

New Jersey

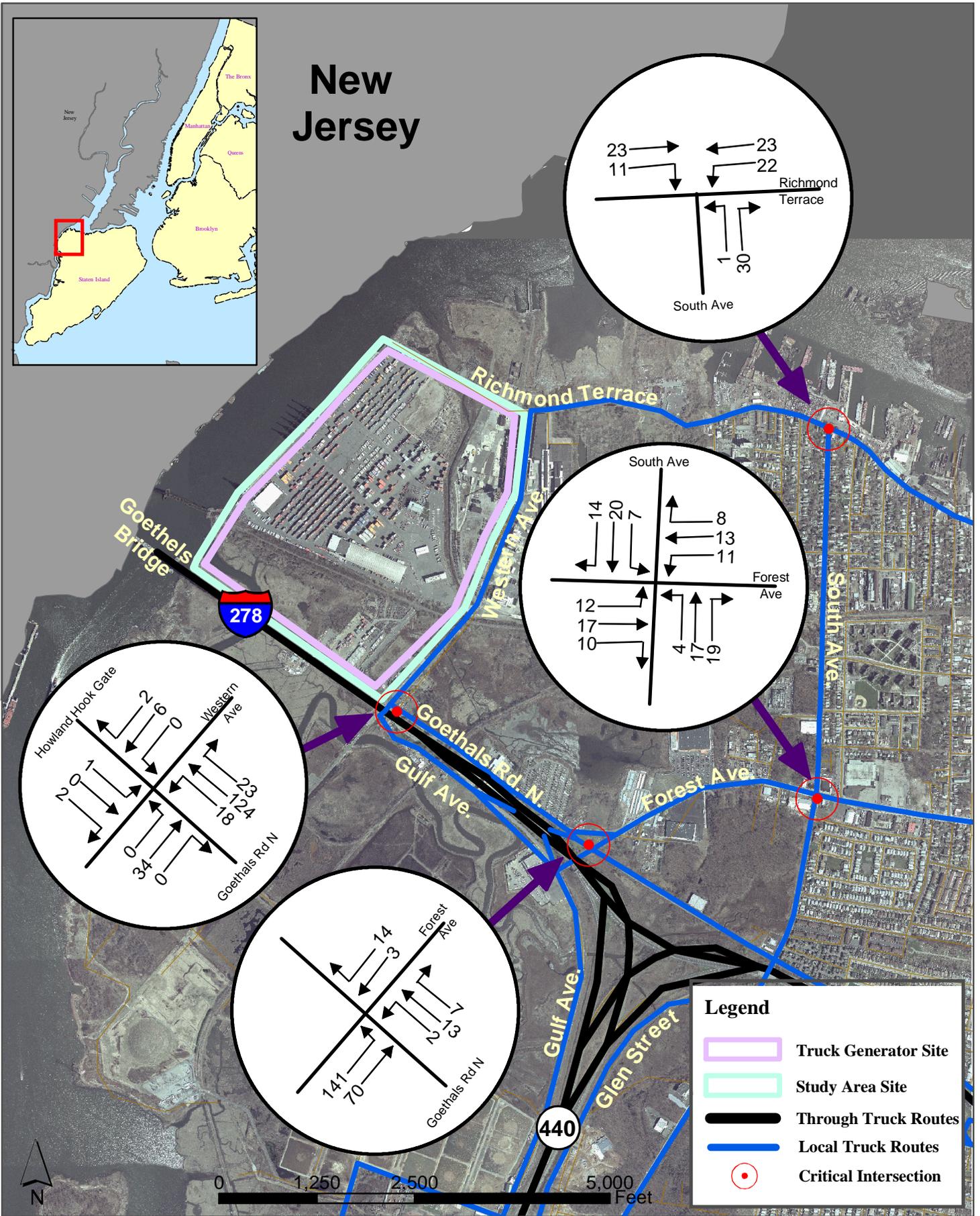


Figure 7-19
AM Peak Hour Truck Traffic Counts
Howland Hook - Staten Island

The truck traffic counts show a high number of trucks making the left-turn from Forest Avenue northbound to Goethals Road North. The heavy left-turn truck movement indicates that truckers exiting the Staten Island Expressway eastbound and accessing Howland Hook from this intersection are truckers accessing the Goethals Bridge from just beyond this intersection. There is also a significant amount of trucks entering the Howland Hook Marine Truck Facility at the intersection of Goethals Road North and Western Avenue.

The results of the Level of Service (LOS) analysis for the four critical intersections identified for the Howland Hook study area are shown in Table 7-2. A description of the LOS analysis and the movement of truck traffic at each intersection are discussed below:

**Table 7-2: Intersection Operational Levels of Service 2004
 Existing Conditions Howland Park– Staten Island**

Intersection	Approach	Lane Group	AM Peak Hour	
			Delay	LOS
Goethals Road North at Western Avenue	EB	LT	7.5	A
	NB	L	11.1	B
	NB	T	14.6	B
	NB	R	9.4	A
	SB	LTR	12.3	B
	Intersection		-	-
Goethals Road North at Forest Avenue	WB	L	19.8	B
	WB	T	20.6	C
	WB	R	22.1	C
	NB	L	19.2	B
	NB	T	12.8	B
	SB	TR	10.0	A
Intersection		16.4	B	
Forest Avenue at South Avenue	EB	LTR	11.3	B
	WB	L	13.3	B
	WB	TR	11.7	B
	NB	L	24.0	C
	NB	TR	43.2	D
	SB	LTR	58.3	E
Intersection		30.7	C	
Richmond Terrace at South Avenue	WB	LT	8.1	A
	NB	LR	11.5	B
	Intersection		-	-

Goethals Road North at Western Avenue/Howland Hook Marine Truck Terminal

The intersection of Goethals Road North and Western Avenue is a non-signalized intersection that is located at the entrance of the Howland Hook Marine Truck Terminal. Western Avenue is the major roadway at the intersection with a one-lane approach in each direction. Goethals Road North and the gate to Howland Hook are stop controlled. Goethals Road North is a three-lane approach, while the exit from Howland Hook is a one-lane approach.

The turning movements conducted at the intersection indicate that the morning peak hour of traffic is from 8:30 AM to 9:30 AM. 50% of the through movements from Goethals Road North to the Howland Hook Marine Truck Terminal are trucks. 12% of the vehicles making the right-turn from Western Avenue southbound to Howland Hook are trucks so there is a large volume of truck traffic entering the facility during the morning peak hours. 12% of the vehicles exiting the facility are trucks. 13% of the traffic making the left and right turns off of Goethals Road North onto Western Avenue is truck traffic so truckers are coming off Goethals Road North and driving to other destinations besides the Howland Hook Marine Truck Terminal entrance. The operations analysis of the intersection indicates the intersection is operating efficiently. All of the approaches operate at LOS A or B, so truckers accessing Howland Hook or exiting the facility from this intersection are traversing through the intersection, efficiently.

Goethals Road North at Forest Avenue

The intersection of Goethals Road North and Forest Avenue is a signalized intersection. Goethals Road North is a one-way facility with a three-lane approach (left, through, though) in the westbound direction. Forest Avenue is a two-lane approach in each direction.

The turning movements conducted at the intersection indicate the morning peak hour of traffic is between 9:45 AM and 10:45 AM. Over 70% of the left-turn movements from Forest Avenue northbound to Goethals Road North are trucks. 27% of the through movements on Forest Avenue northbound are trucks and 15% of the right-turn movements from Forest Avenue southbound to Goethals Road North are trucks, so there is a large amount of truck activity on Forest Avenue.



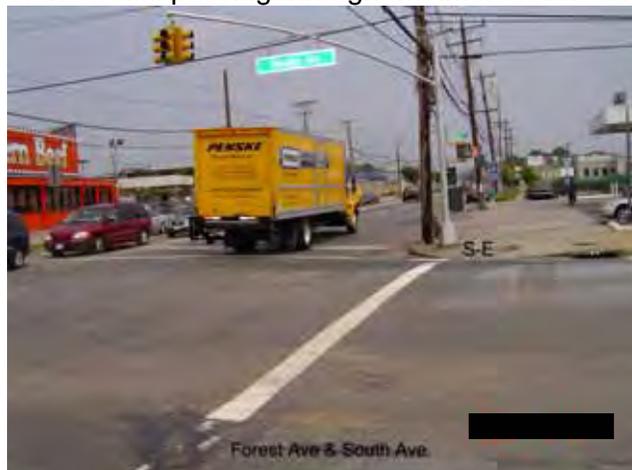
Truck making left-turn onto Goethals Road North westbound from Forest Avenue

The operations analysis of the intersection indicates the intersection is operating at LOS B. The Goethals Road North westbound approach is operating at LOS C, so there is a minor delay for truckers using Goethals Road North to access Howland Hook. The Forest Avenue approaches have minimal delay at both approaches.

Forest Avenue at South Avenue

The intersection of Forest Avenue and South Avenue is a signalized intersection with two-lane approaches at Forest Avenue and a two-lane approach, with left-only lane, at South Avenue northbound. South Avenue southbound is a one-lane approach.

The turning movements conducted at the intersection indicate the morning peak hour of traffic is from 8:30 AM to 9:30 AM. The turning movements also indicate a high percentage of truck traffic at the intersection. The highest percentage of truck traffic occurs at the South Avenue southbound approach, where 20% of the right-turn movements onto Forest Avenue westbound are trucks and 18% of the left-turn movements onto Forest Avenue eastbound are trucks. 11% of the traffic passing through the intersection on South Avenue southbound is truck traffic. 20%



Truck traffic on Forest Avenue eastbound

of the right-turn movements from Forest Avenue westbound to South Street northbound and 18% of the left-turn movements from Forest Avenue eastbound to South Street northbound are trucks. The truck percentages indicate significant trucking activity on South Street north of the intersection with Forest Avenue.

The operations analysis of the intersection indicates the intersection is operating at LOS C. The South Avenue southbound approach operates at LOS E, so truckers traveling southbound on South Avenue experience delays at the intersection. The South Avenue northbound approach operates at LOS D, so

there are delays for truckers at this approach, as well. Both of the Forest Avenue approaches operate at LOS B. The total traffic volumes at all four approaches are fairly equal. However, the Forest Avenue approaches have two through lanes while the South Avenue approaches have only one lane, so there is an increase in the backup of traffic on South Avenue.

Richmond Terrace at South Avenue

The intersection of Richmond Terrace and South Avenue is a non-signalized T-intersection with a one-lane approach in each direction. South Avenue is stop-controlled. The turning movements conducted at the intersection indicate the morning peak hour of service is from 7:45 AM to 8:45 AM. Over 20% of the left-turn movements from Richmond Terrace westbound to South Avenue southbound are trucks, while 18% of the right-turn movements from South Avenue northbound to Richmond Terrace eastbound are trucks. The truck percentages indicate significant truck activity between South Avenue and Richmond Terrace. The operations analysis of the intersection



Truck waiting at Richmond Terrace (a stop-controlled approach) for break in traffic on South Ave.

indicates the intersection is operating efficiently with minimal delays. Therefore, truckers passing through this intersection, even at the stop-controlled South Avenue approach, have minimal difficulties with queuing of traffic.

Roadway Network Capacity/Geometrics/Other Observations

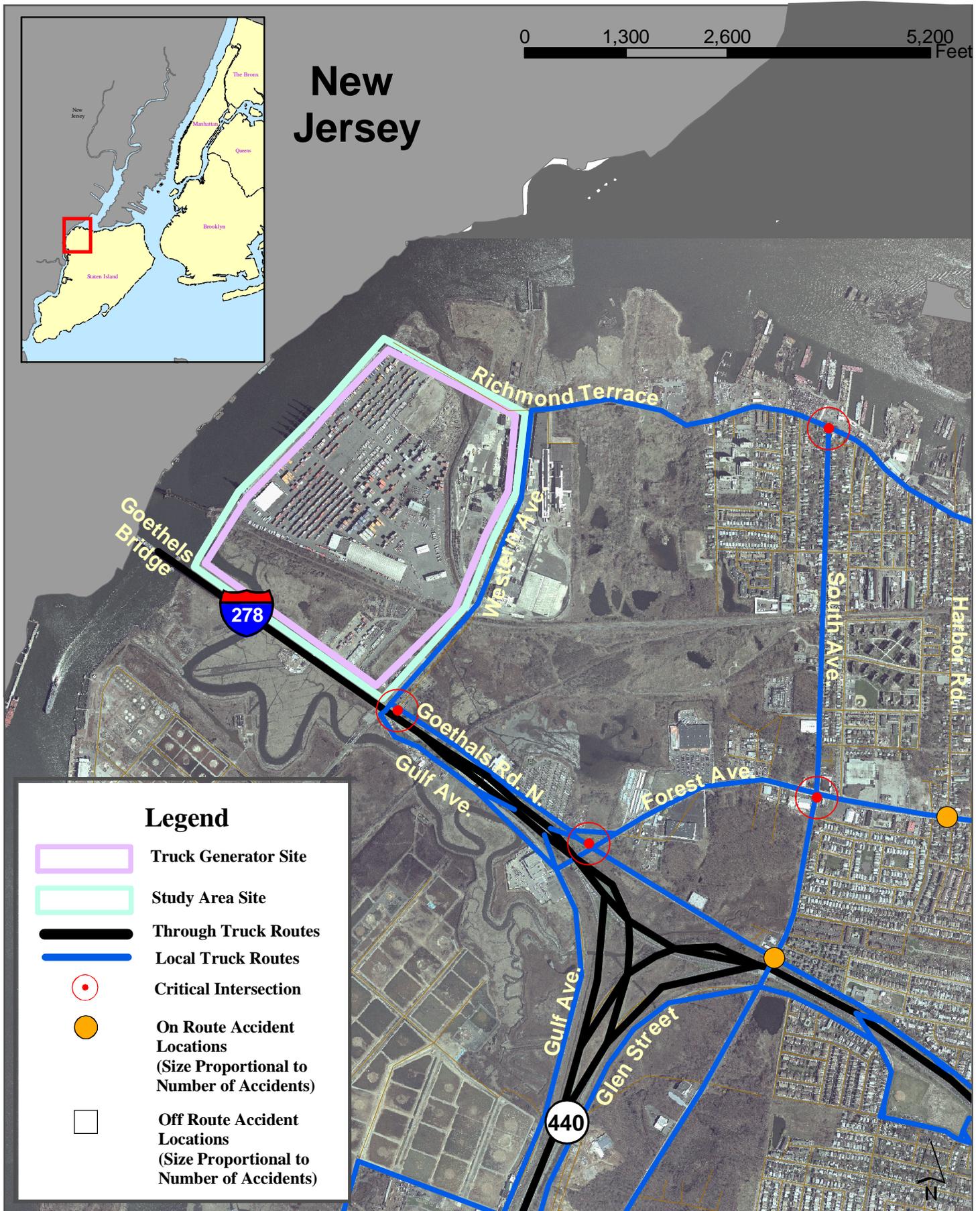
Field observations revealed no obvious issues with roadway capacity or geometrics. However, truck route signage is not posted along any of the designated truck routes.

Accidents

A map of the truck-related accident locations, within and around the Howland Hook study area, is shown in Figure 7-20. There were no truck accident location sites at any of the Howland Hook critical intersections. Furthermore, there were no off-route accident locations within one mile of the site. The two on-route accident location sites were the intersection of South Avenue and Goethals Road North and the intersection of Forest Avenue and Harbor Road. Each of these locations experienced a low number of truck accidents. In summary, there were few truck accidents recorded in and around the Howland Hook study area and there are no locations where truck accidents may hinder the movement of truck traffic in the area.

0 1,300 2,600 5,200 Feet

New Jersey



Legend

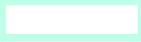
-  Truck Generator Site
-  Study Area Site
-  Through Truck Routes
-  Local Truck Routes
-  Critical Intersection
-  On Route Accident Locations
(Size Proportional to Number of Accidents)
-  Off Route Accident Locations
(Size Proportional to Number of Accidents)

Figure 7-20
Truck Accidents
Howland Hook - Queens

NYC Truck Route Management and Community Impact Reduction Study

NEW YORK CITY



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Case Study Recommendations

Truck route designation signage should be placed at the following intersections:

- Forest Avenue at Gulf Avenue
- Forest Avenue at Goethals Road North
- Forest Avenue at South Avenue
- South Avenue at Richmond Avenue
- Goethals Road North at Western Avenue/Gulf Avenue

Two truck route designation signs should be placed at each approach, one sign before the approach and one sign beyond the approach. Truck route designation signage currently exists at Forest Avenue and South Avenue as well as on Gulf Avenue. However, the current truck route designation signage should be replaced with new signage for better visibility. The truck route signage should also indicate Local Truck Route or Through Truck Route.

The NYCDOT should work with the NYSDOT and PANYNJ in determining the proper routing for 53-foot long, 102-inch wide tractor trailers.

2. Hylan Plaza

Land Use

The Hylan Boulevard study area is bound by Miller Field to the north, Tysens Lane to the south, Titus Avenue to the east, and Clawson Street to the west (Figure 7-21). The truck generator site is Hylan Plaza, a large commercial center that includes a mix of strip and big box retail. The tenants at Hylan Plaza, which include grocery stores, dry cleaners, sporting goods stores, indoor athletic facilities, restaurants, a post office, and a large retail super-center, cater to both the local and regional community.

Hylan Plaza is bound by New Dorp Road to the north, by Ebbitts Avenue to the south, Mill Road to the east, and Hylan Boulevard to the west. All four boundaries of Hylan Plaza as well as Tysens Lane are designated Local Truck Routes. The truck loading area for the site is located at the rear of the plaza adjacent to Mill Road.

East of Hylan Plaza, the study area is comprised of residential uses. Opposite the truck loading area, lining the eastern edge of Mill Road are single-family homes. Also, a public park is located on Mill Road between Tysens Lane and Isernia Avenue. West of Hylan Plaza, the dominant land use in the study area is single family residential, with some commercial uses fronting Hylan Boulevard. The commercial uses are for the most part small professional offices.

North of Hylan Plaza, the study area includes a high school, a library and a large park with athletic fields. South of Hylan Plaza, the study area is residential in character with the exception of some commercial uses that have frontage on the eastern edge of Hylan Boulevard between Ebbitts Avenue and Tysens Lane. A low-rise apartment complex, which has frontage on the western edge of Mill Road, abuts the commercial uses. Proceeding south, residential uses, which include multi-family homes and garden-style apartment complexes, line Tysens Lane.

A map of the land uses within and surrounding the Hylan Plaza study area can be found in Figure 7-22.

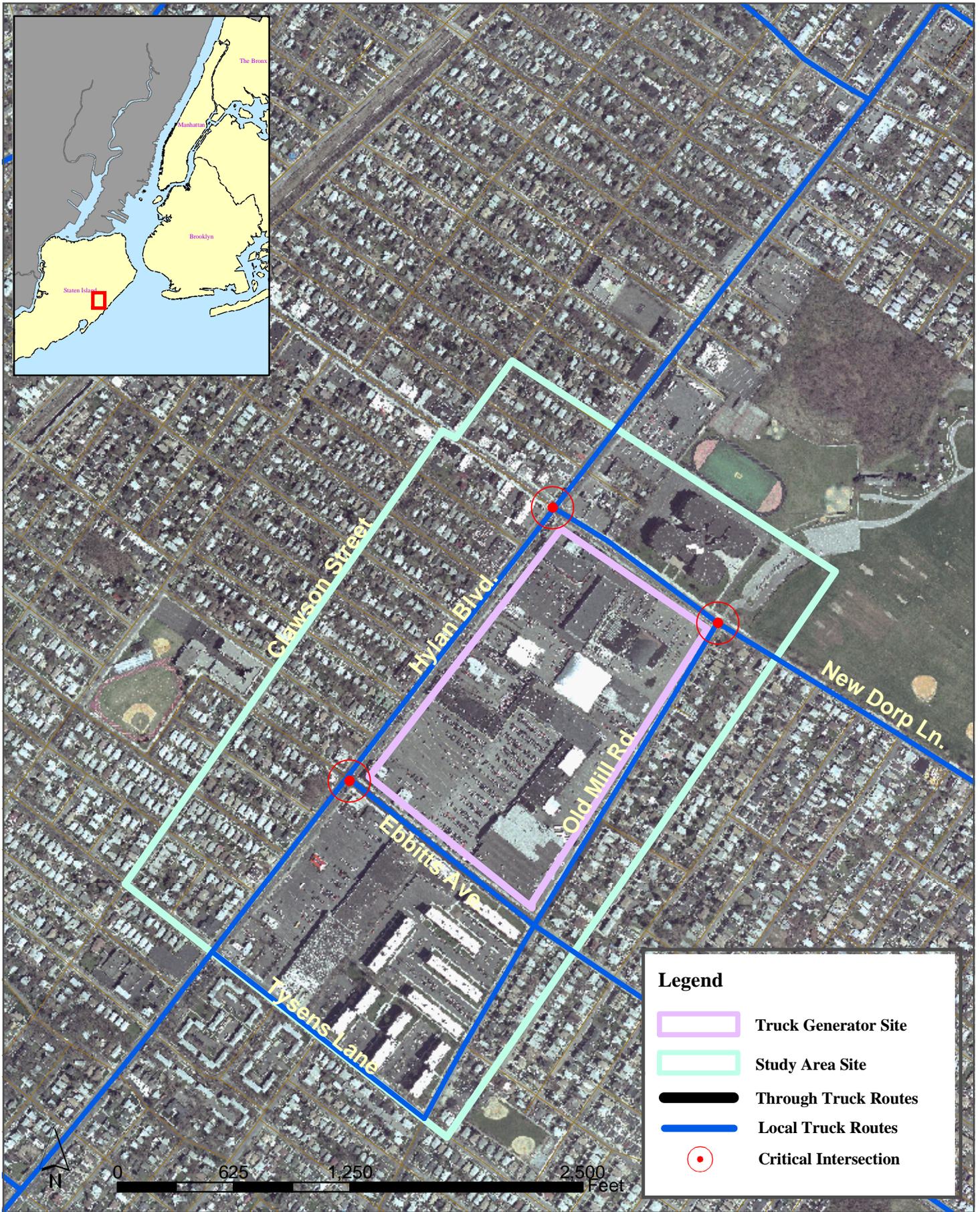


Figure 7-21
Site Map
Hylan Plaza - Staten Island

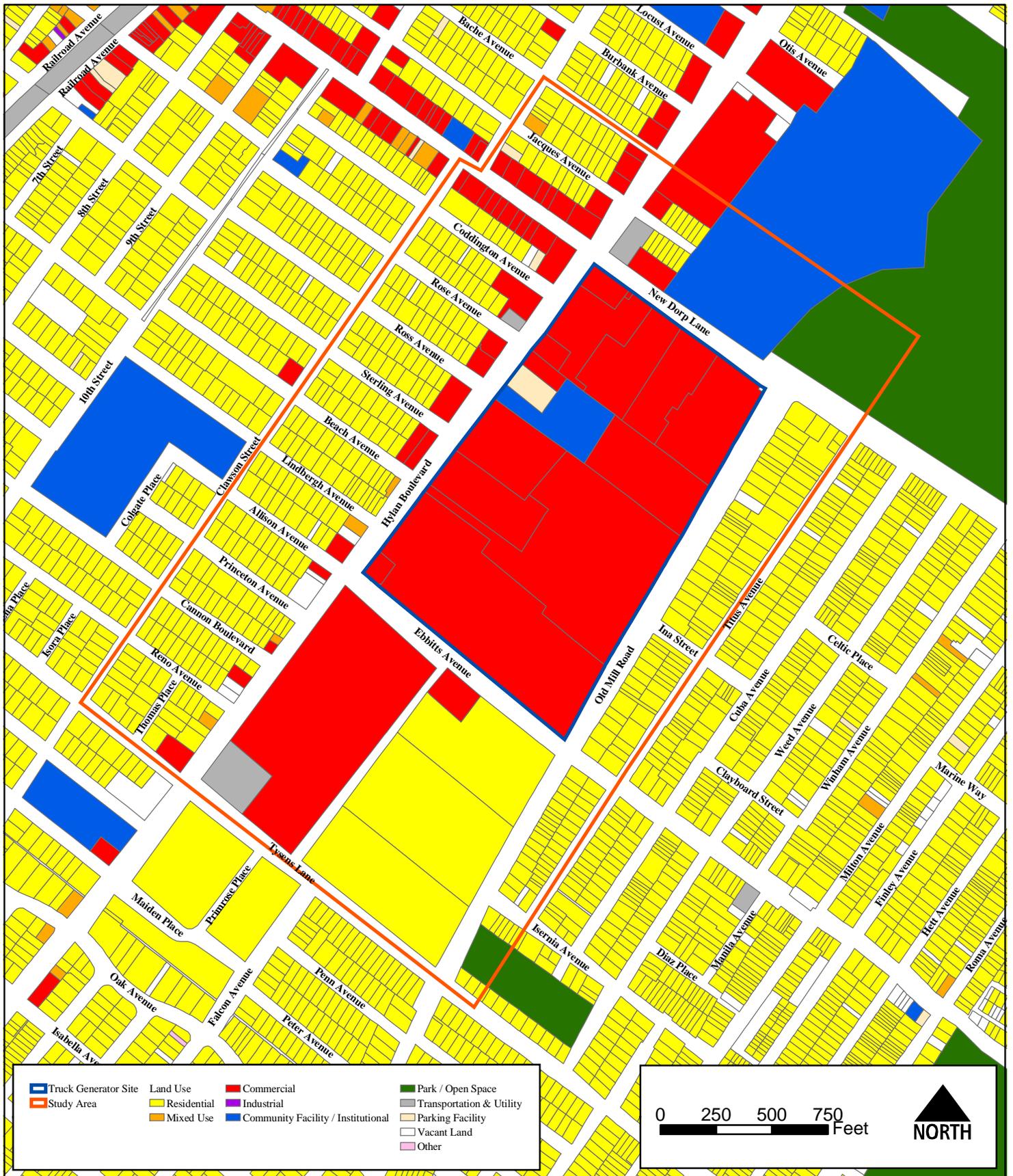


Figure 7-22
Land Use
Hylan Plaza - Staten Island

NYC Truck Route Management and Community Impact Reduction Study



Zoning

The Hylan Boulevard study area bound by Bache Avenue to the northeast, Tysens Lane to the southwest, Titus Avenue to the southeast and Clawson Street to the northwest is contained within residential and commercial zoning districts (Figure 7-23). Commercial properties comprising the block bordered by New Dorp Lane to the northeast, Ebbitts Street to the southwest, Mill Road to the southeast and Hylan Boulevard to the northwest represent the truck generator site. Each of these bordering roadways are designated Local Truck Routes. The truck generator site, as well as parcels to its southwest are contained within the C4-1, general commercial zoning district. The C4-1 zoning district permits a variety of commercial and residential uses, as well as community facilities. In addition to the neighborhood based retail, office and service uses permitted, the C4-1 zoning district provides for the development of major and secondary shopping centers which may contain a significant number of large retail stores that generate considerable traffic. While the maximum permitted floor area ratio (FAR) for commercial uses within the C4-1 district is 1.0, parcels containing residential structures are permitted to have a maximum FAR of 1.25.

The commercial zoning districts comprising the northern portion of the study area include C4-2 and C8-1 districts. The C4-2 zoning district lines both sides of New Dorp Lane. While this general commercial district is similar to the C4-1 zone that encompasses the truck generator site in that it permits commercial, residential and community facility uses, the C4-2 zoning district allows for greater development density. A maximum FAR of 3.4 is permitted for commercial uses. A FAR ranging from 0.78 to 3.0 for residential development is based on various bonuses that could be acquired. Located along the western edge of Hylan Boulevard and on Bache and Jacques Avenues, the C8-1 zoning district is a general service district permitting automotive and other heavy commercial uses. Residential uses are prohibited and the district has a maximum permitted FAR of 1.0.

Residential zoning districts contain the remainder of the parcels in the study area. These districts include the R3-1 and R3-2 zones. As seen in Figure 7-13, the R3-1 zoning district contains all residentially zoned parcels in the study area west of Hylan Boulevard. This zoning district primarily permits single- and two-family homes in detached or semi-detached structures with a maximum permitted FAR of 0.5 and a 0.1 attic allowance. Structures are permitted to cover a maximum of 35% of the parcel and require one off-street parking space per dwelling unit. The R3-2 zoning district contains all parcels within the study area to the northeast and southeast of the truck generator site. This general residence district permits all types of residential structures including detached and semi-detached, single- and two-family homes, garden apartments and row houses. Various types of community facilities are permitted in the district. The R3-2 zoning district permits development at densities similar to the R3-1 district. An FAR of 0.5, plus a 0.1 attic allowance and 35% lot coverage are the maximum permitted in the district. One parking space per dwelling unit is required.

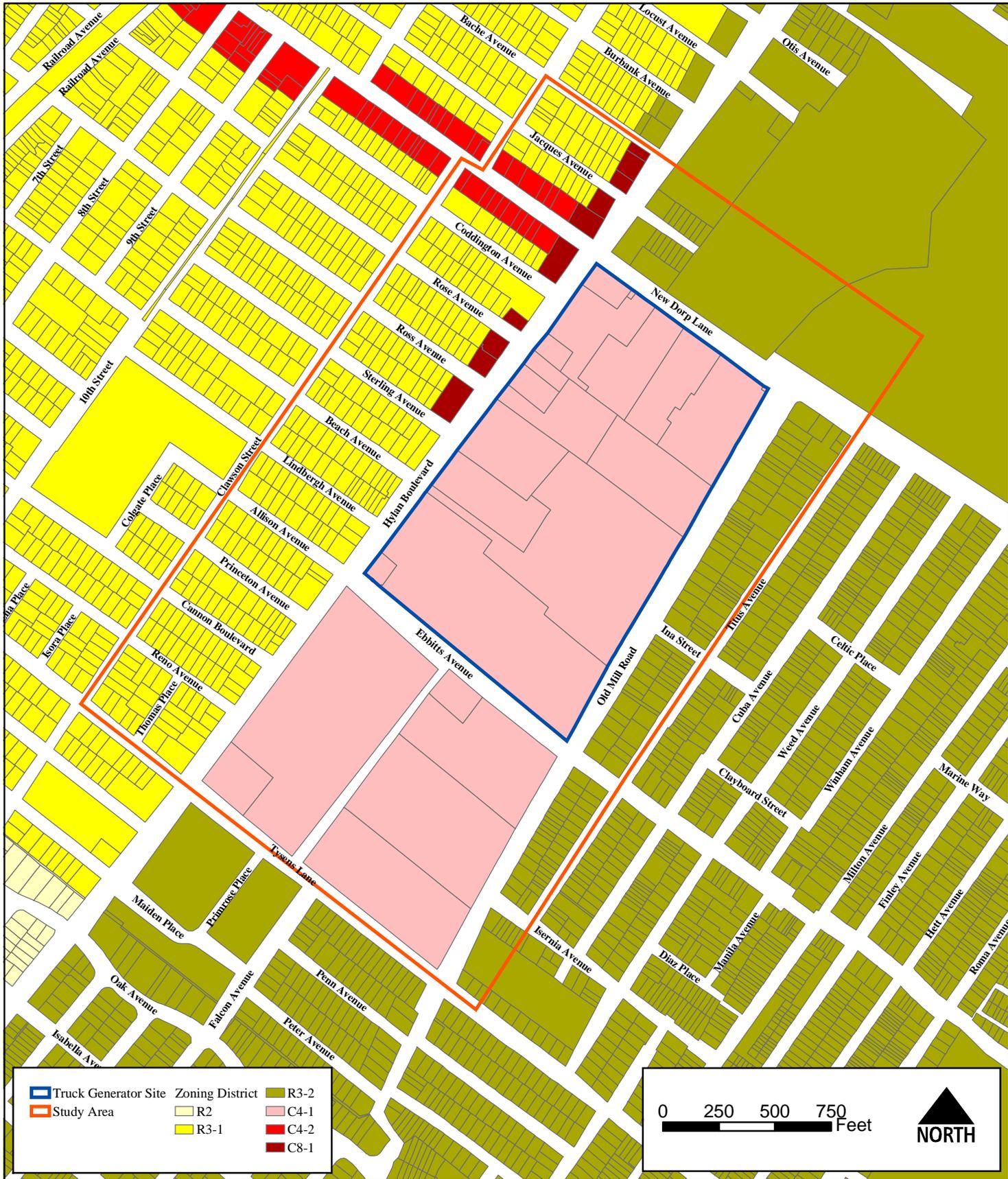


Figure 7-23
Zoning
Hylan Plaza - Staten Island

Community Facilities

New Dorp High School, located on New Dorp Lane between Hylan Boulevard and Mill Road, accommodates approximately 2110 students in grades 9-12. The school is under the jurisdiction of the NYC Department of Education. The main entrance fronts on New Dorp Lane, a designated NYC truck route.

Staten Island Technical High School, located on Clawson Street between Lindbergh and Allison Streets, accommodates approximately 737 students in grades 9 through 12. The school is under the jurisdiction of the NYC Department of Education. The school does not front a NYC truck route, but is located one block west of the truck route on Hylan Boulevard.

Miller Field, fronting on New Dorp Lane, is under the jurisdiction of the National Parks Service and is part of the Gateway National Recreation Area. It is 187-acres in size. The park fronts on New Dorp Lane, a designated NYC truck route.

The ***New Dorp Staten Island Public Library*** is located on New Dorp Lane between Clawson and 10th Streets. The library is located one block west of the Hylan Boulevard truck route.

Gerard P. Dugan Park is located on Mill Road between Isernia Avenue and Tysens Lane. This 3-acre park is under New York City Department of Parks and Recreation jurisdiction. Mill Road, extending from New Dorp Lane to Tysens Lane, is a NYC Local Truck Route and fronts the park. The truck route on Tysens Lane extends from Hylan Boulevard to Mill Road, diagonally across from the park.

The ***New Dorp Station U.S. Post Office*** is located in the Hylan Plaza Shopping Center located on Hylan Boulevard between New Dorp Lane and Ebbitts Street. The streets bounding the shopping center are all designated as NYC Local Truck Routes.

Access to Truck Routes from Site/Study Area

There are no regional Through Truck Routes within or surrounding the Hylan Boulevard study area. The closest regional Through Truck Route is the Staten Island Expressway (I-278), which passes approximately three miles to the north of the Hylan Boulevard study area. I-278 is accessible via Hylan Boulevard. There are three designated Local Truck Routes within the Hylan Boulevard study area: Hylan Boulevard, New Dorp Lane, and Ebbitts Avenue. The Hylan Boulevard truck generator site is accessible to all three roadways.

Critical Intersections

There are three intersections within the Hylan Boulevard study area that were identified as critical intersections. These intersections include:

- Old Mill Road at New Dorp Lane
- Hylan Boulevard at Ebbitts Street/Allison Avenue
- Hylan Boulevard at New Dorp Lane

These two intersections are the access points into the Hylan Plaza truck generator site. All three roads are designated Local Truck Routes. Trucks entering and exiting facilities within the Hylan Park study area will likely pass through these intersections. These two intersections are also access points to residential neighborhoods to the west of the Hylan Boulevard study area.

Traffic Operations

Traffic counts were conducted at the three critical intersections within the Hylan Plaza study area on Tuesday, June 22nd, 2004. The traffic counts were conducted to determine the amount of heavy vehicle traffic at the intersection and to conduct an operations analysis of the intersection. The evening peak period was determined to be the time of day where the most significant amount of truck traffic was likely to occur. A map of the AM peak hour truck traffic at the three key intersections within the Hylan Plaza study area can be found in Figure 7-24.

The results of the Level of Service (LOS) analysis for the two key intersections within the Hylan Plaza study area are shown in Table 7-3. A description of the LOS analyses and the movement of truck traffic at each intersection are discussed below:

**Table 7-3: Intersection Operational Levels of Service 2004
 Existing Conditions Hylan Boulevard – Staten Island**

Intersection	Approach	Lane Group	PM Peak Hour	
			Delay	LOS
Old Mill Road at New Dorp Lane*	EB	LT	11.4	B
	EB	R	11.0	B
	WB	LTR	11.4	B
	NB	LTR	26.8	C
	SB	LTR	20.0	B
	Intersection			16.1
Hylan Blvd. at Ebbitts Avenue*	EB	LTR	36.1	D
	WB	L	47.2	D
	WB	T	38.8	D
	WB	R	27.3	C
	NB	L	28.2	C
	NB	TR	20.3	C
	SB	L	104.3	F
	SB	TR	13.0	B
Intersection			23.0	C
Hylan Blvd. at New Dorp Lane*	EB	L	42.7	D
	EB	TR	43.9	D
	WB	L	56.5	E
	WB	T	39.4	D
	WB	R	44.3	D
	NB	L	81.5	F
	NB	TR	19.9	B
	SB	L	83.8	F
	SB	TR	29.0	C
	Intersection			34.6

* PM Counts conducted at intersections

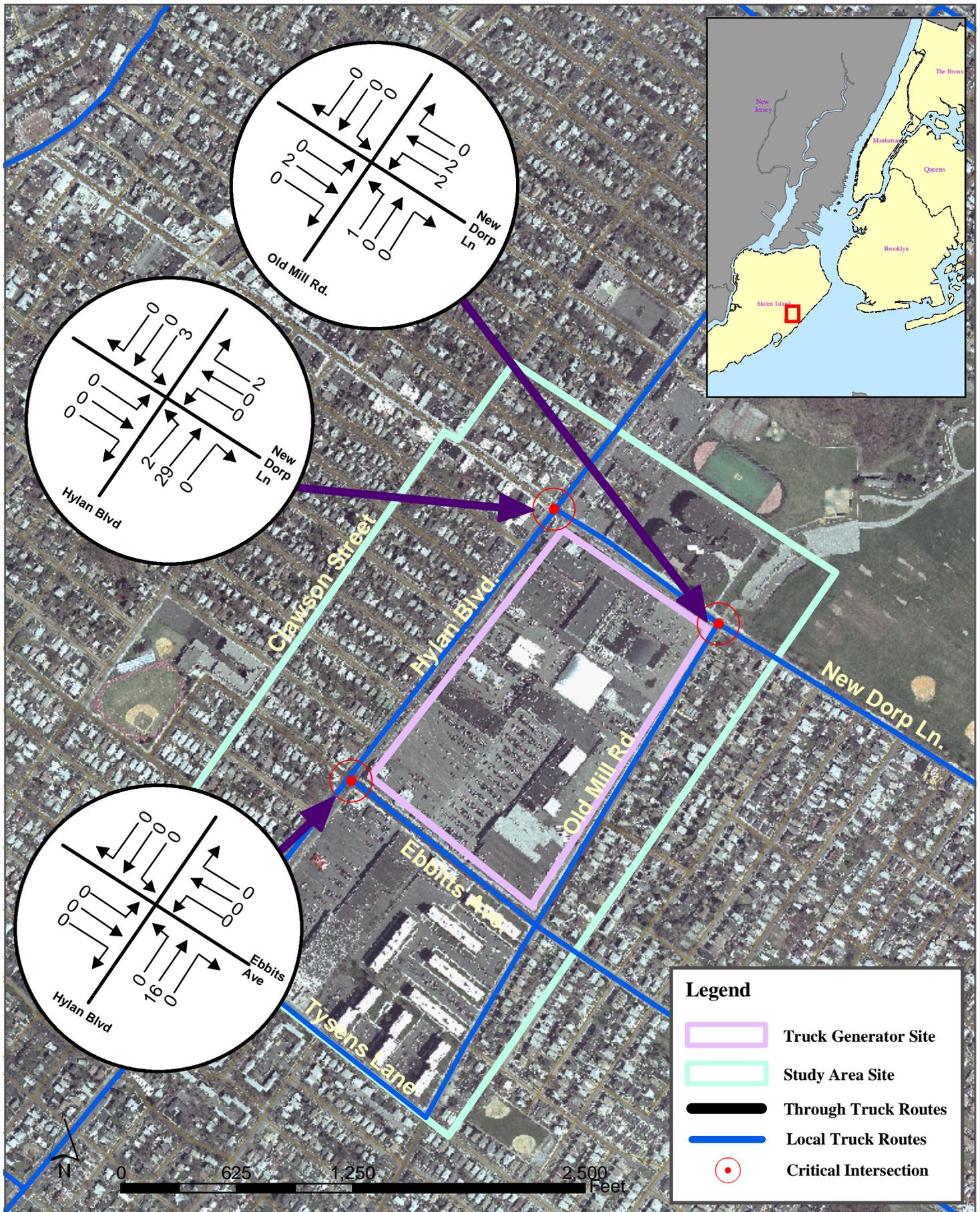


Figure 7-24
PM Peak Hour Truck Traffic Counts
Hylan Plaza - Staten Island

Old Mill Road at New Dorp Lane

The intersection of Old Mill Road and New Dorp Lane is a four-legged signalized intersection, with one-lane approaches in each direction with the exception of the New Dorp Lane eastbound approach, which includes a left-turn only lane. The turning movements conducted at the intersection indicate that the peak hour of traffic is from 5:00 PM to 6:00 PM.

A minimal amount of truck traffic was counted at the intersection. The most significant truck movement is at the New Dorp Lane westbound approach, where 5% of the traffic counted making the left-turn onto Old Mill Road was truck traffic. The area surrounding this intersection is recreational and residential land-uses, so with the exception of truckers making deliveries to and from Hylan Plaza, there are no other truck generators in the area. The operations analysis of the intersection indicates that the intersection is operating at LOS B, with minimal delay at all four approaches.

Hylan Boulevard at Ebbitts Avenue/Allison Avenue

The intersection of Hylan Boulevard and Ebbitts Avenue/Allison Avenue is a four-legged signalized intersection. Hylan Boulevard intersects from the north and south, while the westbound approach is named Ebbitts Avenue and the eastbound approach is named Allison Avenue. The signal at the intersection is a three-phase traffic signal, with extra green time dedicated for the Hylan Boulevard southbound approach.

The turning movement counts conducted at the intersection indicates that the peak hour of traffic at this location is from 5:00 PM to 6:00 PM. Despite the high volume of traffic, there are a low number of trucks during the evening peak period at the intersection. The highest amount of truck traffic at the intersection occurs along Hylan Boulevard northbound, where truck traffic accounts for 2% of the total trips passing through the intersection. The analysis of the turning movements during the peak hour at this location indicates that the commercial development that is abundant throughout this study area does not generate a significant amount of truck traffic during the evening peak period.

The operations analysis for the intersection of Hylan Boulevard and Ebbitts Avenue/Allison Avenue indicates that the intersection operates at LOS C. The eastbound (Allison Avenue) and westbound (Ebbitts Avenue) approaches operate at LOS D, as a result of the significantly shorter green time for these approaches, as opposed to the northbound and southbound approaches. Hylan Boulevard carries a substantial amount of traffic through this intersection (over 2,000 vehicles in the southbound direction). Therefore, the lengthy green time for the Hylan Boulevard approaches is sufficient.

Hylan Boulevard at New Dorp Lane

The intersection of Hylan Boulevard and New Dorp Lane is a four-legged signalized intersection, with Hylan Boulevard intersecting from the north and the south while New Dorp Lane intersects from the east and west. The signal at the intersection is a three-phase traffic signal, with extra green time for left-turn movements from Hylan Boulevard to New Dorp Lane.

The turning movement counts conducted at the intersection indicates that the peak hour of traffic at this location is from 4:00 PM to 5:00 PM. There is a minimal amount of truck traffic at the intersection during the evening peak period despite the high volume of vehicular traffic. The highest amount of truck traffic occurs at the Hylan Boulevard northbound approach where 2% of

the through movements and 1% of the left-turn movements are trucks. 1% of the left-turn movements from Hylan Boulevard southbound to New Dorp Lane eastbound are trucks.

The operations analysis for the intersection of Hylan Boulevard and New Dorp Lane indicates that the intersection operates at LOS C. The New Dorp Lane eastbound and westbound approaches operate at LOS D, as a result of the significantly shorter green time for these approaches, as opposed to the northbound and southbound approaches. Hylan Boulevard carries a substantial amount of traffic through this intersection (over 2,000 vehicles in the southbound direction). Therefore, the lengthy green time for the Hylan Boulevard approaches is sufficient. Despite the dedicated left-turn lanes and the additional green time, the northbound and southbound left-turn approaches operate at LOS F, so truckers accessing New Dorp Lane from Hylan Boulevard experience some delay.

Roadway Network Capacity/Geometrics

Field observations revealed no obvious issues with roadway capacity or geometrics. However, truck route signage is not posted along any of the designated truck routes.

Accidents

A map of the truck-related accident locations, within and around the Hylan Plaza study area, is shown in Figure 7-25. There was no truck accidents recorded at the two critical intersections within the Hylan Boulevard study area. Truck accidents occurred at four locations during the study period; each site experienced a small number of accidents. Three of the locations were along Hylan Boulevard and one of those locations occurred at the Hylan Boulevard truck generator site. The one off-route accident location was at the intersection of Tysens Lane and Clawson Street, which is a residential area. There is a low volume of truck traffic throughout the Hylan Boulevard study area and the low amount of truck accidents in the area clarifies that there are no locations where the presence of truck accidents may hinder the movement of trucks within the Hylan Boulevard study area.

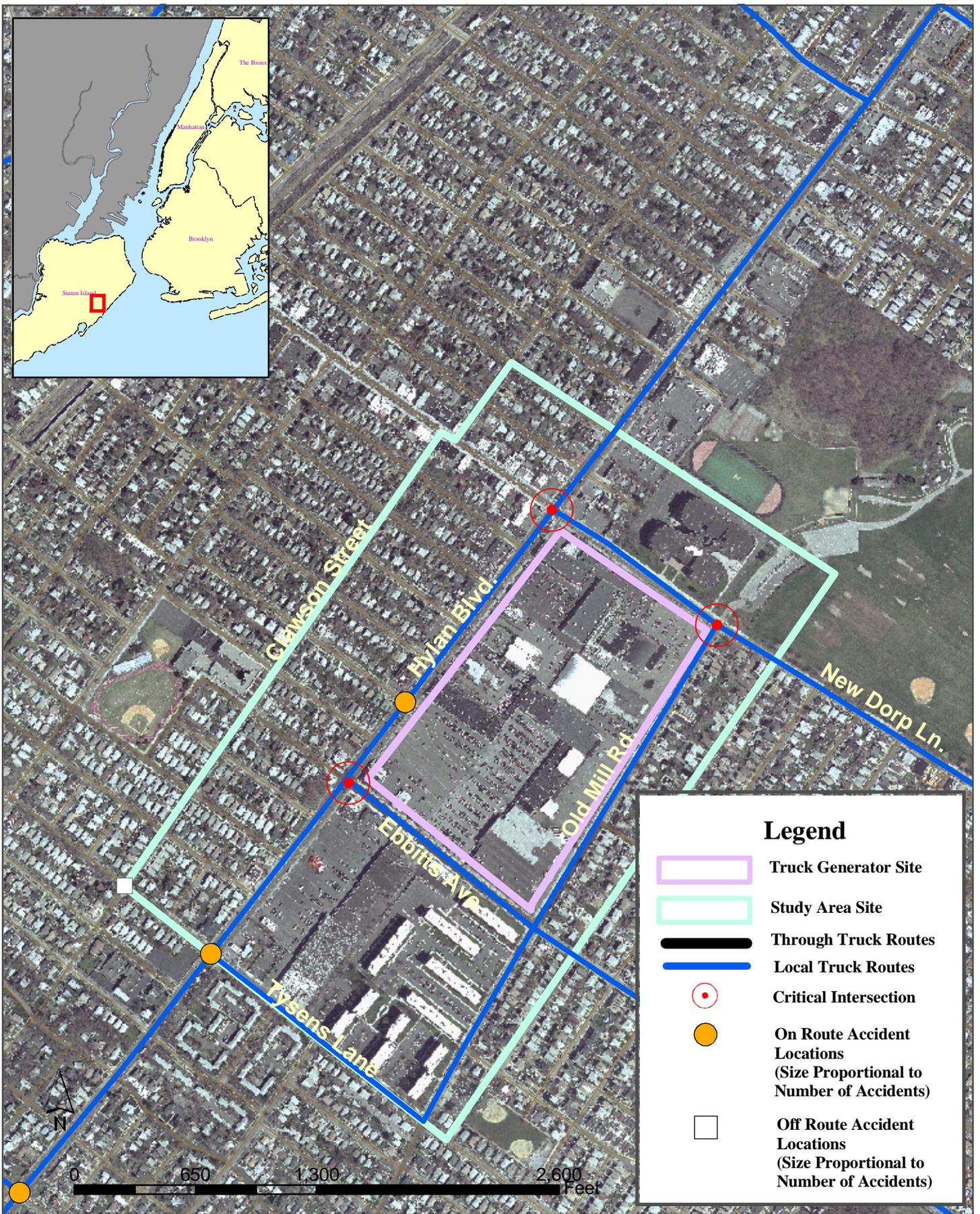


Figure 7-25
Truck Accidents
Hylan Plaza - Staten Island

Recommendations for Hylan Plaza

The operations analyses of Hylan Boulevard at New Dorp Lane and Hylan Boulevard at Ebbitts Avenue suggest that both intersections operate efficiently, considering the large amount of vehicular traffic at both intersections. However, to improve truck mobility at both intersections, signal timing modifications to increase the amount of green time for left-turn movements at the Hylan Boulevard approaches is recommended. The increase in green time will assist in decreasing the queuing lengths at the intersection approaches.

Community facilities and institutional land uses exist on New Dorp Lane and Ebbitts Avenue. Eliminating New Dorp Lane and Ebbitts Avenue east of Old Mill Road as Local Truck Routes is recommended. Furthermore, with the existence of community and institutional facilities along New Dorp Lane, pedestrian warning signs should be installed.

Truck route designation signage should be placed at the following intersections:

- Hylan Boulevard at New Dorp Lane
- Hylan Boulevard at Ebbitts Avenue
- Old Mill Road at New Dorp Lane

Two truck route designation signs should be placed at each approach, one sign before the approach and one sign beyond the approach. Truck route designation signage currently exists at the intersection of Old Mill Road and Ebbitts Avenue. However, the current truck route designation signage should be replaced with new signage for better visibility. The truck route signage should also indicate Local Truck Route or Through Truck Route.

i. Recommendations

The following recommendations were developed based on an overall analysis of the data;

1. Prohibit trucks from using the following truck route streets from 10 PM to 6 AM

<u>Street</u>	<u>Type</u>	<u>Limits</u>
Woodrow Road	Local	Bloomington Road to Arthur Kill Rd
Clove Road	Local	Staten Island Expwy and Richmond Ter.
Castleton Avenue	Local	Richmond Avenue to Jersey Street
Broadway	Local	Forest Avenue to Richmond Terrace
Richmond Hill Road	Local	Richmond Road to Richmond Avenue
Steuben Street	Local	Hylan Boulevard to Narrows Road South

2. Possible investigation for development of traffic mitigation measures, focusing on truck movements at locations where there have been 15 or more truck accidents over a thirty-six month time period.

- Victory Boulevard and West Service Road of the West Shore Expressway - Pearl Harbor Memorial Expressway

Possible short-term improvements include establishing a wide-turn zone, modifying traffic signal timing, and providing additional signage to address localized intersection issues.

3. Eliminate the category of Limited Local Truck Route streets

This street designation was established for trucks with only two axles and no more than six tires. At the time this rule was promulgated, most of the trucks registered within the Tri-State region were 2 axles and either four or six tires. Tractor trailers and single unit trucks with three or more axles comprised only a small portion of the total trucks at the time. Accordingly, the streets that were designated as Limited Local Truck Routes were in the central hilly section of Staten Island and there were concerns about the grade and geometry of these roadways. As land use and development has evolved, the size of trucks has also grown. The retention of this category of truck routes is confusing and limits reasonable access for single unit trucks that are three axles.

Therefore, it is recommended that the Department eliminate the designation and provide access only for local delivery.

4. Install new "Local Truck Route" signs along Victory Boulevard and explore traffic-calming methods.

5. Arthur Kill Road

Several comments were made regarding trucks that pass through non-industrial land uses and contribute to structural/infrastructure/utility damage. There are many stretches of Arthur Kill Road where the predominant land use is residential. In addition, existing geometry and road widths contribute to congestion and issues relating to truck access and movement.

The primary issue relating to lane widths and roadway geometrics will be addressed with the pending capital construction project to widen Arthur Kill Road to provide improved traffic flow and roadway geometrics. In addition, it is recommended that the Department install relevant

positive and negative signage along the corridor. This includes signage encouraging the use of the West Shore Expressway for through trips to eliminate congestion.

6. Decker and Heberton Avenues

- Post new “LOCAL TRUCK ROUTE” signs on Richmond Avenue, Jewett Avenue, Forest Avenue and Castleton Avenue to inform truckers of the designated truck routes in the area.
- Reconstruct the turning radius on the southeast corner at the intersection of Richmond Terrace and Richmond Avenue. This measure would reduce the traffic queues on Richmond Avenue and reinforce the reason for trucks to stay on the Local Truck Route.
- Conduct random traffic enforcement initiatives to keep trucks on the truck routes.

7. Clove Road between Hylan Boulevard and Narrows Road South

This situation should be alleviated by truck driver education and the placement of the following signs:

- Post new “LOCAL TRUCK ROUTE” signs at the key intersection decision points along Clove Road, Hylan Boulevard, and Narrows Road South.
- Post new “LOCAL TRUCK ROUTE” signs on Richmond Avenue, Jewett Avenue, Forest Avenue and Castleton Avenue to inform truckers of the designated truck routes in the area.
- Reconstruct the turning radius on the southeast corner at the intersection of Richmond Terrace and Richmond Avenue. This measure would reduce the traffic queues on Richmond Avenue and reinforce the reason for trucks to stay on the Local Truck Route.
- Conduct random traffic enforcement initiatives to keep trucks on the truck routes.
- Provide truck driver education materials as described in *Technical Memorandum 4, Education Program*.

8. Armstrong Avenue between Hylan Boulevard and Amboy Road

- Properly sign the designated Local Truck Routes as described in *Technical Memorandum 3, Truck Signage Program*.
- Educate the truckers and businesses about the truck routes and traffic rules governing their use of the local streets.
- Post new “Local Truck Route Signs” at the intersections on Amboy Road, Hylan Boulevard, Richmond Avenue, Giffords Avenue and Nelson Avenue to inform truckers of the designated truck routes in the area.
- Conduct random traffic enforcement initiatives to keep trucks on the truck routes.

9. Main Street between Amboy Road and Hylan Boulevard

- Replace Main Street as a truck route with Craig Avenue (or as a second choice Carteret Street) which is located two and six blocks to the west of Main Street. While truck activity should be minimal, both streets are 60 feet and better suited to accommodate trucks than Main Street.
- Post new “LOCAL TRUCK ROUTE” signs at the following intersections:
 - Amboy Avenue and Main Street

- LTR with through arrow – eastbound and westbound approaches
- LTR with left/right arrow – southbound approach
- Amboy Avenue and Craig Avenue
 - LTR with left/right arrows – northbound approach
 - LTR with through right arrows – eastbound approach
 - LTR with through/left arrows – westbound approach
- Hylan Boulevard and Craig Avenue
 - LTR with right arrow – westbound approach
 - LTR with left arrow – southbound approach

10. Bard Avenue

- Post new “LOCAL TRUCK ROUTE” signs with through arrow at the key intersection decision points: Richmond Terrace/Bard Avenue, Castleton Avenue/Bard Avenue and Forest Avenue/Bard Avenue.
- Post “NO TRUCKS EXCEPT LOCAL DELIVERIES” signs at the following intersections:
 - Richmond Terrace and Bard Avenue – south leg
 - Castleton Avenue and Bard Avenue – north and south legs
 - Forest Avenue and Bard Avenue – north leg
- Conduct random traffic enforcement initiatives to keep trucks on the truck routes.
- Provide truck driver education materials as described in *Technical Memorandum 4, Education Program*.

11. Broadway

- Post new “NO TRUCKS EXCEPT LOCAL DELIVERIES” (NTELD) sign on the following intersection approaches:
 - Forest Avenue and Broadway
 - NTELD signs south leg viewable from eastbound and westbound approaches
 - Clove Road and Broadway
 - NTELD signs north leg viewable from northbound approach
- Post new “LOCAL TRUCK ROUTE” signs with through arrow on Richmond Terrace and Clove Road, Castleton Avenue and Forest Avenue.
- Improve the turning radius on the southeast corner at the intersection of Clove Road and Castleton Avenue.
- Restrict trucks from using Broadway between the hours of 10:00 PM and 6:00 AM.

12. Windsor Road/Little Clove Road/Renwick Avenue

- Post the new “LOCAL TRUCK ROUTE” sign on Little Clove Road between Clove Road and Renwick Avenue.
- Post “ALL TRUCKS” sign with left turn arrow on the far side of the intersection of Little Clove Road and Renwick Avenue so that the signs are visible from the westbound approach.
- Post “ALL TRUCKS” sign with right turn arrow at the exit driveway from the Michael J. Petrides Educational Center to prevent trucks from traveling under the Expressway and onto Little Clove Road.

14. Hylan Boulevard and Steuben Street

The Department has received many complaints about trucks on Steuben Street and Hylan Boulevard north of the Staten Island Expressway. In this area the two streets function as a one-way pair. Both streets are designated as Local Truck Routes, however, residential land uses along both streets are incompatible with heavy truck traffic. As a result, these streets should be considered as part of the truck route restriction between the hours of 10:00 PM and 6:00 AM.

15. Greaves Avenue/Greaves Lane

Local complaints focus on trucks using Greaves Avenue and Greaves Lane in the Great Kills/Bay Terrace areas of the Borough. Neither street is a designated truck route and Greaves Avenue is a residential street. Speed bumps have been installed to prevent trucks from speeding. However, a shopping center located at the end of Greaves Lane receives frequent truck deliveries each day.

The following measures are proposed to address this concern:

- Post new “LOCAL TRUCK ROUTE” signs with through arrow at the key intersection decision points: Giffords Avenue/Amboy Road, and Giffords Avenue/Arthur Kill Road.
- Post “NO TRUCKS EXCEPT LOCAL DELIVERIES” signs at the following intersections:
 - Arthur Kill Road and Greaves Avenue – east and west approaches
 - Amboy Road and Greaves Avenue – east and west approaches
- Conduct random traffic enforcement initiatives to keep trucks on the truck routes.
- Restrict trucks from Greaves Avenue (between Arthur Kill Road and Amboy Road) between the hours of 10:00 PM and 6:00 AM.
- Provide truck driver education materials as described in *Technical Memorandum 4, Education Program*.

16. Howland Hook

Truck route designation signage should be placed at the following intersections:

- Forest Avenue at Gulf Avenue
- Forest Avenue at Goethals Road North
- Forest Avenue at South Avenue
- South Avenue at Richmond Avenue
- Goethals Road North at Western Avenue/Gulf Avenue

Two truck route designation signs should be placed at each approach, one sign before the approach and one sign beyond the approach. Truck route designation signage currently exists at Forest Avenue and South Avenue as well as on Gulf Avenue. However, the current truck route designation signage should be replaced with new signage for better visibility. The truck route signage should also indicate Local Truck Route or Through Truck Route.

The NYCDOT should work with the NYSDOT and PANYNJ in determining the proper routing for 53-foot long, 102-inch wide tractor trailers.

17. Hylan Plaza

The operations analyses of Hylan Boulevard at New Dorp Lane and Hylan Boulevard at Ebbitts Avenue suggest that both intersections operate efficiently, considering the large amount of vehicular traffic at both intersections. However, to improve truck mobility at both intersections, signal timing modifications to increase the amount of green time for left-turn movements at the Hylan Boulevard approaches is recommended. The increase in green time will assist in decreasing the queuing lengths at the intersection approaches.

Community facilities and institutional land uses exist on New Dorp Lane and Ebbitts Avenue. Eliminating New Dorp Lane and Ebbitts Avenue east of Old Mill Road as Local Truck Routes is recommended. Furthermore, with the existence of community and institutional facilities along New Dorp Lane, pedestrian warning signs should be installed.

Truck route designation signage should be placed at the following intersections:

- Hylan Boulevard at New Dorp Lane
- Hylan Boulevard at Ebbitts Avenue
- Old Mill Road at New Dorp Lane

Two truck route designation signs should be placed at each approach, one sign before the approach and one sign beyond the approach. Truck route designation signage currently exists at the intersection of Old Mill Road and Ebbitts Avenue. However, the current truck route designation signage should be replaced with new signage for better visibility. The truck route signage should also indicate Local Truck Route or Through Truck Route.