

DRAFT

APPENDIX F

**SOLID AND/OR LIQUID WASTE TRANSPORTATION PLAN FOR
IN-SITU SOLIDIFICATION**

**HEMPSTEAD INTERSECTION STREET
FORMER MANUFACTURED GAS PLANT SITE
VILLAGES OF HEMPSTEAD AND GARDEN CITY
NASSAU COUNTY, NEW YORK**

Prepared for:

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ATTACHMENT

Attachment 1 Traffic Assessment for Trucking Operations (Nelson and Pope, 2008)

LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|--------|---------------------------------------------------------|
| BOD | Basis of Design |
| DOT | Department of Transportation |
| HASP | Health and Safety Plan |
| MGP | manufactured gas plant |
| NYSDEC | New York State Department of Environmental Conservation |
| SHSO | Site Health and Safety Officer |

1.0 SCOPE OF WORK

This document identifies requirements for the transportation of solid and/or liquid non-hazardous and hazardous waste for National Grid's Hempstead Intersection Street former Manufactured Gas Plant (MGP) Site (Site) located in the Villages of Hempstead and Garden City, Nassau County, New York. All transportation will be performed in accordance with this Plan, the Basis of Design (BOD) Report for In-Situ Solidification, the *Traffic Assessment for Trucking Operations Associated with Interim Remedial Measures for the Hempstead Manufactured Gas Plant Site* (Nelson & Pope, 2008), and all applicable Federal, State, and Local Laws.

2.0 WORK BY TRANSPORTER

The transporter will provide all necessary supervision, training, permits, manifests (when required), labor, personal protection equipment, tools, equipment, consumable materials, and expendable materials to transport solid and/or liquid wastes as described herein.

3.0 GENERAL WORK CONDITIONS

3.1 Compliance with Applicable Laws, Rules and Regulations

The Contractor and Transporter shall comply with the following laws, rules and regulations when transporting solid and/or liquid non-hazardous and hazardous wastes from the Site, including the following:

- All applicable provisions of Title 6 New York Code Rules and Regulations (6 NYCRR) Part 364 “Waste Transporters Permit;”
- All applicable provisions of 6 NYCRR Part 372 “Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities;”
- All applicable provisions of New York State Department of Transportation, the New York State Department of Motor Vehicle, and/or any other applicable Federal, New York State, City and all other Local Laws governing interstate and intrastate transportation; and
- All applicable Federal Occupational Safety and Health Administration (OSHA) provisions of Title 29 Code of Federal Regulations (29 CFR) Part 1910.120 “Hazardous Waste Operations Health & Emergency Response.”
- All applicable provisions of Federal Title 49 CFR Parts 105 to 180 “Hazardous Materials and Oil Transportation.”

3.2 Transporter Health and Safety

To ensure the health and safety of drivers, the following procedures shall be followed:

- The Transporter shall either develop and implement a written Health and Safety Plan (HASP) for their drivers that addresses potential exposure to MGP contaminants or shall follow the Contractor’s HASP;
- Upon arriving at the Site, drivers shall report their arrival to National Grid and/or the Site’s Safety Officer (SSO);
- Drivers are restricted to the cab of their transport vehicle, immediate outside area of their truck, and the designated waiting areas. Drivers are not permitted access to the work area without expressed permission from a representative of National Grid;
- Drivers shall have, at a minimum, hard hats, safety glasses, safety shoes, and gloves available in their truck. In the event that a truck driver is required to leave the cab of their transport vehicle while on site, the safety equipment shall be donned;
- Truck drivers will be required to obey rules posted on site and/or any site-specific Health and Safety Plan requirements for all employees. No children under 16 years of age are allowed on site and no passengers are allowed in the loading area; and

- Smoking, eating, and/or drinking are not permitted within the security fence (Contamination Reduction Zone and Exclusion Zone). Smoking, eating, and/or drinking are permitted only in designated areas.

3.3 Transport Vehicles for Solid and Liquid Wastes

The Transporter shall provide transport vehicles that meet the following specifications:

- Solids: The Transporter shall utilize tri-axle dump trucks, tandem dump trailers, and/or roll-off containers to transport solid non-hazardous and hazardous wastes from the Site. Tri-axle dump truck, tandem dump trailer, and/or roll-off container shall be constructed of sufficient metal, equipped with positive locking devices and shall not be used for transporting, storing or drainage of free liquids. National Grid, the Construction Manager, and the Site's SSO will inspect the acceptability of tri-axle dump trucks, tandem dump trailers, and roll-off containers. Any cost for rejected tri-axle dump trucks, tandem dump trailers, and roll-off containers shall be born by the Transporter;
- Liquids: The Transporter shall utilize vacuum trucks, tank trucks, and/or tank trailers to transport liquid non-hazardous and hazardous wastes from the Site. Any vacuum truck, tank truck, and/or tank trailer that is not constructed of sufficient metal, having watertight tanks is considered unacceptable and will be rejected. National Grid, the Construction Manager, and the Site's SSO will determine acceptable vacuum trucks, tank trucks, and/or tank trailers tri-axle dump trucks, tandem dump trailers, and roll-off containers. Any cost for rejected vacuum trucks, tank trucks, and/or tank trailers shall be born by the Transporter; and
- All transport vehicles require working audible and visual backup signals.

3.4 Solids: Loading of Transport Vehicles

The Transporter shall adhere to the following procedures when loading solid non-hazardous and hazardous wastes into transport vehicles:

- Truck engines are not allowed to idle in residential or other areas where the exhaust and/or noise could be considered excessive; restrict idling on site to five (5) minutes time;
- The Contractor shall be responsible to ensure that weight limitations are not exceeded. Weights shall be verified by the receiving facility;
- When loading or when directed by National Grid and/or the Construction Manager, the truck engine shall be shut off. Each transport vehicle may be restarted and driven away only after receiving the "all clear" direction from the loader operator, National Grid and/or the Construction Manager;
- Liners for Hazardous Waste: All transport vehicles transporting hazardous solid waste shall have the driver line the entire box (to at least the top of side boards) with 6-mil thick polyethylene sheets, with no open seams, that extend far enough to extend over both sides of the transport vehicles (to prevent vehicle contamination) and that will be able to fully encapsulate the load.

- Liners for Non-Hazardous Waste: Lining for non-hazardous waste shall not be employed unless otherwise directed by National Grid and/or the Construction Manager. Lining procedures shall follow those described above for hazardous waste;
- No transport vehicle shall be loaded above the side boards and no material shall be spilled out of the transport vehicle.
- The Contractor shall reposition the tarpaulin bars over the loads;
- Drivers shall cover each container with a durable liquid-tight tarpaulin cover that remains in place at all times during shipment, that completely covers the shipping container, and that will remain fully functioning under all loading, wind, traffic and weather conditions. Covering shall be performed inside the loading area or other approved on-site area. Only safe tarpaulin-placement methods shall be used and drivers will not be allowed to walk over loads. The Contractor's tarpaulin placement methods shall display safety and efficiency. The Contractor shall consider placing a scissor lift on both sides of each transport vehicle simultaneously in order to facilitate efficient and labor-saving tarpaulin placement;
- All transportation vehicles shall be inspected prior to leaving the Site by the Contractor to ensure no material adheres to the wheels, undercarriage, tailgates, covers or other areas of transport vehicles. The driver is responsible for determining that the transport vehicle has been properly decontaminated prior to leaving the Site;
- Drivers who are transporting a United States Department of Transportation (USDOT) hazardous material will be provided with appropriate DOT placards. Drivers are responsible for placing the placards on the transport vehicle;
- Drivers will be provided with appropriate shipping documents (e.g. hazardous waste manifest, straight bill-of-lading, etc.) signed by National Grid and/or the Construction Manager; and
- Under no circumstances shall a loaded transportation vehicle be parked on site or off site overnight unless National Grid and/or the Construction Manager have given prior approval.

3.5 Transportation of Solid and Liquid Waste

The transporter shall adhere to the following procedures when transporting solid and liquid non-hazardous and hazardous wastes:

- Drivers shall directly transport and deliver the material only to the disposal facilities approved by National Grid and/or the Construction Manager. No overnight staging of trucks is permitted.
- Drivers shall use only approved truck routes per Specification Section 01010 – Summary of Work, to transport material from the Site to the expressways. En route, the driver shall use only Interstate or officially approved truck routes. To the maximum extent possible, transport vehicles shall minimize travel on any local streets or through residential areas. To the extent possible and in conformance with all applicable regulations, all vehicles shall be routed away from environmentally sensitive areas (e.g., parks, schools, historic sites,

wetlands, etc.). For long distance hauling, all transport vehicles shall remain on primary highways;

- Drivers shall be responsible for transportation safety. All transport vehicles shall be properly maintained, be driven properly, follow all rules and regulations, and observe all speed limits, traffic signs, and notices. All transport vehicles shall be inspected before every trip by the driver to ensure that all doors, covers, etc. are secure and that no material can spill or otherwise be released or leak;
- Drivers shall be required to report any accidents or incidents such as off-site releases, to National Grid and/or the Construction Manager and cooperate with any subsequent accident investigation. In the event that a loaded truck is involved in an incident that results in an off-site release, the Contractor shall notify the Construction Manager immediately. The Contractor is responsible for following all Federal EPA and NYSDEC spill response guidelines and shall be responsible for clean-up following all local and State Department of Transportation spill response procedures. The Contractor shall promptly clean up any spills on haul routes with suitable equipment at no cost to National Grid;
- Drivers shall be required to slow down and be extra cautious during times of poor weather (e.g., rain, fog, and snow);
- Drivers shall be required to take extra care around blind corners (e.g., watch for construction equipment and pedestrians);
- The transport vehicle shall be washed clean before leaving the disposal facility and shall be maintained in a clean, sanitary condition by the driver at all times; and
- The driver shall submit a copy of the completed hazardous waste manifest or straight bill-of-lading for each shipment, a copy of all scale tickets from the site, and copies of all disposal facility scale tickets.

4.0 DESCRIPTION OF TRUCK ROUTES

Truck routes are shown in the *Traffic Assessment for Trucking Operations* (Nelson and Pope, 2008), which is included as Attachment 1 to this Plan.

All trucks will enter the Site via Intersection Street to the south and exit the Site by way of Second Street to the north of the property. From Second Street, all outbound routes will utilize North Franklin Street. It is anticipated that the inbound leg of each hall route will be the mirror image of the outbound route.

All routes described herein are designed to progress transport vehicles to the westbound Long Island Expressway (I-495). From there, all routes continue on the same path to the Brooklyn-Queens Expressway and to the Verrazano Narrows Bridge.

4.1 Truck Route #1

Truck Route #1 begins traveling south on North Franklin Street to westbound Fulton Street. From Fulton Street, which becomes Hempstead Turnpike (NYS Route 24), the route continues along Jamaica Avenue. The route then goes north on Francis Lewis Blvd to Hillside Avenue (NYS Route 25) and continues on to the northbound Clearview Expressway (I-295). From there, the route continues to the westbound Long Island Expressway (I-495).

4.2 Truck Route #2

Truck Route #2 begins by traveling north on Franklin Avenue. From North Franklin Street, the route proceeds west on Old Country Road. From Old Country Road, the route turns north onto Herricks Road and continues to westbound Jericho Turnpike (NYS Route 25), which becomes Braddock Avenue in Queens. From Braddock Avenue the route continues to Hillside Avenue (also NYS Route 25) to the northbound Clearview Expressway (I-295). The Clearview Expressway then leads to the Long Island Expressway, westbound (I-495).

4.3 Truck Route #3

Truck Route #3 begins by traveling northbound on Franklin Avenue to eastbound Old Country Road. From there, the route proceeds to northbound Glen Cove Road where it connects with the westbound Long Island Expressway (I-495).

4.4 Truck Route #4

Truck Route #4 begins southbound on North Franklin Street. From North Franklin Street the route proceeds southbound on Peninsula Boulevard to westbound Sunrise Highway (NYS Route 27). The Sunrise Highway then changes to North Conduit Avenue, which continues on to Atlantic Avenue, Columbia Street and then the Brooklyn-Queens Expressway. This route bypasses the Long Island Expressway.

5.0 REFERENCES

Nelson and Pope, 2008. *Traffic Assessment for Trucking Operations Associated With Interim Remedial Measures for the Hempstead Intersection Street Former Manufactured Gas Plant Site*. June.

NYSDEC, 2006. *6 NYCRR Part 375, Environmental Remediation Programs Subparts 375-1 to 375-4 & 375-6*. December.

ATTACHMENT 1

TRAFFIC ASSESSMENT FOR TRUCKING OPERATIONS

(Provided in Electronic Format)

TRAFFIC ASSESSMENT

**FOR
TRUCKING OPERATIONS
ASSOCIATED WITH**

**REMEDICATION OF THE FORMER
MANUFACTURED GAS PLANT SITE**

AT

**INTERSECTION STREET
HEMPSTEAD, NEW YORK**

JUNE 2008

N & P JOB NO. 08110

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OVERVIEW

National Grid (formerly KeySpan) is preparing a remedial design to address known soil and groundwater impacts at a former Manufactured Gas Plant (MGP) Site in Hempstead, Nassau County, New York. The remedial activities will include the off-site transport, recycling and/or disposal of impacted soil and debris, as well as on-site delivery of clean backfill materials. The remediation materials will be transported by truck to an off-site disposal location.

The material transporting is expected to occur over a period of approximately 3 months beginning in September 2008. During this period, levels of trucking activity will fluctuate. During peak activity, a fleet of 30-35 trucks per day will be required to haul excavated remediation materials offsite and clean fill materials on-site. The loaded trucks will haul the excavated materials to off-site locations in New Jersey, Delaware or Pennsylvania. Clean fill material will be transported from various off-site locations. The transporting of materials will take place during weekdays between the hours of 9:00 AM and 2:00 PM. These midday hours of operation are intended to avoid periods of peak traffic congestions and are in compliance with the 7AM - 6PM restrictions set forth in the New York City Administrative Code: (24-219 - 24-224) Construction Noise Management for Queens and Kings (Brooklyn) Counties.

SITE LOCATION AND ACCESS

The former MGP site is a parcel of land located west of Franklin Avenue, south of Second Street, east of Hilton Avenue and north of Intersection Street (see Figure 1). The majority of the site is within the Village of Garden City. The extreme southerly end of the site is in the Village of Hempstead. The common boundary of the two Villages is indicated by the dashed line running roughly east-west in Figure 1.

For the remedial activities, trucks will enter the Site at the western terminus of Intersection Street off North Franklin Street and exit the site onto Second Street, approximately 300 feet west of Franklin Avenue. Intersection Street is an east/west roadway with one lane in each direction which intersects North Franklin Street one block south of Second Street. The intersection of North

Franklin Street and Intersection Street is unsignalized. In addition to providing access to the former MGP site, Intersection Street also provides access to the industrial land uses and the rear of the car dealerships which front North Franklin Street.

Second Street is an east/west roadway with one lane in each direction. There is a traffic signal in place at the intersection of Second Street with Franklin Avenue. Franklin Avenue (Garden City) changes to North Franklin Street (Hempstead) just south of Second Street. Franklin Avenue/North Franklin Street is a four lane north/south roadway (two lanes in each direction) with exclusive turn lanes at key intersections.



Figure 1: Site Location

Second Street and Intersection Street are low traffic roadways. Field observations do not indicate any factors which would prevent safe access into or out of the site during peak and non-peak periods. There are no restrictions on sight lines for the exit driveway.

TRAFFIC GENERATION

The transporting of materials to and from the site is expected to require approximately 3 months starting in September 2008. During this period, it is estimated that approximately 30-35 trucks will access the site per day (between 9:00 AM-2:30 PM) from an off-site location to either load and depart with remediation materials or to deliver clean fill materials. It is estimated that the on-site loading and unloading processes will require approximately 10 minutes per truck and no more than 6 trucks will be loaded and 6 trucks unloaded in one hour. Typically, the earlier portion of the day will consist primarily of trucks hauling the excavated material offsite while the later portion of the day will consist primarily of truck unloading clean material onsite.

During times when materials are being hauled off-site and on-site simultaneously, a maximum of 12 trucks will enter and exit the site during a one hour period for a total a maximum of 24 truck trips. According to NYC Environmental Review guidelines (CEQR), a heavy truck trip is equivalent to 2.0 vehicle trips. Using the CEQR criterion, the site would therefore generate the equivalent of 48 vehicles trips (PCEs). CEQR guidelines suggest that if a proposed action will generate fewer than 50 peak hour vehicle trips, detailed quantitative analyses are generally not required to determine the project's potential impact on traffic operations.

DEVELOPMENT OF POTENTIAL TRUCK ROUTES

In order to identify the most suitable routes for trucks to travel between the former MGP site in Hempstead and the Verrazano Narrows Bridge, it is necessary to understand the regulatory constraints imposed on truck travel through Nassau County and New York City. In Nassau County, trucks are restricted from driving on certain roadways according to the ordinances of local governing agencies, based on weight limits and land use characteristics of said roadways.

Typically, trucks are restricted from driving on local or residential roadways except for deliveries. Signs posted on the subject roadways specify the applicable truck restrictions.

In New York City (including Queens and Brooklyn), truck traffic is required to use the designated Local and/or Through Truck Routes established by NYCDOT and illustrated on DOT's Truck Route Map. NYCDOT defines "Local Truck Routes" and "Through Truck Routes" as follows:

Local Truck Route: Trucks with an origin or destination for the purpose of delivery, loading or servicing within the respective Borough, shall only operate on designated local routes, except that an operator may operate on a non-designated street for the purpose of arriving at his/her destination. This shall be accomplished by leaving a designated truck route by the most direct route. If the operator has additional destinations in the same general area, he/she may proceed by the most direct route to his/her destination without returning to a designated truck route, provided that the operator's next destination does not require that he/she cross a designated truck route.

Through Truck Route: Trucks having neither an origin nor a destination within the respective borough shall restrict the operation of such vehicles to those street segments designated as Through Truck Routes.

The Interim Remediation report prepared for KeySpan by the remediation design consultant identified three potential truck routes. Nelson & Pope has examined the three routes with respect to the regulatory constraints described above and, where necessary, has modified the routes to avoid roadway segments where truck restrictions are in place (e.g., Stewart Avenue, Garden City, 212th Street, Queens Village). The modified Routes have been designated as Truck Routes #1, #2 and #3. In addition, a fourth potential route, Truck Route #4, was developed which traverses through the southerly portions of Queens and Brooklyn. All of the four truck routes comprise roadways which have either have no posted restrictions on trucks (in Nassau County) or, are Through Truck Routes established by NYCDOT. Each Route allows for travel in both directions; and therefore these routes can be utilized for both legs of a round trip.

ASSESSMENT METHODOLOGY

In order to perform a comparative assessment of the four potential truck routes, each of the routes were driven during non-peak hours (9:00 AM-2:00 PM). During these “drive-throughs” the following data were collected and documented :

- Average Travel Time required to traverse each Route between the former MGP site and the Verrazano Narrows Bridge;
- Posted Truck Restrictions along the Route;
- Areas of Traffic Congestion;
- Travel Lane Configurations for each roadway included in the Route;
- Potential Geometric Constraints (intersection geometry, horizontal curves, sight distance limitations, etc);
- Traffic Signal locations;
- Areas of high pedestrian activity;
- General land uses in vicinity of the site and along truck route.

The data collected through this inventory are summarized in Table 1

**TABLE 1
INVENTORY OF EXISTING ROADWAYS
INCLUDED IN POTENTIAL TRUCK ROUTES**

| ROADWAY | FACILITY TYPE | COUNTY | SEGMENT LENGTH (MILES) | TRUCK RESTRICTION | NO. OF THRU TRAVEL LANES | SPEED LIMIT (MPH) | ON-STREET PARKING PERMITTED? | NOTEWORTHY GEOMETRIC FEATURES |
|----------------------------------|-------------------|--------|------------------------------------------------|-------------------|--------------------------|-------------------|------------------------------|---------------------------------------------------------------------------------------------------|
| INTERSECTION ST. | Local Roadway | Nassau | 0.1 | None | 1 lane each direction | 30 | No | - |
| SECOND ST. | Local Roadway | Nassau | 0.07 | None | 1 lane each direction | 30 | Designated areas only | - |
| FRANKLIN AVE. | Collector Roadway | Nassau | 1.6 | None | 2 lanes each direction | 30 | Designated areas only | Narrow lanes between LIRR & Old Country Restrictive Turning radius at SE Corner at Old Country Rd |
| NO. FRANKLIN ST. | Collector Roadway | Nassau | 0.95 | None | 2 lanes each direction | 30 | Designated areas only | - |
| OLD COUNTRY RD. | Urban Arterial | Nassau | 0.6 miles (WB-Rte #2) 1.2 miles (EB Rte #3) | None | 2 lanes each direction | 30 | Designated areas only | Narrow lanes between Franklin and Willis Avenues |
| HERRICKS RD. | Collector Roadway | Nassau | 0.57 | None | 2 lanes each direction | 30 | Designated areas only | - |
| GLEN COVE RD. | Urban Arterial | Nassau | 2.9 | None | 2 lanes each direction | Varies 40 -45 | No | - |
| PENINSULA BLVD. | Urban Arterial | Nassau | 4.6 | None | 2 lanes each direction | Varies 30 - 45 | No | - |
| SUNRISE HIGHWAY (NYS 27) | Urban Arterial | Nassau | 2.8 | None | 3 lanes each direction | 40 | Designated areas only | - |
| JERICHO TURNPIKE (NYS 25) | Urban Arterial | Nassau | 3.7 | None | 2 lanes each direction | 30 | Designated areas only | - |

TRAFFIC ASSESSMENT FOR
REMEDIATION OF HEMPSTEAD MGP SITE



| | | | | | | | | |
|-----------------------------------------------|-------------------|---------------------|------|----------------------------------|----------------------------------------------------|----------------------------|-----------------------|-------------------------------------------------------------------------------------------|
| FULTON AVE. / HEMPSTEAD TPKE. (NYS 24) | Urban Arterial | Nassau/Queens | 6.5 | None/Designated thru Truck Route | 2 lanes each direction | 30 (Fulton) 35 (NYS 24) | Designated areas only | - |
| NORTH / SOUTH CONDUIT AVENUES | Urban Arterial | Queens | 8.1 | Designated thru Truck Route | Varies 2 to 4 lanes each direction | 40 | No | - |
| BRADDOCK AVE. (NYS 25) | Urban Arterial | Queens | 1.2 | Designated thru Truck Route | 2 lanes each direction | 30 | Designated areas only | - |
| JAMAICA AVE. | Urban Arterial | Queens | 0.51 | Designated thru Truck Route | 2 lanes each direction | 30 | Designated areas only | - |
| FRANCIS LEWIS BLVD. | Urban Arterial | Queens | 0.57 | Designated thru Truck Route | 2 lanes each direction | 30 | Designated areas only | - |
| HILLSIDE AVE. (NYS 25) | Urban Arterial | Queens | 1.1 | Designated thru Truck Route | 3 lanes each direction | 30 | Designated areas only | - |
| ATLANTIC AVE. | Urban Arterial | Queens/ Brooklyn | 6.6 | Designated thru Truck Route | 3 lanes each direction | 30 | Designated areas only | Poor pav't condition. In commercial areas, bottlenecks created by double-parked trucks |
| COLUMBIA ST. | Collector Roadway | Brooklyn | 0.1 | Designated thru Truck Route | 2 lanes NB 3 lanes SB | 30 | No | - |
| LONG ISLAND EXPRESSWAY (I-495) | Freeway | Nassau/ Queens | 17.1 | Designated thru Truck Route | 3 lanes (typ.) each direction + HOV lane in Nassau | 55 (Nassau) 50 (Queens) | No | - |
| BKLYN/QUEENS EXPRESSWAY (I-278) | Freeway | Queens/ Brooklyn | 14.4 | Designated thru Truck Route | 3 lanes each direction | 50 | No | Long term roadway construction several locations |

DESCRIPTION AND ASSESSMENT OF POTENTIAL TRUCK ROUTES

The four potential Truck Routes are illustrated in Exhibit A and Exhibit B. The Nassau County portions of each Route are depicted on Exhibit A and the Queens and Brooklyn portions of the Routes are illustrated in Exhibit B. A brief description and assessment of each Route is provided below.

TRUCK ROUTE #1

(through the Village of Hempstead to Hempstead Turnpike)

Truck Route #1 proposes for trucks originating at the MGP site to travel south on North Franklin Street to westbound Fulton Street. The Route continues west on Fulton Street until it becomes Hempstead Turnpike (NYS Route 24) and continues along Jamaica Avenue. At the Intersection of Francis Lewis Blvd and Jamaica Avenue, the Route turns north to reach Hillside Avenue (NYS Route 25) where it continues east a short distance to the Clearview Expressway entrance. The northbound Clearview Expressway leads to the westbound Long Island Expressway (I-495) and then the Brooklyn-Queens Expressway (BQE) to the Verrazano Narrows Bridge. **Route #1 is represented by the green line in Exhibits A & B.**

Truck Route # 1 has an overall length of thirty-one miles and the **total travel time was 1 hour 15 minutes**

This route is well suited for truck traffic. The pavement is in acceptable condition and based on our observations there are no critical points of conflict or congestion. The section of the Route prior to reaching the LIE should provide consistent travel times. Travel times on the LIE and BQE will vary day to day according to time of day and uncontrollable variables (crashes, construction activity, etc).

TRUCK ROUTE #2

(through the Village of Garden City to Jericho Turnpike)

Truck Route # 2 requires trucks originating at the MGP site to travel north on Franklin Avenue to westbound Old Country Road and then to northbound Herricks Road to westbound Jericho

Turnpike (NYS Route 25). In Queens, NYS 25 becomes Braddock Avenue. Truck Route #2 continues west on Braddock Avenue to Hillside Avenue (also NYS Route 25) to the northbound Clearview Expressway (I-295), The northbound Clearview Expressway leads to the westbound Long Island Expressway (I-495) and Brooklyn-Queens Expressway (BQE) which terminates at the Verrazano Narrows Bridge. **Route # 2 is represented by a pink line in Exhibits A & B.**

Truck Route #2 has an overall length of thirty miles and the **total travel time was 60 minutes.**

Truck Route #2 route is well suited for truck traffic. The pavement is in acceptable condition and based on our observations the only area of potential concern is on Franklin Avenue between the Long Island Rail Road (LIRR) train tracks and Old Country Road. This section of roadway has narrow lanes (approximately 10 feet). However, heavy trucks were observed traveling on this section of roadway. There are no other points of conflict or congestion. The section of this travel route prior to reaching the LIE should provide consistent travel times. Travel times on the LIE and BQE will vary day to day according to time of day and uncontrollable variables (crashes, construction activity, etc).

TRUCK ROUTE #3

(through the Village of Garden City to Glen Cove Road)

Truck Route #3 requires trucks originating at the MGP site to travel north on Franklin Avenue to eastbound Old Country Road and then northbound on Glen Cove Road to the Long Island Expressway (I-495). The LIE connects with the Brooklyn-Queens Expressway (BQE) which leads to the Verrazano Narrows Bridge. **Route #3 is represented by a blue line in Exhibits A & B.**

Truck Route # 3 has an overall length of thirty-five miles and the **total travel time was fifty five (55) minutes.**

Truck Route #3 is well-suited for truck traffic, except for the following areas of potential concerns:

- As described above under “Truck Route #2,” the section of Franklin Avenue between the Long Island Rail Road (LIRR) tracks and Old Country Road has narrow lanes (approx 10 ft).

- At the southeast corner of Franklin Avenue and Old Country Road the turning radius is small and larger trucks turning right to head east on Old Country Road are often required to swing wide, encroach into the adjoining travel lane.
- On Old Country Road between Franklin Avenue and Willis Avenue the lane widths are also narrow (approx 10 ft).

The portion of the Route prior to reaching the LIE should provide consistent travel times. Travel times on the LIE and BQE are somewhat unpredictable and will vary day to day based on the time of day and uncontrollable variables (crashes, construction activity, etc).

TRUCK ROUTE #4

(through the Village of Hempstead to Peninsula Blvd & North / South Conduit Avenues)

Truck Route # 4 is a southerly route which requires trucks to travel south on Franklin Avenue to southbound Peninsula Boulevard to westbound Sunrise Highway (NYS Route 27) which changes to North Conduit Avenue, continuing then to Atlantic Avenue, Columbia Street and the Brooklyn-Queens Expressway (BQE) to reach the Verrazano Narrows Bridge. **Truck Route #4 is represented by an orange line in Exhibits A & B.**

Truck Route # 4 has an overall length of twenty nine miles and a total travel time of **1 hour 15 minutes.**

Although the travel time matches the longest duration recorded for any of the investigated routes, it should be noted that Route #4 may provide the most consistent travel times as the traffic signal systems along much of the route's length (prior to the BQE) are likely to provide the most reliable progression of traffic on a daily basis. As with Truck Route Nos. 1, 2 & 3, travel times on the BQE are somewhat unpredictable and will vary on a daily basis according to time of day and uncontrollable variables (crashes, construction activity, etc).

Truck Route #4 is well-suited for truck traffic. However, the following areas of concern were observed:

- Atlantic Avenue is an important commercial corridor for much of Brooklyn and hence carries a high percentage of local truck traffic. Local trucks often double park to make local deliveries, blocking the right lane and requiring through traffic to make frequent lane changes. These lane changes create substantial friction in the through traffic stream and impede the desired progression of traffic.
- The pavement on Atlantic Avenue is generally in poor condition with many pot-holes and an uneven or undulating pavement. The rough ride provided by these poor pavement conditions is less than ideal for trucks carrying contaminated materials.

Due to the concerns on Atlantic Avenue, **Truck Route No 4 is most suitable as an alternative when known congestion or roadway closures are present on the other three routes.**

CONCLUSIONS

1. The proposed action is anticipated to generate a maximum of 48 passenger car equivalent (PCE) trips per hour during non-commuter peak hours (9AM-2PM). Based on this estimate and the qualitative evaluation of existing traffic conditions along the truck routes, we believe that the proposed operation will not significantly impact traffic operations on the study area.
2. Truck Route #1 (75 minutes) has a longer travel time than Route #2 and Route #3. However, it is debatable whether the additional travel time (15 or-20 minutes) is significant in the context of an overall travel time of three and a half to five hours to reach disposal facilities in Delaware, New Jersey or Pennsylvania. Truck Route #1 is a straightforward routing and does not have any special operational concerns. Route #1 should be considered as one of two preferred routes (along with Route #2).
3. Recognizing that when it comes to trucking operations, “time is money” it is anticipated that truck operators will utilize routes which result in the shortest travel times. Based on this criterion, Truck Route #2 (60 minutes) and Truck Route #3 (55 minutes) would be the most attractive routes.

4. Despite having the shortest travel time (55 minutes) of the four potential routes, Truck Route #3 (Glen Cove Road) has a several concerns related to the existing roadway geometry. These concerns are significant enough to dismiss Route #3 from consideration in favor of either Route #1 or Route #2.
5. Truck Route #4 is the least desirable truck route due to congestion and poor pavement conditions on Atlantic Avenue through Brooklyn. Route #4 should be considered only as an alternative route when there are known problems on the other three truck routes.

POTENTIAL MITIGATION MEASURES

To minimize the potential impact of site-generated truck trips on the traffic operations and the environment within the adjoining Villages of Garden City and Hempstead, the following mitigation measures could be implemented:

- To minimize the impact of site-generated truck traffic on any one community, Truck Routes could be alternated on a daily or weekly basis. For example, during Day 1 (or Week 1) Trucks would be required to use Truck Route #1 and on Day 2 (or Week 2) Trucks would be required to follow Truck Route #2. Given the fact that the difference in travel time between the two Routes (15 minutes) is negligible when compared to the overall 3 three and one-half to 5 hour trip required to reach the disposal facilities, we believe it would be difficult to assert that the slightly longer travel time of Truck Route #1 presents any hardship to the trucking operator. This measure would require some level of enforcement by the Superintendent of Construction.
- Although Second Street traffic volumes are low and sight lines are unimpeded, it is nevertheless recommended that truck traffic exiting the site to Second Street should do so only with the assistance of a flag person. Whenever possible, several trucks should be flagged together as a “platoon”.
- All vehicles exiting the site should be directed to go eastbound on Second Street to the signalized intersection at Franklin Avenue.

- During trucking operations, right turns on red from eastbound Second Street to southbound North Franklin Street should be prohibited to minimize potential safety concerns related to slow-moving trucks entering southbound North Franklin Street.

APPENDIX

IMAGES

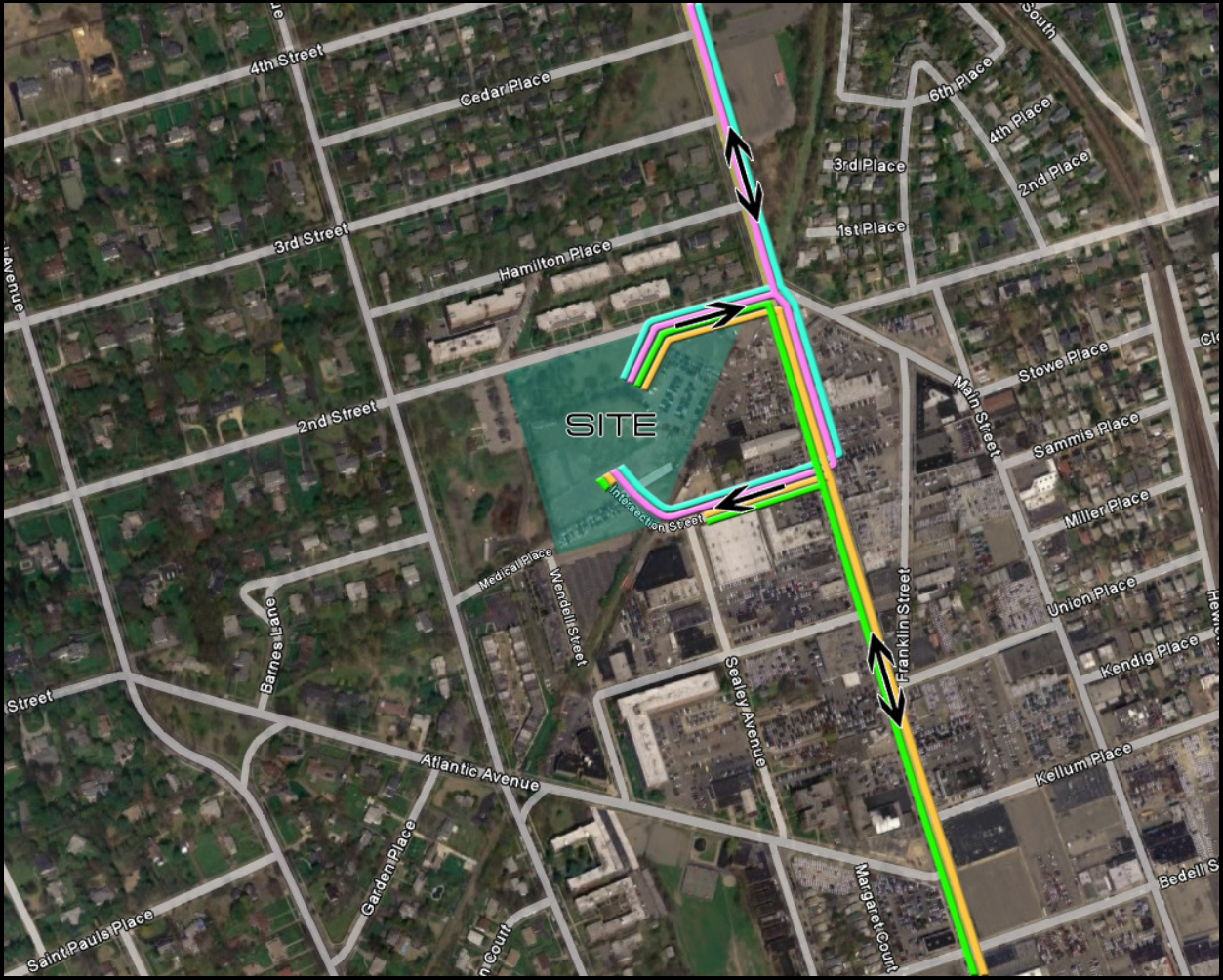


Image 1: Detail of Site Access (Intersection St. & Second Street) & Franklin Avenue/North Franklin Street



Image 2: Detail of North Franklin Street at Fulton Avenue (NYS Route 24) & North Franklin Street at Peninsula Boulevard

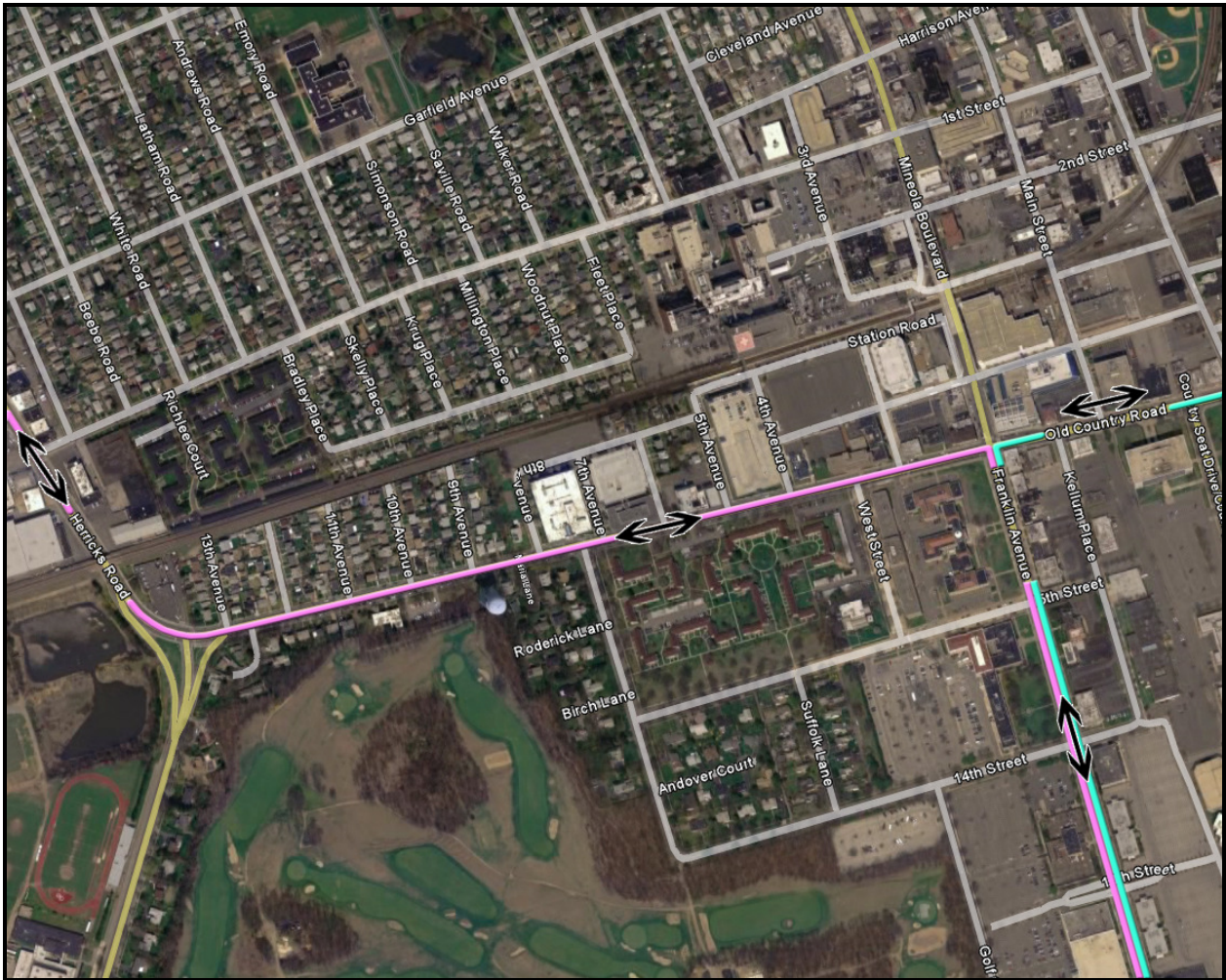


Image 3: Detail of Franklin Avenue at Old Country Road & Old Country Road at Herricks Road/Rockaway Avenue

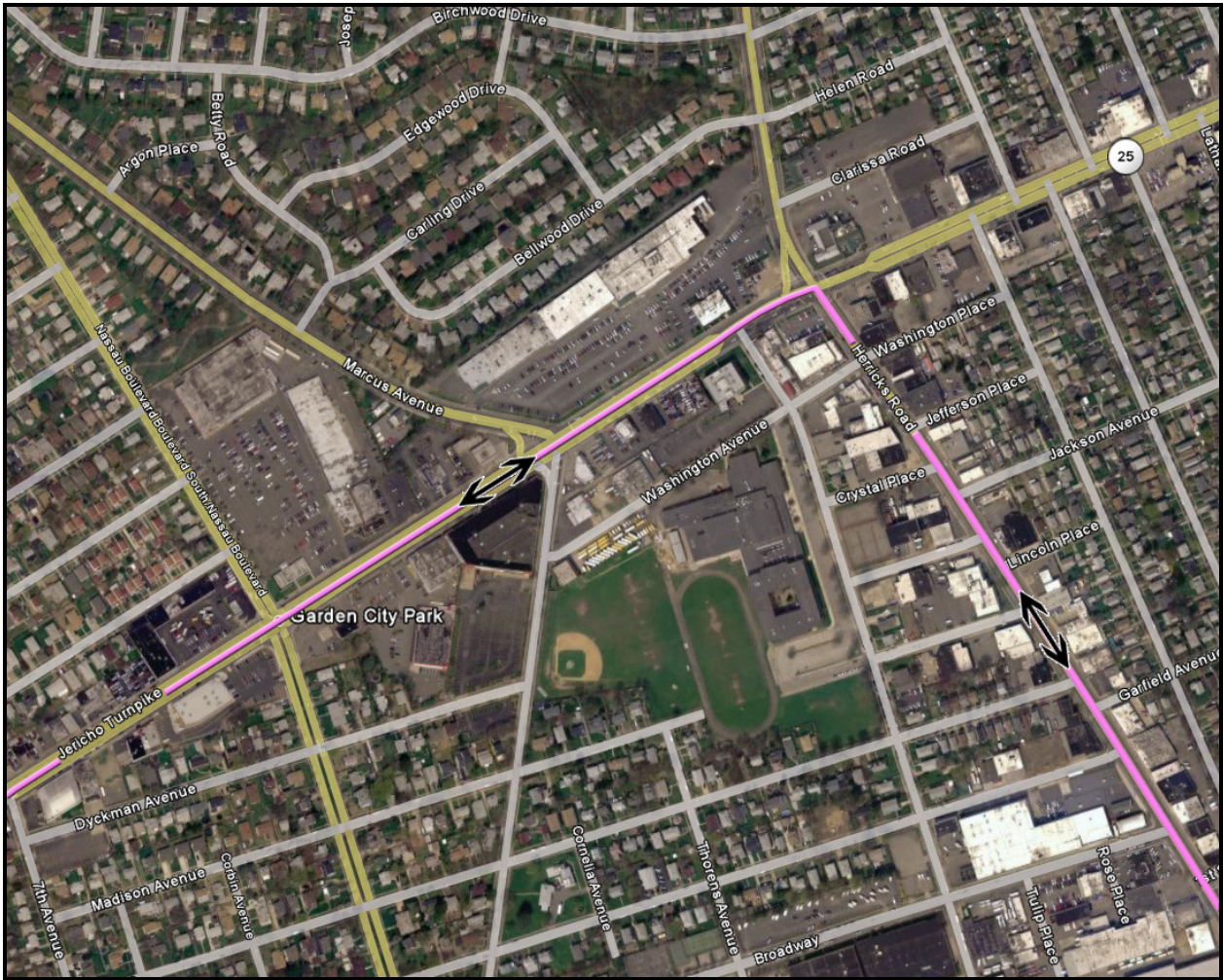


Image 4: Detail of Herricks Road at Jericho Turnpike (NYS Route 25)

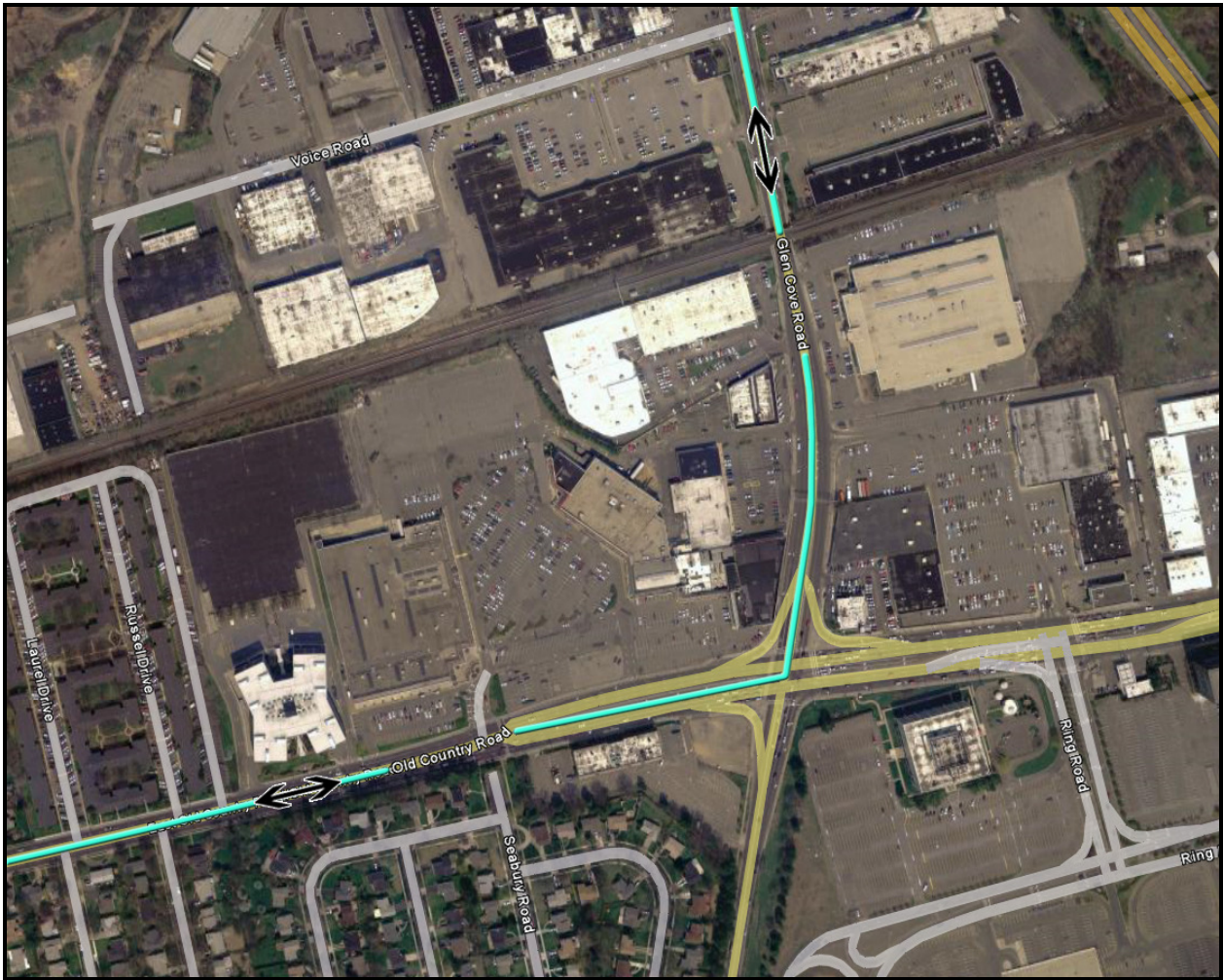


Image 5: Detail of Old Country Road at Glen Cove Road

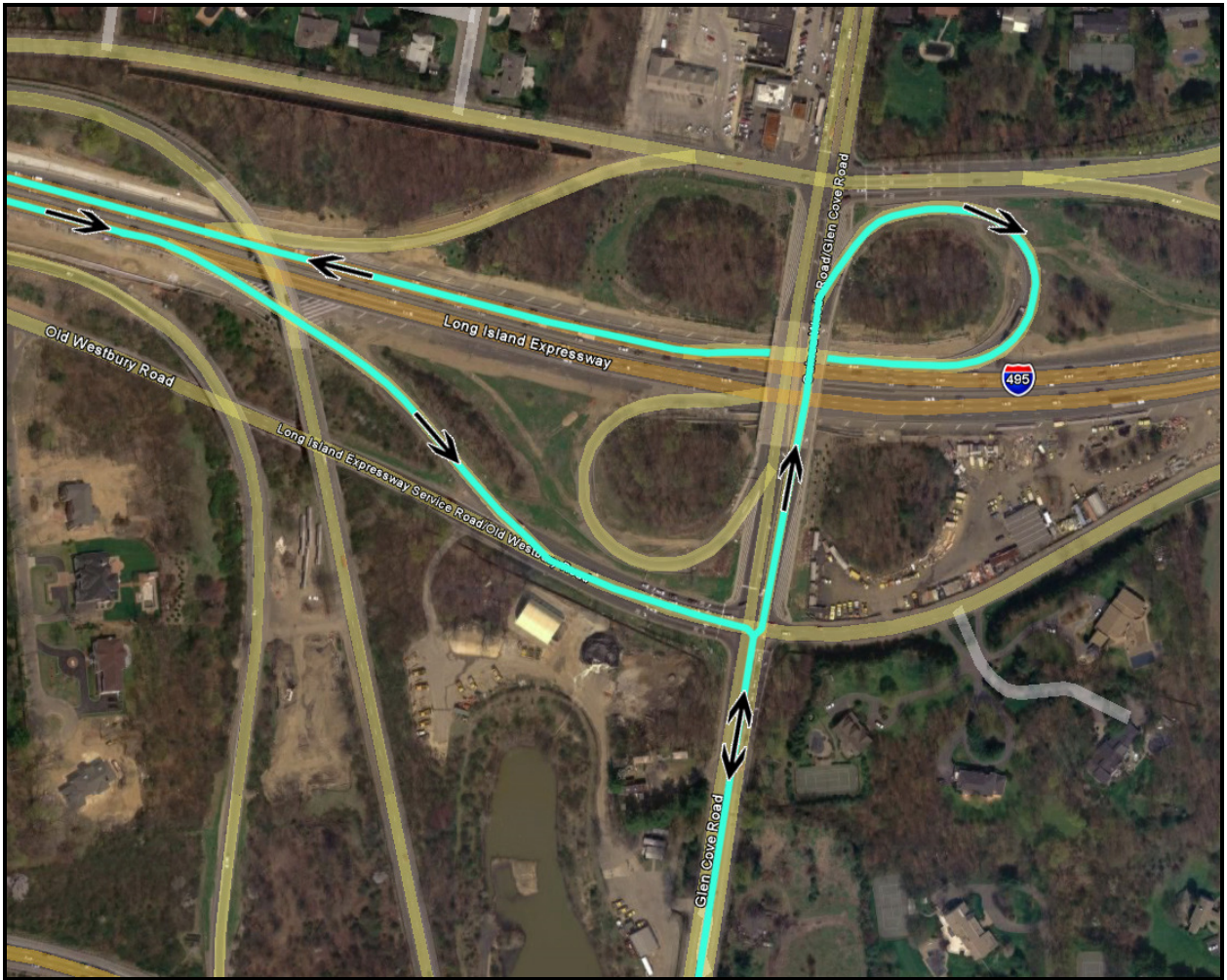


Image 6: Detail of Glen Cove Road at Long Island Expressway (I-495)

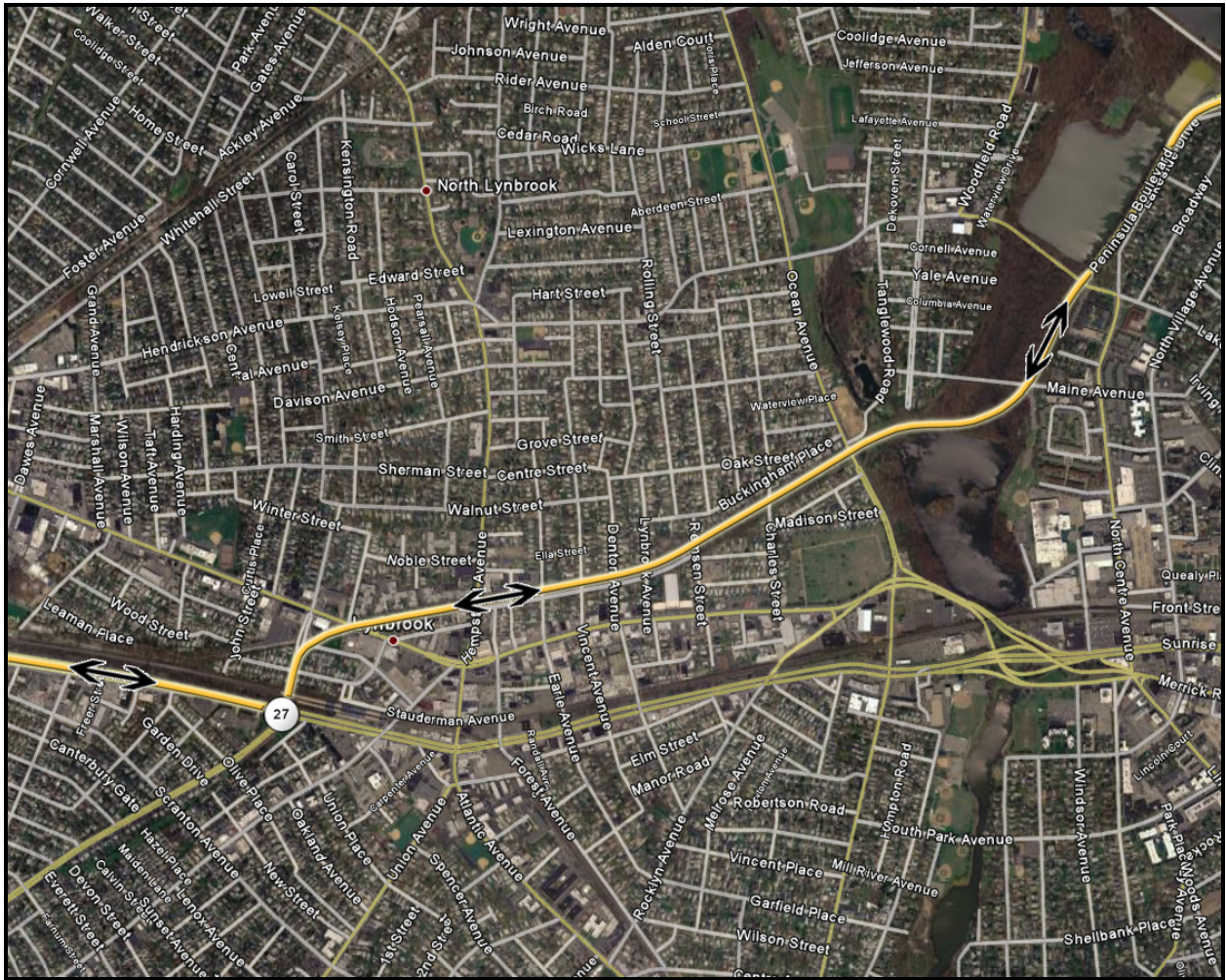


Image 7: Peninsula Boulevard at Sunrise Highway

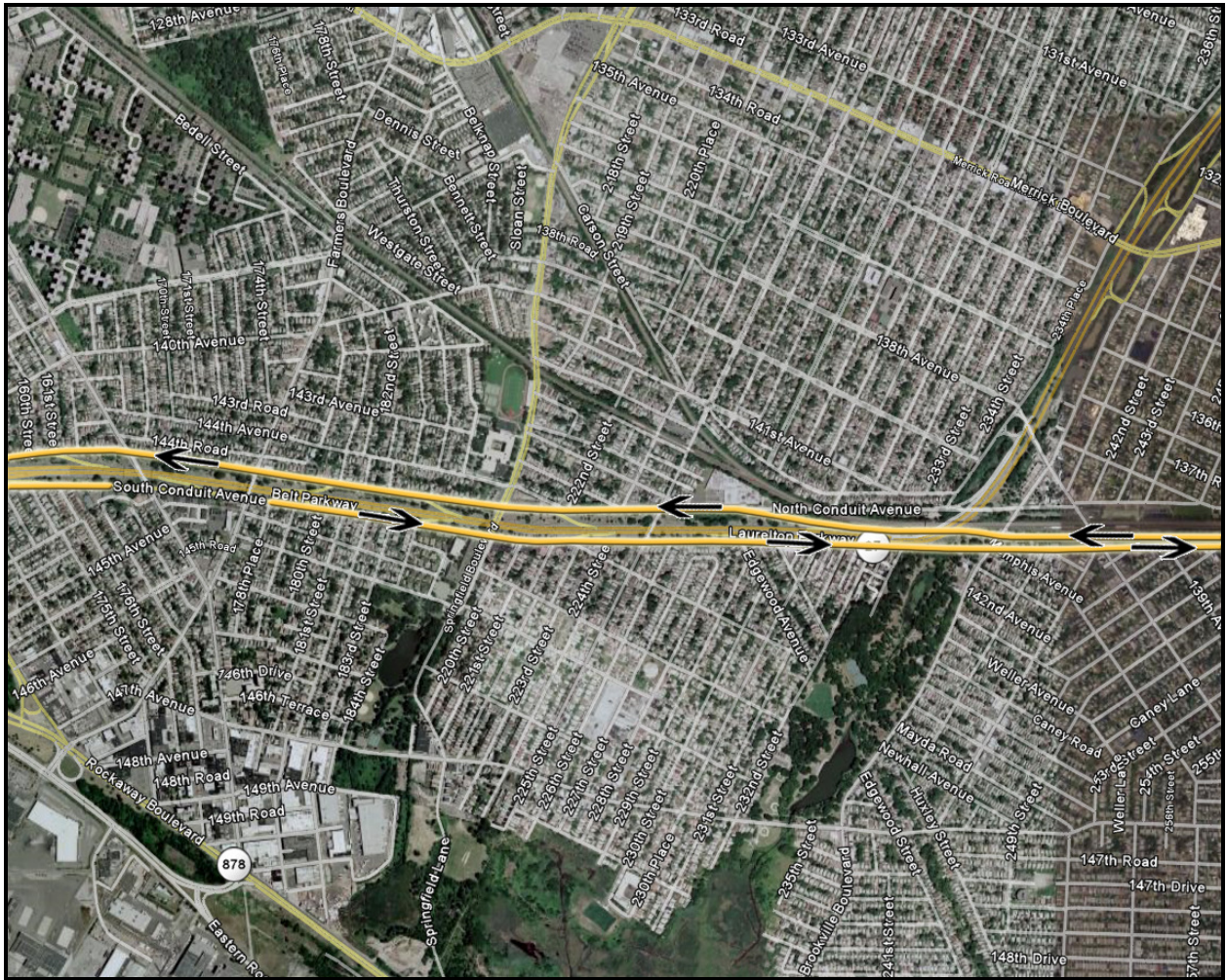


Image 8: Detail of Sunrise Highway at North/South Conduit Avenue

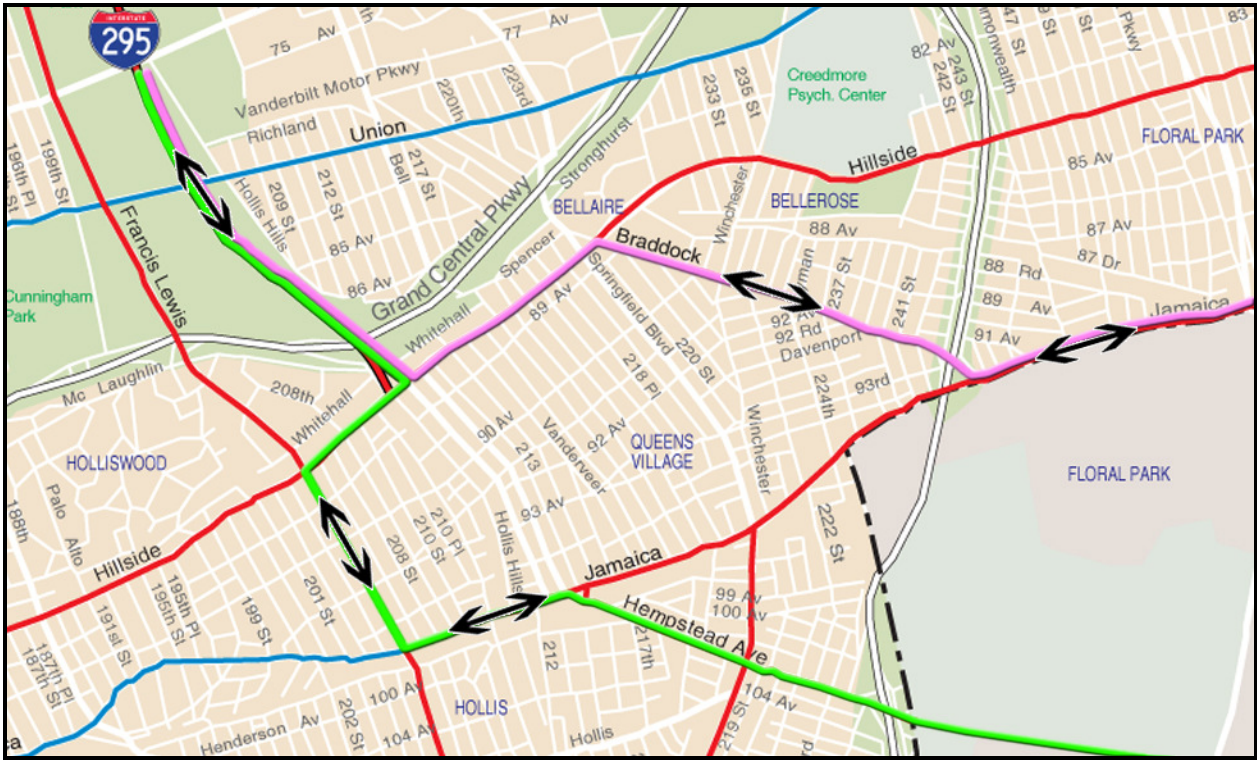


Image 9: Flatbush Detail of Hempstead Avenue at Jamaica Avenue,
Jamaica Avenue at Francis Lewis Boulevard,
Francis Lewis Boulevard at Hillside Avenue (NYS Rt 25)
Jericho Turnpike (NYS Rt 25) at Braddock Avenue (NYS Rt 25)
Braddock Avenue (NYS Rt 25) at Hillside Avenue (NYS Rt 25)
Hillside Avenue (NYS Rt 25) at Clearview Expressway (I-295)

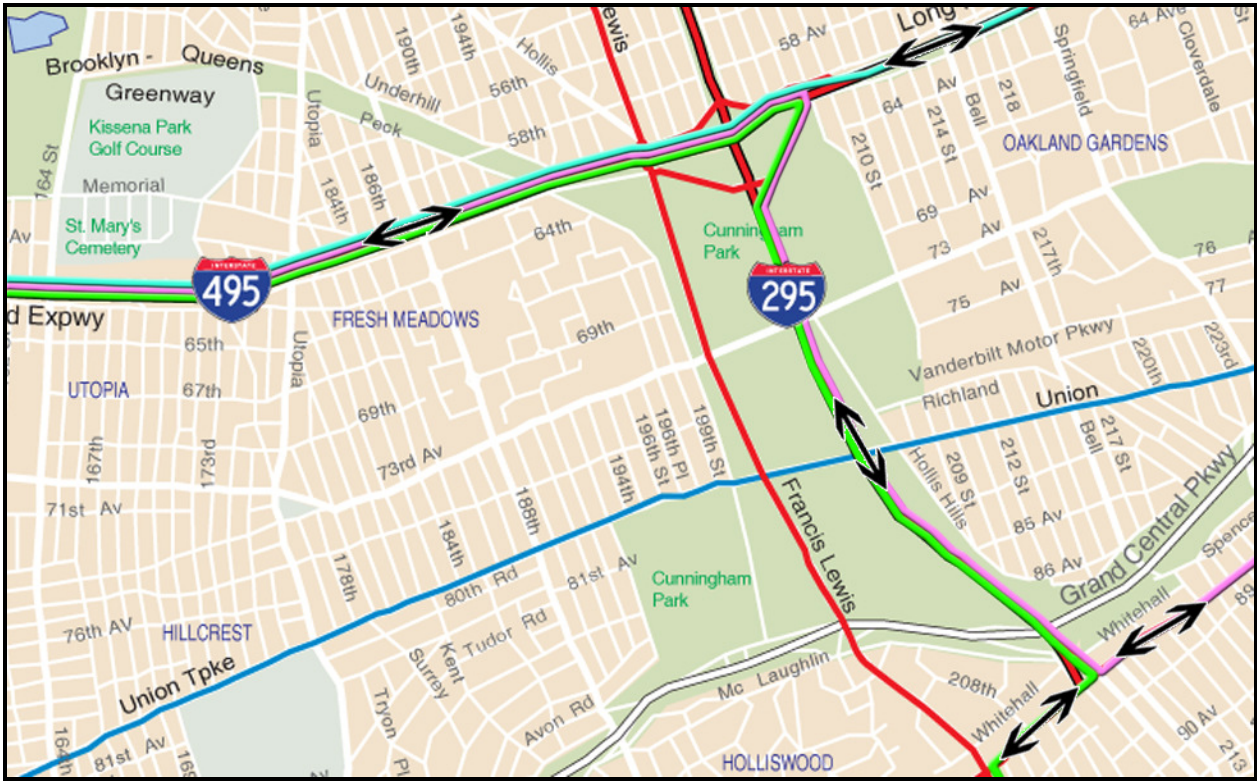


Image 10: Detail of Clearview Expressway (I-295) at Long Island Expressway (I-495)

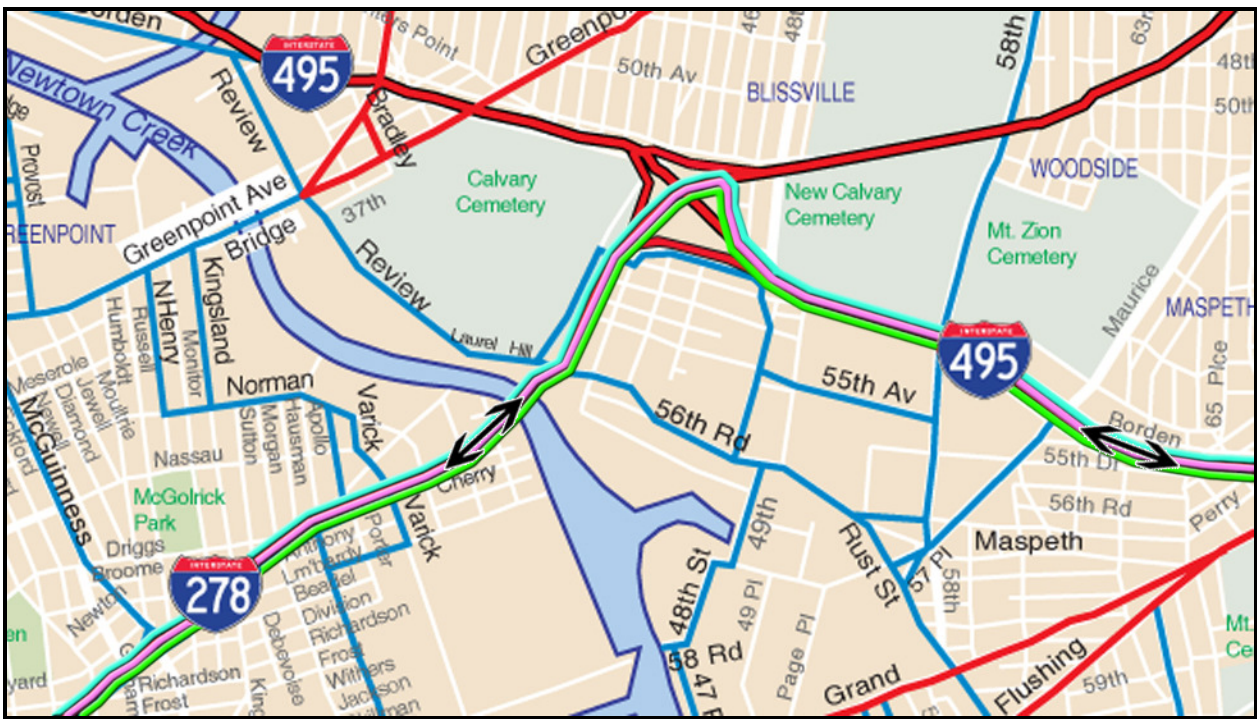


Image 11: Detail of Long Island Expressway (I-495) at Brooklyn-Queens Expressway (I-278)

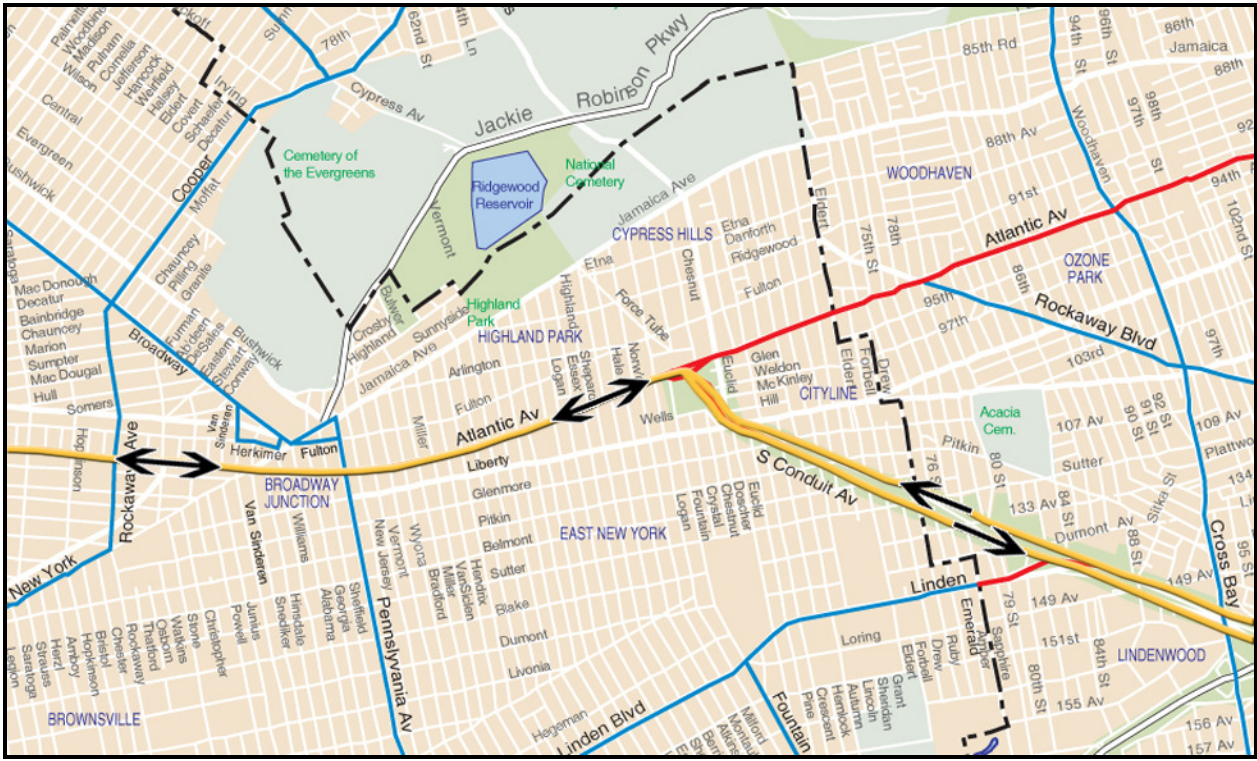


Image 12: Detail of North/South Conduit Avenue at Atlantic Avenue



Image 13: Detail of Atlantic Avenue at Columbia Street & Columbia Street at Brooklyn-Queens Expressway (I-278)

