Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Massena Green Hydrogen Facility		
Project Location (describe, and attach a general location map): Pontoon Bridge Road, Massena, NY 13662		
Brief Description of Proposed Action (include purpose or need): Air Products is proposing development of the Massena Green Hydrogen Facility to harvest up to 35 metric tons per day (MTPD) of green hydrogen utilizing renewable power to be supplied by the New York Power Authority (NYPA). The hydrogen facility involves production of liquid hydrogen by electrolysis. The required electrical supply will be provided from the NYPA Hydro Preservation Power Program and renewable market power through NYPA's 345 kV line adjacent to the project site. The project will be using Quantity 4 electrolyzers rated at 20 megawatts (MW) each to harvest renewable hydrogen. The hydrogen produced in the electrolyzers after being liquified will be distributed to customers for their use as a fuel source mainly for the mobility sector for trucks and buses. Included in construction are an electrolyzer building (300-foot by 175-foot), a compressor building (150-foot by 200-foot), a water treatment building (204-foot by 310-foot), a control building (70-foot by 125-foot), and a terminal building (75-foot by 155-foot). A gravel pad will be constructed to house 4 liquid hydrogen storage tanks. A new electrical substation will be constructed to support this project. Included in the project are associated parking areas, access roads, emergency generators and pads, all necessary utilities, and stormwater basins. Security fencing will be established around the facility as well.		
Name of Applicant/Sponsor: Air Products & Chemicals Inc., Attn: Jonathan Traynor, Project Manager	Telephone: 610-481-1416 E-Mail: traynojn@airproducts.com	
Address: 1940 Air Products Boulevard		
City/PO: Allentown	State: PA	Zip Code: 18106
Project Contact (if not same as sponsor; give name and title/role): Bryan A. Bayer, C&S Engineers, Inc.	Telephone: 315-455-2000 E-Mail: bbayer@cscos.com	
Address: 499 Col. Eileen Collins Boulevard		
City/PO: Syracuse	State: NY	Zip Code: 13212
Property Owner (if not same as sponsor): Tony C. Zappia	Telephone: E-Mail:	
Address: Pontoon Bridge Road		
City/PO: Massena	State: NY	Zip Code: 13662

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes ☑No		
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Site Plan Approval	February 2023
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	Town Building Permit	To be determined
e. County agencies ☑Yes ☐No	County Health Department	To be determined
f. Regional agencies ☑Yes ☐No	St. Lawrence County IDA	February 2023
g. State agencies ☑Yes ☐No	NYSDEC WQC; SPDES (ind & construction), Article 15, Air Registration, NYSEDC	To be determined
h. Federal agencies ☑Yes ☐No	USACE Section 404, Section 10	To be determined

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☑Yes ☐No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☐Yes ☑No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☑Yes ☐No

If Yes, identify the plan(s):

St. Lawrence County Agricultural Development Plan

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑Yes ☐No
If Yes, what is the zoning classification(s) including any applicable overlay district?
I - Industrial, NC - Neighborhood-Commercial

b. Is the use permitted or allowed by a special or conditional use permit? ☑Yes ☐No

c. Is a zoning change requested as part of the proposed action? ☐Yes ☑No
If Yes,
i. What is the proposed new zoning for the site? ______

C.4. Existing community services.

a. In what school district is the project site located? Massena Central School District

b. What police or other public protection forces serve the project site?
Massena Police Department, St. Lawrence County Sheriff's Office, New York State Police, US Customs and Border Patrol

c. Which fire protection and emergency medical services serve the project site?
Massena Fire Department, Massena Memorial Hospital, Massena Rescue

d. What parks serve the project site?
Alcoa Field Recreation Park, Bushnell Park, Danforth Place Park, Massena Town Beach, North Main Street Park, Springs Park, Robert Moses State Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Industrial

b. a. Total acreage of the site of the proposed action? 84.40 acres
b. Total acreage to be physically disturbed? 72.46 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 88.92 acres

c. Is the proposed action an expansion of an existing project or use? ☐Yes ☑No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % ______ Units: ______

d. Is the proposed action a subdivision, or does it include a subdivision? ☐Yes ☑No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)

ii. Is a cluster/conservation layout proposed? ☑Yes ☐No
iii. Number of lots proposed? 2
iv. Minimum and maximum proposed lot sizes? Minimum 6.76 Maximum 81.47

e. Will the proposed action be constructed in multiple phases? ☐Yes ☑No
i. If No, anticipated period of construction: 37 months
ii. If Yes:
- Total number of phases anticipated ______
- Anticipated commencement date of phase 1 (including demolition) ______ month ______ year
- Anticipated completion date of final phase ______ month ______ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: ______

f. Does the project include new residential uses? ☐ Yes ☑ No
If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑ Yes ☐ No
If Yes,
i. Total number of structures 7
ii. Dimensions (in feet) of largest proposed structure: 132 height; 206 width; and 290 length
iii. Approximate extent of building space to be heated or cooled: 152,193 heat/ 24,378 cool square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐ Yes ☑ No
If Yes,
i. Purpose of the impoundment: ______
ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify: ______
iii. If other than water, identify the type of impounded/contained liquids and their source. ______
iv. Approximate size of the proposed impoundment. Volume: ______ million gallons; surface area: ______ acres
v. Dimensions of the proposed dam or impounding structure: ______ height; ______ length
vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): ______

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐ Yes ☑ No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)
If Yes:
i .What is the purpose of the excavation or dredging? ______
ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?
- Volume (specify tons or cubic yards): ______
- Over what duration of time? ______

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them. ______
iv. Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☐ No
If yes, describe. ______
v. What is the total area to be dredged or excavated? ______ acres
vi. What is the maximum area to be worked at any one time? ______ acres
vii. What would be the maximum depth of excavation or dredging? ______ feet
viii. Will the excavation require blasting? ☐ Yes ☐ No
ix. Summarize site reclamation goals and plan: ______

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☑ Yes ☐ No
If Yes:
i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): Design plans may affect wetlands delineated within the project site. Potentially affected wetlands may be considered isolated; however, the final jurisdictional status of on-site water features is subject to approval by the USACE and NYSDEC.

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:
Permanent wetland impacts are anticipated to be approximately 1.57 acres. In addition, there will be temporary wetland impacts are anticipated to be approximately 0.23 acre. Temporary impacts are associated with trenching and utility installation and wetlands will be restored. Post-construction will be consistent with USACE requirements and no loss of wetlands will occur.

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☑ Yes ☐ No
If Yes, describe: 1.57 acres of wetland soil will be permanently impacted

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☑ Yes ☐ No
If Yes:
- acres of aquatic vegetation proposed to be removed: 0.55 acre emergent vegetation
- expected acreage of aquatic vegetation remaining after project completion: 3.98 acres emergent vegetation
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): Site grading to accomodate proposed project development
- proposed method of plant removal: Excavation and backfill
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:
Mitigation will be completed consistent with USACE and NYSDEC requirements.

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No
If Yes:
i. Total anticipated water usage/demand per day: 2MGD process/675GPD employee gallons/day
ii. Will the proposed action obtain water from an existing public water supply? ☑ Yes ☐ No
If Yes:
- Name of district or service area: Massena Water Department (for employee use)
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☑ Yes ☐ No
- Do existing lines serve the project site? ☐ Yes ☑ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No
If Yes:
- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☑ No
If, Yes:
- Applicant/sponsor for new district:
- Date application submitted or anticipated:
- Proposed source(s) of supply for new district:

v. If a public water supply will not be used, describe plans to provide water supply for the project:
In addition for process supply 2MGD will be obtained from the St. Lawrence River through existing intake structures.
vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: N/A gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No
If Yes:
i. Total anticipated liquid waste generation per day: .6MG proc/ 675 emp gallons/day
ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each):
Approximately 600,000 gallons per day of process wastewater will be generated per day, and 675 gallons of wastewater will be treated via an onsite septic system from operations.

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐ Yes ☑ No
If Yes:
- Name of wastewater treatment plant to be used:
- Name of district:
- Does the existing wastewater treatment plant have capacity to serve the project? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: ____________________

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:
- Applicant/sponsor for new district: ____________________
- Date application submitted or anticipated: ____________________
- What is the receiving water for the wastewater discharge? ____________________

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: ____________________

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface) 1,298,310 sf during construction; 753,833 sf after construction

_____ Square feet or 84.40 acres (parcel size)

ii. Describe types of new point sources. New structures, paved areas (e.g. parking areas)

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

On site storm water basins which will release to the existing drainage easement

- If to surface waters, identify receiving water bodies or wetlands: ____________________
- Will stormwater runoff flow to adjacent properties? ☐Yes ☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☑No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑Yes ☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

Construction vehicles during the construction period only (Monday through Friday)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

Power generation, structural heating, operation of facility processes

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

Process emissions

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☑Yes ☐No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☑No

ii. In addition to emissions as calculated in the application, the project will generate:

- 0 Tons/year (short tons) of Carbon Dioxide (CO_2)
- 0 Tons/year (short tons) of Nitrous Oxide (N_2O)
- 0 Tons/year (short tons) of Perfluorocarbons (PFCs)
- 0 Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- 0 Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- 0 Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐ Yes ☑ No

If Yes:

i. Estimate methane generation in tons/year (metric): ______

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): ______

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐ Yes ☑ No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

______

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐ Yes ☑ No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐ Weekend
☐ Randomly between hours of ______ to ______.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): ______

iii. Parking spaces: Existing ______ Proposed ______ Net increase/decrease ______

iv. Does the proposed action include any shared use parking? ☐ Yes ☐ No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe: ______

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐ Yes ☐ No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐ Yes ☐ No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐ Yes ☐ No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑ Yes ☐ No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action:
Peak demand of 110 MW

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):
NYPA substation

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☑ Yes ☐ No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7am - 5pm
- Saturday: Not applicable
- Sunday: Not applicable
- Holidays: Not applicable

ii. During Operations:

- Monday - Friday: 24 hours per day/7 days per week
- Saturday: 24 hours per day/7 days per week
- Sunday: 24 hours per day/7 days per week
- Holidays: 24 hours per day/7 days per week

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

During construction there will be construction equipment on site operating during the hours previously presented. After construction, the site will be established as a Green Hydrogen Facility development and operation noise is anticipated at the level of this use.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☑ Yes ☐ No

Describe: Proposed tree clearing

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Outdoor lighting will be dark sky compliant and designed to avoid lighting adjacent properties.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☑ Yes ☐ No

Describe: Proposed tree clearing

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures:

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored ______

ii. Volume(s) ______ per unit time ______ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: ______

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: 1 tons per month (unit of time)
- Operation : 4.5 tons per month (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: On-site recycling dumpsters
- Operation: On-site recycling dumpsters

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Typical rolloff dumpster
- Operation: On-site dumpsters

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): ________

ii. Anticipated rate of disposal/processing:

- ________ Tons/month, if transfer or other non-combustion/thermal treatment, or
- ________ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: ________ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: ________

ii. Generally describe processes or activities involving hazardous wastes or constituents: ________

iii. Specify amount to be handled or generated ______ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: ________

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: ________

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

____

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☑ Industrial ☐ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☑ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): Right-of-way (ROW)

ii. If mix of uses, generally describe:

The project site is located in a rural area and contains forest land, an open field area, and a right-of-way (ROW) in southern portion of the project site. The project site is bordered by residential land to the northwest, forested land to the south, southwest, and northeast, and industrial land to the southeast.

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0.07	17.31	+17.24
• Forested	67.21	19.34	-47.87
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	2.86	35.06	+32.20
• Agricultural (includes active orchards, field, greenhouse etc.)	0.00	0.00	+/- 0.00
• Surface water features (lakes, ponds, streams, rivers, etc.)	0.06	0.06	+/-0.00
• Wetlands (freshwater or tidal)	9.43	7.86	-1.57
• Non-vegetated (bare rock, earth or fill)	0.00	0.00	+/-0.00
• Other Describe: Right-of-way (ROW)	4.77	4.77	+/-0.00

c. Is the project site presently used by members of the community for public recreation? *i.* If Yes: explain: ______	☐ Yes ☑ No
d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? If Yes, *i.* Identify Facilities: ______ ______	☐ Yes ☑ No
e. Does the project site contain an existing dam? If Yes: *i.* Dimensions of the dam and impoundment: • Dam height: ______ feet • Dam length: ______ feet • Surface area: ______ acres • Volume impounded: ______ gallons OR acre-feet *ii.* Dam's existing hazard classification: ______ *iii.* Provide date and summarize results of last inspection: ______ ______	☐ Yes ☑ No
f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? If Yes: *i.* Has the facility been formally closed? ☐ Yes ☐ No • If yes, cite sources/documentation: ______ *ii.* Describe the location of the project site relative to the boundaries of the solid waste management facility: ______ ______ *iii.* Describe any development constraints due to the prior solid waste activities: ______ ______	☐ Yes ☑ No
g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? If Yes: *i.* Describe waste(s) handled and waste management activities, including approximate time when activities occurred: ______ ______	☐ Yes ☑ No
h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? If Yes: *i.* Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☑ No ☐ Yes – Spills Incidents database Provide DEC ID number(s): ______ ☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): ______ ☐ Neither database *ii.* If site has been subject of RCRA corrective activities, describe control measures: ______ ______ ______ *iii.* Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No If yes, provide DEC ID number(s): ______ *iv.* If yes to (i), (ii) or (iii) above, describe current status of site(s): ______ ______	☐ Yes ☑ No

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: ____
- Describe the type of institutional control (e.g., deed restriction or easement): ____
- Describe any use limitations: ____
- Describe any engineering controls: ____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: ____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? >6.5 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? ____%

c. Predominant soil type(s) present on project site:

MaB - Malone loam	37.1 %
HnB - Hogansburg loam	25.7 %
MsB - Muskellunge silty clay loam	14.0 %

d. What is the average depth to the water table on the project site? Average: 1 feet

e. Drainage status of project site soils:

- ☐ Well Drained: 0.0 % of site
- ☑ Moderately Well Drained: 27.6 % of site
- ☑ Poorly Drained 20.5 % of site

f. Approximate proportion of proposed action site with slopes:

- ☑ 0-10%: 100 % of site
- ☐ 10-15%: ____% of site
- ☐ 15% or greater: ____% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: ____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name Delineated stream (federally regulated) Classification ____
- Lakes or Ponds: Name ____ Classification ____
- Wetlands: Name Federal Waters, Federal Waters, Federal Waters,... Approximate Size 7.31ac(federal);0.25ac(st)
- Wetland No. (if regulated by DEC) MA-1

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☑ Yes ☐ No

If yes, name of impaired water body/bodies and basis for listing as impaired:
Name - Pollutants - Uses:Grass River, Lower, and tribs – Priority Organics – Fish Consumption

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:
i. Name of aquifer: ____

m. Identify the predominant wildlife species that occupy or use the project site:

Chestnut-sided warbler	Gray squirrel	White-tailed deer
Nashville warbler	Eastern chipmunk	Eastern cottontail
Yellow-bellied sapsucker	Groundhog	

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): ______

ii. Source(s) of description or evaluation: ______

iii. Extent of community/habitat:

- Currently: ______ acres
- Following completion of project as proposed: ______ acres
- Gain or loss (indicate + or -): ______ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:

i. Species and listing (endangered or threatened):

Listed Plant – contact NY Natural Heritage

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:

i. Species and listing: ______

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☑ Yes ☐ No

If yes, give a brief description of how the proposed action may affect that use:

The project site is hunted by the owner of the property. The site is not open to the public.

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No

If Yes, provide county plus district name/number: ______

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No

i. If Yes: acreage(s) on project site? All areas are prime farmland: 21.1 acres; Prime farmland if drained: 12.1 acres

ii. Source(s) of soil rating(s): USDA NRCS Web Soil Survey

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: ______

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name: ______

ii. Basis for designation: ______

iii. Designating agency and date: ______

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: ______

iii. Brief description of attributes on which listing is based:

______

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): ______

ii. Basis for identification: ______

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Massena Town Beach, Nicandri Nature Center, Robert Moses State Park - Thousand Islands, St. Lawrence State Park

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): Public beach, nature center, state park

iii. Distance between project and resource: <5 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: ______

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Bryan A. Bayer, PWS, CE, C&S Engineers, Inc. Date February 1, 2023

Signature Bryan A Bayer Title Managing Environmental Scientist

PRINT FORM

EAF Mapper Summary Report

Thursday, December 15, 2022 3:40 PM

Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	Yes
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	Yes
E.2.h.v [Impaired Water Bodies - Name and Basis for Listing]	Name - Pollutants - Uses:Grass River, Lower, and tribs – Priority Organics – Fish Consumption
E.2.i. [Floodway]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.j. [100 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.k. [500 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.

E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes
E.2.o. [Endangered or Threatened Species - Name]	Listed Plant – contact NY Natural Heritage
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Agency Use Only [If applicable]

Project : Massena Green Hydrogen Project

Date : April 20, 2023

Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "**Yes**" to a numbered question, please complete all the questions that follow in that section.
- If you answer "**No**" to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land

Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1) ☐ NO ☐ YES

If "Yes", answer questions a - j. If "No", move on to Section 2.

	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☑	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☑	☐
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☑	☐
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☑	☐
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☐	☐
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☑	☐
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☐	☐
h. Other impacts: ______________________________		☐	☐

2. Impact on Geological Features The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g) *If "Yes", answer questions a - c. If "No", move on to Section 3.*	☐ NO		☐ YES
	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. Identify the specific land form(s) attached: ______________________	E2g	☐	☐
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: ______________________	E3c	☐	☐
c. Other impacts: ______________________		☐	☐

3. Impacts on Surface Water The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h) *If "Yes", answer questions a - l. If "No", move on to Section 4.*	☐ NO		☑ YES
	Relevant Part I Question(s)	**No, or small impact may occur**	**Moderate to large impact may occur**
a. The proposed action may create a new water body.	D2b, D1h	☑	☐
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	☑	☐
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	☑	☐
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	☑	☐
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	☑	☐
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	☑	☐
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	☑	☐
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	☑	☐
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	☑	☐
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	☑	☐
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	☑	☐

l. Other impacts: ____		☐	☐

4. Impact on groundwater
The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer. ☐NO ☐YES
(See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t)
If "Yes", answer questions a - h. If "No", move on to Section 5.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	☑	☐
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: ______________________________	D2c	☑	☐
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	☑	☐
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	☑	☐
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	☑	☐
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	☑	☐
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	☑	☐
h. Other impacts: ____		☐	☐

5. Impact on Flooding
The proposed action may result in development on lands subject to flooding. ☑NO ☐YES
(See Part 1. E.2)
If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	☐	☐
b. The proposed action may result in development within a 100 year floodplain.	E2j	☐	☐
c. The proposed action may result in development within a 500 year floodplain.	E2k	☐	☐
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	☐	☐
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	☐	☐
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	☐	☐

g. Other impacts: ____		☐	☐

6. Impacts on Air The proposed action may include a state regulated air emission source. (See Part 1. D.2.f., D.2.h, D.2.g) *If "Yes", answer questions a - f. If "No", move on to Section 7.*	☐NO	☐YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☑	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☐	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☑	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☑	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☐	☐
vi. 43 tons/year or more of methane	D2h	☑	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☑	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☑	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☑	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☑	☐
f. Other impacts: ____		☐	☐

7. Impact on Plants and Animals The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) *If "Yes", answer questions a - j. If "No", move on to Section 8.*	☐NO	☐YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☑	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☑	☐
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☑	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☑	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	☑	☐
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: ____________	E2n	☑	☐
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	☑	☐
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: ____________ Forest Habitat (Google Earth)	E1b	☐	☐
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	☑	☐
j. Other impacts: ____________		☐	☐

8. Impact on Agricultural Resources

The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.) ☐ NO ☐ YES

If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	☑	☐
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, Elb	☑	☐
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	☑	☐
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	☑	☐
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	El a, E1b	☑	☐
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	☑	☐
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	☑	☐
h. Other impacts: ____________		☐	☐

9. Impact on Aesthetic Resources

The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.) ☐ NO ☐ YES

If "Yes", answer questions a - g. If "No", go to Section 10.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☑	☐
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☑	☐
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	 ☑ ☐	 ☐ ☐
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	 ☑ ☑	 ☐ ☐
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☐	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☑	☐
g. Other impacts: ____		☐	☐

10. Impact on Historic and Archeological Resources

The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.) ☐ NO ☐ YES

If "Yes", answer questions a - e. If "No", go to Section 11.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on the National or State Register of Historical Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places.	E3e	☑	☐
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	☑	☐
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: ____	E3g	☑	☐

d. Other impacts: ______________________________		☐	☐
e. If any of the above (a-d) are answered "Moderate to large impact may occur", continue with the following questions to help support conclusions in Part 3:			
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	☐	☐
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	☐	☐
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	☐	☐

11. Impact on Open Space and Recreation

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan.
(See Part 1. C.2.c, E.1.c., E.2.q.)
If "Yes", answer questions a - e. If "No", go to Section 12.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	☐	☐
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	☐	☐
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	☐	☐
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	☐	☐
e. Other impacts: ______________________________		☐	☐

12. Impact on Critical Environmental Areas

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)
If "Yes", answer questions a - c. If "No", go to Section 13.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
c. Other impacts: ______________________________		☐	☐

13. Impact on Transportation

The proposed action may result in a change to existing transportation systems. ☑ NO ☐ YES
(See Part 1. D.2.j)
If "Yes", answer questions a - f. If "No", go to Section 14.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☐	☐
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☐	☐
c. The proposed action will degrade existing transit access.	D2j	☐	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☐	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☐	☐
f. Other impacts: ______________________________		☐	☐

14. Impact on Energy

The proposed action may cause an increase in the use of any form of energy. ☐ NO ☐ YES
(See Part 1. D.2.k)
If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☐	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☑	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☑	☐
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☐	☐
e. Other Impacts: ______________________________		☐	☐

15. Impact on Noise, Odor, and Light

The proposed action may result in an increase in noise, odors, or outdoor lighting. ☐ NO ☐ YES
(See Part 1. D.2.m., n., and o.)
If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☑	☐
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☑	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☑	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☑	☐
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☑	☐
f. Other impacts: ____		☐	☐

16. Impact on Human Health

The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.) ☑ NO ☐ YES

If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No,or small impact may cccur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☐
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☐	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☐	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☐	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☐	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☐	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☐
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☐	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☐
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☐
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☐	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☐	☐
m. Other impacts: ____			

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. ☑ NO ☐ YES

(See Part 1. C.1, C.2. and C.3.)

If "Yes", answer questions a - h. If "No", go to Section 18.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☐	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☐	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☐	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☐	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, Elb	☐	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☐	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☐	☐
h. Other: ____ ____		☐	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. ☑ NO ☐ YES

(See Part 1. C.2, C.3, D.2, E.3)

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☐	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☐	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☐	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☐	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☐	☐
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☐	☐
g. Other impacts: ____ ____		☐	☐

PRINT FULL FORM

Agency Use Only [IfApplicable]

Project : Massena Green Hydrogen Project

Date : April 20, 2023

Full Environmental Assessment Form
Part 3 - Evaluation of the Magnitude and Importance of Project Impacts
and
Determination of Significance

Part 3 provides the reasons in support of the determination of significance. The lead agency must complete Part 3 for every question in Part 2 where the impact has been identified as potentially moderate to large or where there is a need to explain why a particular element of the proposed action will not, or may, result in a significant adverse environmental impact.

Based on the analysis in Part 3, the lead agency must decide whether to require an environmental impact statement to further assess the proposed action or whether available information is sufficient for the lead agency to conclude that the proposed action will not have a significant adverse environmental impact. By completing the certification on the next page, the lead agency can complete its determination of significance.

Reasons Supporting This Determination:
To complete this section:

- Identify the impact based on the Part 2 responses and describe its magnitude. Magnitude considers factors such as severity, size or extent of an impact.
- Assess the importance of the impact. Importance relates to the geographic scope, duration, probability of the impact occurring, number of people affected by the impact and any additional environmental consequences if the impact were to occur.
- The assessment should take into consideration any design element or project changes.
- Repeat this process for each Part 2 question where the impact has been identified as potentially moderate to large or where there is a need to explain why a particular element of the proposed action will not, or may, result in a significant adverse environmental impact.
- Provide the reason(s) why the impact may, or will not, result in a significant adverse environmental impact
- For Conditional Negative Declarations identify the specific condition(s) imposed that will modify the proposed action so that no significant adverse environmental impacts will result.
- Attach additional sheets, as needed.

See Attached FEAF Part 3 - Additional Information

Determination of Significance - Type 1 and Unlisted Actions

SEQR Status: ☑ Type 1 ☐ Unlisted

Identify portions of EAF completed for this Project: ☑ Part 1 ☑ Part 2 ☑ Part 3

Upon review of the information recorded on this EAF, as noted, plus this additional support information
See attached FEAF Part 3 - Additional Information

and considering both the magnitude and importance of each identified potential impact, it is the conclusion of the
______________________________ as lead agency that:

☑ A. This project will result in no significant adverse impacts on the environment, and, therefore, an environmental impact statement need not be prepared. Accordingly, this negative declaration is issued.

☐ B. Although this project could have a significant adverse impact on the environment, that impact will be avoided or substantially mitigated because of the following conditions which will be required by the lead agency:

There will, therefore, be no significant adverse impacts from the project as conditioned, and, therefore, this conditioned negative declaration is issued. A conditioned negative declaration may be used only for UNLISTED actions (see 6 NYCRR 617.7(d)).

☐ C. This Project may result in one or more significant adverse impacts on the environment, and an environmental impact statement must be prepared to further assess the impact(s) and possible mitigation and to explore alternatives to avoid or reduce those impacts. Accordingly, this positive declaration is issued.

Name of Action: Massena Green Hydrogen Facility

Name of Lead Agency: Town of Massena Planning Board

Name of Responsible Officer in Lead Agency: Vance Fleury

Title of Responsible Officer: Chairman

Signature of Responsible Officer in Lead Agency: Vance L Fleury Date: May 18 2023

Signature of Preparer (if different from Responsible Officer) Date:

For Further Information:

Contact Person: Bryan A. Bayer, C&S Engineers, Inc.

Address: 499 Col. Eileen Collins Boulevard

Telephone Number: 315-455-2000

E-mail: bbayer@cscos.com

For Type 1 Actions and Conditioned Negative Declarations, a copy of this Notice is sent to:

Chief Executive Officer of the political subdivision in which the action will be principally located (e.g., Town / City / Village of)
Other involved agencies (if any)
Applicant (if any)
Environmental Notice Bulletin: http://www.dec.ny.gov/enb/enb.html

PRINT FULL FORM

Massena Green Hydrogen Facility
Air Products & Chemicals, Inc.
Town of Massena
FEAF Part 3 – Additional Information

The Town of Massena Planning Board (Town) is currently undertaking a municipal zoning review consisting of site plan approval of the proposed Air Products & Chemicals, Inc. (Air Products) Massena Green Hydrogen Facility Project (Project). The Project involves development of a facility that will harvest up to 35 metric tons per day (MTPD) of green hydrogen utilizing renewable power. The proposed facility will be located along Pontoon Bridge Road in the Town of Massena. The Town has declared its intent to be Lead Agency under the State Environmental Quality Review Act (SEQR) by resolution.

On March 17, 2023, the Town of Massena Planning Board submitted a SEQR Lead Agency Status letter with a completed and signed Part I – Full Environmental Assessment Form (FEAF) for the proposed Massena Green Hydrogen Facility to all involved and interested agencies.

The New York State Department of Environmental Conservation (NYSDEC) responded by letter on April 3, 2023. The NYSDEC concurred with the Town of Massena Planning Board acting as lead agency and listed comments regarding the proposed action (see Appendix A – NYSDEC SEQR Correspondence). Responses to NYSDEC comments are as follows:

1.) A Joint Application for Permit for an Article 24 Freshwater Wetlands Permit and Section 401 Water Quality Certification from the NYSDEC, as well as a Section 404 Permit with the USACE, is currently underway and will be submitted to the NYSDEC and USACE for approval upon completion. No impacts to Article 24 Freshwater Wetlands or their respective adjacent areas will be completed as part of this project. Note that the construction of the stormwater detention basins described in your letter are anticipated to be constructed in 2023/2024 prior to the proposed changes in Article 24 Freshwater Wetlands regulations anticipated in 2025.
2.) The requirement for a Construction Stormwater Permit has been noted. A stormwater pollution prevention plan (SWPPP) is completed for this project, and a Notice of Intent will be submitted as appropriate.
3.) Disturbance of greater than 5 acres at a time during construction will require authorization from the Regional Water Engineer. The applicant will comply with this requirement as necessary.
4.) Water that will serve project operation is being purchased from the Village of Massena and the connection will be made at their water treatment plant. The Village Water Department is aware of this action and will be reviewing and approving the connection.
5.) A State Pollutant Discharge Elimination System (SPDES) permit application has been submitted to the NYSDEC. Design documents (report, plans & specs) have been submitted for NYSDEC review in order to obtain a SPDES permit.
6.) Section D.1.4 of the FEAF Part 1 document has been updated to account for the detention basins in the northern section of the property. See the FEAF Part 1 for updated information. The basins are proposed to account for stormwater runoff and treatment per SPDES requirements.
7.) As noted in the FEAF Part 1, 2 MGD of water will be obtained from the St. Lawrence River through existing intake structures; to clarify, no work will take place at these intake structures at the river as they are existing and suitable to serve the proposed project.

FEAF Part 3 – Additional Information (Cont'd)

8.) The wastewater generated will include raw treatment water backwash, cooling water blowdown, water rejects from the demineralizer plant, and steam condensate. The expected flow of these waste streams for Phase 1 is approximately 370,000 gpd, as illustrated in the following table.

Waste Stream	**Flow (m3/h)**	**Flow Rate (gal/min)**	**Daily Flow Rate (gal/day)**	**Temperature (°F)**
Raw Water Treatment Backwash	20	88.1	126,803	59
Cooling Tower Blowdown	32	140.9	202,884	113
Demineralizer Reject Water	5	22.0	31,701	68
Steam Blowdown	1	4.4	6,340	302
Total Discharge	**58**	**255.4**	**367,727**	

The pollutant loading of the wastewater will be the same as the incoming water from the St. Lawrence River, but the wastewater will be concentrated due to the various stages of water treatment and evaporation from the cooling tower, as listed above. The attached table provides the estimated concentration and loading to the Massena Power Canal.

9.) As proposed in the design, a discharge line will extend to the Massena Power Canal (Fisheries Index Number SL-1-6A1 [unnamed water]). The discharge line will be 15 inches in diameter stretching 1,328 feet in length. In association with the proposed discharge line will be a 20-foot wide drainage easement. The 15" diameter discharge will be a Class 52 ductile iron storm sewer design surrounded by heavy duty grouted rip rap at the headwall. For further details, please see the plan, profile, and detail sheets for the water discharge pipe to the canal provided in Appendix B.

As part of this *FEAF Part 3 – Additional Information* document, the items below address potential impacts and associated mitigation measures related to the proposed action.

1.) Impact on land – The total acreage of the proposed action is 84.40 acres, including 72.46 acres of proposed disturbance.

Excavation of soil will be required for the construction of the project due to the foundation system and utility installation in the design plans. It is anticipated that excavated materials will remain onsite. In the event contaminated soils are encountered, these soils will be handled consistent with federal, state, and local regulations.

The duration of the project is estimated at 37-months. Construction activities typically result in potential impacts associated with traffic, dust, stormwater, and noise. These potential impacts are minimized as a result of the following measures:

- The developer will be required to implement a maintenance and protection of traffic plan for use during construction. The plan will be reviewed and approved by the Town of Massena;

FEAF Part 3 – Additional Information (Cont'd)

- The developer will be required to implement best management practices for dust control;
- Stormwater impacts will be addressed by implementation of erosion and sediment controls during construction, consistent with a Construction Stormwater Permit and SWPPP;
- The proposed project will cause a temporary increase in ambient noise levels from the operation of construction equipment. Measures to minimize noise impacts during construction will include adherence to local ordinances for working hours and inspection of equipment for proper muffling;
- Additionally, in accordance with NYSDEC, authorization from the Regional Water Engineer is required prior to disturbing more than 5 acres at any given time during construction.

With employment of proper mitigation measures, the impact on land associated with this project is not considered a significant environmental impact.

2.) Impact on geological features – The project site does not contain known unique or unusual land forms (e.g. cliffs, dunes, minerals, fossils, caves). No impact to significant geologic features will occur due to the proposed project.

3.) Impacts on surface water – The project site includes 9.43 acres of wetland habitat and 0.06 acre of stream habitat. In total, 1.57 acres of permanent wetland impacts are anticipated. Temporary wetland impacts will be limited to approximately 0.23 acre and will be associated with trenching and utility installation; impacted wetlands will be restored and NYSDEC and USACE requirements will be adhered to post-construction.

Any work completed within NYSDEC wetland MA-1, as well as its 100-foot regulated adjacent area, will require an Article 24 wetlands permit in accordance with the Freshwater Wetlands Act. A Section 404 permit through the USACE will be required for any discharge or fill within federally regulated wetlands and a Section 10 permit through the USACE will be required for discharge or fill within the federally- regulated stream. A Section 401 Water Quality Certificate will be required through the NYSDEC for any Section 404 permit issued by the USACE.

Potential impacts to nearby surface waters from construction will be avoided by implementation of appropriate soil erosion and sediment controls. Impacted wetlands will be restored consistent NYSDEC and USACE requirements, and therefore, no loss of wetlands will occur. The Wetland & Waterway Delineation Report is included in Appendix C.

4.) Impact on groundwater – The project is not located within the footprint of a sole source, primary, or principal aquifer. In addition, the project does not involve use or disposal of hazardous materials, or the bulk storage of petroleum or chemical products that could potentially contaminate local groundwater supplies.

5.) Impact on flooding – The proposed project is located outside the regulated floodplain boundaries. No impacts to floodplains will occur as a result of this project.

6.) Impacts on air – The USEPA, through the federal Clean Air Act (CAA), has established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: carbon monoxide (CO), sulfur dioxide

(SO_2), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$), ozone, and lead. An area that violates a national primary or secondary NAAQS for one or more of the USEPA designated criteria pollutants is referred to as non-attainment. A maintenance area is one that has previously been in violation of the NAAQS but has since implemented an avoidance plan and has had no additional violations over an extended period of time.

The project is located in St. Lawrence County. According to the USEPA Green Book (current as of February 28, 2019), St. Lawrence County is currently in attainment for all criteria pollutants, except SO_2, which is listed as "non-attainment". Further review of the Green Book indicates that part of St. Lawrence County was designated as a SO_2 non-attainment in years 2021-2023 and has not yet been redesignated to a maintenance area. An area that has remained in compliance with the NAAQS for an extended period of time is re-designated as "attainment".

Air emission sources require consistency with State and federal air quality standards. The New York air permitting program regulates sources of air pollution. The program is required under provisions set forth in the federal Clean Air Act and New York State regulation (6 NYCRR Part 201). NYSDEC Division of Air Resources administers the air program. The proposed project includes equipment that requires a New York State Air Registration from New York State's air program.

SO_2 emissions associated with the proposed project will be limited in nature. The two potential sources of SO_2 emissions would be on-road diesel trucks shipping bulk hydrogen to costumers as well as non-road construction vehicles and equipment. During operation, SO_2 emissions will be related to diesel trucks used for trucking operations to and from the facility as well as emergency generators if there is a loss of power.

Beginning in 2006, the United State Environmental Protection Agency (USEPA) began to phase-in stringent regulations to lower the amount of sulfur in diesel fuel to 15 ppm. This fuel is known as ultra-low sulfur diesel (ULSD). These diesel regulations targeted emissions from two on-road (or highway) vehicles and non-road engines and equipment.

After 2010, USEPA's diesel standards required that:

- All highway diesel fuel supplied to the market be ULSD; and
- All highway diesel vehicles must use ULSD.

After 2014, EPA's diesel standards require that:

- All non-road, locomotive, and marine (NRLM) diesel fuel must be ULSD; and
- All non-road engines and equipment, such as generators, must use this ULSD.

According to the USEPA, the ULSD standards for on-road and non-road vehicles and equipment has collectively reduced sulfur emissions by more than 90%. In addition, once in operation, Air Products plans to encourage the use of hydrogen powered vehicles, rather than diesel or gasoline, to transport the hydrogen from the facility.

FEAF Part 3 – Additional Information (Cont'd)

7.) Impacts on plants and animals – The majority of the project site contains forest habitat with a stream, an open field, and a right-of-way. Although over 10 acres of forest habitat will be converted due to the proposed action, forested habitat surrounds the project site primarily to the north and northeast. Wildlife species likely to inhabit the project site include small mammals like gray squirrel and eastern cottontail, as well as larger animals like the white-tail deer and birds, including chestnut-sided warbler. The majority of species within the project site are relatively mobile species and will likely be able to inhabit neighboring or nearby suitable habitat post-construction. No significant impact to plants and animals will occur as a result of this project.

As indicated by the EAF Mapper, the New York Natural Heritage Program (NYNHP) was consulted on December 19, 2022; NYNHP responded on February 2, 2023 listing great plains lady tresses (*Spiranthes magnicamporum*) within 0.5 mile of the project site. Information on the great plains lady tresses is included below.

The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) online service was consulted for this project as well. The IPaC is used to obtain a USFWS Official Species List (See Attachment C) that identifies the potential presence of federally listed rare, threatened, and endangered species near a proposed action that may be affected by project activities. The USFWS Official Species List dated April 3, 2023 lists one mammal, northern long-eared bat (*Myotis septentrionalis*), and one insect, monarch butterfly (*Danaus plexippus*). Lastly and according to the IPaC system, there are no critical habitats located within the property and no other Federally threatened or endangered species, or environmentally-sensitive habitat areas were identified. C&S staff completed the Determination Key within the IPaC online service which indicated the proposed project is not likely to adversely affect the northern long-eared bat. No tree clearing requirements are recommended. Information on the northern long-eared bat and monarch butterfly is included below.

All agency correspondence related to rare, threatened, or endangered species can be found in Appendix D.

Great Plains Lady Tresses

Great plains lady tresses is a perennial orchid listed as endangered at the state level and critically imperiled in New York State by NYNHP status. Unlike other orchid species, this species is relatively conspicuous, lacking leaves at flowering time; additionally, it has a characteristically strong vanilla-like scent and flowers late in the growing season (mid-September to mid-October). This species prefers open habitat with sparce vegetation and thrives in open alvar grasslands, on disturbed dredge/fill land with poor soils, cobbly soils, ice-scoured flat riverside meadows, and areas with limited woody vegetation.[1] As the project site is primarily wooded habitat with a stream and vegetated floodplain, it is unlikely that great plains lady tresses will occupy this land.

[1] New York Natural Heritage Program. 2023. Online Conservation Guide for Spiranthes magnicamporum. Available from: https://guides.nynhp.org/great-plains-ladies-tresses/. Accessed April 4, 2023.

FEAF Part 3 – Additional Information (Cont'd)

Northern Long-Eared Bat

The northern long-eared bat is listed as endangered at the state and federal level. The northern long-eared bat winters in caves and mines and migrates seasonally to summer roosts in dead and decadent trees. Northern long-eared bats are typically associated with mature interior forest[2] and tend to avoid woodlands with significant edge habitat[3]. They may most often be found in cluttered or densely forested areas including in uplands and at streams or vernal pools[4]. They may use small openings or canopy gaps as well. Some research suggests that northern long-eared bats forage on forested ridges and hillsides rather than in riparian or floodplain forests. Captures from New York suggest that northern long-eared bats may also be found using younger forest types[5]. This species selects day roosts in dead or live trees under loose bark, or in cavities and crevices, and may sometimes use caves as night roosts[6]. They may also roost in buildings or behind shutters. A variety of tree species are used for roosting. The structural complexity of surrounding habitat and availability of roost trees may be important factors in roost selection[7]. Roosts of female bats tend to be large diameter, tall trees, and in at least some areas, located within a less dense canopy[8]. Northern long-eared bats hibernate in caves and mines where the air temperature is constant, preferring cooler areas with high humidity[9].

In New York, a permit is required for the "take" of protected species under the Uniform Procedures Act that includes direct impact to the species as well as adverse modification to habitat. The New York State Department of Environmental Conservation (NYSDEC) considers impacts to "occupied" habitat as well as direct impacts to the species. NYSDEC requirements for northern long-eared bat protection are consistent with USFWS in areas that are not considered "occupied habitat". NYSDEC defines occupied habitat as those areas within five (5) miles of a known hibernacula, or 1.5 miles from a documented summer occurrence. Correspondence with the USFWS IPaC online service indicates the presence of northern long-eared bat (state and federally endangered); however, C&S completed the Determination Key for this species within IPaC which indicated that the project is not likely to adversely affect the northern long-eared bat. Further, NYSDEC guidance indicates that there are no known winter occurrences of northern

---

[2] Carroll, S. K., T. C. Carter and G. A. Feldhamer. 2002. Placement of nets for bats: effects on perceived fauna. Southeastern Naturalist 1:193-198.

[3] Yates, M. and R. Muzika. 2006. Effect of forest structure and fragmentation on site occupancy of bat species in Missouri Ozark forests. Journal of Wildlife Management 70:1238-1248.

[4] Brooks, R. T. and W. M. Ford. 2005. Bat Activity in a Forest Landscape of Central Massachusetts. Northeastern Naturalist 12:447-462.

[5] New York Natural Heritage Program. 2016. Online Conservation Guide for Myotis septentrionalis. Available from: http://www.acris.nynhp.org/guide.php?id=7407. Accessed October 9, 2017.

[6] U.S. Fish and Wildlife Service. 2013. 12-Month finding on a petition to list the eastern small-footed bat and the northern long-eared bat as threatened or endangered; Listing the northern long-eared bat as an endangered species; Proposed rule. Vol. 78 No.

[7] Carter, T. C. and G. A. Feldhamer. 2005. Roost tree use by maternity colonies of Indiana bats and northern long-eared bats in southern Illinois. Forest Ecology and Management 219:259-268.

[8] Sasse, D. B. and P. J. Pekins. 1996. Summer roosting ecology of northern long-eared bats (Myotis septentrionalis) in the White Mountain National Forest. Pp. 91-101 in Proceedings of the Bats and Forests Symposium of the British Columbia Ministry of Forest.

[9]U.S. Fish and Wildlife Service. 2013. 12-Month finding on a petition to list the eastern small-footed bat and the northern long-eared bat as threatened or endangered; Listing the northern long-eared bat as an endangered species; Proposed rule. Vol. 78 No.

long-eared bat within St. Lawrence County and the only summer occurrence on record within the county is located in the Town of Hammond, approximately 49 miles southwest of the project site[10]. The proposed project is not considered to contain "occupied habitat" and will therefore not be subject to the incidental take permitting process.

Monarch Butterfly

The monarch butterfly can be found in varying habitats, so long as milkweed (for breeding) and flowering plants (for nectar) are present. Further, the monarch butterfly is considered a candidate species and is not listed as threatened or endangered; therefore, requirements associated with potential presence of endangered or threatened species do not apply to this species[11].

8.) Impacts on agricultural resources – The project is not located in a New York State Agricultural District. The total 84.4-acre site contains approximately 21.1 acres of prime farmland, 12.1 acres of prime farmland if drained, and 5.6 acres of farmland of statewide importance. No impacts to agricultural resources are anticipated to as the majority of the project site is not currently used for agriculture.

9.) Impacts on aesthetic resources – The project site does not contain, and is not located adjacent to, identified scenic/aesthetic resources. There are officially designated federal, state, or local scenic or aesthetic resources within 5 miles of the property, namely Massena Town Beach, Nicandri Nature Center, Robert Moses State Park - Thousand Islands, St. Lawrence State Park. No significant adverse impacts on the latter aesthetic resources as a result of the proposed project are anticipated.

10.) Impacts on historical and archeological resources – Coordination with the New York State Historic Preservation Office (SHPO) is complete for the project. The SHPO indicated by letter on November 10, 2022 that the project is located within an archaeologically sensitive location. SHPO therefore recommends a Phase 1A/1B archaeological survey for components of the project, particularly those involving ground disturbance. The Phase 1A/1B archaeological survey must be conducted by a 36 CFR 61 qualified archaeologist. This requirement may be waived if substantial prior ground disturbance can be documented and is approved by SHPO/OPRHP. This letter is provided as Appendix E.

A Phase I Cultural Resource survey is underway at the project site. To date, no culturally significant items have been identified. Continued coordination with SHPO and adherence to SHPO requirements will ensure no adverse impacts to historical and archaeological resources as a result of the proposed project.

11.) Impacts on open space and recreation – The proposed action will not result in a loss of recreational opportunities, and/or open space. The site is used for hunting only by the owner and is not open to the public. The site is not located in a designated municipal open space plan.

---

[10] NYSDEC. 2018. Northern Long-Eared Bat Occurrences by Town. Available from Northern Long-eared Bat Occurrences by Town (ny.gov). Accessed April 7, 2023.

[11] U.S. Fish & Wildlife Service. N.D. *Danaus plexippus* Overview. Available from https://www.fws.gov/species/monarch-butterfly-danaus-plexippus. Accessed June 29, 2022.

FEAF Part 3 – Additional Information (Cont'd)

12.) Impacts on critical environmental areas – No designated critical environmental areas occur within or immediately adjacent to the property. The current action, as well as any future development, will not involve impacts to designated critical environmental areas.

13.) Impacts on transportation – A traffic study was conducted as part of the SEQR process, which involved analysis of the surrounding street network under existing and full build conditions. Under current conditions, the intersections associated with the study area operate at acceptable levels of service with additional capacity for an increase in traffic volumes. As stated in the traffic study, the proposed project will have minimal impacts on the study area and the associated intersections are expected to continue operation within their current level of service; therefore, no mitigation is recommended during operation of the proposed facility. The traffic impact study is included in Appendix F.

Traffic levels will increase during the anticipated thirty-seven-month construction window. These construction-related increases in observed traffic are temporary in nature and are not considered significant.

14.) Impacts on energy – Electricity for the project will be supplied by New York Power Authority (NYPA). This includes development of a site-specific substation. No natural gas will be supplied to the project. Water will be provided by the Village of Massena Water Department for employee use during operation. For process supply during operation, an additional 2 million gallons per day of water will be drawn from the St. Lawrence River through existing intake structures. Sewer service will be provided by the Town of Massena. The proposed project will not use public wastewater treatment facilities; approximately 600,000 gallons per day of process wastewater will be generated per day, and 675 gallons of wastewater will be treated via an onsite septic system from operations.

Operation of the new facility will result in increased use of electricity and water resources. The developer has coordinated with the local utility providers regarding supply and availability of necessary services. Operation of the facility is not expected to exceed available natural resources or future energy supplies.

Additionally, construction and/or operation of the facilities would not involve a need for unusual materials or those in short supply. As with any construction project, there will be short-term increases in electrical and gasoline usage to power construction equipment and for worker travel.

15.) Impacts on noise, odor, and light

Noise - The proposed project will cause a temporary increase in ambient noise levels from the operation of construction equipment. Measures to minimize noise impacts during construction will include adherence to local ordinances for working hours and inspection of equipment for proper muffling. After construction, the site will be established as a Green Hydrogen Facility development and operation noise is anticipated at the level of this use. Operational noise levels are not anticipated to exceed thresholds set in local ordinances.

Odors - The proposed project will not cause an increase in odors.

FEAF Part 3 – Additional Information (Cont'd)

Light –Lighting will not impact adjacent properties and will be dark sky compliant. Parking lot fixtures will comply with the Town of Massena regulations.

16.) Impact on Human Health – The proposed project will not result in an impact to human health from exposure to new or existing sources of contaminants. No use of pesticides or herbicides are involved in the proposed project. In addition, the project operation does not use or produce materials considered hazardous substances, and therefore will not create a condition increasing the adjacent public's exposure to harmful materials.

17.) Consistency with community plans – The action will not result in population growth in the Town of Massena that exceeds 5%, and will not result in increasing density that will impact existing infrastructure. The project is does not require a change in zoning. Project activities will continue to be coordinated with the Town of Massena Planning Board in order to ensure consistency with local zoning and land use requirements. This may include minor changes to the proposal. It is not anticipated that minor deviations that are required during the Town of Massena Planning Board review will necessitate changes to information contained herein. Given the project will require consistency with the Town's requirements, no significant impacts associated with community plans are anticipated.

In summary, the proposed project will not result in the following:

I. Increase in population within the Town of Massena;
II. Require a change in zoning or existing land use plans;
III. Change in the density of development that would exceed the capacity of existing infrastructure; or
IV. Result in induced socioeconomic impacts from residential or commercial development

18.) Consistency with community character – The proposed action is consistent with the existing community character as described in the following bullets:

I. The project is located in an area with buildings of similar size and industrial nature;
II. No impacts to historic structures;
III. It will not significantly increase the need for schools, parks, roads, infrastructure;
IV. It will not result in a significant increase in the need for emergency services; and
V. No displacement of housing will occur.

<u>Appendix A</u>
NYSDEC SEQR Correspondence

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 6
Dulles State Office Building, 317 Washington Street, Watertown, NY 13601-3787
P: (315) 785-2245 | F: (315) 785-2242
www.dec.ny.gov

APRIL 3, 2023

BRYAN BAYER
C&S ENGINEERS, INC.
499 COL. EILEEN COLLINS BLVD.
SYRACUSE, NY 13212

RE: Town of Massena
Air Products & Chemicals, Inc. – Massena Green Hydrogen Facility
State Environmental Quality Review (SEQR) Coordination
Town of Massena, St. Lawrence County

Dear Bryan Bayer:

We received your letter on March 17, 2023 regarding the proposed project listed above. The department has no objection to the Town of Massena Planning Board acting as lead agency for the above project. Below are comments from our Program Staff:

1. An Article 24 wetlands permit will be required for any work completed within State Regulated Wetland MA-1 and it's 100" Regulated Adjacent Area. The wetland located to the North/North West of the project site near the proposed retention pond is currently unregulated by the New York State Department of Environmental Conservation(DEC). On January 1, 2025, the DEC's wetland regulations will be changing and this wetland may become jurisdictional. This would mean that an Article 24 permit would be required for the construction of the retention pond and any work within the wetland and the 100' Regulated adjacent area.
2. This project will require a Construction Stormwater Permit.
3. If the project disturbs greater than 5 acres at any one time, authorization is required from the Regional Water Engineer prior to disturbing greater than 5 acres.
4. Any new connection to an existing water system must be reviewed and approved by the water service provider to certify their ability and willingness to serve the proposed area. In addition, a Water Withdrawal Permit may be required. Please contact Rachel Bernat at (315) 785-2515.
5. A NY-2C application for New Industrial facilities is required for State Pollutant Discharge Elimination System permitting . An engineering report describing the type of industrial process and treatment process(es) that are being proposed must accompany the NY-2C application.
6. Design documents (report, plans & specs) must be submitted for DEC review once the SPDES permit is issued.

7. Section D.1.4 – does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as a creation of a water supply, reservoir, pond, lake, waste lagoon, or other storage? Application states NO, yet the site drawings indicate a retention pond on the north section of the property. Can the applicant please provide clarification?
8. Section D.2.C.v – states process supply 2MGPD will be obtained from the St. Lawrence River through existing intake structures. Can the applicant elaborate on location and design of existing intake structures as they are not clear on the site plans or EAF?
9. Section D.2.D.ii – The proposed action will generate .6MGPD process waste water and 675 gallons of employee waste water (to be treated via onsite septic). Can the applicant describe water quality parameters of the proposed .6MGPD process waste water (e.g. temperature of waste water, other descriptors of wastewater from the electrolysis process)?
10. The site plans indicate a proposed discharge line will extend to the Massena Power Canal (Fisheries Index Number SL-1-6A1 [unnamed water]) but don't mention that in the proposed actions section of the EAF. Can the applicant please verify this is correct and elaborate on the size and design of the proposed discharge line?

We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our databases are continuously being updated and amended. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Thank you for contacting us regarding this matter. If you have any questions with this letter, I can be reached at (315) 785-2245 or donna.iloff@dec.ny.gov.

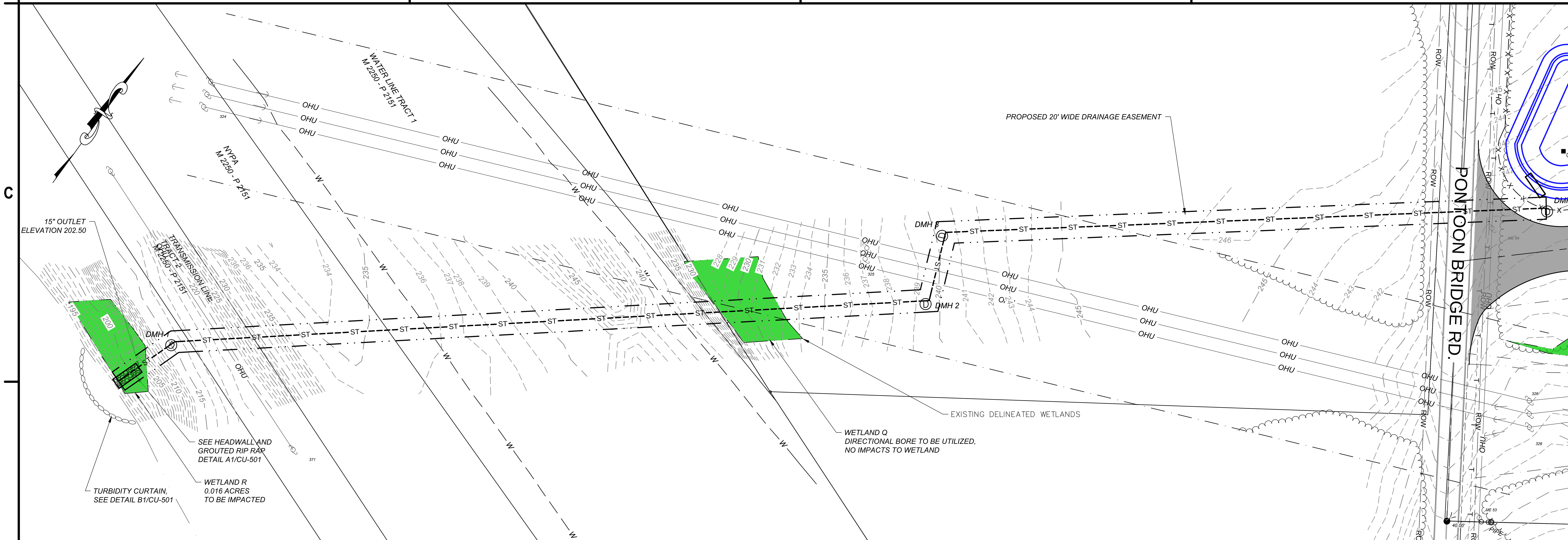
Sincerely,

Donna Iloff

Donna Iloff
Program Aide
Region 6

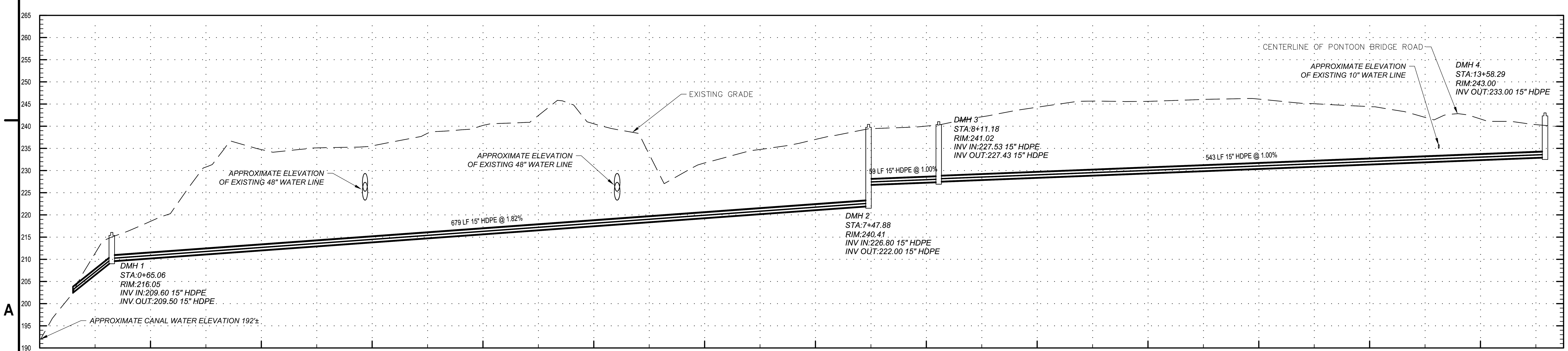
<u>Appendix B</u>

Discharge Line Plans, Profile, and Detail Sheets



B1 PLAN

SCALE: 1" = 50'



A1 PROFILE

SCALE: 1" = 50'

C&S COMPANIES®

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

PRELIMINARY
NOT FOR CONSTRUCTION

AIR PRODUCTS

AIR PRODUCTS & CHEMICALS, INC.
MASSENA GREEN H2 PLANT
MASSENA, NEW YORK

MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO: Z73.001.001
DATE: FEBRUARY 2023
DRAWN BY: M. MARCHEWKA
DESIGNED BY:
CHECKED BY:

NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK EDUCATION LAW

DRAINAGE PLAN AND PROFILE OF 15" HDPE DRAINAGE LINE

CU-101

Apr 03, 2023 - 1:47pm
F:\Project\Z73 - Air Products & Chemicals Inc\Z73.001.001 - Air Products - Massena NY Plan\Design\CADD\Sheet Files\Z7300100_CU-PLAN-PRFL.dwg

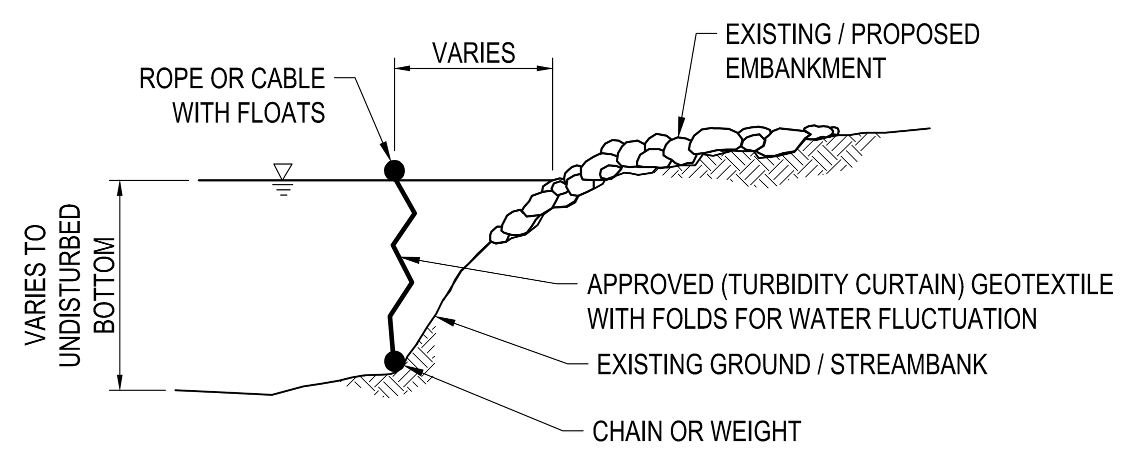
C & S COMPANIES®

C S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

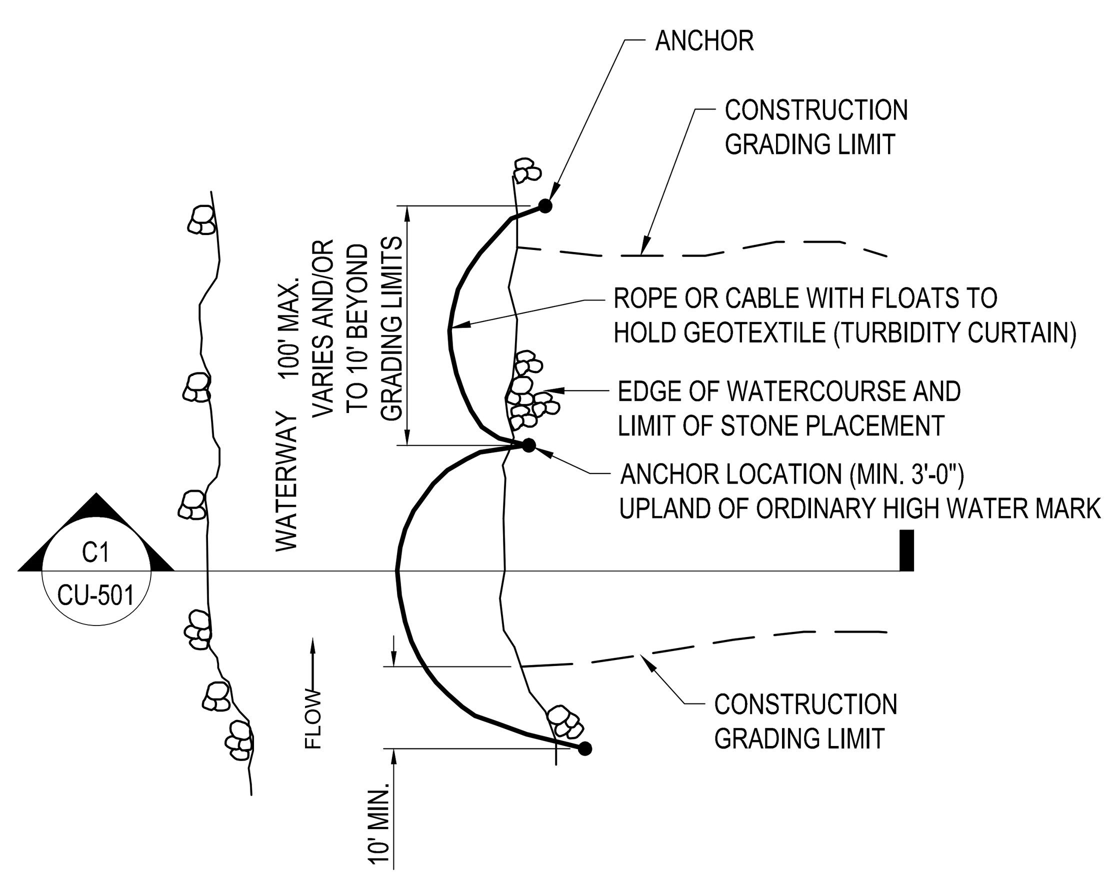
PRELIMINARY
NOT FOR CONSTRUCTION

AIR PRODUCTS

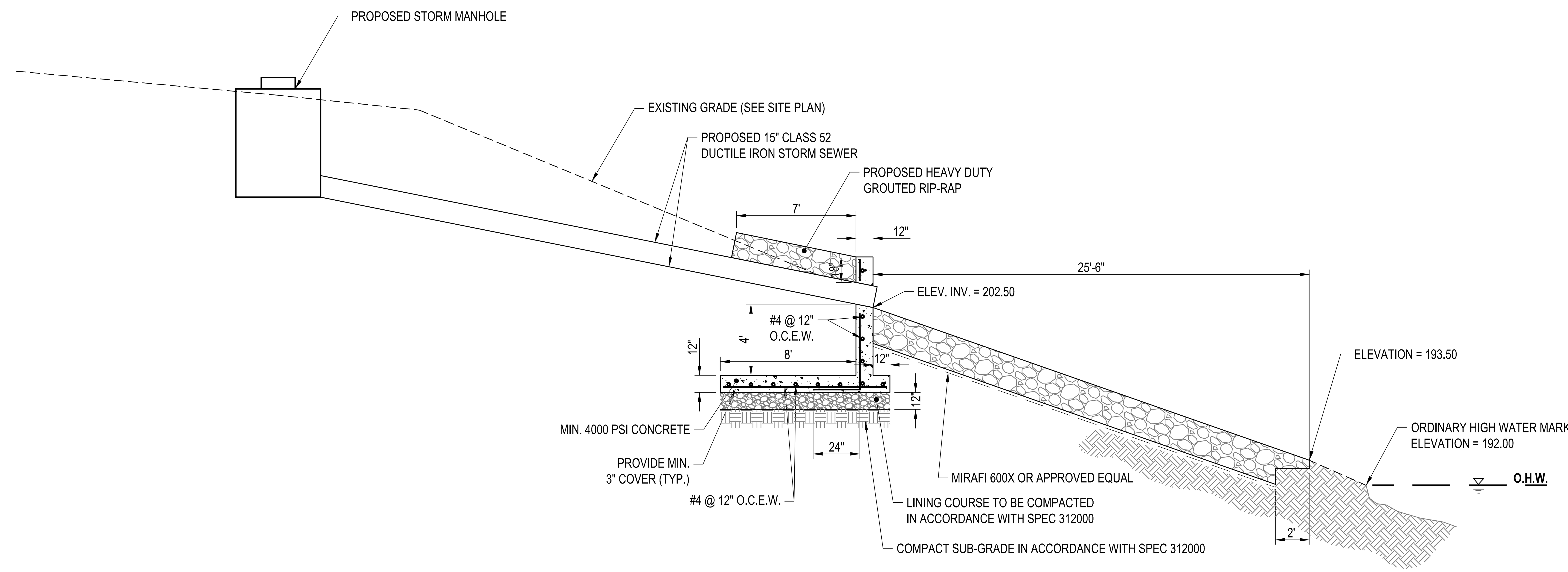
AIR PRODUCTS & CHEMICALS, INC.
MASSENA GREEN H2 PLANT
MASSENA, NEW YORK



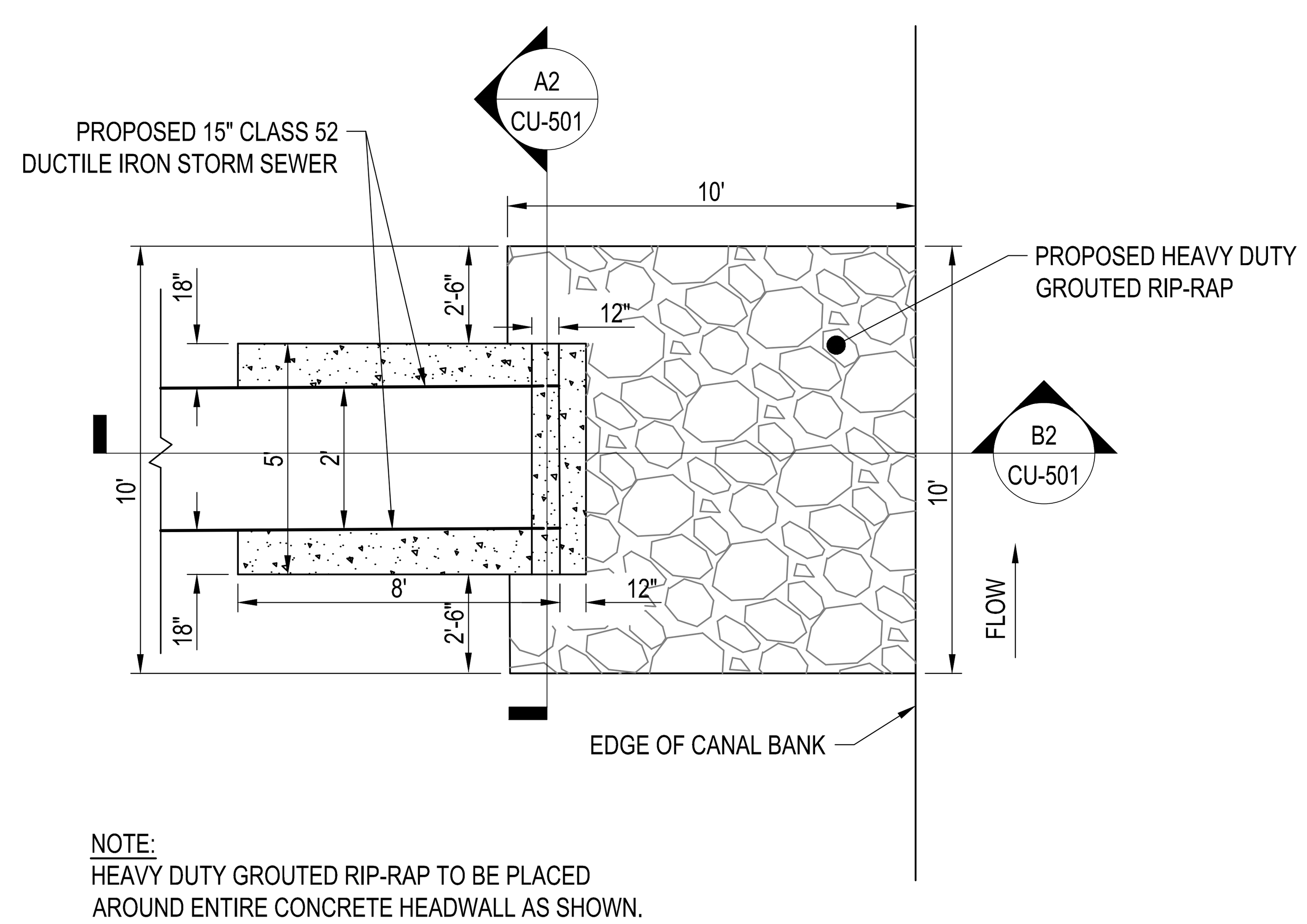
C1 TURBITY CURTAIN SECTION
SCALE: X" = 1'-0"



B1 TURBITY CURTAIN DETAIL
NOT TO SCALE

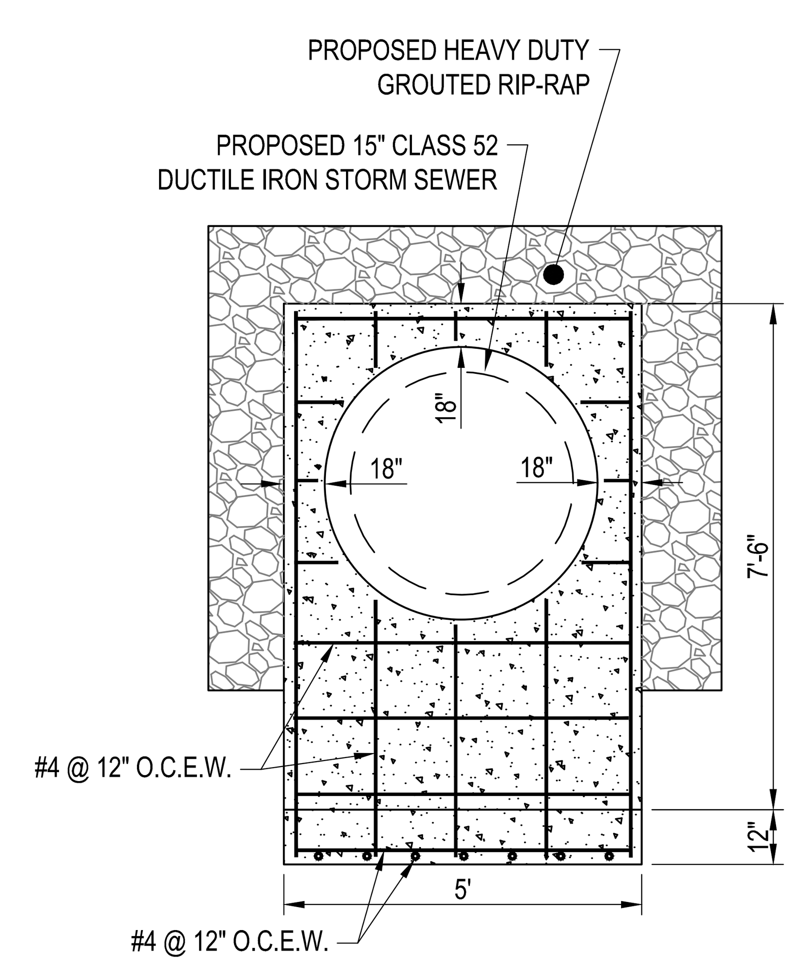


B2 CONCRETE HEAD WALL SECTION
NOT TO SCALE



NOTE:
HEAVY DUTY GROUTED RIP-RAP TO BE PLACED AROUND ENTIRE CONCRETE HEADWALL AS SHOWN.

A1 CONCRETE HEADWALL DETAIL
NOT TO SCALE



A2 CONCRETE HEAD WALL SECTION
NOT TO SCALE

A3 NOT USED
NOT TO SCALE

A4 NOT USED
NOT TO SCALE

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	Z73.001.001
DATE:	APRIL 2023
DRAWN BY:	M. MARCHEWKA
DESIGNED BY:	
CHECKED BY:	

DRAINAGE AND UTILITY DETAILS

CU-501

Apr 07, 2023 - 3:08pm
F:\Project\Z73 - Air Products & Chemicals Inc\Z73.001.001 - Air Products - Massena NY Plant\Design\CADD\Sheet Files\Z73001001_CU-DETAILS.dwg

Appendix C

Wetland & Waterway Delineation Report

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd
Syracuse, New York 13212

Wetland & Waterway Delineation Report

Air Products & Chemicals Inc.

Massena Green Hydrogen Facility

Town of Massena

St. Lawrence County, New York

Prepared for:
Jonathan Traynor
Sr. Project Manager – Project Execution
Air Products & Chemicals Inc.
1940 Air Products Boulevard
Allentown, PA 18106-5500

November 4, 2022

Table of Contents

List of Figures

Appendices

1.0 Introduction

Air Products & Chemicals Inc. is proposing development of the Massena Green Hydrogen Facility (hereinafter "Project") located along Pontoon Bridge Road in the Town of Massena, St. Lawrence County, New York. The Project includes the development of 82 - acres of property. C&S Engineers, Inc. (C&S) was tasked with conducting a wetland and waterway delineation for the 82-acre site (hereinafter referred to as "Area of Interest" of "AOI)". C&S performed the on October 5 and 6, 2022. The delineation is prepared consistent with the United States Army Corps of Engineers (USACE) and New York State Department of Environmental Conservation (NYSDEC). This report outlines review of published resource materials, existing site conditions, and the results of field investigations.

1.1 Project Location

The AOI is 82.19 acres in size and located east of Pontoon Bridge Road in the Town of Massena, St. Lawrence County, NY. The site occurs within the Robinson Creek-Frontal Saint Lawrence River (USGS Cataloging Unit: 0415031002).

2.0 Methods

2.1 Desktop Evaluation

Prior to field survey, C&S reviewed various maps and other sources of information to determine onsite areas that contain aquatic resources. These include:

- United States Geological Survey (USGS) topographic maps
- National Wetlands Inventory (NWI) Maps prepared by the U.S. Fish and Wildlife Service (USFWS)
- Freshwater Wetland Maps prepared by the NYSDEC
- Stream Classification Maps prepared by the NYSDEC
- Soil Survey Geographic Database (SSURGO) Soils Map prepared using U.S. Department of Agriculture Natural Resources Conservation Service Soil Survey Geographic Database
- Federal Emergency Management Agency (FEMA) Floodplain Maps

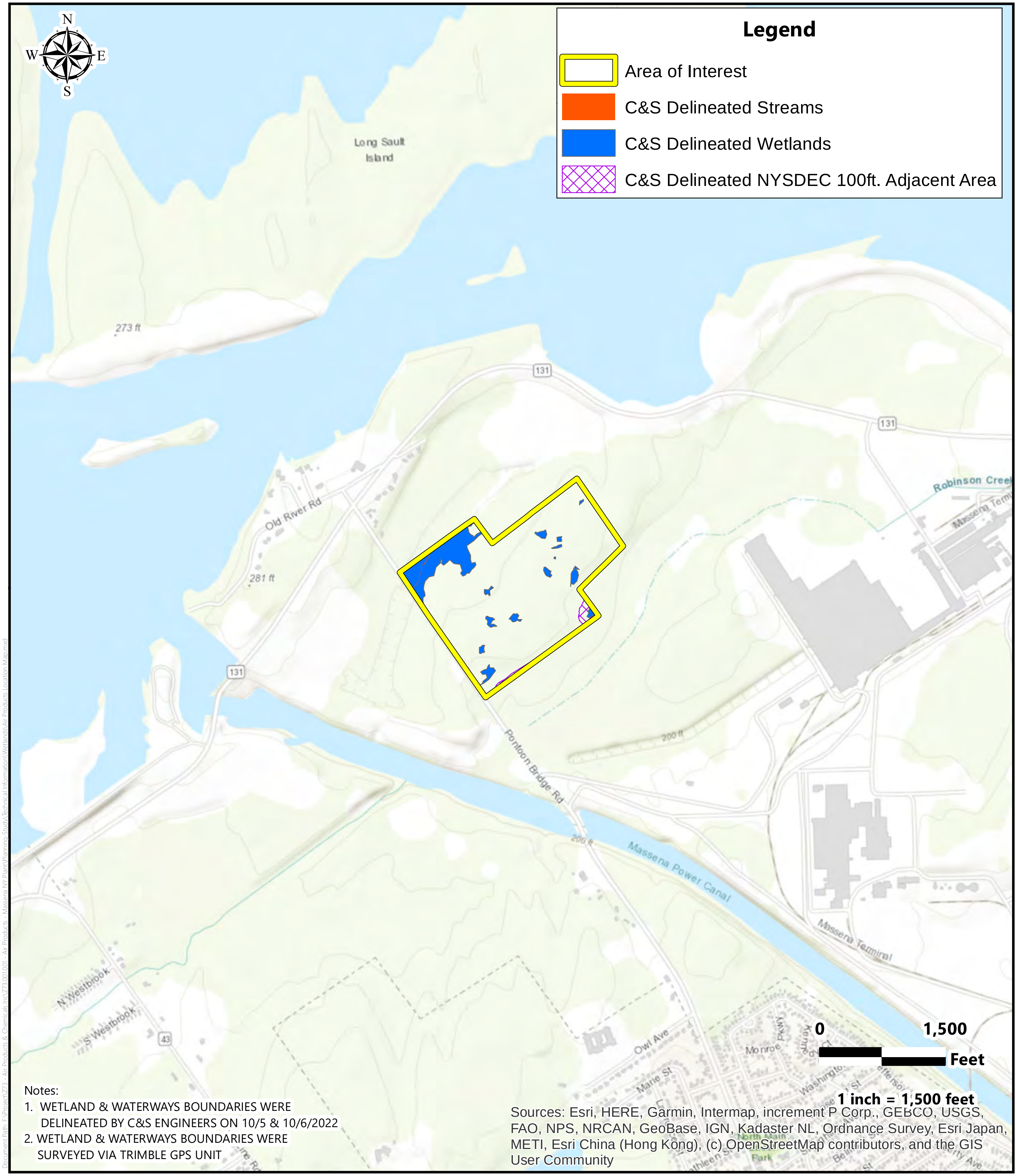
The above references are used initially to identify areas with potential to contain wetlands and streams.

3.0 Field Surveys

3.1 Wetlands

C&S completed wetland delineations within the AOI on October 5 and 6, 2022. During field surveys, dominant flora species, hydrologic features, and soil conditions are recorded.

Wetlands boundaries are delineated using criteria for vegetation, soils, and hydrology as specified in the *1987 Corps of Engineers Wetland Delineation Manual* (USACE 1987) (hereinafter referred to as the USACE Manual) and the *2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0* (Regional Supplement) (USACE 2012). New York State regulated wetlands are mapped adjacent to the AOI. As such, the aquatic resource delineation is completed consistent with the *1995 NYSDEC Freshwater Wetlands Delineation Manual* (NYSDEC 1995).



Notes:

1. WETLAND & WATERWAYS BOUNDARIES WERE DELINEATED BY C&S ENGINEERS ON 10/5 & 10/6/2022
2. WETLAND & WATERWAYS BOUNDARIES WERE SURVEYED VIA TRIMBLE GPS UNIT

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Sources: . Created by C&S Engineers, Inc.

C&S COMPANIES®

Figure 1 | Project Location Map

Air Products & Chemicals Inc.
Massena Green Hydrogen Facility
Town of Massena, St. Lawrence County, NY

AIR PRODUCTS

Locations of wetland delineation flags are mapped in the field using a Trimble Global Positioning System (GPS). Wetland flags/points are placed and coordinates are recorded via GPS along the wetland boundaries based on observations of hydrophytic vegetation, hydric soils, and hydrology conditions. These observations are made throughout the hydrologic condition continuum to verify the wetland boundary is sufficiently identified. Each wetland is assigned a letter designation, and each wetland flag is labeled with the letter assigned to the wetland and numbered consecutively. All GPS code phase data captured in the field are post-processed (differential correction) using Trimble's Pathfinder Office software. Wetland polygons are created in Geographic Information System (GIS) shapefiles and incorporated on Project base maps for the preparation of report figures. Wetland areas are calculated using Environmental Systems Research Institute ARCGIS ARCView.

Formal wetland determination data forms are completed in the field to document justification for the wetland boundary as delineated (Appendix A). These forms are prepared consistent with the Regional Supplement, and include information pertaining to hydrology, vegetation, and soils for each wetland within the Project AOI.

Vegetation is characterized consistent with the Regional Supplement, and recorded in plots as required by the USACE. Scientific nomenclature for plant species and the indicator status for each plant species occurring within the wetland sampling plot is determined using National Wetland Plant List: 2016 Update of Wetland Ratings (Lichvar et al. 2016). Soil characteristics and hydrology data are observed and collected at test pits within the vegetative plots. The pits are excavated by hand to a depth of 20 inches below grade consistent with the USACE Manual. The presence of hydric soil indicators is determined by describing pertinent characteristics of the soil sample. Soil colors are determined using the Munsell® soil color charts (2000 Edition, Gretag Macbeth, Division of Kollmorgen Instruments Corporation, New Windsor, New York). Hydric soil characteristics such as organic soil layers, reducing conditions, gleying, low-chroma mottles, and concretions are noted. Primary and secondary indicators of hydrology are also noted at each sample plot.

A wetland determination is made at each sample plot after characterizing vegetation, hydrology, and soil. If the vegetation, hydrology, and hydric soil criteria are met, the area is deemed a wetland. If one or more of the criteria are not met, the area is determined to be non-wetland. Completed wetland determination sheets for each representative soil pit are included in Appendix A.

Wetlands identified are further classified consistent with the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Wetlands identified are further classified consistent with the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). The jurisdictional status of delineated features is identified consistent with the *2008 Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell V. United States* memorandum prepared by the United States Environmental Protection Agency and USACE, and the associated guidance document entitled the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* dated May 30, 2007.

3.2 Wetland Manual Differences

The NYSDEC manual and the USACE Manual/Regional Supplement are similar with regard to identifying wetland boundaries; however there are a few significant differences. The first difference is that the NYSDEC Manual states that if an area meets certain requirements regarding prevalence of wetland vegetation, the area can be considered a wetland without detailed investigation of hydrology and soils. If the wetland vegetation requirements are not met, but more than 50 percent of the dominant species prefer wetland habitats; then an investigation and verification of hydrology and/or hydric soils is required to locate a wetland boundary. The second difference is that the Regional Supplement has established additional methods for determining the dominance of hydrophytic vegetation, additional indicators of wetland hydrology, and additional hydric soils criteria that exceed those identified in the USACE and NYSDEC Manuals. These additional indicators could result in differences of wetland boundaries. In the instance the two wetland boundaries are not consistent as a result of the differences in manuals; the discrepancy between the two will be described within the results section of this report. This summary will include a discussion of the reason for the different boundaries.

3.3 Streams

Stream delineations were completed within and immediately adjacent the AOI. The federally regulated Ordinary High Water (OHW) mark of streams within the Project AOI are delineated using the definitional criteria as presented in Title 33, Code of Federal Regulations, Part 328, and the USACE Regulatory Guidance Letter 05-05 – Guidance on Ordinary High Water Mark Identification. Each stream is categorized in regard to its flow regime as perennial, intermittent, or ephemeral, as defined by the USACE. The OHW mark for each stream is mapped using the Trimble GPS.

Streams in the State of New York are protected by Article 15 Use and Protection of Waters. Streams are given classifications that designate the level of protection afforded to each waterbody. Each waterbody identified within the AOI is classified according to Article 15. The waterbody classification categories are AA, A, B, C or D depending on their designated level of protection. Waters with classifications A, B, and C may also have a standard of (T), indicating that it may support a trout population, or (TS), indicating that it may support trout spawning (TS). Streams with a designation of C(T) or higher are considered "protected" waters of New York State.

Stream boundaries are mapped using Trimble GPS units with sub-meter accuracy. Stream lengths are calculated in linear feet using Environmental Systems Research Institute ARCGIS ARCView. The jurisdictional status of delineated features is identified consistent with the *2008 Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell V. United States* memorandum prepared by the United States Environmental Protection Agency and USACE, and the associated guidance document entitled the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* dated May 30, 2007.

3.4 Ditches – Federal Jurisdiction

The jurisdictional status of ditches identified is consistent with the *2008 Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell V. United States* memorandum prepared by the United States Environmental Protection Agency and USACE, and the associated guidance document entitled the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* dated May 30, 2007.

4.0 Results

4.1 Desktop Evaluation

Resource mapping used during the desktop review are provided in Figures 1 through 5. Figure 1 depicts the AOI on USGS topographic mapping. Figure 2 provides NYSDEC mapped resources within the AOI. Figure 3 provides NWI mapping, and Figure 4 provides soil survey information. Figure 5 depicts FEMA mapped floodplains within the vicinity of the AOI. A summary of information gathered during the desktop analysis is provided herein.

4.1.1 Topography and Drainage

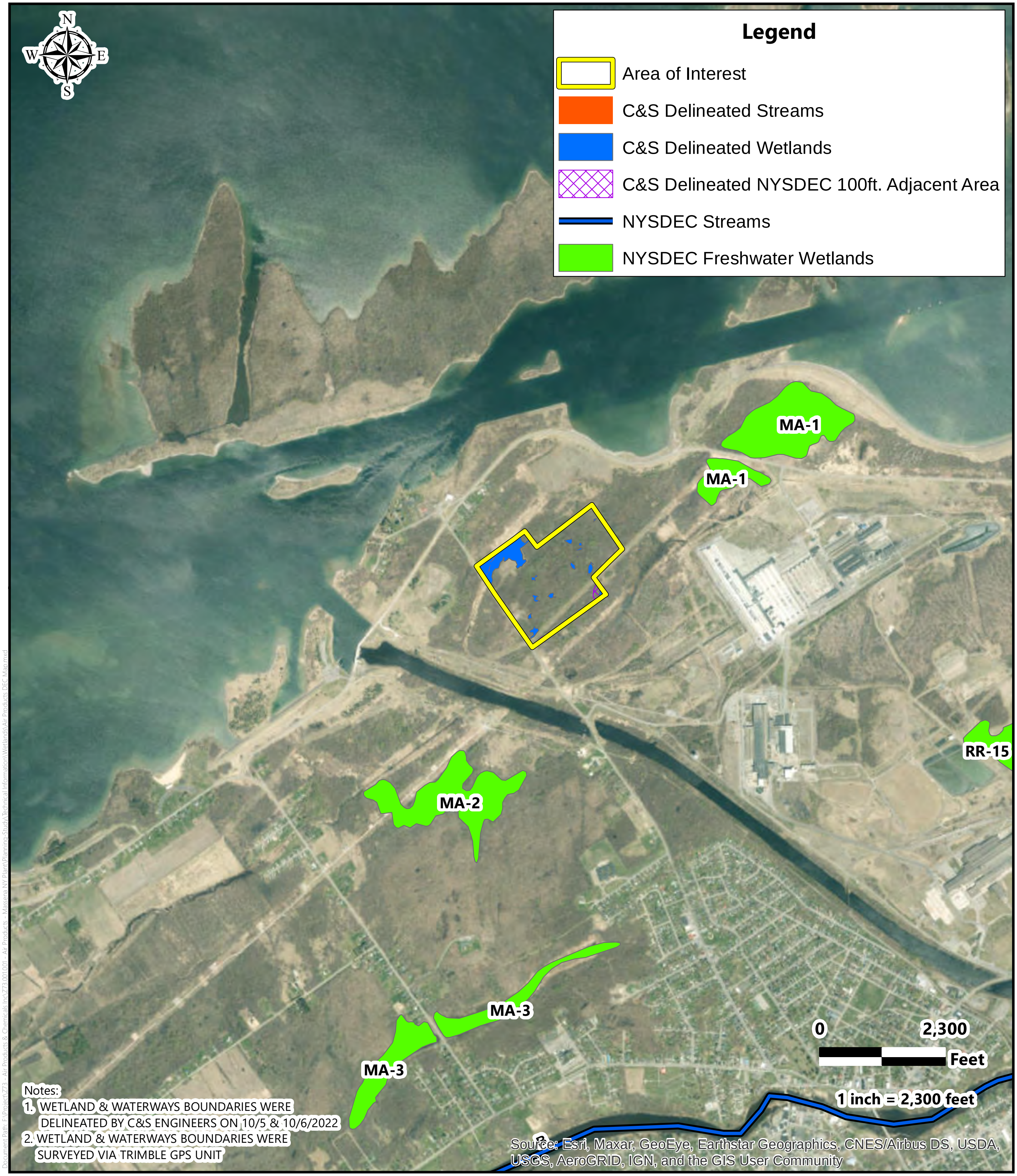
The Project site appears on the Massena U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (See Figure 1). The AOI is located east of Pontoon Bridge Road in the Town of Massena, St. Lawrence County within the USGS topographic map. Elevations range from 200 feet above mean sea level (amsl) in the northern portion of the site, 230 feet amsl in the southern portion of the site and 250 feet amsl in the middle portion of the site (North American Vertical Datum of 1988 [NAVD 88]).

4.1.2 New York State Mapped Resources

Article 24 of the Environmental Conservation Law requires the NYSDEC to map freshwater wetlands subject to jurisdiction of the law. Article 24 Freshwater Wetland Maps show the approximate location of the wetland boundary and the unique alpha numeric wetland identification number assigned to each resource. Due to the scale of the mapping and aerial photography used to produce the wetland boundaries, they are suitable for general planning purposes only. Based on the Freshwater Wetland Maps and the field review, NYSDEC wetland MA-1 is a class 2 wetland that is adjacent to the AOI. There are no streams within or adjacent to the AOI (See Figure 2).

4.1.3 National Wetlands Inventory Map

The NWI map identifies one mapped wetland, PSS1Cd, within the northern part of the AOI (See Figure 3). PSS1Cd is a palustrine, scrub/shrub, broad-leaved deciduous, seasonally flooded, partially drained/ditched wetland. Note that NWI maps were derived from aerial photo interpretation and are suitable for general planning purposes only; they typically do not show all the wetland or watercourse resources within any given area.



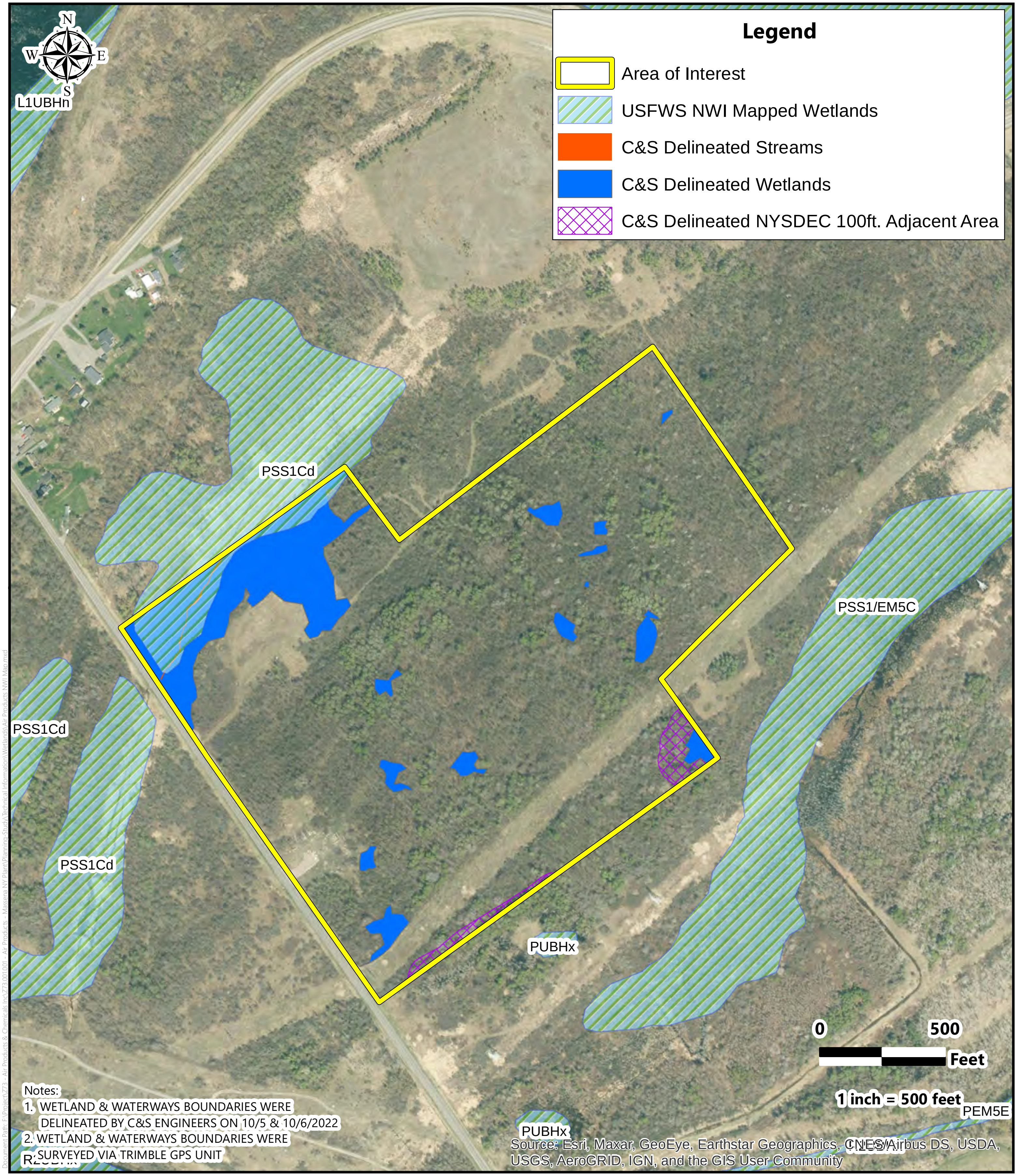
Sources: . Created by C&S Engineers, Inc.

C&S COMPANIES®

Figure 2 | NYSDEC Freshwater Wetlands & Stream Classification Map

Air Products & Chemicals Inc.
Massena Green Hydrogen Facility
Town of Massena, St. Lawrence County, NY

AIR PRODUCTS



Sources: . Created by C&S Engineers, Inc.

Figure 3 | USFWS NWI Wetlands Map

Air Products & Chemicals Inc.
Massena Green Hydrogen Facility
Town of Massena, St. Lawrence County, NY

4.1.4 Soil Survey

Nine unique soil series are mapped within the AOI as depicted in Figure 4. Eight of the soils contain hydric components. Table 1 provides the hydric rating, and acreage of the soils mapped on site. The hydric rating by map unit provided by the USDA NRCS Web Soil Survey is provided as Appendix B.

Table 1. Web Soil Summary in the AOI

Soil map unit	Hydric rating	Acres of soil within AOI	Percent of soil within AOI
Ak – Adjidaumo silty clay, 0 to 3 percent slopes	93	4.4	5.3%
Dd – Deford loamy fine sand	90	1.2	1.4%
HnB - Hogansburg loam, 3 to 8 percent slopes	0	21.1	25.7%
HrB - Hogansburg and Grenville soils, 0 to 8 percent slopes, very stony	3	1.6	1.9%
MaB - Malone loam, 3 to 8 percent slopes	3	30.5	37.1%
MsA - Muskellunge silty clay loam, 0 to 3 percent slopes	5	0.6	0.7%
MsB - Muskellunge silty clay loam, 3 to 8 percent slopes	5	11.5	14.0%
Rt - Runeberg soils, 0 to 3 percent slopes	96	11.3	13.8%
Ue - Udorthents, loamy	1	<0.1	<0.1%

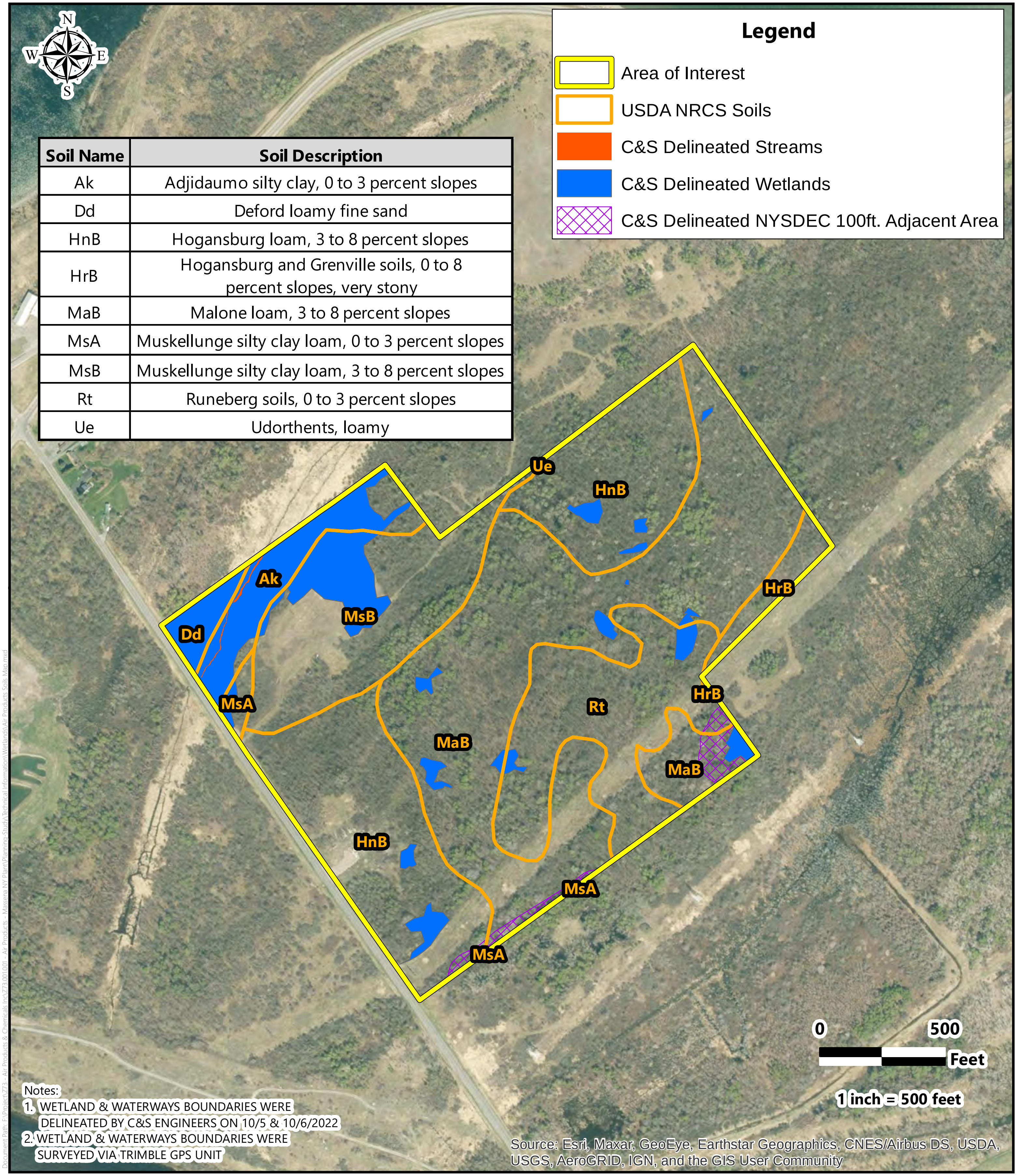
4.1.5 FEMA Floodplain Map

The FEMA floodplain map (See Figure 5) depicts there are no regulatory floodways within the AOI.

4.2 Field Surveys

4.2.1 Wetlands

C&S delineated 14 wetlands within the AOI referred to as Wetlands A, B, C, D, E, F, G, T, U, V, W, X, Y and Z. The boundaries of the delineated wetlands are included in Figures 6. Wetlands A, B, E, F and T are categorized as palustrine scrub-shrub (PSS) wetlands consistent with the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) (hereinafter referred to as Cowardin). Wetlands C, D, G and U are palustrine emergent (PEM) wetlands consistent with Cowardin. Wetlands V, W, X and Y are a palustrine forested (PFO) wetland consistent with Cowardin. Wetland Z is a PEM/PSS wetland complex consistent with Cowardin. The boundaries of on-site wetlands within and adjacent to the AOI are delineated consistent with the USACE and NYSDEC manual. Table 2 provides a summary of the wetland identified during the field investigation. Photographs of the wetland identified is provided in Appendix C.



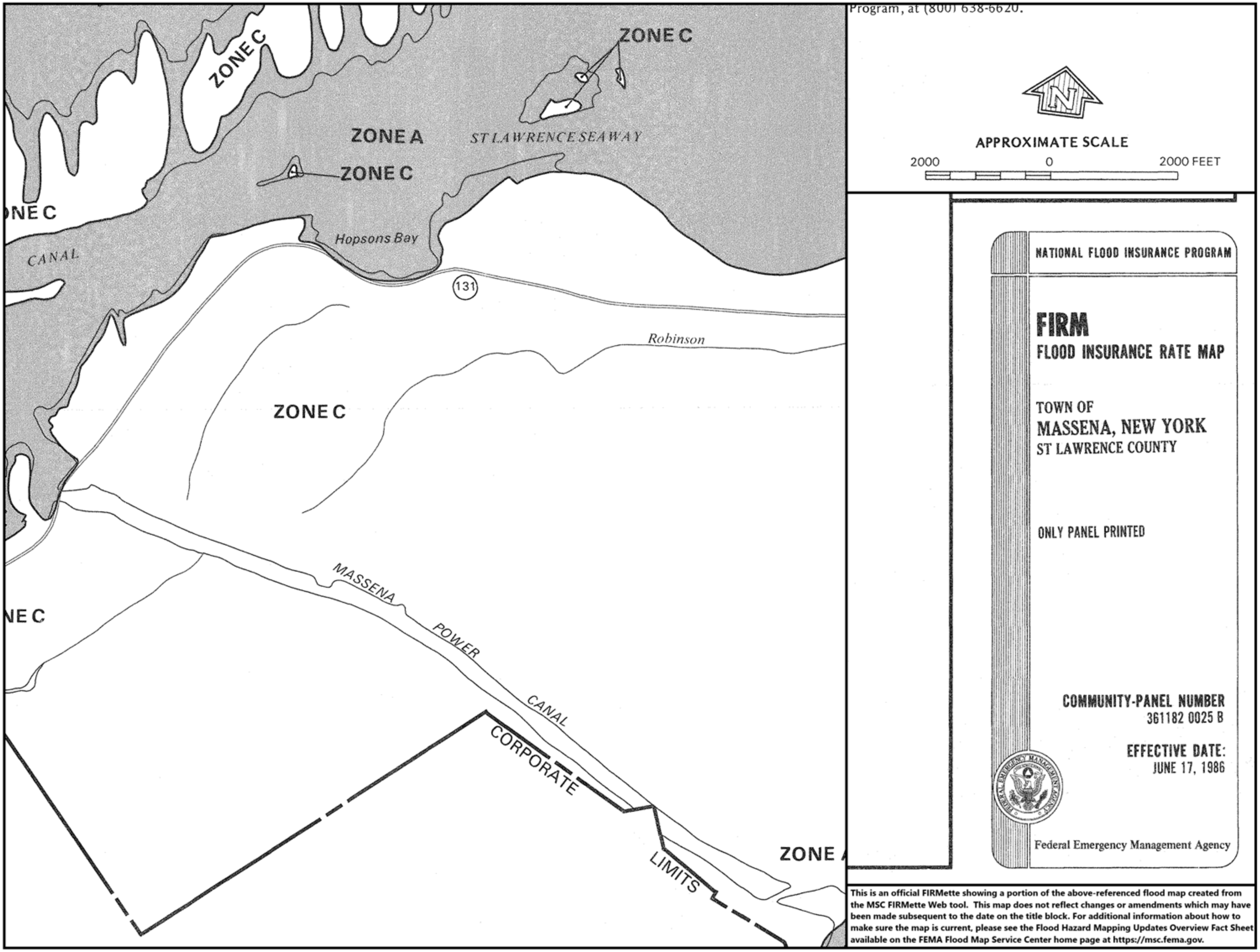
Soil Name	Soil Description
Ak	Adjidaumo silty clay, 0 to 3 percent slopes
Dd	Deford loamy fine sand
HnB	Hogansburg loam, 3 to 8 percent slopes
HrB	Hogansburg and Grenville soils, 0 to 8 percent slopes, very stony
MaB	Malone loam, 3 to 8 percent slopes
MsA	Muskellunge silty clay loam, 0 to 3 percent slopes
MsB	Muskellunge silty clay loam, 3 to 8 percent slopes
Rt	Runeberg soils, 0 to 3 percent slopes
Ue	Udorthents, loamy

Sources: . Created by C&S Engineers, Inc.

Figure 4 | USDA NRCS Soils Map

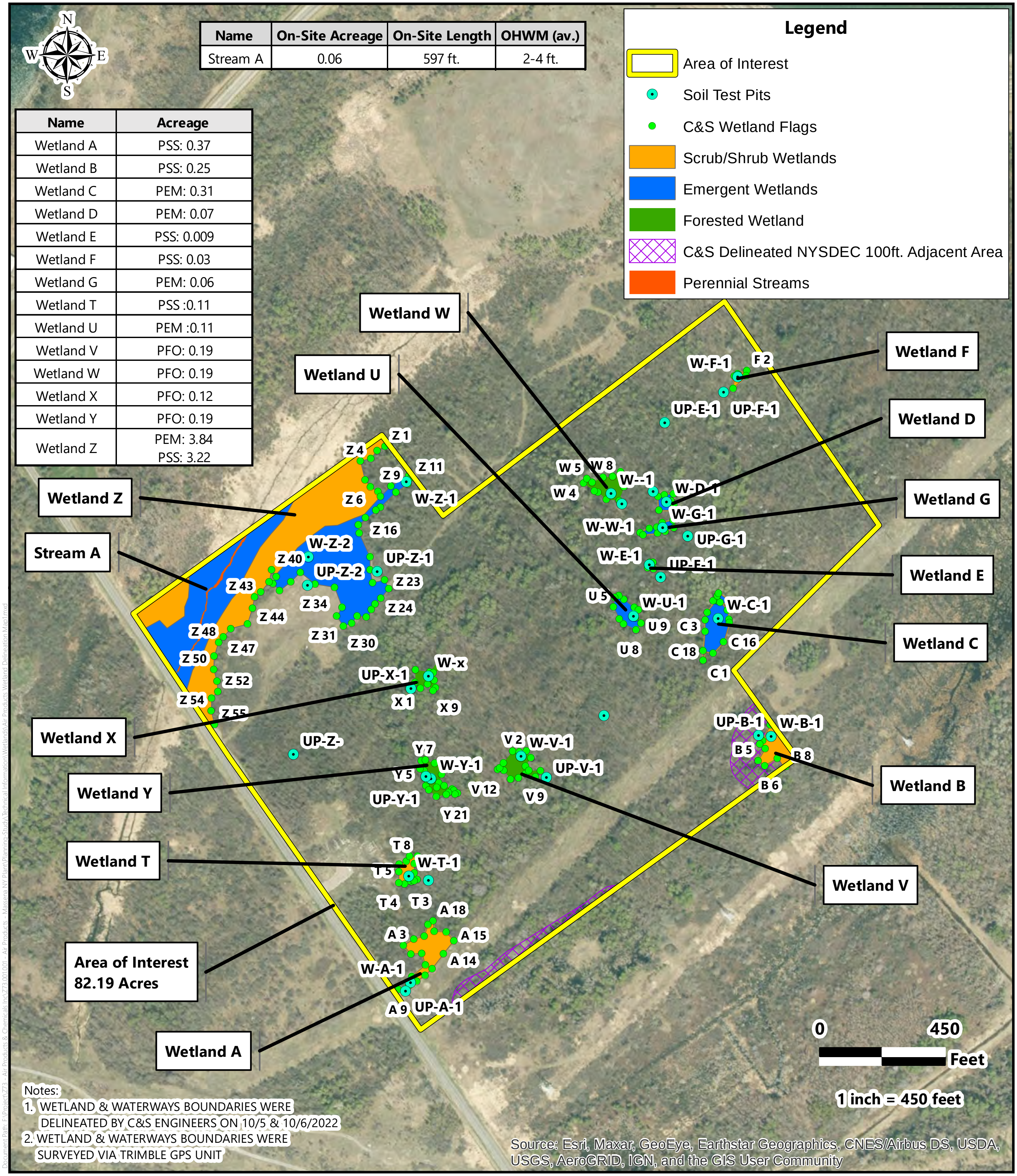
Air Products & Chemicals Inc.
Massena Green Hydrogen Facility
Town of Massena, St. Lawrence County, NY

Figure 5 FEMA 100-Year Flood Map



Name	On-Site Acreage	On-Site Length	OHWM (av.)
Stream A	0.06	597 ft.	2-4 ft.

Name	Acreage
Wetland A	PSS: 0.37
Wetland B	PSS: 0.25
Wetland C	PEM: 0.31
Wetland D	PEM: 0.07
Wetland E	PSS: 0.009
Wetland F	PSS: 0.03
Wetland G	PEM: 0.06
Wetland T	PSS :0.11
Wetland U	PEM :0.11
Wetland V	PFO: 0.19
Wetland W	PFO: 0.19
Wetland X	PFO: 0.12
Wetland Y	PFO: 0.19
Wetland Z	PEM: 3.84 PSS: 3.22



Sources: . Created by C&S Engineers, Inc.

C&S COMPANIES®

Figure 6 | C&S Delineated Wetlands & Surface Waters Map

Air Products & Chemicals Inc.
Massena Green Hydrogen Facility
Town of Massena, St. Lawrence County, NY

AIR PRODUCTS

Table 2. Wetland Delineation Summary in the AOI

Wetland Id	Cowardin Community Type	Agency Jurisdiction	Latitude/ Longitude Coordinates	Acreage in AOI
A	PSS	No Jurisdiction	44.957656 N -74.910435 W	PSS: 0.37
B	PSS	USACE/NYSDEC	44.959525 N -74.905572 W	PSS: 0.25
C	PEM	No Jurisdiction	44.960762 N -74.906358 W	PEM: 0.31
D	PEM	No Jurisdiction	44.961983 N -74.907021 W	PEM: 0.07
E	PSS	No Jurisdiction	44.961344 N -74.907245 W	PSS: 0.009
F	PSS	No Jurisdiction	44.963222 N -74.905957 W	PSS: 0.03
G	PEM	No Jurisdiction	44.961736 N -74.907110 W	PEM: 0.06
T	PSS	No Jurisdiction	44.958390 N -74.910742 W	PSS: 0.11
U	PEM	No Jurisdiction	44.960926 N -74.907607 W	PEM: 0.11
V	PFO	No Jurisdiction	44.95946 N -74.909150 W	PFO: 0.19
W	PFO	No Jurisdiction	44.962155 N -74.907797 W	PFO: 0.19
X	PFO	No Jurisdiction	44.960325 N -74.910378 W	PFO: 0.12
Y	PFO	No Jurisdiction	44.959347 N -74.910345 W	PFO: 0.19
Z	PEM/PSS	USACE	44.961627 N -74.912601 W	PEM: 3.84 PSS: 3.22
		TOTAL		9.07 acres

The PEM, PSS and PFO Cowardin classes are defined below:

PEM – This aquatic resource is a palustrine emergent wetland. Vegetation is comprised of erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

PSS – This aquatic resource is a palustrine scrub-shrub wetland. Vegetation is predominantly woody with true shrubs, young trees, and trees or shrubs less than 6 meters (20 feet) tall.

PFO – This aquatic resource is a palustrine forested wetland. The wetland is characterized by broad-leaved deciduous woody trees and shrubs.

Below are descriptions of the wetlands that are within the AOI:

Wetland A (PSS): The woody vine stratum is absent from this wetland. The tree stratum is dominated by green ash (*Fraxinus pennsylvanica*). The shrub stratum is dominated by buckthorn (*Rhamnus cathartica*), grey dogwood (*Cornus racemosa*) and grey willow (*Salix bebbiana*). The herbaceous stratum is dominated by reed canary grass (*Phalaris arundinacea*), soft rush (*Juncus effusus*), Canada goldenrod (*Solidago canadensis*) and late goldenrod (*Solidago gigantea*). The primary hydrologic indicator observed was oxidized rhizospheres on living roots (C2). The secondary hydrologic indicators observed are saturation visible on aerial photography (C9) and a positive FAC-neutral test (D5). The soil hydric indicator F6-redox dark surface was observed and met.

Wetland B (PSS): The tree and woody vine stratum is absent from this wetland. The shrub stratum is dominated by nannyberry (*Viburnum lentago*). The herbaceous stratum is dominated by hop sedge (*Carex lupulina*) and sensitive fern (*Onoclea sensibilis*). The secondary hydrologic indicators observed were drainage patterns (B10) and a positive FAC-neutral test (D5). The soil hydric indicator A11 – depleted below dark surface, F3-depleted matrix and F8- redox depressions were observed and met.

Wetland C (PEM): The tree and woody vine stratum are absent from this wetland. The shrub stratum is dominated by silky dogwood (*Cornus amomum*) and grey willow. The herbaceous stratum is dominated by sweetflag (*Acorus calamus*), broad-leaved cattail (*Typha latifolia*), devils- pitchfork (*Bidens frondosa*). The primary hydrologic indicator observed were high water table (A2), saturation (A3) and inundation visible on aerial imagery (B6). The secondary hydrologic indicator observed was a positive FAC-neutral test (D5). The soil hydric indicator A11 – depleted below dark surface, F3-depleted matrix and F8- redox depressions were observed and met.

Wetland D (PEM): The shrub and woody vine stratum is absent from this wetland. The tree stratum is dominated by green ash. The herbaceous stratum is dominated by false nettle (*Boehmeria cylindrica*), pinkweed (*Persicaria pensylvanica*) and mild water-pepper (*Persicaria hydropiper*). The primary hydrologic indicator observed were sparsely vegetated concave surface (B8) and oxidized rhizospheres on living roots (C2). The secondary hydrologic indicators observed was a positive FAC-neutral test (D5). The soil hydric indicator F6-redox dark surface and F8 – redox depressions were observed and met.

Wetland E (PSS): The tree and woody vine stratum are absent from this wetland. The shrub stratum is dominated by green ash. The herbaceous stratum is dominated by creeping jenny (*Lysimachia nummularia*) and shallow sedge (*Carex lurida*). The primary hydrologic indicator observed were sparsely vegetated concave surface (B8). The secondary hydrologic indicator observed were saturation visible on aerial imagery (C9) and a positive FAC-neutral test (D5). The soil hydric indicator A11 – depleted below dark surface, F3-depleted matrix and F8- redox depressions were observed and met.

Wetland F (PSS): The tree and woody vine stratum are absent from this wetland. The shrub stratum is dominated by green ash, buckthorn and silky dogwood. The herbaceous stratum is dominated by sensitive fern and water-horehound (*Lycopus americanus*). The primary hydrologic indicator observed was oxidized rhizospheres on living roots (C2). The secondary hydrologic indicators observed were drainage patterns (B10) and a positive FAC-neutral test (D5). The soil hydric indicators A11 – depleted below dark surface, F3-depleted matrix, F6 – redox dark surface and F8- redox depressions were observed and met.

Wetland G (PEM): The tree, shrub and woody vine stratum are absent from this wetland. The herbaceous stratum is dominated by false nettle. The primary hydrologic indicator observed were observed were indentation visible on aerial imagery, sparsely vegetated concave surface (B8) and oxidized rhizospheres on living roots (C2). The secondary hydrologic indicators observed was positive FAC-neutral test (D5). The soil hydric indicators F6 – redox dark surface and F8- redox depressions were observed and met.

Wetland T (PSS): The tree stratum is dominate by green ash. The shrub stratum is dominated by buckthorn and red osier dogwood (*Cornus alba*). The herbaceous stratum is dominated by broadleaf cattail and common boneset (*Eupatorium perfoliatum*). The woody vine stratum is dominated by fox grape (*Vitis labrusca*) and black nightshade (*Solanum ptychanthum*). The primary hydrologic indicator observed was oxidized rhizospheres on living roots (C2). The secondary hydrologic indicator observed were saturation visible on aerial imagery (C9) and a positive FAC-neutral test (D5). The soil hydric indicator F6 – redox dark surface was observed and met.

Wetland U (PEM): The tree stratum is dominate by silver maple (*Acer saccharinum*) and eastern cottonwood (*Populus deltoides*). The shrub stratum is dominated by common buttonbush and silky dogwood. The herbaceous stratum is dominated by broadleaf cattail, sensitive fern, mild water pepper, cottongrass bulrush (*Scirpus cyperinus*) and yellow marsh marigold (*Caltha palustris*). The woody vine stratum is dominated by fox grape. The primary hydrologic indicator observed was oxidized rhizospheres on living roots (C2). The secondary hydrologic indicator observed were saturation visible on aerial imagery (C9) and a positive FAC-neutral test (D5). The soil hydric indicators A11 – depleted below dark surface and F3-depleted matrix were observed and met.

Wetland V (PFO): The tree stratum is dominate by green ash, American elm (*Ulmus americana*), American basswood (*Tilia americana*) and northern red oak (*Quercus rubra*). The shrub stratum is dominated by buckthorn. The herbaceous stratum is dominated by sensitive fern. The woody vine stratum is dominated by fox grape. The primary hydrologic indicator observed was oxidized rhizospheres on living roots (C2). The secondary hydrologic indicator observed was saturation visible on aerial imagery (C9). The soil hydric indicators A11 – depleted below dark surface and F3-depleted matrix were observed and met.

Wetland W (PFO): The tree stratum is dominate by green ash and American elm. The shrub stratum is dominated by buckthorn and honeysuckle (*Lonicera morrowii*). The herbaceous stratum is dominated by sensitive fern. The primary hydrologic indicator observed was oxidized rhizospheres on living roots (C2). The secondary hydrologic indicator observed was a positive FAC-neutral test (D5). The soil hydric indicators A11 – depleted below dark surface and F3-depleted matrix were observed and met.

Wetland X (PFO): The tree stratum is dominate by green ash. The shrub stratum is dominated by buckthorn. The herbaceous stratum is dominated by sensitive fern. The primary hydrologic indicator observed was oxidized rhizospheres on living roots (C2). The secondary hydrologic indicator observed was a positive FAC-neutral test (D5). The soil hydric indicator A11 – depleted below dark surface was observed and met.

Wetland Y (PFO): The tree stratum is dominate by green ash. The shrub stratum is dominated by buckthorn. The herbaceous stratum is dominated by common three seeded mercury (*Acalypha rhomboidea*) and American water plantain (*Alisma subcordatum*). The primary hydrologic indicator observed were high water table (A2), saturation (A3) oxidized rhizospheres on living roots (C2). The secondary hydrologic indicator observed was a positive FAC-neutral test (D5). The soil hydric indicators A11 – depleted below dark surface, F3-depleted matrix and F6 – redox dark surface were observed and met.

Wetland Z (PEM/PSS): The tree stratum is dominate by green ash, pin oak (*Quercus palustris*) and paper birch (*Betula papyrifera*). The shrub stratum is dominated by buckthorn, honeysuckle, grey dogwood and red osier dogwood. The herbaceous stratum is dominated by reed canary grass, purple loosestrife (*Lythrum salicaria*), late goldenrod, wrinkle-leaf goldenrod (*Solidago rugosa*) and common boneset. The primary hydrologic indicator observed was oxidized rhizospheres on living roots (C2). The secondary hydrologic indicator observed was a positive FAC-neutral test (D5). The soil hydric indicators A11 – depleted below dark surface, F3-depleted matrix and F6 – redox dark surface were observed and met.

4.2.2 Streams and Open Waters

The field survey resulted in one stream (referred to as Stream A) identified within the AOI and summarized in Table 3. Stream A is encompassed by Wetland Z. Photographs of the stream identified is provided in Appendix C. The boundary of the delineated stream is included in Figures 6.

Table 3. Stream Delineation Summary in the AOI

Stream Id	Stream Classification	Agency Jurisdiction	Length and Width in AOI (Feet)	Acreage in AOI
A	Perennial	USACE	Length – 597 Width – 2-4	0.06

No non-relatively open waterways (RPWs) are identified within the project limits.

No open waters were delineated during the field survey.

4.2.3 Ditches

No ditches were identified within the AOI.

5.0 Conclusion

C&S was retained by Air Products & Chemicals Inc. to complete a wetland and waterway survey for the proposed project. Wetland areas were assessed as waters of the U.S. subject to USACE and NYSDEC. These features are also classified consistent with the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).

Fourteen wetlands (Wetlands A, B, C, D, E, F, G, T, U, V, W, X, Y and Z.) were delineated by C&S in the AOI within the Robinson Creek-Frontal Saint Lawrence River (USGS Cataloging Unit: 0415031002).

- Wetland A is PSS feature totaling 0.37 acres within the AOI. This wetland is a closed depressional wetland with no direct connection to a traditionally navigable water (TNW), and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.
- Wetland B is PSS feature where 0.25 acres was delineated within the AOI and is potentially regulated water of the of the United States afforded protection under Section 404 of the Clean Water Act.
- Wetland C is a PEM feature where 0.31 acres was delineated within the AOI. This wetland is a closed depressional wetland with no direct connection to a TNW, and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.
- Wetland D is a PEM feature where 0.07 acres was delineated within the AOI. This wetland is a closed depressional wetland with no direct connection to a TNW, and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.
- Wetland E is a PSS feature where 0.009 acres was delineated within the AOI. This wetland is a closed depressional wetland with no direct connection to a TNW, and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.
- Wetland F is a PSS feature where 0.03 acres was delineated within the AOI. This wetland is a closed depressional wetland with no direct connection to a TNW, and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.
- Wetland G is a PEM feature where 0.06 acres was delineated within the AOI. This wetland is a closed depressional wetland with no direct connection to a TNW, and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.
- Wetland T is a PSS feature where 0.11 acres was delineated within the AOI. This wetland is a closed depressional wetland with no direct connection to a TNW, and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.
- Wetland U is a PEM feature where 0.11 acres was delineated within the AOI. This wetland is a closed depressional wetland with no direct connection to a TNW, and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.
- Wetland V is a PFO feature where 0.19 acres was delineated within the AOI. This wetland is a closed depressional wetland with no direct connection to a TNW, and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.
- Wetland W is a PFO feature where 0.19 acres was delineated within the AOI. This wetland is a closed depressional wetland with no direct connection to a TNW, and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.

- Wetland X is a PFO feature where 0.12 acres was delineated within the AOI. This wetland is a closed depressional wetland with no direct connection to a TNW, and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.
- Wetland Y is a PFO feature where 0.19 acres was delineated within the AOI. This wetland is a closed depressional wetland with no direct connection to a TNW, and therefore should not be considered jurisdictional under Section 404 of the Clean Water Act.
- Wetland Z is a PEM/PSS feature where 7.18 acres was delineated within the AOI is a potentially regulated water of the United States afforded protection under Section 404 of the Clean Water Act.

Wetlands A, C, D, E, F, G, T, U, V, W, X and Y are isolated wetlands with no jurisdictional connection to TNW waters and therefore are not potentially regulated water of the of the United States afforded protection under Section 404 of the Clean Water Act. Wetlands B and Z are potentially regulated waters of the of the United States afforded protection under Section 404 of the Clean Water Act. The wetlands described herein satisfy the criteria to be a wetland pursuant to the Army Corps of Engineers' 1987 Manual (and Regional Supplement) with subsequent clarification memoranda and pursuant to confirmation by the USACE.

Wetlands A, C, D, E, F, G, T, U, V, W, X, Y, and Z are not subject to not subject to jurisdiction by the NYSDEC under Article 24 of the Freshwater Wetlands Act. Wetland B would be subject to jurisdiction by the NYSDEC under the Article 24 of the Freshwater Wetlands Act. It is our opinion that Wetland B is a portion of NYSDEC Wetland MA-1.

No non-relatively open waterways (RPWs) or open waters were identified within the project limits.

One stream was identified within the AOI boundary, identified as Stream A. Stream A is an unnamed tributary of the Massena Power Canal, which is a Class D with D standards surface water that is encompassed by wetland Z and therefore is not considered a protected stream by New York State standards. Stream A is potentially regulated water of the United States afforded protection under Section 404 of the Clean Water Act.

The final boundary and jurisdictional status of on-site features is subject to approval by both the USACE and NYSDEC.

APPENDIX A
USACE WETLAND DATA FORMS

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-6-2022

Applicant/Owner: Air Products State: NY Sampling Point: W-A-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): concave Slope %: 0-3

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.957310 Long: -74.910753 Datum: NAD 1983

Soil Map Unit Name: HnB - Hogansburg loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID:	Wetland A

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

____ Surface Water (A1)	____ Water-Stained Leaves (B9)
____ High Water Table (A2)	____ Aquatic Fauna (B13)
____ Saturation (A3)	____ Marl Deposits (B15)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)
____ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)
____ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-A-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15x15)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Cornus racemosa*	25	Yes	FAC
2. *Rhamnus cathartica*	10	Yes	FAC
3. *Salix bebbiana*	10	Yes	FACW
4.			
5.			
6.			
7.			
	45	=Total Cover	

Herb Stratum (Plot size: 5x5)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Phalaris arundinacea*	35	Yes	FACW
2. *Solidago canadensis*	15	No	FACU
3. *Solidago gigantea*	30	Yes	FACW
4. *Lythrum salicaria*	15	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	

Woody Vine Stratum (Plot size: 5x5)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Vitis labrusca*	10	Yes	FACU
2.			
3.			
4.			
	10	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	85	x 2 =	170
FAC species	35	x 3 =	105
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	160 (A)		390 (B)

Prevalence Index = B/A = 2.44

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-A-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10YR 3/1	100					Loamy/Clayey	
6-18	10YR 3/1	95	5YR 3/4	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L**)
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-6-2022

Applicant/Owner: Air Products State: NY Sampling Point: UP-A-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): convex Slope %: 3-8

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: -74.910777 Long: -74.910777 Datum: NAD 1983

Soil Map Unit Name: HnB- Hogansburg loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UP-A-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	10	Yes	FAC
2. *Cornus racemosa*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Daucus carota*	15	Yes	UPL
2. *Solidago canadensis*	30	Yes	FACU
3. *Vicia americana*	15	Yes	FACU
4. *Solidago altissima*	15	Yes	FACU
5. *Galium aparine*	10	No	FACU
6. *Taraxacum officinale*	5	No	FACU
7. *Hieracium pratense*	5	No	UPL
8. *Pastinaca sativa*	10	No	UPL
9. *Eurybia divaricata*	15	Yes	UPL
10.			
11.			
12.			
	120	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	75	x 4 =	300
UPL species	45	x 5 =	225
Column Totals:	140 (A)		585 (B)

Prevalence Index = B/A = 4.18

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UP-A-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ________
Depth (inches): ________

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: B-W

Investigator(s): BAB Section, Township, Range: ____

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.959659 Long: -74.905632 Datum: WGS 84

Soil Map Unit Name: MaB - Malone loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: B-W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Viburnum lentago*	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex lupulina*	20	Yes	OBL
2. *Onoclea sensibilis*	30	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	30	x 2 =	60
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		200 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: B-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					Loamy/Clayey	
8-18	5Y 4/2	90	10YR 2/1	5	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 5/6	5	C	M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_X_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
_X_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
_X_ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** _X_ **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: B-U

Investigator(s): BAB Section, Township, Range: ____

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope %: 3-5

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.959661 Long: -74.905807 Datum: WGS 84

Soil Map Unit Name: MaB - Malone loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: B-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *prunus serotina*	30	Yes	FACU
2. *acer rubrum*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	60	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *cornus racemosa*	40	Yes	FAC
2. *robinia pseudoacacia*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *geum canadense*	10	Yes	FAC
2. *dryopteris marginalis*	10	Yes	FACU
3. *onoclea sensibilis*	10	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	80	x 3 =	240
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	135 (A)		440 (B)

Prevalence Index = B/A = 3.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: B-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					Loamy/Clayey	
14-16	10YR 4/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: C-W

Investigator(s): BAB Section, Township, Range: ____

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.960826 Long: -74.906339 Datum: WGS 84

Soil Map Unit Name: Rt - Runeberg soils NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___
Hydric Soil Present?	Yes X	No ___
Wetland Hydrology Present?	Yes X	No ___

Is the Sampled Area within a Wetland? **Yes** X **No** ___

If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
X High Water Table (A2)	___ Aquatic Fauna (B13)
X Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
X Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 8

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: C-W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus amomum*	10	Yes	FACW
2. *Salix bebbiana*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Acorus calamus*	30	Yes	OBL
2. *Typha latifolia*	30	Yes	OBL
3. *Bidens frondosa*	25	Yes	FACW
4. *Phalaris arundinacea*	15	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	120 (A)		180 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: C-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Mucky Loam/Clay	
6-18	10YR 4/2	95	10YR 5/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: C/E-U

Investigator(s): BAB Section, Township, Range: ____

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope %: 3-5

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.963062 Long: -74.906199 Datum: WGS 84

Soil Map Unit Name: MaB - Malone loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** X
Hydric Soil Present?	Yes ___ No X	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ___ No X	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: C/E-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	25	Yes	FAC
2. *Ulmus americana*	10	No	FACW
3. *Betula papyrifera*	25	Yes	FACU
4.			
5.			
6.			
7.			
	60	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *viburnum lentago*	2	No	FAC
2. *Rhamnus cathartica*	15	Yes	FAC
3. *Lonicera morrowii*	10	Yes	FACU
4.			
5.			
6.			
7.			
	27	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Solidago gigantea*	25	Yes	FACW
2. *rhamnus cathartica*	50	Yes	FAC
3. *onoclea sensibilis*	2	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	77	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	37	x 2 =	74
FAC species	92	x 3 =	276
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	164 (A)		490 (B)

Prevalence Index = B/A = 2.99

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: C/E-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Loamy/Clayey	
10-16	10YR 4/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: D-W

Investigator(s): BAB Section, Township, Range: ____

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.961987 Long: -74.907017 Datum: WGS 84

Soil Map Unit Name: HnB - Hogansburg Loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area**
Hydric Soil Present?	Yes X No ___	**within a Wetland?** **Yes** X **No** ___
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: D-W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	50	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Boehmeria cylindrica*	35	Yes	OBL
2. *Persicaria pensylvanica*	25	Yes	FACW
3. *Persicaria hydropiper*	25	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	75	x 2 =	150
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	135 (A)		210 (B)

Prevalence Index = B/A = 1.56

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: D-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	2.5Y 3/1	90	7.5YR 4/6	10	C	PL/M	Loamy/Clayey	Prominent redox concentrations
10-18	2.5Y 3/1	85	7.5YR 4/6	15	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
_X_ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
_X_ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** _X_ **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: E-W

Investigator(s): BAB Section, Township, Range: ____

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.961364 Long: -74.907268 Datum: WGS 84

Soil Map Unit Name: MnB - Malone Loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
X Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
X Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
? Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: E-W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Lysimachia nummularia*	2	Yes	FACW
2. *carex lurida*	3	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	7	x 2 =	14
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	10 (A)		17 (B)

Prevalence Index = B/A = 1.70

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: E-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Loamy/Clayey	
4-12	2.5Y 4/2	95	10YR 5/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Hard pan

Depth (inches): 12

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: F-W

Investigator(s): BAB Section, Township, Range: ____

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.963209 Long: -74.905983 Datum: WGS 84

Soil Map Unit Name: MnB - Malone Loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

____ Surface Water (A1)	____ Water-Stained Leaves (B9)	
____ High Water Table (A2)	____ Aquatic Fauna (B13)	
____ Saturation (A3)	____ Marl Deposits (B15)	
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	
____ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	
____ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: F-W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fraxinus pennsylvanica*	2	No	FACW
2. *Rhamnus cathartica*	20	Yes	FAC
3. *Cornus amomum*	30	Yes	FACW
4.			
5.			
6.			
7.			
	52	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Onoclea sensibilis*	50	Yes	FACW
2. *Lycopus americanus*	2	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	52	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	82	x 2 =	164
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	104 (A)		226 (B)

Prevalence Index = B/A = 2.17

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: F-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	95	7.5YR 4/6	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations
10-18	10YR 4/2	95	10YR 5/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: F-U

Investigator(s): BAB Section, Township, Range: ____

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope %: 3-5

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.963062 Long: -74.906199 Datum: WGS 84

Soil Map Unit Name: HnB - Hogansburg Loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** X
Hydric Soil Present?	Yes ____ No X	If yes, optional Wetland Site ID:	____
Wetland Hydrology Present?	Yes ____ No X		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ? Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: F-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Ulmus americana*	3	No	FACW
3.			
4.			
5.			
6.			
7.			
	18	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rubus allegheniensis*	5	No	FACU
2. *Rhamnus cathartica*	15	Yes	FAC
3. *Lonicera morrowii*	15	Yes	FACU
4. *cornus amomum*	2	No	FACW
5.			
6.			
7.			
	37	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Solidago gigantea*	5	No	FACW
2. *lonicera morrowii*	15	Yes	FACU
3. *onoclea sensibilis*	5	No	FACW
4. *dryopteris marginalis*	15	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	15	x 3 =	45
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	95 (A)		305 (B)

Prevalence Index = B/A = 3.21

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: F-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-12	10YR 3/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)

___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Hard pan

Depth (inches): 12

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: 1-U

Investigator(s): BAB Section, Township, Range: ____

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope %: 3-5

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.962783 Long: -74.907014 Datum: WGS 84

Soil Map Unit Name: HnB - Hogansburg loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** X
Hydric Soil Present?	Yes ___ No X	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ___ No X	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 1-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2. *Populus tremuloides*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *viburnum lentago*	2	No	FAC
2. *Rhamnus cathartica*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	32	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *onoclea sensibilis*	60	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	52	x 3 =	156
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	142 (A)		396 (B)

Prevalence Index = B/A = 2.79

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 1-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					Loamy/Clayey	
8-16	10YR 4/3	95	10YR 5/6	5	c	m		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: G-W

Investigator(s): BAB Section, Township, Range: ____

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0-2

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.961734 Long: -74.907066 Datum: WGS 84

Soil Map Unit Name: HnB - Hogansburg Loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** X **No** ___
Hydric Soil Present?	Yes X No ___	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes X No ___	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
X Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
X Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: G-W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Sapling/Shrub Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Herb Stratum (Plot size: 5)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Boehmeria cylindrica*	80	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	=Total Cover	

Woody Vine Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		80 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: G-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	2.5Y 3/1	90	7.5YR 4/6	10	C	PL/M	Loamy/Clayey	Prominent redox concentrations
10-18	2.5Y 3/1	85	7.5YR 4/6	15	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: G-U

Investigator(s): BAB Section, Township, Range: ____

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope %: 3-5

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.961665 Long: -74.906739 Datum: WGS 84

Soil Map Unit Name: MaB - Malone loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** X
Hydric Soil Present?	Yes ___ No X	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ___ No X	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ? Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: G-U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *ostrya virginiana*	15	Yes	FACU
2. *fraxinus pennsylvanica*	35	Yes	FACW
3. *prunus serotina*	15	Yes	FACU
4. *rhamnus cathartica*	15	Yes	FAC
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Lonicera morrowii*	20	Yes	FACU
2. *Rhamnus cathartica*	40	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *rhamnus cathartica*	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	95	x 3 =	285
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	180 (A)		555 (B)

Prevalence Index = B/A = 3.08

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: G-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-10	10YR 3/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Hard pan

Depth (inches): 10

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-6-2022

Applicant/Owner: Air Products State: NY Sampling Point: W-T-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): concave Slope %: 0-3

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.958302 Long: -74.910745 Datum: NAD 1983

Soil Map Unit Name: HnB - Hogansburg loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID: Wetland T

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-T-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Cornus alba*	30	Yes	FACW
2. *Rhamnus cathartica*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Eupatorium perfoliatum*	20	Yes	FACW
2. *Typha angustifolia*	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1. *Vitis labrusca*	15	Yes	FACU
2. *Solanum ptychanthum*	10	Yes	FACU
3.			
4.			
	25	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	60	x 2 =	120
FAC species	15	x 3 =	45
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	110 (A)		275 (B)

Prevalence Index = B/A = 2.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-T-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/1	95	2.5YR 4/4	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
_X_ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric Soil Present? **Yes** _X_ **No** ___

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-6-2022

Applicant/Owner: Air Products State: NY Sampling Point: UP-T-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): convex Slope %: 3-8

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: -74.910458 44.958269 Long: -74.910458 Datum: NAD 1983

Soil Map Unit Name: HnB- Hogansburg loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____ No X	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ____ No X	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UP-T-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Acer saccharum*	20	Yes	FACU
3. *Betula papyrifera*	15	Yes	FACU
4. *Acer saccharinum*	10	No	FACW
5.			
6.			
7.			
	60	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	55	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	55	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Dryopteris sp*	20	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	25	x 2 =	50	
FAC species	55	x 3 =	165	
FACU species	35	x 4 =	140	
UPL species	0	x 5 =	0	
Column Totals:	115	(A)	355	(B)

Prevalence Index = B/A = 3.09

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UP-T-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/3	100					Loamy/Clayey	
13-18	10YR 4/4	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-6-2022

Applicant/Owner: Air Products State: NY Sampling Point: W-U-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): concave Slope %: 0-3

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.960881 Long: -74.907526 Datum: NAD 1983

Soil Map Unit Name: MaB -Malone loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____ Hydric Soil Present? Yes X No ____ Wetland Hydrology Present? Yes X No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____ If yes, optional Wetland Site ID: Wetland U

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

____ Surface Water (A1)	____ Water-Stained Leaves (B9)	
____ High Water Table (A2)	____ Aquatic Fauna (B13)	
____ Saturation (A3)	____ Marl Deposits (B15)	
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	
____ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	
____ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-U-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	25	Yes	FACW
2. *Populus deltoides*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Cornus amomum*	25	Yes	FACW
2. *Cephalanthus occidentalis*	15	Yes	OBL
3.			
4.			
5.			
6.			
7.			
	40	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Onoclea sensibilis*	10	Yes	FACW
2. *Typha angustifolia*	5	Yes	OBL
3. *Persicaria amphibia*	5	Yes	OBL
4. *Scirpus cyperinus*	5	Yes	OBL
5. *Caltha palustris*	5	Yes	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1. *Vitis labrusca*	10	Yes	FACU
2.			
3.			
4.			
	10	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 90.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	35	x 1 =	35
FACW species	60	x 2 =	120
FAC species	20	x 3 =	60
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	125 (A)		255 (B)

Prevalence Index = B/A = 2.04

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-U-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/1	100					Loamy/Clayey	
8-18	10YR 4/1	90	5YR 5/6	10	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_X_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
_X_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** _X_ **No** ___

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-6-2022

Applicant/Owner: Air Products State: NY Sampling Point: UP-U-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): convex Slope %: 0-3

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.960432 Long: -74.907744 Datum: NAD 1983

Soil Map Unit Name: Rt- Runeberg soils, 0 to 3 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?**	**Yes** ____ **No** X
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UP-U-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	No	FACW
2. *Acer saccharum*	10	No	FACU
3. *Quercus palustris*	15	Yes	FACW
4. *Populus tremuloides*	15	Yes	FACU
5. *Betula papyrifera*	25	Yes	FACU
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	70	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	70	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Dryopteris sp*	10	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	70	x 3 =	210
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	145 (A)		460 (B)

Prevalence Index = B/A = 3.17

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UP-U-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/3	100					Loamy/Clayey	
10-18	10YR 4/4	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-6-2022

Applicant/Owner: Air Products State: NY Sampling Point: W-V-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): concave Slope %: 0-3

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.959490 Long: -74.909149 Datum: NAD 1983

Soil Map Unit Name: Rt -Runeberg soils, 0 to 3 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____
If yes, optional Wetland Site ID: Wetland U

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____
Water Table Present? Yes ____ No X Depth (inches): ____
Saturation Present? Yes ____ No X Depth (inches): ____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-V-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	30	Yes	FACW
2. *Ulmus americana*	15	Yes	FACW
3. *Tilia americana*	15	Yes	FACU
4. *Quercus rubra*	15	Yes	FACU
5.			
6.			
7.			
	75	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Onoclea sensibilis*	45	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1. *Vitis labrusca*	10	Yes	FACU
2.			
3.			
4.			
	10	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	90	x 2 =	180
FAC species	10	x 3 =	30
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	140 (A)		370 (B)

Prevalence Index = B/A = 2.64

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-V-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Loamy/Clayey	
10-18	2.5Y 5/1	97	5YR 4/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: UP-V-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): convex Slope %: 3-8

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.959324 Long: -74.908804 Datum: NAD 1983

Soil Map Unit Name: Rt- Runeberg soils, 0 to 3 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____ No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UP-V-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	No	FACW
2. *Acer saccharinum*	20	Yes	FACW
3. *Quercus palustris*	10	No	FACW
4. *Populus tremuloides*	35	Yes	FACU
5. *Betula papyrifera*	20	Yes	FACU
6.			
7.			
	95	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	60	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	60	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Dryopteris sp*	25	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	60	x 3 =	180
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	155	(A)	480 (B)

Prevalence Index = B/A = 3.10

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UP-V-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/3	100					Loamy/Clayey	
12-18	10YR 4/4	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	***OMB Control #: 0710-0024, Exp: 11/30/2024*** ***Requirement Control Symbol EXEMPT:*** ***(Authority: AR 335-15, paragraph 5-2a)***

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: W-W-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): concave Slope %: 3-8

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.962052 Long: -74.907759 Datum: NAD 1983

Soil Map Unit Name: HnB -Hogansburg loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____	**Is the Sampled Area**
Hydric Soil Present? Yes X No ____	**within a Wetland? Yes** X **No** ____
Wetland Hydrology Present? Yes X No ____	If yes, optional Wetland Site ID: Wetland W

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-W-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	35	Yes	FACW
2. *Ulmus americana*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	50	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	50	Yes	FAC
2. *Lonicera morrowii*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	65	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Onoclea sensibilis*	50	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	50	x 3 =	150
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	165 (A)		410 (B)

Prevalence Index = B/A = 2.48

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-W-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Loamy/Clayey	
10-18	2.5Y 5/2	97	5YR 4/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
X Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___
Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: UP-W-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): convex Slope %: 3-8

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.961948 Long: -74.907639 Datum: NAD 1983

Soil Map Unit Name: HnB - Hogansburg loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are “Normal Circumstances” present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____ No X	**within a Wetland?**	**Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID:	____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UP-W-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	65	Yes	FAC
2. *Lonicera morrowii*	10	No	FACU
3.			
4.			
5.			
6.			
7.			
	75	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Rubus allegheniensis*	15	Yes	FACU
2. *Dryopteris sp*	30	Yes	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1. *Vitis labrusca*	10	Yes	FACU
2.			
3.			
4.			
	10	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	65	x 3 =	195
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	110 (A)		355 (B)

Prevalence Index = B/A = 3.23

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UP-W-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: W-X-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): concave Slope %: 3-8

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.960325 Long: -74.910357 Datum: NAD 1983

Soil Map Unit Name: MaB - Malone loam, 3 to 8 percent slopes NWI classification: ______

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID: Wetland X

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-X-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	45	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Onoclea sensibilis*	45	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	65	x 2 =	130
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		265 (B)

Prevalence Index = B/A = 2.41

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-X-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					Loamy/Clayey	
12-18	2.5Y 5/2	97	5YR 5/6	3	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: UP-Y-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): convex Slope %: 3-8

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.959334 Long: -74.910448 Datum: NAD 1983

Soil Map Unit Name: MaB - Malone loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____ No X	**within a Wetland?**	**Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID:	____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UP-Y-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Tilia americana*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	75	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	75	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1. *Parthenocissus inserta*	15	Yes	FACU
2.			
3.			
4.			
	15	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	10	x 2 = 20
FAC species	75	x 3 = 225
FACU species	30	x 4 = 120
UPL species	0	x 5 = 0
Column Totals:	115 (A)	365 (B)

Prevalence Index = B/A = 3.17

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UP-Y-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ______

Depth (inches): ______

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022
Applicant/Owner: Air Products State: NY Sampling Point: W-Y-1
Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18
Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): concave Slope %: 3-8
Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.959274 Long: -74.910367 Datum: NAD 1983
Soil Map Unit Name: MaB - Malone loam, 3 to 8 percent slopes NWI classification: ____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID:	Wetland Y

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
X High Water Table (A2)	___ Aquatic Fauna (B13)	
X Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-Y-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	35	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	35	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Acalypha rhomboidea*	30	Yes	FACU
2. *Alisma subcordatum*	20	Yes	OBL
3. *Persicaria amphibia*	5	No	OBL
4. *Cyperus esculentus*	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	45	x 2 =	90
FAC species	10	x 3 =	30
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	110 (A)		265 (B)

Prevalence Index = B/A = 2.41

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-Y-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	95	5YR 3/3	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations
6-18	10YR 4/1	90	5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
			2.5YR 3/4	5	C	M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
X Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L**)
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	***OMB Control #: 0710-0024, Exp: 11/30/2024*** ***Requirement Control Symbol EXEMPT:*** ***(Authority: AR 335-15, paragraph 5-2a)***

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: UP-Y-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): convex Slope %: 3-8

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.959334 Long: -74.910448 Datum: NAD 1983

Soil Map Unit Name: MaB - Malone loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are “Normal Circumstances” present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____ No X	**within a Wetland?**	**Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID:	____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UP-Y-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Tilia americana*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	75	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	75	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1. *Parthenocissus inserta*	15	Yes	FACU
2.			
3.			
4.			
	15	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	75	x 3 =	225
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	115 (A)		365 (B)

Prevalence Index = B/A = 3.17

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UP-Y-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: W-Z-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): concave Slope %: 0-3

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.962254 Long: -74.910630 Datum: NAD 1983

Soil Map Unit Name: Ak - Adjidaumo silty clay, 0 to 3 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X No ____	**within a Wetland? Yes** X **No** ____
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID: Wetland Z

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-Z-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Quercus palustris*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	15	Yes	FAC
2. *Cornus racemosa*	15	Yes	FAC
3. *Lonicera morrowii*	10	No	FACU
4. *Cornus alba*	15	Yes	FACW
5.			
6.			
7.			
	55	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Phalaris arundinacea*	30	Yes	FACW
2. *Lythrum salicaria*	20	Yes	OBL
3. *Plantago major*	10	No	FACU
4. *Symphyotrichum novi-belgii*	15	No	FACW
5. *Solidago canadensis*	10	No	FACU
6. *Solidago gigantea*	20	Yes	FACW
7.			
8.			
9.			
10.			
11.			
12.			
	105	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20	
FACW species	105	x 2 =	210	
FAC species	30	x 3 =	90	
FACU species	30	x 4 =	120	
UPL species	0	x 5 =	0	
Column Totals:	185	(A)	440	(B)

Prevalence Index = B/A = 2.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-Z-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3/1	95	2.5YR 3/4	5	C	M	Loamy/Clayey	Prominent redox concentrations
12-18	7.5YR 4/1	95	2.5YR 4/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
_X_ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
_X_ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric Soil Present? **Yes** _X_ **No** ___

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	***OMB Control #: 0710-0024, Exp: 11/30/2024*** ***Requirement Control Symbol EXEMPT:*** ***(Authority: AR 335-15, paragraph 5-2a)***

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: UP-Z-1

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): convex Slope %: 3-8

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.961371 Long: -74.911046 Datum: NAD 1983

Soil Map Unit Name: MsB Muskellunge silty clay loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

		Secondary Indicators (minimum of two required)
___ Surface Water (A1)	___ Water-Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Drainage Patterns (B10)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Stunted or Stressed Plants (D1)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	___ Shallow Aquitard (D3)
___ Sparsely Vegetated Concave Surface (B8)		___ Microtopographic Relief (D4)
		___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____	
Water Table Present?	Yes ____	No X	Depth (inches): ____	
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____	**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UP-Z-1

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15x15)			
1. *Rhamnus cathartica*	30	Yes	FAC
2. *Cornus racemosa*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size: 5x5)			
1. *Phalaris arundinacea*	35	Yes	FACU
2. *Fragaria vesca*	15	No	UPL
3. *Viola bicolor*	10	No	FACU
4. *Galium aparine*	20	Yes	FACU
5. *Rubus allegheniensis*	15	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: 5x5)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	95	x 4 =	380
UPL species	15	x 5 =	75
Column Totals:	160 (A)		605 (B)

Prevalence Index = B/A = 3.78

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UP-Z-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	10YR 3/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers **WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region** See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	*OMB Control #: 0710-0024, Exp: 11/30/2024* *Requirement Control Symbol EXEMPT:* *(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: W-Z-2

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): concave Slope %: 3-8

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.961516 Long: -74.912008 Datum: NAD 1983

Soil Map Unit Name: MsB - Muskellunge silty clay loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID:	Wetland Z

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)
___ High Water Table (A2)	___ Aquatic Fauna (B13)
___ Saturation (A3)	___ Marl Deposits (B15)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)
___ Sparsely Vegetated Concave Surface (B8)	

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: W-Z-2

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Betula papyrifera*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15x15)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Cornus alba*	10	Yes	FACW
2. *Cornus racemosa*	15	Yes	FAC
3. *Salix alba*	10	Yes	FACW
4.			
5.			
6.			
7.			
	35	=Total Cover	

Herb Stratum (Plot size: 5x5)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Phalaris arundinacea*	25	Yes	FACW
2. *Solidago rugosa*	20	Yes	FAC
3. *Solidago gigantea*	15	No	FACW
4. *Cyperus esculentus*	15	No	FACW
5. *Eupatorium perfoliatum*	25	Yes	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	

Woody Vine Stratum (Plot size: 5x5)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	35	x 3 =	105
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	150 (A)		365 (B)

Prevalence Index = B/A = 2.43

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-Z-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					Loamy/Clayey	
10-18	10YR 4/1	95	5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region
See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Massena Green Hydrogen Facility City/County: Massena/St. Lawrence Sampling Date: 10-5-2022

Applicant/Owner: Air Products State: NY Sampling Point: UP-Z-2

Investigator(s): J. Strong Section, Township, Range: 4.004-1-19 &4.004-1-18

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): convex Slope %: 3-8

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.961239 Long: -74.912057 Datum: NAD 1983

Soil Map Unit Name: MsB Muskellunge silty clay loam, 3 to 8 percent slopes NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are “Normal Circumstances” present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X
Hydric Soil Present?	Yes ____	No X
Wetland Hydrology Present?	Yes ____	No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)	___ Water-Stained Leaves (B9)	
___ High Water Table (A2)	___ Aquatic Fauna (B13)	
___ Saturation (A3)	___ Marl Deposits (B15)	
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	
___ Sparsely Vegetated Concave Surface (B8)		

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UP-Z-2

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Sapling/Shrub Stratum (Plot size: 15x15)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Herb Stratum (Plot size: 5x5)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Phalaris arundinacea*	25	Yes	FACU
2. *Fragaria vesca*	15	Yes	UPL
3. *Daucus carota*	20	Yes	UPL
4. *Galium aparine*	15	Yes	FACU
5. *Vicia americana*	15	Yes	FACU
6. *Asclepias syriaca*	10	No	UPL
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	

Woody Vine Stratum (Plot size: 5x5)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	55	x 4 =	220
UPL species	45	x 5 =	225
Column Totals:	100 (A)		445 (B)

Prevalence Index = B/A = 4.45

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: UP-Z-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/3	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ High Chroma Sands (S11) (**LRR K, L)**
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Marl (F10) (**LRR K, L**)
___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Polyvalue Below Surface (S8) (**LRR K, L**)
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Red Parent Material (F21) **(outside MLRA 145)**
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

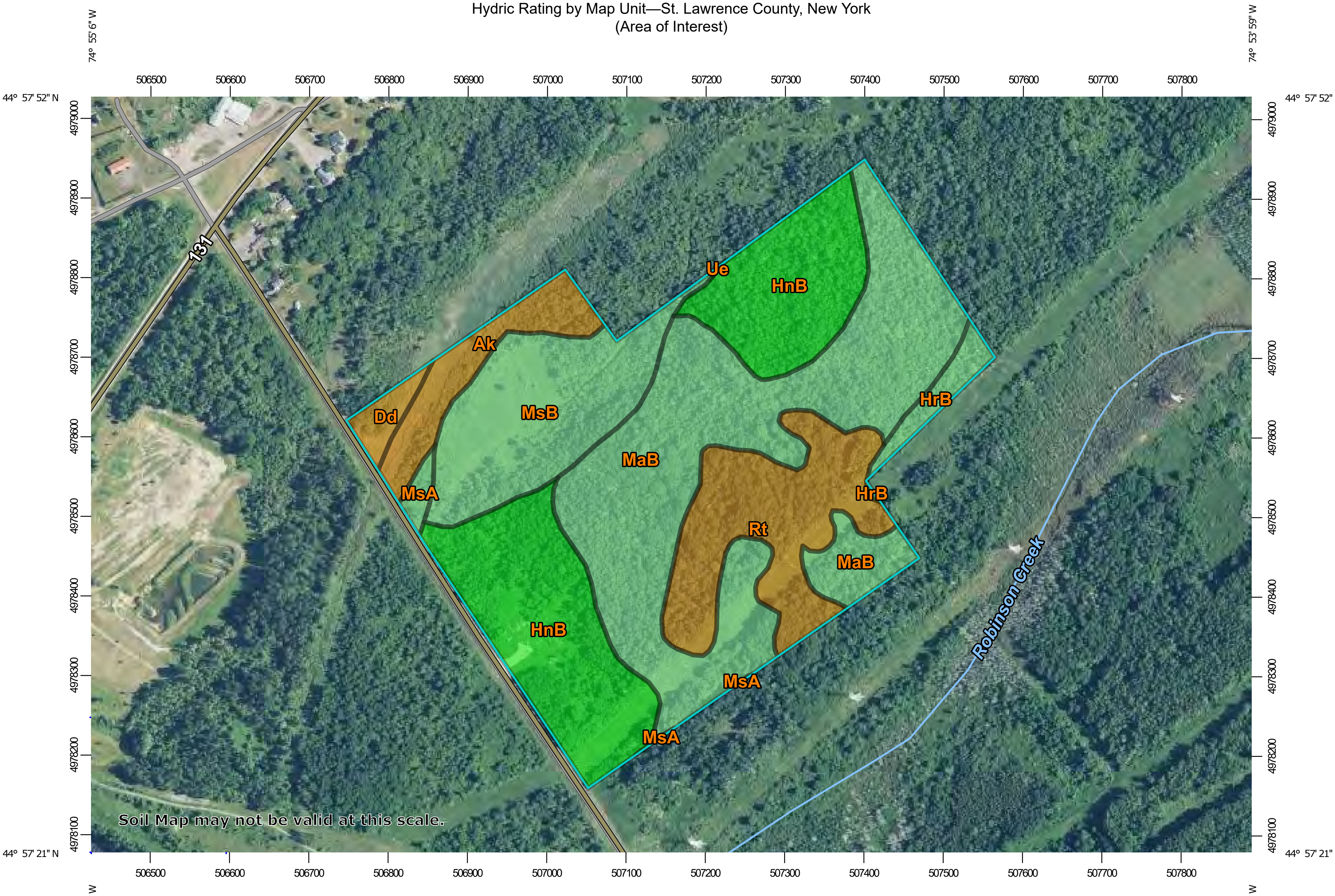
Restrictive Layer (if observed):
Type: ______
Depth (inches): ______

Hydric Soil Present? **Yes** ____ **No** X

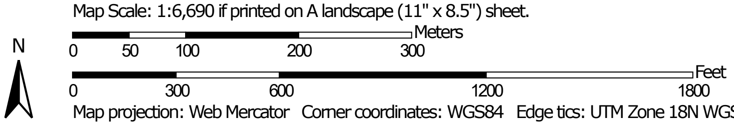
Remarks:

APPENDIX B
WEB SOIL SURVEY

Hydric Rating by Map Unit—St. Lawrence County, New York
(Area of Interest)



Map Scale: 1:6,690 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Soil Rating Lines

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Soil Rating Points

Hydric (100%)

Hydric (66 to 99%)

Hydric (33 to 65%)

Hydric (1 to 32%)

Not Hydric (0%)

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: St. Lawrence County, New York
Survey Area Data: Version 23, Sep 10, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 20, 2020—Jun 22, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ak	Adjidaumo silty clay, 0 to 3 percent slopes	93	4.4	5.3%
Dd	Deford loamy fine sand	90	1.2	1.4%
HnB	Hogansburg loam, 3 to 8 percent slopes	0	21.1	25.7%
HrB	Hogansburg and Grenville soils, 0 to 8 percent slopes, very stony	3	1.6	1.9%
MaB	Malone loam, 3 to 8 percent slopes	3	30.5	37.1%
MsA	Muskellunge silty clay loam, 0 to 3 percent slopes	5	0.6	0.7%
MsB	Muskellunge silty clay loam, 3 to 8 percent slopes	5	11.5	14.0%
Rt	Runeberg soils, 0 to 3 percent slopes	96	11.3	13.8%
Ue	Udorthents, loamy	1	0.0	0.0%
Totals for Area of Interest			**82.2**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

APPENDIX C
PHOTOGRAPHS

Photo Documentation

Project: Air Products & Chemicals Inc.
Marshall Project
Town of Massena, St. Lawrence County, NY

Photo – Photo of UP-A-1 Data Point.

Photo – Photo of soil at UP-A-1 Data Point.

Photo Documentation

Project: Air Products & Chemicals Inc.
Marshall Project
Town of Massena, St. Lawrence County, NY

Photo – Photo of W-A-1 Data Point.

Photo – Photo of soil at W-A-1 Data Point.

Photo Documentation

Photo – Photo of Wetland B.

Photo – Photo of Wetland C.

Photo Documentation

Photo – Photo of Wetland D.

Photo – Photo of Wetland E.

Photo Documentation

Photo – Photo of Wetland F.

Photo – Photo of Wetland G.

Photo – Photo of UP-T-1 Data Point.

Photo – Photo of soil at UP-T-1 Data Point.

Photo Documentation

Project: Air Products & Chemicals Inc.
Marshall Project
Town of Massena, St. Lawrence County, NY

Photo – Photo of UP-T-1 Data Point.

Photo – Photo of soil at UP-T-1 Data Point.

Photo Documentation

Photo – Photo of W-T-1 Data Point.

Photo – Photo of soil at W-T-1 Data Point.

Photo Documentation

Project: Air Products & Chemicals Inc.
Marshall Project
Town of Massena, St. Lawrence County, NY

Photo – Photo of UP-U-1 Data Point.

Photo – Photo of soil at UP-U-1 Data Point.

Photo Documentation

Photo – Photo of W-U-1 Data Point.

Photo – Photo of soil at W-U-1 Data Point.

Photo – Photo of UP-V-1 Data Point.

Photo – Photo of soil at UP-V-1 Data Point.

Photo Documentation

Project: Air Products & Chemicals Inc.
Marshall Project
Town of Massena, St. Lawrence County, NY

Photo – Photo of W-V-1 Data Point.

Photo – Photo of soil at W-V-1 Data Point.

Photo Documentation

Project: Air Products & Chemicals Inc.
Marshall Project
Town of Massena, St. Lawrence County, NY

Photo – Photo of UP-W-1 Data Point.

Photo – Photo of soil at UP-W-1 Data Point.

Photo Documentation

Project: Air Products & Chemicals Inc.
Marshall Project
Town of Massena, St. Lawrence County, NY

Photo – Photo of W-W-1 Data Point.

Photo – Photo of soil at W-W-1 Data Point.

Photo Documentation

Photo – Photo of UP-X-1 Data Point.

Photo – Photo of soil at UP-X-1 Data Point.

Photo Documentation

Photo – Photo of W-X-1 Data Point.

Photo – Photo of soil at W-X-1 Data Point.

Photo Documentation

Project: Air Products & Chemicals Inc.
Marshall Project
Town of Massena, St. Lawrence County, NY

Photo – Photo of UP-Y-1 Data Point.

Photo – Photo of soil at UP-Y-1 Data Point.

Photo Documentation

Project: Air Products & Chemicals Inc.
Marshall Project
Town of Massena, St. Lawrence County, NY

Photo – Photo of W-Y-1 Data Point.

Photo – Photo of soil at W-Y-1 Data Point.

Photo Documentation

Photo – Photo of UP-Z-1 Data Point.

Photo – Photo of soil at UP-Z-1 Data Point.

Photo Documentation

Photo – Photo of W-Z-1 Data Point.

Photo – Photo of soil at W-Z-1 Data Point.

Photo Documentation

Project: Air Products & Chemicals Inc.
Marshall Project
Town of Massena, St. Lawrence County, NY

Photo – Photo of UP-Z-2 Data Point.

Photo – Photo of soil at UP-Z-2 Data Point.

Photo Documentation

Photo – Photo of W-Z-2 Data Point.

Photo – Photo of soil at W-Z-2 Data Point.

Photo Documentation

Project: Air Products & Chemicals Inc.
Marshall Project
Town of Massena, St. Lawrence County, NY

Photo – Photo of Stream A

Photo – Photo of Stream A

Appendix D

Rare, Threatened, and Endangered Species Agency Correspondence

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To:
Project Code: 2023-0063961
Project Name: Air Products Green Hydrogen Facility

April 03, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

PROJECT SUMMARY

Project Code: 2023-0063961
Project Name: Air Products Green Hydrogen Facility
Project Type: Commercial Development
Project Description: Commercial development of a green hydrogen facility
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.96051155,-74.90992087319944,14z

Counties: St. Lawrence County, New York

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPAC USER CONTACT INFORMATION

Agency: C&S Engineers, Inc.
Name: Shannon Booth
Address: 499 Col Eileen Collins Boulevard
City: Syracuse
State: NY
Zip: 13212
Email sbooth@cscos.com
Phone: 3159855938

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To: April 04, 2023
Project code: 2023-0063961
Project Name: Air Products Green Hydrogen Facility

Federal Nexus: yes
Federal Action Agency (if applicable):

Subject: Technical assistance for 'Air Products Green Hydrogen Facility'

Dear Shannon Booth:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 04, 2023, for 'Air Products Green Hydrogen Facility' (here forward, Project). This project has been assigned Project Code 2023-0063961 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter.

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Step

Consultation with the Service is necessary. The project has a federal nexus (e.g., Federal funds, permit, etc.), but you are not the federal action agency or its designated (in writing) non-federal representative. Therefore, the ESA consultation status is incomplete and no project activities should occur until consultation between the Service and the Federal action agency (or designated non-federal representative), is completed.

As the federal agency or designated non-federal representative deems appropriate, they should submit their determination of effects to the Service by doing the following.

1. Log into IPaC using an agency email account and click on My Projects, click "Search by record locator" to find this Project using **835-124590999**. (Alternatively, the originator of the project in IPaC can add the agency representative to the project by using the Add Member button on the project home page.)
2. Review the answers to the Northern Long-eared Bat Range-wide Determination Key to ensure that they are accurate.
3. Click on Review/Finalize to convert the ‘not likely to adversely affect’ consistency letter to a concurrence letter. Download the concurrence letter for your files if needed.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the New York Ecological Services Field Office and reference Project Code 2023-0063961 associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Air Products Green Hydrogen Facility

2. Description

The following description was provided for the project 'Air Products Green Hydrogen Facility':

> Commercial development of a green hydrogen facility

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.96051155,-74.90992087319944,14z

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No
2. The proposed action does not intersect an area where the northern long-eared bat is likely to occur, based on the information available to U.S. Fish and Wildlife Service as of the most recent update of this key. If you have data that indicates that northern long-eared bats <u>are</u> likely to be present in the action area, answer "NO" and continue through the key.

   Do you want to make a no effect determination?

   No
3. Do you have post-white nose syndrome occurrence data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed acoustic detections. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No
4. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No
5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Yes

6. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   No

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   No

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

9. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the effects of any activities that would not occur but for the proposed action.

   If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer "No" below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project's action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a "no effect" determination for the northern long-eared bat.

   Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer "No" and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of Effects of the Action can be found here: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

   No

10. Have you contacted the appropriate agency to determine if your action is near any known northern long-eared bat hibernacula?

    Note: A document with links to Natural Heritage Inventory databases and other state-specific sources of information on the locations of northern long-eared bat hibernacula is available here. Location information for northern long-eared bat hibernacula is generally kept in state natural heritage inventory databases – the availability of this data varies by state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited.

    Yes

11. Is any portion of the action area within 0.5-mile radius of any known northern long-eared bat hibernacula? If unsure, contact your local Ecological Services Field Office.

    No

12. Does the action area contain any caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating northern long-eared bats?

    No

13. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
    (If unsure, answer "Yes.")

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags ≥3 inches (12.7 centimeter) dbh), answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    Yes

14. Will the action cause effects to a bridge?

    No

15. Will the action result in effects to a culvert or tunnel?

    No

16. Does the action include the intentional exclusion of northern long-eared bats from a building or structure?

    Note: Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local U.S. Fish and Wildlife Services Ecological Services Field Office to help assess whether northern long-eared bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures

    No
17. Does the action involve removal, modification, or maintenance of a human-made structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No
18. Will the action cause construction of one or more new roads open to the public?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No
19. Will the action include or cause any construction or other activity that is reasonably certain to increase average daily traffic on one or more existing roads?

    Note: For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    No
20. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No
21. Will the proposed action involve the creation of a new water-borne contaminant source (e.g., leachate pond pits containing chemicals that are not NSF/ANSI 60 compliant)?

    No
22. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    Yes

23. Will the proposed action result in the cutting or other means of knocking down, bringing down, or trimming of any trees suitable for northern long-eared bat roosting?

    Note: Suitable northern long-eared bat roost trees are live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities.

    Yes

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

47.9

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the inactive (hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

0

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the active (non-hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

47.9

Will all potential northern long-eared bat (NLEB) roost trees (trees ≥3 inches diameter at breast height, dbh) be cut, knocked, or brought down from any portion of the action area greater than or equal to 0.1 acre? If all NLEB roost trees will be removed from multiple areas, select 'Yes' if the cumulative extent of those areas meets or exceeds 0.1 acre.

Yes

Enter the extent of the action area (in acres) from which all potential NLEB roost trees will be removed. If all NLEB roost trees will be removed from multiple areas, entire the total extent of those areas. Round up to the nearest tenth of an acre.

47.9

For the area from which all potential northern long-eared bat (NLEB) roost trees will be removed, on how many acres (round to the nearest tenth of an acre) will trees be allowed to regrow? Enter '0' if the entire area from which all potential NLEB roost trees are removed will be developed or otherwise converted to non-forest for the foreseeable future.

0

Will any snags (standing dead trees) ≥3 inches dbh be left standing in the area(s) in which all northern long-eared bat roost trees will be cut, knocked down, or otherwise brought down?

Yes

Will all project activities by completed by April 1, 2024?

No

IPAC USER CONTACT INFORMATION

Agency: C&S Engineers, Inc.
Name: Shannon Booth
Address: 499 Col Eileen Collins Boulevard
City: Syracuse
State: NY
Zip: 13212
Email sbooth@cscos.com
Phone: 3159855938

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

February 2, 2023

Shannon Booth
C&S Engineers, Inc.
499 Col Eileen Collins Boulevard
Syracuse, NY 13212

Re: Industrial Development Project - Pontoon Bridge Rd
County: St Lawrence   Town/City: Massena

Dear Shannon Booth:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 6 Office, Division of Environmental Permits, at dep.r6@dec.ny.gov.

Sincerely,

Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program

1155

The following rare plants, rare animals, and significant natural communities have been documented at your project site, or in its vicinity.

We recommend that potential impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine the status of a species at the site, particularly for sites that are currently undeveloped and may contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following plant is listed as Endangered by New York State, and is a vulnerable natural resource of conservation concern.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*
Vascular Plants			
Great Plains Ladies' Tresses	*Spiranthes magnicamporum*	Endangered	Critically Imperiled in NYS
Documented within 0.5 mile of the project site.			16789

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org.

Appendix E
SHPO Correspondence

New York State
Parks, Recreation and
Historic Preservation

KATHY HOCHUL
Governor

ERIK KULLESEID
Commissioner

ARCHAEOLOGY COMMENTS

Phase IA/IB Archaeological Survey Recommendation
Project: Massena Green Hydrogen Facility
PR#: 22PR08211
Date: 11/10/2022

Your project is in an archaeologically sensitive location. Therefore, the State Historic Preservation Office/Office of Parks, Recreation and Historic Preservation (SHPO/OPRHP) recommends a Phase IA/IB archaeological survey for components of the project that will involve ground disturbance, unless substantial prior ground disturbance can be documented. A Phase IA/IB survey is designed to determine the presence or absence of archaeological sites or other cultural resources in the project's Area of Potential Effects (APE).

If you consider the entire project area to be disturbed, documentation of the disturbance will need to be reviewed by SHPO/OPRHP. Examples of disturbance include mining activities and multiple episodes of building construction and demolition. Documentation of ground disturbance typically consists of soil bore logs, photos, or previous project plans. Agricultural activity is not considered to be substantial ground disturbance.

Please note that in areas with alluvial soils or fill archaeological deposits may exist below the depth of superficial disturbances such as pavement or even deeper disturbances, depending on the thickness of the alluvium or fill. Evaluation of the possible impact of prior disturbance on archaeological sites must consider the depth of potentially culture-bearing deposits and the depth of planned disturbance by the proposed project.

Our office does not conduct archaeological surveys. A 36 CFR 61 qualified archaeologist should be retained to conduct the Phase IA/IB survey.

If you have any questions concerning archaeology, please contact Jessica Schreyer at
Jessica.Schreyer@parks.ny.gov

Appendix F

Traffic Impact Study

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

Traffic Impact Study

Hydrogen Electrolysis Facility
Town of Massena

Prepared for:
Air Products and Chemicals, Inc.
1940 Air Products Blvd.
Allentown, PA 18106

January 2023

Executive Summary

A hydrogen electrolysis plant is proposed on Pontoon Bridge Road on an existing 90+/- acre site. A traffic study was conducted as part of the SEQR process. The surrounding street network was analyzed under existing and full build conditions. The study area includes the following intersections:

1) NYS Route 131 at County Route 42
2) NYS Route 131 at NYS Route 37 West
3) NYS Route 131 at NYS Route 37 East
4) NYS Route 37 at Main Street
5) NYS Route 56 and Andrews Street at NYS Route 37 East

The majority of study area intersections are operating at acceptable levels of service and have additional capacity for an increase in traffic volumes. The intersection of NYS Route 37 and Main Street does experience some delay, however, it can be remedied by updated signal timings. The intersections of NYS Route 131 at NYS Route 37 Eastbound and NYS Route 37 at Main Street have a higher than statewide average collision rate. These intersections may be remedied through low cost improvements such as an intersection ahead warning sign, and improved signal timings. Only a small amount of traffic generated from the proposed facility is anticipated to use these intersections.

The trips generated from the proposed facility are 144 vehicles entering and existing which includes a combination of passenger vehicles and trucks. All trucks will go to and from NYS Route 131 avoiding heading south on Main Street into the core of the Town of Massena. NYS Route 131 east of Pontoon Bridge Road will be used for trucks to access their major routes from NYS Route 37. The site development has a minor/negligible impact to study area intersections.

No mitigation is recommended since the project has minimal impacts to the study area, and intersections are expected to continue to operate at their existing level of service.

1.0 Introduction

The purpose of this traffic study is to analyze traffic impacts as a part of the New York State Environmental Quality Review Act (SEQR) for a proposed hydrogen electrolysis plant in Massena, New York. As a part of the SEQR process, a traffic impact study is required when a proposed project will result in a substantial increase in traffic. A substantial increase in traffic is defined as a facility generating 100 or more trips during an hour. This traffic impact study will determine impacts to the local road network, and propose and analyze any necessitated mitigation caused by the proposed facility.

Background

A hydrogen electrolysis facility is proposed on Pontoon Bridge Road on an existing 90+/- acre site located just north of the Alcoa Plant. The remainder of this traffic impact study provides additional information about the site, surrounding street network, and site operations leading to the trip generation values.

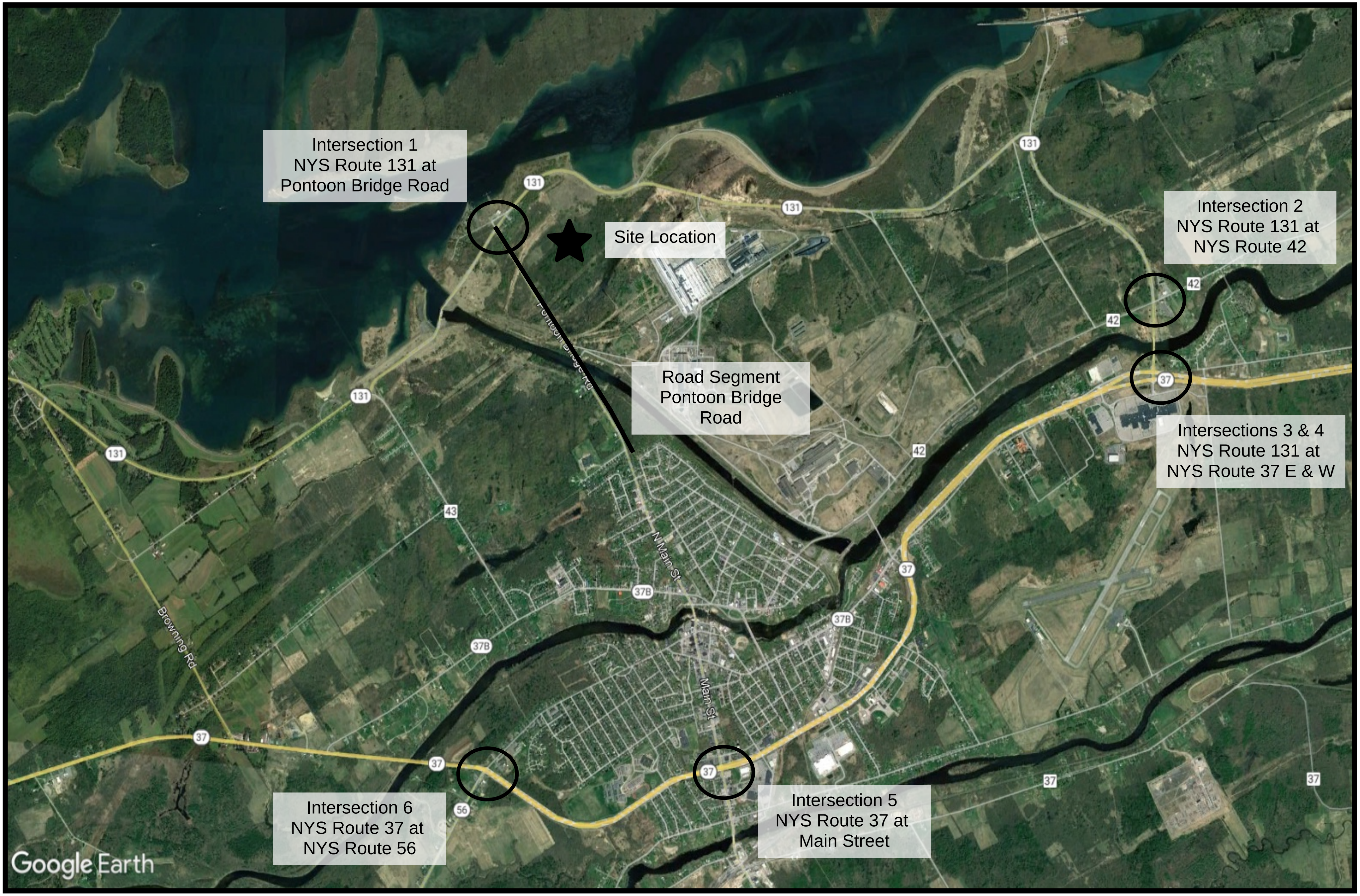
The proposed development will include two building facilities, a control room and terminal, with a site driveway to each. Trucks will only use the southern driveway to the terminal which will be gated/secured. The site is expected to be mostly shift work comprising of two shifts. The majority of traffic will be during shift changes, but some trucks and personal vehicles will come and go throughout the day.

Study Area

The study area includes major intersections in the area that are anticipated to accommodate vehicles generated by the proposed site. The two types of vehicle generators considered for the site were employees and delivery trucks. The following intersections make up the study area:

6) NYS Route 131 at Pontoon Ridge Road
7) NYS Route 131 at County Route 42
8) NYS Route 131 at NYS Route 37 West
9) NYS Route 131 at NYS Route 37 East
10) NYS Route 37 at Main Street
11) NYS Route 56 and Andrews Street at NYS Route 37 East

Trucks generated from the facility will not travel south onto Pontoon Bridge Road into the Village of Massena. All trucks will travel on the northern segment of Pontoon Bridge Road between the site driveways and NYS Route 131. All trucks will follow the same travel route until they reach major routes taking them to their final destination. All trucks will use Pontoon Ridge Road to NYS Route 131, and will travel to NYS Route 37. Travel patterns beyond the immediate area are not yet determined since they will be based on their servicing destinations.



C&S COMPANIES®

Study Area

N

Figure 1

intersection with NYS Route 131 from 12:00PM Wednesday November 16, 2022 to 12:00PM Thursday November 17, 2022. Table 2 highlights information about the adjacent streets to the site.

Table 2: Street Network Information

Street	Jurisdiction	Functional Classification	AADT
Pontoon Bridge Road	Town of Massena	Urban Minor Arterial	876
NYS Route 131	NYSDOT	Urban Minor Arterial	437

Capacity Analysis

Intersection Analysis

Turning movement counts (TMCs) were collected by Quality Counts on Thursday November 17, 2022 from 7:00AM to 9:00AM and 3:00PM to 6:00PM on a typical weekday. When the traffic counts were taken, a long term bridge closure was in place just north of the intersections of NYS Route 131 at NYS Route 37 East and West. Traffic travelling southbound on NYS Route 131 was diverted onto NYS Route 42 to avoid the closure. Traffic counts were taken at the intersection of County Route 42 and NYS Route 131 in an effort to capture vehicles that would have used NYS Route 37 East and West from NYS Route 131.

Table 3 below highlights the results of the level of service analysis for existing conditions. The intersections impacted by the detour were analyzed using the raw data collected. The next section in the report has additional analyses at those intersections to verify their approximate operations based on historical traffic data.

Table 3: Intersection LOS Analysis

Approach		Weekday AM			Weekday PM		
		LOS[a] (Delay)[b]	V/C[c]	Queue[d]	LOS (Delay)	V/C	Queue
NYS Route 131 at Pontoon Bridge Road							
Northbound	*Left/Thru/Right*	a (8.8)	0.02	0	a (9.5)	0.03	0
Southbound	*Left/Thru/Right*	a (9.9)	0.00	0	b (10.0)	0.00	0
	Intersection	n/a			n/a		
NYS Route 131 at County Route 42							
Eastbound	*Left/Thru/Right*	a (9.5)	0.06	0	b (10.5)	0.09	0
Westbound	*Left/Thru/Right*	a (9.4)	0.05	0	b (11.1)	0.14	0
	Intersection	n/a			n/a		

Methodology

Intersections

The study intersections were analyzed using SYNCHRO 11[1], which is a computer program that implements the methods presented in the 6th Edition Highway Capacity Manual[2]. SYNCHRO determines the Level of Service (LOS), which is defined in terms of Delay.

> Delay is a measure of driver discomfort, frustration, fuel consumption and lost travel time.
> Level of Service criteria are stated in terms of the control delay per vehicle for a 15-minute analysis period and range from "A" to "F". Level of Service A is representative of a movement that is free flowing with minimal delay, while LOS F generally represents long delays. LOS D is generally considered acceptable in urban environments.

The ranges of delay for each level of service, as contained in the 6th Edition Highway Capacity Manual, are shown in Table 1.

Table 1: Intersection Level of Service Criteria

Level of Service (LOS)	Unsignalized Intersections	Signalized Intersections	
	Delay (sec)	Delay (sec)	v/c ratio*
A	0-10	0-10	<1.0
B	> 10-15	> 10-20	<1.0
C	> 15-25	> 20-35	<1.0
D	> 25-35	> 35-55	<1.0
E	> 35-50	> 55-80	<1.0
F	over 50	over 80	≥1.0

* If the volume to capacity ratio is 1.0 or greater, the LOS is an F

2.0 Existing Conditions

Adjacent Street Network

Pontoon Bridge Road

Pontoon Bridge Road is classified as an urban minor arterial with a speed limit of 55 MPH. The typical section of Pontoon Bridge Road within the study area consists of 10' lanes and 5' shoulders on each side. Automated Traffic Recorders (ATRs) were collected on Pontoon Bridge Road approximately 840 feet south of the

[1] Synchro Studio 11, Traffic Signal Optimization and Simulation Modeling Software, Version 10, Trafficware Corporation, Albany, California, 2020.
[2] Highway Capacity Manual, Transportation Research Board, National Research Council, Washington D.C., 2016.

Table 3: Intersection LOS Analysis Continued

NYS Route 131 at NYS Route 37 West							
Northbound	*Left*	A (8.3)	0.01	5	B (10.3)	0.01	3
	Thru						
Southbound	*Left/Thru/Right*	-	-	-	-	-	-
Westbound	*Left*	A (7.0)	0.00	2	A (7.0)	0.00	5
	Thru	A (4.9)	0.11	45	A (4.7)	0.15	77
	Right	-	-	-	-	-	-
	Intersection	A (2.7)	-	-	A (4.8)	-	-
NYS Route 131 at NYS Route 37 East							
Northbound	*Thru*	-	-	-	B (12.5)	0.00	5
	Right	A (0.0)	0.00	0	A (0.0)	0.01	0
Southbound	*Left/Thru/Right*	A (9.0)	0.00	0	A (9.7)	0.00	3
Eastbound	*Left*	A (7.0)	0.00	4	A (7.0)	0.00	3
	Thru	A (4.8)	0.13	53	A (4.6)	0.12	63
	Right	A (0.0)	0.00	0	A (0.0)	0.00	0
	Intersection	A (4.7)	-	-	A (4.6)	-	-
NYS Route 37 at Main Street							
Northbound	*Left*	D (40.4)	0.36	87	D (49.5)	0.47	103
	Thru/Right	D (36.0)	0.70	234	D (44.5)	0.79	309
Southbound	*Left*	D (40.6)	0.35	80	D (50.2)	0.53	127
	Thru/Right	C (29.8)	0.48	163	D (40.4)	0.72	293
Eastbound	*Left*	D (40.2)	0.18	45	D (48.0)	0.28	61
	Thru/Right	C (23.1)	0.28	94	C (25.8)	0.26	86
Westbound	*Left*	D (41.5)	0.36	75	D (47.5)	0.61	168
	Thru/Right	B (19.4)	0.70)	234	C (21.2)	0.23	105
	Intersection	C (30.6)	-	-	D (37.9)	-	-
NYS Route 37 at Andrews Street and NYS Route 56							
Northbound	*Left*	C (21.8)	0.13	47	C (23.0)	0.33	90
	Thru/Right	B (13.6)	0.15	56	B (16.6)	0.31	109
Southbound	*Left*	A (8.5)	0.09	23	A (8.9)	0.10	23
	Thru/Right	B (16.7)	0.34	98	C (20.2)	0.35	89
Eastbound	*Left/Thru*	B (18.2)	0.34	110	C (20.1)	0.35	98
	Right	A (4.5)	0.17	27	A (0.2)	0.07	0
Westbound	*Left/Thru/Right*	B (17.8)	0.39	125	B (19.8)	0.47	138
	Intersection	B (15.3)	-	-	B (18.3)	-	-

*lowercase letters signify the HCM 6th edition Stop Control methodology was used
a: level-of-service

b: delay is measured in seconds
c: volume to capacity ratio
d: 95th queue length, measured in feet

Based on the level of service analysis, the majority of intersections are operating at acceptable levels of service with available capacity. The intersection of NYS Route 37 at Main Street has multiple movements operating at a LOS D in the AM and PM peak periods, and an overall LOS D in the PM peak.

Detour on NYS Route 131

Additional analyses were completed to check for potential impacts the long term bridge closure and detour had on traffic volumes at the NYS Route 131 and NYS Route 37 intersections. The NYSDOT Traffic Data Viewer was used to look at historical traffic counts approaching the intersections of NYS Route 131 and CR 42, as well as NYS Route 131 and NYS Route 37 Eastbound and Westbound. The historical data was used to balance the intersections to account for movements that were missing. Volumes were added to the following intersection approaches and movements:

<u>NYS Route 131 at CR 42</u>

- Northbound Through
- Southbound Through
- Eastbound Right

<u>NYS Route 131 AT NYS Route 37 Westbound</u>

- Northbound Through
- Southbound Right
- Southbound Through
- Westbound Right

<u>NYS Route 131 AT NYS Route 37 Eastbound</u>

- Southbound Left
- Eastbound Left

A LOS analysis was completed at the three intersections impacted by the detour. The results are shown in Table 4. The increase in volumes had little impact to the intersections. All intersections have additional capacity to accommodate an increase in vehicles, and are operating at acceptable levels of service.

Table 4: Detour Impacted Intersections LOS Analysis

Approach		Weekday AM LOS[a] (Delay)[b]	Weekday AM V/C[c]	Weekday AM Queue[d]	Weekday PM LOS (Delay)	Weekday PM V/C	Weekday PM Queue
NYS Route 131 at County Route 42							
Eastbound	*Left/Thru/Right*	b (10.4)	0.18	0.7	b (12.6)	0.31	1.3
Westbound	*Left/Thru/Right*	b (11.2)	0.07	0.2	b (13.2)	0.13	0.4
	Intersection	n/a			n/a		
NYS Route 131 at NYS Route 37 West							
Northbound	*Left*	C (31.3)	0.01	m7	C (31.7)	0.01	9
Northbound	*Thru*	C (31.9)	0.27	86	C (30.3)	0.16	58
Southbound	*Thru*	C (20.7)	0.23	58	B (10.5)	0.26	71
Southbound	*Right*	A (0.4)	0.10	0	A (2.0)	0.22	11
Westbound	*Left*	B (17.0)	0.00	3	B (16.0)	0.00	6
Westbound	*Thru*	B (17.2)	0.29	63	B (15.8)	0.31	103
Westbound	*Right*	A (0.3)	0.10	0	A (0.2)	0.08	0
	Intersection	B (17.6)	-	-	B (14.1)	-	-
NYS Route 131 at NYS Route 37 East							
Northbound	*Thru*	B (18.0)	0.00	3	B (19.5)	0.00	5
Northbound	*Right*	A (0.0)	0.01	0	A (0.0)	0.01	0
Southbound	*Left/Thru/Right*	A (5.2)	0.14	5	A (5.0)	0.15	6
Eastbound	*Left*	B (18.3)	0.24	63	B (16.1)	0.09	43
Eastbound	*Thru*	B (17.6)	0.36	74	B (15.4)	0.25	84
Eastbound	*Right*	A (0.0)	0.01	0	A (0.0)	0.01	0
	Intersection	B (15.2)	-	-	B (12.7)	-	-

Collision Analysis

A collision analysis was completed for the study area intersections, which includes four signalized intersections and two sign-controlled intersections. There was a total of 58 collisions over a five-year period, from June 2017 through May 2022. The most common type of collision was rear end, with a total of 30 out of 58 collisions. The next most common collision types were overtaking and right-angle collisions. Detailed accident analyses are provided in Appendix B. Table 5 is a summary of the predominant collision types at each intersection.

Three out of the four signalized intersections had collision rates above the 2019 reported statewide average for similar facilities. One intersection in particular has a significantly high number of collisions, Main Street at NYS Route 131. Two intersections (one signalized and one sign-controlled) boasted zero collisions over the past five years. All intersections that had an above statewide average collision rate are further investigated for the cause and potential mitigation measures to improve safety following Table 5.

Table 5: Collision Analysis

Type of Collision	Number	Percentage
NYS Route 131 at Pontoon Bridge Rd		
Collision Rate: 0.57 acc/mev > Statewide Average: 0.19 acc/mev		
Right Angle	1	100%
NYS Route 37 Eastbound at NYS Route 131 & Mall Rd		
Collision Rate: 1.19 acc/mev > Statewide Average: 0.26 acc/mev		
Rear End	4	36%
Overtaking	1	9%
Right Angle	5	46%
Other	1	9%
NYS Route 37 at Main St		
Collision Rate: 1.44 acc/mev > Statewide Average: 0.26 acc/mev		
Rear End	22	58%
Overtaking	4	10%
Right Angle	7	18%
Left Turn	2	5%
NYS Route 37 at NYS Route 56 and Andrews St		
Collision Rate: 0.41 acc/mev > Statewide Average: 0.26 acc/mev		
Rear End	4	50%
Overtaking	1	13%
Right Angle	1	13%
Left Turn	2	25%

NYS Route 131 at NYS Route 37 Eastbound and Mall Road

Due to the bridge closure just north of this intersection, traffic counts are uncharacteristically low at this intersection. Therefore, the collision rate is inflated due to the low traffic volumes. Specific historical traffic data on the NYSDOT Traffic Data Viewer for northbound and southbound approaches at this intersection was not available. The most predominant collision style at this intersection was right angle. Causes listed in the collision reports include unsafe speed, and disregarding a traffic control device. The approach speed limit for NYS Route 37 Eastbound is 45 MPH, and is 30 MPH for the southbound approach. The existing signal clearance times are adequate with a length of 5 seconds of yellow and 2 seconds of all red. It is recommended an intersection ahead sign be installed on NYS Route 37, since one does not exist today. Speed data should also be collected since unsafe speeds is a known cause also.

NYS Route 37 and Main Street

This intersection was examined more closely due to the collision rate being significantly higher than the statewide average. There is a pattern of rear ends at the intersection, of the 22 rear end collisions, 10 of those happened in wet/snowy conditions. Typical countermeasures for slippery surfaces include pavement overlays, grooved pavement, and adequate drainage. Another countermeasure for slippery surfaces is to reduce the speed limit on approaches. The northbound and southbound approaches have a speed limit of 30 MPH, and the eastbound and westbound approaches have a speed limit of 35 MPH, both which seem appropriate and this countermeasure is not recommended. There is no apparent cause for the higher than average collisions, besides many are experience during wet and snowy conditions.

NYS Route 37 at NYS Route 56 and Andrews Street

This intersection is slightly above the statewide average. The majority of collisions are rear ends. A typical cause for rear ends at a signalized intersection can be inappropriate clearance times. The intersection clearance times are appropriate, since this is location is only slightly above the statewide average, it isn't recommended for further mitigation measures. There is only a minor amount of traffic that this facility would generate that may go through this intersection.

Based on the review of collision patterns at intersections, the following are suggested:

- *NYS Route 131 at NYS Route 37 Eastbound and Mall Road*: Install an intersection ahead sign on the NYS Route 37 eastbound approach
- *NYS Route 37 at Main Street:* Revise signal timings to obtain better levels of service.

3.0 No Build Condition

Historical traffic data was reviewed at three different roadway segments within the study area. In general, the study area from 2013 to 2019 had an overall decline in traffic volumes. Therefore, no background growth rate is proposed to analyze the future no build condition.

4.0 Build Condition

Site Information

A new hydrogen electrolysis plant is proposed to be constructed on a green-field site located on a 90 acre lot with access to and from Pontoon Bridge Road. The site is bound by Pontoon Bridge Road, NYS Route 131, and the existing Alcoa plant. Appendix A Figure 2 contains a site plan. The anticipated construction completion year is 2026.

Site Operations

The site is only anticipated to have employees and trucks. Trucks would be classified as a WB-62 or larger. Estimated site traffic was provided by the site owner, Table 5 shows the approximate number of vehicles generated by phase, and at full build out. At full build out, the anticipated weekday (Monday through Thursday) daily total of traffic will be 170 vehicles. On Fridays and the weekend, the daily total of vehicles will be less than a typical weekday.

Table 5: Site Trip Generation Estimates (Round Trips)

Vehicles in 24 Hours	Monday – Thursday	Friday	Weekend
Phase 1			
Cars	95	80	24
Trucks	25	25	6
Total in 24 hours	120	105	30
Phase 2			
Cars	32	33	8
Trucks	18	17	4
Total in 24 hours	50	50	12
Full Build Out			
Cars	127	113	32
Trucks	43	42	10
Total in 24 hours	170	155	42

Trip Generation

Traffic will be generated by the control room and the terminal building. The control room will generate traffic from employees which will be mostly comprised of shift work concentrated on an AM shift and a PM shift. Shift change times are anticipated between 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM. The remainder of the control room will be some staff that may come and go throughout the day outside of shift changes. The terminal building will generate traffic from staff and trucks. The traffic will be split approximately 50% between staff vehicles and trucks. The staff traffic will be during the two peaks which coincide with the control room, and trucks will be spread throughout the day. Since truck traffic will be mostly throughout the day, assume 40% of trips for trucks will occur during peak hours.

Table 6: Trip Generation During Peaks for Weekday Operations

Peak	Control Room			Terminal						Site Totals
	Passenger Vehicles			Passenger Vehicles			Trucks			
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	
AM	42	42	84	21	21	42	9	9	18	144
PM	42	42	84	21	21	42	9	9	18	144
Daily Total Trips During Peak Hours										288

Based on Table 6 above, a peak hour will consist of 144 total trips, 18 of those being trucks.

Trip Distribution

Assume that facility employees taking a passenger vehicle will follow existing travel patterns. Trucks will be using NYS Route 131 east of Pontoon Bridge Road. Refer to Figure 4 in Appendix A for travel patterns to and from the facility. Note that traffic patterns during the AM and PM peaks on the adjacent streets near the site are similar. There are low traffic volumes, and the split between northbound and southbound on Pontoon Bridge Road is approximately 45% and 55%. For ease of calculations, these were rounded to 50% split between northbound and southbound traffic.

Full Build Capacity Analysis

Based on the trip distribution, it is expected Tables 7 and 8 summarize the results of the intersection/site driveway LOS analysis for the build condition. The proposed driveways are anticipated to operate at a LOS A. The site volumes have a minimal/negligible impact to the study area intersections.

Table 7: Intersection LOS Analysis AM Peak

Approach		Existing			Proposed		
		LOS[a] (Delay)[b]	V/C[c]	Queue[d]	LOS (Delay)	V/C	Queue
Site Driveway 1 (Northern) at Pontoon Bridge Road							
Westbound	*Left/Right*	-	-	-	a (9.2)	0.05	0
	Intersection	-			n/a		
Site Driveway 2 (Southern) at Pontoon Bridge Road							
Westbound	*Left/Right*	-	-	-	a (9.0)	0.04	0
	Intersection	-			n/a		
NYS Route 131 at Pontoon Bridge Road							
Northbound	*Left/Thru/Right*	a (8.8)	0.02	0	a (9.5)	0.09	0
Southbound	*Left/Thru/Right*	a (9.9)	0.00	0	b (10.5)	0.00	0
	Intersection	n/a			n/a		

Table 7: Intersection LOS Analysis AM Peak Continued

NYS Route 131 at County Route 42							
Eastbound	*Left/Thru/Right*	a (9.5)	0.06	0	b (10.7)	0.19	0
Westbound	*Left/Thru/Right*	a (9.4)	0.05	0	b (11.6)	0.07	0
	Intersection	n/a			n/a		
NYS Route 131 at NYS Route 37 West							
Northbound	*Left*	C (31.3)	0.01	m7	C (31.0)	0.01	m7
	Thru	C (31.9)	0.27	86	C (32.6)	0.29	94
Southbound	*Thru*	C (20.7)	0.23	58	C (21.0)	0.26	64
	Right	A (0.4)	0.10	0	A (0.12)	0.23	64
Westbound	*Left*	B (17.0)	0.00	3	B (17.0)	0.00	3
	Thru	B (17.2)	0.29	63	B (17.2)	0.21	64
	Right	A (0.3)	0.10	0	A (0.3)	0.10	0
	Intersection	A (2.7)	B (17.6)	-	B (17.4)	-	-
NYS Route 131 at NYS Route 37 East							
Northbound	*Thru*	B (18.0)	0.00	3	B (18.0)	0.00	3
	Right	A (0.0)	0.01	0	A (0.0)	0.15	0
Southbound	*Left/Thru/Right*	A (5.2)	0.14	5	A (5.2)	0.15	5
Eastbound	*Left*	B (18.3)	0.24	63	B (18.5)	0.19	71
	Thru	B (17.6)	0.36	74	B (17.3)	0.26	76
	Right	A (0.0)	0.01	0	A (0.0)	0.00	0
	Intersection	A (4.7)	B (15.2)	-	B (15.0)	-	-
NYS Route 37 at Main Street							
Northbound	*Left*	D (40.4)	0.36	87	D (40.8)	0.37	87
	Thru/Right	D (36.0)	0.70	234	D (36.6)	0.72	241
Southbound	*Left*	D (40.6)	0.35	80	D (41.0)	0.35	80
	Thru/Right	C (29.8)	0.48	163	C (29.9)	0.48	164
Eastbound	*Left*	D (40.2)	0.18	45	D (40.6)	0.18	46
	Thru/Right	C (23.1)	0.28	94	C (23.6)	0.29	97
Westbound	*Left*	D (41.5)	0.36	75	D (42.0)	0.39	80
	Thru/Right	B (19.4)	0.70)	234	B (19.5)	0.15	67
	Intersection	C (30.6)	-	-	C (31.0)	-	-

Table 7: Intersection LOS Analysis AM Peak Continued

NYS Route 37 at Andrews Street and NYS Route 56							
Northbound	*Left*	C (21.8)	0.13	47	C (22.0)	0.13	48
	Thru/Right	B (13.6)	0.15	56	B (13.7)	0.15	59
Southbound	*Left*	A (8.5)	0.09	23	A (8.4)	0.09	23
	Thru/Right	B (16.7)	0.34	98	B (16.9)	0.34	102
Eastbound	*Left/Thru*	B (18.2)	0.34	110	B (18.3)	0.34	111
	Right	A (4.5)	0.17	27	A (4.5)	0.17	28
Westbound	*Left/Thru/Right*	B (17.8)	0.39	125	B (17.9)	0.39	126
	Intersection	B (15.3)	-	-	B (15.4)	-	-

Table 8: Intersection LOS Analysis PM Peak

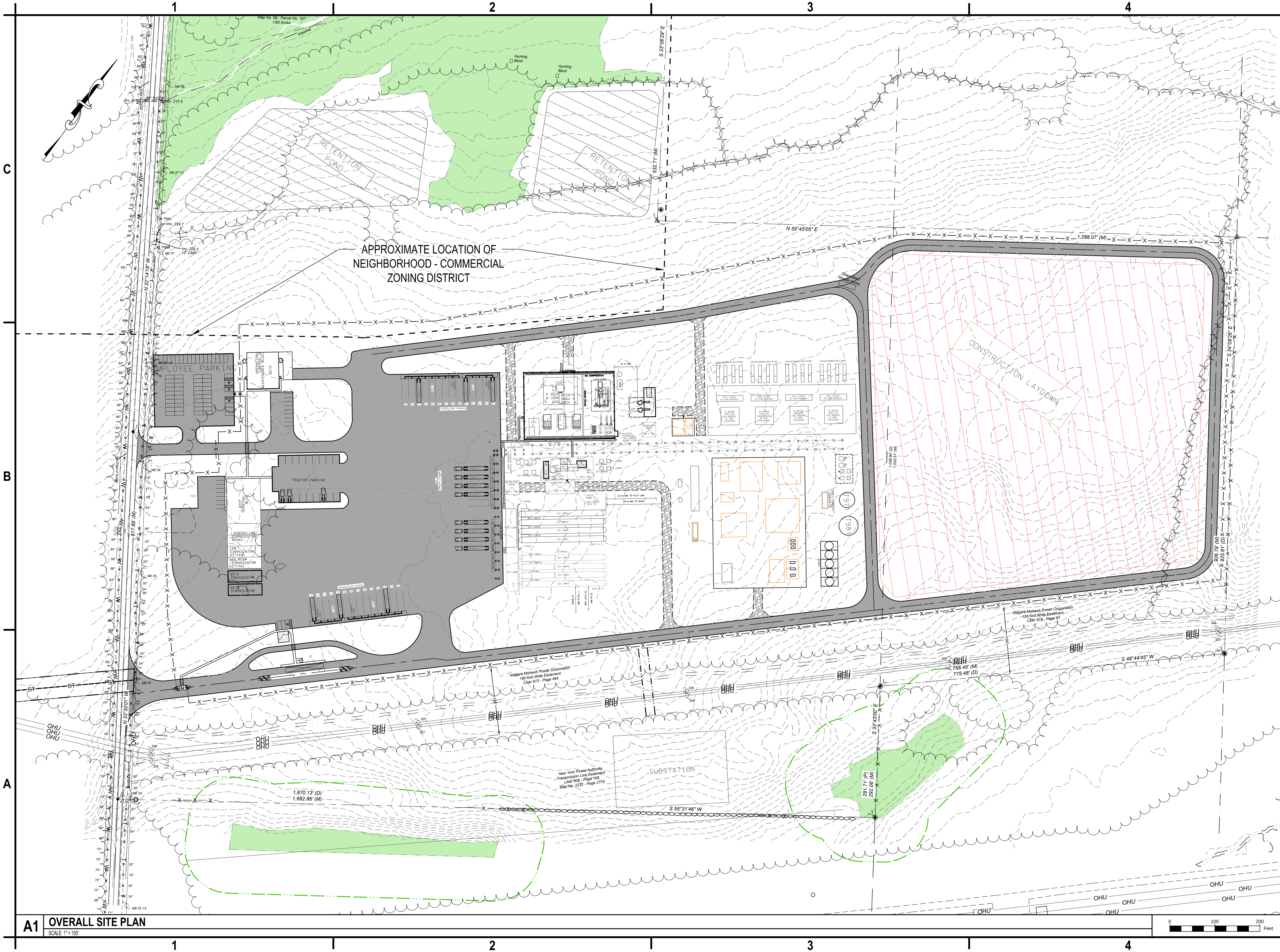
Approach		Existing			Proposed		
		LOS[a] (Delay)[b]	V/C[c]	Queue[d]	LOS (Delay)	V/C	Queue
Site Driveway 1 (Northern) at Pontoon Bridge Road							
Westbound	*Left/Right*	-	-	-	a (9.2)	0.05	0
	Intersection	-			n/a		
Site Driveway 2 (Southern) at Pontoon Bridge Road							
Westbound	*Left/Right*	-	-	-	a (8.9)	0.03	0
	Intersection	-			n/a		
NYS Route 131 at Pontoon Bridge Road							
Northbound	*Left/Thru/Right*	a (9.5)	0.03	0	a (9.9)	0.10	0
Southbound	*Left/Thru/Right*	b (10.0)	0.00	0	b (10.6)	0.01	0
	Intersection	n/a			n/a		
NYS Route 131 at County Route 42							
Eastbound	*Left/Thru/Right*	b (12.6)	0.31	1.3	b (13.1)	0.33	1.4
Westbound	*Left/Thru/Right*	b (13.2)	0.13	0.4	b (13.9)	0.14	0.5
	Intersection	n/a			n/a		
NYS Route 131 at NYS Route 37 West							
Northbound	*Left*	C (31.7)	0.01	9	C (31.3)	0.01	m9
	Thru	C (30.3)	0.16	58	C (30.4)	0.18	65
Southbound	*Thru*	B (10.5)	0.26	71	B (19.4)	0.28	78
	Right	A (2.0)	0.22	11	A (2.5)	0.24	16
Westbound	*Left*	B (16.0)	0.00	6	B (16.3)	0.00	6
	Thru	B (15.8)	0.31	103	B (15.9)	0.31	104
	Right	A (0.2)	0.08	0	A (0.2)	0.10	0
	Intersection	B (14.1)	-	-	B (14.3)	-	-

Table 8: Intersection LOS Analysis PM Peak Continued

NYS Route 131 at NYS Route 37 East							
Northbound	*Thru*	B (19.5)	0.00	5	B (19.0)	0.00	5
	Right	A (0.0)	0.01	0	A (0.0)	0.01	0
Southbound	*Left/Thru/Right*	A (5.0)	0.15	6	A (4.3)	0.00	0
Eastbound	*Left*	B (16.1)	0.09	43	B (16.3)	0.10	49
	Thru	B (15.4)	0.25	84	B (15.5)	0.25	85
	Right	A (0.0)	0.01	0	A (0.0)	0.01	0
	Intersection	B (12.7)	-	-	B (15.2)	-	-
NYS Route 37 at Main Street							
Northbound	*Left*	D (49.5)	0.47	103	D (49.7)	0.47	103
	Thru/Right	D (44.5)	0.79	309	D (44.8)	0.79	315
Southbound	*Left*	D (50.2)	0.53	127	D (50.3)	0.53	127
	Thru/Right	D (40.4)	0.72	293	D (40.0)	0.72	293
Eastbound	*Left*	D (48.0)	0.28	61	D (48.2)	0.28	61
	Thru/Right	C (25.8)	0.26	86	C (26.5)	0.27	88
Westbound	*Left*	D (47.5)	0.61	168	D (47.8)	0.62	174
	Thru/Right	C (21.2)	0.23	105	C (21.5)	0.24	108
	Intersection	D (37.9)	-	-	D (38.1)	-	-
NYS Route 37 at Andrews Street and NYS Route 56							
Northbound	*Left*	C (23.0)	0.33	90	C (23.0)	0.33	90
	Thru/Right	B (16.6)	0.31	109	B (16.6)	0.32	111
Southbound	*Left*	A (8.9)	0.10	23	A (8.9)	0.10	23
	Thru/Right	C (20.2)	0.35	89	C (20.2)	0.35	89
Eastbound	*Left/Thru*	C (20.1)	0.35	98	C (20.2)	0.36	100
	Right	A (0.2)	0.07	0	A (0.2)	0.07	0
Westbound	*Left/Thru/Right*	B (19.8)	0.47	138	B (19.8)	0.47	138
	Intersection	B (18.3)	-	-	B (18.3)	-	-

Appendix A

Figures



C&S COMPANIES®

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212
Phone: 315-455-2000
Fax: 315-455-9667
www.cscos.com

PRELIMINARY
NOT FOR CONSTRUCTION

AIR PRODUCTS

AIR PRODUCTS & CHEMICALS, INC.
MASSENA GREEN H2 PLANT
MASSENA, NEW YORK

MARK	DATE	DESCRIPTION

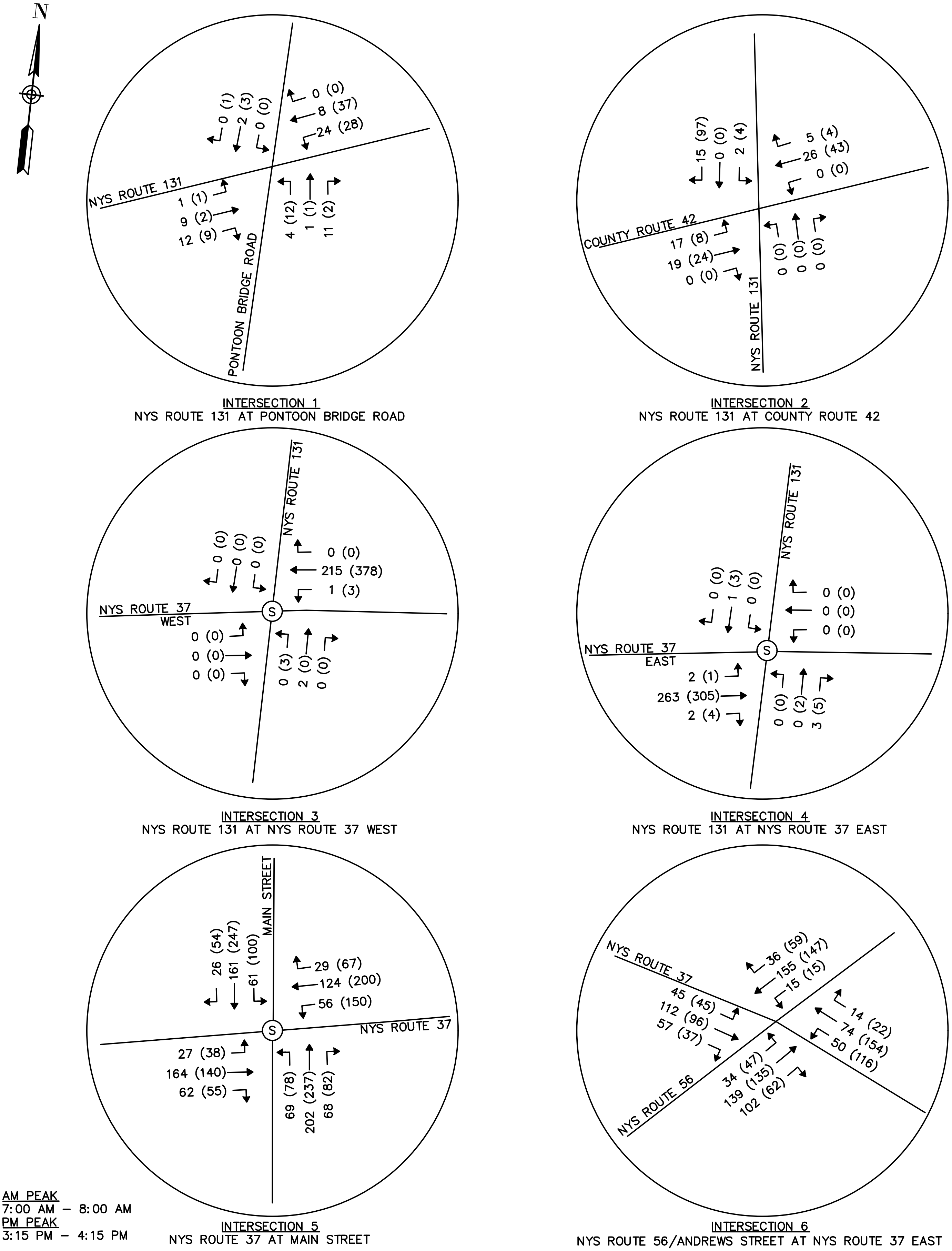
REVISIONS

PROJECT NO:	Z73.001.001
DATE:	NOVEMBER 2022
DRAWN BY:	B. BUCKINGHAM
DESIGNED BY:	
CHECKED BY:	

NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK EDUCATION LAW

OVERALL SITE PLAN

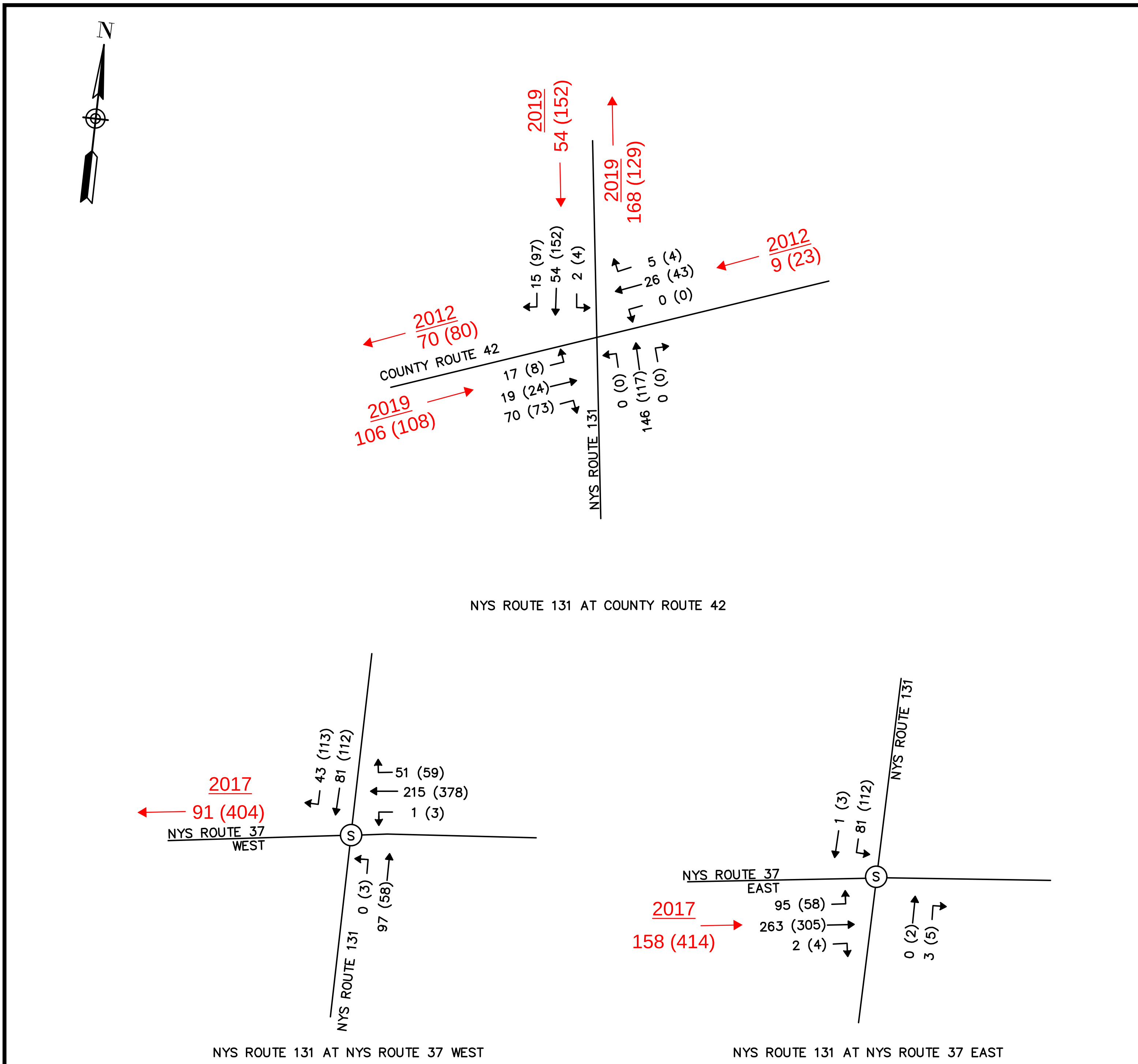
Figure 2



C&S COMPANIES®

Turning Movement Diagram Existing (2022)

Figure 3



KEY

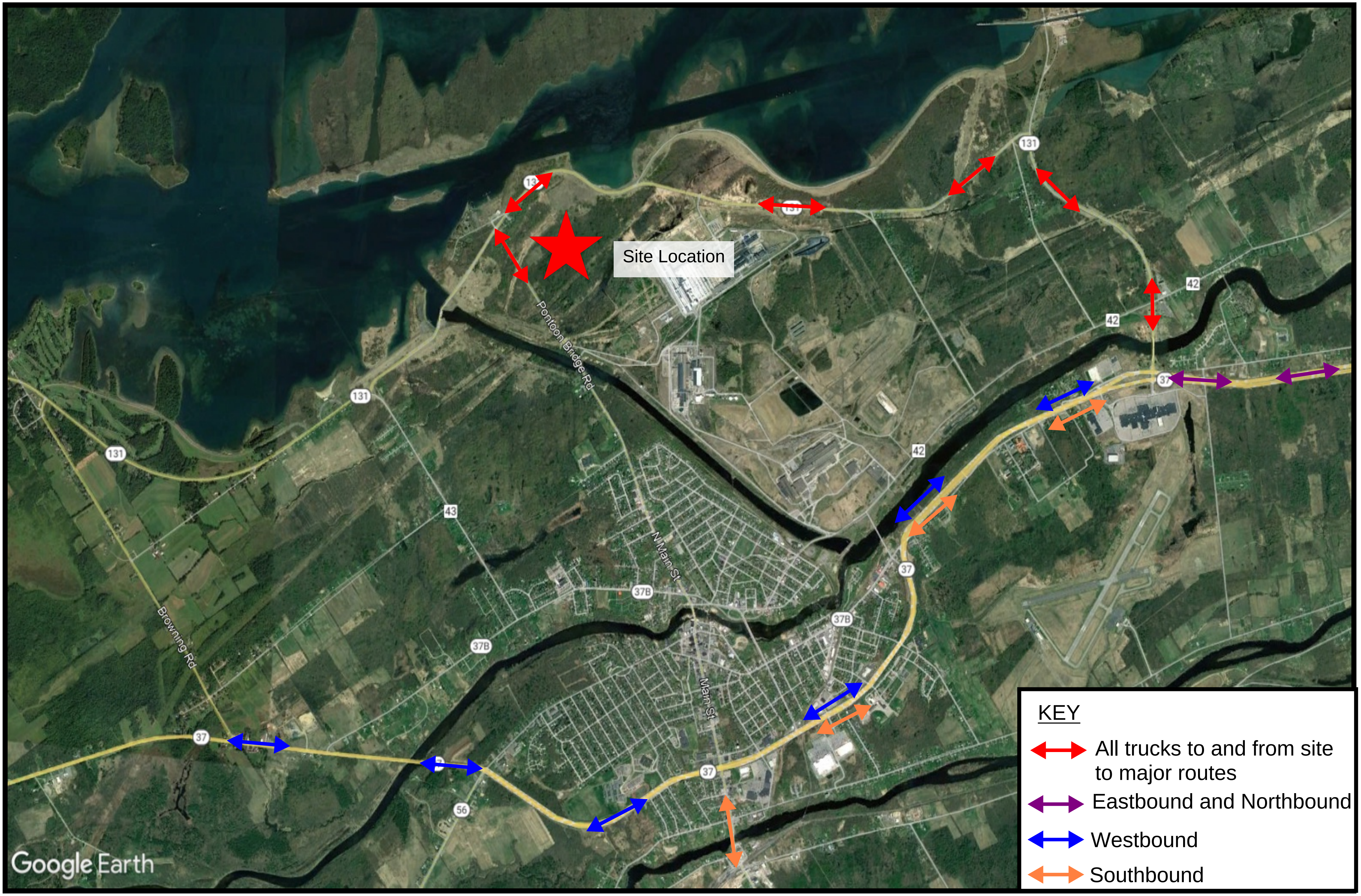
XXXX Count Year

AM (PM) NYSDOT Traffic Data Peak Hour Volumes AM (PM)

C&S COMPANIES®

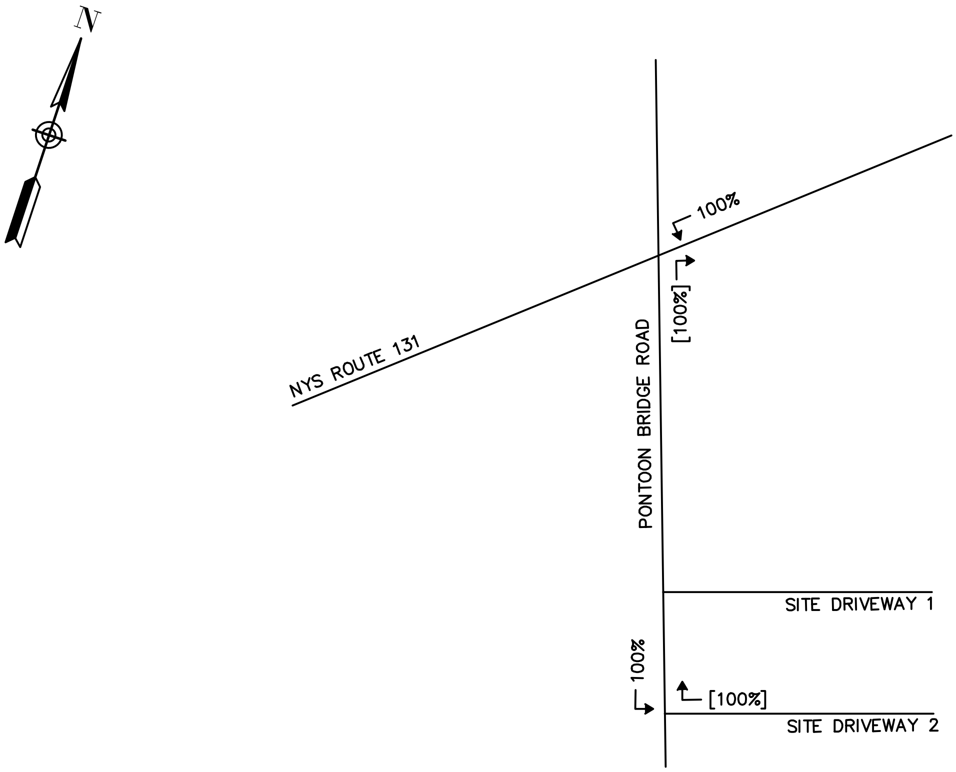
Turning Movement Diagram
Balancing Volumes From Detour

Figure 4

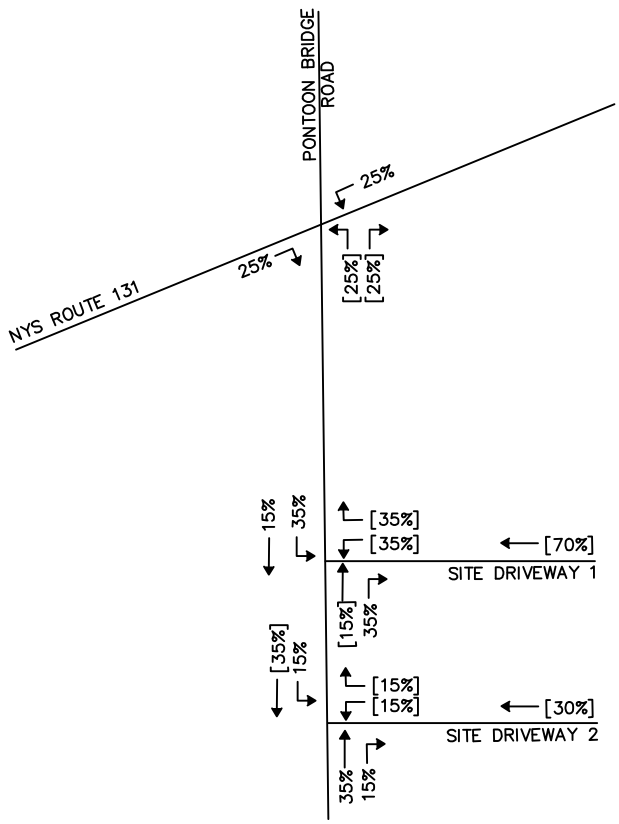


Proposed Truck Travel Route

Figure 5



SITE GENERATED TRUCKS

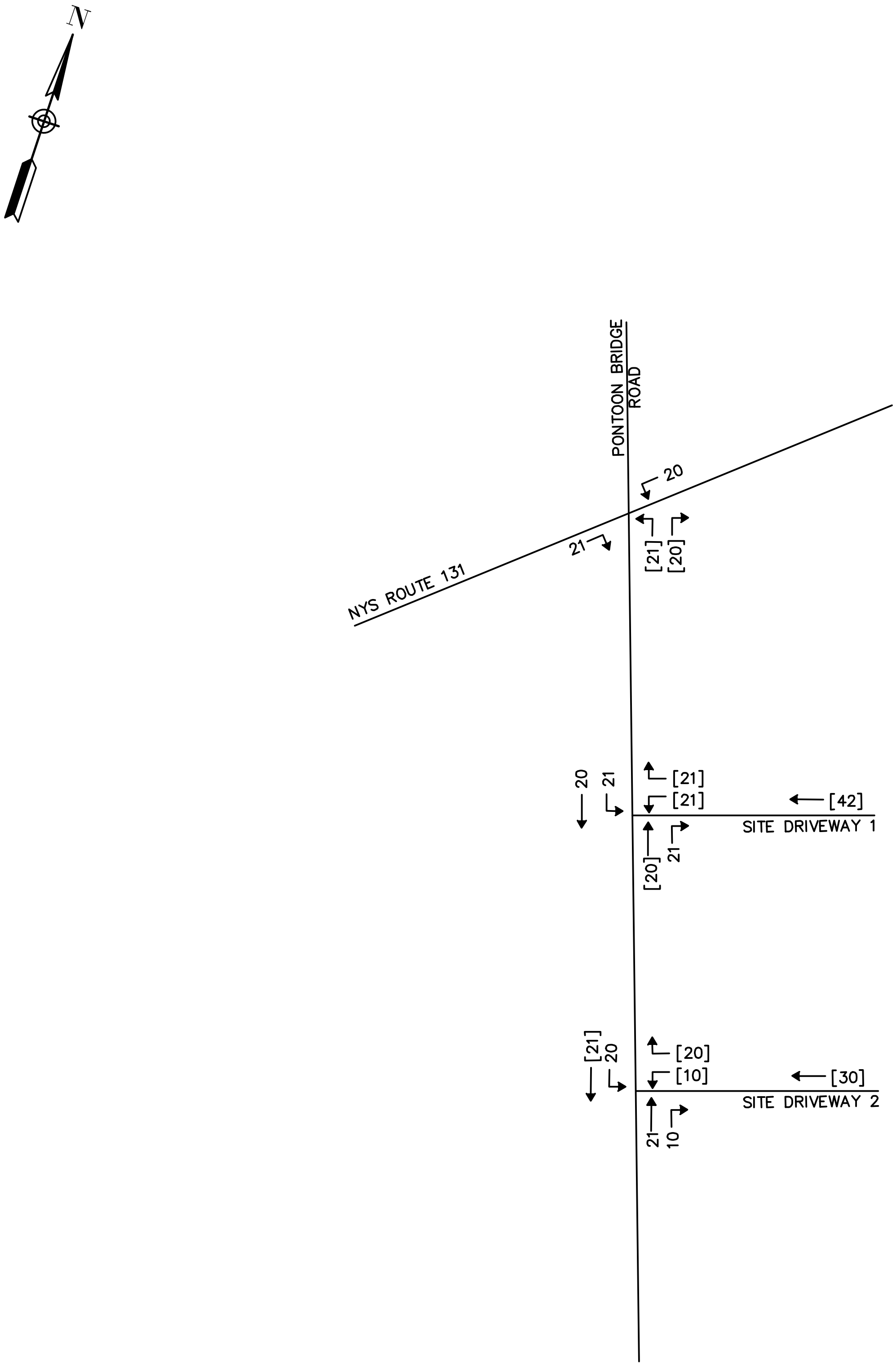


SITE GENERATED PERSONAL VEHICLES

C&S COMPANIES®

Trip Distribution

Figure 6

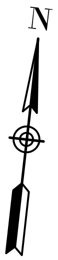


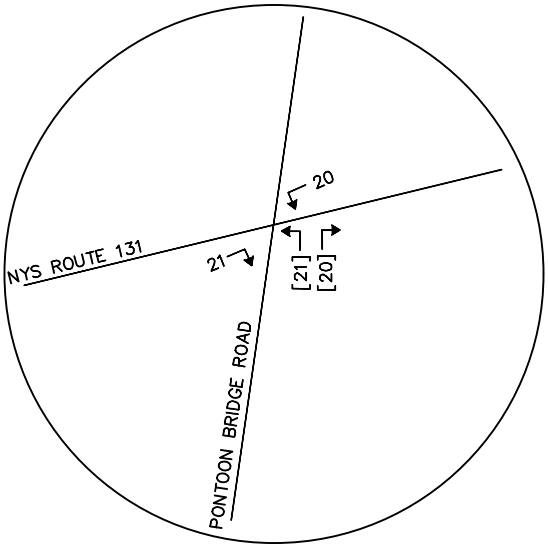
NOTE: TRIPS ARE THE SAME FOR THE AM AND PM PEAK HOURS

C&S COMPANIES®

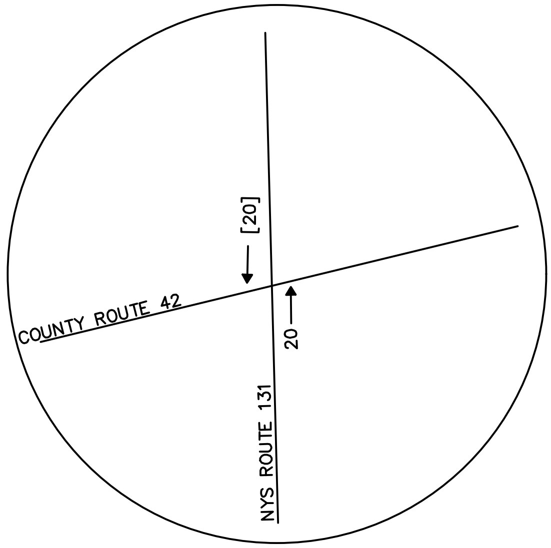
Trip Generation

Figure 7

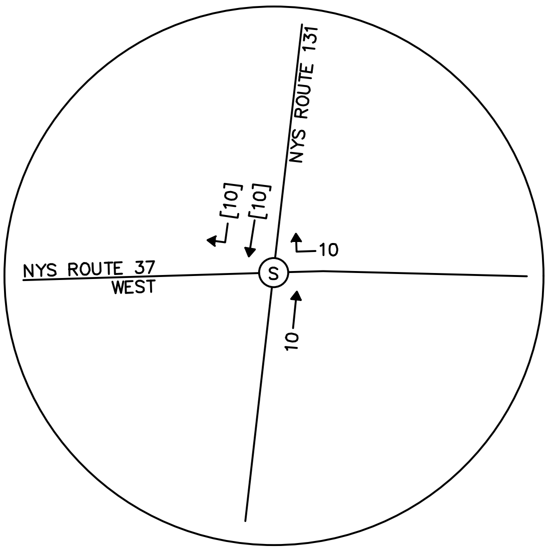




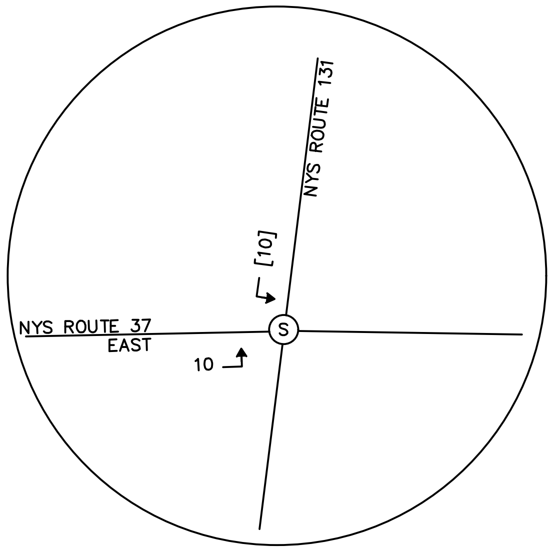
INTERSECTION 1
NYS ROUTE 131 AT PONTOON BRIDGE ROAD



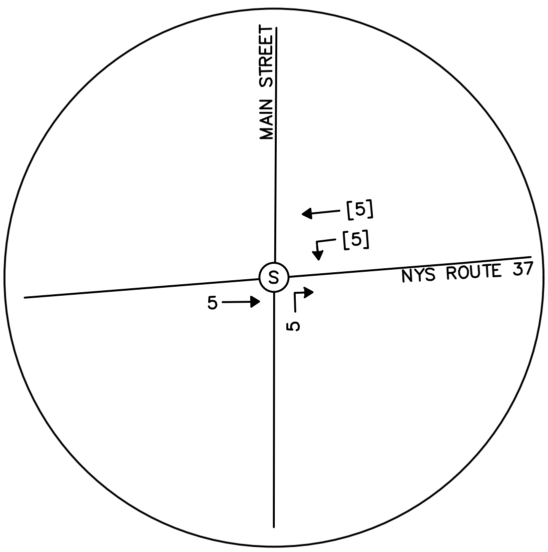
INTERSECTION 2
NYS ROUTE 131 AT COUNTY ROUTE 42



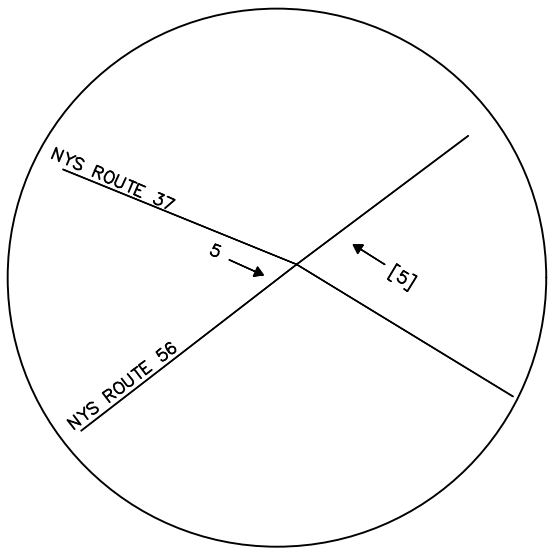
INTERSECTION 3
NYS ROUTE 131 AT NYS ROUTE 37 WEST



INTERSECTION 4
NYS ROUTE 131 AT NYS ROUTE 37 EAST



INTERSECTION 5
NYS ROUTE 37 AT MAIN STREET

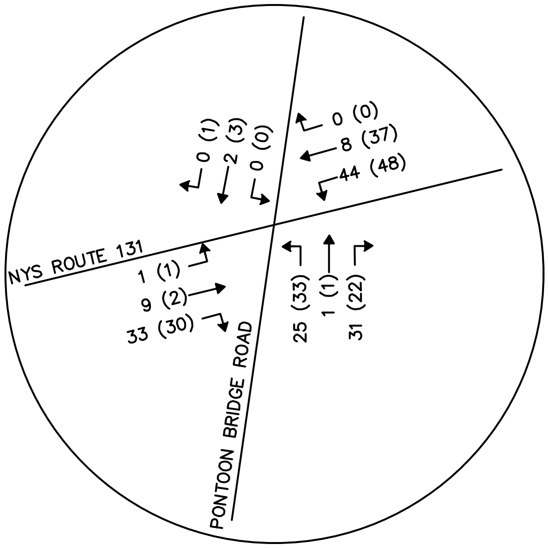


INTERSECTION 6
NYS ROUTE 56/ANDREWS STREET AT NYS ROUTE 37 EAST

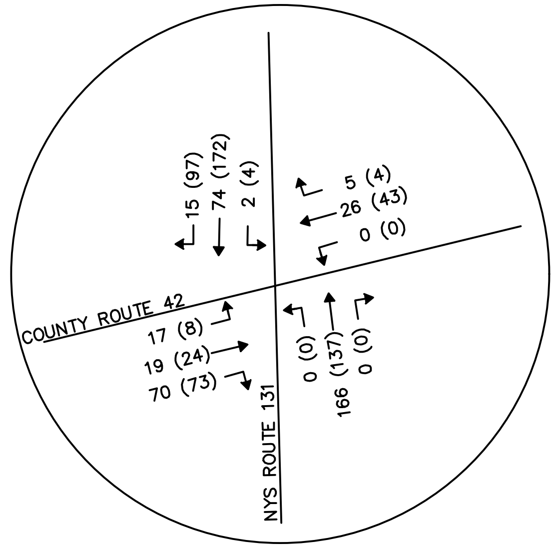
C&S COMPANIES®

Trip Generation
Entire Study Area

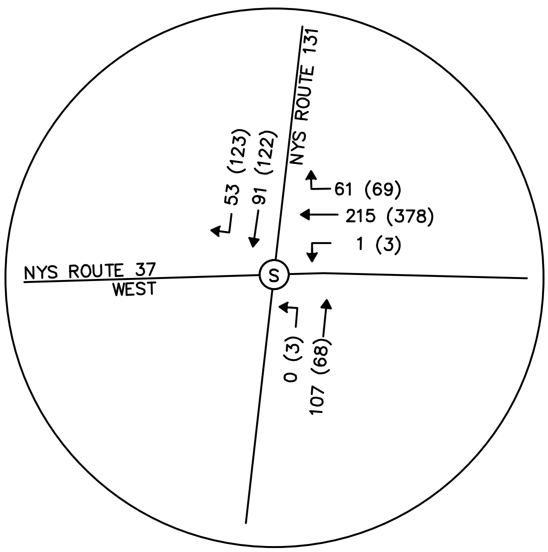
Figure 8



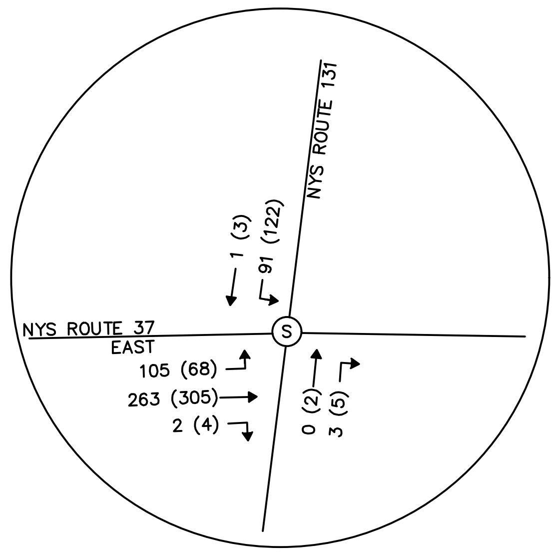
INTERSECTION 1
NYS ROUTE 131 AT PONTOON BRIDGE ROAD



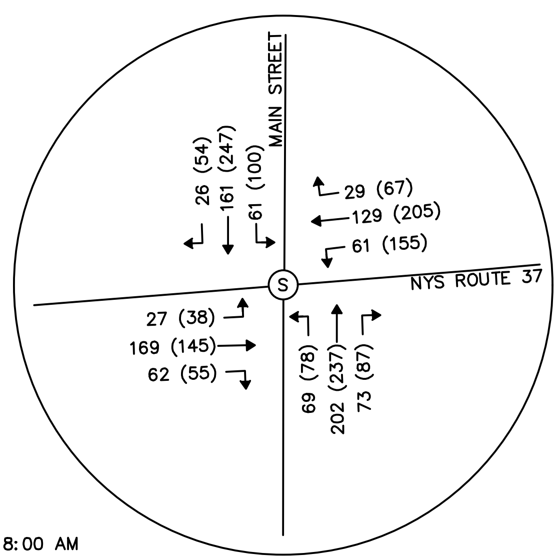
INTERSECTION 2
NYS ROUTE 131 AT COUNTY ROUTE 42



INTERSECTION 3
NYS ROUTE 131 AT NYS ROUTE 37 WEST

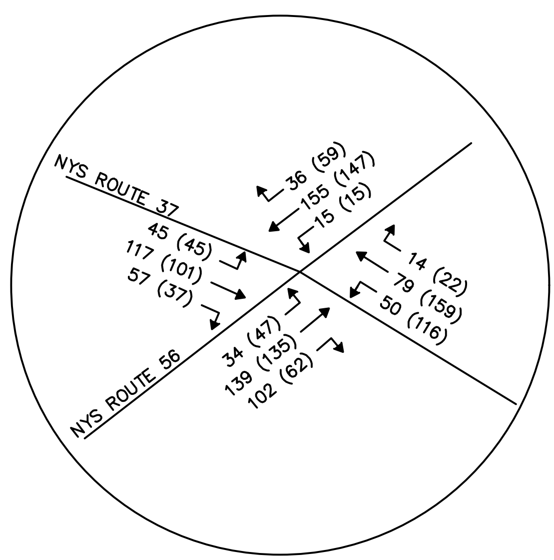


INTERSECTION 4
NYS ROUTE 131 AT NYS ROUTE 37 EAST



AM PEAK
7:00 AM – 8:00 AM
PM PEAK
3:15 PM – 4:15 PM

INTERSECTION 5
NYS ROUTE 37 AT MAIN STREET



INTERSECTION 6
NYS ROUTE 56/ANDREWS STREET AT NYS ROUTE 37 EAST

C&S COMPANIES®

Turning Movement Diagram Proposed (2026)

Figure 9

Appendix B

Traffic Data

Intersection	
Int Delay, s/veh	4.8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	4	1	11	0	2	0	1	9	12	24	8	0
Future Vol, veh/h	4	1	11	0	2	0	1	9	12	24	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	7	20	6	0	17	0	100	18	0	0	20	0
Mvmt Flow	5	1	15	0	3	0	1	12	16	32	11	0

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	99	97	20	105	105	11	11	0	0	28	0	0
Stage 1	22	22	-	75	75	-	-	-	-	-	-	-
Stage 2	77	75	-	30	30	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.7	6.26	7.1	6.67	6.2	5.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.17	5.7	-	6.1	5.67	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.7	-	6.1	5.67	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.18	3.354	3.5	4.153	3.3	3.1	-	-	2.2	-	-
Pot Cap-1 Maneuver	871	760	1046	880	758	1076	1149	-	-	1599	-	-
Stage 1	984	842	-	939	804	-	-	-	-	-	-	-
Stage 2	920	799	-	992	841	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	854	744	1046	853	742	1076	1149	-	-	1599	-	-
Mov Cap-2 Maneuver	854	744	-	853	742	-	-	-	-	-	-	-
Stage 1	983	841	-	938	788	-	-	-	-	-	-	-
Stage 2	899	783	-	976	840	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	8.8	9.9	0.4	5.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1149	-	-	967	742	1599	-	-
HCM Lane V/C Ratio	0.001	-	-	0.022	0.004	0.02	-	-
HCM Control Delay (s)	8.1	0	-	8.8	9.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.1	-	-

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	19	0	0	26	5	1	1	1	2	0	15
Future Vol, veh/h	17	19	0	0	26	5	1	1	1	2	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	92	92
Heavy Vehicles, %	19	25	0	0	19	0	0	0	0	0	0	8
Mvmt Flow	23	26	0	0	36	7	1	1	1	3	0	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	39	18	8	31	26	2	16	0	0	2	0	0
Stage 1	14	14	-	4	4	-	-	-	-	-	-	-
Stage 2	25	4	-	27	22	-	-	-	-	-	-	-
Critical Hdwy	7.29	6.75	6.2	7.1	6.69	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Follow-up Hdwy	3.671	4.225	3.3	3.5	4.171	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	924	833	1080	982	835	1088	1615	-	-	1634	-	-
Stage 1	964	840	-	1024	860	-	-	-	-	-	-	-
Stage 2	951	849	-	996	844	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	886	831	1080	956	832	1088	1615	-	-	1634	-	-
Mov Cap-2 Maneuver	886	831	-	956	832	-	-	-	-	-	-	-
Stage 1	963	838	-	1023	859	-	-	-	-	-	-	-
Stage 2	905	848	-	963	842	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	9.4	2.4	1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1615	-	-	856	865	1634	-	-
HCM Lane V/C Ratio	0.001	-	-	0.058	0.049	0.002	-	-
HCM Control Delay (s)	7.2	0	-	9.5	9.4	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	215	0	3	0	0	0	0	0
Future Volume (vph)	0	0	0	1	215	0	3	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	275		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1805	3195	1900	1805	1900	0	0	1900	1900
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1805	3195	1900	1805	1900	0	0	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		453			483			228			523	
Travel Time (s)		10.3			11.0			5.2			11.9	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	1	259	0	4	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2			2	1
Detector Template				Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (ft)				20	100	20	20	100			100	20
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				20	6	20	20	6			6	20
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Split					Prot
Protected Phases					1		4	4			3	3
Permitted Phases				1		1						
Detector Phase				1	1	1	4	4			3	3
Switch Phase												
Minimum Initial (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				12.0	12.0	12.0	12.0	12.0			12.0	12.0
Total Split (s)				20.0	20.0	20.0	20.0	20.0			20.0	20.0
Total Split (%)				33.3%	33.3%	33.3%	33.3%	33.3%			33.3%	33.3%
Maximum Green (s)				13.0	13.0	13.0	13.0	13.0			13.0	13.0
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Lead/Lag							Lag	Lag			Lead	Lead
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	None	None			None	None
Act Effct Green (s)				15.4	15.4		6.9					
Actuated g/C Ratio				0.75	0.75		0.33					
v/c Ratio				0.00	0.11		0.01					
Control Delay				7.0	4.9		15.3					
Queue Delay				0.0	0.0		0.0					
Total Delay				7.0	4.9		15.3					
LOS				A	A		B					
Approach Delay					4.9			15.3				
Approach LOS					A			B				
Queue Length 50th (ft)				0	0		0					
Queue Length 95th (ft)				2	45		8					
Internal Link Dist (ft)		373			403			148			443	
Turn Bay Length (ft)				275								
Base Capacity (vph)				1420	2513		1420					
Starvation Cap Reductn				0	0		0					
Spillback Cap Reductn				0	0		0					
Storage Cap Reductn				0	0		0					
Reduced v/c Ratio				0.00	0.10		0.00					

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 20.6	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.13	
Intersection Signal Delay: 5.0	Intersection LOS: A
Intersection Capacity Utilization 31.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 13: NYS Route 131 & NYS Route 37 West

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	263	2	0	0	0	0	0	3	0	1	0
Future Volume (vph)	2	263	2	0	0	0	0	0	3	0	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1805	3312	1615	0	0	0	0	1900	1615	0	3610	0
Flt Permitted	0.950											
Satd. Flow (perm)	1805	3312	1615	0	0	0	0	1900	1615	0	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200						617			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		479			493			324			228	
Travel Time (s)		10.9			11.2			7.4			5.2	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	333	3	0	0	0	0	0	4	0	1	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	20	6	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Prot						Prot		NA	
Protected Phases	1	1	1					4	4	3	3	
Permitted Phases												
Detector Phase	1	1	1					4	4	3	3	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Total Split (s)	20.0	20.0	20.0					20.0	20.0	20.0	20.0	
Total Split (%)	33.3%	33.3%	33.3%					33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	13.0	13.0	13.0					13.0	13.0	13.0	13.0	
Yellow Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0		0.0	
Total Lost Time (s)	7.0	7.0	7.0					7.0	7.0		7.0	
Lead/Lag								Lag	Lag	Lead	Lead	
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					None	None	None	None	
Act Effct Green (s)	15.4	15.4	15.4						6.9		6.9	
Actuated g/C Ratio	0.75	0.75	0.75						0.33		0.33	
v/c Ratio	0.00	0.13	0.00						0.00		0.00	
Control Delay	7.0	4.8	0.0						0.0		9.0	
Queue Delay	0.0	0.0	0.0						0.0		0.0	
Total Delay	7.0	4.8	0.0						0.0		9.0	
LOS	A	A	A						A		A	
Approach Delay		4.8									9.0	
Approach LOS		A									A	
Queue Length 50th (ft)	0	0	0						0		0	
Queue Length 95th (ft)	4	53	0						0		2	
Internal Link Dist (ft)		399			413			244			148	
Turn Bay Length (ft)	150											
Base Capacity (vph)	1420	2605	1313						1402		2840	
Starvation Cap Reductn	0	0	0						0		0	
Spillback Cap Reductn	0	0	0						0		0	
Storage Cap Reductn	0	0	0						0		0	
Reduced v/c Ratio	0.00	0.13	0.00						0.00		0.00	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 20.6
Natural Cycle: 40
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.13
Intersection Signal Delay: 4.7 Intersection LOS: A
Intersection Capacity Utilization 31.8% ICU Level of Service A
Analysis Period (min) 15

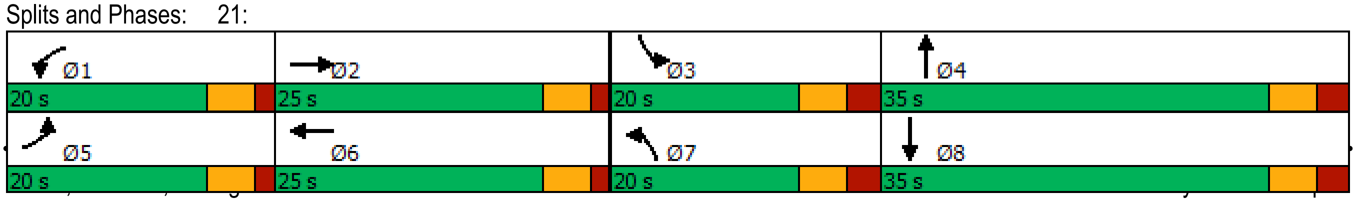
Splits and Phases: 16: NYS Route 131 & NYS Route 37 East

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	164	62	56	124	29	69	202	68	61	161	26
Future Volume (vph)	27	164	62	56	124	29	69	202	68	61	161	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1752	3025	0	1421	3105	0	1752	1757	0	1671	1834	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1752	3025	0	1421	3105	0	1752	1757	0	1671	1834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48			25			17			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		546			510			451			340	
Travel Time (s)		12.4			11.6			10.3			7.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	3%	18%	5%	27%	13%	13%	3%	1%	13%	8%	1%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	260	0	64	176	0	79	310	0	70	215	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	23.1	20.0		10.1	24.1		11.1	24.1		11.1	27.1	
Total Split (s)	20.0	25.0		20.0	25.0		20.0	35.0		20.0	35.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		20.0%	35.0%		20.0%	35.0%	
Maximum Green (s)	14.9	19.9		14.9	19.9		13.9	28.9		13.9	28.9	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.6	3.6		3.6	3.6	
All-Red Time (s)	1.5	1.5		1.5	1.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.1	5.1		5.1	5.1		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		13.0			12.0			9.0			14.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	7.4	22.0		9.3	28.5		9.3	18.2		9.1	18.0	
Actuated g/C Ratio	0.10	0.29		0.12	0.38		0.12	0.24		0.12	0.24	
v/c Ratio	0.18	0.28		0.36	0.15		0.36	0.70		0.35	0.48	
Control Delay	40.2	23.1		41.5	19.4		40.4	36.0		40.6	29.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.2	23.1		41.5	19.4		40.4	36.0		40.6	29.8	
LOS	D	C		D	B		D	D		D	C	
Approach Delay		24.9			25.3			36.9			32.5	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	14	43		30	22		36	133		32	88	
Queue Length 95th (ft)	45	94		75	65		87	234		80	163	
Internal Link Dist (ft)		466			430			371			260	
Turn Bay Length (ft)	200			200			150					
Base Capacity (vph)	383	922		311	1196		357	755		341	782	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.28		0.21	0.15		0.22	0.41		0.21	0.27	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 74.9	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 50.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 21:



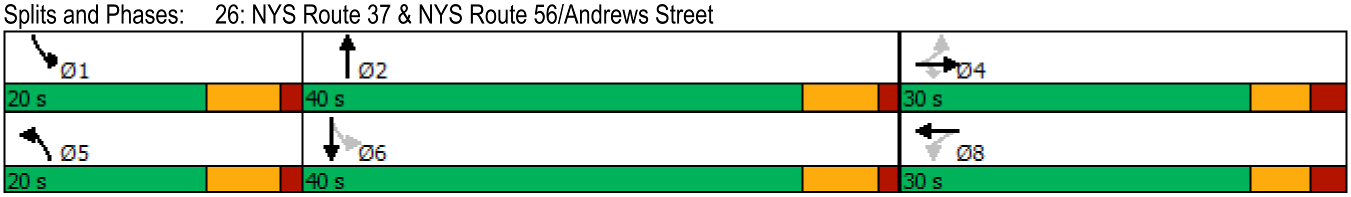
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	139	102	15	155	36	50	74	14	45	112	57
Future Volume (vph)	34	139	102	15	155	36	50	74	14	45	112	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	0		0	0		150	125		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1710	1583	0	1655	0	1703	1734	0	1597	1664	0
Flt Permitted		0.901			0.954		0.950			0.695		
Satd. Flow (perm)	0	1556	1583	0	1586	0	1703	1734	0	1169	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121		12			12			32	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		490			481			361			360	
Travel Time (s)		11.1			10.9			8.2			8.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	12%	2%	4%	15%	0%	6%	6%	12%	13%	4%	17%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	186	110	0	222	0	54	95	0	48	181	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8				2		6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.5	24.5	24.5	24.5	24.5		11.5	24.5		11.5	24.5	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		20.0	40.0		20.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%		22.2%	44.4%		22.2%	44.4%	
Maximum Green (s)	23.5	23.5	23.5	23.5	23.5		13.5	33.5		13.5	33.5	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5		6.5		6.5	6.5		6.5	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effct Green (s)		14.3	14.3		14.4		9.9	15.0		15.4	12.8	
Actuated g/C Ratio		0.35	0.35		0.35		0.24	0.37		0.38	0.31	
v/c Ratio		0.34	0.17		0.39		0.13	0.15		0.09	0.34	
Control Delay		18.2	4.5		17.8		21.8	13.6		8.5	16.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		18.2	4.5		17.8		21.8	13.6		8.5	16.7	
LOS		B	A		B		C	B		A	B	
Approach Delay		13.1			17.8			16.6			15.0	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		45	0		52		14	11		6	37	
Queue Length 95th (ft)		110	27		125		47	56		23	98	
Internal Link Dist (ft)		410			401			281			280	
Turn Bay Length (ft)			175							125		
Base Capacity (vph)		968	1030		991		753	1333		867	1284	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.19	0.11		0.22		0.07	0.07		0.06	0.14	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 41
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 15.3 Intersection LOS: B
Intersection Capacity Utilization 52.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 26: NYS Route 37 & NYS Route 56/Andrews Street



Intersection	
Int Delay, s/veh	4.1

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	12	1	2	0	3	1	1	2	9	28	37	0
Future Vol, veh/h	12	1	2	0	3	1	1	2	9	28	37	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	33	0	0	0	0	4	0	0
Mvmt Flow	17	1	3	0	4	1	1	3	13	41	54	0

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	151	148	10	150	154	54	54	0	0	16	0	0
Stage 1	12	12	-	136	136	-	-	-	-	-	-	-
Stage 2	139	136	-	14	18	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.83	6.2	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4.297	3.3	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	821	747	1077	822	685	1019	1564	-	-	1589	-	-
Stage 1	1014	890	-	872	728	-	-	-	-	-	-	-
Stage 2	869	788	-	1011	822	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	798	726	1077	801	666	1019	1564	-	-	1589	-	-
Mov Cap-2 Maneuver	798	726	-	801	666	-	-	-	-	-	-	-
Stage 1	1013	889	-	871	708	-	-	-	-	-	-	-
Stage 2	839	767	-	1006	821	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	9.5	10	0.6	3.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1564	-	-	821	729	1589	-	-
HCM Lane V/C Ratio	0.001	-	-	0.026	0.008	0.026	-	-
HCM Control Delay (s)	7.3	0	-	9.5	10	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0.1	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	24	0	0	43	4	1	1	1	4	0	97
Future Vol, veh/h	8	24	0	0	43	4	1	1	1	4	0	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	49	49	49	73	73	73	73	73	73	73	92	92
Heavy Vehicles, %	19	25	0	0	19	0	0	0	0	0	0	8
Mvmt Flow	16	49	0	0	59	5	1	1	1	5	0	105

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	99	67	53	91	119	2	105	0	0	2	0	0
Stage 1	63	63	-	4	4	-	-	-	-	-	-	-
Stage 2	36	4	-	87	115	-	-	-	-	-	-	-
Critical Hdwy	7.29	6.75	6.2	7.1	6.69	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Follow-up Hdwy	3.671	4.225	3.3	3.5	4.171	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	844	781	1020	898	741	1088	1499	-	-	1634	-	-
Stage 1	907	799	-	1024	860	-	-	-	-	-	-	-
Stage 2	938	849	-	926	769	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	786	778	1020	852	738	1088	1499	-	-	1634	-	-
Mov Cap-2 Maneuver	786	778	-	852	738	-	-	-	-	-	-	-
Stage 1	906	797	-	1023	859	-	-	-	-	-	-	-
Stage 2	868	848	-	866	767	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.2	2.5	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1499	-	-	780	759	1634	-	-
HCM Lane V/C Ratio	0.001	-	-	0.084	0.085	0.003	-	-
HCM Control Delay (s)	7.4	0	-	10	10.2	7.2	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	378	0	3	0	0	0	0	0
Future Volume (vph)	0	0	0	3	378	0	3	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	275		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1805	3195	1900	1805	1900	0	0	1900	1900
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1805	3195	1900	1805	1900	0	0	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		453			483			228			523	
Travel Time (s)		10.3			11.0			5.2			11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	3	411	0	3	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2			2	1
Detector Template				Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (ft)				20	100	20	20	100			100	20
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				20	6	20	20	6			6	20
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Split					Prot
Protected Phases					1		4	4			3	3
Permitted Phases				1		1						
Detector Phase				1	1	1	4	4			3	3
Switch Phase												
Minimum Initial (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				12.0	12.0	12.0	12.0	12.0			12.0	12.0
Total Split (s)				20.0	20.0	20.0	20.0	20.0			20.0	20.0
Total Split (%)				33.3%	33.3%	33.3%	33.3%	33.3%			33.3%	33.3%
Maximum Green (s)				13.0	13.0	13.0	13.0	13.0			13.0	13.0
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Lead/Lag							Lag	Lag			Lead	Lead
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	None	None			None	None
Act Effct Green (s)				18.5	18.5		6.8					
Actuated g/C Ratio				0.86	0.86		0.31					
v/c Ratio				0.00	0.15		0.01					
Control Delay				7.0	4.7		10.3					
Queue Delay				0.0	0.0		0.0					
Total Delay				7.0	4.7		10.3					
LOS				A	A		B					
Approach Delay					4.7			10.3				
Approach LOS					A			B				
Queue Length 50th (ft)				0	0		0					
Queue Length 95th (ft)				5	77		3					
Internal Link Dist (ft)		373			403			148			443	
Turn Bay Length (ft)				275								
Base Capacity (vph)				1326	2347		1326					
Starvation Cap Reductn				0	0		0					
Spillback Cap Reductn				0	0		0					
Storage Cap Reductn				0	0		0					
Reduced v/c Ratio				0.00	0.18		0.00					

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 21.6	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.15	
Intersection Signal Delay: 4.8	Intersection LOS: A
Intersection Capacity Utilization 36.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 13: NYS Route 131 & NYS Route 37 West

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	305	4	0	0	0	0	2	5	0	3	0
Future Volume (vph)	1	305	4	0	0	0	0	2	5	0	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1805	3312	1615	0	0	0	0	1900	1615	0	3610	0
Flt Permitted	0.950											
Satd. Flow (perm)	1805	3312	1615	0	0	0	0	1900	1615	0	3610	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200						200			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		479			493			324			228	
Travel Time (s)		10.9			11.2			7.4			5.2	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	347	5	0	0	0	0	2	6	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	20	6	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Prot					NA	Prot		NA	
Protected Phases	1	1	1					4	4	3	3	
Permitted Phases												
Detector Phase	1	1	1					4	4	3	3	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Total Split (s)	20.0	20.0	20.0					20.0	20.0	20.0	20.0	
Total Split (%)	33.3%	33.3%	33.3%					33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	13.0	13.0	13.0					13.0	13.0	13.0	13.0	
Yellow Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0		0.0	
Total Lost Time (s)	7.0	7.0	7.0					7.0	7.0		7.0	
Lead/Lag								Lag	Lag	Lead	Lead	
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					None	None	None	None	
Act Effct Green (s)	18.5	18.5	18.5					6.8	6.8		6.7	
Actuated g/C Ratio	0.86	0.86	0.86					0.31	0.31		0.31	
v/c Ratio	0.00	0.12	0.00					0.00	0.01		0.00	
Control Delay	7.0	4.6	0.0					12.5	0.0		9.7	
Queue Delay	0.0	0.0	0.0					0.0	0.0		0.0	
Total Delay	7.0	4.6	0.0					12.5	0.0		9.7	
LOS	A	A	A					B	A		A	
Approach Delay		4.6						3.1			9.7	
Approach LOS		A						A			A	
Queue Length 50th (ft)	0	0	0					0	0		0	
Queue Length 95th (ft)	3	63	0					5	0		3	
Internal Link Dist (ft)		399			413			244			148	
Turn Bay Length (ft)	150											
Base Capacity (vph)	1326	2433	1239					1395	1239		2652	
Starvation Cap Reductn	0	0	0					0	0		0	
Spillback Cap Reductn	0	0	0					0	0		0	
Storage Cap Reductn	0	0	0					0	0		0	
Reduced v/c Ratio	0.00	0.14	0.00					0.00	0.00		0.00	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 21.6
Natural Cycle: 40
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.15
Intersection Signal Delay: 4.6 Intersection LOS: A
Intersection Capacity Utilization 36.3% ICU Level of Service A
Analysis Period (min) 15

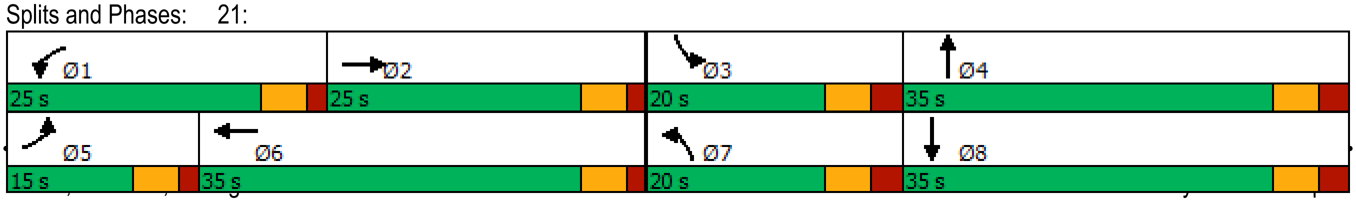
Splits and Phases: 16: NYS Route 131 & NYS Route 37 East

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	140	55	150	200	67	78	237	82	100	247	54
Future Volume (vph)	38	140	55	150	200	67	78	237	82	100	247	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3286	0	1770	3347	0	1671	1772	0	1752	1792	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3286	0	1770	3347	0	1671	1772	0	1752	1792	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			44			16			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		546			510			451			340	
Travel Time (s)		12.4			11.6			10.3			7.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	6%	3%	2%	5%	0%	8%	2%	6%	3%	3%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	222	0	170	303	0	89	362	0	114	342	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	23.1	20.0		10.1	24.1		11.1	24.1		11.1	27.1	
Total Split (s)	15.0	25.0		25.0	35.0		20.0	35.0		20.0	35.0	
Total Split (%)	14.3%	23.8%		23.8%	33.3%		19.0%	33.3%		19.0%	33.3%	
Maximum Green (s)	9.9	19.9		19.9	29.9		13.9	28.9		13.9	28.9	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.6	3.6		3.6	3.6	
All-Red Time (s)	1.5	1.5		1.5	1.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.1	5.1		5.1	5.1		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		13.0			12.0			9.0			14.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	7.8	21.8		14.1	33.9		10.2	22.5		10.9	23.1	
Actuated g/C Ratio	0.09	0.25		0.16	0.38		0.11	0.25		0.12	0.26	
v/c Ratio	0.28	0.26		0.61	0.23		0.47	0.79		0.53	0.72	
Control Delay	48.0	25.8		47.5	21.2		49.5	44.5		50.2	40.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	48.0	25.8		47.5	21.2		49.5	44.5		50.2	40.4	
LOS	D	C		D	C		D	D		D	D	
Approach Delay		29.4			30.6			45.5			42.8	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	25	44		98	61		52	197		66	183	
Queue Length 95th (ft)	61	86		168	105		103	309		127	293	
Internal Link Dist (ft)		466			430			371			260	
Turn Bay Length (ft)	200			200			150					
Base Capacity (vph)	206	843		415	1303		274	614		287	621	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.26		0.41	0.23		0.32	0.59		0.40	0.55	

Intersection Summary	
Area Type: Other	
Cycle Length: 105	
Actuated Cycle Length: 88.9	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 37.9	Intersection LOS: D
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 21:



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	96	37	15	147	59	116	154	22	45	96	37
Future Volume (vph)	45	96	37	15	147	59	116	154	22	45	96	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	0		0	0		150	125		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1774	1615	0	1742	0	1703	1796	0	1805	1748	0
Flt Permitted		0.840			0.969		0.950			0.635		
Satd. Flow (perm)	0	1515	1615	0	1693	0	1703	1796	0	1206	1748	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121		20			9			24	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		490			481			361			360	
Travel Time (s)		11.1			10.9			8.2			8.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	6%	0%	3%	7%	0%	6%	4%	3%	0%	3%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	157	41	0	246	0	129	195	0	50	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8				2		6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.5	24.5	24.5	24.5	24.5		11.5	24.5		11.5	24.5	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		20.0	40.0		20.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%		22.2%	44.4%		22.2%	44.4%	
Maximum Green (s)	23.5	23.5	23.5	23.5	23.5		13.5	33.5		13.5	33.5	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5		6.5		6.5	6.5		6.5	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effct Green (s)		14.0	14.0		14.0		10.8	16.1		15.1	10.7	
Actuated g/C Ratio		0.30	0.30		0.30		0.23	0.34		0.32	0.23	
v/c Ratio		0.35	0.07		0.47		0.33	0.31		0.10	0.35	
Control Delay		20.1	0.2		19.8		23.0	16.6		8.9	20.2	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		20.1	0.2		19.8		23.0	16.6		8.9	20.2	
LOS		C	A		B		C	B		A	C	
Approach Delay		16.0			19.8			19.1			17.3	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		39	0		58		34	46		7	33	
Queue Length 95th (ft)		98	0		138		90	109		23	89	
Internal Link Dist (ft)		410			401			281			280	
Turn Bay Length (ft)			175							125		
Base Capacity (vph)		834	944		941		630	1260		853	1231	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.19	0.04		0.26		0.20	0.15		0.06	0.12	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 46.9

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

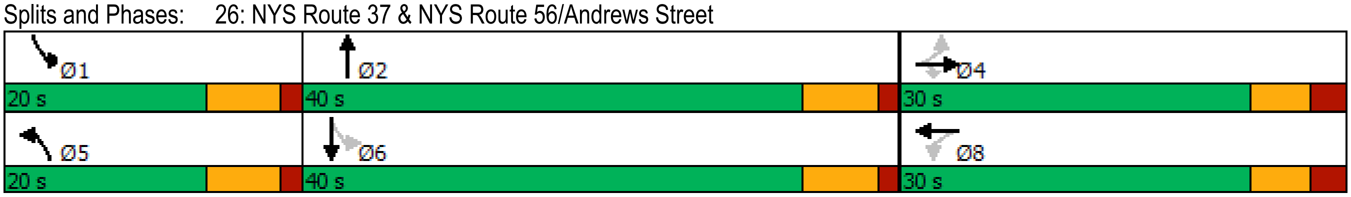
Maximum v/c Ratio: 0.47

Intersection Signal Delay: 18.3 Intersection LOS: B

Intersection Capacity Utilization 50.7% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: NYS Route 37 & NYS Route 56/Andrews Street



Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	19	70	0	26	5	1	146	1	2	54	15
Future Vol, veh/h	17	19	70	0	26	5	1	146	1	2	54	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	92	92
Heavy Vehicles, %	19	25	0	0	19	0	0	0	0	0	0	8
Mvmt Flow	23	26	96	0	36	7	1	200	1	3	59	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	297	276	67	337	284	201	75	0	0	201	0	0
Stage 1	73	73	-	203	203	-	-	-	-	-	-	-
Stage 2	224	203	-	134	81	-	-	-	-	-	-	-
Critical Hdwy	7.29	6.75	6.2	7.1	6.69	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Follow-up Hdwy	3.671	4.225	3.3	3.5	4.171	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	623	595	1002	621	598	845	1537	-	-	1383	-	-
Stage 1	896	791	-	804	703	-	-	-	-	-	-	-
Stage 2	742	692	-	874	796	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	588	593	1002	542	596	845	1537	-	-	1383	-	-
Mov Cap-2 Maneuver	588	593	-	542	596	-	-	-	-	-	-	-
Stage 1	895	789	-	803	702	-	-	-	-	-	-	-
Stage 2	698	691	-	763	794	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	11.2	0	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1537	-	-	810	626	1383	-	-
HCM Lane V/C Ratio	0.001	-	-	0.179	0.068	0.002	-	-
HCM Control Delay (s)	7.3	0	-	10.4	11.2	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.2	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	215	51	3	97	0	0	81	43
Future Volume (vph)	0	0	0	1	215	51	3	97	0	0	81	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	275		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1805	3195	1615	1805	1900	0	0	1900	1615
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1805	3195	1615	1805	1900	0	0	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						200						200
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		453			483			228			523	
Travel Time (s)		10.3			11.0			5.2			11.9	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	1	259	61	4	117	0	0	98	52
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2			2	1
Detector Template				Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (ft)				20	100	20	20	100			100	20
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				20	6	20	20	6			6	20
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Split	NA			NA	Prot
Protected Phases					1		4	4			3	3
Permitted Phases				1		1						
Detector Phase				1	1	1	4	4			3	3
Switch Phase												
Minimum Initial (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				12.0	12.0	12.0	12.0	12.0			12.0	12.0
Total Split (s)				20.0	20.0	20.0	20.0	20.0			20.0	20.0
Total Split (%)				33.3%	33.3%	33.3%	33.3%	33.3%			33.3%	33.3%
Maximum Green (s)				13.0	13.0	13.0	13.0	13.0			13.0	13.0
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Lead/Lag							Lag	Lag			Lead	Lead
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	None	None			None	None
Act Effct Green (s)				12.3	12.3	12.3	9.9	9.9			9.7	9.7
Actuated g/C Ratio				0.28	0.28	0.28	0.23	0.23			0.22	0.22
v/c Ratio				0.00	0.29	0.10	0.01	0.27			0.23	0.10
Control Delay				17.0	17.2	0.3	31.3	31.9			20.7	0.4
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				17.0	17.2	0.3	31.3	31.9			20.7	0.4
LOS				B	B	A	C	C			C	A
Approach Delay					14.0			31.9			13.6	
Approach LOS					B			C			B	
Queue Length 50th (ft)				0	32	0	1	41			26	0
Queue Length 95th (ft)				3	63	0	m7	86			58	0
Internal Link Dist (ft)		373			403			148			443	
Turn Bay Length (ft)				275								
Base Capacity (vph)				726	1286	769	726	764			764	769
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.00	0.20	0.08	0.01	0.15			0.13	0.07

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 43.7	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 17.6	Intersection LOS: B
Intersection Capacity Utilization 31.8%	ICU Level of Service A
Analysis Period (min) 15	
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 13: NYS Route 131 & NYS Route 37 West

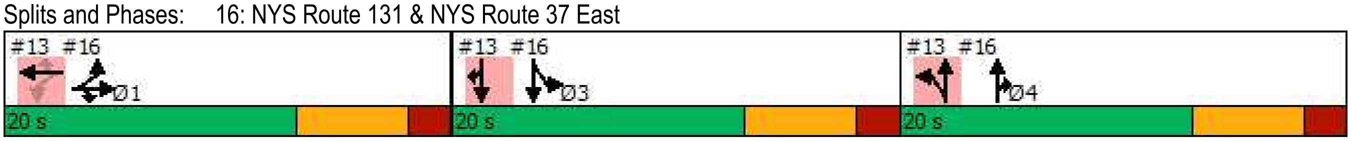
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	263	2	0	0	0	0	1	3	81	1	0
Future Volume (vph)	95	263	2	0	0	0	0	1	3	81	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1805	3312	1615	0	0	0	0	1900	1615	0	3440	0
Flt Permitted	0.950										0.953	
Satd. Flow (perm)	1805	3312	1615	0	0	0	0	1900	1615	0	3440	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200						200			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		479			493			324			228	
Travel Time (s)		10.9			11.2			7.4			5.2	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	333	3	0	0	0	0	1	4	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	20	6	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Prot					NA	Prot	Split	NA	
Protected Phases	1	1	1					4	4	3	3	
Permitted Phases												
Detector Phase	1	1	1					4	4	3	3	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Total Split (s)	20.0	20.0	20.0					20.0	20.0	20.0	20.0	
Total Split (%)	33.3%	33.3%	33.3%					33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	13.0	13.0	13.0					13.0	13.0	13.0	13.0	
Yellow Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0		0.0	
Total Lost Time (s)	7.0	7.0	7.0					7.0	7.0		7.0	
Lead/Lag								Lag	Lag	Lead	Lead	
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					None	None	None	None	
Act Effct Green (s)	12.3	12.3	12.3					9.9	9.9		9.7	
Actuated g/C Ratio	0.28	0.28	0.28					0.23	0.23		0.22	
v/c Ratio	0.24	0.36	0.01					0.00	0.01		0.14	
Control Delay	18.3	17.6	0.0					18.0	0.0		5.2	
Queue Delay	0.0	0.0	0.0					0.0	0.0		0.0	
Total Delay	18.3	17.6	0.0					18.0	0.0		5.2	
LOS	B	B	A					B	A		A	
Approach Delay		17.6						3.6			5.2	
Approach LOS		B						A			A	
Queue Length 50th (ft)	28	42	0					0	0		2	
Queue Length 95th (ft)	63	74	0					3	0		5	
Internal Link Dist (ft)		399			413			244			148	
Turn Bay Length (ft)	150											
Base Capacity (vph)	726	1333	769					764	769		1384	
Starvation Cap Reductn	0	0	0					0	0		0	
Spillback Cap Reductn	0	0	0					0	0		0	
Storage Cap Reductn	0	0	0					0	0		0	
Reduced v/c Ratio	0.17	0.25	0.00					0.00	0.01		0.08	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 43.7
Natural Cycle: 40
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 15.2 Intersection LOS: B
Intersection Capacity Utilization 33.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 16: NYS Route 131 & NYS Route 37 East



Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	24	73	0	43	4	1	117	1	4	152	97
Future Vol, veh/h	8	24	73	0	43	4	1	117	1	4	152	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	49	49	49	73	73	73	73	73	73	73	92	92
Heavy Vehicles, %	19	25	0	0	19	0	0	0	0	0	0	8
Mvmt Flow	16	49	149	0	59	5	1	160	1	5	165	105

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	423	391	218	490	443	161	270	0	0	161	0	0
Stage 1	228	228	-	163	163	-	-	-	-	-	-	-
Stage 2	195	163	-	327	280	-	-	-	-	-	-	-
Critical Hdwy	7.29	6.75	6.2	7.1	6.69	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Follow-up Hdwy	3.671	4.225	3.3	3.5	4.171	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	513	510	827	492	484	889	1305	-	-	1430	-	-
Stage 1	738	675	-	844	732	-	-	-	-	-	-	-
Stage 2	769	722	-	690	649	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	460	507	827	372	482	889	1305	-	-	1430	-	-
Mov Cap-2 Maneuver	460	507	-	372	482	-	-	-	-	-	-	-
Stage 1	737	672	-	843	731	-	-	-	-	-	-	-
Stage 2	702	721	-	522	646	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	13.2	0.1	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1305	-	-	686	502	1430	-	-
HCM Lane V/C Ratio	0.001	-	-	0.312	0.128	0.004	-	-
HCM Control Delay (s)	7.8	0	-	12.6	13.2	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0.4	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	378	59	3	58	0	0	112	113
Future Volume (vph)	0	0	0	3	378	59	3	58	0	0	112	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	275		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1805	3195	1615	1805	1900	0	0	1900	1615
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1805	3195	1615	1805	1900	0	0	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						200						200
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		453			483			228			523	
Travel Time (s)		10.3			11.0			5.2			11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	3	411	64	3	63	0	0	122	123
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2			2	1
Detector Template				Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (ft)				20	100	20	20	100			100	20
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				20	6	20	20	6			6	20
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Split	NA			NA	Prot
Protected Phases					1		4	4			3	3
Permitted Phases				1		1						
Detector Phase				1	1	1	4	4			3	3
Switch Phase												
Minimum Initial (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				12.0	12.0	12.0	12.0	12.0			12.0	12.0
Total Split (s)				20.0	20.0	20.0	20.0	20.0			20.0	20.0
Total Split (%)				33.3%	33.3%	33.3%	33.3%	33.3%			33.3%	33.3%
Maximum Green (s)				13.0	13.0	13.0	13.0	13.0			13.0	13.0
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Lead/Lag							Lag	Lag			Lead	Lead
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	None	None			None	None
Act Effct Green (s)				16.8	16.8	16.8	8.7	8.7			10.0	10.0
Actuated g/C Ratio				0.41	0.41	0.41	0.21	0.21			0.25	0.25
v/c Ratio				0.00	0.31	0.08	0.01	0.16			0.26	0.22
Control Delay				16.0	15.8	0.2	31.7	30.3			19.0	2.0
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				16.0	15.8	0.2	31.7	30.3			19.0	2.0
LOS				B	B	A	C	C			B	A
Approach Delay					13.7			30.4			10.5	
Approach LOS					B			C			B	
Queue Length 50th (ft)				1	52	0	1	22			32	0
Queue Length 95th (ft)				6	103	0	9	58			71	11
Internal Link Dist (ft)		373			403			148			443	
Turn Bay Length (ft)				275								
Base Capacity (vph)				774	1371	807	774	815			815	807
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.00	0.30	0.08	0.00	0.08			0.15	0.15

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 40.5	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.31	
Intersection Signal Delay: 14.1	Intersection LOS: B
Intersection Capacity Utilization 39.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 13: NYS Route 131 & NYS Route 37 West

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	305	4	0	0	0	0	2	5	112	3	0
Future Volume (vph)	58	305	4	0	0	0	0	2	5	112	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1805	3312	1615	0	0	0	0	1900	1615	0	3440	0
Flt Permitted	0.950										0.953	
Satd. Flow (perm)	1805	3312	1615	0	0	0	0	1900	1615	0	3440	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200						200			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		479			493			324			228	
Travel Time (s)		10.9			11.2			7.4			5.2	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	347	5	0	0	0	0	2	6	0	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	20	6	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Prot					NA	Prot	Split	NA	
Protected Phases	1	1	1					4	4	3	3	
Permitted Phases												
Detector Phase	1	1	1					4	4	3	3	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Total Split (s)	20.0	20.0	20.0					20.0	20.0	20.0	20.0	
Total Split (%)	33.3%	33.3%	33.3%					33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	13.0	13.0	13.0					13.0	13.0	13.0	13.0	
Yellow Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0		0.0	
Total Lost Time (s)	7.0	7.0	7.0					7.0	7.0		7.0	
Lead/Lag								Lag	Lag	Lead	Lead	
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					None	None	None	None	
Act Effct Green (s)	16.8	16.8	16.8					8.7	8.7		10.0	
Actuated g/C Ratio	0.41	0.41	0.41					0.21	0.21		0.25	
v/c Ratio	0.09	0.25	0.01					0.00	0.01		0.15	
Control Delay	16.1	15.4	0.0					19.5	0.0		5.0	
Queue Delay	0.0	0.0	0.0					0.0	0.0		0.0	
Total Delay	16.1	15.4	0.0					19.5	0.0		5.0	
LOS	B	B	A					B	A		A	
Approach Delay		15.3						4.9			5.0	
Approach LOS		B						A			A	
Queue Length 50th (ft)	14	43	0					1	0		3	
Queue Length 95th (ft)	43	84	0					5	0		6	
Internal Link Dist (ft)		399			413			244			148	
Turn Bay Length (ft)	150											
Base Capacity (vph)	774	1421	807					815	807		1476	
Starvation Cap Reductn	0	0	0					0	0		0	
Spillback Cap Reductn	0	0	0					0	0		0	
Storage Cap Reductn	0	0	0					0	0		0	
Reduced v/c Ratio	0.09	0.24	0.01					0.00	0.01		0.09	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 40.5	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.31	
Intersection Signal Delay: 12.7	Intersection LOS: B
Intersection Capacity Utilization 36.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 16: NYS Route 131 & NYS Route 37 East

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	21	44	21	21	58
Future Vol, veh/h	21	21	44	21	21	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	23	48	23	23	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	169	60	0	0	71	0
Stage 1	60	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	821	1005	-	-	1529	-
Stage 1	963	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	808	1005	-	-	1529	-
Mov Cap-2 Maneuver	808	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	896	1529	-
HCM Lane V/C Ratio	-	-	0.051	0.015	-
HCM Control Delay (s)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection						
Int Delay, s/veh	2.6					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	20	45	10	20	59
Future Vol, veh/h	10	20	45	10	20	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	22	49	11	22	64

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	163	55	0	0	60	0
Stage 1	55	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	828	1012	-	-	1544	-
Stage 1	968	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	816	1012	-	-	1544	-
Mov Cap-2 Maneuver	816	-	-	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	902	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	1.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	937	1544	-
HCM Lane V/C Ratio	-	-	0.035	0.014	-
HCM Control Delay (s)	-	-	9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.8

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	25	1	31	0	2	0	1	9	33	44	8	0
Future Vol, veh/h	25	1	31	0	2	0	1	9	33	44	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	7	20	6	0	17	0	100	18	0	0	20	0
Mvmt Flow	33	1	41	0	3	0	1	12	44	59	11	0

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	167	165	34	186	187	11	11	0	0	56	0	0
Stage 1	36	36	-	129	129	-	-	-	-	-	-	-
Stage 2	131	129	-	57	58	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.7	6.26	7.1	6.67	6.2	5.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.17	5.7	-	6.1	5.67	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.7	-	6.1	5.67	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.18	3.354	3.5	4.153	3.3	3.1	-	-	2.2	-	-
Pot Cap-1 Maneuver	786	696	1028	779	682	1076	1149	-	-	1562	-	-
Stage 1	967	831	-	880	761	-	-	-	-	-	-	-
Stage 2	861	756	-	960	818	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	760	669	1028	724	655	1076	1149	-	-	1562	-	-
Mov Cap-2 Maneuver	760	669	-	724	655	-	-	-	-	-	-	-
Stage 1	966	830	-	879	732	-	-	-	-	-	-	-
Stage 2	825	727	-	919	817	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	9.5	10.5	0.2	6.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1149	-	-	883	655	1562	-	-
HCM Lane V/C Ratio	0.001	-	-	0.086	0.004	0.038	-	-
HCM Control Delay (s)	8.1	0	-	9.5	10.5	7.4	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0.1	-	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	19	70	0	26	5	1	166	1	2	74	15
Future Vol, veh/h	17	19	70	0	26	5	1	166	1	2	74	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	92	92
Heavy Vehicles, %	19	25	0	0	19	0	0	0	0	0	0	8
Mvmt Flow	23	26	96	0	36	7	1	227	1	3	80	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	345	324	88	385	332	228	96	0	0	228	0	0
Stage 1	94	94	-	230	230	-	-	-	-	-	-	-
Stage 2	251	230	-	155	102	-	-	-	-	-	-	-
Critical Hdwy	7.29	6.75	6.2	7.1	6.69	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Follow-up Hdwy	3.671	4.225	3.3	3.5	4.171	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	578	558	976	577	561	816	1510	-	-	1352	-	-
Stage 1	873	774	-	777	684	-	-	-	-	-	-	-
Stage 2	717	673	-	852	779	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	544	556	976	501	559	816	1510	-	-	1352	-	-
Mov Cap-2 Maneuver	544	556	-	501	559	-	-	-	-	-	-	-
Stage 1	872	772	-	776	683	-	-	-	-	-	-	-
Stage 2	673	672	-	741	777	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	11.6	0	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1510	-	-	773	589	1352	-	-
HCM Lane V/C Ratio	0.001	-	-	0.188	0.072	0.002	-	-
HCM Control Delay (s)	7.4	0	-	10.7	11.6	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.2	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	1	215	61	3	107	0	0	91	53
Future Volume (vph)	0	0	0	1	215	61	3	107	0	0	91	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	275		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	0	1805	3195	1615	1805	1900	0	0	1900	1615
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1805	3195	1615	1805	1900	0	0	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						200						200
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		453			483			228			523	
Travel Time (s)		10.3			11.0			5.2			11.9	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	1	259	73	4	129	0	0	110	64
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2			2	1
Detector Template				Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (ft)				20	100	20	20	100			100	20
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				20	6	20	20	6			6	20
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Split	NA			NA	Prot
Protected Phases					1		4	4			3	3
Permitted Phases				1		1						
Detector Phase				1	1	1	4	4			3	3
Switch Phase												
Minimum Initial (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				12.0	12.0	12.0	12.0	12.0			12.0	12.0
Total Split (s)				20.0	20.0	20.0	20.0	20.0			20.0	20.0
Total Split (%)				33.3%	33.3%	33.3%	33.3%	33.3%			33.3%	33.3%
Maximum Green (s)				13.0	13.0	13.0	13.0	13.0			13.0	13.0
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Lead/Lag							Lag	Lag			Lead	Lead
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	None	None			None	None
Act Effct Green (s)				17.2	17.2	17.2	10.3	10.3			10.1	10.1
Actuated g/C Ratio				0.39	0.39	0.39	0.23	0.23			0.23	0.23
v/c Ratio				0.00	0.21	0.10	0.01	0.29			0.26	0.12
Control Delay				17.0	17.2	0.3	31.7	32.5			21.0	0.5
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				17.0	17.2	0.3	31.7	32.6			21.0	0.5
LOS				B	B	A	C	C			C	A
Approach Delay					13.5			32.5			13.5	
Approach LOS					B			C			B	
Queue Length 50th (ft)				0	33	0	1	46			30	0
Queue Length 95th (ft)				3	64	0	m7	94			64	0
Internal Link Dist (ft)		373			403			148			443	
Turn Bay Length (ft)				275								
Base Capacity (vph)				723	1281	767	723	761			761	767
Starvation Cap Reductn				0	0	0	0	33			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.00	0.20	0.10	0.01	0.18			0.14	0.08

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 44.4
Natural Cycle: 40
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.29
Intersection Signal Delay: 17.4 Intersection LOS: B
Intersection Capacity Utilization 31.8% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: NYS Route 131 & NYS Route 37 West

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	263	2	0	0	0	0	1	3	91	1	0
Future Volume (vph)	105	263	2	0	0	0	0	1	3	91	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		0	0		0
Storage Lanes	1		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1805	3312	1615	0	0	0	0	1900	1615	0	3440	0
Flt Permitted	0.950										0.953	
Satd. Flow (perm)	1805	3312	1615	0	0	0	0	1900	1615	0	3440	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200						200			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		479			493			324			228	
Travel Time (s)		10.9			11.2			7.4			5.2	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	333	3	0	0	0	0	1	4	0	116	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	20	6	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Prot					NA	Prot	Split	NA	
Protected Phases	1	1	1					4	4	3	3	
Permitted Phases												
Detector Phase	1	1	1					4	4	3	3	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Total Split (s)	20.0	20.0	20.0					20.0	20.0	20.0	20.0	
Total Split (%)	33.3%	33.3%	33.3%					33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	13.0	13.0	13.0					13.0	13.0	13.0	13.0	
Yellow Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0		0.0	
Total Lost Time (s)	7.0	7.0	7.0					7.0	7.0		7.0	
Lead/Lag								Lag	Lag	Lead	Lead	
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					None	None	None	None	
Act Effct Green (s)	17.2	17.2	17.2					10.3	10.3		10.1	
Actuated g/C Ratio	0.39	0.39	0.39					0.23	0.23		0.23	
v/c Ratio	0.19	0.26	0.00					0.00	0.01		0.15	
Control Delay	18.5	17.3	0.0					18.0	0.0		5.2	
Queue Delay	0.0	0.0	0.0					0.0	0.0		0.0	
Total Delay	18.5	17.3	0.0					18.0	0.0		5.2	
LOS	B	B	A					B	A		A	
Approach Delay		17.5						3.6			5.2	
Approach LOS		B						A			A	
Queue Length 50th (ft)	32	43	0					0	0		3	
Queue Length 95th (ft)	71	76	0					3	0		5	
Internal Link Dist (ft)		399			413			244			148	
Turn Bay Length (ft)	150											
Base Capacity (vph)	723	1328	767					761	767		1379	
Starvation Cap Reductn	0	0	0					0	0		0	
Spillback Cap Reductn	0	0	0					0	0		0	
Storage Cap Reductn	0	0	0					0	0		0	
Reduced v/c Ratio	0.18	0.25	0.00					0.00	0.01		0.08	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 44.4
Natural Cycle: 40
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.29
Intersection Signal Delay: 15.0 Intersection LOS: B
Intersection Capacity Utilization 34.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 16: NYS Route 131 & NYS Route 37 East

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	169	62	61	129	29	69	202	73	61	161	26
Future Volume (vph)	27	169	62	61	129	29	69	202	73	61	161	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1752	3026	0	1421	3108	0	1752	1751	0	1671	1834	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1752	3026	0	1421	3108	0	1752	1751	0	1671	1834	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			24			18			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		546			510			451			340	
Travel Time (s)		12.4			11.6			10.3			7.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	3%	18%	5%	27%	13%	13%	3%	1%	13%	8%	1%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	265	0	70	181	0	79	316	0	70	215	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases												
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	23.1	20.0		10.1	24.1		11.1	24.1		11.1	27.1	
Total Split (s)	20.0	25.0		20.0	25.0		20.0	35.0		20.0	35.0	
Total Split (%)	20.0%	25.0%		20.0%	25.0%		20.0%	35.0%		20.0%	35.0%	
Maximum Green (s)	14.9	19.9		14.9	19.9		13.9	28.9		13.9	28.9	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.6	3.6		3.6	3.6	
All-Red Time (s)	1.5	1.5		1.5	1.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.1	5.1		5.1	5.1		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		13.0			12.0			9.0			14.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	7.5	22.0		9.7	28.8		9.4	18.5		9.2	18.3	
Actuated g/C Ratio	0.10	0.29		0.13	0.38		0.12	0.24		0.12	0.24	
v/c Ratio	0.18	0.29		0.39	0.15		0.37	0.72		0.35	0.48	
Control Delay	40.6	23.6		42.0	19.5		40.8	36.6		41.0	29.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.6	23.6		42.0	19.5		40.8	36.6		41.0	29.9	
LOS	D	C		D	B		D	D		D	C	
Approach Delay		25.4			25.8			37.5			32.6	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	15	45		33	23		37	137		33	89	
Queue Length 95th (ft)	46	97		80	67		87	241		80	164	
Internal Link Dist (ft)		466			430			371			260	
Turn Bay Length (ft)	200			200			150					
Base Capacity (vph)	380	915		308	1198		355	747		338	777	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.29		0.23	0.15		0.22	0.42		0.21	0.28	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 75.6

Natural Cycle: 90

Control Type: Semi Act-Uncoord

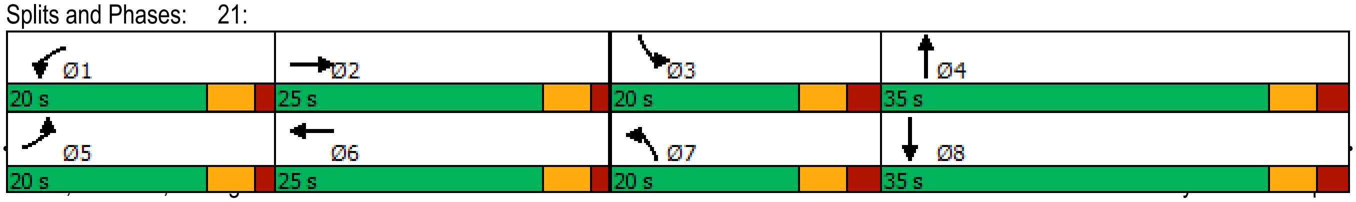
Maximum v/c Ratio: 0.72

Intersection Signal Delay: 31.0 | Intersection LOS: C

Intersection Capacity Utilization 50.4% | ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 21:



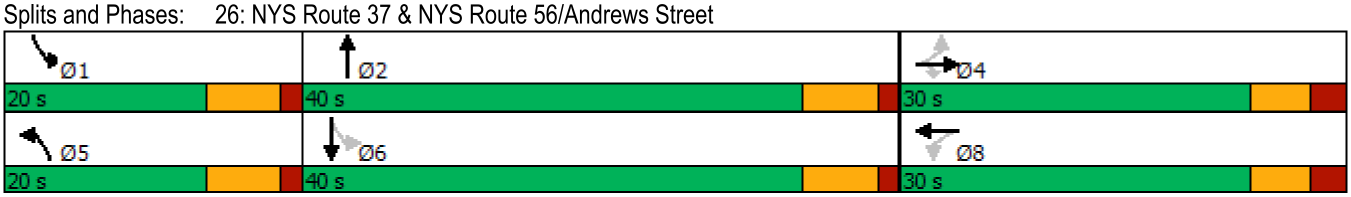
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	139	102	15	155	36	50	79	14	45	117	57
Future Volume (vph)	34	139	102	15	155	36	50	79	14	45	117	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	0		0	0		150	125		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1710	1583	0	1655	0	1703	1736	0	1597	1669	0
Flt Permitted		0.901			0.954		0.950			0.692		
Satd. Flow (perm)	0	1556	1583	0	1586	0	1703	1736	0	1164	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121		12			11			31	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		490			481			361			360	
Travel Time (s)		11.1			10.9			8.2			8.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	12%	2%	4%	15%	0%	6%	6%	12%	13%	4%	17%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	186	110	0	222	0	54	100	0	48	187	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8				2		6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.5	24.5	24.5	24.5	24.5		11.5	24.5		11.5	24.5	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		20.0	40.0		20.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%		22.2%	44.4%		22.2%	44.4%	
Maximum Green (s)	23.5	23.5	23.5	23.5	23.5		13.5	33.5		13.5	33.5	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5		6.5		6.5	6.5		6.5	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effct Green (s)		14.3	14.3		14.5		10.0	15.2		15.6	13.0	
Actuated g/C Ratio		0.35	0.35		0.35		0.24	0.37		0.38	0.32	
v/c Ratio		0.34	0.17		0.39		0.13	0.15		0.09	0.34	
Control Delay		18.3	4.5		17.9		22.0	13.7		8.4	16.9	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		18.3	4.5		17.9		22.0	13.7		8.4	16.9	
LOS		B	A		B		C	B		A	B	
Approach Delay		13.2			17.9			16.6			15.1	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		45	0		52		14	12		6	39	
Queue Length 95th (ft)		111	28		126		48	59		23	102	
Internal Link Dist (ft)		410			401			281			280	
Turn Bay Length (ft)			175							125		
Base Capacity (vph)		963	1026		987		751	1331		866	1285	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.19	0.11		0.22		0.07	0.08		0.06	0.15	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 41.2
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 15.4 Intersection LOS: B
Intersection Capacity Utilization 53.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 26: NYS Route 37 & NYS Route 56/Andrews Street



Intersection	
Int Delay, s/veh	5.4

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	33	1	22	0	3	1	1	2	30	48	37	0
Future Vol, veh/h	33	1	22	0	3	1	1	2	30	48	37	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	0	0	0	0	33	0	0	0	0	4	0	0
Mvmt Flow	48	1	32	0	4	1	1	3	43	70	54	0

Major/Minor	Minor1			Minor2			Major1			Major2		
Conflicting Flow All	224	221	25	237	242	54	54	0	0	46	0	0
Stage 1	27	27	-	194	194	-	-	-	-	-	-	-
Stage 2	197	194	-	43	48	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.83	6.2	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.83	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4.297	3.3	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	736	681	1057	722	609	1019	1564	-	-	1549	-	-
Stage 1	996	877	-	812	685	-	-	-	-	-	-	-
Stage 2	809	744	-	976	798	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	704	648	1057	674	580	1019	1564	-	-	1549	-	-
Mov Cap-2 Maneuver	704	648	-	674	580	-	-	-	-	-	-	-
Stage 1	995	876	-	811	653	-	-	-	-	-	-	-
Stage 2	765	709	-	944	797	-	-	-	-	-	-	-

Approach	NB	SB	NE	SW
HCM Control Delay, s	9.9	10.6	0.2	4.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NEL	NET	NER	NBLn1	SBLn1	SWL	SWT	SWR
Capacity (veh/h)	1564	-	-	809	650	1549	-	-
HCM Lane V/C Ratio	0.001	-	-	0.1	0.009	0.045	-	-
HCM Control Delay (s)	7.3	0	-	9.9	10.6	7.4	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0.1	-	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	24	73	0	43	4	1	137	1	4	172	97
Future Vol, veh/h	8	24	73	0	43	4	1	137	1	4	172	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	49	49	49	73	73	73	73	73	73	73	92	92
Heavy Vehicles, %	19	25	0	0	19	0	0	0	0	0	0	8
Mvmt Flow	16	49	149	0	59	5	1	188	1	5	187	105

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	473	441	240	540	493	189	292	0	0	189	0	0
Stage 1	250	250	-	191	191	-	-	-	-	-	-	-
Stage 2	223	191	-	349	302	-	-	-	-	-	-	-
Critical Hdwy	7.29	6.75	6.2	7.1	6.69	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.29	5.75	-	6.1	5.69	-	-	-	-	-	-	-
Follow-up Hdwy	3.671	4.225	3.3	3.5	4.171	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	474	477	804	456	453	858	1281	-	-	1397	-	-
Stage 1	718	659	-	815	711	-	-	-	-	-	-	-
Stage 2	743	701	-	671	635	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	422	475	804	341	451	858	1281	-	-	1397	-	-
Mov Cap-2 Maneuver	422	475	-	341	451	-	-	-	-	-	-	-
Stage 1	717	656	-	814	710	-	-	-	-	-	-	-
Stage 2	676	700	-	504	632	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	13.9	0.1	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1281	-	-	655	470	1397	-	-
HCM Lane V/C Ratio	0.001	-	-	0.327	0.137	0.004	-	-
HCM Control Delay (s)	7.8	0	-	13.1	13.9	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.4	0.5	0	-	-

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	21	34	21	21	60
Future Vol, veh/h	21	21	34	21	21	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	23	37	23	23	65

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	160	49	0	0	60	0
Stage 1	49	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	831	1020	-	-	1544	-
Stage 1	973	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	819	1020	-	-	1544	-
Mov Cap-2 Maneuver	819	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	900	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	1.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	909	1544	-
HCM Lane V/C Ratio	-	-	0.05	0.015	-
HCM Control Delay (s)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	20	25	10	20	61
Future Vol, veh/h	10	20	25	10	20	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	22	27	11	22	66

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	143	33	0	0	38	0
Stage 1	33	-	-	-	-	-
Stage 2	110	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	850	1041	-	-	1572	-
Stage 1	989	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	837	1041	-	-	1572	-
Mov Cap-2 Maneuver	837	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	963	1572	-
HCM Lane V/C Ratio	-	-	0.034	0.014	-
HCM Control Delay (s)	-	-	8.9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	378	69	3	68	0	0	122	123
Future Volume (vph)	0	0	0	3	378	69	3	68	0	0	122	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	275		0	0		0	0		0
Storage Lanes	0		0	1		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1805	3195	1615	1805	1900	0	0	1900	1615
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1805	3195	1615	1805	1900	0	0	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						200						200
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		453			483			228			523	
Travel Time (s)		10.3			11.0			5.2			11.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	0	3	411	75	3	74	0	0	133	134
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	3	411	75	3	74	0	0	133	134
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2	1	1	2			2	1
Detector Template				Left	Thru	Right	Left	Thru			Thru	Right
Leading Detector (ft)				20	100	20	20	100			100	20
Trailing Detector (ft)				0	0	0	0	0			0	0
Detector 1 Position(ft)				0	0	0	0	0			0	0
Detector 1 Size(ft)				20	6	20	20	6			6	20
Detector 1 Type				Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Queue (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 1 Delay (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Detector 2 Position(ft)					94			94			94	
Detector 2 Size(ft)					6			6			6	
Detector 2 Type					Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0			0.0	
Turn Type				Perm	NA	Perm	Split	NA			NA	Prot
Protected Phases					1		4	4			3	3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				1		1						
Detector Phase				1	1	1	4	4			3	3
Switch Phase												
Minimum Initial (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
Minimum Split (s)				12.0	12.0	12.0	12.0	12.0			12.0	12.0
Total Split (s)				20.0	20.0	20.0	20.0	20.0			20.0	20.0
Total Split (%)				33.3%	33.3%	33.3%	33.3%	33.3%			33.3%	33.3%
Maximum Green (s)				13.0	13.0	13.0	13.0	13.0			13.0	13.0
Yellow Time (s)				5.0	5.0	5.0	5.0	5.0			5.0	5.0
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	2.0
Lost Time Adjust (s)				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)				7.0	7.0	7.0	7.0	7.0			7.0	7.0
Lead/Lag							Lag	Lag			Lead	Lead
Lead-Lag Optimize?							Yes	Yes			Yes	Yes
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode				None	None	None	None	None			None	None
Act Effct Green (s)				16.8	16.8	16.8	8.9	8.9			10.1	10.1
Actuated g/C Ratio				0.41	0.41	0.41	0.22	0.22			0.25	0.25
v/c Ratio				0.00	0.31	0.10	0.01	0.18			0.28	0.24
Control Delay				16.3	15.9	0.2	31.3	30.4			19.4	2.5
Queue Delay				0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay				16.3	15.9	0.2	31.3	30.4			19.4	2.5
LOS				B	B	A	C	C			B	A
Approach Delay					13.5			30.5			10.9	
Approach LOS					B			C			B	
Queue Length 50th (ft)				1	53	0	1	26			35	0
Queue Length 95th (ft)				6	104	0	m9	65			78	16
Internal Link Dist (ft)		373			403			148			443	
Turn Bay Length (ft)				275								
Base Capacity (vph)				772	1367	805	772	813			813	805
Starvation Cap Reductn				0	0	0	0	0			0	0
Spillback Cap Reductn				0	0	0	0	0			0	0
Storage Cap Reductn				0	0	0	0	0			0	0
Reduced v/c Ratio				0.00	0.30	0.09	0.00	0.09			0.16	0.17

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 40.8
Natural Cycle: 40
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.31
Intersection Signal Delay: 14.3 Intersection LOS: B
Intersection Capacity Utilization 39.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: NYS Route 131 & NYS Route 37 West

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR
Lane Configurations						
Traffic Volume (vph)	68	305	4	0	0	0
Future Volume (vph)	68	305	4	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0
Storage Lanes	1		1	0		0
Taper Length (ft)	25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Frt			0.850			
Flt Protected	0.950					
Satd. Flow (prot)	1805	3312	1615	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1805	3312	1615	0	0	0
Right Turn on Red			Yes			Yes
Satd. Flow (RTOR)			200			
Link Speed (mph)		30			30	
Link Distance (ft)		479			493	
Travel Time (s)		10.9			11.2	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	9%	0%	0%	0%	0%
Adj. Flow (vph)	77	347	5	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	347	5	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12	
Link Offset(ft)		0			0	
Crosswalk Width(ft)		16			16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9
Number of Detectors	1	2	1			
Detector Template	Left	Thru	Right			
Leading Detector (ft)	20	100	20			
Trailing Detector (ft)	0	0	0			
Detector 1 Position(ft)	0	0	0			
Detector 1 Size(ft)	20	6	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0			
Detector 2 Position(ft)		94				
Detector 2 Size(ft)		6				
Detector 2 Type		Cl+Ex				
Detector 2 Channel						
Detector 2 Extend (s)		0.0				
Turn Type	Split	NA	Prot			
Protected Phases	1	1	1			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	2	5	0	3	0
Future Volume (vph)	0	2	5	0	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0
Storage Lanes	0		1	0		0
Taper Length (ft)	25			25		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850			
Flt Protected						
Satd. Flow (prot)	0	1900	1615	0	3610	0
Flt Permitted						
Satd. Flow (perm)	0	1900	1615	0	3610	0
Right Turn on Red			Yes			Yes
Satd. Flow (RTOR)			200			
Link Speed (mph)		30			30	
Link Distance (ft)		324			228	
Travel Time (s)		7.4			5.2	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	2	6	0	3	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2	6	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0	
Link Offset(ft)		0			0	
Crosswalk Width(ft)		16			16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9
Number of Detectors		2	1	1	2	
Detector Template		Thru	Right	Left	Thru	
Leading Detector (ft)		100	20	20	100	
Trailing Detector (ft)		0	0	0	0	
Detector 1 Position(ft)		0	0	0	0	
Detector 1 Size(ft)		6	20	20	6	
Detector 1 Type		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94	
Detector 2 Size(ft)		6			6	
Detector 2 Type		Cl+Ex			Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)		0.0			0.0	
Turn Type		NA	Prot		NA	
Protected Phases		4	4	3	3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases												
Detector Phase	1	1	1					4	4	3	3	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	12.0	12.0					12.0	12.0	12.0	12.0	
Total Split (s)	20.0	20.0	20.0					20.0	20.0	20.0	20.0	
Total Split (%)	33.3%	33.3%	33.3%					33.3%	33.3%	33.3%	33.3%	
Maximum Green (s)	13.0	13.0	13.0					13.0	13.0	13.0	13.0	
Yellow Time (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0		0.0	
Total Lost Time (s)	7.0	7.0	7.0					7.0	7.0		7.0	
Lead/Lag								Lag	Lag	Lead	Lead	
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					None	None	None	None	
Act Effct Green (s)	16.8	16.8	16.8					8.9	8.9		10.1	
Actuated g/C Ratio	0.41	0.41	0.41					0.22	0.22		0.25	
v/c Ratio	0.10	0.25	0.01					0.00	0.01		0.00	
Control Delay	16.3	15.5	0.0					19.0	0.0		4.3	
Queue Delay	0.0	0.0	0.0					0.0	0.0		0.0	
Total Delay	16.3	15.5	0.0					19.0	0.0		4.3	
LOS	B	B	A					B	A		A	
Approach Delay		15.5						4.8			4.3	
Approach LOS		B						A			A	
Queue Length 50th (ft)	17	44	0					1	0		0	
Queue Length 95th (ft)	49	85	0					5	0		m0	
Internal Link Dist (ft)		399			413			244			148	
Turn Bay Length (ft)	150											
Base Capacity (vph)	772	1417	805					813	805		1544	
Starvation Cap Reductn	0	0	0					0	0		0	
Spillback Cap Reductn	0	0	0					0	0		0	
Storage Cap Reductn	0	0	0					0	0		0	
Reduced v/c Ratio	0.10	0.24	0.01					0.00	0.01		0.00	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 40.8
Natural Cycle: 40
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.31
Intersection Signal Delay: 15.2 Intersection LOS: B
Intersection Capacity Utilization 39.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: NYS Route 131 & NYS Route 37 East

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	145	55	155	205	67	78	237	87	100	247	54
Future Volume (vph)	38	145	55	155	205	67	78	237	87	100	247	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	200		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.963			0.960			0.973	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3292	0	1770	3350	0	1671	1770	0	1752	1792	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3292	0	1770	3350	0	1671	1770	0	1752	1792	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			42			17			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		546			510			451			340	
Travel Time (s)		12.4			11.6			10.3			7.7	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	6%	3%	2%	5%	0%	8%	2%	6%	3%	3%	4%
Adj. Flow (vph)	43	165	63	176	233	76	89	269	99	114	281	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	228	0	176	309	0	89	368	0	114	342	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases												
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.1	20.0		10.1	24.1		11.1	24.1		11.1	27.1	
Total Split (s)	15.0	25.0		25.0	35.0		20.0	35.0		20.0	35.0	
Total Split (%)	14.3%	23.8%		23.8%	33.3%		19.0%	33.3%		19.0%	33.3%	
Maximum Green (s)	9.9	19.9		19.9	29.9		13.9	28.9		13.9	28.9	
Yellow Time (s)	3.6	3.6		3.6	3.6		3.6	3.6		3.6	3.6	
All-Red Time (s)	1.5	1.5		1.5	1.5		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.1	5.1		5.1	5.1		6.1	6.1		6.1	6.1	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		None	Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		13.0			12.0			9.0			14.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	7.8	21.7		14.3	34.0		10.2	22.8		11.0	23.4	
Actuated g/C Ratio	0.09	0.24		0.16	0.38		0.11	0.26		0.12	0.26	
v/c Ratio	0.28	0.27		0.62	0.24		0.47	0.79		0.53	0.72	
Control Delay	48.2	26.5		47.8	21.5		49.7	44.8		50.3	40.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	48.2	26.5		47.8	21.5		49.7	44.8		50.3	40.0	
LOS	D	C		D	C		D	D		D	D	
Approach Delay		29.9			31.1			45.8			42.6	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	25	46		102	63		52	201		66	183	
Queue Length 95th (ft)	61	88		174	108		103	315		127	293	
Internal Link Dist (ft)		466			430			371			260	
Turn Bay Length (ft)	200			200			150					
Base Capacity (vph)	205	834		413	1300		272	611		285	618	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.27		0.43	0.24		0.33	0.60		0.40	0.55	

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 89.3

Natural Cycle: 90

Control Type: Semi Act-Uncoord

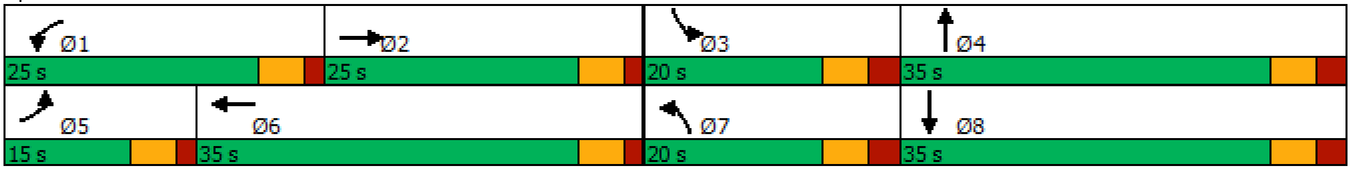
Maximum v/c Ratio: 0.79

Intersection Signal Delay: 38.1 Intersection LOS: D

Intersection Capacity Utilization 58.9% ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 21:



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	101	37	15	147	59	116	159	22	45	96	37
Future Volume (vph)	45	101	37	15	147	59	116	159	22	45	96	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		175	0		0	0		150	125		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.964			0.982			0.958	
Flt Protected		0.985			0.997		0.950			0.950		
Satd. Flow (prot)	0	1776	1615	0	1742	0	1703	1796	0	1805	1748	0
Flt Permitted		0.844			0.968		0.950			0.632		
Satd. Flow (perm)	0	1522	1615	0	1691	0	1703	1796	0	1201	1748	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121		20			9			24	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		490			481			361			360	
Travel Time (s)		11.1			10.9			8.2			8.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	6%	0%	3%	7%	0%	6%	4%	3%	0%	3%	7%
Adj. Flow (vph)	50	112	41	17	163	66	129	177	24	50	107	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	162	41	0	246	0	129	201	0	50	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8				2		6		
Detector Phase	4	4	4	8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.5	24.5	24.5	24.5	24.5		11.5	24.5		11.5	24.5	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		20.0	40.0		20.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%		22.2%	44.4%		22.2%	44.4%	
Maximum Green (s)	23.5	23.5	23.5	23.5	23.5		13.5	33.5		13.5	33.5	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5	6.5		6.5		6.5	6.5		6.5	6.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effct Green (s)		14.0	14.0		14.0		10.9	16.2		15.1	10.8	
Actuated g/C Ratio		0.30	0.30		0.30		0.23	0.35		0.32	0.23	
v/c Ratio		0.36	0.07		0.47		0.33	0.32		0.10	0.35	
Control Delay		20.2	0.2		19.8		23.0	16.6		8.9	20.2	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		20.2	0.2		19.8		23.0	16.6		8.9	20.2	
LOS		C	A		B		C	B		A	C	
Approach Delay		16.2			19.8			19.1			17.3	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		41	0		58		34	48		7	33	
Queue Length 95th (ft)		100	0		138		90	111		23	89	
Internal Link Dist (ft)		410			401			281			280	
Turn Bay Length (ft)			175							125		
Base Capacity (vph)		838	944		940		634	1260		857	1231	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.19	0.04		0.26		0.20	0.16		0.06	0.12	

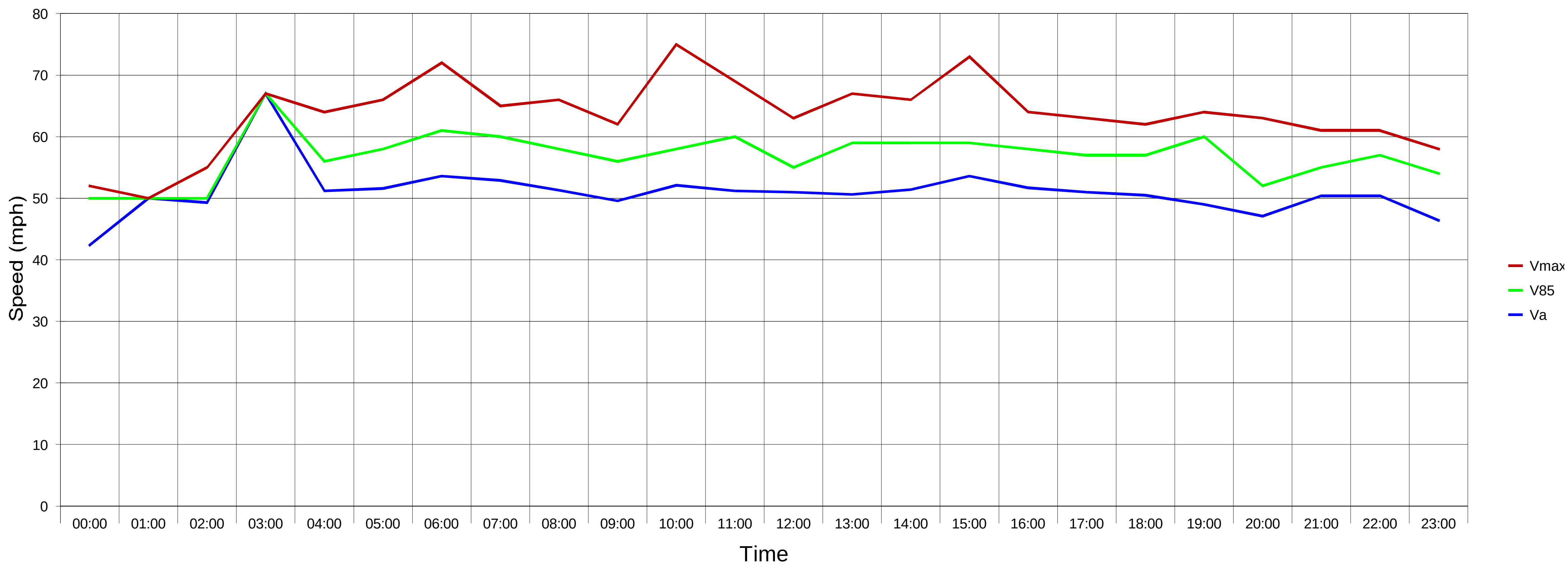
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 46.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 18.3 Intersection LOS: B
Intersection Capacity Utilization 51.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 26: NYS Route 37 & NYS Route 56/Andrews Street

Pittsford Traffic and Radar, L.L.C.
Victor, New York 14564 USA
1-585-267-7401
david_tuttle@pittsfordtrafficandradar.biz

Pontoon Bridge Road; 840 ft SE of NY Route 131; Latitude: 44.961260, Longitude: -74.914705; "+" = WB



Statistics

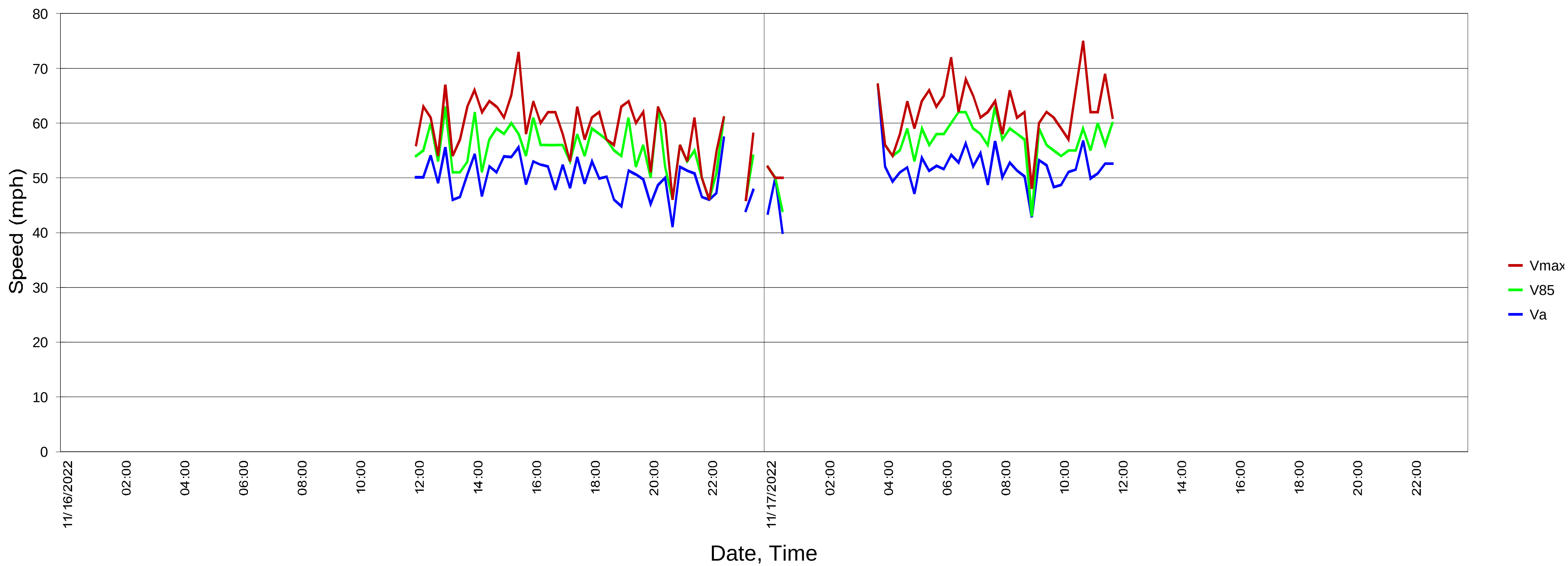
Period: Wednesday, November 16, 2022, 12:00 o'clock to Thursday, November 17, 2022, 12:00 o'clock

Speed violations: 93 %
Average time interval: 21.6 sec.
Traffic in column: 100 %
ADT: 876
Truck Share: 9 %

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
F-1	4	0.9	6	1.4	10	1.1	32	46	49	59	41	48	51	51
F-2,-3	407	91.1	384	89.5	791	90.3	46	53	59	73	43	51	58	75
F-4,-5,-6,-7	34	7.6	37	8.6	71	8.1	44	49	54	60	41	48	53	58
F-8,-9,-10	2	0.4	2	0.5	4	0.5	41	42	42	42	41	42	42	42
Total	447	51	429	49	876	100	46	52	59	73	43	50	58	75

Pittsford Traffic and Radar, L.L.C.
Victor, New York 14564 USA
1-585-267-7401
david_tuttle@pittsfordtrafficandradar.biz

Pontoon Bridge Road; 840 ft SE of NY Route 131; Latitude: 44.961260, Longitude: -74.914705; "+" = WB



Statistics

Period: Wednesday, November 16, 2022, 12:00 o'clock to Thursday, November 17, 2022, 12:00 o'clock

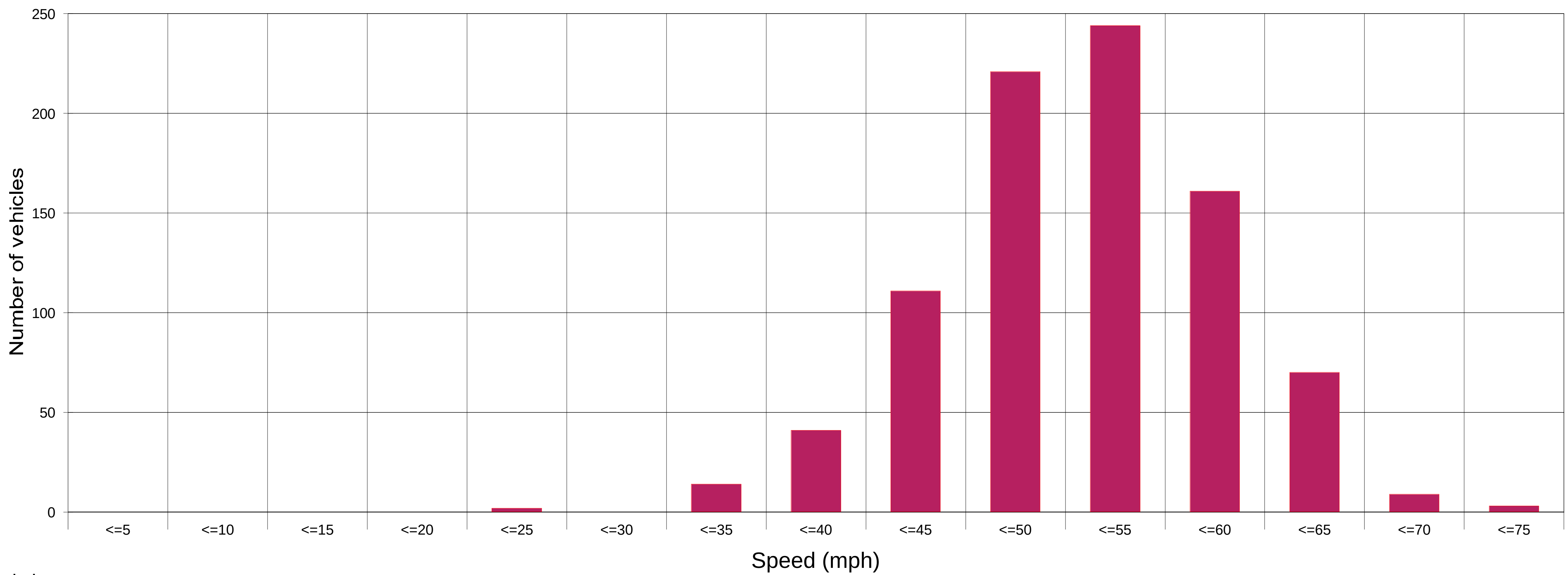
Speed violations:	93 %
Average time interval:	21.6 sec.
Traffic in column:	100 %
ADT:	876
Truck Share:	9 %

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
F-1	4	0.9	6	1.4	10	1.1	32	46	49	59	41	48	51	51
F-2,-3	407	91.1	384	89.5	791	90.3	46	53	59	73	43	51	58	75
F-4,-5,-6,-7	34	7.6	37	8.6	71	8.1	44	49	54	60	41	48	53	58
F-8,-9,-10	2	0.4	2	0.5	4	0.5	41	42	42	42	41	42	42	42
Total	447	51	429	49	876	100	46	52	59	73	43	50	58	75

SIERZEGA

Pittsford Traffic and Radar, L.L.C.
Victor, New York 14564 USA
1-585-267-7401
david_tuttle@pittsfordtrafficandradar.biz

Pontoon Bridge Road; 840 ft SE of NY Route 131; Latitude: 44.961260, Longitude: -74.914705; "+" = WB



Statistics

Period: Wednesday, November 16, 2022, 12:00 o'clock to Thursday, November 17, 2022, 12:00 o'clock

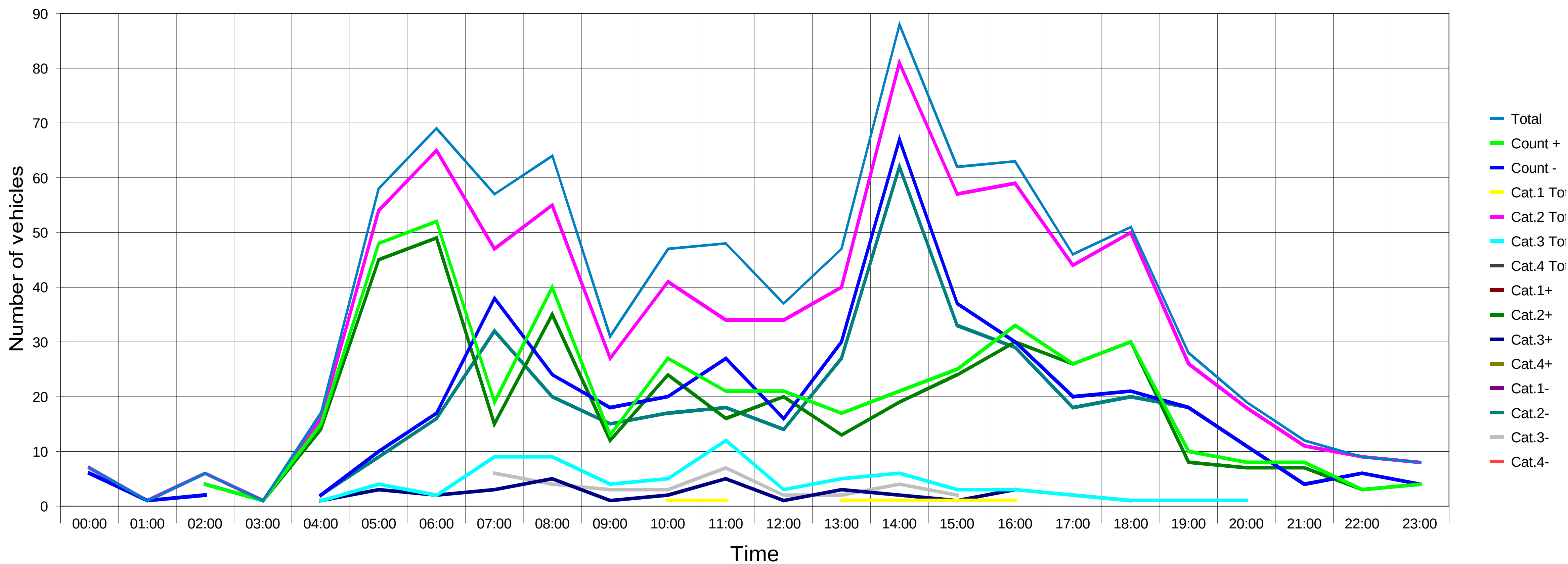
Speed violations:	93 %
Average time interval:	21.6 sec.
Traffic in column:	100 %
ADT:	876
Truck Share:	9 %

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
F-1	4	0.9	6	1.4	10	1.1	32	46	49	59	41	48	51	51
F-2,-3	407	91.1	384	89.5	791	90.3	46	53	59	73	43	51	58	75
F-4,-5,-6,-7	34	7.6	37	8.6	71	8.1	44	49	54	60	41	48	53	58
F-8,-9,-10	2	0.4	2	0.5	4	0.5	41	42	42	42	41	42	42	42
Total	447	51	429	49	876	100	46	52	59	73	43	50	58	75

SIERZEGA

Pittsford Traffic and Radar, L.L.C.
Victor, New York 14564 USA
1-585-267-7401
david_tuttle@pittsfordtrafficandradar.biz

Pontoon Bridge Road; 840 ft SE of NY Route 131; Latitude: 44.961260, Longitude: -74.914705; "+" = WB



Statistics

Period: Wednesday, November 16, 2022, 12:00 o'clock to Thursday, November 17, 2022, 12:00 o'clock

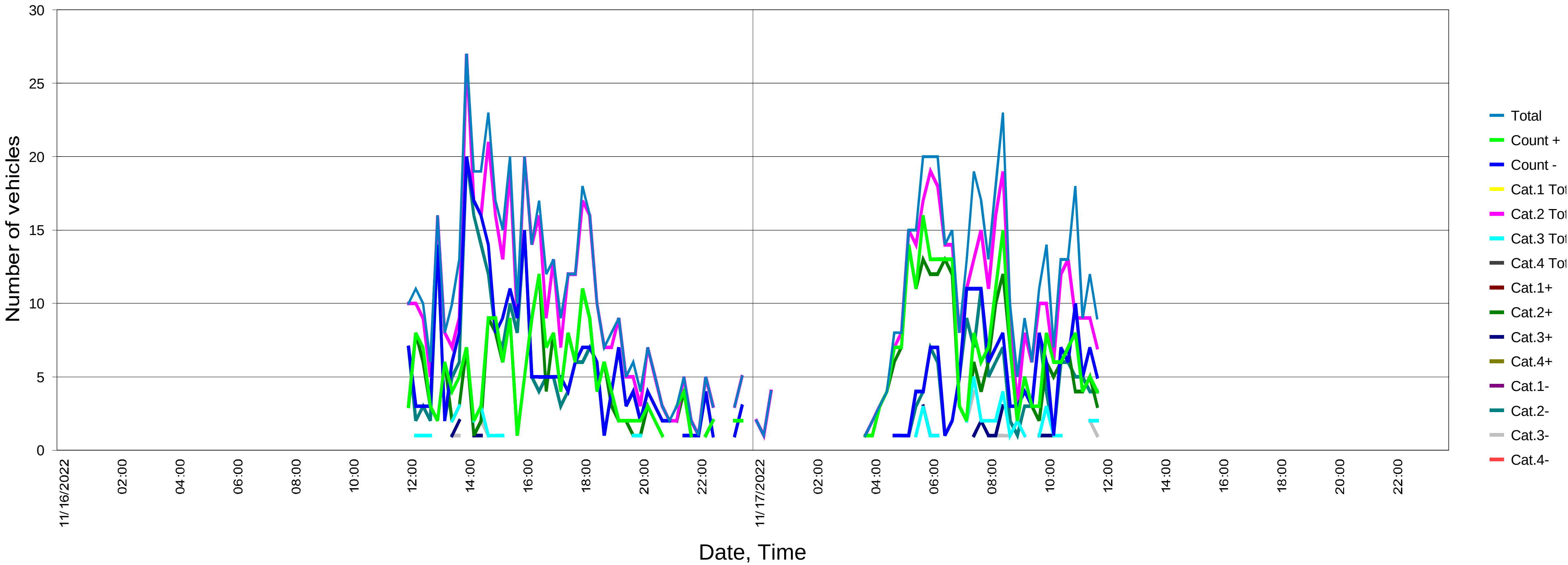
Speed violations: 93 %
Average time interval: 21.6 sec.
Traffic in column: 100 %
ADT: 876
Truck Share: 9 %

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
F-1	4	0.9	6	1.4	10	1.1	32	46	49	59	41	48	51	51
F-2,-3	407	91.1	384	89.5	791	90.3	46	53	59	73	43	51	58	75
F-4,-5,-6,-7	34	7.6	37	8.6	71	8.1	44	49	54	60	41	48	53	58
F-8,-9,-10	2	0.4	2	0.5	4	0.5	41	42	42	42	41	42	42	42
Total	447	51	429	49	876	100	46	52	59	73	43	50	58	75

SIERZEGA

Pittsford Traffic and Radar, L.L.C.
Victor, New York 14564 USA
1-585-267-7401
david_tuttle@pittsfordtrafficandradar.biz

Pontoon Bridge Road; 840 ft SE of NY Route 131; Latitude: 44.961260, Longitude: -74.914705; "+" = WB



Statistics

Period: Wednesday, November 16, 2022, 12:00 o'clock to Thursday, November 17, 2022, 12:00 o'clock

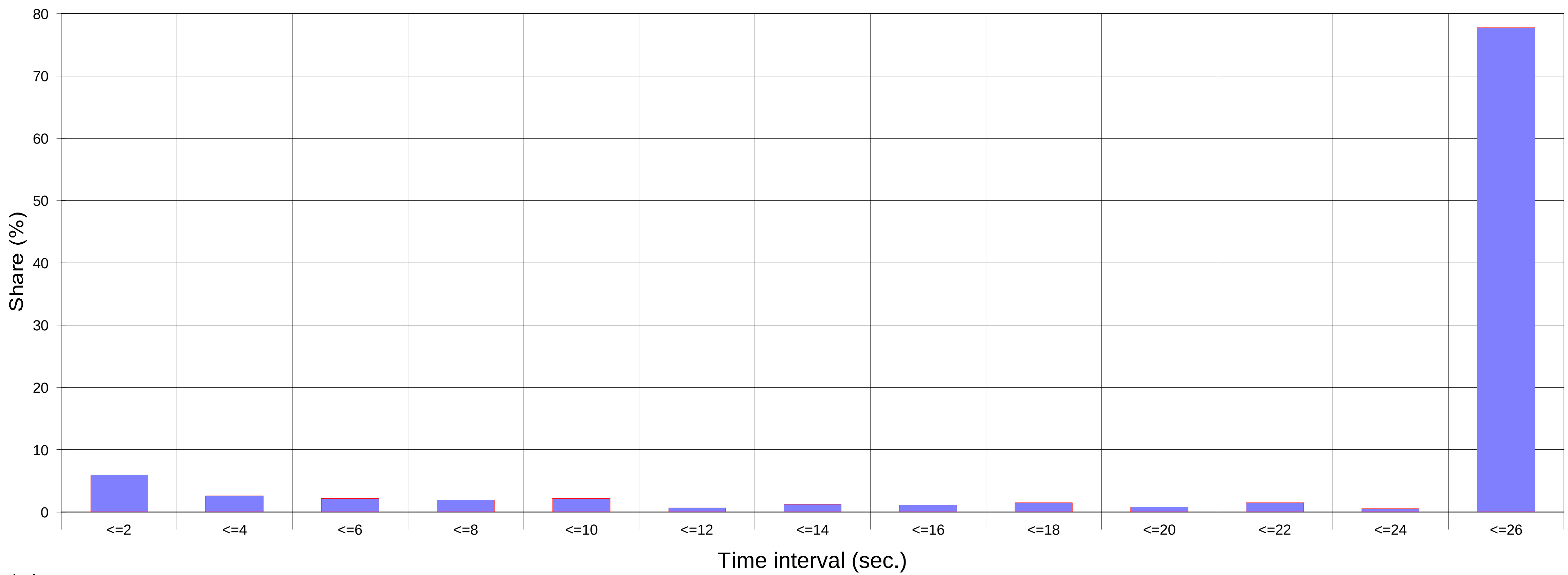
Speed violations:	93	%
Average time interval:	21.6	sec.
Traffic in column:	100	%
ADT:	876	
Truck Share:	9	%

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
F-1	4	0.9	6	1.4	10	1.1	32	46	49	59	41	48	51	51
F-2,-3	407	91.1	384	89.5	791	90.3	46	53	59	73	43	51	58	75
F-4,-5,-6,-7	34	7.6	37	8.6	71	8.1	44	49	54	60	41	48	53	58
F-8,-9,-10	2	0.4	2	0.5	4	0.5	41	42	42	42	41	42	42	42
Total	447	51	429	49	876	100	46	52	59	73	43	50	58	75

SIERZEGA

Pittsford Traffic and Radar, L.L.C.
Victor, New York 14564 USA
1-585-267-7401
david_tuttle@pittsfordtrafficandradar.biz

Pontoon Bridge Road; 840 ft SE of NY Route 131; Latitude: 44.961260, Longitude: -74.914705; "+" = WB



Statistics

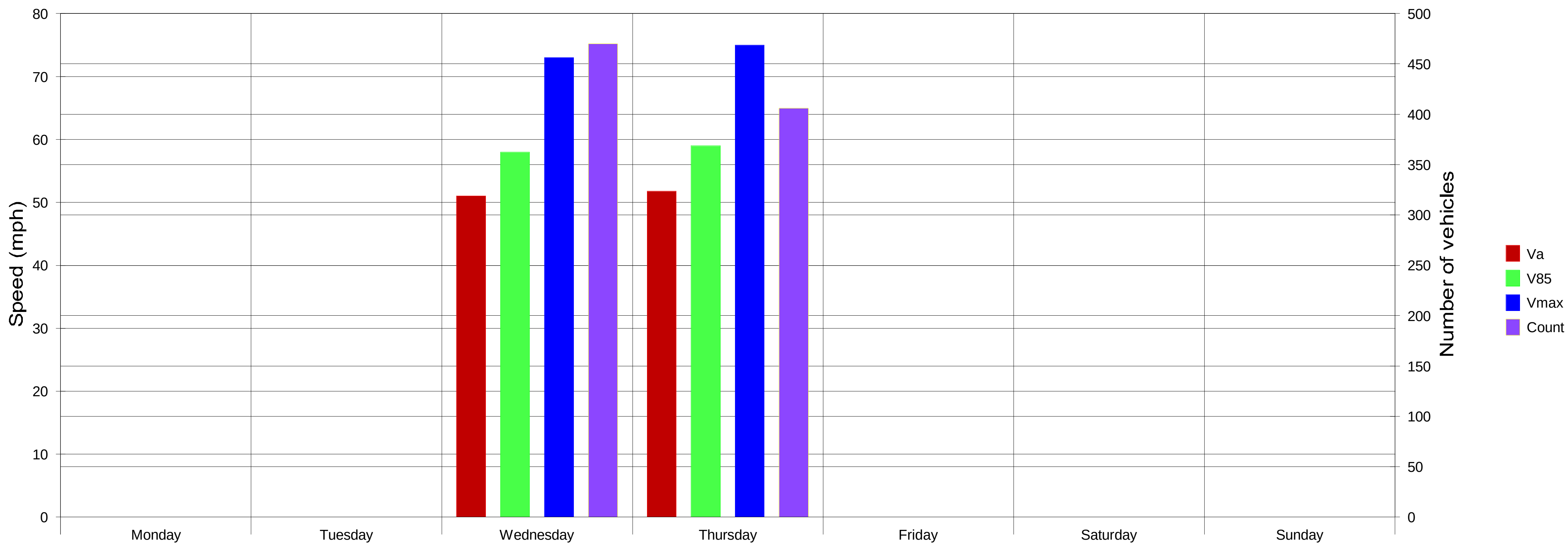
Period: Wednesday, November 16, 2022, 12:00 o'clock to Thursday, November 17, 2022, 12:00 o'clock

Speed violations:	93	%
Average time interval:	21.6	sec.
Traffic in column:	100	%
ADT:	876	
Truck Share:	9	%

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
F-1	4	0.9	6	1.4	10	1.1	32	46	49	59	41	48	51	51
F-2,-3	407	91.1	384	89.5	791	90.3	46	53	59	73	43	51	58	75
F-4,-5,-6,-7	34	7.6	37	8.6	71	8.1	44	49	54	60	41	48	53	58
F-8,-9,-10	2	0.4	2	0.5	4	0.5	41	42	42	42	41	42	42	42
Total	447	51	429	49	876	100	46	52	59	73	43	50	58	75

Pittsford Traffic and Radar, L.L.C.
Victor, New York 14564 USA
1-585-267-7401
david_tuttle@pittsfordtrafficandradar.biz

Pontoon Bridge Road; 840 ft SE of NY Route 131; Latitude: 44.961260, Longitude: -74.914705; "+" = WB



Statistics

Period: Wednesday, November 16, 2022, 12:00 o'clock to Thursday, November 17, 2022, 12:00 o'clock

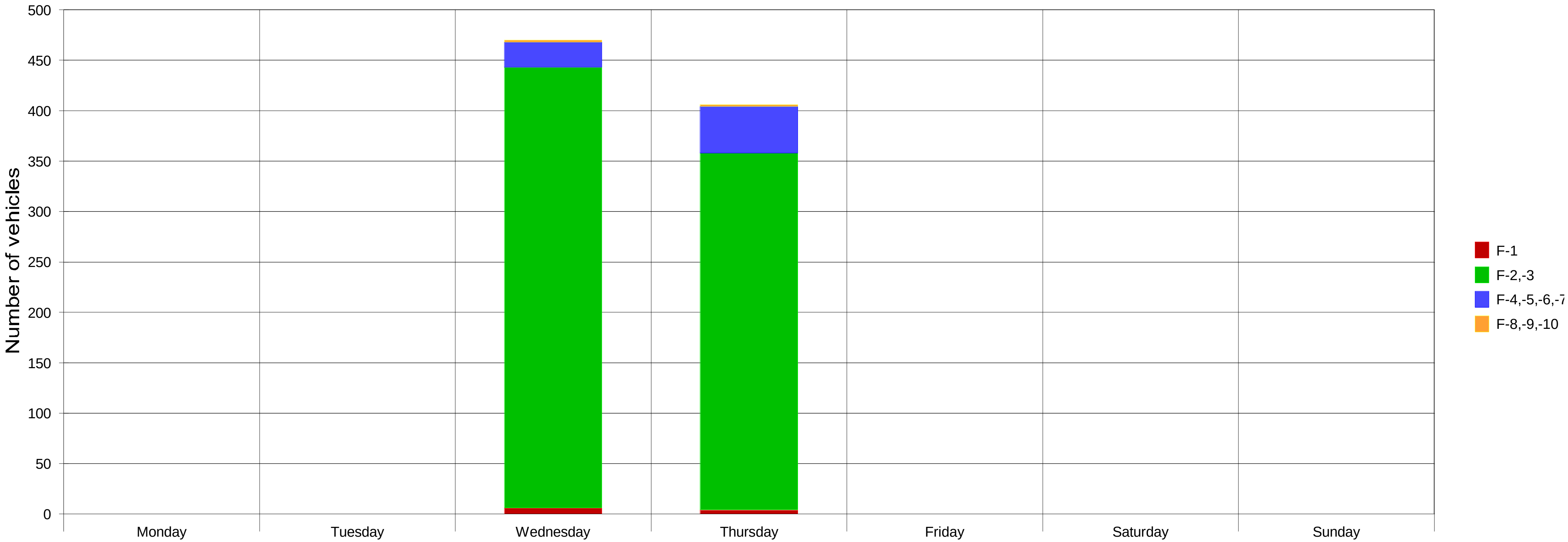
Speed violations:	93	%
Average time interval:	21.6	sec.
Traffic in column:	100	%
ADT:	876	
Truck Share:	9	%

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
F-1	4	0.9	6	1.4	10	1.1	32	46	49	59	41	48	51	51
F-2,-3	407	91.1	384	89.5	791	90.3	46	53	59	73	43	51	58	75
F-4,-5,-6,-7	34	7.6	37	8.6	71	8.1	44	49	54	60	41	48	53	58
F-8,-9,-10	2	0.4	2	0.5	4	0.5	41	42	42	42	41	42	42	42
Total	447	51	429	49	876	100	46	52	59	73	43	50	58	75

SIERZEGA

Pittsford Traffic and Radar, L.L.C.
Victor, New York 14564 USA
1-585-267-7401
david_tuttle@pittsfordtrafficandradar.biz

Pontoon Bridge Road; 840 ft SE of NY Route 131; Latitude: 44.961260, Longitude: -74.914705; "+" = WB



Statistics

Period: Wednesday, November 16, 2022, 12:00 o'clock to Thursday, November 17, 2022, 12:00 o'clock

Speed violations: 93 %
Average time interval: 21.6 sec.
Traffic in column: 100 %
ADT: 876
Truck Share: 9 %

	Count +	%	Count -	%	Total	%	V15 +	Va +	V85 +	Vmax+	V15 -	Va -	V85 -	Vmax -
F-1	4	0.9	6	1.4	10	1.1	32	46	49	59	41	48	51	51
F-2,-3	407	91.1	384	89.5	791	90.3	46	53	59	73	43	51	58	75
F-4,-5,-6,-7	34	7.6	37	8.6	71	8.1	44	49	54	60	41	48	53	58
F-8,-9,-10	2	0.4	2	0.5	4	0.5	41	42	42	42	41	42	42	42
Total	447	51	429	49	876	100	46	52	59	73	43	50	58	75

SIERZEGA

Detailed evaluation Wednesday, November 16, 2022, 12:00 o'clock to Thursday, November 17, 2022, 12:00 o'clock

		F-2,-3					**F-4,-5,-6,-7**					**F-8,-9,-10**					**F-4,-5,-6,-7 + F-8,-9,-10**					**Total:**				
	Evaluation:	Count	Share [%]	Va mph	V85 mph	Vmax mph	Count	Share [%]	Va mph	V85 mph	Vmax mph	Count	Share [%]	Va mph	V85 mph	Vmax mph	Count	Share [%]	Va mph	V85 mph	Vmax mph	Count	Share [%]	Va mph	V85 mph	Vmax mph
Direction +	Day:	313	90.7	53	59	73	28	8.1	49	54	60	2	0.6	42	42	42	30	8.7	49	54	60	**345**	39.4	53	59	73
	Evening:	22	84.6	48	60	64	2	7.7	50	51	51	0	0				2	7.7	50	51	51	**26**	3	48	55	64
	Night:	71	94.7	52	58	67	4	5.3	50	50	59	0	0				4	5.3	50	50	59	**75**	8.6	52	58	67
	16 Hours:	335	90.3	53	60	73	30	8.1	49	54	60	2	0.5	42	42	42	32	8.6	49	53	60	**371**	42.4	52	59	73
	Weekday traffic:	407	91.1	53	59	73	34	7.6	49	54	60	2	0.4	42	42	42	36	8.1	49	54	60	**447**	51	52	59	73
	Weekend traffic:																									
	Total traffic:	407	91.1	53	59	73	34	7.6	49	54	60	2	0.4	42	42	42	36	8.1	49	54	60	**447**	51	52	59	73
Direction -	Day:	321	87.9	51	59	75	36	9.9	48	53	58	2	0.5	42	42	42	38	10.4	48	53	58	**365**	41.7	51	58	75
	Evening:	32	100	49	59	63	0	0				0	0				0	0				**32**	3.7	49	59	63
	Night:	30	96.8	47	52	58	1	3.2	47	47	47	0	0				1	3.2	47	47	47	**31**	3.5	47	52	58
	16 Hours:	353	88.9	51	59	75	36	9.1	48	53	58	2	0.5	42	42	42	38	9.6	48	53	58	**397**	45.3	51	58	75
	Weekday traffic:	384	89.5	51	58	75	37	8.6	48	53	58	2	0.5	42	42	42	39	9.1	48	53	58	**429**	49	50	58	75
	Weekend traffic:																									
	Total traffic:	384	89.5	51	58	75	37	8.6	48	53	58	2	0.5	42	42	42	39	9.1	48	53	58	**429**	49	50	58	75
Total	Day:	634	89.3	52	59	75	64	9	48	53	60	4	0.6	42	42	42	68	9.6	48	53	60	**710**	81.1	52	59	75
	Evening:	54	93.1	49	60	64	2	3.4	50	51	51	0	0				2	3.4	50	51	51	**58**	6.6	49	59	64
	Night:	101	95.3	50	57	67	5	4.7	50	50	59	0	0				5	4.7	50	50	59	**106**	12.1	50	57	67
	16 Hours:	688	89.6	52	59	75	66	8.6	48	53	60	4	0.5	42	42	42	70	9.1	48	53	60	**768**	87.7	51	59	75
	Weekday traffic:	791	90.3	52	59	75	71	8.1	49	53	60	4	0.5	42	42	42	75	8.6	48	53	60	**876**	100	51	59	75
	Weekend traffic:																									
	Total traffic:	**791**	**90.3**	**52**	**59**	**75**	**71**	**8.1**	**49**	**53**	**60**	**4**	**0.5**	**42**	**42**	**42**	**75**	**8.6**	**48**	**53**	**60**	**876**	**100**	**51**	**59**	**75**

Detailed evaluation Wednesday, November 16, 2022, 12:00 o'clock to Thursday, November 17, 2022, 12:00 o'clock

Evaluation:				Average Traffic									
	From - To	Days	Dir.	Day:		Evening:		Night:		16 Hours:		ADT	
From - To				06:00 - 18:59		19:00 - 21:59		22:00 - 05:59		06:00 - 21:59		00:00 - 23:59	
Days				1		1		1		1		1	
				AT [veh./h]	AT [veh./13h]	AT [veh./h]	AT [veh./3h]	AT [veh./h]	AT [veh./8h]	AT [veh./h]	AT [veh./16h]	AT [veh./h]	ADT [veh./24h]
Weekday traffic:	Mon - Fri	1	+	27	345	9	26	9	75	23	371	19	447
			-	28	365	11	32	4	31	25	397	18	429
			T	55	710	19	58	13	106	48	768	36	876
Weekend traffic:	Sat - Sun	0	+										
			-										
			T										
Total traffic:		1	+	27	345	9	26	9	75	23	371	19	447
			-	28	365	11	32	4	31	25	397	18	429
			T	55	710	19	58	13	106	48	768	36	876

SIERZEGA

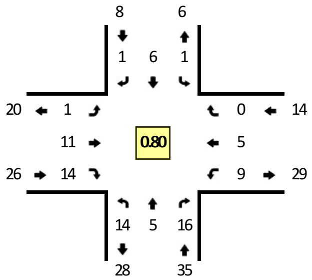
Detailed evaluation Wednesday, November 16, 2022, 12:00 o'clock to Thursday, November 17, 2022, 12:00 o'clock

Evaluation:				Peak hours				K - Factors		
	From - To	Days	Dir.	From mean values		Absolute		K6	K16	K200
From - To								06:00 - 08:59	06:00 - 21:59	Peak hour
				Time	[veh./h]	Date, time	[veh./h]	15:00 - 17:59		
Weekday traffic:	Mon - Fri	1	+	05:45	55	11/17/2022, 05:45	55	0.436	0.83	0.123
			-	14:00	67	11/16/2022, 14:00	67	0.387	0.925	0.156
			T	14:00	88	11/16/2022, 14:00	88	0.412	0.877	0.1
Weekend traffic:	Sat - Sun	0	+							
			-							
			T							
Total traffic:		1	+	05:45	55	11/17/2022, 05:45	55	0.436	0.83	0.123
			-	14:00	67	11/16/2022, 14:00	67	0.387	0.925	0.156
			T	14:00	88	11/16/2022, 14:00	88	0.412	0.877	0.1

Legend to K-factors:
K(I) -factor: vehicles in period1+2 / ADT
K(J) -factor: vehicles in 16 hrs. period /ADT
K(200)-factor: vehicles in peak hour /ADT

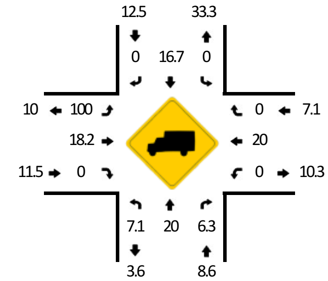
LOCATION: Pontoon Bridge Rd -- NY 131
CITY/STATE: Massena, NY

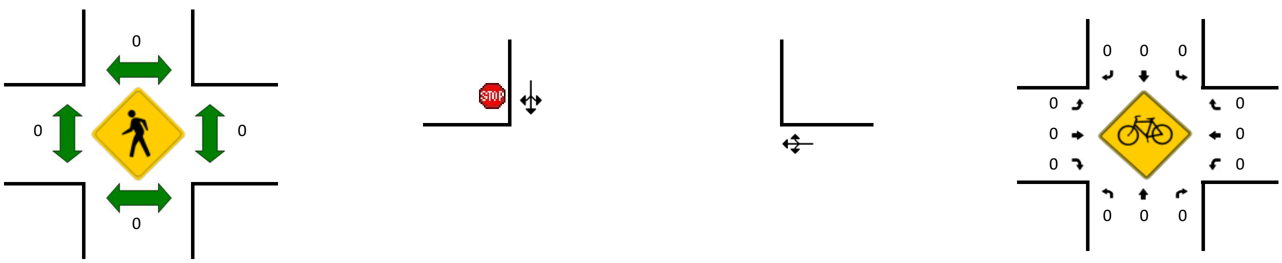
QC JOB #: 16009201
DATE: Thu, Nov 17 2022

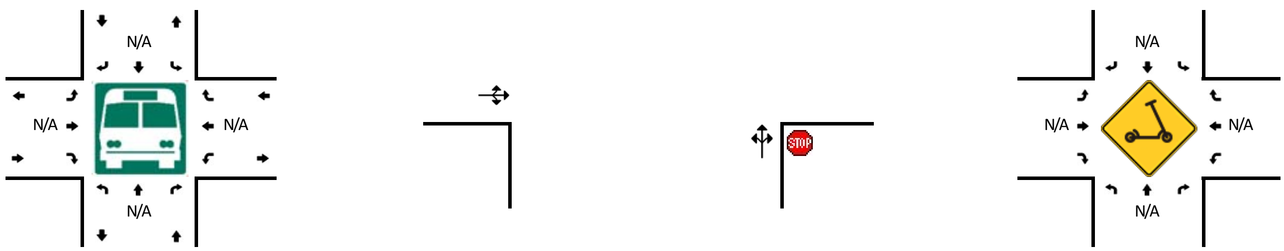


Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

Quality Counts
DATA THAT DRIVES COMMUNITIES







15-Min Count Period Beginning At	Pontoon Bridge Rd (Northbound)				Pontoon Bridge Rd (Southbound)				NY 131 (Eastbound)				NY 131 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	0	1	0	0	0	0	0	0	0	2	0	3	0	0	0	8	
7:15 AM	0	0	1	0	0	0	0	0	0	5	2	0	9	2	0	0	19	
7:30 AM	1	1	6	0	0	0	0	0	0	0	4	0	7	5	0	0	24	
7:45 AM	1	0	3	0	0	2	0	0	1	4	4	0	5	1	0	0	21	72
8:00 AM	2	1	4	0	1	0	1	0	0	1	3	0	1	3	0	1	18	82
8:15 AM	2	0	7	0	0	1	0	0	0	3	4	0	0	1	0	0	18	81
8:30 AM	9	4	2	0	0	3	0	0	0	3	3	0	2	0	0	0	26	83
8:45 AM	2	1	3	0	0	1	0	0	0	2	0	0	2	3	0	0	14	76

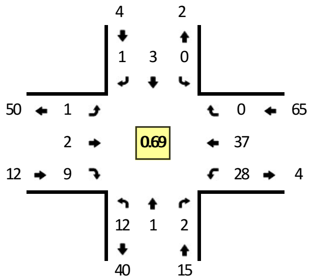
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	36	16	8	0	0	12	0	0	0	12	12	0	8	0	0	0	104
Heavy Trucks	0	4	4		0	4	0		0	4	0		0	0	0		16
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

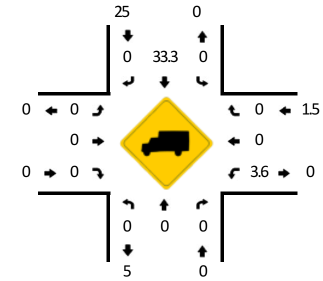
Comments:

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

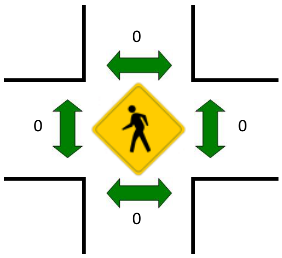
LOCATION: Pontoon Bridge Rd -- NY 131 | **QC JOB #:** 16009202
CITY/STATE: Massena, NY | **DATE:** Thu, Nov 17 2022

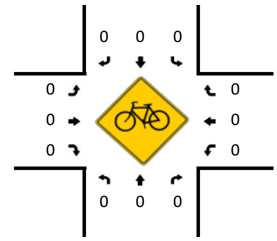
Peak-Hour: 3:15 PM -- 4:15 PM
Peak 15-Min: 3:30 PM -- 3:45 PM

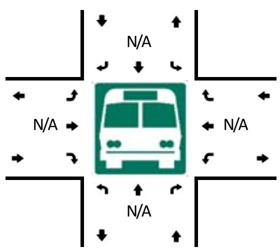


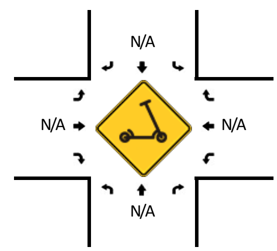


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Pontoon Bridge Rd (Northbound)				Pontoon Bridge Rd (Southbound)				NY 131 (Eastbound)				NY 131 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	6	0	1	0	0	1	0	0	0	1	2	0	5	1	0	0	17	
3:15 PM	3	0	0	0	0	1	1	0	0	0	1	0	7	4	0	0	17	
3:30 PM	5	0	2	0	0	0	0	0	0	1	3	0	7	17	0	0	35	
3:45 PM	2	0	0	0	0	1	0	0	1	0	3	0	5	10	0	0	22	91
4:00 PM	2	1	0	0	0	1	0	0	0	1	2	0	9	6	0	0	22	96
4:15 PM	5	2	2	0	0	0	0	0	0	0	2	0	3	2	0	0	16	95
4:30 PM	6	1	5	0	0	0	0	0	1	1	3	0	1	1	0	0	19	79
4:45 PM	3	1	3	0	0	1	0	0	2	1	2	0	1	2	0	0	16	73
5:00 PM	1	2	2	0	0	0	1	0	0	2	2	0	3	7	0	0	20	71
5:15 PM	3	1	2	0	0	2	0	0	0	1	2	0	1	3	0	0	15	70
5:30 PM	2	1	3	0	0	0	0	0	0	0	2	0	3	2	0	0	13	64
5:45 PM	1	2	2	0	0	1	0	0	0	0	0	0	4	3	0	0	13	61

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	0	8	0	0	0	0	0	0	4	12	0	28	68	0	0	140
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

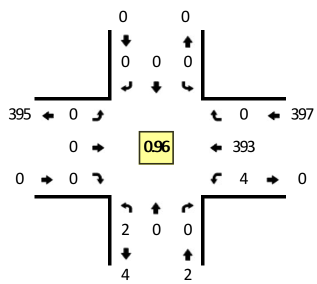
Comments:

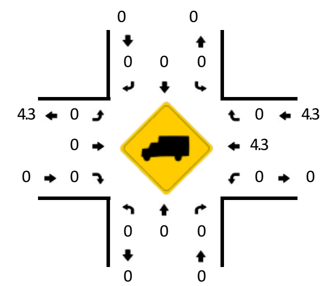
Report generated on 11/29/2022 2:35 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

LOCATION: NY 131 -- WB NY 37
QC JOB #: 16009204

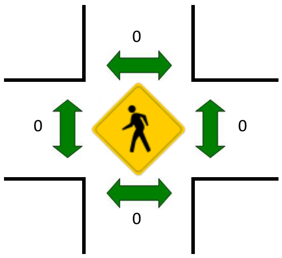
CITY/STATE: Massena, NY
DATE: Thu, Nov 17 2022

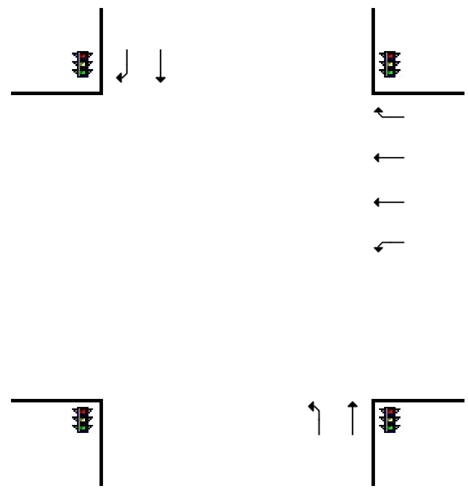
Peak-Hour: 3:30 PM -- 4:30 PM
Peak 15-Min: 3:45 PM -- 4:00 PM

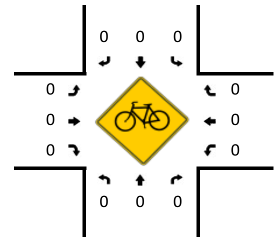


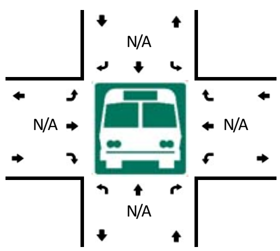


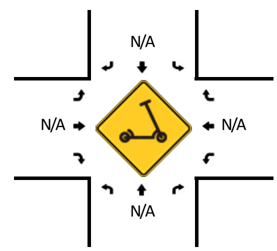
Quality Counts
DATA THAT DRIVES COMMUNITIES









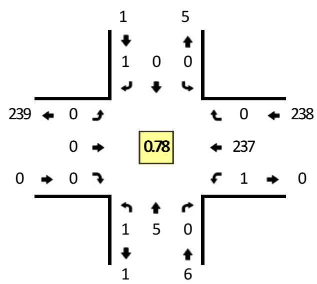


15-Min Count Period Beginning At	NY 131 (Northbound)				NY 131 (Southbound)				WB NY 37 (Eastbound)				WB NY 37 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	79	0	0	81	
3:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	86	0	0	88	
3:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	89	0	0	91	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	103	0	0	104	364
4:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	101	384
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	101	0	0	103	399
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	75	0	0	76	384
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	74	0	0	76	356
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	75	0	0	75	330
5:15 PM	3	0	0	0	0	0	0	0	0	0	0	0	2	96	0	0	101	328
5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	74	0	0	76	328
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	3	60	0	0	63	315

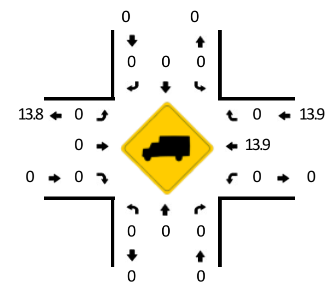
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	4	412	0	0	416
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	20	0		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

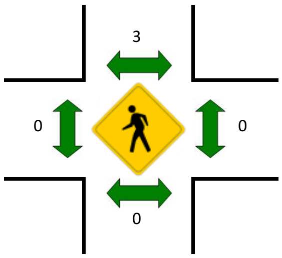
Comments:

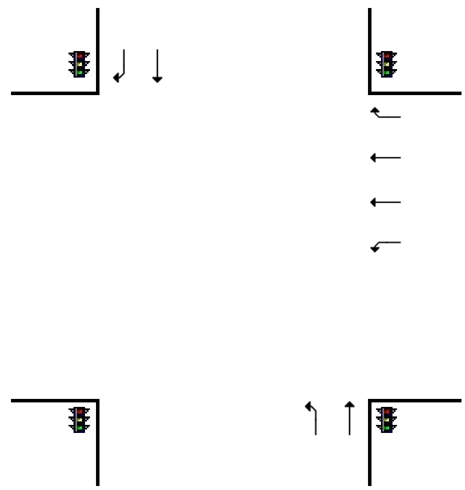
LOCATION: NY 131 -- WB NY 37
CITY/STATE: Massena, NY
QC JOB #: 16009203
DATE: Thu, Nov 17 2022

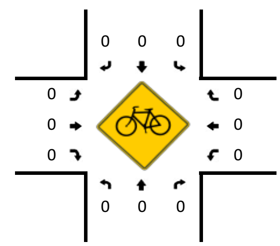


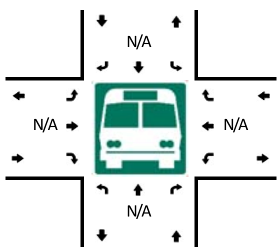
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

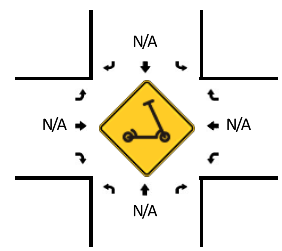










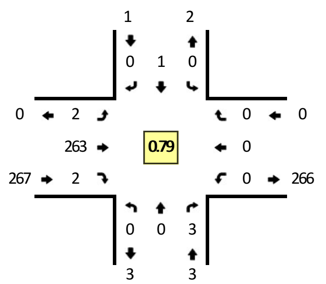


15-Min Count Period Beginning At	NY 131 (Northbound)				NY 131 (Southbound)				WB NY 37 (Eastbound)				WB NY 37 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	50	0	0	51	
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	54	0	0	55	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	47	0	0	47	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	64	0	0	65	218
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	52	0	0	53	220
8:15 AM	0	2	0	0	0	0	1	0	0	0	0	0	0	65	0	0	68	233
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	45	0	0	45	231
8:45 AM	1	3	0	0	0	0	0	0	0	0	0	0	0	75	0	0	79	245

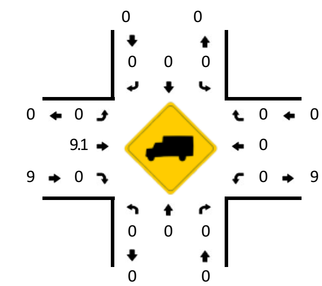
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	12	0	0	0	0	0	0	0	0	0	0	0	300	0	0	316
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	32	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

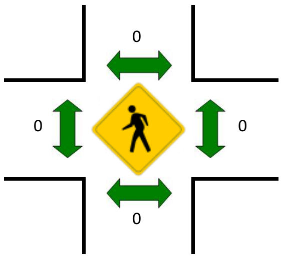
Comments:

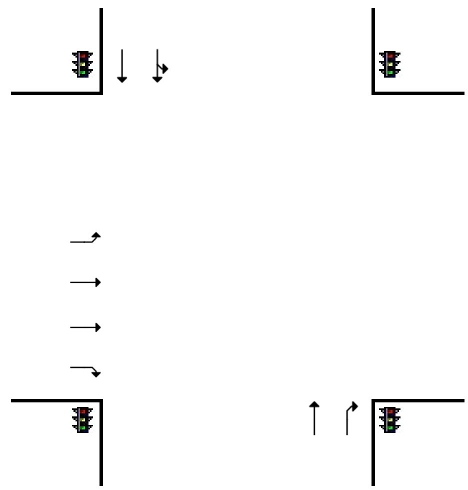
LOCATION: NY 131/Mall Rd -- EB SR 37
CITY/STATE: Massena, NY
QC JOB #: 16009205
DATE: Thu, Nov 17 2022

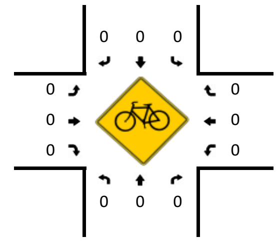


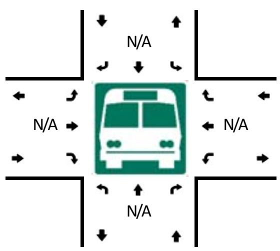
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

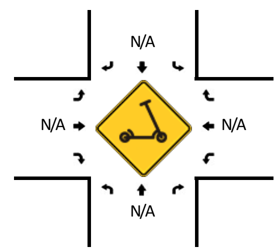










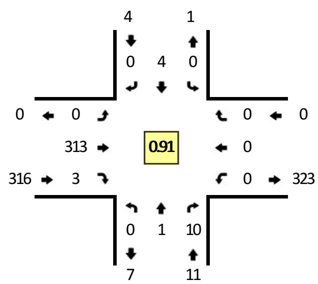


15-Min Count Period Beginning At	NY 131/Mall Rd (Northbound)				NY 131/Mall Rd (Southbound)				EB SR 37 (Eastbound)				EB SR 37 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	1	40	0	0	0	0	0	0	42	
7:15 AM	0	0	0	0	0	0	0	0	1	81	0	0	0	0	0	0	82	
7:30 AM	0	0	0	0	0	0	0	0	0	85	1	0	0	0	0	0	86	
7:45 AM	0	0	2	0	0	1	0	0	0	57	1	0	0	0	0	0	61	271
8:00 AM	0	0	0	0	0	1	0	0	0	37	0	0	0	0	0	0	38	267
8:15 AM	0	0	0	0	0	0	0	0	2	59	0	0	0	0	0	0	61	246
8:30 AM	0	0	1	0	0	0	0	0	0	64	1	0	0	0	0	0	66	226
8:45 AM	0	1	0	0	0	0	0	0	3	49	0	0	0	0	0	0	53	218

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	340	4	0	0	0	0	0	344
Heavy Trucks	0	0	0		0	0	0		0	28	0		0	0	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

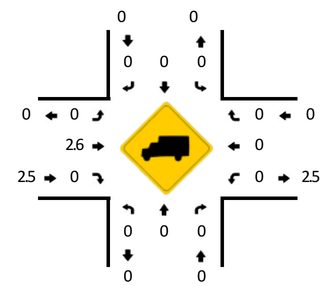
Comments:

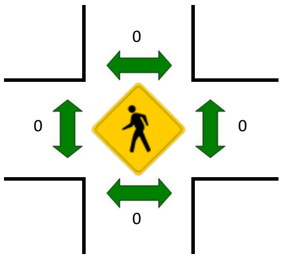
LOCATION: NY 131/Mall Rd -- EB SR 37
QC JOB #: 16009206
CITY/STATE: Massena, NY
DATE: Thu, Nov 17 2022

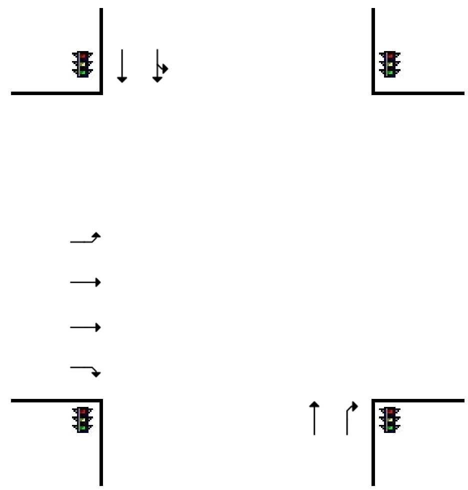


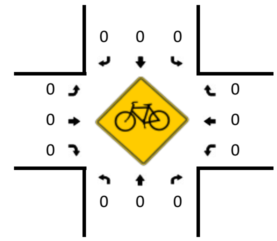
Peak-Hour: 3:45 PM -- 4:45 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

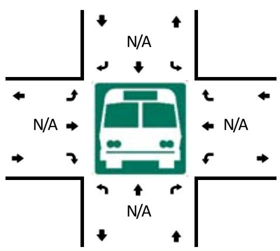
Quality Counts
DATA THAT DRIVES COMMUNITIES

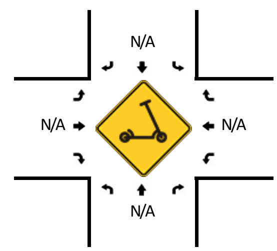












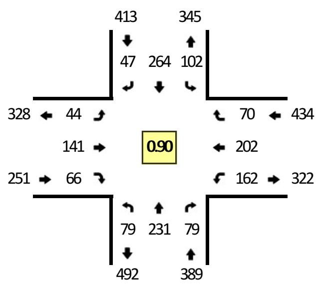
15-Min Count Period Beginning At	NY 131/Mall Rd (Northbound)				NY 131/Mall Rd (Southbound)				EB SR 37 (Eastbound)				EB SR 37 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	3	0	0	2	0	0	0	81	0	0	0	0	0	0	86	
3:15 PM	0	0	1	0	0	1	0	0	1	79	0	0	0	0	0	0	82	
3:30 PM	0	1	0	0	0	1	0	0	0	71	2	0	0	0	0	0	75	
3:45 PM	0	0	1	0	0	1	0	0	0	68	2	0	0	0	0	0	72	315
4:00 PM	0	1	3	0	0	0	0	0	0	87	0	0	0	0	0	0	91	320
4:15 PM	0	0	4	0	0	2	0	0	0	84	0	0	0	0	0	0	90	328
4:30 PM	0	0	2	0	0	1	0	0	0	74	1	0	0	0	0	0	78	331
4:45 PM	0	0	4	0	0	2	0	0	0	60	0	0	0	0	0	0	66	325
5:00 PM	0	0	6	0	0	0	0	0	0	81	1	0	0	0	0	0	88	322
5:15 PM	0	3	0	0	0	2	0	0	0	66	0	0	0	0	0	0	71	303
5:30 PM	0	1	3	0	0	0	0	0	0	58	0	0	0	0	0	0	62	287
5:45 PM	0	0	2	0	0	3	0	0	0	61	0	0	0	0	0	0	66	287

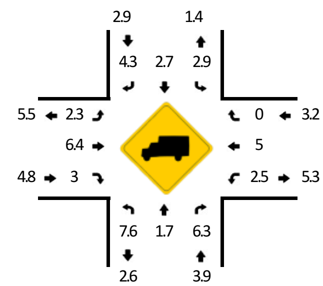
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	4	12	0	0	0	0	0	0	348	0	0	0	0	0	0	364
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

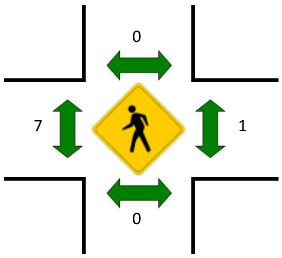
Comments:

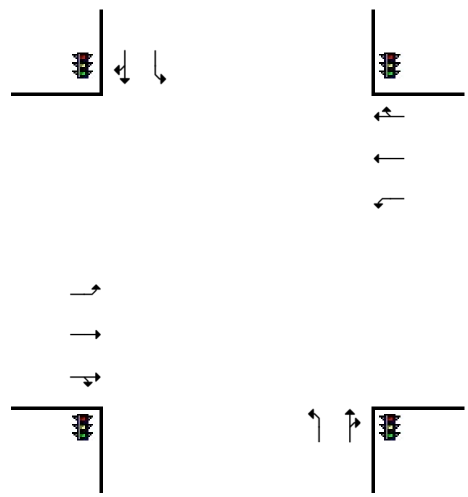
LOCATION: Main St -- NY 37   **QC JOB #:** 16009208
CITY/STATE: Massena, NY   **DATE:** Thu, Nov 17 2022

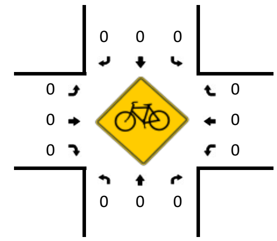
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:45 PM -- 4:00 PM

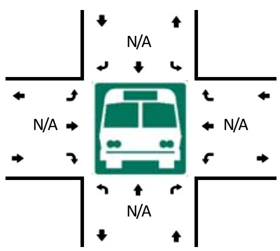


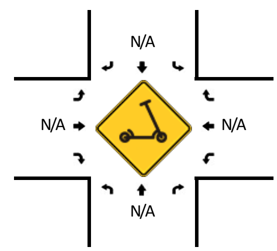












15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				NY 37 (Eastbound)				NY 37 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	20	55	19	0	26	81	12	0	15	37	23	0	40	42	15	0	385	
3:15 PM	16	48	15	0	22	65	13	0	10	28	12	0	37	50	14	0	330	
3:30 PM	18	61	23	0	21	57	10	0	12	37	16	0	36	52	18	0	361	
3:45 PM	25	67	22	0	33	61	12	0	7	39	15	0	49	58	23	0	411	1487
4:00 PM	19	61	22	0	24	64	19	0	9	36	12	0	28	40	12	0	346	1448
4:15 PM	17	51	19	0	12	56	7	0	6	26	15	0	39	41	17	1	307	1425
4:30 PM	18	60	23	0	15	65	9	0	4	33	9	0	41	50	12	0	339	1403
4:45 PM	19	59	21	0	16	53	4	0	6	27	12	0	41	42	13	0	313	1305
5:00 PM	21	50	16	0	7	65	11	0	6	28	8	0	36	41	8	1	298	1257
5:15 PM	15	54	25	0	9	55	3	0	7	43	12	0	31	37	8	0	299	1249
5:30 PM	15	54	24	0	10	50	5	0	6	34	10	0	27	38	12	0	285	1195
5:45 PM	14	48	24	0	6	44	2	0	4	25	21	0	27	35	9	0	259	1141

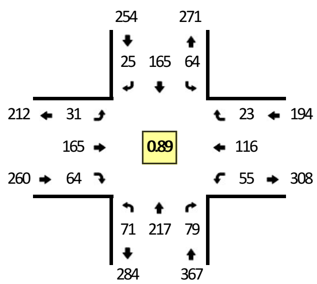
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	100	268	88	0	132	244	48	0	28	156	60	0	196	232	92	0	1644
Heavy Trucks	8	0	4		4	4	0		0	4	0		12	16	0		52
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

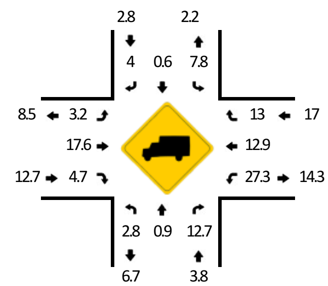
Comments:

Report generated on 11/29/2022 2:35 PM   SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

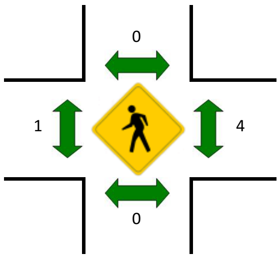
LOCATION: Main St -- NY 37 **QC JOB #:** 16009207
CITY/STATE: Massena, NY **DATE:** Thu, Nov 17 2022

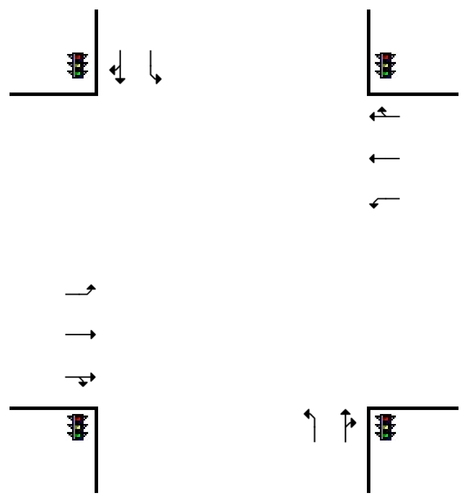
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

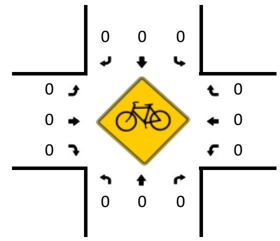


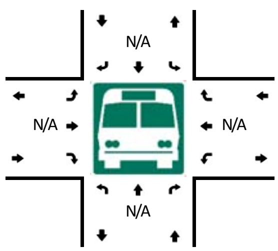


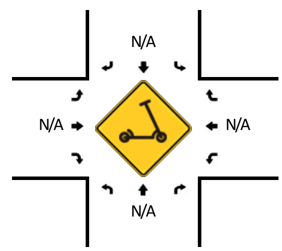
Quality Counts
DATA THAT DRIVES COMMUNITIES











15-Min Count Period Beginning At	Main St (Northbound) Left	Thru	Right	U	Main St (Southbound) Left	Thru	Right	U	NY 37 (Eastbound) Left	Thru	Right	U	NY 37 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	13	36	12	0	8	32	8	0	3	37	11	0	17	33	10	0	220	
7:15 AM	21	47	13	0	16	57	13	0	5	55	20	0	6	42	6	0	301	
7:30 AM	19	46	18	0	17	39	2	0	12	42	17	0	15	27	7	0	261	
7:45 AM	16	73	25	0	20	33	3	0	7	30	14	0	18	22	6	0	267	1049
8:00 AM	15	51	23	0	11	36	7	0	7	38	13	0	16	25	4	0	246	1075
8:15 AM	15	56	21	0	21	35	11	0	12	34	9	0	26	22	12	0	274	1048
8:30 AM	10	51	25	0	21	49	2	0	7	33	16	0	20	32	11	0	277	1064
8:45 AM	10	53	27	0	17	44	2	0	5	27	12	0	26	26	4	0	253	1050

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	84	188	52	0	64	228	52	0	20	220	80	0	24	168	24	0	1204
Heavy Trucks	0	4	4		20	4	0		0	68	0		4	12	4		120
Buses																	
Pedestrians		0				0				0				12			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Type of peak hour being reported: Intersection Peak

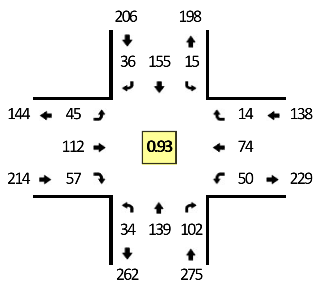
Method for determining peak hour: Total Entering Volume

LOCATION: Andrews St -- NY 37

QC JOB #: 16009209

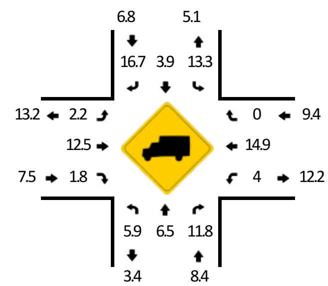
CITY/STATE: Massena, NY

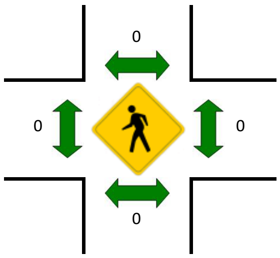
DATE: Thu, Nov 17 2022

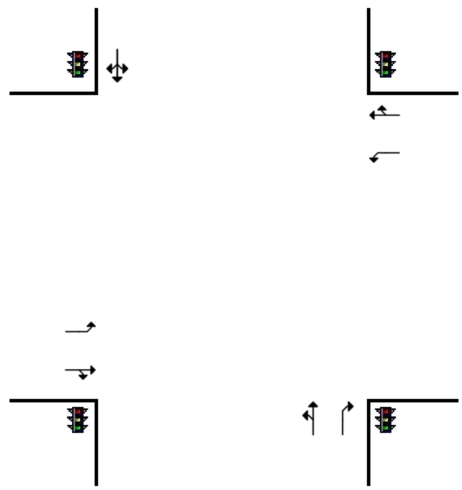


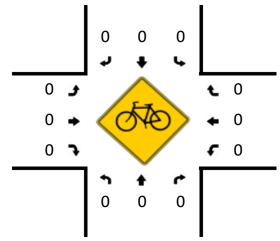
Peak-Hour: 7:00 AM -- 8:00 AM

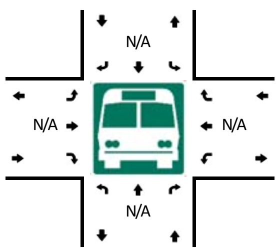
Peak 15-Min: 7:15 AM -- 7:30 AM

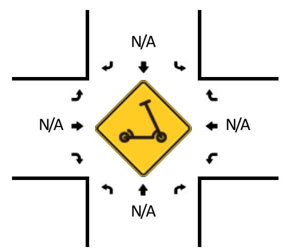












15-Min Count Period Beginning At	Andrews St (Northbound)				Andrews St (Southbound)				NY 37 (Eastbound)				NY 37 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	7	26	22	0	3	51	10	0	13	35	16	0	13	16	3	0	215	
7:15 AM	8	43	32	0	1	36	8	0	16	31	10	0	18	16	5	0	224	
7:30 AM	8	23	18	0	6	33	5	0	6	30	15	0	11	26	2	0	183	
7:45 AM	11	47	30	0	5	35	13	0	10	16	16	0	8	16	4	0	211	833
8:00 AM	17	27	12	0	0	30	8	0	8	32	5	0	14	18	5	0	176	794
8:15 AM	9	35	21	0	1	37	9	0	16	24	5	0	14	17	7	0	195	765
8:30 AM	8	10	19	0	1	23	6	0	7	25	10	0	19	23	4	0	155	737
8:45 AM	13	21	16	0	1	19	10	0	12	30	3	0	14	16	5	0	160	686

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	172	128	0	4	144	32	0	64	124	40	0	72	64	20	0	896
Heavy Trucks	0	8	20		0	8	4		0	8	0		0	16	0		64
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

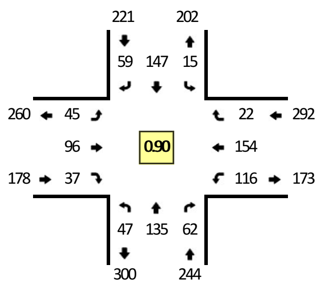
Comments:

Report generated on 11/29/2022 2:35 PM

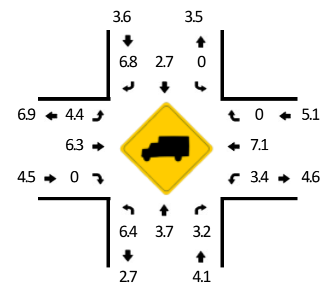
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

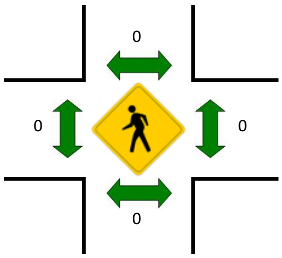
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

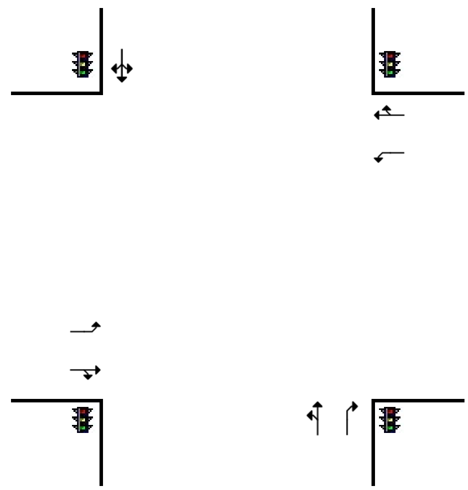
LOCATION: Andrews St -- NY 37 | **QC JOB #:** 16009210
CITY/STATE: Massena, NY | **DATE:** Thu, Nov 17 2022

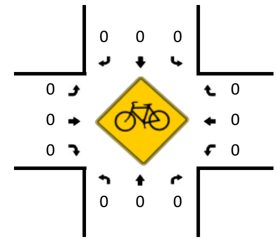


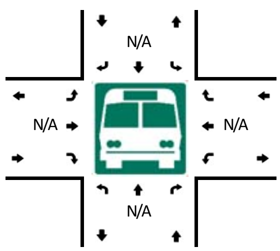
Peak-Hour: 3:15 PM -- 4:15 PM
Peak 15-Min: 3:45 PM -- 4:00 PM

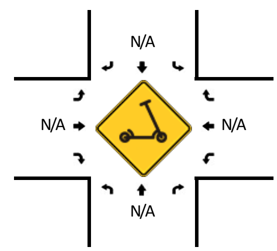












15-Min Count Period Beginning At	Andrews St (Northbound) Left	Thru	Right	U	Andrews St (Southbound) Left	Thru	Right	U	NY 37 (Eastbound) Left	Thru	Right	U	NY 37 (Westbound) Left	Thru	Right	U	Total	Hourly Totals
3:00 PM	10	25	17	0	6	35	17	0	8	22	14	0	23	37	6	0	220	
3:15 PM	8	21	7	0	3	32	21	0	15	19	5	0	36	38	6	0	211	
3:30 PM	9	45	20	0	2	37	9	0	7	23	6	0	20	35	5	0	218	
3:45 PM	14	42	18	0	5	43	14	0	11	19	12	0	28	48	6	0	260	909
4:00 PM	16	27	17	0	5	35	15	0	12	35	14	0	32	33	5	0	246	935
4:15 PM	9	33	14	0	3	32	10	0	7	21	7	0	21	34	5	0	196	920
4:30 PM	15	39	17	0	1	24	8	0	11	24	9	0	24	45	2	0	219	921
4:45 PM	8	38	14	0	7	24	14	0	8	24	10	0	22	28	3	0	200	861
5:00 PM	13	38	21	0	2	35	8	0	13	19	14	0	21	34	4	0	222	837
5:15 PM	12	22	18	0	4	17	15	0	8	27	8	0	19	29	3	0	182	823
5:30 PM	11	34	23	0	2	18	3	0	12	23	6	0	25	25	3	0	185	789
5:45 PM	8	27	15	0	5	15	9	0	9	15	5	0	13	27	1	0	149	738

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	56	168	72	0	20	172	56	0	44	76	48	0	112	192	24	0	1040
Heavy Trucks	12	0	0		0	8	0		0	0	0		8	12	0		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

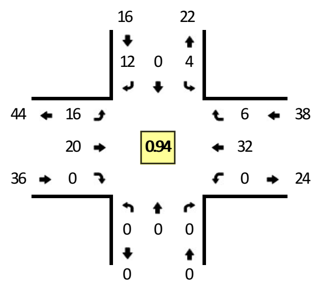
Report generated on 11/29/2022 2:35 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

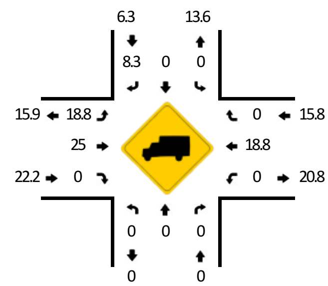
LOCATION: NY 131 -- CR 42 **QC JOB #:** 16009212

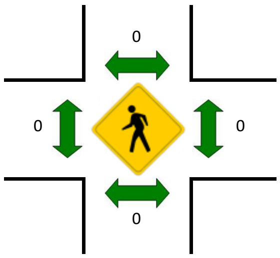
CITY/STATE: Massena, NY **DATE:** Thu, Nov 17 2022

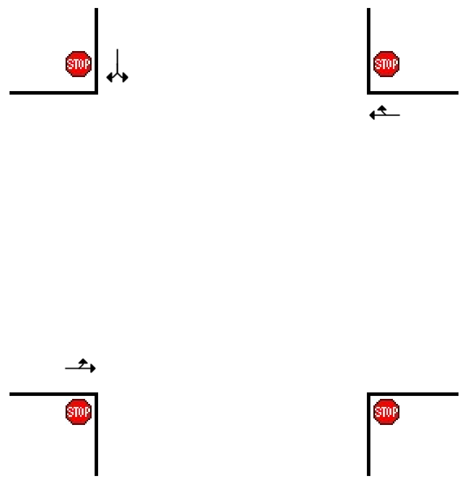
Peak-Hour: 7:45 AM -- 8:45 AM

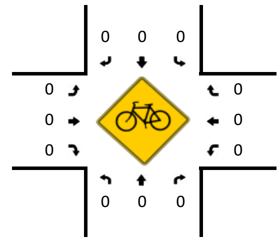
Peak 15-Min: 7:45 AM -- 8:00 AM

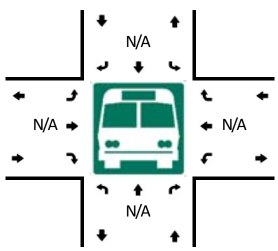


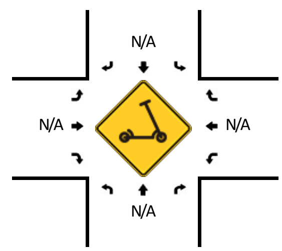












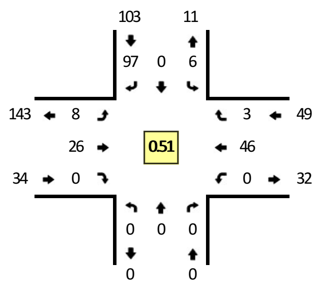
15-Min Count Period Beginning At	NY 131 (Northbound)				NY 131 (Southbound)				CR 42 (Eastbound)				CR 42 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	2	0	8	4	0	0	0	6	0	0	20	
7:15 AM	0	0	0	0	2	0	7	0	3	6	0	1	0	8	2	0	29	
7:30 AM	0	0	0	0	0	0	3	0	1	5	0	0	0	2	1	0	12	
7:45 AM	0	0	0	0	0	0	3	0	5	4	0	0	0	10	2	0	24	85
8:00 AM	0	0	0	0	2	0	3	0	3	3	0	0	0	10	1	0	22	87
8:15 AM	0	0	0	0	2	0	3	0	5	4	0	0	0	6	0	0	20	78
8:30 AM	0	0	0	0	0	0	3	0	3	9	0	0	0	6	3	0	24	90
8:45 AM	0	0	0	0	3	0	2	0	4	3	0	0	0	7	0	0	19	85

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	12	0	20	16	0	0	0	40	8	0	96
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	8	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

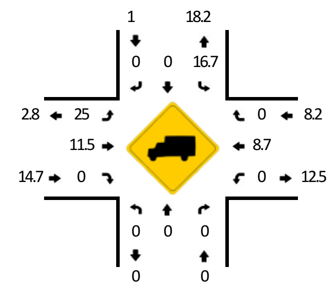
Comments:

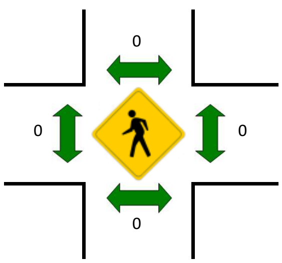
Type of peak hour being reported: Intersection Peak Method for determining peak hour: Total Entering Volume

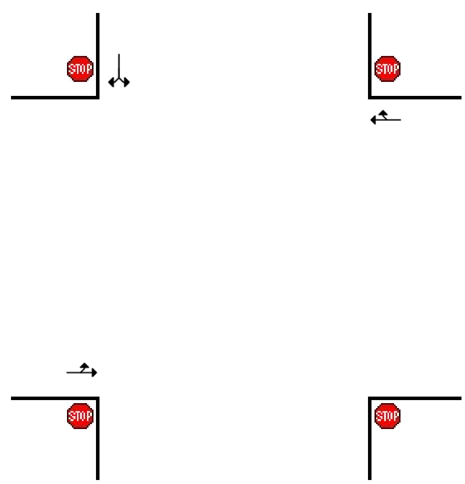
LOCATION: NY 131 -- CR 42 **QC JOB #:** 16009213
CITY/STATE: Massena, NY **DATE:** Thu, Nov 17 2022

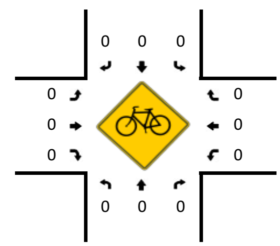


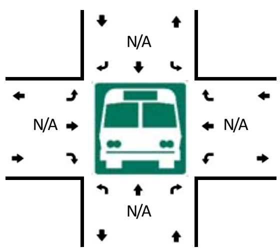
Peak-Hour: 3:30 PM -- 4:30 PM
Peak 15-Min: 3:30 PM -- 3:45 PM

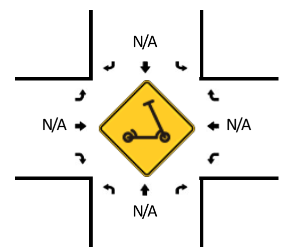












15-Min Count Period Beginning At	NY 131 (Northbound)				NY 131 (Southbound)				CR 42 (Eastbound)				CR 42 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	0	0	5	0	1	8	0	0	0	6	1	0	21	
3:15 PM	0	0	0	0	0	0	5	0	3	4	0	0	0	4	1	0	17	
3:30 PM	0	0	0	0	2	0	76	0	2	7	0	0	0	5	0	0	92	
3:45 PM	0	0	0	0	2	0	11	0	0	7	0	0	0	17	2	0	39	169
4:00 PM	0	0	0	0	0	0	5	0	3	6	0	0	0	17	1	0	32	180
4:15 PM	0	0	0	0	2	0	5	0	3	6	0	0	0	7	0	0	23	186
4:30 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	4	0	0	12	106
4:45 PM	0	0	0	0	0	0	2	0	3	5	0	0	0	8	0	0	18	85
5:00 PM	0	0	0	0	0	0	14	0	4	5	0	0	0	4	1	0	28	81
5:15 PM	0	0	0	0	0	0	4	0	6	8	0	0	0	4	0	0	22	80
5:30 PM	0	0	0	0	0	0	8	0	5	4	0	0	0	6	0	0	23	91
5:45 PM	0	0	0	0	1	0	6	0	3	3	0	0	0	6	0	0	19	92

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	8	0	304	0	8	28	0	0	0	20	0	0	368
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	4	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 11/29/2022 2:35 PM SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix C

Collision Data

INTERSECTION CRASH RATE WORKSHEET

C&S COMPANIES®

Project Name: Hydrogen Electrolysis Facility
Project Number: Z73.001.001

CITY/TOWN : Massena   COUNT DATE : December 2022

REGION: 7   UNSIGNALIZED : ☐   SIGNALIZED : X

INTERSECTION DATA

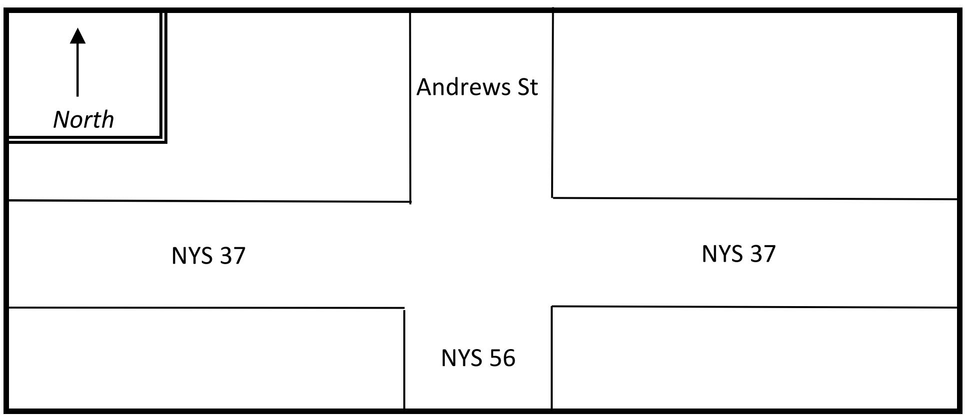
MAJOR STREET : NYS Route 37

MINOR STREET(S) : NYS Route 56

Andrews St

INTERSECTION DIAGRAM

(Label Approaches)



ANNUAL DAILY TRAFFIC VOLUMES

APPROACH :	1	2	3	4	5	**Total Daily Approach Volume**
DIRECTION :	EB	WB	SB	NB		
APPROACH DAILY VOLUMES:	1,370	2,920	2,210	4,170		**10,670**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **10,670**

TOTAL # OF CRASHES : 8   # OF YEARS : 5   AVERAGE # OF CRASHES PER YEAR (**A**) : **1.60**

CRASH RATE CALCULATION : **0.41**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : NYSDOT average accident rate for urban, four-legged, signal w/ left turn is 0.26 acc/mev.
The crash rate for this interection is above the statewide average.

INTERSECTION CRASH RATE WORKSHEET

Project Name: Hydrogen Electrolysis Facility

Project Number: Z73.001.001

CITY/TOWN : Massena

COUNT DATE : December 2022

REGION: 7

UNSIGNALIZED :

SIGNALIZED : X

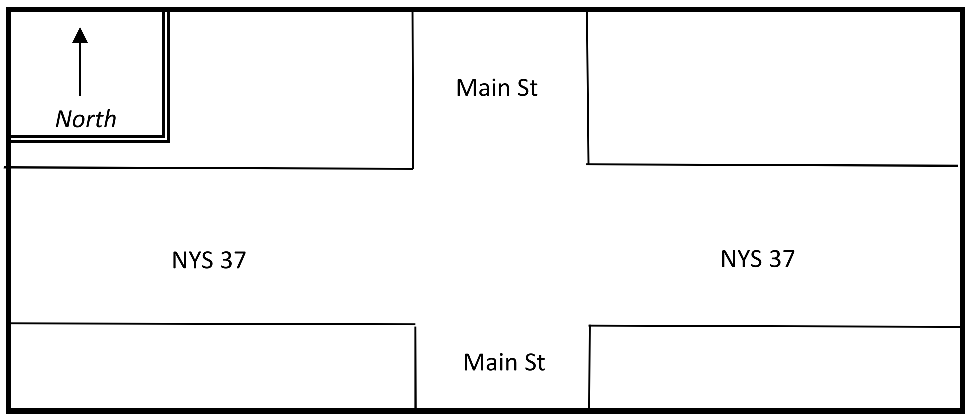
INTERSECTION DATA

MAJOR STREET : NYS Route 37

MINOR STREET(S) : Main St

INTERSECTION DIAGRAM

(Label Approaches)



ANNUAL DAILY TRAFFIC VOLUMES

APPROACH :	1	2	3	4	5	Total Daily Approach Volume
DIRECTION :	EB	SB	NB	WB		
APPROACH DAILY VOLUMES:	2,330	4,010	3,970	4,170		**14,480**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **14,480**

TOTAL # OF CRASHES : 38

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : **7.60**

CRASH RATE CALCULATION : **1.44**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : NYSDOT average accident rate for urban, three-legged, signal w/ left turn is 0.26 acc/mev.

The crash rate for this interection is above the statewide average.

INTERSECTION CRASH RATE WORKSHEET

C&S COMPANIES®

Project Name: Hydrogen Electrolysis Facility

Project Number: Z73.001.001

CITY/TOWN : Massena   COUNT DATE : December 2022

REGION: 7   UNSIGNALIZED : X   SIGNALIZED :

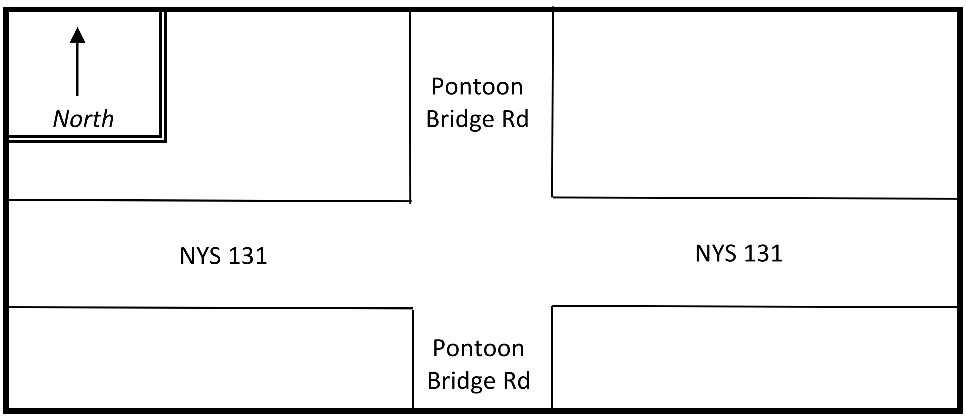
INTERSECTION DATA

MAJOR STREET : NYS Route 131

MINOR STREET(S) : Pontoon Bridge Rd

INTERSECTION DIAGRAM

(Label Approaches)



ANNUAL DAILY TRAFFIC VOLUMES

APPROACH :	1	2	3	4	5	Total Daily Approach Volume
DIRECTION :	EB	WB	SB	NB		
APPROACH DAILY VOLUMES:	120	650	40	150		960

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **960**

TOTAL # OF CRASHES : 1   # OF YEARS : 5   AVERAGE # OF CRASHES PER YEAR (**A**) : **0.20**

CRASH RATE CALCULATION : **0.57**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : NYSDOT average accident rate for urban, four-legged, signal w/ left turn is 0.19 acc/mev.
The crash rate for this interection is above the statewide average.

INTERSECTION CRASH RATE WORKSHEET

C&S COMPANIES®

Project Name: Hydrogen Electrolysis Facility

Project Number: Z73.001.001

CITY/TOWN : Massena

COUNT DATE : December 2022

REGION: 7

UNSIGNALIZED :

SIGNALIZED : X

INTERSECTION DATA

MAJOR STREET : NYS Route 37

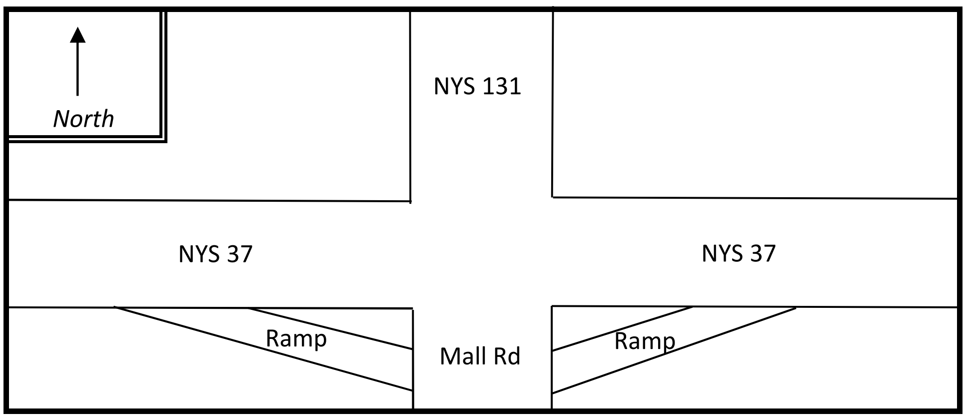
MINOR STREET(S) : NYS 131

Mall Rd

Ramps

INTERSECTION DIAGRAM

(Label Approaches)



ANNUAL DAILY TRAFFIC VOLUMES

APPROACH :	1	2	3	4	5	Total Daily Approach Volume
DIRECTION :	EB	SB	NB			
APPROACH DAILY VOLUMES:	3,100	30	70			**3,200**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **3,200**

TOTAL # OF CRASHES : 11

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : **2.20**

CRASH RATE CALCULATION : **1.88**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : NYSDOT average accident rate for urban, four-legged, signal w/ left turn is 0.26 acc/mev.

The crash rate for this interection is above the statewide average.

INTERSECTION CRASH RATE WORKSHEET

Project Name: Hydrogen Electrolysis Facility
Project Number: Z73.001.001

CITY/TOWN : Massena　　COUNT DATE : December 2022

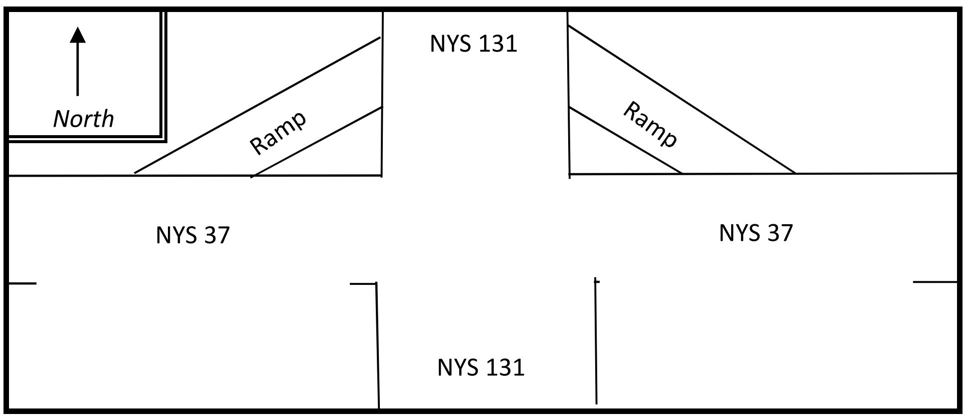
REGION: 7　　UNSIGNALIZED : 　　SIGNALIZED : X

INTERSECTION DATA

MAJOR STREET : NYS Route 825 (Hill Rd)

MINOR STREET(S) : Brooks Rd/Floyd Ave

INTERSECTION DIAGRAM
(Label Approaches)



ANNUAL DAILY TRAFFIC VOLUMES

APPROACH :	1	2	3	4	5	Total Daily Approach Volume
DIRECTION :	WB	SB	NB			
APPROACH DAILY VOLUMES:	381	0	3			384

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : 384

TOTAL # OF CRASHES :	0	# OF YEARS :	5	AVERAGE # OF CRASHES PER YEAR (**A**) :	0.00

CRASH RATE CALCULATION : **0.00**

$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

Comments : NYSDOT average accident rate for a four legged intersection with a left turn lane is 0.26.
The crash rate for this interection is below the statewide average.

INTERSECTION CRASH RATE WORKSHEET

C&S COMPANIES®

Project Name: Hydrogen Electrolysis Facility

Project Number: Z73.001.001

CITY/TOWN : Masssena

COUNT DATE : December 2022

REGION: 7

UNSIGNALIZED : X

SIGNALIZED :

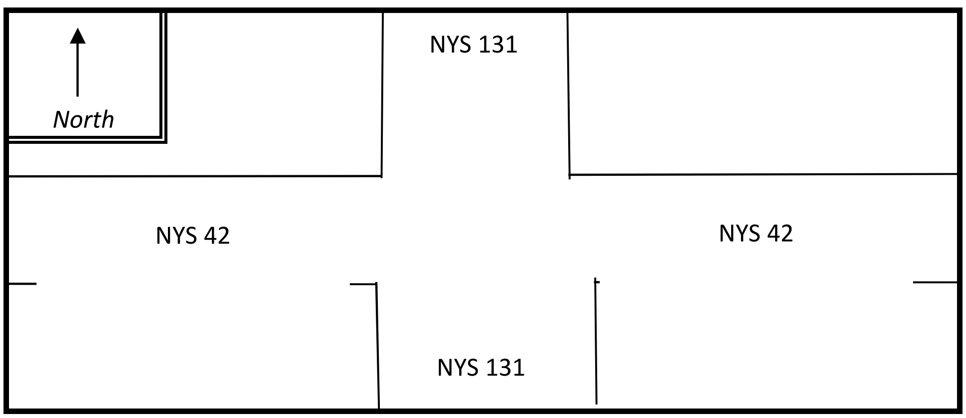
INTERSECTION DATA

MAJOR STREET : NYS Route 131

MINOR STREET(S) : NYS Route 42

INTERSECTION DIAGRAM

(Label Approaches)



ANNUAL DAILY TRAFFIC VOLUMES

APPROACH :	1	2	3	4	5	Total Daily Approach Volume
DIRECTION :	EB	WB	SB	NB		
APPROACH DAILY VOLUMES:	320	470	1,010	0		**1,800**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **1,800**

TOTAL # OF CRASHES : 0

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

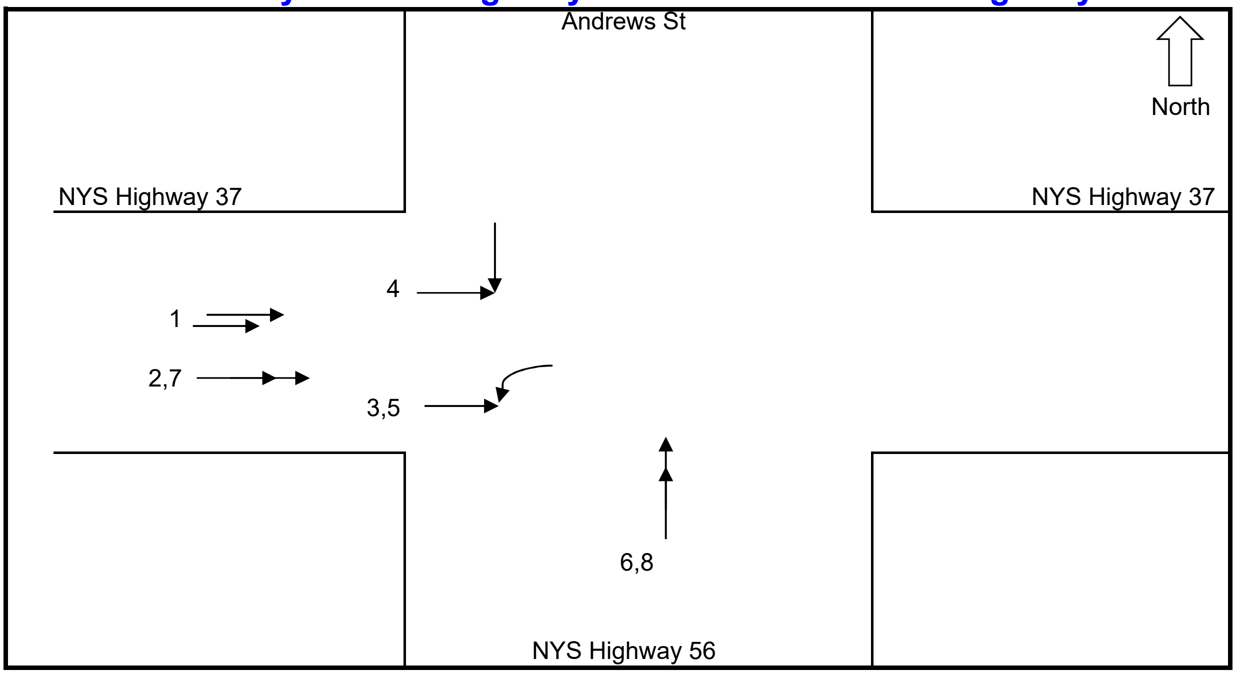
$$\text{RATE} = \frac{(A * 1{,}000{,}000)}{(V * 365)}$$

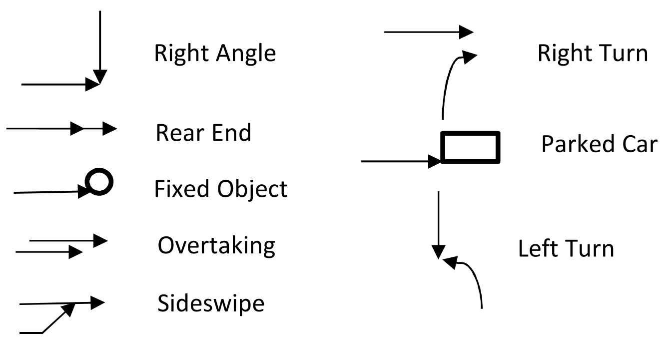
Comments : NYSDOT average accident rate for a four legged, sign controlled intersection is 0.31.

The crash rate for this interection is below the statewide average.

Project	Hydrogen Electrolysis Facility	Sheet	1 of 1
	Traffic Impact Study	File #	Z73.001.001
Prepared by	L. Mussi	Date	01/11/2023
Checked by	K. Wessel	Date	01/31/2023

Crash Analysis: NYS Highway 37 / Andrews St / NYS Highway 56



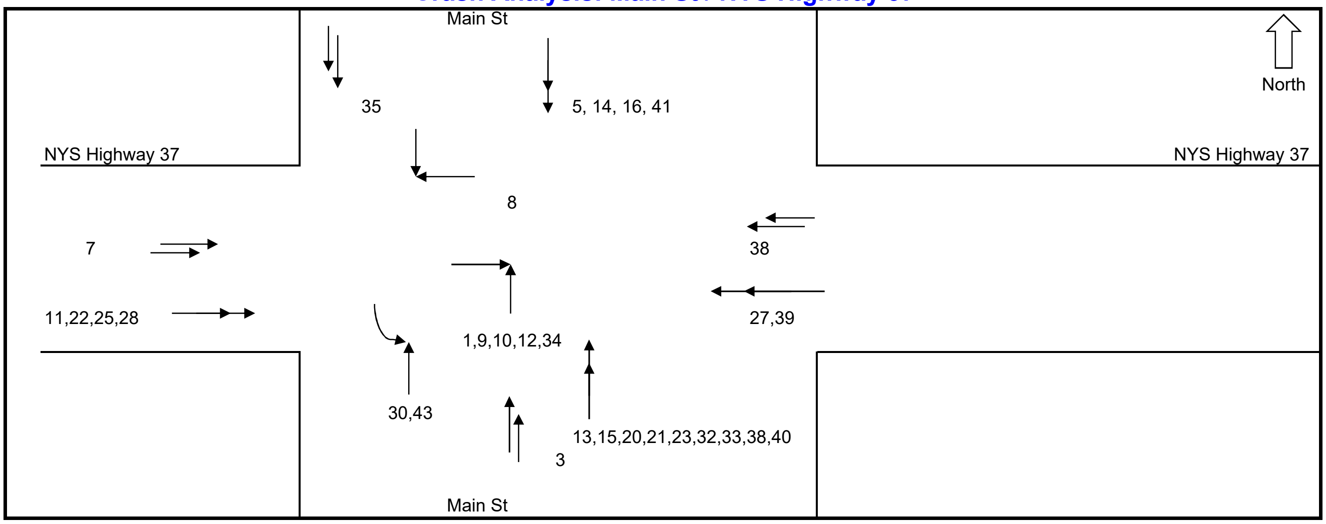


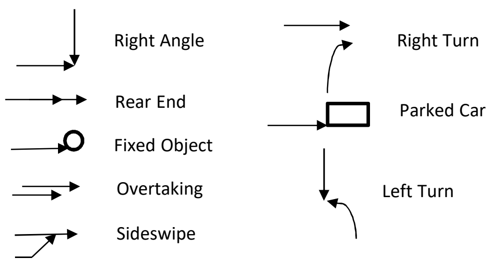
PD - Property Damage
NR - Nonreportable
I - Injury
F - Fatality

No.	Date	Time	Collision Type	Road Condition	Severity	Comment
1	1/25/2019	6:25 AM	Overtaking	Snow, Dark	PD	
2	12/4/2019	4:32 PM	Rear End	Wet, Dark	PD	
3	6/8/2020	1:57 PM	Right Angle	Dry, Light	PD	
4	6/10/2020	1:36 PM	Left Turn	Dry, Light	PD	
5	10/7/2020	11:56 AM	Left Turn	Wet, Light	PD	
6	1/9/2021	1:43 PM	Rear End	Dry, Light	PD	
7	1/15/2021	6:23 PM	Rear End	Dry, Dark	PD	
8	5/11/2022	2:16 PM	Rear End	Dry, Light	PD	

Project	Hydrogen Electrolysis Facility	Sheet	1 of 1
	Traffic Impact Study	File #	Z73.001.001
Prepared by	L. Mussi	Date	01/11/2023
Checked by	K. Wessel	Date	01/31/2023

Crash Analysis: Main St / NYS Highway 37



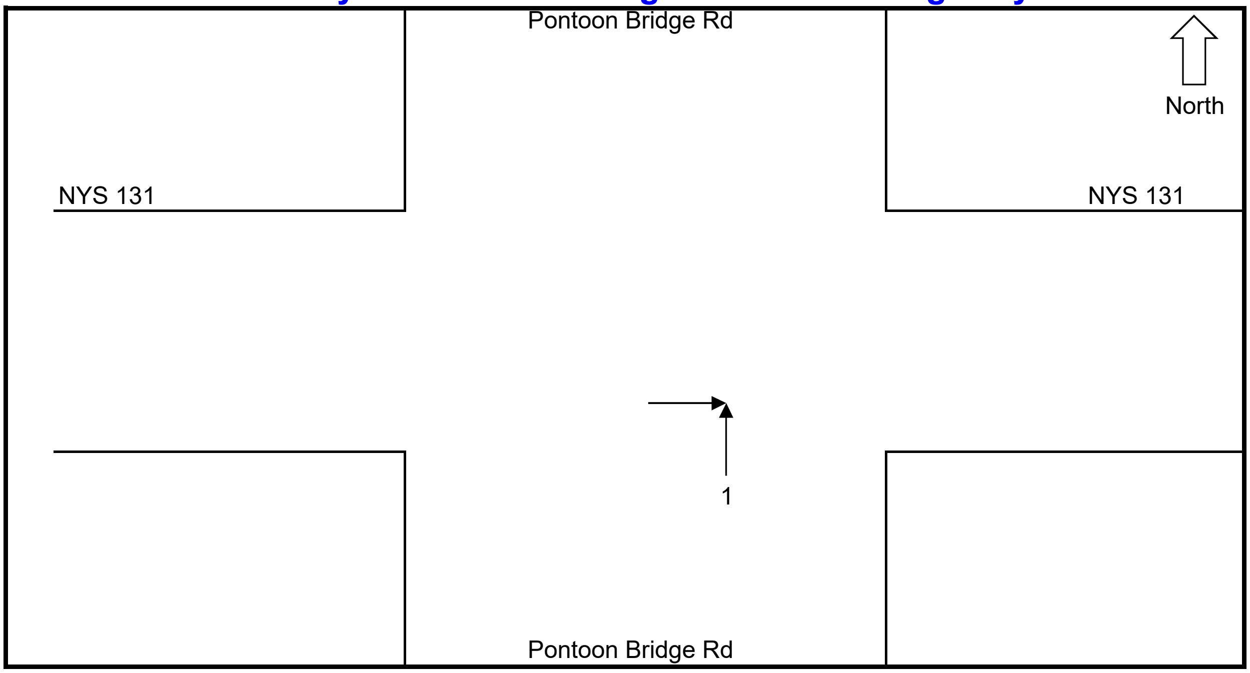


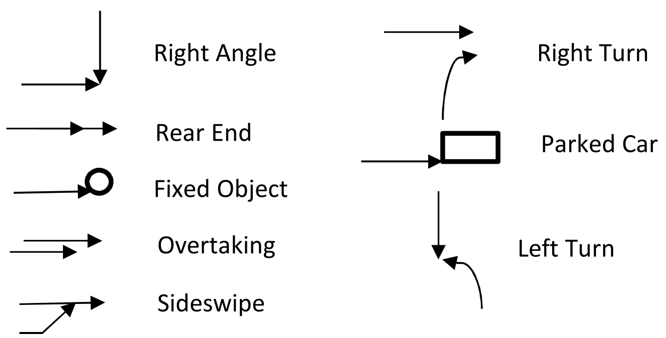
PD - Property Damage
NR - Nonreportable
I - Injury
F - Fatality

No.	Date	Time	Collision Type	Road Condition	Severity	Comment
A	8/16/2017	11:30 AM	Rear End	Dry, Light	PD	unknown direction, Main St
1	12/4/2017	7:00 AM	Right Angle	Dry, Dark	PD	
2	12/27/2017	9:11 PM	Other	Dry, Dark	I	colission with pedestrian, serious injury, NYS 37 Eastbound
B	2/23/2018	9:30 AM	Rear End	Dry, Light	PD	unknown direction, Main St
3	3/24/2018	11:52 AM	Overtaking	Dry, Light	PD	
5	3/29/2018	12:58 PM	Rear End	Dry, Light	I	
7	4/13/2018	3:10 PM	Overtaking	Dry, Light	I	
8	5/25/2018	3:37 PM	Right Angle	Dry, Light	PD	
9	7/17/2018	3:00 PM	Right Angle	Unknown	PD	
10	9/3/2018	4:25 PM	Right Angle	Dry, Light	PD	
11	12/4/2018	3:49 PM	Rear End	Dry, Light	PD	
12	1/22/2019	7:15 AM	Right Angle	Snow, Dark	PD	
13	4/11/2019	4:18 PM	Rear End	Dry, Light	PD	
14	4/21/2019	12:57 PM	Rear End	Dry, Light	PD	
15	4/26/2019	8:20 AM	Rear End	Wet, Light	PD	
16	6/10/2019	8:02 AM	Rear End	Dry, Light	PD	

Project	Hydrogen Electrolysis Facility	Sheet	1 of 1
	Traffic Impact Study	File #	Z73.001.001
Prepared by	L. Mussi	Date	01/11/2023
Checked by	K. Wessel	Date	01/31/2023

Crash Analysis: Pontoon Bridge Rd and NYS Highway 131





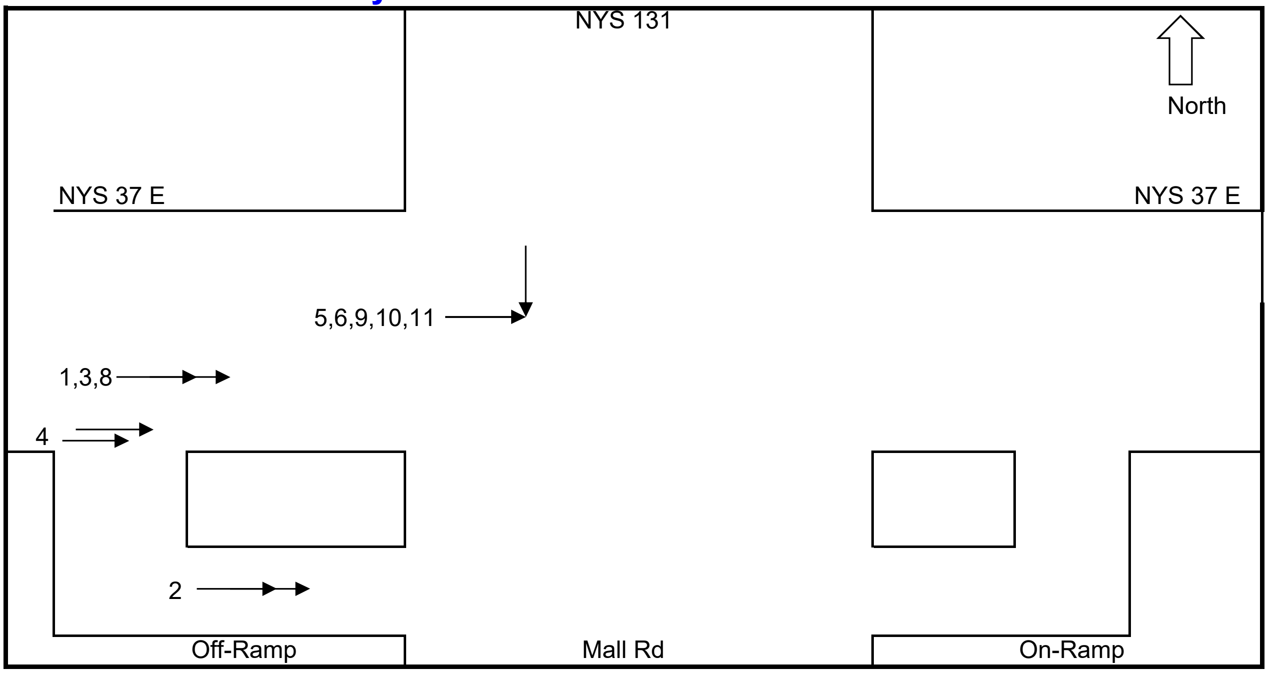
PD - Property Damage
NR - Nonreportable
I - Injury
F - Fatality

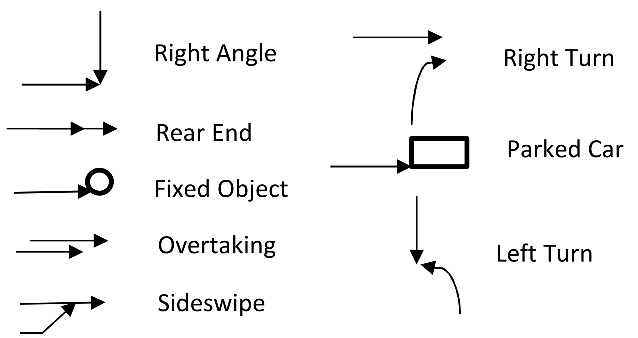
No.	Date	Time	Collision Type	Road Condition	Severity	Comment
1	1/13/2021	9:01 AM	Right Angle	Dry, Light	PD	
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

C&S COMPANIES

Project	Hydrogen Electrolysis Facility	Sheet	1 of 1
	Traffic Impact Study	File #	Z73.001.001
Prepared by	L. Mussi	Date	01/11/2023
Checked by	K. Wessel	Date	01/31/2023

Crash Analysis: NYS 131 / Mall Rd / NYS 37 Eastbound





PD - Property Damage
NR - Nonreportable
I - Injury
F - Fatality

No.	Date	Time	Collision Type	Road Condition	Severity	Comment
1	6/22/2017	7:55 PM	Raer End	Dry, Light	PD	
2	8/20/2017	5:22 PM	Rear End	Dry, Light	PD	
3	11/10/2017	10:43 AM	Rear End	Dry, Light	I	
4	10/10/2018	8:58 AM	Overtaking	Dry, Light	PD	
5	5/7/2019	7:30 PM	Right Angle	Dry, Light	PD	
6	2/27/2020	12:45 PM	Right Angle	Snow/Ice, Light	PD	
7	10/8/2020	11:40 AM	Rear End	Dry, Light	PD	
8	5/26/2021	6:26 PM	Other	Dry, Light	PD	Collision with deer
9	6/8/2021	2:55 PM	Right Angle	Dry, Light	I	Near Ramp
10	7/25/2021	8:30 PM	Right Angle	Dry, Dark	I	
11	2/18/2022	12:24 PM	Right Angle	Snow/Ice, Light	PD	Near Ramp
12						
13						
14						
15						
16						