Welcher Avenue and Route 9A/Route 9 Southbound Off-Ramp—The westbound left-turn operates at LOS F during the Weekday AM peak hour and LOS E during the Weekday PM peak hour. The northbound right-turn operates are LOS F during the Weekday PM peak hour. The southbound approach operates at LOS F during the Weekday AM and Weekday PM peak hours.
- Route 9 and Bear Mountain Parkway/Jans Peeck Bridge—The eastbound left-turn operates at LOS E during the Weekday PM and Saturday Midday peak hours. The northbound left-turn operates at LOS F during the Weekday PM and Saturday Midday peak hours. The southbound through movement operates at LOS F during the Weekday AM, Weekday PM, and Saturday Midday peak hours.

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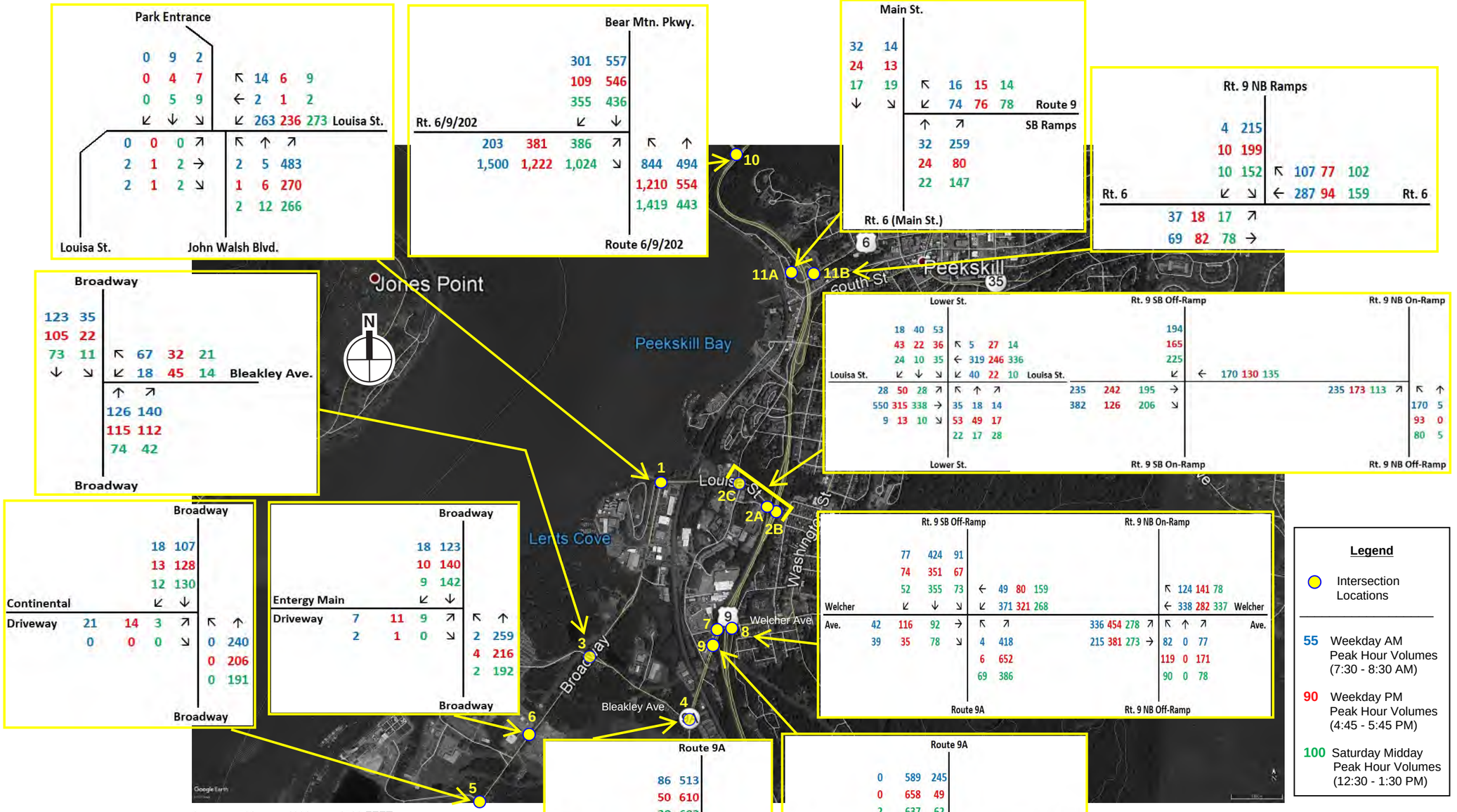

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Intersection Locations

55 Weekday AM Peak Hour Volumes (7:30 - 8:30 AM)

90 Weekday PM Peak Hour Volumes (4:45 - 5:45 PM)

100 Saturday Midday Peak Hour Volumes (12:30 - 1:30 PM)

PORT CORTLANDT

2020 Existing Traffic Volumes

Figure 2

Table 2
2020 Existing Conditions Level of Service Analysis

Intersection	Weekday AM				Weekday PM				Saturday Midday (Weekend)			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Signalized Intersections												
Louisa Street and Lower S. Street												
Eastbound	LTR	0.56	13.8	B	LTR	0.38	11.7	B	LTR	0.34	11.3	B
Westbound	LTR	0.39	11.9	B	LTR	0.34	10.7	B	LTR	0.34	11.1	B
Northbound	LT	0.11	10.1	B	LT	0.18	10.7	B	LT	0.07	9.7	A
	R	0.03	1.6	A	R	0.03	1.7	A	R	0.05	3.1	A
Southbound	LT	0.19	10.9	B	LT	0.10	10.1	B	LT	0.09	10.0	A
	R	0.03	2.0	A	R	0.07	4.0	A	R	0.05	2.9	A
	Intersection		12.4	B	Intersection		10.6	B	Intersection		10.5	B
Broadway and Bleakley Avenue												
Westbound	LR	0.20	6.0	A	LR	0.14	10.0	A	LR	0.13	8.1	A
Northbound	TR	0.44	12.0	B	TR	0.31	10.3	B	TR	0.28	10.0	A
Southbound	LT	0.35	11.1	B	LT	0.28	10.2	B	LT	0.27	10.0	B
	Intersection		10.5	B	Intersection		10.2	B	Intersection		9.7	A
Route 9A and Bleakley Avenue												
Eastbound	LR	0.64	20.1	C	LR	0.42	17.4	B	LR	0.47	12.2	B
Northbound	LT	0.54	11.9	B	LT	0.67	12.1	B	LT	0.42	6.7	A
Southbound	T	0.71	16.6	B	T	0.54	8.3	A	T	0.53	7.9	A
	R	0.08	0.1	A	R	0.04	0.0	A	R	0.03	0.0	A
	Intersection		14.7	B	Intersection		10.7	B	Intersection		7.8	A
Welcher Avenue and Route 9A/Route 9 Southbound Off-Ramp												
Eastbound	TR	0.35	23.9	C	TR	0.50	33.8	C	TR	0.49	23.3	C
Westbound	L	1.23	161.6	F	L	0.85	58.9	E	L	0.73	51.4	D
	T	0.11	37.4	D	T	0.14	32.9	C	T	0.27	36.2	D
Northbound	LR	0.33	11.8	B	LR	0.50	16.6	B	LR	0.37	13.2	B
	R	0.68	38.7	D	R	1.05	103.3	F	R	0.69	41.4	D
Southbound	LTR	1.00	102.6	F	LTR	1.06	108.5	F	LTR	0.76	38.1	D
	Intersection		90.0	F	Intersection		69.9	E	Intersection		35.3	D

Table 2, cont'd
2020 Existing Conditions Level of Service Analysis

Intersection	Weekday AM				Weekday PM				Saturday Midday (Weekend)			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Signalized Intersections												
Welcher Avenue and Route 9 Northbound Ramps												
Eastbound	L	0.68	27.0	C	L	0.80	39.7	D	L	0.50	14.6	B
	T	0.23	7.0	A	T	0.42	9.0	A	T	0.28	7.5	A
Westbound	TR	0.48	20.3	C	TR	0.48	21.7	C	TR	0.36	16.9	B
Northbound	LT	0.28	31.5	C	LT	0.39	35.7	D	LT	0.24	28.5	C
	R	0.21	1.3	A	R	0.42	7.2	A	R	0.17	0.7	A
	Intersection		19.3	B	Intersection		23.2	C	Intersection		14.0	B
Route 9/Bear Mountain Parkway and Jans Peeck Bridge*												
Eastbound	L	0.49	30.2	C	L	0.97	67.5	E	L	0.95	63.7	E
	R	0.99	22.4	C	R	0.84	5.8	A	R	0.68	2.3	A
Northbound	L	0.88	34.7	C	L	1.09	81.8	F	L	1.34	184.6	F
	T	0.51	10.7	B	T	0.53	11.0	B	T	0.44	9.7	A
Southbound	T	1.85	416.6	F	T	1.92	451.0	F	T	1.47	257.2	F
	R	0.41	13.1	B	R	0.15	10.7	B	R	0.48	15.6	B
	Intersection		80.3	F	Intersection		95.8	F	Intersection		102.0	F
Unsignalized Intersections												
Louisa Street and John Walsh Boulevard/Park Entrance**												
Eastbound	LTR	0.00	7.3	A	LTR	0.00	7.2	A	LTR	0.00	7.2	A
Westbound	LTR	0.27	8.5	A	LTR	0.20	8.2	A	LTR	0.21	8.1	A
Northbound	LT	0.04	22.0	C	LT	0.02	16.0	C	LT	0.05	16.9	C
	R	0.61	13.7	B	R	0.31	10.2	B	R	0.26	9.8	A
Southbound	LTR	0.11	23.0	C	LTR	0.06	16.9	C	LTR	0.09	17.3	C
Louisa Street and Route 9 Southbound Ramps												
-No Conflicting or Merging Movements for Analysis-												
Louisa Street and Route 9 Northbound Ramps***												
Eastbound	L	0.39	10.9	B	L	0.35	10.3	B	L	0.28	9.5	A
Northbound	LT	0.30	10.3	B	LT	0.24	9.6	A	LT	0.23	9.3	A

Table 2, cont'd
2020 Existing Conditions Level of Service Analysis

Intersection	Weekday AM				Weekday PM				Saturday Midday (Weekend)			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Unsignalized Intersections												
Broadway and Continental Driveway												
Eastbound	L	0.06	13.3	B	L	0.05	12.7	B	L	0.05	12.6	B
	R	0.00	9.0	A	R	0.00	9.2	A	R	0.00	9.3	A
Northbound	LT	0.00	7.5	A	LT	0.00	7.6	A	LT	0.00	7.6	A
Broadway and Entergy Main Driveway												
Eastbound	LR	0.04	11.3	B	LR	0.03	11.1	B	LR	0.02	11.2	B
Northbound	LT	0.00	7.6	A	LT	0.00	7.6	A	LT	0.00	7.6	A
Route 9A and Belock Avenue/Route 9 Southbound On-Ramp												
Eastbound	LTR	0.12	27.0	D	LTR	0.05	20.3	C	LTR	0.10	19.6	C
Northbound	L	0.01	9.2	A	L	0.01	9.2	A	L	0.00	9.0	A
Southbound	L	0.35	11.4	B	L	0.07	10.1	B	L	0.07	8.8	A
Route 6 and Route 9 Southbound Ramps												
Westbound	LR	0.14	10.8	B	LR	0.12	9.8	A	LR	0.13	10.3	B
Southbound	LT	0.02	8.0	A	LT	0.01	7.5	A	LT	0.02	7.8	A
Route 6 and Route 9 Northbound Ramps												
Eastbound	L	0.04	8.4	A	L	0.02	7.7	A	L	0.01	8.0	A
Southbound	L	0.53	21.0	C	L	0.37	13.2	B	L	0.31	13.4	B
	R	0.01	10.4	B	R	0.01	9.1	A	R	0.02	9.7	A

Notes:

*The traffic signal at this intersection provides continuous green signal time for the eastbound right-turn movement.

** Coded as a Two-Way Stop Controlled intersection in Synchro due to limitations in the Synchro software

*** Coded as an All-Way Stop Controlled intersection in Synchro due to limitations in the Synchro software

The lane groups/approaches identified above can be considered as traffic hot spots (any additional traffic would further exacerbate already unacceptable traffic conditions) since they currently operate at near failing (LOS E) or failing conditions (LOS F).

PUBLIC TRANSPORTATION

The Westchester County Bee-Line Bus System operates the following bus routes within the study area: Routes 14 (Peekskill-Yorktown-White Plains), 16 (Peekskill-Yorktown), 17 (Peekskill-White Plains), 18 (Peekskill Commuter), and 31 (Peekskill Commuter). Routes 14 and 31 operate closest to the project site but do not travel or stop along Broadway at the Proposed Project site entrance.

The Metropolitan Transportation Authority's (MTA) Metro-North Railroad offers commuter rail service near the study area via its Hudson Line. The Cortlandt train station is located approximately

two miles southeast of the Project Site, within the Town of Cortlandt. The Peekskill train station is located approximately two miles northeast of the project site in the City of Peekskill.

CRASH DATA

The most recent three years of traffic accident data for each of the study area intersections have been requested from NYSDOT. A summary of this data will be provided to the Town once obtained from NYSDOT, and will be included in the DGEIS.

PEDESTRIAN AND BICYCLE CONDITIONS

Pedestrian and bicycle volumes were generally observed to be light-to-moderate in the study area.

E. POTENTIAL TRAFFIC EFFECTS OF THE PROPOSED PROJECT

Potential traffic effects of the Proposed Project were assessed by comparing 2023 future without the Proposed Project and 2023 with the Proposed Project conditions.

FUTURE WITHOUT THE PROPOSED PROJECT

Future traffic conditions in 2023 without the Proposed Project were developed based on the following:

- Increasing the 2020 existing conditions traffic volumes by a 0.5 percent per year from 2020 (existing year) to 2023 (future with the Proposed Project) for background growth.
- Manually adding trips from pending developments located in the vicinity of the Proposed Action. The pending development project lists from the Town and the City of Peekskill are included in **Appendix A**).

A review of the pending development projects lists revealed that no major development projects are planned in the immediate area of the project site. Discrete vehicle trip from sizeable projects in proximity to any of the study area roadways were added to the traffic network. Vehicle trips from smaller pending developments and/or located well outside the study area were accounted for in the background growth factor. The projected traffic volumes in 2023 without the Proposed Project are presented in **Figure 3**.

FUTURE WITH THE PROPOSED PROJECT

The estimated number of trip generated by the Proposed Project is summarized in **Table 3**.

Some of the truck trips presented in **Table 3** may be further reduced if equipment and supplies are brought to the site by marine vessels rather than by trucks. However to provide for a conservative analysis, all deliveries to the site are assumed to be made by truck.

The peak hour auto trips presented in **Table 3** were assigned to the study area traffic network based on trip patterns utilized by employees of the Indian Point Energy Center and Continental Products Operations. These auto assignment percentages are shown in **Figure 4**. The peak hour truck trips presented in **Table 3** were assigned to the study area traffic network based on permitted truck routes from the Proposed Project site to and from Route 9. All trucks would arrive from and depart to the north along Broadway (no trucks would be permitted to travel south of the driveway). These truck assignment percentages are shown in **Figure 5**.

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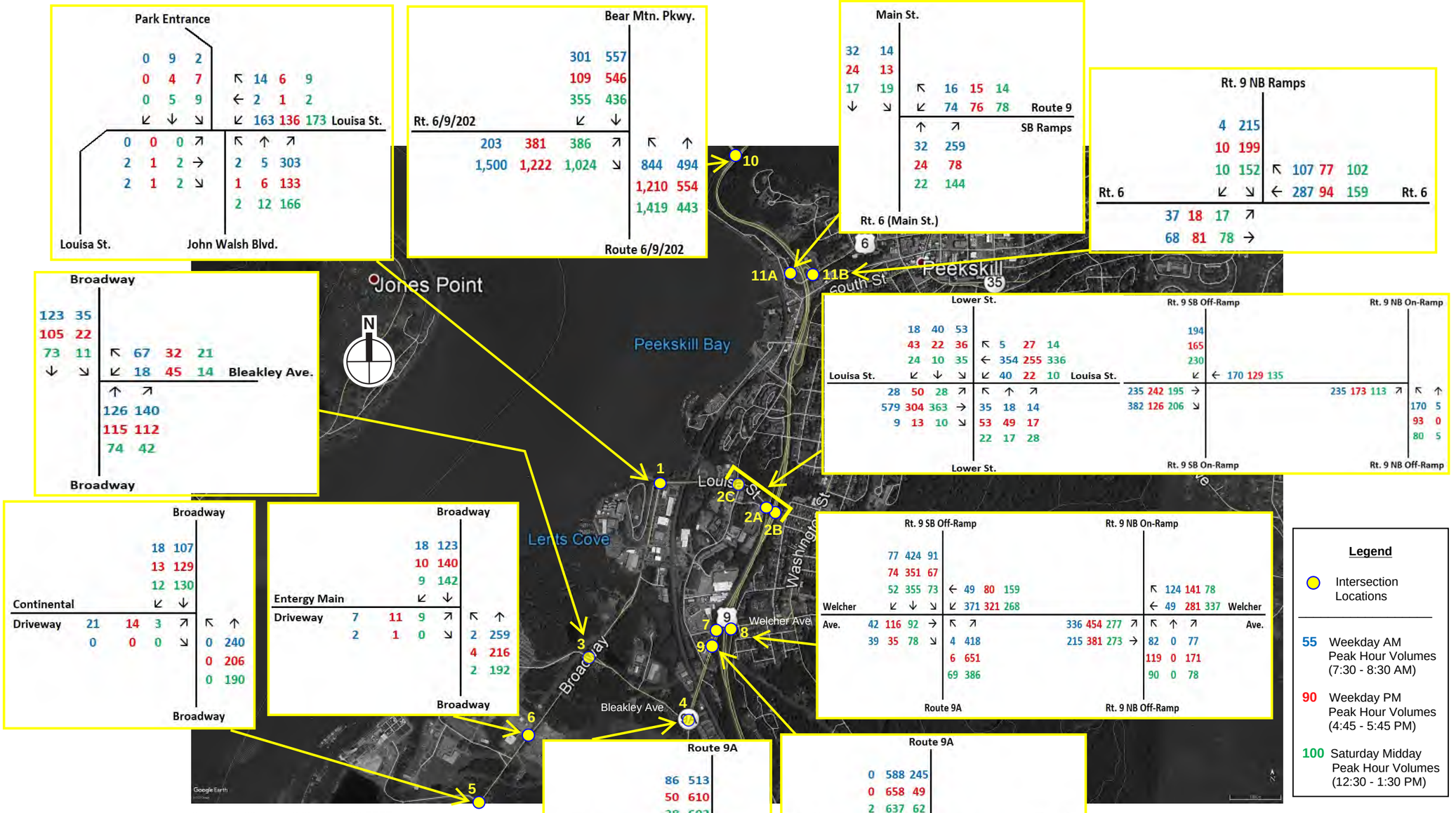

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Intersection Locations

55 Weekday AM Peak Hour Volumes (7:30 - 8:30 AM)

90 Weekday PM Peak Hour Volumes (4:45 - 5:45 PM)

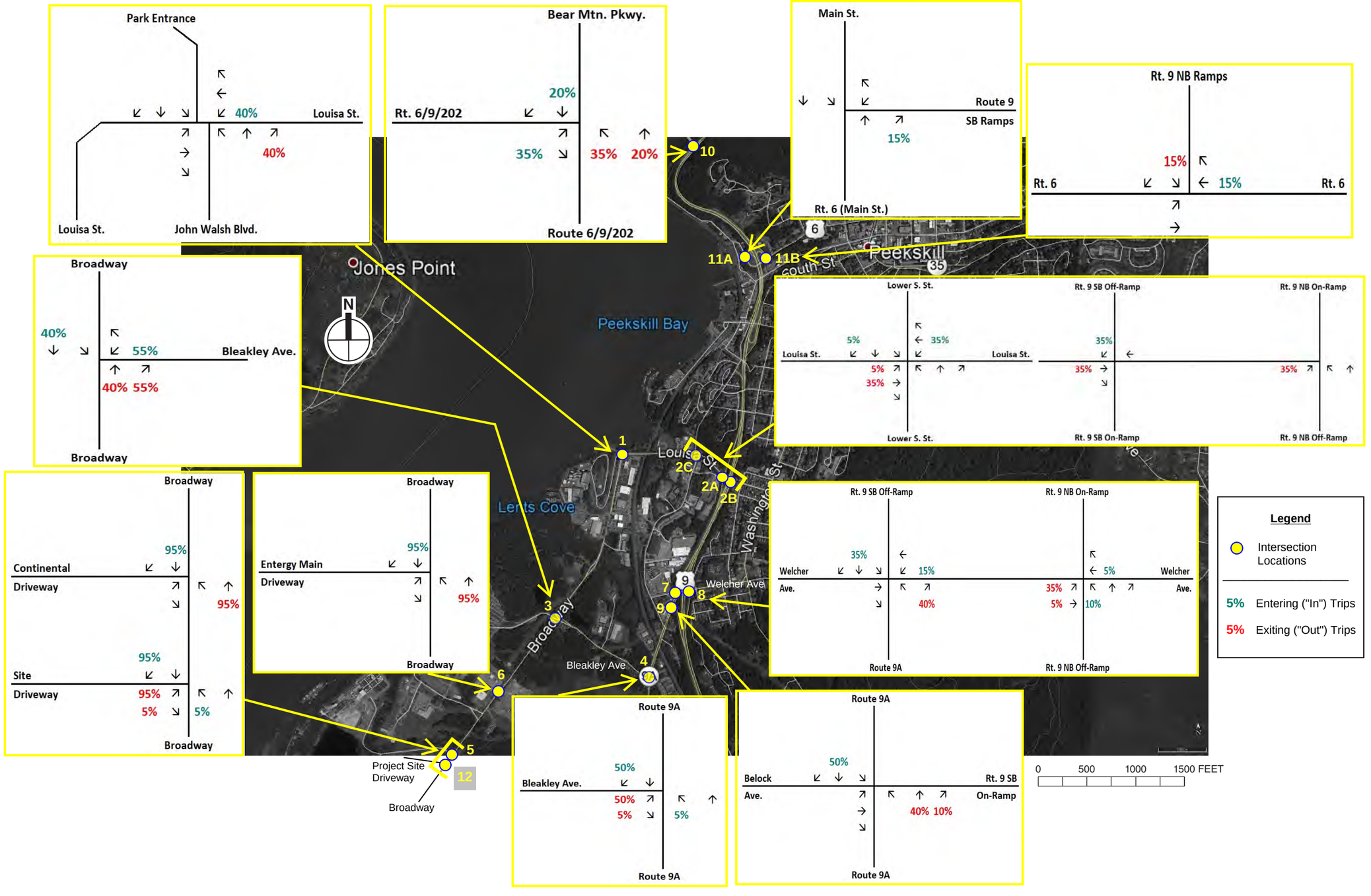
100 Saturday Midday Peak Hour Volumes (12:30 - 1:30 PM)

PORT CORTLANDT

2023 No Build Traffic Volumes

Figure 3

9.3.20



PORT CORTLANDT

Project Trip Assignments - Autos

Figure 4

9.3.20

Project Trip Assignments - Trucks

Figure 5

PORT CORTLANDT

Table 3
Port Cortlandt Trip Generation

A. TRIP GENERATION

A- 1. DAILY TRIPS

# Truck Trips per day*	80 *(80 to 90 percent Tractor Trailers)*

A-2. PEAK HOUR TRIPS

Peak Hour		# of Trips		
		In	Out	Total
AM Peak Hour (Trucks)	6:00 - 7:00 AM	6	6	12
AM Peak Hour (Overall)	6:30 - 7:30 AM	200	100	300
PM Peak Hour (Overall)	2:30 - 3:30 PM	100	200	300
PM Peak Hour (Trucks)	4:00 - 5:00 PM	6	6	12
Late Night Peak Hour (Overall)	10:30 – 11:30PM	100	100	200

A-3. ASSUMED PEAK HOUR TRIPS FOR TRAFFIC ANALYSIS**

Peak Hour Analyzed		# of Trips		
		In	Out	Total
Weekday AM Peak Hour (7:30 - 8:30 AM)	Autos***	167	83	250
	Trucks	6	6	12
	Total	**173**	**89**	**262**
Weekday PM Peak Hour (4:45 - 5:45 PM)	Autos***	83	167	250
	Trucks	6	6	12
	Total	**89**	**173**	**262**
Saturday Midday Peak Hour (12:30 - 1:30 PM) ****	Autos***	83	83	167
	Trucks	6	6	6
	Total	**89**	**89**	**173**

Table 3, cont'd
Port Cortlandt Trip Generation

B. FACILITY INFORMATION	
Times/Days of Operations	24 hours /7 days a week (see footnote 3)
# of Employees	400
# of Parking Spaces	300

Table Notes:
* Truck trips are round trips. As a starting point truck trip numbers assumed to be half of Continental's truck trips. One Tier 1 manufacturer indicated that with nacelle materials provide by marine vessels, only about 2 truck trips per day (besides normal fedex/ups/usps) would be likely for supplies, all during normal work hours.
** To provide for a conservative analysis the peak hours of the generator were superimposed on the peak hours of traffic network.
*** Adjusted auto trips based on 1.2 vehicle occupancy factor to account for carpooling.
**** Saturday Peak Hour auto trips are assumed to be 100 in and 100 out and truck trips are the same as the weekday peak hours.

General Notes:
1. Continental has approximately 130 employees and 160 truck trips/day (approximately 90 percent tractor trailer). Heaviest truck activity occurs between 3-8AM and 10AM-5PM. The Plant runs 24-Hours/Day, 5 to 6 Days/week (Monday-Friday/Saturday) with some maintenance activity on down days.
2. At its peak, Indian Point Energy Center employed approximately 1,000 to 1,200 workers.
3. Based on conversations with industry, a fabrication facility typically starts with one shift working 5 to 6 days per week. However, as backlog increases, a second shift and ultimately a third shift may be hired, if backlog demands such. For the purposes planning purposes, This traffic impact assessment assumed that demand will generate periods of time when 3 shifts and 7days/week operations will be required and overnight shifts have less labor requirements than the primary daytime shifts. Conversations will continue with the industry to determine total employee breakdowns by shift. **It's important to note that there are no outdoor activities associated with the overnight shift.**

The peak hour project-generated trips would be distributed across the study area intersections based on the assignments shown in **Figures 4 and 5**, are shown in **Figure 6**.

The peak hour project generated trips shown in **Figure 6** were added to the 2023 future without the Proposed Project volumes presented in **Figure 3** to establish the 2023 future with the Proposed Project traffic volumes. The 2023 future with the Proposed Project traffic volumes are presented in **Figure 7**.

The Synchro results of the 2023 future without the Proposed Project conditions versus the 2023 future with the Proposed Project conditions are presented in **Table 4** (see **Appendix B** for the LOS table).

POTENTIAL TRAFFIC IMPACTS

Based on the Town's impact criteria for traffic, as described in Section C, above, a comparison of the 2023 future without the Proposed Project conditions versus the 2023 future with the Proposed Project conditions in **Table 4** shows that there would be the potential for traffic impacts at the following locations:

- Welcher Avenue and Route 9A/Route 9 Southbound Off-Ramp—The westbound left-turn would deteriorate within LOS F during the Weekday AM peak hour and from LOS D to LOS E during the Saturday Midday peak hour. The northbound right-turn would deteriorate within

9.3.20

Legend

Intersection Locations

55 Weekday AM Peak Hour Volumes (7:30 - 8:30 AM)

90 Weekday PM Peak Hour Volumes (4:45 - 5:45 PM)

100 Saturday Midday Peak Hour Volumes (12:30 - 1:30 PM)

PORT CORTLANDT

Project Generated Volumes

Figure 6

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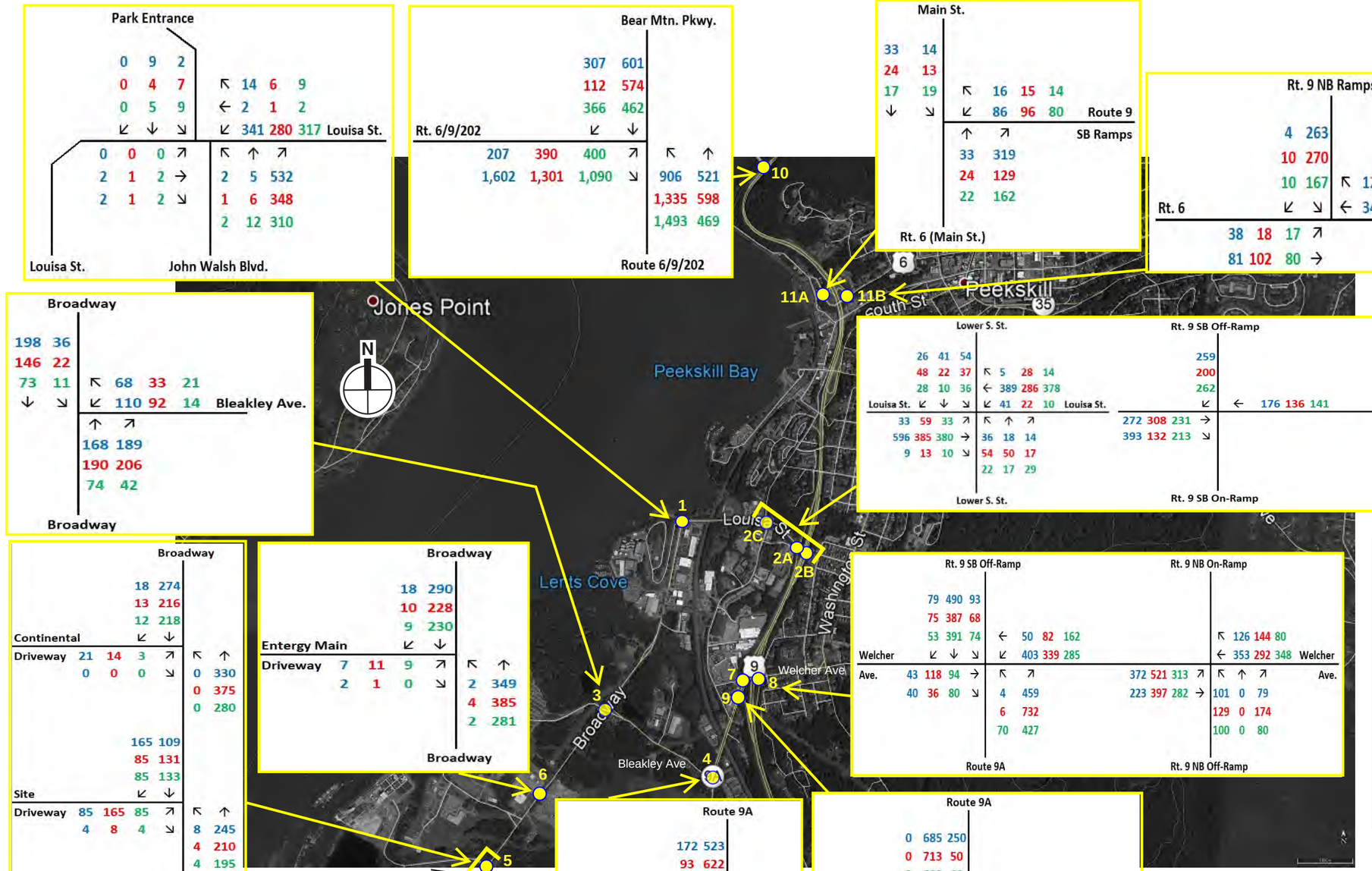

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Intersection Locations

55 Weekday AM Peak Hour Volumes (7:30 - 8:30 AM)

90 Weekday PM Peak Hour Volumes (4:45 - 5:45 PM)

100 Saturday Midday Peak Hour Volumes (12:30 - 1:30 PM)

PORT CORTLANDT

2023 Build Traffic Volumes

Figure 7

APPENDIX B

2023 Future without the Proposed Project and 2023 with the Proposed Project Conditions Level of Service Analysis

Intersection	Weekday AM								Weekday PM								Saturday Midday (Weekend)							
	2023 Future w/o Proposed Project				2023 Future with Proposed Project				2023 Future w/o Proposed Project				2023 Future with Proposed Project				2023 Future w/o Proposed Project				2023 Future with Proposed Project			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
SIGNALIZED INTERSECTIONS																								
Louisa Street and Lower S. Street																								
Eastbound	LTR	0.57	14.0	B	LTR	0.62	14.8	B	LTR	0.38	11.7	B	LTR	0.46	12.6	B	LTR	0.35	11.4	B	LTR	0.39	11.8	B
Westbound	LTR	0.40	12.0	B	LTR	0.46	12.8	B	LTR	0.34	10.8	B	LTR	0.39	11.3	B	LTR	0.34	11.2	B	LTR	0.38	11.5	B
Northbound	LT	0.12	10.2	B	LT	0.12	10.2	B	LT	0.18	10.7	B	LT	0.18	10.7	B	LT	0.07	9.7	A	LT	0.07	9.7	A
	R	0.03	1.6	A	R	0.03	1.6	A	R	0.03	1.7	A	R	0.03	1.7	A	R	0.05	3.3	A	R	0.05	3.3	A
Southbound	LT	0.19	10.9	B	LT	0.19	10.9	B	LT	0.11	10.1	B	LT	0.11	10.1	B	LT	0.09	10.0	A	LT	0.09	10.0	A
	R	0.03	2.0	A	R	0.05	3.2	A	R	0.07	4.0	A	R	0.08	3.9	A	R	0.05	2.9	A	R	0.05	3.4	A
	Intersection		12.5	B	Intersection		13.1	B	Intersection		10.6	B	Intersection		11.3	B	Intersection		10.6	B	Intersection		10.9	B
Broadway and Bleakley Avenue																								
Westbound	LR	0.20	6.0	A	LR	0.41	14.5	B	LR	0.15	10.0	A	LR	0.23	12.5	B	LR	0.13	7.9	A	LR	0.23	11.1	B
Northbound	TR	0.45	12.1	B	TR	0.58	14.7	B	TR	0.32	10.4	B	TR	0.54	13.6	B	TR	0.29	10.0	B	TR	0.40	11.4	B
Southbound	LT	0.35	11.2	B	LT	0.51	13.8	B	LT	0.28	10.3	B	LT	0.37	11.4	B	LT	0.27	10.1	B	LT	0.35	10.9	B
	Intersection		10.6	B	Intersection		14.3	B	Intersection		10.3	B	Intersection		12.8	B	Intersection		9.7	A	Intersection		11.2	B
Route 9A and Bleakley Avenue																								
Eastbound	LR	0.64	20.2	C	LR	0.69	20.9	C	LR	0.42	17.4	B	LR	0.59	20.4	C	LR	0.47	12.1	B	LR	0.56	15.1	B
Northbound	LT	0.55	12.3	B	LT	0.63	16.1	B	LT	0.68	12.7	B	LT	0.83	21.4	C	LT	0.43	6.8	A	LT	0.50	8.7	A
Southbound	T	0.73	17.5	B	T	0.77	20.9	C	T	0.56	7.9	A	T	0.67	13.5	B	T	0.54	8.1	A	T	0.62	10.6	B
	R	0.08	0.1	A	R	0.15	0.2	A	R	0.04	0.0	A	R	0.07	0.1	A	R	0.03	0.0	A	R	0.06	0.1	A
	Intersection		15.3	B	Intersection		17.0	B	Intersection		11.0	B	Intersection		17.2	B	Intersection		7.9	A	Intersection		10.0	B
Welcher Avenue and Route 9A/Route 9 Southbound Off-Ramp																								
Eastbound	TR	0.36	24.2	C	TR	0.36	24.7	C	TR	0.51	34.1	C	TR	0.51	34.3	C	TR	0.49	23.0	C	TR	0.49	23.0	C
Westbound	L	1.26	173.1	F	L	1.35	209.6	F	L	0.87	61.0	E	L	0.9	64.0	E	L	0.73	51.6	D	L	0.76	55.6	E
	T	0.11	37.7	D	T	0.11	36.2	D	T	0.14	33.0	C	T	0.14	32.0	C	T	0.28	35.9	D	T	0.27	38.7	D
Northbound	LR	0.33	11.7	B	LR	0.35	12.0	B	LR	0.51	17.0	B	LR	0.58	20.8	C	LR	0.38	13.6	B	LR	0.41	13.9	B
	R	0.68	38.5	D	R	0.72	39.8	D	R	1.06	109.9	F	R	1.14	121.5	F	R	0.71	42.6	D	R	0.76	46.6	D
Southbound	LTR	1.03	102.1	F	LTR	1.16	121.1	F	LTR	1.10	108.9	F	LTR	1.26	172.4	F	LTR	0.79	39.7	D	LTR	0.85	44.4	D
	Intersection		92.8	F	Intersection		109.9	F	Intersection		71.7	E	Intersection		93.2	F	Intersection		36.0	D	Intersection		39.2	D
Welcher Avenue and Route 9 Northbound Ramps																								
Eastbound	L	0.69	27.9	C	L	0.73	31.2	C	L	0.82	53.9	D	L	0.89	89.4	F	L	0.51	15.5	B	L	0.55	17.9	B
	T	0.24	6.8	A	T	0.24	6.8	A	T	0.43	9.0	A	T	0.44	9.5	A	T	0.28	7.7	A	T	0.29	7.9	A
Westbound	TR	0.49	20.9	C	TR	0.52	23.0	C	TR	0.50	22.2	C	TR	0.55	24.3	C	TR	0.36	17.0	B	TR	0.38	18.0	B
Northbound	LT	0.29	32.4	C	LT	0.35	36.0	D	LT	0.39	36.4	D	LT	0.42	38.2	D	LT	0.24	28.8	C	LT	0.26	29.1	C
	R	0.22	1.5	A	R	0.22	1.5	A	R	0.43	7.3	A	R	0.43	7.3	A	R	0.17	0.8	A	R	0.17	0.8	A
	Intersection		19.8	B	Intersection		22.2	C	Intersection		27.6	C	Intersection		40.2	D	Intersection		14.3	B	Intersection		15.4	B
Route 9/Bear Mountain Parkway and Jans Peeck Bridge*																								
Eastbound	L	0.50	30.5	C	L	0.50	30.5	C	L	0.99	72.9	E	L	0.99	72.9	E	L	0.98	71.2	E	L	0.98	71.2	E
	R	1.01	29.3	C	R	1.05	42.4	D	R	0.87	7.7	A	R	0.89	9.2	A	R	0.70	2.6	A	R	0.72	2.8	A
Northbound	L	0.90	36.3	D	L	0.92	38.5	D	L	1.15	104.2	F	L	1.20	126.6	F	L	1.38	201.6	F	L	1.41	215.0	F
	T	0.52	10.9	B	T	0.54	11.1	B	T	0.54	11.2	B	T	0.57	11.7	B	T	0.45	9.9	A	T	0.47	10.1	B
Southbound	T	1.93	452.6	F	T	2.09	522.2	F	T	1.96	467.7	F	T	2.02	494.3	F	T	1.50	269.3	F	T	1.56	293.6	F
	R	0.42	13.6	B	R	0.43	13.9	B	R	0.16	11.0	B	R	0.16	11.2	B	R	0.49	15.9	B	R	0.49	15.9	B
	Intersection		88.1	F	Intersection		105.1	F	Intersection		105.2	F	Intersection		116.2	F	Intersection		110.0	F	Intersection		117.7	F

2023 Future without the Proposed Project and 2023 with the Proposed Project Conditions Level of Service Analysis

Intersection	Weekday AM								Weekday PM								Saturday Midday (Weekend)							
	2023 Future w/o Proposed Project				2023 Future with Proposed Project				2023 Future w/o Proposed Project				2023 Future with Proposed Project				2023 Future w/o Proposed Project				2023 Future with Proposed Project			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
UNSIGNALIZED INTERSECTIONS																								
Louisa Street and John Walsh Boulevard/Park Entrance**																								
Eastbound	LTR	0.00	7.3	A	LTR	0.00	7.3	A	LTR	0.00	7.2	A	LTR	0.00	7.2	A	LTR	0.00	7.2	A	LTR	0.00	7.2	A
Westbound	LTR	0.28	8.5	A	LTR	0.36	8.9	A	LTR	0.21	8.2	A	LTR	0.24	8.4	A	LTR	0.21	8.1	A	LTR	0.24	8.3	A
Northbound	LT	0.04	22.4	C	LT	0.06	31.9	D	LT	0.03	16.3	C	LT	0.03	18.4	C	LT	0.06	17.1	C	LT	0.06	19.3	C
	R	0.62	14.0	B	R	0.67	15.2	C	R	0.32	10.3	B	R	0.41	11.0	B	R	0.27	9.8	A	R	0.31	10.1	B
Southbound	LTR	0.11	23.8	C	LTR	0.17	34.7	D	LTR	0.06	17.2	C	LTR	0.07	21.1	C	LTR	0.10	17.6	C	LTR	0.11	20.3	C
Louisa Street and Route 9 Southbound Ramps																								
-No Conflicting or Merging Movements for Analysis-																								
Louisa Street and Route 9 Northbound Ramps***																								
Eastbound	L	0.39	11.0	B	L	0.45	11.8	B	L	0.35	10.4	B	L	0.45	11.6	B	L	0.29	9.6	A	L	0.33	10.1	B
Northbound	LT	0.30	10.4	B	LT	0.32	10.6	B	LT	0.24	9.7	A	LT	0.25	10.0	A	LT	0.23	9.4	A	LT	0.24	9.6	A
Broadway and Continental Driveway																								
Eastbound	L	0.06	13.4	B	L	0.10	18.7	C	L	0.05	12.8	B	L	0.07	17.2	C	L	0.01	12.7	B	L	0.02	15.6	C
	R	0.00	9.0	A	R	0.00	10.2	B	R	0.00	9.2	A	R	0.00	9.8	A	R	0.00	9.3	A	R	0.00	10.0	B
Northbound	LT	0.00	7.5	A	LT	0.00	8.0	A	LT	0.00	7.6	A	LT	0.00	7.9	A	LT	0.00	7.7	A	LT	0.00	7.9	A
Broadway and Entergy Main Driveway																								
Eastbound	LR	0.04	11.3	B	LR	0.05	14.6	B	LR	0.03	11.1	B	LR	0.04	13.9	B	LR	0.03	11.1	B	LR	0.03	13.1	B
Northbound	LT	0.00	7.6	A	LT	0.00	8.1	A	LT	0.00	7.6	A	LT	0.00	7.9	A	LT	0.00	7.7	A	LT	0.00	7.9	A
Route 9A and Belock Avenue/Route 9 Southbound On-Ramp																								
Eastbound	LTR	0.13	28.9	D	LTR	0.16	34.6	D	LTR	0.05	20.8	C	LTR	0.05	23.0	C	LTR	0.10	20.1	C	LTR	0.11	21.5	C
Northbound	L	0.01	9.2	A	L	0.01	9.6	A	L	0.01	9.3	A	L	0.01	9.4	A	L	0.00	9.1	A	L	0.00	9.3	A
Southbound	L	0.36	11.6	B	L	0.38	12.1	B	L	0.07	10.1	B	L	0.08	10.7	B	L	0.07	8.9	A	L	0.07	9.0	A
Route 6 and Route 9 Southbound Ramps																								
Westbound	LR	0.16	11.2	B	LR	0.17	11.3	B	LR	0.15	10.2	B	LR	0.15	10.2	B	LR	0.14	10.3	B	LR	0.14	10.4	B
Southbound	LT	0.02	8.1	A	LT	0.02	8.2	A	LT	0.01	7.6	A	LT	0.01	7.6	A	LT	0.02	7.8	A	LT	0.02	7.8	A
Route 6 and Route 9 Northbound Ramps																								
Eastbound	L	0.05	8.6	A	L	0.05	8.7	A	L	0.02	7.9	A	L	0.02	7.9	A	L	0.01	8.0	A	L	0.01	8.0	A
Southbound	L	0.68	29.6	D	L	0.74	34.9	D	L	0.51	16.8	C	L	0.57	18.6	C	L	0.32	13.6	B	L	0.36	14.2	B
	R	0.01	10.8	B	R	0.01	11.0	B	R	0.02	9.4	A	R	0.02	9.5	A	R	0.02	9.7	A	R	0.02	9.8	A
Broadway and Project Site Driveway																								
Eastbound	LR	Does Not Exist in No Build			LR	0.20	14.1	B	LR	Does Not Exist in No Build			LR	0.33	14.5	B	LR	Does Not Exist in No Build			LR	0.18	12.9	B
Northbound	LT				LT	0.01	8.0	A	LT				LT	0.00	7.8	A	LT				LT	0.00	7.9	A

Notes:

*The traffic signal at this intersection provides continuous green signal time for the eastbound right turn movement.

** Coded as a Two-Way Stop Controlled intersection in Synchro due to limitations in the Synchro software

*** Coded as an All-Way Stop Controlled intersection in Synchro due to limitations in the Synchro software

LOS F during the Weekday PM peak hour. The southbound approach would deteriorate within LOS F during the Weekday AM and Weekday PM peak hours.

- Welcher Avenue and Route 9 Northbound Ramps—The eastbound left-turn would deteriorate from LOS D to LOS F during the Weekday PM peak hour.
- Route 9 and Bear Mountain Parkway/Jans Peeck Bridge—The northbound left-turn would deteriorate within LOS F during the Weekday PM peak hour. The southbound through movement would deteriorate within LOS F during the Weekday AM peak hour.

It is important to note that the entering or exiting project-generated traffic utilizing Broadway or Route 9A to the south of the project site is anticipated to be approximately 10 vehicles during each of the peak hours examined. That level of traffic is not expected to generate significant congestion along those roadways south of the project site.

POTENTIAL TRAFFIC MITIGATION

The locations identified as having potential traffic impacts are all signalized intersections under the jurisdiction of NYSDOT. Potential traffic mitigation measures could include the following:

- Retiming the traffic signals
- Upgrading the traffic signal components, including vehicle detection, traffic signal hardware (controllers), signal communications and/or software

The goal of these proposed improvements to be funded by the Proposed Project are to optimize traffic operations at each intersection similar to the improvements installed on US Route 6 as part of the Cortlandt Crossing project. Approval from NYSDOT would be required to explore and implement the proposed mitigation measures.

TRAFFIC CIRCULATION

With the Proposed Project site would be accessible from a single driveway on Broadway. For autos, the driveway would be a full movement driveway (all turns permitted). For trucks, the driveway would be limited to right turning entering trucks from southbound Broadway and left turning exiting trucks onto northbound Broadway. The site driveway would provide a single entry lane and single exit lane.

Based on field inspection the sight distance at the proposed driveway location in both direction is acceptable. However, warning signs will be installed on Broadway to notify drivers of the presence of the driveway.

PARKING

As presented in **Table 3**, the Proposed Project would provide approximately 300 parking spaces on-site.

PUBLIC TRANSPORTATION

No significant changes are expected in the study area's public transportation conditions under 2023 future without and with the Proposed Project scenarios. Metro-North Commuter Railroad and the Bee-Line Bus System adjust their operating schedules to reflect demand as needed.

CRASH DATA/SAFETY

Awaiting crash data from NYSDOT.

PEDESTRIAN AND BICYCLE CONDITIONS

No significant changes in study area pedestrian and bicycle conditions are expected under 2023 future without and with the Proposed Project scenarios.

F. CONCLUSIONS

With the projected increase in traffic to and from the proposed site, traffic impacts as per the Town criteria are projected to occur at three of the study area intersections for the peak hours examined. Potential design options to be considered include traffic signal retimings and upgrades to the traffic signal hardware, software, signal communication and detection to improve traffic conditions. Again, as each of these signals is under the jurisdiction of NYSDOT, approval from NYSDOT to implement the proposed mitigation measures is required. The goal of these proposed improvements to be funded by the Proposed Project are to optimize traffic operations at each intersection similar to the improvements installed on US Route 6 as part of the Cortlandt Crossing project.

It is expected that the DGEIS for the Proposed Project would include a refined traffic analysis based on additional details of the potential operations. As some of the assumptions in the traffic study may be conservative in the development of the baseline traffic volumes and conditions (project-generated truck trips could be replaced with barge trips) it is possible that a refined traffic analysis may result in fewer project generated trips.

Port Cortlandt Technical Memorandum

Noise Impact Assessment

Port Cortlandt Technical Memorandum
Noise Impact Assessment

A. INTRODUCTION

This technical memorandum summarizes AKRF's initial assessment of the potential for noise impacts during operation of the Proposed Project within the Town of Cortlandt (the Town) and estimates the potential for the Proposed Project to generate noise that would be perceptible and/or disruptive at surrounding sensitive uses (e.g., residences, open space, schools). As part of the preparation of the DGEIS, an assessment of the potential noise and duration during construction will also be prepared. The initial operational analysis consisted of baseline noise level measurements, estimates of noise levels from vehicular traffic associated with the project, and modeling of estimated noise from on-site operations of the potential manufacturing facility. While there are currently transient trespassing trail bikes on the site, the noise levels from such were conservatively not included in the baseline assessment or initial impact analyses. The projected future noise levels were compared with existing noise levels in the area to evaluate their potential effects on residents. It should be noted that the noise analysis presented in this memorandum will be subject to further refinement as the Proposed Project evolves, to include any additional locations of sensitive uses as requested by the Town and the public through the Draft Generic Environmental Impact Statement (DGEIS). Note that the selection of these initial noise-sensitive locations was based on the Applicant's familiarity with topographic and roadway conditions and knowledge of residences, open space, and schools in the area and near the Project Site.

B. SUMMARY OF FINDINGS

The analysis showed that vehicular traffic to and from the Project Site would have the potential to result in noise level increases in the range that would be considered imperceptible to barely perceptible at noise-sensitive uses along the traffic routes. The total noise levels would also be below the threshold that would necessitate mitigation according to the Town of Cortlandt noise ordinance or the New York State Department of Environmental Conservation (NYSDEC) impact evaluation guidance.

At the time this analysis was prepared, assumptions were made for the potential source noise levels for equipment moving on-site and at the port. The predominant source on site would be either be a transient vehicle for moving personnel or equipment used to move the large components to storage or down to the waterfront. The sound levels from a self-propelled modular trailer (SPMT), which would be used to move large manufactured products such as nacelles or blades, were not available, and so were simulated for this technical memorandum using forklifts, which are comparable. As the DGEIS is prepared, further source information for mobile on-site equipment will be included in the analyses.

Utilizing these source estimates, in the modeling of indoor manufacturing operations and outdoor transport, the analysis of noise from on-site manufacturing operations found that outdoor equipment

used to move materials between the manufacturing building and the river would be the dominant source of on-site noise during the daytime, and port operations would be the dominant source of on-site noise at night. Predicted daytime noise levels from the potential on-site manufacturing operations without any noise mitigation measures would result in only barely perceptible or imperceptible noise level increases at surrounding receptors. Predicted nighttime noise levels, primarily driven by port operations, would have the potential to result in barely perceptible to readily noticeable noise levels only at receptors at the west end of 9th or 10th Streets with direct line of sight to port operations. All predicted daytime and nighttime noise levels would be below the Town of Cortlandt noise level restrictions and NYSDEC recommended threshold for residential use.

In coordination with the Town, future locations for noise measurements and simulations, as well as the details of any potential design options on the site or in the community around the site, will be further refined as part of the DGEIS and Site Plan approval process, to avoid any potential for significant adverse noise impacts. It is expected that the DGEIS for the Proposed Project would include a refined noise analysis based on additional details of the potential operations and a more extensive program of baseline noise level measurements. Such a refined analysis would be expected to result in comparable or lower predicted noise levels from potential manufacturing operations and may also find lower predicted noise level increases based on more precise determinations of baseline noise levels.

C. METHODOLOGY

NOISE FUNDAMENTALS

COMMUNITY RESPONSE TO CHANGES IN NOISE LEVELS

Common noise levels in dBA are shown in **Table 1**. [1] The average ability of an individual to perceive changes in noise levels is well documented (see **Table 2**). Generally, changes in noise levels less than 3 dBA are barely perceptible to most listeners, whereas 10 dBA changes are normally perceived as doublings (or halvings) of noise levels. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

NOISE STANDARDS AND IMPACT CRITERIA

TOWN OF CORTLANDT NOISE CONTROL LAW

The Town of Cortlandt noise control law, Chapter 197 of the Town Code of Cortlandt, prohibits "unnecessary noise," which is defined as "any excessive or unusually loud sound or any sound which either annoys, disturbs, injures, or endangers the comfort, repose, health, peace or safety of a person or which causes injury to animal life or damage to property or business." The law puts forth specific noise level limits for residential and commercial districts, which are shown in **Table 3**.

[1] Noise is typically measured in units called decibels (dB), which are 10 times the logarithm of the ratio of the sound pressure squared to a standard reference pressure squared. One of the simplified scales that accounts for the dependence of perceived loudness on frequency is the use of a weighting network—known as A-weighting—that simulates the response of the human ear. For most noise assessments, the A-weighted sound pressure level in dBA units is used in view of its widespread recognition and its close correlation with perception. In this analysis, all measured noise levels are reported in dBA or A-weighted decibels.

Table 1
Common Noise Levels

Sound Source	(dBA)
Military jet, air raid siren	130
Amplified rock music	110
Jet takeoff at 500 meters	100
Freight train at 30 meters	95
Train horn at 30 meters	90
Heavy truck at 15 meters	
Busy city street, loud shout	80
Busy traffic intersection	
Highway traffic at 15 meters, train	70
Predominantly industrial area	60
Light car traffic at 15 meters, city or commercial areas or residential areas close to industry	
Background noise in an office	50
Suburban areas with medium density transportation	
Public library	40
Soft whisper at 5 meters	30
Threshold of hearing	0

Note: A 10 dBA increase in level appears to double the loudness, and a 10 dBA decrease halves the apparent loudness.
Source: Cowan, James P. Handbook of Environmental Acoustics. Van Nostrand Reinhold. New York. 1994.
Egan, M. David. Architectural Acoustics. McGraw-Hill Book Company. 1988.

Table 2
Average Ability to Perceive Changes in Noise Levels

Change (dBA)	Human Perception of Sound
2-3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound

Source: Bolt, Beranek and Newman, Inc. *Fundamentals and Abatement of Highway Traffic Noise*, Report No. PB-222-703. Prepared for Federal Highway Administration. June 1973.

Table 3
Cortlandt Town Code Specified Noise Level Limits (in dBA)

Time of Day	Noise Level Limit for Residential Districts	Noise Level Limit for Commercial Districts
8 AM to 6 PM	65	65
6 PM to 8 AM	55	

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NYSDEC has published a policy and guidance document, *Assessing and Mitigating Noise Impacts* (DEP-00-1, February 2, 2001), which presents noise impact assessment methods, identifies thresholds for significant impacts, and discusses potential measures to reduce or eliminate noise impacts.[2]

NYSDEC's guidance document sets forth thresholds to use in determining whether a noise increase due to a project may constitute a significant adverse impact, noting that these thresholds should be viewed as guidelines subject to adjustment as appropriate for the specific circumstances. According to DEP-00-1:

- Increases in noise ranging from 0 to 3 dBA should have no appreciable effect on sensitive uses;
- Increases of 3 to 6 dBA may have the potential for adverse impacts only in cases where the most sensitive of uses (e.g., hospital or school) are present;
- Increases of more than 6 dBA may require a closer analysis of impact potential depending on existing noise levels and the character and sensitivity of surrounding land use; and
- Increases of 10 dBA or greater deserve consideration of avoidance and mitigation measures in most cases.

The guidance document also sets forth noise thresholds to use in identifying whether a noise level from a project should be considered a potential significant adverse impact. According to the guidance, the addition of any noise source in a non-industrial setting should not raise the ambient noise level above a maximum of 65 dBA, and ambient noise levels in industrial or commercial areas may exceed 65 dBA with a high end of approximately 79 dBA. As set forth in the guidance, projects that exceed these levels should explore the feasibility of implementing mitigation.

GENERAL NOISE ANALYSIS METHODOLOGY

- Establish existing baseline noise levels at sensitive uses near the Project Site and/or along routes to/from the site using a combination of previously measured noise levels in the vicinity of the Project Site and newly conducted noise level measurements;
- Examine the potential for noise level increases from vehicular traffic along routes to and from the Project Site using proportional modeling of vehicular traffic noise;
- Use the CadnaA state-of-the-art noise calculation model and estimates of noise emissions from on-site operational equipment (e.g., manufacturing equipment, tools, vehicles, building mechanical equipment) to estimate noise levels resulting from manufacturing operations on the Project Site at nearby sensitive uses;
- Compare total estimated noise levels from project operations to existing baseline noise levels and to applicable noise regulations;

[2] http://www.dec.ny.gov/docs/permits_ej_operations_pdf/noise2000.pdf.

- Based on estimated total noise levels and noise level increments associated with the project, identify the potential for project operations to result in noise levels that would be disruptive at nearby sensitive uses; and
- Consider potential mitigation measures for noise sources that may result in disruptive noise levels or noise level increases.

PROPORTIONAL MODELING OF VEHICULAR TRAFFIC NOISE

Mobile sources constitute vehicles arriving at and departing from the Project Site. Proportional modeling was used to determine the potential noise level increases at sensitive uses along the routes that such vehicles would use to travel to and from the Project Site. These include sensitive uses along Broadway north of the Project Site, since all vehicular traffic associated with the Project would be required to travel on Broadway north of the Project Site entrance.

Using the proportional modeling technique, the prediction of future noise levels, where traffic is the dominant noise source, is based on a calculation using measured existing noise levels and predicted changes in traffic volumes to determine levels in the future with operation of the project. Vehicular traffic volumes are converted into Passenger Car Equivalent (PCE) values, for which one medium-duty truck (having a gross weight between 9,900 and 26,400 pounds) is assumed to generate the noise equivalent of 13 cars, and one heavy-duty truck (having a gross weight of more than 26,400 pounds) is assumed to generate the noise equivalent of 47 cars, and one bus (vehicles designed to carry more than nine passengers) is assumed to generate the noise equivalent of 18 cars. Future noise levels are calculated using the following equation:

FB NL - EX NL = 10 * $\log_{10}$ (FB PCE / EX PCE)

where:

FB NL = Future Noise Level with the Proposed Project (Operational)

EX NL = Existing Noise Level

FB PCE = Future PCEs with the Proposed Project (Operational)

EX PCE = Existing PCEs

Sound levels are measured in decibels. They increase logarithmically with sound source strength. In this case, the sound source is traffic volumes measured in PCEs. For example, assume that traffic is the dominant noise source at a particular location. If the existing traffic volume on a street is 100 PCE, and the future traffic volume increased by 50 PCE to a total of 150 PCE, the noise level would increase by 1.8 dBA. Similarly, if the future traffic were increased by 100 PCE, or doubled to a total of 200 PCE, the noise level would increase by 3.0 dBA.

COMPUTER-BASED NOISE PREDICTION MODEL

The CadnaA model, based on the acoustic propagation standards promulgated in International Standard ISO 9613-2, was used to estimate noise levels from the on-site operations associated with the project. The CadnaA model is a computerized three-dimensional model developed by DataKustik for sound prediction and assessment that allows the user to model several different sound source types, including point sources, line sources, and area sources. The model can be used for the analysis of a wide variety of sound sources, including stationary sources (e.g., construction equipment, industrial equipment, power generation equipment, etc.), transportation sources (e.g., roads, highways, railroad lines, busways, airports, etc.), and other specialized sources (e.g., sporting

facilities, etc.). The model takes into account the sound power levels of the sound sources, attenuation with distance, ground contours, reflections from barriers and structures, surface absorption, attenuation due to shielding, etc. This model was employed to simulate Port and upland landside operations, including those that would occur within the manufacturing facility.

D. EXISTING CONDITIONS

In order to document existing noise levels in the Town of Cortlandt, AKRF conducted noise level measurements near sensitive uses in the project area in addition to considering noise level measurements previously conducted in the project area for the Montauk Bus Garage Facility project. **Figure 1** shows the noise measurements that were previously performed as well as six locations where new noise level measurements were conducted.

NOISE LEVEL MEASUREMENT RESULTS

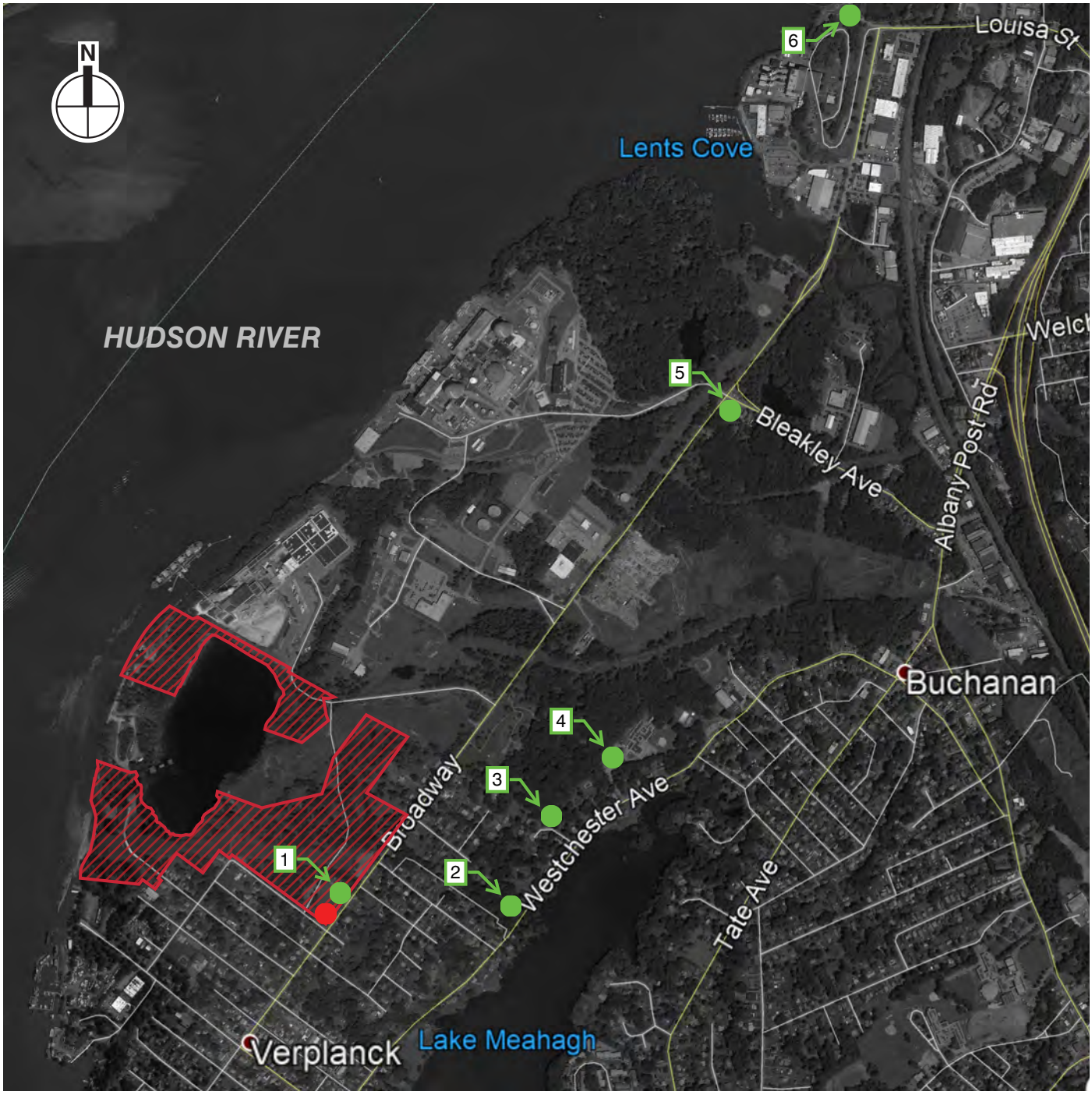
At each of the new noise monitoring locations (see **Figure 1**), AKRF conducted 20-minute duration measurements during weekday daytime (7 AM to 10 PM) and nighttime (10 PM to 7 AM) periods as well as Sunday daytime and nighttime periods. Measurements were conducted on July 29 and 30 and August 2 and 3, 2020.

Measurements were performed using a Brüel & Kjær Sound Level Meter (SLM) Type 2250, Brüel & Kjær Type 4189 ½-inch microphone, and a Brüel & Kjær Sound Level Calibrator Type 4231. The SLM had a laboratory calibration date within one year of the measurement, as is standard practice. The Brüel & Kjær SLMs are a Type 1 instrument according to American National Standards Institute (ANSI) Standard S1.4-1983 (R2006). At each receptor site, the instrument was mounted at least 5 feet above grade. The microphone was mounted at least six feet away from any large reflecting surfaces. The SLM was field checked before and after readings with a Brüel & Kjær Type 4231 Sound Level Calibrator using the appropriate adaptor. Measurements were made on the A-scale (dBA). The data were digitally recorded by the SLM. Measured quantities included the $L_{eq(1)}$ values. All measurement procedures were based on the guidelines outlined in ANSI Standard S1.13-2005.

The results of the existing L_{eq} noise level measurements are summarized in **Table 4**.

The dominant source of noise during weekday and Sunday daytime periods was vehicular traffic on the roadways adjacent to each of the measurement sites. The dominant source of noise during nighttime periods at Sites 1 and 6 was also vehicular traffic, specifically along Broadway. However, at Sites 2, 3, 4, and 5, the dominant source of noise during the nighttime periods when vehicular traffic was at a minimum generally was insects or other wildlife. In some cases, the insect noise during the nighttime resulted in higher total level of noise than occurred during daytime from vehicular traffic. AKRF will undertake additional baseline noise levels in the fall to measure nighttime levels at sites 2, 3, 4, and 5 if requested.

9.3.20



Project Site

Historical Noise Measurement Location

2020 Noise Measurement Location

0 1000 2000 FEET

Noise Measurement Locations

PORT CORTLANDT

Figure 1

Table 4
Results of 2020 Noise Survey Program (in dBA)

Site	Location	Day	Time	$L_{eq(1)}$ Noise Level
1	Along Broadway near the intersection of Broadway and 11th Street	Weekday	Daytime	63.1
			Nighttime	58.9
		Sunday	Daytime	61.5
			Nighttime	57.8
2	Along Westchester Avenue near 14th Street.	Weekday	Daytime	58.9
			Nighttime	53.4
		Sunday	Daytime	59.8
			Nighttime	53.3
3	In the cul-de-sac at the end of Pheasants Run.	Weekday	Daytime	43.2
			Nighttime	49.0
		Sunday	Daytime	46.5
			Nighttime	51.1
4	In the parking lot of the Buchanan-Verplanck Elementary School.	Weekday	Daytime	47.0
			Nighttime	52.2
		Sunday	Daytime	42.5
			Nighttime	59.9
5	Along Bleakley Avenue near the intersection of Bleakley Avenue and Broadway.	Weekday	Daytime	56.9
			Nighttime	52.9
		Sunday	Daytime	58.5
			Nighttime	60.8
6	Charles Point Park near the intersection of Broadway and Louisa Street.	Weekday	Daytime	50.3
			Nighttime	44.8
		Sunday	Daytime	50.1
			Nighttime	49.0

Notes: Noise level measurements conducted by AKRF, Inc. on July 29 and 30 and August 2 and 3, 2020.

COMPARISON OF CURRENT NOISE LEVELS TO HISTORICAL NOISE LEVELS

At noise measurement Site 1 described above, AKRF had previously conducted noise level measurements on Tuesday, February 14, 2017 as part of another assignment, not related to the Proposed Project. Since the measured noise level from 2017 represents a typical condition prior to the start of the COVID-19 pandemic, the newly measured noise level was compared with the previously measured level to evaluate the potential effects on noise levels associated with reduced traffic and other activity during the pandemic. **Table 5** shows the weekday daytime noise levels from 2017 and 2020 at this location.

Table 5
Comparison of Noise Levels along Broadway near 11th Street 2017 and 2020 (in dBA)

Year	Measurement Start Time	$L_{eq(1)}$ Noise Level
2017	4 PM	66.9
2020	5 PM	63.1

Typically, day-to-day variability of noise levels at locations where vehicular traffic is the dominant source of noise, which is the case at this location, is approximately plus or minus 3 dBA, although variability can be greater for areas with low levels of vehicular traffic. The measured level at this location in 2020 is approximately 4 dBA lower than the level measured in 2017, suggesting a reduction slightly greater than would be explained by typical day-to-day variability.

Based on this comparison of measured noise levels, the measured daytime noise levels in 2020 appear to be somewhat lower than what those expected for typical volumes of vehicular traffic before the COVID-19 pandemic. A 4 dBA adjustment factor to daytime noise levels could be used to estimate 2020 non-pandemic levels where appropriate for the potential noise effects under study.

E. POTENTIAL NOISE EFFECTS OF THE PROPOSED PROJECT

MOBILE SOURCE NOISE EFFECTS

Using the methodology described earlier, potential noise levels in the future with the Proposed Project were calculated for the three noise receptor sites along Broadway north of the Project Site, represented by receptors 1, 5, and 6. At other receptors, no truck traffic deliveries or departures (with the possible exception of some UPS/FedEx/USPS deliveries) or vehicular traffic associated with the Proposed Project would traverse the immediately adjacent roadway segments, since all truck traffic associated with the Project would be required to travel on Broadway north of the Project Site entrance, and all other vehicular traffic associated with the Project would travel either north or South on Broadway.

The weekday daytime measured noise level has been used to estimate the weekday AM traffic peak period, the weekday nighttime period has been used to estimate the weekday PM time period, and the Sunday daytime period has been used to represent the Saturday MD time period. The future noise levels during each of these periods are shown in **Table 6**.

Table 6
Future Noise Levels with the Proposed Project (in dBA)

Site	Time	Existing $L_{eq(1)}$	Future $L_{eq(1)}$ with Proposed Project	Project Increment
1	Weekday AM	63.1	64.4	1.3
	Weekday PM	58.9	60.4	1.5
	Saturday MD	61.5	62.9	1.4
5	Weekday AM	56.9	58.1	1.2
	Weekday PM	52.9	54.3	1.4
	Saturday MD	58.5	59.8	1.3
6	Weekday AM	50.3	50.9	0.6
	Weekday PM	50.3	51.2	0.9
	Saturday MD	50.1	50.9	0.8

Comparing future noise levels with the Proposed Project with existing noise levels, even using the conservative estimate of 12 trucks/per hour, the maximum increase in $L_{eq(1)}$ noise levels would be less than 2 dBA, which would be considered imperceptible to barely perceptible and would not exceed NYSDEC's threshold of 6 dBA beyond which closer analysis or consideration of avoidance or mitigation would be warranted. In the future with the Proposed Project, the absolute levels would

not exceed 65 dBA, which is NYSDEC's recommended level for residential use and the Town of Cortlandt noise level restriction for daytime.

NOISE EFFECTS OF ON-SITE OPERATIONS

The potential noise effects of the on-site manufacturing operations included in the Proposed Project were evaluated according to the methodology described above. The noise sources associated with these operations include tools and equipment operating inside a potential manufacturing building, equipment operating outside the building primarily used to move materials between the building and the river, port operations at the river such as materials loading onto and off of barges, and building HVAC equipment. Each of these were included in the 3D acoustical models of project operations. The noise emission levels for each were conservatively estimated based on typical noise emission levels for manufacturing equipment, tools, and HVAC equipment, and the quantities for each were estimated to provide a conservative representation of potential noise effects of the manufacturing operations. Daytime operations could include any of the noise sources described above, whereas nighttime operations would not include outdoor movement of materials with the potential exception of port operations, since there would not be a need to move materials outdoors during nighttime hours.

For circumstances where details are not yet known (e.g., blade manufacturing vs. nacelle manufacturing), the assumption that would tend to result in higher levels of noise was selected. Consequently, a refined analysis based on additional and more specific information would be expected to result in comparable or lower predicted noise levels; such an refined analysis would be provided in the DGEIS.

The predicted $L_{eq(1)}$ noise levels resulting from daytime on-site manufacturing operations of the Proposed Project as experienced at the nearest receptors would range from the low 40s dBA to the mid-60s dBA depending on the proximity and line of sight to the Project Site. Baseline measured daytime noise levels in the area were also in the range of the low 40s to mid-60s dBA[3]. **Figure 2** shows the noise levels from potential daytime on-site manufacturing operations predicted to occur throughout the study area at a height of approximately 15 feet above grade (representing a window on the second floor of a building). The primary contributing sources to the predicted daytime noise levels are the equipment that would be operating outdoors on the Project Site to move equipment between the manufacturing building and the river. This equipment would consist of a combination of cranes, self-propelled modular transporters, forklifts, and/or trucks. These pieces of equipment would not need to operate at night.

The predicted $L_{eq(1)}$ noise levels resulting from nighttime on-site manufacturing operations of the Proposed Project as experienced at the nearest receptors would range from the low 40s dBA to the low 50ss dBA depending on the proximity and line of sight to the Project Site. Baseline measured nighttime noise levels in the area were in the range of the mid-40s to high 50s dBA. **Figure 3** shows the noise levels from potential nighttime operations for the same locations.

The primary contributing sources to predicted nighttime noise levels are port operations, which may include movement of materials to or from a barge. The "Port Operations" memorandum outlines

[3] Generally, due to the logarithmic nature of the decibel scale, combining a baseline noise level with a noise source that contributes the same level results in a 3 dBA increase, whereas adding a source with a higher level would result in a larger increase, up to approximately the difference between the baseline level and new source level.

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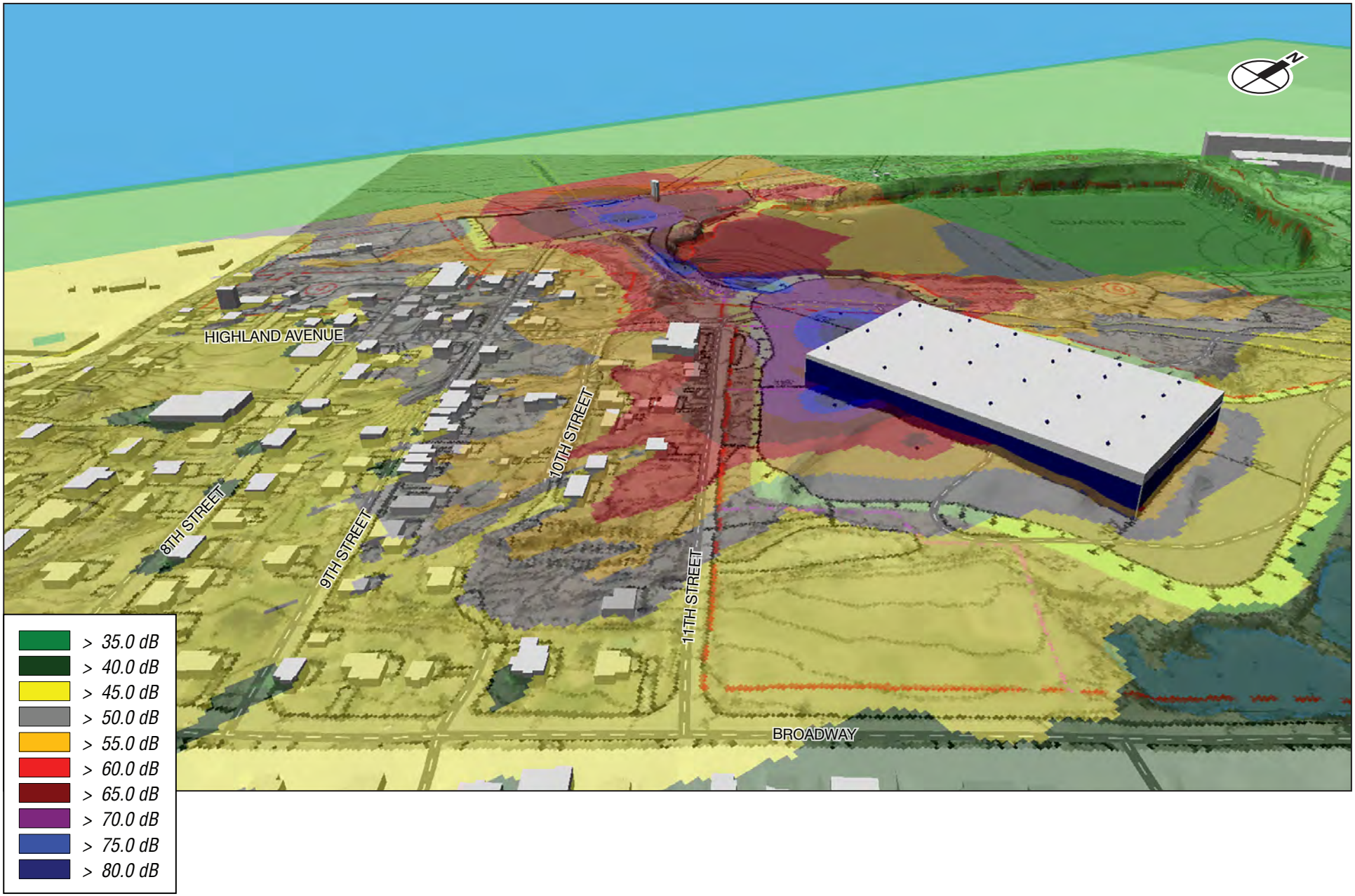

Estimated Daytime Noise Levels

PORT CORTLANDT

Figure 2

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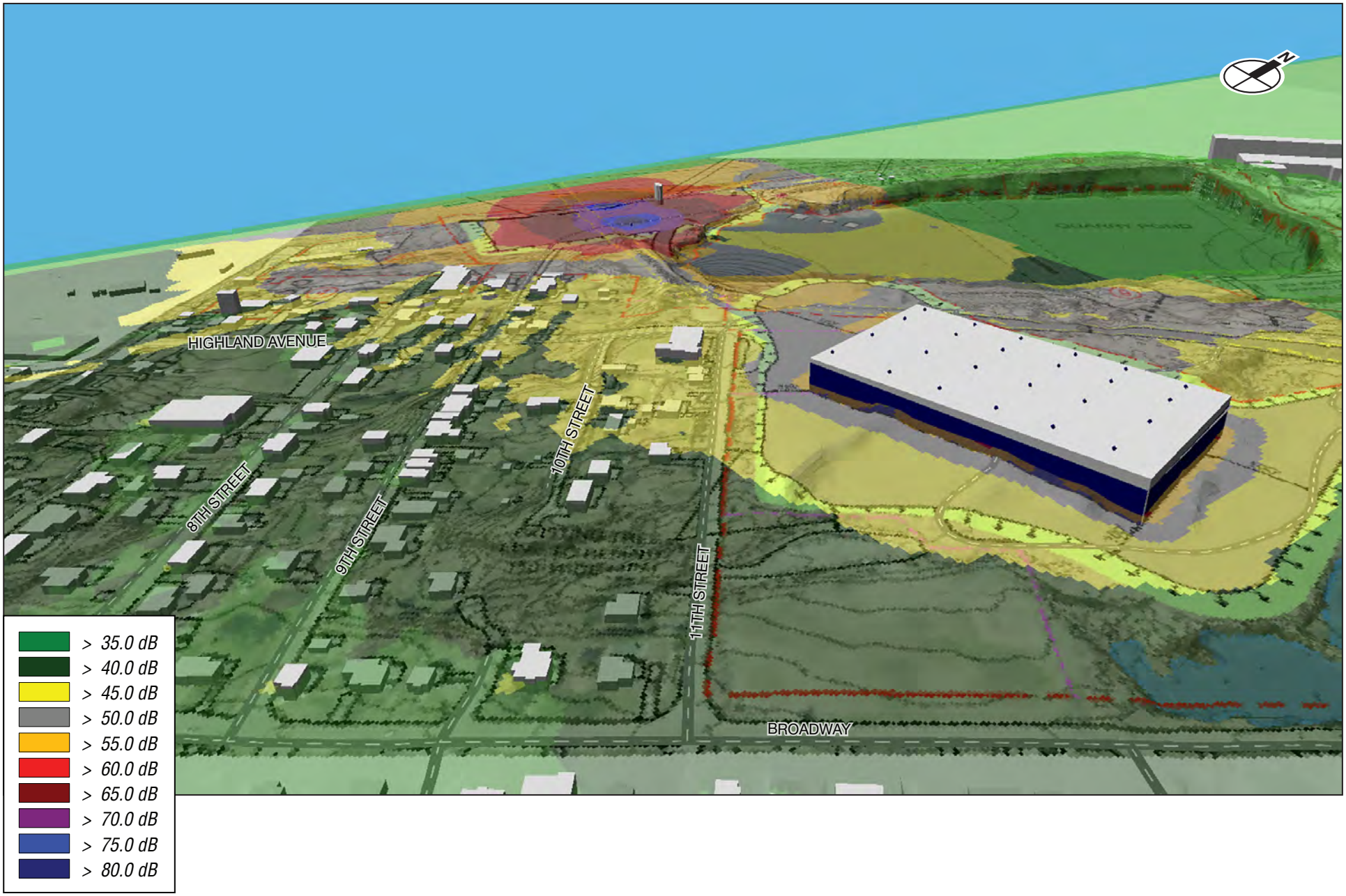

Estimated Nighttime Noise Levels

PORT CORTLANDT

Figure 3

the overall predicted frequency of vessel operations per year that could occur at the Port. Manufacturing activities within the potential manufacturing building could also occur at night, but the equipment and tools that would be used for manufacturing would be located inside the building, which would diminish the perceptibility of the noise. It has been assumed that the building HVAC system would consist primarily of large volume rooftop air handling units, which contribute less to the overall noise emissions than the other equipment discussed, but their emissions are included in both daytime and nighttime estimated noise levels. Predicted noise levels at specific receptor areas are discussed below.

11TH STREET

Saint Patrick's Church and the residences along the south side of 11th Street between Highland Avenue and Broadway are the nearest sensitive uses with the most direct line of sight to the potential on-site manufacturing operations. As a result, these uses are predicted to experience the highest project-generated noise levels, which would be in the range of 50 to 67 dBA during daytime and in the range of 42 to 46 dBA during nighttime. The maximum predicted project-generated daytime noise level of 67 dBA is comparable to the daytime noise level of 66.9 dBA measured at the corner of 11th Street and Broadway in 2017 (prior to the COVID-19 pandemic) (see **Table 5**). Using the 2017-measured level at this location as a baseline, the maximum predicted project noise level would result in a "barely perceptible" increase during daytime. Further, the maximum predicted project-generated nighttime noise level of 46 dBA is comparable to the baseline nighttime noise levels measured in the area (mid-40s to mid-50s dBA), and would also result in a "barely perceptible" noise level increase.

The maximum daytime levels predicted for this area would be less than the 65 dBA acceptable daytime threshold for residential use in the Town of Cortlandt noise ordinance and NYSDEC guidance, and the maximum nighttime levels predicted for this area would be less than the 55 dBA acceptable nighttime threshold for residential use in the Town of Cortlandt noise ordinance and below the total level recommended by for residential use of 65 dBA.

9TH AND 10TH STREETS

The residences along the 9th and 10th Streets west of Broadway are slightly farther from the Project Site and many are partially shielded from the site by other buildings, but are closer to and would have a direct line of sight to port operations. These sensitive uses are predicted to experience noise levels in the range of 49 to 56 dBA during daytime and in the range of 39 to 52 dBA during nighttime. The predicted daytime noise levels are lower than the measured daytime noise levels in the area (in both 2017 and 2020), and would consequently not have the potential to result in perceptible noise level increases during daytime hours. The maximum predicted project-generated nighttime noise level of 52 dBA is comparable to the baseline nighttime noise levels measured in the area (mid-40s to mid-50s dBA), and would result in a "barely perceptible" to "readily noticeable" noise level increase.

The maximum daytime levels predicted for this area would be less than the 65 dBA acceptable daytime threshold for residential use in the Town of Cortlandt noise ordinance and NYSDEC guidance, and the maximum nighttime levels predicted for this area would be less than the 55 dBA acceptable nighttime threshold for residential use in the Town of Cortlandt noise ordinance and below the total level recommended by for residential use of 65 dBA.

OTHER SENSITIVE USES

All other sensitive uses, including those along streets south of 9th Street or east of Broadway, are located farther away from the Project Site than the locations discussed above. The predicted noise levels at these other sensitive uses from potential on-site manufacturing operations would be less than 55 dBA, and consequently would result in noise level increases that would be imperceptible to barely perceptible and total noise levels below both the 55 dBA acceptable nighttime threshold for residential use in the Town of Cortlandt noise ordinance and the 65 dBA level recommended by NYSDEC guidance for residential use. For the DGEIS, additional refinements of the operational noise impacts will be evaluated, and more refined predictions of incremental noise levels beyond the sensitive uses (noise-sensitive locations) in the technical memorandum will be prepared.

DESCRIPTION OF POTENTIAL ADDITIONAL NOISE REDUCTION MEASURES

As described above, the primary contributor to the total level of noise predicted to occur at nearby sensitive uses would be the equipment operating outdoors on the Project Site moving materials between the manufacturing building and the river. Since the equipment would be located at grade level and the surrounding buildings are of moderate height (two or three stories), a physical barrier/berm that would break the line of sight between these sources and the surrounding sensitive uses is likely to be an effective method for reducing potential visual and noise effects from the manufacturing facility and will be investigated in the DGEIS. In coordination with the Town, future locations for noise measurements and simulations, as well as the details of any potential design options on the site or in the community around the site, will be further refined as part of the DGEIS and Site Plan approval process, to avoid any potential for significant adverse noise impacts.

F. CONCLUSIONS

Vehicular traffic to and from the Project Site would have the potential to result in noise level increases at nearby sensitive uses in the range that would be considered imperceptible to barely perceptible and below the threshold that would necessitate mitigation according to the Town of Cortlandt noise ordinance or NYSDEC impact evaluation guidance.

The analysis of noise from on-site manufacturing operations found that outdoor equipment used to move materials between the manufacturing building and the river would be the dominant source of on-site noise during daytime, and port operations would be the dominant source of on-site noise during nighttime. Predicted daytime noise levels from the potential on-site manufacturing operations without any noise mitigation measures would result in only barely perceptible or imperceptible noise level increases at surrounding receptors. Predicted nighttime noise levels, primarily driven by port operations, would have the potential to result in barely perceptible to readily noticeable noise levels only at receptors at the west end of 9th or 10th Streets with direct line of sight to port operations. All predicted daytime and nighttime noise levels would be below the Town of Cortlandt noise level restrictions and the NYSDEC recommended threshold for residential use.

In coordination with the Town, future locations for noise measurements and simulations, as well as the details of any potential design options on the site or in the community around the site, will be further refined as part of the DGEIS and Site Plan approval process, to avoid any potential for significant adverse noise impacts. It is expected that the DGEIS for the Proposed Project would include a refined noise analysis based on additional details of the potential operations and a more extensive program of baseline noise level measurements. Such a refined analysis would be expected to result in comparable or lower predicted noise levels from potential manufacturing operations and

may also find lower predicted noise level increases based on more precise determinations of baseline noise levels. ✷

Port Cortlandt Technical Memorandum

Economic and Fiscal Impact Assessment

Port Cortlandt Technical Memorandum
Economic and Fiscal Impacts Assessment

A. INTRODUCTION AND SUMMARY OF FINDINGS

INTRODUCTION

This technical memorandum presents an assessment of the expected economic and fiscal impact of the Proposed Project (or Project) on the Town of Cortlandt (the Town) and other affected taxing jurisdictions, including the Hendrick Hudson School District (HHSD). An analysis of economic and fiscal impacts of the Proposed Action will be provided within a chapter of the Draft Generic Environmental Impact Statement (DGEIS) dedicated to potential future phases/buildout of select waterfront areas/parcels.

SUMMARY OF FINDINGS

This assessment finds that the Proposed Project would generate substantial economic and fiscal benefits to the Town and HHSD, and would not result in significant adverse impacts to any municipal services or special taxing districts.

With the closure of the Indian Point Energy Center (IPEC), the Town and HHSD both face a fiscal challenge made all the more difficult by the COVID-19 pandemic and the onset of an economic recession. The winding down of IPEC payment-in-lieu-of-taxes (PILOT) agreement over next five years create budget gaps most acutely for HHSD; historically IPEC PILOT revenues have comprised approximately one-third of the district's budget.

The Town and HHSD have been actively planning to address their respective budget gaps. It is expected that significant grant funds will be available to the Town, HHSD, and other affected taxing jurisdictions through the New York State Electric Generation Facility Cessation Mitigation Program.[1] However, the available "cessation funds" only start with an 80 percent match of lost funds, and wind down every year over approximately 7 years (estimated 2028 end-date); the cessation funds never fully cover the Town and HHSD budget gaps. Without additional fiscal measures, HHSD will need to manage an estimated $49.7 million aggregate shortfall over the next

[1] The Electric Generation Facility Cessation Mitigation Program was created to provide grant assistance to support local government entities, including counties, towns, cities, villages, school districts and special districts, impacted by reductions in the tax liability and/or PILOTs (Tax Loss) owed by an electric generation facility subject to their taxing authority. The Tax Loss must be 20 percent or more and a direct result of an electric generation facility ceasing operation within its jurisdiction. Empire State Development, in consultation with the New York State Energy Research and Development Authority and the Department of Public Service, is administering the program. For more information please see: https://esd.ny.gov/electric-generation-facility-cessation-mitigation-program.

five years (2021-2025), and the Town will need to manage an estimated $1.7 million aggregate budget shortfall over the same period.

In the future without the Proposed Project, the Town and HHSD budget gaps will need to be addressed by reducing budgets, which could jeopardize the quality of municipal and school services, and/or by increasing property taxes, which erodes housing affordability and the Town's attractiveness as a place to live, work, and play. The Town also will continue to pursue economic development opportunities consistent with the *2016 Sustainable Comprehensive Plan* that may "chip away" at the budget gaps left by IPEC's closure. However, during these challenging economic conditions, there is also the possibility of the Town losing some existing businesses and jobs.

As noted in the New York State Energy Research & Development Agency (NYSERDA) Request for Proposals (ORECRFP20-1 "RFP"), NYSERDA proposals should include economic benefits for jurisdictions in New York State, including tax payments, PILOT payments and/or payments under Host Community agreements. The Proposed Project seeks to establish a Port Cortlandt PILOT or Host Community agreements that over an initial five-year period (2021-2025) would provide the funds necessary to fill annual budget gaps not met by the cessation funds for local entities. As detailed in **Table 1**, the proposed Port Cortlandt payments would exceed $50 million over this first five-year period, with an estimated $49.9 million for HHSD and $1.7 million for the Town. Verplanck Fire and the Hendrick Hudson Free Library also would receive Port Cortlandt PILOT or Host Community agreement revenues to fully offset budget gaps remaining after cessation funds. While these payments would only be for five years (since it would be tied to an energy solicitation award from 1,000 to 2,500 Megawatts for offshore wind for New York State), once a hub is invested in, future PILOTs and/or Host Community agreements after the five-year period would be tied to further energy solicitation awards, securing a long term commitments over time.

Table 1
Estimated Port Cortlandt Payments
(through PILOTor Host Community Agreements)

	2021	2022	2023	2024	2025	TOTAL
Town of Cortlandt	$92,856	$230,017	$372,627	$464,542	$559,984	**$1,720,026**
Hendrick Hudson School District (HHSD)	$2,681,637	$6,642,798	$10,761,332	$13,415,794	$16,172,130	**$49,673,691**
Verplanck Fire	$43,151	$106,890	$173,162	$215,875	$260,228	**$799,306**
Hendrick Hudson Free Library	$39,053	$96,741	$156,720	$195,378	$235,519	**$723,413**
TOTAL	**$2,856,697**	**$7,076,446**	**$11,463,842**	**$14,291,590**	**$17,227,862**	**$52,916,436**

Notes: Town funds include Cortlandt Consolidated Water.

Sources: Estimated Port Cortlandt payments to HHSD are based on data supplied to AKRF by HHSD. Estimated payments to other taxing jurisdictions are based on the DL English Indian Point Closure Task Force 2018 Report. Estimates are subject to change based on discussions with the Town, HHSD, and other directly affected taxing jurisdictions, and as more Project-specific data becomes available from prospective Project Site developer(s) and tenant(s).

In terms of municipal costs, the Proposed Project does not have a residential component and therefore would not generate school-aged children who would place incremental demands on

HHSD. Similarly, the Project would place only marginal service demands on local libraries. The Proposed Project would generate demand for services from the Town that in budgetary terms are estimated to cost under $30,000 annually. The Proposed Project would not demand substantial additional demand for police, fire, or EMS services as compared with existing conditions, given the project site's continual need for policing to ensure a safe and secure vacant site.[2] The project site would continue to be supported by County, State, and Park police, Verplanck Fire as a first responder, and Ambulance #2 as a first-responder.

The Proposed Project would represent a major new investment in the Town, generating jobs and both business and worker spending in the short-term (during construction) as well as long term (during annual operations). AKRF estimates that building the Proposed Project would generate 651 person-years[3] of direct (on-site) construction-related employment, 91 person-years of indirect employment from business-to-business purchasing in Westchester County, and over 144 person-years of induced employment in Westchester County from direct and indirect workers' consumer spending. An additional 80 person-years of indirect and induced employment would be captured within New York State outside of Westchester County.

Once stabilized, full operations of the Proposed Project would demand hundreds of on-site employees; for purposes of economic impact modeling, and based on confidential information supplied by two Tier 1 manufacturers (potential tenants) it is assumed that the Project would generate an estimated 300 full-time jobs on-site (i.e., direct employment).[4] Jobs on the project site would span a range of skillsets and education needs: "green-collar jobs" associated in design, engineering, and manufacturing for the renewable energy industry; "blue-collar" jobs in Transportation and Warehousing, Utilities, and Administration and Waste Management Services; as well as "white-collar jobs" in Professional, Scientific, and Technical Services, Finance, and Management. While some of the jobs would require special background and training that not readily available in the local market, many of the jobs align with education and skill sets in the local communities and region.

The Proposed Project's operations also would require support from area businesses, which in turn would generate additional jobs within the local economy. Based on input-output modeling performed by AKRF and assuming 300 on-site jobs, the Proposed Project would support an estimated 146 jobs in Westchester County supply chain industries, and another 111 jobs in Westchester County from workers' consumer spending. The Project would support an additional 97 indirect and induced jobs within New York State outside of Westchester County.

The Proposed Project would introduce a major new employer and 21st Century "clean and green" industry within the hamlet of Verplanck. The Proposed Project would re-introduce to the local economy workers' consumer spending, it would signal new investment, and through Port

[2] As part of the Proposed Action the project site would be secured to the extent practical from trespassers.

[3] A "person-year" is the equivalent of one person working full time for one year.

[4] Currently there are several different types of offshore wind supply chain manufacturing facilities that could be built. Based on NYSERDA studies and industry information, this analysis assumes 300 direct full-time jobs, to be confirmed if the project site is awarded funding through NYSERDA and a tenant is identified. Other analyses, such as the Traffic Impact Assessment Technical Memorandum, assume a larger number of employees for purposes of a conservative assessment of potential environmental effects.

Cortlandt payments the Proposed Project would help maintain affordability of local housing stock and the quality of municipal services—two critical ingredients for sustainable growth.

The proposed Port Cortlandt PILOT or Host Community agreements establish an initial five-year payment period because the first NYSERDA award is a finite length tied to an energy solicitation award from 1.0 to 2.5 gigawatts for offshore wind in New York State. However, it is expected that with the initial award, the project site would be extremely well-positioned to secure future offshore wind procurement awards that would allow for continued PILOT and/or Host Community agreement commitments beyond the initial five-year period. The Proposed Project (and associated proposed rezoning action) would position the Town to attract additional investment supporting offshore wind and its supply chain. With over 30 gigawatts of planned electric power generating capacity being installed on the U.S. East Coast continental shelf over the next decade and a half, offshore wind presents a major opportunity for seaboard states to generate green jobs in the decades ahead.[5]

In this respect and in many others, the Proposed Project is consistent with economic development objectives advanced in the Town's *2016 Sustainable Comprehensive Plan*:

- The Proposed Project and Proposed Action would promote light industrial, waterfront-dependent uses along the Verplanck waterfront, consistent with uses envisioned in the Waterfront Sustainability District.
- The Project revitalizes economic development activities along the Cortlandt Waterfront by leveraging New York State investment in Verplanck.
- The Project has synergies with a contemplated Hudson River Discovery Center along the Verplanck waterfront. The Proposed Project advances uses that could inspire future generations to pursue renewable energies, and through content and activities coordinated with Project tenants, can tell a story about the area's historic role in providing "tomorrow's energy."
- The Project advances State efforts to be fossil free by 2050, and in doing so would promote a sustainable future. A Cortlandt community survey commissioned as part of its master planning efforts found that respondents would like the Town to encourage energy efficiency and renewable energy, clean technologies, and green businesses.
- The Project is resilient. The Port's storage and manufacturing uses would be located upland, above elevations threatened by storm surges.
- The Project offers economic resiliency. The Port Cortlandt PILOT or Host Community agreement payments would maintain fiscal solvency for local taxing jurisdictions associated with the project site, and in doing so maintain housing affordable and quality education.

METHODOLOGY

The assessment uses the following approach and data sources for evaluating the economic and fiscal impacts of the Proposed Project (major section headings in bold):

Existing Conditions describes socioeconomic conditions in the Town based on the most currently available data sources. Demographic and housing trends analysis for the Town, with Westchester

[5] Source: https://www.maritime-executive.com/editorials/how-u-s-ports-can-capitalize-on-the-offshore-wind-boom

County and New York State as benchmarks, uses U.S. Census American Community Survey (ACS) 2006-2010 and 2014-2018 five-year estimates. The employment trends assessment utilizes U.S. Department of Labor Bureau of Labor Statistics data as well as "OnTheMap" data from the U.S Census Bureau, Center for Economic Studies, Longitudinal Employer Household Survey. Estimated budgets and IPEC PILOT revenues are from publicly available data sources and data provided to AKRF by HHSD.

Future Without the Proposed Project describes conditions anticipated in the future without the Proposed Project. Projections of budget shortfalls are based on data provided to AKRF by HHSD, the DL English Indian Point Closure Task Force 2018 Report, and other publicly available documents.

Potential Impacts of the Proposed Project estimates the economic and fiscal benefits and municipal costs of the Proposed Project. Economic benefits—e.g., direct and indirect jobs, labor income, and total economic output—were estimated using the IMPLAN (IMpact analysis for PLANning) input-output modeling system. IMPLAN was developed by the U.S. government and subsequently privatized by professors at the University of Minnesota. IMPLAN uses the most recent economic data from sources such as the U.S. Bureau of Economic Analysis, the U.S. Bureau of Labor Statistics, and the U.S. Census Bureau to predict effects on the local economy from changes in direct non-payroll expenditures and employment (e.g., during annual operation). The model contains data for Westchester County and New York State on 536 economic sectors, showing how each sector affects every other sector as a result of a change in the quantity of its product or service.

The fiscal costs of the Proposed Project to the Town are estimated using the Proportional Valuation Method, a methodology that allows for the accounting of mixed-use development that includes industrial and/or commercial uses.[6] It assigns costs attributable to the share of the real property value that nonresidential uses add to a community's real property tax base; the method assumes that relative real property values represent shares of municipal costs.[7]

The project site overlaps with multiple taxing jurisdictions and special districts that do not align with Town or census tract boundaries; therefore, the proportional valuation methodology was not performed, as it was not possible to estimate the number of properties in those taxing jurisdictions using available resources. Rather, qualitative assessments of municipal demand were conducted for taxing jurisdictions, including Ambulance, Verplanck Fire, Hendrick Hudson Free Library, County Refuse, and Cortlandt Consolidated Water districts. Additional assessment of the municipal demands on service providers would be provided as part of the DGEIS.

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[6] The proportional valuation methodology used for this analysis is based on guidance in *The Fiscal Impact Handbook; Estimating Local Costs and Revenues of Land Development*, 2012 edition, by Robert Burchell and David Listokin.

[7] While using property value to assign proportional municipal costs is a relatively accurate method, if the value of nonresidential property significantly differs from the average value of existing local property, this method tends either to overstate or understate actual cost of services to non-residential properties. Thus this analysis employs refinement coefficients based on empirical studies to compensate for this over- or understatement of costs (Burchell and Listokin, 2012).

EXISTING CONDITIONS

This section presents a demographic overview of the Town, including population, housing, income, and employment trends (see *Demographic Overview*); and describes the existing fiscal conditions of all taxing jurisdictions associated with the project site, as well as the project site's existing municipal demands (see *Fiscal Conditions*).

DEMOGRAPHIC OVERVIEW

Population

In 2018 the Town had a total estimated population of 42,446 residents (see **Table 2**). Between 2010 and 2018, The Town's population increased by an estimated 1,607 residents (3.9 percent). The Town's residential growth rate was slightly higher than that of Westchester County, which experienced 3.1 percent growth over the same time period. The Town and County's recent population growth exceeded the rate of growth within New York State overall (2.0 percent).

Table 2
Residential Population Trends 2010–2018

	Population		
	2010	**2018**	**% Change**
Town of Cortlandt	40,839	42,446	3.9%
Westchester County	939,406	968,815	3.1%
New York State	19,229,752	19,618,453	2.0%

Source: U.S. Census Bureau, 2006-2010 and 2014-2018 American Community Survey (ACS) 5-Year Estimates.

Households and Housing Trends

In 2018 there were an estimated 15,020 households within the Town, with an average household size of 2.8 persons per household (see **Table 3**). The Town's average household size is similar to that of Westchester County as a whole (2.7 persons per household) and New York State (2.6 persons per household). Between 2010 and 2018 the Town experienced strong growth in the number of households (5.7 percent) that exceeded the rate of household growth in the County (0.4 percent).

Table 3
Households and Household Size

	Households			Average Household Size	
	2010	**2018**	**% Change**	**2010**	**2018**
Town of Cortlandt	14,215	15,020	5.7%	2.7	2.8
Westchester County	345,795	347,332	0.4%	2.6	2.7
New York State	7,205,740	7,316,537	1.5%	2.6	2.6

Sources: U.S. Census Bureau, 2006-2010 and 2014-2018 American Community Survey (ACS) 5-Year Estimates.

As shown in **Table 4**, the number of housing units within the Town grew by approximately 7.5 percent between 2010 and 2018, a higher rate than that of Westchester County and the State. The County added approximately 5,400 units to its housing stock (1.5 percent growth), of which approximately 1,100 units (20 percent) were constructed within the Town.

Table 4
Housing Units

	Housing Units		
	2010	**2018**	**% Change**
Town of Cortlandt	15,082	16,219	7.5%
Westchester County	368,498	373,942	1.5%
New York State	8,050,835	8,287,087	2.9%

Source: U.S. Census Bureau, 2006-2010 and 2014-2018 American Community Survey (ACS) 5-Year Estimates.

As shown in **Table 5**, vacancy rates have increased slightly across all three geographies between 2010 and 2018. At 7.4 percent and 7.1 percent, respectively, the Town and County's vacancy rates are lower than that of New York State overall (11.7 percent).

Table 5
Housing Vacancy & Tenure

	Vacancy Rate		Owner Occupancy Rate	
	2010	**2018**	**2010**	**2018**
Town of Cortlandt	5.8%	7.4%	77.8%	75.2%
Westchester County	6.2%	7.1%	62.7%	61.3%
New York State	10.5%	11.7%	55.2%	53.9%

Sources: U.S. Census Bureau, 2006-2010 and 2014-2018 American Community Survey (ACS) 5-Year Estimates.

The Town has a high percentage of owner-occupied units (75.2 percent) as compared with both Westchester County (61.3 percent) and New York State overall (53.9 percent). However, all geographies are experiencing a trend toward lower owner occupancy rates (i.e., a greater percentages of renter-occupied units).

Income Trends

As shown in **Table 6** average household income in the Town is an estimated $144,148, which is slightly lower than average household income in Westchester County ($148,770). However, both the Town and County have average annual household incomes that are about 50 percent higher than the New York State average ($97,424). Adjusted for inflation, average household income in the Town has grown by approximately 3.8 percent between 2010 and 2018. The Town's household income growth rate exceeded the growth rate for Westchester (0.6 percent), but was slightly lower than the growth rate for New York State (5.0 percent).

Table 6
Average Household Income

	2010[1]	**2018**	**% Change**
Town of Cortlandt	$138,810	$144,148	3.8%
Westchester County	$147,881	$148,770	0.6%
New York State	$92,767	$97,424	5.0%

Note: 1. Adjusted to 2018 dollars for inflation.
Sources: U.S. Census Bureau, 2006-2010 and 2014-2018 American Community Survey (ACS) 5-Year Estimates.

Average household income can be influenced by both high and low outliers; therefore analyzing median household income helps to paint a fuller picture of income distribution. As seen in **Table 7**, the Town has a higher median household income ($110,885) as compared with Westchester County ($92,758) and New York State overall ($65,323). Cortlandt's median household income grew by approximately 4.0 percent between 2010 and 2018, while median household income grew by only 0.9 percent in Westchester County and by 1.8 percent in New York State.

Table 7
Median Household Income

	2010[1]	2018	% Change
Town of Cortlandt	$106,579	$110,885	4.0%
Westchester County	$91,895	$92,758	0.9%
New York State	$64,176	$65,323	1.8%

Note: 1. Adjusted to 2017 dollars for inflation.
Sources: U.S. Census Bureau, 2006-2010 and 2014-2018 American Community Survey (ACS) 5-Year Estimates.

As shown in **Table 8**, the Town's poverty rate is lower than the County and State. The poverty rate for the Town has remained relatively stable since 2010, with the exception of adults over 64, for whom the poverty rate increased by 1.6 percentage points. This senior cohort has the highest percentage of people living in poverty across all age cohorts.

Table 8
Poverty Status (For Population for Whom Poverty Status is Determined)

	2010			2018		
	Under 18	18-64	Over 64	Under 18	18-64	Over 64
Town of Cortlandt	5.3%	4.7%	4.4%	5.4%	4.7%	6.0%
Westchester County	10.5%	7.6%	7.1%	11.1%	8.8%	8.3%
New York State	19.9%	12.6%	11.5%	20.6%	13.4%	11.5%

Sources: U.S. Census Bureau, 2006-2010 and 2014-2018 American Community Survey (ACS) 5-Year Estimates.

Town residents have high levels of educational attainment, comparable to the high education attainment within Westchester County overall. As seen in **Table 9**, nearly half of Town residents age 25 or older have a bachelor's degree or higher; only 6.5 percent of residents age 25 or older have not attained a high school diploma. Westchester County and New York State have nearly twice as large a share of residents without a high school diploma at 12.2 percent and 13.5 percent, respectively.

Table 9
Educational Attainment Age 25 or Older (2018)

	Town of Cortlandt	Westchester County	New York State
Less than High School	6.5%	12.2%	13.5%
High School	21.2%	19.6%	26.1%
Some College	23.0%	20.0%	24.4%
Bachelor's or Higher Degree	49.3%	48.2%	35.9%

Sources: U.S. Census Bureau, 2006-2010 and 2014-2018 American Community Survey (ACS) 5-Year Estimates.

Employment Trends —Residents

As shown in **Table 10**, pre-COVID (in December 2019) the Town had a low unemployment rate of 3.5 percent, lower than that of Westchester County (3.4 percent) and New York State (3.9 percent) overall. With the COVID-19 pandemic, the Town's unemployment rate is significantly higher at 11.0 percent, but lower than the rate for Westchester County (12.5 percent) and New York State (16.0 percent).[8]

Table 10
Unemployment Rate: December 2019 and June 2020

	December 2019	June 2020 (during Covid-19 Pandemic)
Town of Cortlandt	3.5%	11.0%
Westchester County	3.8%	12.5%
New York State	4.0%	16.0%

Source: United States Department of Labor Bureau of Labor Statistics, accessed August 2020.

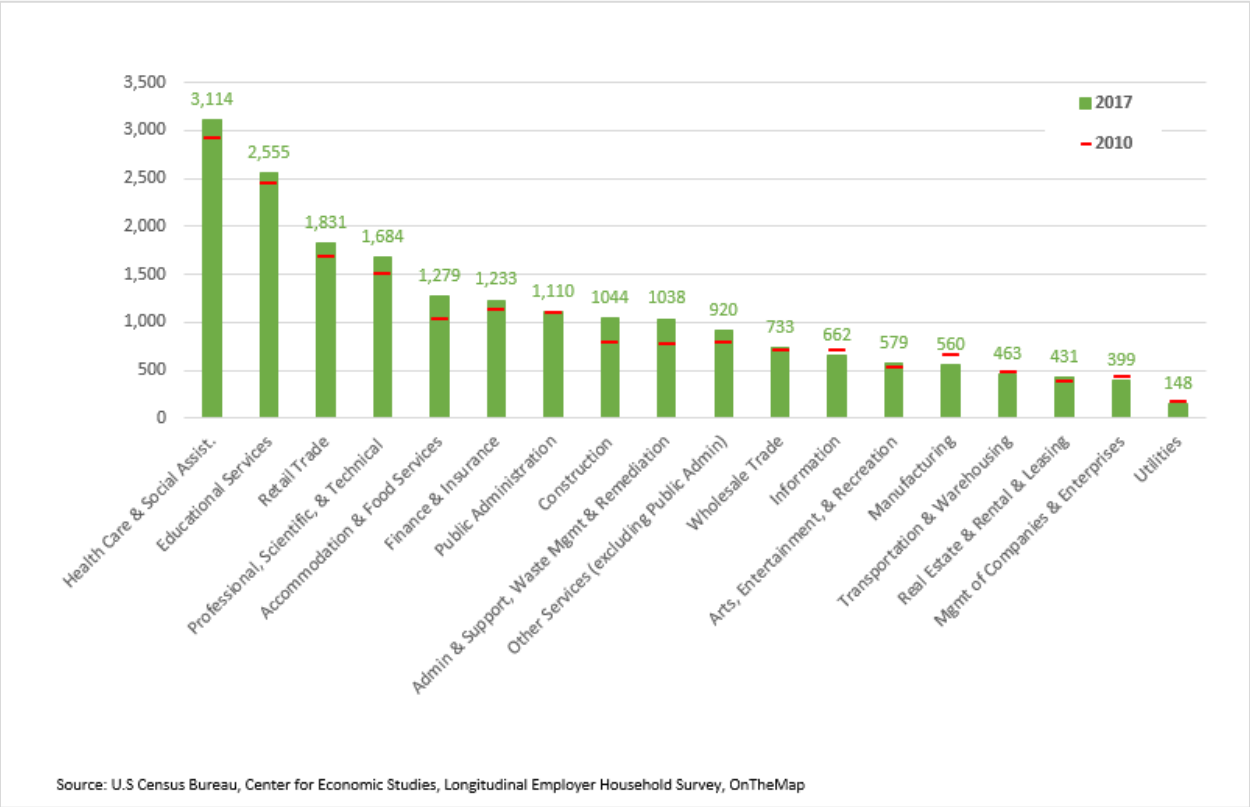
Town residents are primarily employed in service sector industries. As shown in **Figure 1**, in 2017 the top five employment sectors in which Town residents were employed are health care and social assistance (15.7 percent of employed Town residents); educational services (12.9 percent); retail trade (9.3 percent); professional, scientific and technical services (8.5 percent); and accommodation and food services (6.5 percent). Employment for residents in all of the top employment sectors grew between 2010 and 2017. Retail sector employment grew at the fastest rate (24 percent). The Manufacturing sector contracted at the greatest rate (15 percent); in 2017 there were about 100 fewer Town residents employed within the Manufacturing sector than in 2010.

Employment Trends – Workers

In 2017 there were an estimated 12,707 jobs located in the Town. As shown in **Figure 2**, they were heavily concentrated in the health care and social assistance sector; approximately 3,497 jobs (28 percent of jobs in the Town) are within this sector. Other sectors with high employment include retail trade (16 percent), educational services (8 percent), construction (8 percent), and utilities (7 percent). From 2010 to 2017, educational services showed the largest growth in employment, increasing employment within this sector by 66 percent. Heath care and social assistance, by far the largest employment sector, experienced a 10 percent decrease in jobs between 2010 and 2017.

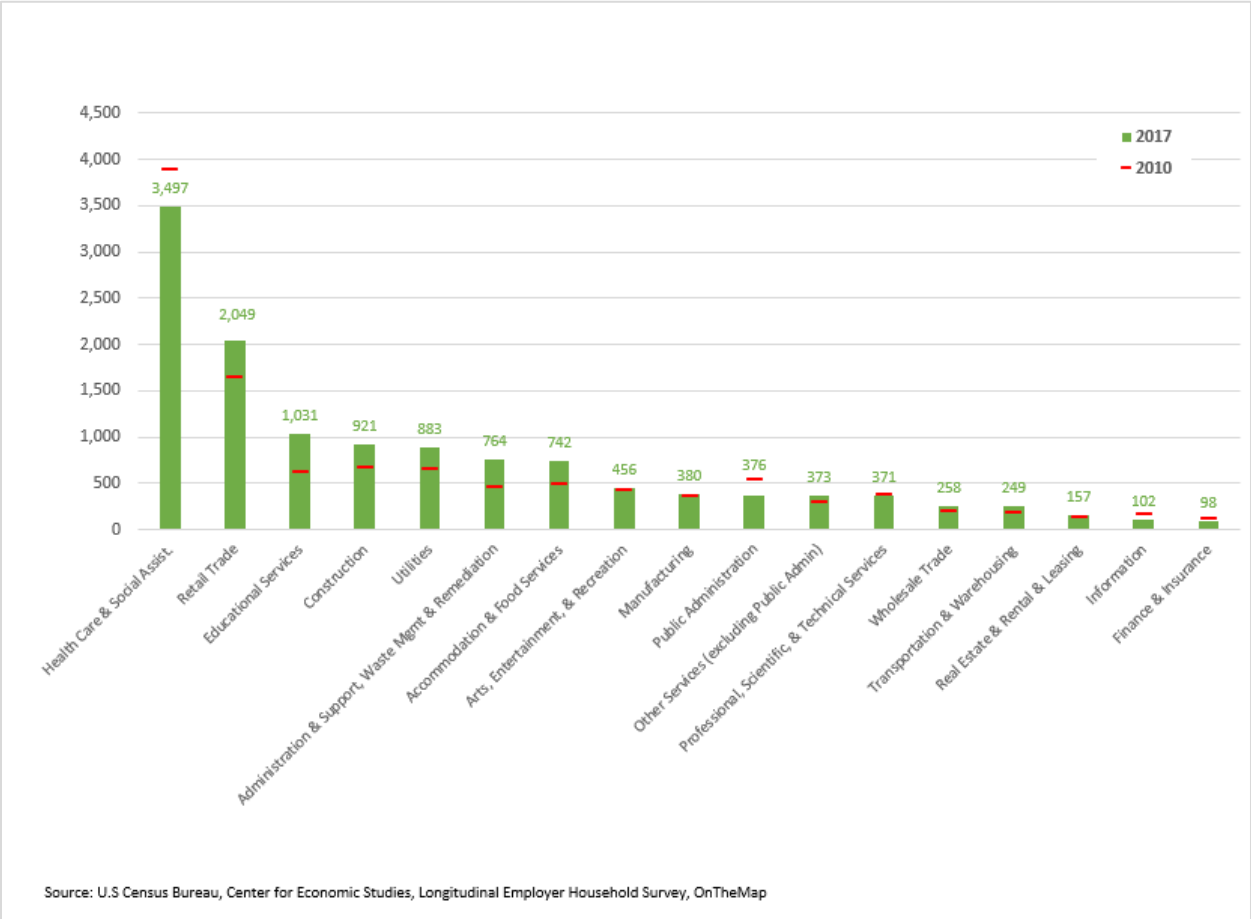
[8] This memorandum does not speculate on the longer-term effects of the COVID-19 pandemic. However, it should be noted that the Proposed Project's anticipated supply chain fabrication facility would be less susceptible to COVID-19 transmission than typical manufacturing facilities, given its larger floorplate, a less dense working environment, and need to maintain clean working conditions for both workers and equipment.

Figure 1: Employment – Town of Cortlandt Residents 2010-2017



Source: U.S Census Bureau, Center for Economic Studies, Longitudinal Employer Household Survey, OnTheMap

Figure 2: Employment – Jobs within the Town of Cortlandt, 2010 and 2017



Based on employment information pre-COVID-19 pandemic, the largest employer in the Town is the Cortlandt Town Center—a large retail center located on Cortlandt Boulevard, also known as NYS Route 6. Other major employers in the Town are mostly institutions, such as the New York Presbyterian Hudson Valley Hospital Center, Town & Village Governments, the School Districts, and the FDR Veterans Administration Hospital. Immediately adjacent to the project site in the Village of Buchanan is Continental Building Products, a building board and wallboard manufacturer that employs approximately 100 workers. Also within close proximity to the project site is IPEC, which during full operations was one of the largest employers in Town with over 1,000 workers.

Worker Inflow/Outflow

As shown in **Table 11**, of the nearly 13,000 people who worked in the Town in 2017, approximately one in five (20.1 percent) are Town residents, while the remaining nearly 80 percent commute into Town from other areas. While the total number of jobs in Town has grown since 2010, the proportion of those jobs held by Town residents remains the same as in 2010 (20.1 percent).

Table 11
Inflow/Outflow Job Counts (Primary Jobs), 2017

	2010		2017	
	Count	**Share**	**Count**	**Share**
Employed in the Selection Area	11,277	100%	12,745	100.0%
Employed in the Selection Area but Living Outside	9,010	79.9	10,178	79.9%
Employed and Living in the Selection Area	2,267	20.1	2,567	20.1%

Notes: Town of Cortlandt is the "Selection Area"
Source: U.S. Census Bureau's Longitudinal Employer Household Survey 2017

The most common place of work for employed Town residents is Manhattan. As seen in **Table 12** approximately 20.8 percent of all employed Town residents commute to Manhattan for their primary job. The next most common place for Town residents to work is within the Town itself, with a total of 12.3 percent of employed residents working their primary job in Town. Other common commuting locations include regional employment centers in Westchester County such Mount Pleasant (5.1 percent), Greenburgh (4.8 percent), Yorktown (4.4 percent), and White Plains (4.3 percent). Aside from locations identified in **Table 12**, 37.2 percent of Town residents work their primary job in a variety of other locations.

Table 12
Where Town of Cortlandt Residents are Employed—2017

	Count	**Share**
Total Primary Jobs Held by Town of Cortlandt Residents	18,250	100.0%
Manhattan borough (New York, NY)	3,788	20.8%
Cortlandt town (Westchester, NY)	2,248	12.3%
Mount Pleasant town (Westchester, NY)	935	5.1%
Greenburgh town (Westchester, NY)	872	4.8%
Yorktown town (Westchester, NY)	805	4.4%
White Plains city (Westchester, NY)	780	4.3%
Peekskill city (Westchester, NY)	595	3.3%
Ossining town (Westchester, NY)	542	3.0%
Bronx borough (Bronx, NY)	504	2.8%
Yonkers city (Westchester, NY)	399	2.2%
All Other Locations	6,782	37.2%

Sources: Longitudinal Employer Household Survey, On the Map, Primary Jobs, 2015

As shown in **Table 13**, in addition to Town itself, other common places of residence for Town workers are nearby towns and cities in Westchester County such as Peekskill (7.6 percent), Yorktown (5.4 percent), and Ossining (3.1 percent). However, many Cortlandt workers also commute from outside of Westchester County; approximately 13.6 percent of workers commute from identified towns and cities in Putnam County, Dutchess County, the Bronx, and Queens.

Table 13
Where Town of Cortlandt Workers Live—2017

	Count	Share
Total Cortlandt Workers (Primary Jobs)	11,531	100.0%
Town of Cortlandt (Westchester, NY)	2,248	19.5%
Peekskill city (Westchester, NY)	877	7.6%
Yorktown town (Westchester, NY)	628	5.4%
Ossining town (Westchester, NY)	362	3.1%
Putnam Valley town (Putnam, NY)	343	2.8%
Carmel town (Putnam, NY)	274	2.7%
Fishkill town (Dutchess, NY)	251	2.3%
Bronx borough (Bronx, NY)	248	2.2%
East Fishkill town (Dutchess, NY)	237	2.0%
Queens borough (Queens, NY)	210	1.8%
All Other Locations	5,853	50.1%

Sources: Longitudinal Employer Household Survey, On the Map, Primary Jobs, 2017

LOCAL AREA DEMOGRAPHIC AND MARKET CONDITIONS

The project site is located within the hamlet of Verplanck, which is immediately adjacent to the Continental and IPEC properties in the Village of Buchanan. Given the relatively small populations of the hamlet (an estimated 1,310 residents) and village (an estimated 3,442 residents), statistically reliable demographic data is not readily available. Additional information would be provided for the hamlet of Verplanck and the Village of Buchanan as part of the EIS.

FISCAL CONDITIONS

The project site is defined as an approximately 54-acre parcel of land within an existing approximately 99-acre tax parcel (ID 43.13-1-3). The project site is serviced by the nine taxing jurisdictions and special districts identified in **Table 14**. Each taxing jurisdiction generates a portion of their annual operating budget through revenues generated by property taxes; **Table 14** presents the amounts and percentages of budgets that are funded via property tax revenues. Many of these taxing jurisdictions and special districts also receive budget funds from the IPEC PILOT; **Table 14** also presents the current amounts and percentages of budgets that are funded via the IPEC PILOT. Within the Town, the PILOT agreement allocates 68 percent of the payment to the Town (General Fund, Library, Town Water, and Special Districts), and 31 percent to the Verplanck Fire District.

Most notable is the amount of PILOT revenues to HHSD—in excess of $24 million in 2020. Historically, the IPEC PILOT revenues received by HHSD supported approximately 30 percent of the district's annual budget. This substantial financial contribution has enabled HHSD to provide outstanding educational services without substantial property tax increases, maintaining a relatively affordable cost of living within the school district.

Table 14
Project Site Taxing Jurisdictions

Taxing Jurisdictions and Special Districts	Current Budget	Amount and Percentage of Budget Supported by Property Taxation		Amount and Percentage of Budget Supported by IPEC PILOT	
		Amount	Percentage	Amount	Percentage
Westchester County	$2,106,780,252	$569,579,000	27%	$4,300,000	<1%
Town (Outside Village)	$31,941,159	$19,110,682	60%	$850,000	3%
Hendrick Hudson School District (HHSD)	$82,137,880	$46,348,822	56%	$24,125,990	29%
Ambulance #2	$852,000	$87,000	10%	N/A[1]	N/A[1]
County Refuse	$75,819,229	$43,378,946	56%	N/A[2]	N/A[2]
Verplanck Fire	$614,226	$216,330	35%	$395,000	64%
Hendrick Hudson Free Library	$1,639,873	$1,245,878	76%	$357,495	22%
Verplanck Light	$30,000	$30,000	100%	$0	0%
Cortland Consolidated Water	$7,422,277	$1,016,405	14%	N/A[1]	N/A[1]

Notes: Estimates to be confirmed with the Town, HHSD, and other taxing jurisdictions and special districts.

1. Within the Town, the PILOT agreement allocates 68 percent of the payment to the Town (General Fund, Library, Town Water, and Special Districts); specific amounts and percentages of budgets are not available.

2. Westchester County may allocate a portion of PILOT revenues to County Refuse; specific amount and percentages of budget are not available.

Sources: Westchester County 2020 Adopted Operating Budget; Town O/S, Consolidated Water District, Ambulance #2, and Verplanck Light from Town of Cortlandt 2020 Adopted Budget; HHSD from Proposed 2020-2021 Budget Summary; Verplanck Fire District 2020 Budget as Modified; Hendrick Hudson Free Library 2020-2021 Budget; and DL English Indian Point Closure Task Force 2018 Report.

The project site is Town-owned property that is not taxed; therefore, the project site does not currently generate any property tax revenues. From a municipal cost perspective, the project site generates a service burden to the Town and County in the form of managing and protecting the property from trespassers, and more generally policing the property.

FUTURE WITHOUT THE PROPOSED PROJECT

In 2021 IPEC will cease all operations. IPEC is located in the Village of Buchanan and employed approximately 1,000 workers.[9] As per the IPEC PILOT agreements and as shown in **Table 15**, PILOT payments have begun to ramp down (starting in 2020), with the closure of IPEC Unit 2, followed by the closure of Unit 3 in 2021. Each unit accounts for 50 percent of the PILOT payments. The IPEC PILOT will cease entirely by 2025, the year the PILOT is set to expire **[TO BE CONFIRMED]**.

[9] DL English, Indian Point Taskforce Report, 2018

Table 15
IPEC PILOT Phase Out

Fiscal Year Ending in	Unit 2	Unit 3
2020	No Reduction	No Reduction
2021	30% Reduction	No Reduction
2022	60% Reduction	30% Reduction
2023	90% Reduction	60% Reduction
2024	90% Reduction	90% Reduction

Source: DL English IPEC Task Force Report, 2018

The Town and HHSD have been actively planning to address their respective budget gaps. It is expected that significant grant funds will be available to the Town, HHSD, and other affected taxing jurisdictions through the New York State Electric Generation Facility Cessation Mitigation Program. The Electric Generation Facility Cessation Mitigation Program was created to provide grant assistance to support local government entities, including counties, towns, cities, villages, school districts and special districts, impacted by reductions in the tax liability and/or payments in lieu of taxes (Tax Loss) owed by an electric generation facility subject to their taxing authority. The Tax Loss must be 20 percent or more and a direct result of an electric generation facility ceasing operation within its jurisdiction. Empire State Development, in consultation with the New York State Energy Research and Development Authority and the Department of Public Service, is administering the program. [10]

However, the available "cessation funds" only start with an 80 percent match of lost funds, and wind down every year over approximately 7 years (estimated 2028 end-date); they never fully cover the Town and HHSD budget gaps. As shown in **Table 16**, without additional fiscal measures, HHSD will need to manage an estimated $49.7 million aggregate shortfall over the next five years (2021-2025). By 2025, the projected shortfall would represent approximately one-fifth of HHSD's existing operational budget.

Table 16
Projected HHSD Budget Shortfalls

	2021	2022	2023	2024	2025
Portion of HHSD Budget Historically Funded by IPEC PILOT	$25,539,399	$26,050,187	$26,571,191	$27,102,615	$27,644,667
IPEC PILOT Funds to HHSD	$14,046,669	$6,512,547	$2,657,119	$2,710,261	$2,764,467
Projected Cessation Program Funds	$8,811,093	$12,894,843	$13,152,739	$10,976,559	$8,708,070
Projected Budget Gap Due to Loss of IPEC PILOT Revenues	**($2,681,637)**	**($6,642,798)**	**($10,761,332)**	**($13,415,794)**	**($16,172,130)**

Sources: AKRF, Inc. and data provided by HHSD.

[10] https://esd.ny.gov/electric-generation-facility-cessation-mitigation-program.

The Town will receive approximately $850,000 in PILOT payments in 2020. In 2021, the PILOT payment for Unit 2 will be reduced by 30 percent to approximately $600,000. By 2024, the last year of the PILOT agreement, the total PILOT payment will be reduced to approximately $94,000. Over the 2021-2025 five-year period, the Town will need to manage an estimated $1.7 million aggregate budget shortfall.

In the future without the Proposed Project, the Town and HHSD budget gaps will need to be addressed by reducing budgets, which could jeopardize the quality of municipal and school services; and/or by increasing property taxes, which erodes housing affordability and the Town's attractiveness as a place to live, work, and play. The Town will continue to pursue economic development opportunities consistent with the *2016 Sustainable Comprehensive Plan* that may "chip away" at the budget gaps left by IPEC's closure. However, during these challenging economic conditions, there is also the possibility of losing existing businesses and jobs.

It is difficult to predict what the impact of the closure of IPEC will be on tax rates or property tax revenues for affected jurisdictions, as there will be additional newly-completed projects which will contribute to the tax base, as well as the possibility of loss of businesses due to COVID-19 and the onset of an economic recession. Due to the substantial nature of these payments and the loss of economic activity associated with IPEC, its closure will further heighten the Town and other affected taxing jurisdictions' sensitivity to the fiscal effects of new development. In addition to the New York State Electric Generation Facility Cessation Mitigation Program, the Indian Point Closure Task Force has identified a number of strategies including pursuing state and federal programs which are intended to lessen the impacts of lost tax revenue, these include: pursuing economic development funds and redevelopment opportunities, increasing government efficiency, and municipal restructuring and reorganization.

POTENTIAL IMPACTS WITH THE PROPOSED PROJECT

This section presents the estimated economic impacts of the Proposed Project in terms jobs, labor income, and economic output generated by construction (see *Economic Impact of Construction Activities*) and from the Project's stabilized annual operations (see *Economic Impact of Operations*); and presents the estimated fiscal impact of the Proposed Project in terms of proposed PILOT or Host Community agreement revenues and estimated municipal costs (see *Fiscal Impact of the Proposed Project*).

Economic benefits are broken into three components: direct, indirect, and induced.

- **Direct effects** represent the initial benefits to the economy of a specific new investment; e.g., this would include on-site employment and associated labor income.
- **Indirect effects** represent the benefits generated by industries purchasing from other industries as a result of the direct investment. For example, indirect employment resulting from the Proposed Project's construction expenditures would include jobs in industries that provide materials for construction.
- **Induced effects** represent the impacts caused by increased income in a region. Direct and indirect effects generate more worker income by increasing employment and/or salaries in certain industries. Households spend some of this additional income on local goods and services, such as food and drink, recreation, and medical services. Benefits generated by these household expenditures are quantified as induced effects.

ECONOMIC IMPACT OF CONSTRUCTION ACTIVITIES

The economic benefits of the Proposed Project's construction, including jobs, labor income, and economic output, were estimated using a conservative construction cost assumption of $100 million as an "input" to the IMPLAN input-output model. The total cost of construction is expected to exceed $100 million; the economic benefits of a larger investment would be (approximately) proportionately higher.[11]

Employment

Based on the $100 million construction cost assumption and the nature of construction activities, direct employment from construction is estimated at 651 person-years of employment (see **Table 17**). A person-year is the equivalent of one person working full time for one year.

Based on the IMPLAN model's economic multipliers for Westchester County sectors, construction activities associated with the Proposed Project would generate an additional 91 person-years of indirect employment and 144 person-years of induced employment in Westchester County, bringing the total amount of Westchester County-based employment from construction to 886 person-years. In the larger New York State economy, construction activities associated with the Proposed Project would generate an estimated additional 80 person-years of indirect and induced employment, bringing the total direct and generated jobs from construction to 966 person-years of employment.

Labor Income

Direct labor income during construction is estimated at $57 million (see **Table 17**). Total direct, indirect, and induced labor income resulting from the construction is estimated at $75 million in Westchester County. In the broader New York State economy, total direct, indirect, and induced labor income from the construction is estimated at $81 million.

Total Impact on the Local Economy

Based on the IMPLAN models for Westchester County and New York State, the total economic activity that would result from construction is estimated to be $159 million in New York State, of which $147 million would occur in Westchester County (see **Table 17**).

[11] By way of example, if the Proposed Project's construction cost was determined to be approximately $150 million, the direct, indirect, and induced economic benefits would be approximately 1.5 times the values estimated in this memorandum.

Table 17
Economic Impact of the Proposed Project's Construction Activities

	Westchester County	Total New York State
Employment (Person-Years)[1]		
Direct (direct industry jobs)	651	651
Indirect (jobs in support industries)	91	115
Induced (jobs from household spending)	144	200
Total	**886**	**966**
Labor Income (Millions of 2020 dollars)		
Direct (earnings from direct jobs)	$57	$57
Indirect (earnings from support industries)	$9	$11
Induced (earnings from household spending)	$10	$14
Total	**$75**	**$81**
Total Output[2] (Millions of 2020 dollars)		
Direct (output from direct jobs)	$100	$100
Indirect (output from support industries)	$21	$28
Induced (output from household spending)	$27	$32
Total	**$147**	**$159**

Notes:
1 A person-year is the equivalent of one person working full time for one year.
2 Output is the total effect on the local economy, including the sum of the cost of goods and services used to produce a product and the associated payments to workers, taxes, and profits.
Detailed amounts may not add to totals due to rounding.
Sources: AKRF, Inc., August 2020, using the 2019 IMPLAN economic modeling system for Westchester County and New York State.

ECONOMIC IMPACT OF OPERATIONS

Similar to construction benefits, this section presents the direct, indirect, and induced economic benefits of the Proposed Project's operations during a stabilized operating year. The modeling assumes 300 direct jobs at the project site; this is the "input" used in the modeling to estimate indirect and induced employment, labor income, and total economic output.

Employment

Once stabilized, full operations of the Proposed Project would demand hundreds of on-site employees; as noted above, for purposes of economic impact modeling it was assumed that the Project would generate an estimated 300 full-time jobs on-site (i.e., direct employment).[12] Jobs at the project site would span a range of skillsets and education needs: "green-collar jobs" associated in design, engineering, and manufacturing for the renewable energy industry; "blue-collar" jobs in Transportation and Warehousing, Utilities, and Administration and Waste Management Services; as well as "white-collar jobs" in Professional, Scientific, and Technical Services, Finance, and Management. While some of the jobs would require special background and training

[12] Currently there are several different types of offshore wind supply chain fabrication facilities that could be built. Based on NYSERDA studies and industry information, this analysis assumes 300 direct full-time jobs, to be confirmed if the project site is awarded funding through NYSERDA and a tenant is identified. Other analyses, such as the Traffic Impact Assessment Technical Memorandum assume a larger number of employees for purposes of a conservative assessment of potential environmental effects.

that not readily available in the local market, many of the jobs align with education and skill sets in the local communities and region.

The Project's business-to-business demand during operations would support an additional 146 indirect jobs in Westchester County. These would include jobs in businesses supplying and transporting equipment and machinery, laundering of uniforms, and professional and administrative support services.

Direct and indirect workers' household spending would support another 111 jobs in Westchester County. These jobs would span a wide range of occupations driven by consumer spending, including health care, food and beverage, and retail. Finally, within the broader New York State economy, the Proposed Project would support 97 additional indirect and induced jobs, for a total of 655 direct, indirect, and induced jobs in New York State.

Labor Income

The 300 direct, on-site jobs supported by the Proposed Project would generate an estimated $36 million in labor income annually (see **Table 18**). Indirect and induced jobs in Westchester County would generate an additional $22 million in labor income annually. When including the broader New York State economy, the Proposed Project would generate a total of $65 million in direct, indirect, and induced labor income each year.

Table 18
Economic Impact of the Proposed Project's Operations

	Westchester County	Total New York State
Employment (Full-Time Equivalent)		
Direct (direct industry jobs)	300	300
Indirect (jobs in support industries)	146	184
Induced (jobs from household spending)	111	171
Total	**557**	**655**
Labor Income (Millions of 2020 dollars)		
Direct (earnings from direct jobs)	$36	$36
Indirect (earnings from support industries)	$15	$18
Induced (earnings from household spending)	$7	$11
Total	**$58**	**$65**
Total Output[1] (Millions of 2020 dollars)		
Direct (output from direct jobs)	$150	$150
Indirect (output from support industries)	$36	$48
Induced (output from household spending)	$19	$43
Total	**$206**	**$241**

Notes:
1 Output is the total effect on the local economy, including the sum of the cost of goods and services used to produce a product and the associated payments to workers, taxes, and profits.
Detailed amounts may not add to totals due to rounding.
Sources: AKRF, Inc., August 2020, using the 2019 IMPLAN economic modeling system for Westchester County and New York State.

Total Impact on the Local Economy

The total annual economic output of the Proposed Project in the Westchester County economy would be an estimated $206 million annually. Output from direct jobs in the Town would total $150 million annually.

Beyond the above-described benefits, the Proposed Project would position the Town to receive additional economic benefits from future development directly and indirectly facilitated by the Project. The initial investment in offshore wind supply chain at the project site would make Port Cortlandt and adjacent rezoned properties extremely competitive in future NYSERDA and even non-New York State procurement bids (e.g., New Jersey). Port Cortlandt would be one of the few operating ports with adjacent upland manufacturing capabilities on the eastern seaboard. It is expected that future NYSERDA procurements will stress the need the advance job growth in New York State by leveraging existing assets with capacity, such as Port Cortlandt.

The Proposed Project would generate "green jobs" press for Cortlandt, signal new investment opportunities, and would generate demand for business-to-business services that could be captured by new businesses or growth of existing businesses within and outside of Town. Similarly, the consumer demand generated by job growth would help to sustain existing business and grow businesses within and outside of Town. Overall, the Proposed Project is consistent with economic development objectives advanced in the Town's *2016 Sustainable Comprehensive Plan*:

- The Proposed Project and Proposed Action would promote light industrial, waterfront-dependent uses along the Verplanck waterfront, consistent with uses envisioned in the Waterfront Sustainability District.
- The Project revitalizes economic development activities along the Cortlandt Waterfront by leveraging New York State investment in Verplanck.
- The Project has synergies with a contemplated Hudson River Discovery Center along the Verplanck waterfront. The Proposed Project advances uses that could inspire future generations to pursue renewable energies, and through content and activities coordinated with Project tenants, can tell a story about the area's historic role in providing "tomorrow's energy."
- The Project advances State efforts to be fossil free by 2050, and in doing so would promote a sustainable future. A Cortlandt community survey commissioned as part of its master planning efforts found that respondents would like the Town to encourage energy efficiency and renewable energy, clean technologies, and green businesses.
- The Project is resilient. The Port's storage and manufacturing uses would be located upland, above elevations threatened by storm surges.
- The Project offers economic resiliency. As detailed below, the Port Cortlandt PILOT or Host Community agreement payments would maintain fiscal solvency for all taxing jurisdictions associated with the project site, and in doing so maintain housing affordable and quality education.

FISCAL IMPACT OF THE PROPOSED PROJECT

Estimated Municipal Costs

Activities associated with the Proposed Project would generate demand for services from some of the directly-affected taxing jurisdictions and special districts.[13] As detailed below, there would be incremental demands placed on the Town in terms of municipal administrative services, as well

[13] The project site currently is not sewered, and therefore does not generate any incremental demand on a wastewater treatment system. The Proposed Project expects to install a package sewage treatment plant on site that would be funded, operated, and maintained by the Project.

as incremental demands on the County for policing, the ambulance district, fire department, and utilities. The estimates in this memorandum are based on reasonable assumptions and provide an acceptable benchmark for potential future economic and fiscal effects of the Proposed Project. As more information becomes available with respect to specific tenants and project site activities, the potential effects on municipal budges and service costs will be updated as needed.

Westchester County

Westchester County supports policing of the project site. The Proposed Project would generate workers and visitors who may request or require policing services. The costs associated with an increased policing demand would not be substantial, as services already are provided in the area. The Proposed Project's demand for EMS services would not require substantial new investment in equipment or personnel **[TO CONFIRM]**.

Town of Cortlandt (including Highway)

Based on a proportional valuation estimate performed by AKRF, the Proposed Project would generate demand for services from the Town, including administrative services, which in budgetary terms are estimated to cost under $30,000 annually.

Hendrick Hudson School District (HHSD)

The Proposed Project does not have a residential component and therefore would not generate school-aged children.

Ambulance #2

The Proposed Project would generate workers and visitors who may require emergency medical services (EMS). The costs associated with an increased demand for EMS would not be substantial, as EMS service already exists in the area. The Proposed Project's demand for EMS services would not require substantial new investment in equipment or personnel **[TO CONFIRM]**.

Verplanck Fire

The Proposed Project would generate additional demand for fire protection services as a result of the additional worker population and development introduced by the Project. The costs associated with increased fire protection services is not expected to be substantial as the fire protection infrastructure already exists, and the structures on the project site are not expected to require additional investment in equipment **[TO CONFIRM]**. Additional costs are expected to be more than offset by the estimated Port Cortlandt payments that the fire department would receive with the Proposed Project.

Hendrick Hudson Free Library

The Proposed Project does not a residential component and therefore is not expected to generate direct demands on library services.

Verplanck Light

The Verplanck Lighting Special District provides for street lighting within district boundaries. The Proposed Project would provide for on-site lighting, and would not require additional lighting along street frontages **[TO CONFIRM]**.

County Refuse

The Westchester County Refuse Disposal District No. 1 is responsible for the transportation and disposal of municipally collected solid waste and the processes of recyclables. The Proposed Project's incremental demands on the County Refuse district is not expected to require additional new equipment or infrastructure **[TO CONFIRM]**. Solid waste generated by the Proposed Project would be collected and transported by a private carter.

Cortlandt Consolidated Water

The Proposed Project would generate additional demand for potable water services as a result of the additional worker population and development introduced. The costs associated with increased potable water services would not be substantial as the water infrastructure already exists, and the incremental increase in development would not require additional investment in sewer infrastructure or equipment **[TO CONFIRM]**.

Estimated Fiscal Benefits[14]

As noted in the NYSERDA RFP, NYSERDA proposals should include economic benefits for jurisdictions in New York State, including tax payments, PILOT payments and/or payments under Host Community Agreements. In response to the RFP, it is proposed that the Project would seek to establish a Port Cortlandt PILOT or Host Community agreement that over an initial five-year period (2021-2025) would provide the funds necessary to fill the annual budget gaps not met through the cessation funds. As detailed in **Table 19**, the proposed Port Cortlandt payment would exceed $50 million over this first five-year period, with an estimated $49.9 million for HHSD and $1.7 million for the Town. Verplanck Fire and the Hendrick Hudson Free Library also would receive Port Cortlandt PILOT or Host Community agreement revenues to fully offset budget gaps remaining after cessation funds.

Table 19
Estimated Port Cortlandt Payments
(through PILOTor Host Community Agreements)

	2021	2022	2023	2024	2025	TOTAL
Town of Cortlandt	$92,856	$230,017	$372,627	$464,542	$559,984	**$1,720,026**
Hendrick Hudson School District (HHSD)	$2,681,637	$6,642,798	$10,761,332	$13,415,794	$16,172,130	**$49,673,691**
Verplanck Fire	$43,151	$106,890	$173,162	$215,875	$260,228	**$799,306**
Hendrick Hudson Free Library	$39,053	$96,741	$156,720	$195,378	$235,519	**$723,413**
TOTAL	**$2,856,697**	**$7,076,446**	**$11,463,842**	**$14,291,590**	**$17,227,862**	**$52,916,436**

Notes: Town funds include Cortlandt Consolidated Water. Potential PILOT revenues or other funds to directly affected taxing jurisdictions to be discussed with those jurisdictions.

Sources: Estimated Port Cortlandt payments to HHSD are based on data supplied to AKRF by HHSD. Estimated payments to other taxing jurisdictions are based on the DL English Indian Point Closure Task Force 2018 Report.

The proposed Port Cortlandt PILOT or Host Community agreement establishes an initial five-year payment period because the first NYSERDA award is a finite length; it is tied to an initial energy solicitation award of between 1.0 and 2.5 gigawatts for offshore wind for New York State. It is expected that with the initial award, the project site would be extremely well-positioned to secure future offshore wind procurement awards. Once a hub is invested in, future PILOT and/or Host Community Agreements would be tied to further energy solicitation awards, securing a long-term

[14] In addition to the revenues associated with the proposed PILOT or Host Community agreements, with the Proposed Project there would be a one-time payment to the Town for the purchase of the project site. Fair market value for the project site is being determined by the Town.

commitment to PILOTs and/or Host Community agreements over time. The Proposed Project (and associated rezoning action) would position the Town to attract additional investment supporting offshore wind and its supply chain. With over 30 gigawatts of planned electric power generating capacity being installed on the U.S. East Coast continental shelf over the next decade and a half, offshore wind presents a major opportunity for seaboard states to generate green jobs in the decades ahead.[15]

MITIGATION MEASURES

As described above, the Proposed Project would generate substantial economic and fiscal benefits to the Town and HHSD, and would not result in significant adverse impacts to any municipal services or special taxing districts. The Proposed Project would fully address substantial budgetary gaps created by the closure of IPEC and associated losses of IPEC PILOT payments, and is consistent with economic development objectives advanced in the Town's *2016 Sustainable Comprehensive Plan.* In coordination with the Town, the analyses will be refined and supplemented as part of the DGEIS and Site Plan approval process based on additional discussions with the Town, HHSD, and other directly affected taxing jurisdictions, and as more Project-specific data becomes available from prospective Project Site developer(s) and tenant(s).

[15] Source: https://www.maritime-executive.com/editorials/how-u-s-ports-can-capitalize-on-the-offshore-wind-boom

Port Cortlandt Technical Memorandum

Visual Impact Assessment

Port Cortlandt Technical Memorandum
Visual Impact Assessment

A. INTRODUCTION

This technical memorandum summarizes AKRF's initial assessment of the visibility of the Proposed Project from select vantage points within the Town of Cortlandt (the Town). It should be noted that the visual analysis presented in this memorandum will be subject to further refinement as the Proposed Project evolves, to include additional vantage points requested by the Town and the public through the Draft Generic Environmental Impact Statement (DGEIS). However, the selection of these initial vantage points was based on the Applicant's familiarity with topographic conditions in the area and the publicly accessible view corridors presented by the roadway network and land uses in the vicinity of the project site. In addition, while "leaf off" pictures along the perimeter of the site were taken in April 2020, there were no pictures taken at that time from the residences "up hill" on 13th, 14th and 16th Streets with leaves off. In autumn 2020, as leaf off conditions return, additional locations identified and requested will be photographed and included in the DGEIS.

The methodology presented in the attached photo simulations (comparison of existing vs. proposed views) reflects that in the Draft Scope of Work provided to the Town on August 21, 2020. As noted in the cover letter to these technical memoranda, we have received two different guidances from Tier 1 supply chain manufacturers regarding potential facility height. One indicated a building height of approximately 40 feet, and at the end of August 2020, we received "next generation" specifications for a building more on the order of 60 feet tall. Ultimately, building heights would be mandated by the use and size of the equipment for fabrication within the facility. As discussions with potential tenants continue, we intend to evaluate the differences between these two height options, and as part of the DGEIS will fully analyze the best available information for the potential maximum height of the potential structures.

B. SUMMARY OF FINDINGS

PHOTO SIMULATIONS

As shown in **Figure 1**, four vantage points were utilized for the initial photo simulation study, described as follows:

- Vantage Point A – Broadway north of 16th Street looking southwest;
- Vantage Point B – Broadway at 14th Street looking west;
- Vantage Point C – Broadway between 11th and 13th streets (at Letteri Ballfield) looking west;
- Vantage Point D – 11th Street at St. Patrick's Church looking northeast;

9.3.20

Source: Westchester County GIS, 2018 - New York State, Rockland County GIS, 2016

X < Yard/Dock Visible All Year

X < Facility Visible All Year

X < Facility Seasonally Visible

Thoroughfare Views

A *Broadway North of 16th Street*

B *Broadway at 14th Street*

C *Broadway at Baseball Diamond*

Residential Neighborhood Views

D *11th Street at St. Patrick's Church*

Note:
All existing conditions information depicted on this plan is approximate and taken from publicly available GIS data.

0 400 1000 FEET

Location and Direction of Existing and Proposed Views

PORT CORTLANDT

Figure 1

The following sections summarize the visibility of the Proposed Project from each of the above-referenced vantage points (see **Figures 2 through 5**), including observations of seasonal variations in visibility (leaf-on vs. leaf-off), existing vegetative cover on the project site to remain, and elements of the potential landscaping/buffering plan which would provide additional visual screening from neighboring properties. Such screening measures would be in conformance with the guidelines found within the Town Code for manufacturing districts abutting residential districts. In addition, as the potential port operations are explored for the DGEIS, the potential for the duration and visibility of crane operations on upland or port locations from the surrounding community will be further explored.

VANTAGE POINT A (40-FOOT-TALL MANUFACTURING BUILDING)

As shown in **Figure 2**, a small portion of the upland manufacturing building's southeastern roofline would be visible to motorists under leaf-on conditions through intervening residences. It can also be assumed that from this vantage point, the same small portion of the upland manufacturing building would be visible under leaf-off conditions. Residents and pedestrians walking east of Broadway will be able to view the structure, and additional photos for leaf off/on evaluations will be performed for the DGEIS. The potential port area would not be visible from this vantage point.

VANTAGE POINT B (40-FOOT-TALL MANUFACTURING BUILDING)

As shown in **Figure 3**, the presence of wetlands and the previous clearing of part of the site for the construction of the gas pipeline results in a brief pocket of visibility towards the upland manufacturing building for motorists traveling north and south along Broadway. Residents and pedestrians walking east of Broadway will be able to view the structure, and additional photos for leaf off/on evaluations will be performed for the DGEIS. From this vantage point, a portion of the upland manufacturing building's eastern façade would be visible under both leaf-on and leaf-off conditions. The potential port area would not be visible from this vantage point.

VANTAGE POINT C (40-FOOT-TALL MANUFACTURING BUILDING)

As shown in **Figure 4**, similar to Vantage Point B, a portion of the upland manufacturing building's façade would be visible to motorists traveling north and south along Broadway. However, due to existing deciduous trees to remain around the perimeter of the Letteri Ballfield, views of the building would be mostly limited to the leaf-off condition. The potential landscaped berm and planted buffer around the building would also provide screening such that only the roofline would be visible. The potential port area would not be visible from this vantage point.

VANTAGE POINT D (40-FOOT-TALL MANUFACTURING BUILDING)

As shown in **Figure 5**, the portion of 11th Street adjacent to St. Patrick's Church would provide the closest publicly accessible view of the upland manufacturing building under both leaf-on and leaf-off conditions, From this vantage point, portions of the west-facing façade of the building would fill the existing void created by the clearing for the construction of the gas pipeline. As a result, limited views towards existing residential uses to the east would be replaced with the building. A potential landscaped berm and planted buffer around the building would screen views along 11th Street and Highland Avenue from the external activities and storage areas, as well as the port facility, which would be at a lower elevation than 11th Street. As the project design progresses, additional landscaping and structural treatments will be developed for locations where

9.3.20

EXISTING VIEW

PROPOSED VIEW

PORT CORTLANDT

Vantage Point A:
Existing and Proposed Views (40 ft Building)
Figure 2

EXISTING VIEW

PROPOSED VIEW

Vantage Point B:
Existing and Proposed Views (40 ft Building)
Figure 3

EXISTING VIEW

PROPOSED VIEW

Vantage Point C:
Existing and Proposed Views (40 ft Building)
Figure 4

EXISTING VIEW

PROPOSED VIEW

Vantage Point D:
Existing and Proposed Views (40 ft Building)
Figure 5

the trees along the perimeter have been cut down during the installation of the gas pipeline at the project site. In addition, as described in the attached "Port Operations" technical memorandum, movement of materials on-site will be limited to daylight hours and there will be flexibility to halt such movements as necessary during times sensitive to the community, such as for funerals at the adjacent church property.

DIGITAL RENDERINGS

Two "bird's eye" view renderings of the Proposed Project (also included in the Draft Scope of Work) are attached as **Figures 6 and 7**. These figures depict the potential port and manufacturing facilities from a northeasterly aerial view and provide context for how the Proposed Project will be located. Please refer to the attached "Port Operations" technical memorandum for a description of the anticipated frequency of such operations.

PHOTO SIMULATIONS OF POTENTIAL 60-FOOT-TALL MANUFACTURING BUILDING

As noted above, in order to remain transparent to the Town in light of recently obtained confidential specifications from one manufacturer indicating the manufacturing building height could be more on the order of 60 feet tall for "next generation" equipment, a supplemental set of photo simulations (from the same four vantage points presented above) has been provided in **Figures 8 through 11**. As discussions with potential tenants advance, we will evaluate the differences between these two height options, and as part of the DGEIS intend to fully analyze the best available information for the potential maximum height of this structure.

CONCLUSION

Pursuant to comments received in Zoom meetings and a Town Board workshop meeting, we are advancing mitigation concepts for visual impacts, and will be updating the simulations performed to date with such options incorporated into the project.

As the project design progresses, additional landscaping and structural treatments will be developed for locations where the trees along the perimeter were cut down during the installation of the pipeline at the project site. In addition, as described in the attached "Port Operations" technical memorandum movement of materials on-site will be limited and there will be flexibility to halt such movements during times that are sensitive to the community, such as funerals at the adjacent St. Patrick's church property (Vantage Point D). In coordination with the Town, future locations for photo and video simulations and the details of the potential landscaped berm and plantings on the site perimeter and operational requirements will be further refined as part of the DGEIS and Site Plan approval process, to minimize potential adverse visual impacts to the extent practical.

9.3.20

Rendering of Development Concept Site Plan
Looking South from Hudson River

PORT CORTLANDT

Figure 6

9.3.20

Rendering of Development Concept Site Plan
Looking East from Former Quarry Pond

PORT CORTLANDT

Figure 7

EXISTING VIEW

PROPOSED VIEW

Vantage Point A:
Existing and Proposed Views (60 ft Building)
Figure 8

EXISTING VIEW

PROPOSED VIEW

Vantage Point B:
Existing and Proposed Views (60 ft Building)
Figure 9

EXISTING VIEW

PROPOSED VIEW

Vantage Point C:
Existing and Proposed Views (60 ft Building)
Figure 10

EXISTING VIEW

PROPOSED VIEW

Vantage Point D:
Existing and Proposed Views (60 ft Building)
Figure 11