APPENDIX D

TRANSPORTATION

- *TPF/TDF Technical Memorandum*
- *Study Area Parking Regulations*

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DRAFT

TECHNICAL MEMORANDUM

TO: **NYCDCP**

FROM: **Philip Habib & Associates**

DATE: **October 25, 2019**
(Revised September 9, 2020)

PROJECT: **Acme Fish Expansion (PHA No. 1817)**

RE: **Transportation Planning Factors and Travel Demand Forecast**

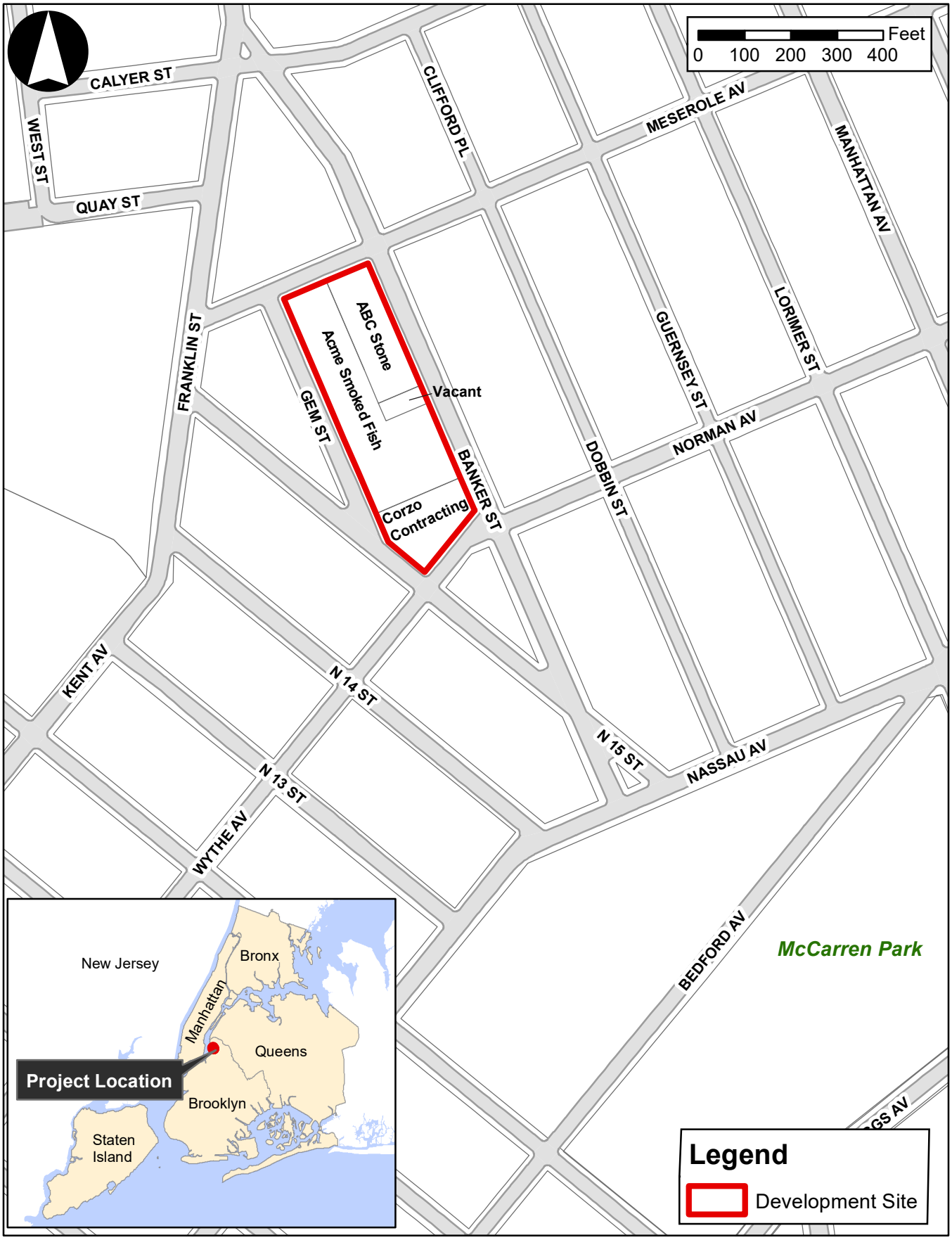
This memorandum summarizes the transportation planning factors to be used for the analyses of traffic, parking, transit, and pedestrian conditions for the Acme Fish Expansion project. Estimates of the peak travel demand for the Proposed Actions' reasonable worst-case development scenario (RWCDS) are provided, along with a discussion of trip assignment methodologies and study area definitions.

THE PROPOSED ACTIONS

The Proposed Actions involve a zoning map amendment, zoning text amendment, and Large-Scale General Development special permits for a Development Site encompassing the entirety of Brooklyn Block 2615 in the Greenpoint-Williamsburg Industrial Business Zone (IBZ) in Brooklyn Community District 1. As shown in **Figure 1**, the Development Site, which contains approximately 116,756 square feet (sf) of lot area, is bounded by Meserole Avenue on the north, Wythe Avenue on the south, Banker Street on the east and Gem Street and North 15th Street on the west. The existing Acme Smoked Fish Company ("Acme") facility currently occupies lots 1, 21, 25 and 50, and is comprised of four interconnected one- to two-story buildings with a total of approximately 72,885 sf of built floor area. The Development Site also includes Lot 6, which contains ABC Stone, a stone supplier occupying a 2-story building (approximately 21,500 sf); a single-story vacant building with approximately 3,800 sf on Lot 19; and open storage for Corzo Contracting Company, a utility construction company that occupies the southern portion of the block (Lot 125).

The existing Acme facility has limited capacity and an outdated and aging plant. Upgrading the existing facility would be both cost-prohibitive and infeasible as it would necessitate ceasing operations for an

Project Location



extended period of time. The intent of the Proposed Actions is to provide the company with a new flexible, purpose-built facility that would allow them to consolidate their processing operations at their existing location in Greenpoint, Brooklyn. Warehousing and distribution functions would be relocated to a facility in New Jersey. The Proposed Actions seek to enable the cost of a new state-of-the-art factory for Acme to be offset by allowing a mix of complementary uses. Amending the zoning to preserve manufacturing while allowing greater commercial density above would achieve this objective.

THE REASONABLE WORST CASE DEVELOPMENT SCENARIO (RWCDS)

In order to assess the potential effects of the Proposed Actions, a RWCDS for both "future without the Proposed Actions" (No-Action) and "future with the Proposed Actions" (With-Action) conditions is analyzed for an analysis year of 2024. As per the RWCDS, the No-Action scenario assumes that the existing M3-1 zoning would remain and the Proposed Development would not be constructed. It is anticipated that, without a new state-of-the-art purpose-built facility for its operations, Acme Smoked Fish would strongly consider relocating outside of New York State. As such, for analysis purposes it is assumed that in the absence of the Proposed Actions Acme Smoke Fish would vacate its buildings on the site (Lots 1, 21, 25, and 50). Lot 6, which is currently occupied by ABC Stone, is also expected to be vacated in the No-Action, as the business is currently in the process of moving out. Based on existing and anticipated real estate market trends, existing structures and site conditions, and uses allowed by existing zoning, it is expected that those vacated buildings would be re-occupied. As such, the No-Action scenario assumes that Acme's and ABC Stone's vacated buildings would be re-occupied by a mix of eating/drinking/entertainment establishments, creative office and warehouse uses. The vacant building on Lot 19, which is the smallest lot on the block, is assumed to be re-occupied by restaurant use in the No-Action. Finally, the No-Action scenario assumes that Lot 125, which currently accommodates parking and open storage, would be redeveloped with a new three-story commercial building with distillery, creative office, dance studio and restaurant uses. (For travel demand forecasting purposes, the dance studio use is conservatively included in the creative office category.)

Overall, as shown in **Table 1**, the No-Action condition for the Development Site is assumed to consist of a total of 148,085 gsf (excluding parking), comprised of approximately 35,225 gsf of restaurant/entertainment uses, 66,750 gsf of creative office space, 28,610 gsf of warehousing spaces, and 17,500 gsf of light industrial (distillery) space, as well as an estimated 107 accessory parking spaces.

Under the With-Action scenario, the Proposed Development would be comprised of a total of 639,900 gsf of new development (excluding parking), including a total of approximately 33,800 gsf of retail space, approximately 496,800 gsf of office space and approximately 109,300 gsf of light industrial/manufacturing space (a new processing facility for Acme). As shown in **Table 1**, compared to the No-Action condition, the Proposed Actions would result in a net incremental increase of 33,800 gsf of local retail space, 430,050 gsf of office space and 91,800 gsf of light industrial/manufacturing space. There would also be a net incremental decrease of 35,225 gsf of restaurant/entertainment uses and 28,610 gsf of warehousing space. On-site accessory parking on the Development Site would increase by approximately 43 spaces to a total of approximately 150.

TABLE 1
2024 RWCDS No-Action and With-Action Land Uses
for the Travel Demand Forecast

Land Use	No-Action Condition	With-Action Condition	Net Increment
Commercial			
Local Retail	0 gsf	33,800 gsf	+ 33,800 gsf
Office	66,750 gsf	496,800 gsf	+ 430,050 gsf
Restaurant/Entertainment	35,225 gsf	0 gsf	- 35,225 gsf
Total Commercial	***101,975 gsf***	***530,600 gsf***	***+ 428,625 gsf***
Light Industrial/Manufacturing/Warehousing			
Light Industrial/Manufacturing (Acme)	0 gsf	109,300 gsf	+ 109,300 gsf
Light Industrial/Manufacturing (Distillery)	17,500 gsf	0 gsf	- 17,500 gsf
Warehousing	28,610 gsf	0 gsf	- 28,610 gsf
Total Light Industrial/Manufacturing/Warehousing	***46,110 gsf***	***109,300 gsf***	***+ 63,190 gsf***
Total Floor Area	***148,085 gsf***	***639,900 gsf***	***+ 491,815 gsf***
Parking			
Accessory Parking Spaces	107	150	+ 43

TRANSPORTATION PLANNING FACTORS

The trip generation rates, temporal and directional distributions, modal splits, vehicle occupancies and truck trip factors used to forecast travel demand for local retail, office, general light industrial/manufacturing, restaurant and warehousing land uses are summarized in **Table 2**. They were based on factors cited in the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, American Association of State Highway Transportation Officials (AASHTO) Census Transportation Planning Products (CTPP) reverse journey-to-work five-year data, data from *ITE Trip Generation Manual, 10th Edition* (Land Use Code 150 - Warehousing), data from a 2019 mode choice survey of office workers in Williamsburg conducted by PHA, New York City Department of Transportation (DOT) survey data, and factors developed for recent environmental reviews including the May 2016 *25 Kent Avenue EAS*, the 2017 *12 Franklin Street EAS*, the 2018 *Jerome Avenue Rezoning FEIS* and the 2016 *East New York Rezoning Proposal FEIS.* Factors are shown for the weekday AM and PM peak hours (typical peak periods for commuter travel demand) and the weekday midday and Saturday peak hours (typical peak periods for retail demand). To reflect the mixed-use nature of the Proposed Development, it was assumed for the purposes of the travel demand forecast that 25 percent of all local retail trips on weekdays would be linked to other proposed uses on the site, consistent with *CEQR Technical Manual* guidance. A five percent linked-trip factor was assumed for the Saturday peak hour reflecting the fact that there would be substantially less office, light industrial and warehousing travel demand on weekends.

TABLE 2: Transportation Planning Factors

Land Use:	Local Retail		Office		Light Industrial/ Manufacturing		Restaurant		Warehousing	
Trip Generation										
	(1)		(1)		(2)		(3)		(4)	
Weekday	205		18.0		14.7		179.0		1.9	
Saturday	240		3.9		2.2		139.0		0.2	
	per 1,000 sf		per 1,000 sf		per 1,000 sf		per 1,000 sf		per 1,000 sf	
Temporal Distribution										
	(1)		(1)		(2)		(3)		(4)	
AM	3.0%		12.0%		13.2%		1.0%		6.0%	
MD	19.0%		15.0%		11.0%		13.7%		8.0%	
PM	10.0%		14.0%		14.2%		7.7%		5.0%	
Saturday	10.0%		17.0%		10.7%		11.6%		11.0%	
Modal Splits										
	(5)		(6,3)		(3,7)		(3)		(3,7)	
	All Periods		AM/PM/SAT	MD	AM/PM/SAT	MD	All Periods		AM/PM/SAT	MD
Auto	11.0%		12.1%	2.0%	40.7%	2.0%	20.0%		40.7%	2.0%
Taxi/Rideshare	0.0%		5.9%	1.0%	0.1%	1.0%	10.0%		0.1%	1.0%
Subway	3.0%		45.7%	7.0%	35.8%	7.0%	15.0%		35.8%	7.0%
Bus	2.0%		6.2%	7.0%	5.4%	7.0%	15.0%		5.4%	7.0%
Ferry	0.0%		2.7%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%
Bike	0.0%		15.3%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%
Walk Only/Other	84.0%		12.1%	83.0%	18.0%	83.0%	40.0%		18.0%	83.0%
	100.0%		100%	100%	100%	100%	100%		100%	100%
In/Out Splits	(8)		(8)		(2)		(3)		(4)	
	In	Out	In	Out	In	Out	In	Out	In	Out
AM	50%	50%	94.0%	6.0%	88.0%	12.0%	94.0%	6.0%	65.0%	35.0%
MD	47%	53%	39.0%	61.0%	50.0%	50.0%	65.0%	35.0%	50.0%	50.0%
PM	44%	56%	5.0%	95.0%	12.0%	88.0%	65.0%	35.0%	24.0%	76.0%
Saturday	55%	45%	60.0%	40.0%	47.0%	53.0%	63.0%	37.0%	64.0%	36.0%
Vehicle Occupancy										
	(2)		(6)		(7)		(3)		(7)	
Auto	2.00		1.15		1.11		2.20		1.11	
Taxi	2.00		1.85		1.11		2.30		1.11	
Truck Trip Generation:	(1)		(1)		(2)		(2)		(4)	
Weekday	0.35		0.32		0.67		3.60		0.35	
Saturday	0.04		0.01		0.67		3.60		0.03	
	per 1,000 sf		per 1,000 sf		per 1,000 sf		per 1,000 sf		per 1,000 sf	
Truck Temporal Distribution:	(1)		(1)		(2)		(3)		(9)	
AM	8.0%		10.0%		14.0%		6.0%		14.0%	
MD	11.0%		11.0%		9.0%		6.0%		9.0%	
PM	2.0%		2.0%		1.0%		1.0%		1.0%	
Saturday	11.0%		11.0%		0.0%		0.0%		9.0%	
Truck In/Out Splits:										
	In	Out	In	Out	In	Out	In	Out	In	Out
All Periods	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%

Notes:

(1) Based on data from the 2014 *CEQR Technical Manual.*

(2) Based on data from the *East New York Rezoning Proposal FEIS* , 2016.

(3) Based on data from the *12 Franklin Street EAS, 2017*.

(4) Based on data from *ITE Trip Generation Manual, 10th Edition,* Land Use Code 150 (Warehousing).

(5) Based on DOT Brooklyn transit zone survey data provided by DCP.

(6) Based on 2019 PHA mode choice survey data for an office use in Williamsburg, Brooklyn.

(7) Based on 2012-2016 ACS Reverse Journey-to-Work census data for Kings County census tracts 557, 561, 565, 569, 571, 573 and 575.

(8) Based on data cited in the *25 Kent Avenue EAS* , 2016.

(9) Based on data from the *Jerome Avenue Rezoning FEIS,* 2018.

It should also be noted that the data from the 2019 office worker mode choice survey indicate that, depending on the distance to nearby subway stations and bus and ferry stops, some office workers commuting to/from Williamsburg use taxi/rideshare services to travel between transit facilities and their workplace. Given the distance between the Development Site and the Bedford Avenue (L) subway station (0.6 mile), and the Greenpoint and North Williamsburg ferry stops (both 0.7 mile), some subway and ferry trips generated by the Proposed Actions' office component are also expected to use taxi/rideshare services. (As the Nassau Avenue (G) subway station and nearby bus routes are located within ¼-mile of the Development Site, trips to/from these transit services are expected to be made on foot.) As shown in **Table 3**, based on the 2019 survey data and anticipated demand at the Bedford Avenue (L) subway station and nearby ferry stops, it is estimated that 2.4 percent of office commuter trips would use both the subway and a taxi/ridershare service and that 0.9 percent would use a combination of the ferry and taxi/rideshare modes. Overall, it is estimated that a total of approximately 9.2 percent of trips generated by the Proposed Actions's office component in the weekday AM and PM and Saturday peak hours would therefore arrive or depart the Development Site via taxi/rideshare services.

TABLE 3: Breakdown of Office Taxi/Rideshare Demand

Taxi/Rideshare Trip Type	Percent
Taxi/Rideshare Trip Only	5.9%
Trip to/from Subway	2.4%
Trip to/from Ferry	0.9%
Total	9.2%
Source: June 2019 PHA survey of office workers in Williamsburg.	

As discussed previosuly, the Proposed Actions' RWCDS includes a new flexible, purpose-build facility for Acme that would allow for consolidation of processing operations at the Development Site in the With-Action condition. Warehousing and distribution functions would be relocated to a facility in New Jersey. Based on the existing workforce and projected employment under the Proposed Actions, it is anticipated that production staff at Acme would total approximately 80 workers, while administrative/sales staff would total approximately 60 workers. Data on the travel demand characteristics (e.g., temporal distribution, mode choice, etc.) of the existing Acme workforce were used to forecast the travel demand that would be generated by administrative/sales staff in the typical weekday AM and PM commuter peak hours and weekday midday (lunchtime) period. Production staff are expected to generate little if any travel demand during these periods as they would typically arrive in the early morning period (i.e., prior to 6:00 AM) and depart in mid-afternoon (i.e., after 2:30 PM). In addition, as operations at the proposed Acme facility would primarily occur on weekdays, it would also generate little, if any travel demand on Saturdays.

The forecast of travel demand generated by Acme administrative/sales staff conservatively assumes that all of these workers would arrive during the weekday AM peak hour and depart during the PM peak hour, and that 80 percent would depart and return to the facility during the midday peak hour. Based

on the travel demand characteristics of the existing Acme workforce, it is estimated that approximately 58 percent of administrative/sales staff would drive to work, with the remaining 42 percent traveling by the transit or walk modes. The factors for office employees shown in **Table 2** were used to estimate the taxi, subway, bus and walk mode shares, as well as the vehicle occupancies for these administrative/sales staff trips.

The numbers of truck trips that would be generated by the proposed Acme facility were estimated based on data provided by Acme. Each weekday, the existing Acme plant currently receives approximately eight deliveries by truck during the AM hours, and dispatches finished product on approximately ten outbound trucks over the course of the day. In addition, Acme uses a fleet of 16 single-unit trucks for local deliveries. These trucks typically depart the plant between 2:00 AM and 7:00 AM and return between 12:00 PM and 5:00 PM. Under the Proposed Actions, warehousing and distribution functions would be relocated to a facility in New Jersey resulting in a substantial reduction in the number of Acme-related truck trips at the Development Site. Acme projects that in the future approximately six trucks would make deliveries to the plant each weekday prior to 7:00 AM, and an additional six trucks would transport finished product from the plant to the off-site distribution facility between 7:00 AM and 3:00 PM. Trucks making local deliveries would no longer originate/terminate at the Development Site. For analysis purposes it is conservatively assumed that 50 percent of all daily truck trips would occur during the AM and midday peak hours, with three trucks arriving/departing in each of these periods.

TRIP GENERATION

The net incremental change in person and vehicle trips expected to result from the Proposed Actions by the 2024 analysis year was derived based on the net change in land uses shown in **Table 1**, the transportation planning factors shown in **Tables 2 and 3**, and the data on travel demand characteristics and projected future workforce provided by Acme and described above. **Tables 4 and 5** show estimates of the net incremental change in peak hour person trips and vehicle trips (versus the No-Action condition) that would occur in 2024 with implementation of the Proposed Actions. These data are further summarized in **Table 6**. As shown in **Table 4**, under the RWCDS, the Proposed Actions would generate a net increase of approximately 1,046 person trips (in + out combined) in the weekday AM peak hour, 1,347 in the weekday midday, 1,139 in the weekday PM and 483 in the Saturday peak hour. As shown in **Table 6**, peak hour vehicle trips (including auto, taxi and truck trips) would increase by a net total of approximately 215 and 180 (in + out combined) in the weekday AM and PM peak hours, respectively, and decrease by a net total of 47 and five trips in the weekday midday and Saturday peak hours, respectively. These vehicle-trip totals assume that a portion of subway and ferry commuters would arrive and depart the site via taxi/rideshare services. Peak hour subway trips would increase by a net total of approximately 418, 438 and 64 trips during the weekday AM and PM, and Saturday peak hours, respectively, and decrease by a net total of 13 trips in the weekday midday. Bus trips would increase by approximately 51 in the weekday AM peak hour and five in the weekday PM peak hour, and decrease by 24 and 53 trips in the weekday midday and Saturday peak hours, respectively. There would also be 27, 30 and eight new ferry trips in the weekday AM and PM, and Saturday peak hours, respectively, and trips by bike would increase by 148, 171 and 45 during these same periods. Lastly, trips

made entirely on foot (walk-only trips) would increase by 216, 1,495, 371 and 457, during the weekday AM, midday and PM, and Saturday peak hours, respectively.

TABLE 4: RWCDS Travel Demand Forecast – Incremental Person Trips

Land Use:		Local Retail [a,b]		Office		Light Industrial		Restaurant		Warehousing		Acme [d,e]		Total	
Size/Units:		33,800 gsf		430,050 gsf		-17,500 gsf [c]		-35,225 gsf		-28,610 gsf		109,300 gsf			
Peak Hour Trips:															
	AM	156		929		-34		-63		-3		61		1,046	
	MD	987		1,161		-28		-864		-4		95		1,347	
	PM	520		1,084		-37		-486		-3		61		1,139	
	Saturday	771		285		-4		-568		-1		0		483	
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
AM	Auto	9	9	105	7	-12	-2	-12	-1	-1	0	31	0	120	13
	Taxi	0	0	52	3	0	0	-6	0	0	0	4	0	50	3
	Subway	2	2	398	25	-11	-1	-9	-1	-1	0	14	0	393	25
	Bus	2	2	54	3	-2	0	-9	-1	0	0	2	0	47	4
	Ferry	0	0	24	2	0	0	0	0	0	0	1	0	25	2
	Bike	0	0	134	9	0	0	0	0	0	0	5	0	139	9
	Walk/Other	65	65	106	7	-5	-1	-23	-1	-1	0	4	0	146	70
	Total	**78**	**78**	**873**	**56**	**-30**	**-4**	**-59**	**-4**	**-3**	**0**	**61**	**0**	**920**	**126**
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
MD	Auto	51	58	9	14	0	0	-112	-60	0	0	1	1	-51	13
	Taxi	0	0	5	7	0	0	-56	-30	0	0	1	0	-50	-23
	Subway	14	16	32	50	-1	-1	-84	-45	0	0	3	3	-36	23
	Bus	9	10	32	50	-1	-1	-84	-45	0	0	3	3	-41	17
	Ferry	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Walk/Other	390	439	375	587	-12	-12	-226	-122	-2	-2	40	40	565	930
	Total	**464**	**523**	**453**	**708**	**-14**	**-14**	**-562**	**-302**	**-2**	**-2**	**48**	**47**	**387**	**960**
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
PM	Auto	24	32	7	124	-2	-13	-63	-34	0	-1	0	31	-34	139
	Taxi	0	0	3	61	0	0	-32	-17	0	0	0	4	-29	48
	Subway	7	9	25	470	-2	-11	-47	-26	0	-1	0	14	-17	455
	Bus	5	6	3	64	0	-2	-47	-26	0	0	0	2	-39	44
	Ferry	0	0	1	28	0	0	0	0	0	0	0	1	1	29
	Bike	0	0	8	158	0	0	0	0	0	0	0	5	8	163
	Walk/Other	192	245	7	125	-1	-6	-126	-68	0	-1	0	4	72	299
	Total	**228**	**292**	**54**	**1,030**	**-5**	**-32**	**-315**	**-171**	**0**	**-3**	**0**	**61**	**-38**	**1,177**
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Saturday	Auto	47	38	21	14	-2	-2	-72	-42	0	0	0	0	-6	8
	Taxi	0	0	10	7	0	0	-36	-21	0	0	0	0	-26	-14
	Subway	13	10	78	51	-1	-1	-54	-32	0	0	0	0	36	28
	Bus	8	7	11	7	0	0	-54	-32	0	0	0	0	-35	-18
	Bike	0	0	26	17	1	1	0	0	0	0	0	0	27	18
	Walk/Other	357	291	21	14	0	0	-142	-83	-1	0	0	0	235	222
	Total	**425**	**346**	**172**	**113**	**-2**	**-2**	**-358**	**-210**	**-1**	**0**	**0**	**0**	**236**	**247**

Notes:

[a] 25% linked-trip credit applied to weekday local retail trips.

[b] 5% linked-trip credit applied to Saturday local retail trips.

[c] Demand from No-Action light industrial/manufacturing (distillery) uses.

[d] Based on data provided by Acme, there would be a total of approximately 60 administrative staff who would generate travel demand during the typical weekday AM, midday and PM peak hours. Demand from an additional 80 production staff would typically occur outside of these peak periods.

[e] Assumes a 58% auto/taxi mode share for administrative staff based on data provided by Acme. Auto/taxi split, transit/walk split and vehicle occupancies based on factors for office workers. Conservatively assumes all administrative staff would arrive/depart in the AM/PM peak hours, and that 80% would depart and return to the proposed facility in the midday peak hour.

TABLE 5: RWCDS Travel Demand Forecast – Incremental Vehicle Trips

Land Use:		Local Retail [a,b]		Office		Light Industrial		Restaurant		Warehousing		Acme [d,e]		Total	
Size/Units:		33,800 gsf		430,050 gsf		-17,500 gsf [c]		-35,225 gsf		-28,610 gsf		109,300 gsf			
Vehicle Trips :		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
AM	Auto	5	5	91	6	-11	-2	-5	0	-1	0	27	0	106	9
	Taxi [f]	0	0	47	47	0	0	-3	-3	0	0	2	2	46	46
	Truck	0	0	7	7	-1	-1	-4	-4	-1	-1	3	3	4	4
	Total	**5**	**5**	**145**	**60**	**-12**	**-3**	**-12**	**-7**	**-2**	**-1**	**32**	**5**	**156**	**59**
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
MD	Auto	26	29	8	12	0	0	-51	-27	0	0	1	1	-16	15
	Taxi [f]	0	0	7	7	0	0	-37	-37	0	0	0	0	-30	-30
	Truck	1	1	8	8	-1	-1	-4	-4	0	0	3	3	7	7
	Total	**27**	**30**	**23**	**27**	**-1**	**-1**	**-92**	**-68**	**0**	**0**	**4**	**4**	**-39**	**-8**
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
PM	Auto	12	16	6	108	-2	-12	-29	-15	0	-1	0	27	-13	123
	Taxi [f]	0	0	54	54	0	0	-21	-21	0	0	2	2	35	35
	Truck	0	0	1	1	0	0	-1	-1	0	0	0	0	0	0
	Total	**12**	**16**	**61**	**163**	**-2**	**-12**	**-51**	**-37**	**0**	**-1**	**2**	**29**	**22**	**158**
		In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Saturday	Auto	24	19	18	12	-2	-2	-33	-19	0	0	0	0	7	10
	Taxi [f]	0	0	14	14	0	0	-25	-25	0	0	0	0	-11	-11
	Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	**24**	**19**	**32**	**26**	**-2**	**-2**	**-58**	**-44**	**0**	**0**	**0**	**0**	**-4**	**-1**

Notes:

[a] 25% linked-trip credit applied to weekday local retail trips.

[b] 5% linked-trip credit applied to Saturday local retail trips.

[c] Demand from No-Action light industrial/manufacturing (distillery) uses.

[d] Based on data provided by Acme, there would be a total of approximately 60 administrative staff who would generate travel demand during the typical weekday AM, midday and PM peak hours. Demand from an additional 80 production staff would typically occur outside of these peak periods.

[e] Assumes a 58% auto/taxi mode share for administrative staff based on data provided by Acme. Auto/taxi split, transit/walk split and vehicle occupancies based on factors for office workers. Conservatively assumes all administrative staff would arrive/depart in the AM/PM peak hours, and that 80% would depart and return to the proposed facility in the midday peak hour.

[f] Office taxi trips include an additional 34, 38 and 10 trips (inbound + outbound, combined) in the AM, PM and Saturday peak hours, respectively, to account for transit riders using taxi/rideshare services to access the Bedford Avenue subway station or the ferry.

TABLE 6: Travel Demand Forecast Summary

				Person Trips																	
Peak	Vehicle Trips[1]			Subway			Bus			Ferry			Bike			Walk			Pedestrian Trips[2]		
Hour	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
AM	156	59	215	393	25	418	47	4	51	25	2	27	139	9	148	146	70	216	581	99	680
MD	-39	-8	-47	-36	23	-13	-41	17	-24	0	0	0	0	0	0	565	930	1,495	488	970	1,458
PM	22	158	180	-17	455	438	-39	44	5	1	29	30	8	163	171	72	299	371	15	794	809
Saturday	-4	-1	-5	36	28	64	-35	-18	-53	5	3	8	27	18	45	235	222	457	235	235	470

Notes:

[1] Includes 34, 38 and 10 taxi/rideshare vehicle trips to/from the Bedford Avenue (L) subway station and nearby ferry stops in the AM, PM and Saturday peak hours.

[2] Includes walk-only trips and pedestrians en route to/from nearby subway stations and bus and ferry stops. Excludes transit/ferry trips using taxi/rideshare services to access the site.

LEVEL 1 SCREENING ASSESSMENT

The *CEQR Technical Manual* describes a two-level screening procedure for the preparation of a "preliminary analysis" to determine if quantified operational analyses of transportation conditions are warranted. As discussed in the following sections, the preliminary analysis begins with a trip generation (Level 1) analysis to estimate the numbers of person and vehicle trips attributable to the proposed action. According to the *CEQR Technical Manual*, if a proposed action is expected to result in fewer than 50 peak hour vehicle trips and fewer than 200 peak hour transit or pedestrian trips, further quantified analyses are not warranted. When these thresholds are exceeded, detailed trip assignments (a Level 2 assessment) are to be performed to estimate the incremental trips that could occur at specific transportation elements and to identify potential locations for further analysis. If the trip assignments show that the proposed action would generate 50 or more peak hour vehicle trips at an intersection, 200 or more peak hour subway trips at a station, 50 or more peak hour bus trips in one direction along a bus route, or 200 or more peak hour pedestrian trips traversing a sidewalk, corner area or crosswalk, then further quantified operational analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, vehicular and pedestrian safety, and parking.

Traffic

Based on *CEQR Technical Manual* guidelines, a quantified traffic analysis is typically required if a proposed action would result in 50 or more vehicle trip ends in a peak hour at one or more intersections. As shown in **Table 6**, under the RWCDS, the net number of incremental vehicle trips—215, -47, 180 and -5 in the weekday AM, midday and PM, and Saturday peak hours, respectively—would exceed the 50-trip threshold only in the AM and PM periods, and a Level 2 screening analysis is therefore warranted for these periods to determine which intersections would require quantified analysis. Further analysis of the weekday midday and Saturday peak hours is not warranted.

Transit

According to the general thresholds used by the Metropolitan Transportation Authority and specified in the *CEQR Technical Manual*, detailed transit analyses are generally not required if a proposed action is projected to result in fewer than 200 peak hour rail or bus transit riders. If a proposed action would result in 50 or more bus passengers being assigned to a single bus route in one direction, or if it would result in an increase of 200 or more passengers at a single subway station or on a single subway line, a detailed bus and/or subway analysis would be warranted. Transit analyses typically focus on the weekday AM and PM commuter peak hours as it is during these periods that overall demand on the subway and bus systems is usually highest.

As shown in **Table 6**, the Proposed Actions are expected to generate approximately 418 and 438 incremental subway trips in the weekday AM and PM peak hours. As these numbers of trips would exceed the 200-trip *CEQR Technical Manual* analysis threshold, a Level 2 screening analysis is warranted to determine which subway stations and routes would require quantified analysis. As also shown in

Table 6 the Proposed Actions are expected to generate only 51 incremental trips by bus in the weekday AM peak hour and five new trips by bus in the PM peak hour. A total of four NYC Transit bus routes operate within ¼-mile of the Development Site (the B32, B43, B48 and B62), and the number of incremental trips in one direction on any one of these routes would not exceed the 50-trip *CEQR Technical Manual* analysis threshold. Therefore, a detailed analysis of bus conditions under the Proposed Actions is not warranted.

Pedestrians

According to *CEQR Technical Manual* guidelines, a quantified analysis of pedestrian conditions is typically required if a proposed action would result in 200 or more peak hour pedestrian trips at any pedestrian element (sidewalk, corner area or crosswalk). As shown in **Table 6**, the Proposed Actions' RWCDS would generate an incremental demand of approximately 680, 1,458, 809 and 470 total pedestrian trips (including walk-only trips and pedestrians en route to and from nearby subway stations and bus and ferry stops) in the weekday AM, midday and PM, and Saturday peak hours, respectively. As the numbers of trips in each of these periods would exceed the 200-trip threshold, a Level 2 screening analysis is warranted to determine which pedestrian elements would require quantified analysis.

LEVEL 2 SCREENING ASSESSMENT

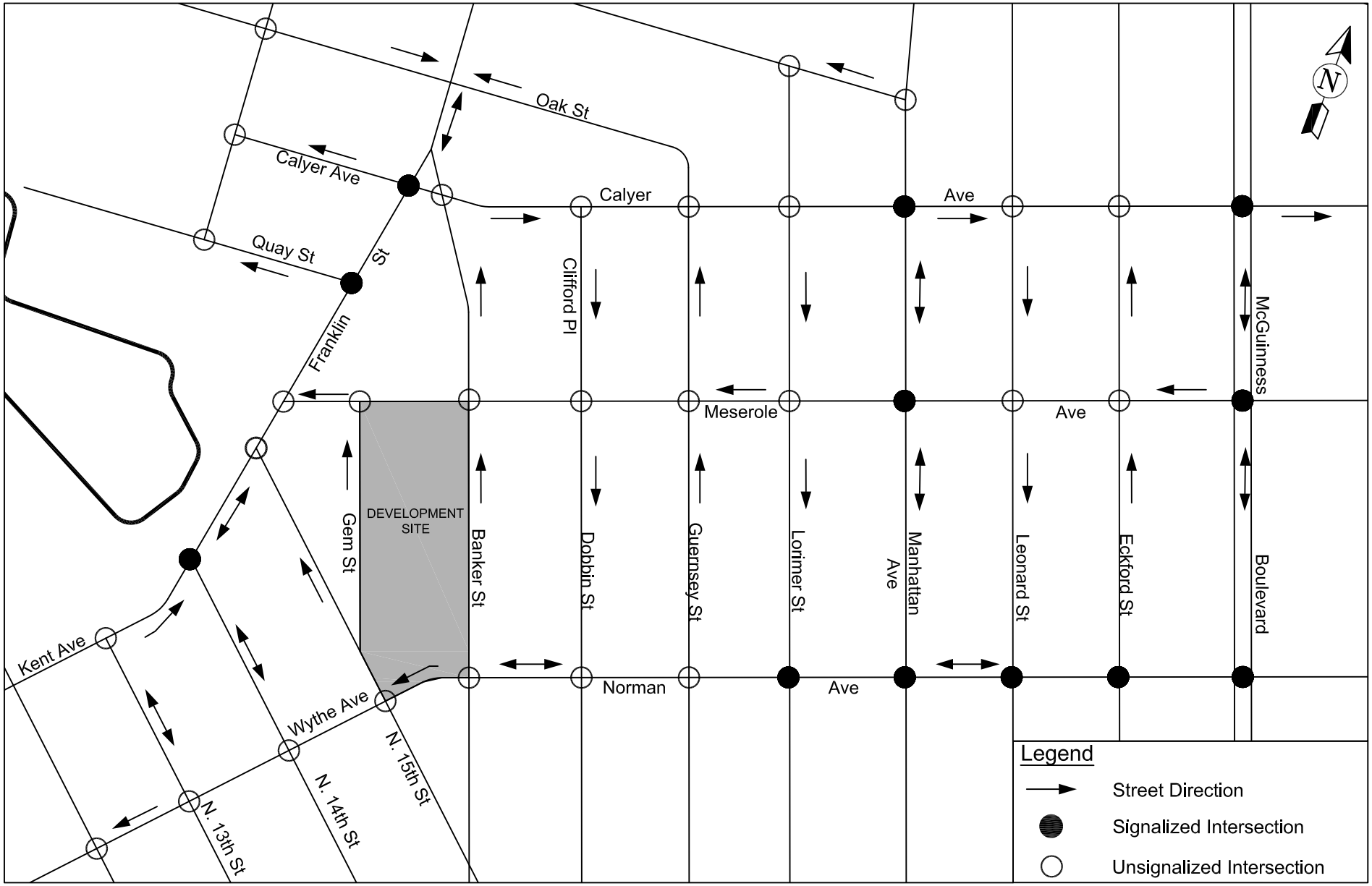
Traffic

Area Street Network

As shown in **Figure 2**, the street network in proximity to the Development Site is comprised of an irregular grid pattern of collector and one-way local streets. Many of the intersections along local streets are stop-controlled, with traffic signals more common along collector streets and arterial roadways.

The Development Site itself is bordered by Banker Street on the east, North 15th and Gem streets on the west, Meserole Street on the north and Wythe Avenue on the south. **Banker Street** is a one-way northbound local street that typically operates with one moving lane plus parking along both curbs. A striped bicycle lane is located outboard of the parking lane along the west curb. **North 15th Street** and **Gem Street** are also one-way northbound local streets, and they typically operate with one to two moving lanes plus parking along both curbs. Both **Meserole Avenue** and **Wythe Avenue** are one-way westbound local streets that typically operate with one moving lane plus parking along both curbs. East of Banker Street, Wythe Avenue becomes **Norman Avenue**, which operates two-way with one moving lane plus curbside parking in each direction. Another local street that is expected to be used by project-generated traffic is **Calyer Street** which runs parallel and to the north of Meserole Avenue. Calyer Street operates one-way eastbound, typically with one moving lane plus parking along both curbs.

To the west of the Development Site is **Franklin Street**, a two-way, north-south collector street that operates with one moving lane plus a striped curbside bicycle lane in the northbound direction, and one moving lane, a striped bicycle lane and a curbside parking lane in the southbound direction. South of



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Figure 2
Street Network

North 14th Street, Franklin Street becomes **Kent Avenue** which operates one-way northbound with one moving lane plus a two-way striped bicycle path along the west curb. Both Franklin Street and Kent Avenue are DOT-designated Local Truck Routes. NYC Transit B32 buses operate along Franklin Street in both directions, and along Kent Avenue (northbound only). Another collector street of note is **Manhattan Avenue** located to the east of the Development Site. Manhattan Avenue is a commercial corridor that operates two-way in a north-south orientation with one moving lane plus curbside parking in each direction. NYC Transit B43 and B62 buses operate along the street.

The primary arterial roadway in proximity to the Development Site is **McGuinness Boulevard** located approximately 0.4 mile to the east. McGuinness Boulevard is a two-way north-south roadway that operates with two moving lanes plus curbside parking in each direction. A raised median separates northbound and southbound traffic, and left-turn bays are provided at many intersections. McGuinness Boulevard is a DOT-designated Local Truck Route and provides a connection to the Brooklyn-Queens Expressway (I-278) to the south of the Development Site.

Traffic Assignment and Analyzed Intersections

As shown in **Table 6** and discussed above, the Proposed Actions' RWCDS is expected to result in a net incremental increase of approximately 215 and 180 vehicle trips during the weekday AM and PM peak hours, respectively. As these traffic volumes would exceed 50 trips in each peak hour (the *CEQR Technical Manual* Level 1 screening threshold for a detailed analysis), an assignment of net increment traffic volumes was prepared for each period to help identify individual intersections for analysis (a Level 2 screening assessment).

The assignments of auto and taxi trips to the street network in proximity to the Development Site were based on the anticipated origins and destinations of vehicle trips associated with the different land uses projected under the RWCDS (i.e., office/light industrial/warehouse and local retail/restaurant). The origins/destinations of office/light industrial/warehouse uses were based on 2012-2016 American Community Survey (ACS) five-year reverse journey-to-work data. Origins/destinations for local retail/restaurant uses that generate mostly local trips were based on population density in proximity to the Development Site and surrounding neighborhoods within a 0.5-mile radius. **Tables 7 and 8** show the directional distributions of auto and taxi trips by land use based on the origin/destination data. Using these distributions, auto and taxi trips were first assigned to various portals on the periphery of Greenpoint/Williamsburg, and from there via the most direct route to the Development Site. Some taxi trips were also assigned to routes connecting the Development Site to nearby transit facilities (i.e., the Bedford Avenue (L) subway station and the North Williamsburg and Greenpoint ferry stops) to reflect the use of taxi/ridesharing services by some transit riders. As the Proposed Actions' RWCDS includes on-site accessory parking, auto trips were assigned directly to the proposed parking garage entrance on Gem Street. (Although some drivers will likely park on-street in the area, assigning all trips to the Development Site can be considered a conservative approach with respect to the traffic impact analysis as it concentrates project traffic at intersections in proximity to the site rather than dispersing it to outlying streets.)

TABLE 7: Directional Distributions of Auto/Taxi Trips for Office/Light Industrial/Warehouse Uses

Land Use	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Long Island	New Jersey/PA	Upstate	Other Out-of-State
Office/Light Industrial/Warehouse	3.3%	31.0%	2.1%	22.5%	5.3%	25.5%	3.1%	5.2%	2.0%

Notes: Based on 2012-2016 ACS five-year reverse journey-to-work data.

TABLE 8: Directional Distributions of Auto/Taxi Trips for Local Retail/Restaurant Uses

Land Use	North	South	East
Local Retail/Restaurant	29%	44%	27%

Notes: Based on population density within ¼-mile of the Development Site.

Taxis were generally assigned to the building frontages on Gem Street and Banker Street. Trucks were assigned to DOT-designated truck routes—i.e., McGuinness Boulevard and Kent Avenue/Franklin Street (both Local Truck Routes)—and then to the most direct paths to and from the Proposed Development's loading docks on Meserole Avenue and Banker Street.

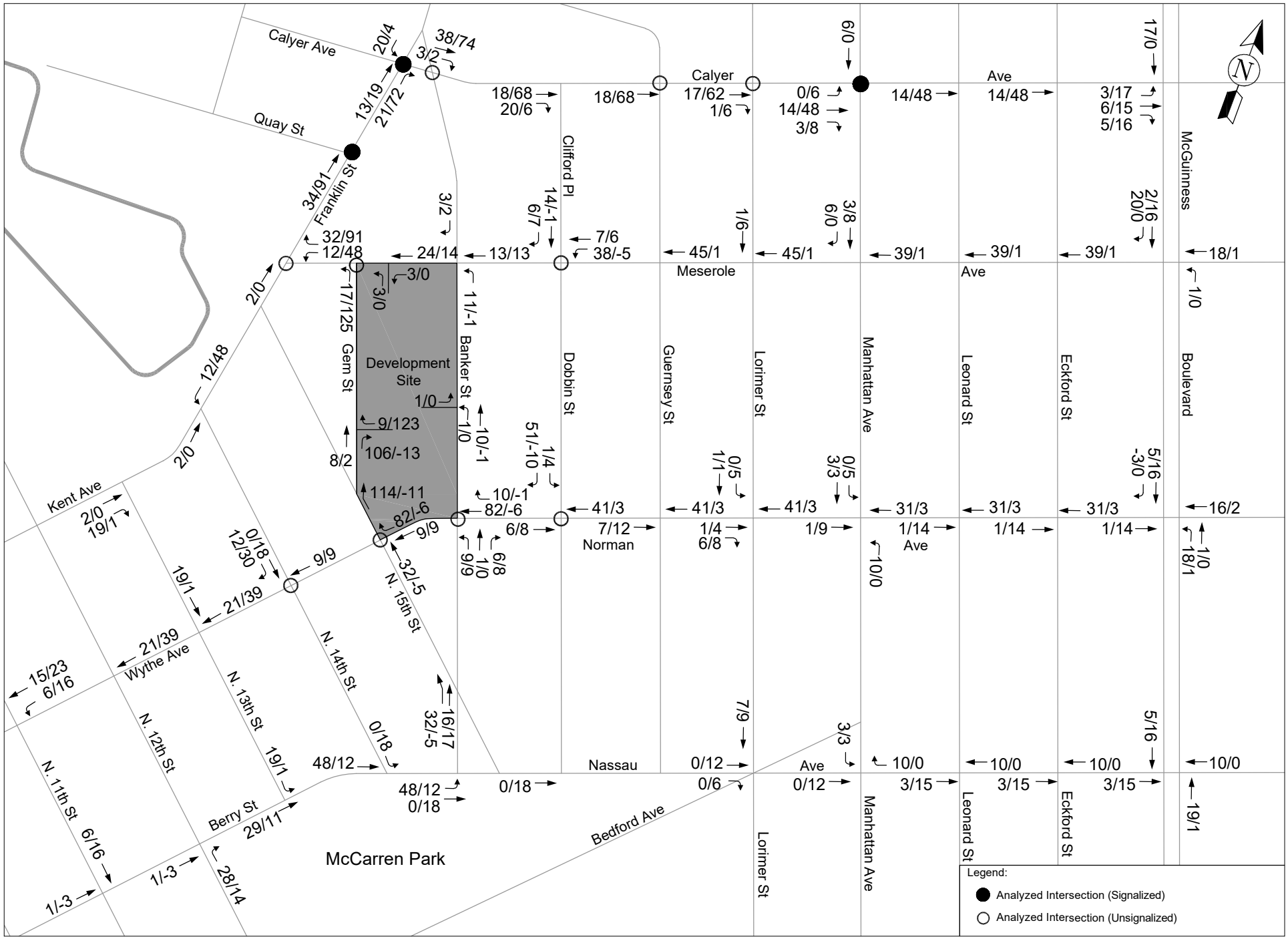
The assignment of net incremental peak hour vehicle trips at intersections in proximity to the Development Site are shown in **Figure 3**. As shown in **Figure 3**, a total of 13 intersections (three signalized and 10 unsignalized) were selected for detailed analysis as they would exceed the 50-trip threshold in the AM and/or PM peak hours. These include the following:

<u>Signalized Intersections</u>

1. Calyer Avenue @ Franklin Street
2. Calyer Avenue @ Manhattan Avenue
3. Franklin Street @ Quay Street

<u>Unsignalized Intersections</u>

4. Calyer Avenue @ Banker Street
5. Calyer Avenue @ Guernsey Street
6. Calyer Avenue @ Lorimer Street
7. Meserole Avenue @ Franklin Street
8. Meserole Avenue @ Gem Street
9. Meserole Avenue @ Dobbin Street
10. Wythe Avenue @ North 14th Street
11. Wythe Avenue @ North 15th Street
12. Norman Avenue @ Banker Street
13. Norman Avenue @ Dobbin Street



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Figure 3
Project Increment Peak Hour Traffic Volumes and Analyzed Intersections

Traffic Analysis Peak Hours

As discussed above, incremental demand from the Proposed Actions would exceed the 50-trip *CEQR Technical Manual* analysis threshold at one or more intersections during the weekday AM and PM peak hours. The traffic impact analysis will therefore focus on these two periods. Based on automatic traffic recorder (ATR) count data collected in proximity to the Development Site, the weekday 7:30-8:30 AM and 5-6 PM peak hours were selected for analysis.

Transit

As discussed previously, according to the general thresholds used by the Metropolitan Transportation Authority (MTA) and specified in the *CEQR Technical Manual*, if a proposed action would result in an increase of 200 or more passengers at a single subway station or on a single subway line, a detailed subway analysis would be warranted. As shown in **Table 6**, the Proposed Actions are expected to generate a net total of approximately 418 and 438 incremental subway trips in the weekday AM and PM peak hours, respectively. These trips are expected to be concentrated at two subway stations located in proximity of the Development Site—the Nassau Avenue station served by G trains operating on the Crosstown Line between western Brooklyn and Long Island City, Queens, and the Bedford Avenue station served by L trains operating on the Canarsie Line between Canarsie, Brooklyn and the 14th Street corridor in Manhattan. As shown in **Figure 4**, the Nassau Avenue (G) station is an approximately 0.3 mile walk from the Development site while the Bedford Avenue (L) station is an approximately 0.6 mile walk.

New subway trips generated by the Proposed Actions' office component were assigned to the Nassau Avenue (G) and Bedford Avenue (L) subway stations based on trip origin data from the 2019 office worker mode choice survey. Trips from other uses were assigned based 2012-2016 ACS five-year reverse journey-to-work data. As shown in **Table 9**, based on these assignments, it is estimated that new subway demand from the Proposed Actions would likely exceed the 200-trip *CEQR Technical Manual* analysis threshold in the AM and PM periods at the Nassau Avenue (G) station, and this station was therefore selected for detailed analysis. Key circulation elements (e.g., stairs and fare arrays) expected to be used by concentrations of new demand from the Proposed Actions will be analyzed.

As it is possible that the Proposed Actions' RWCDS would also generate more than 200 new peak hour subway trips in one direction on G trains, line haul conditions on these trains will be analyzed. The analysis will use existing subway service and ridership data provided by NYCT to assess existing, future No-Action, and future With-Action conditions at the maximum load points during the weekday AM and PM peak hours.

Transit Services

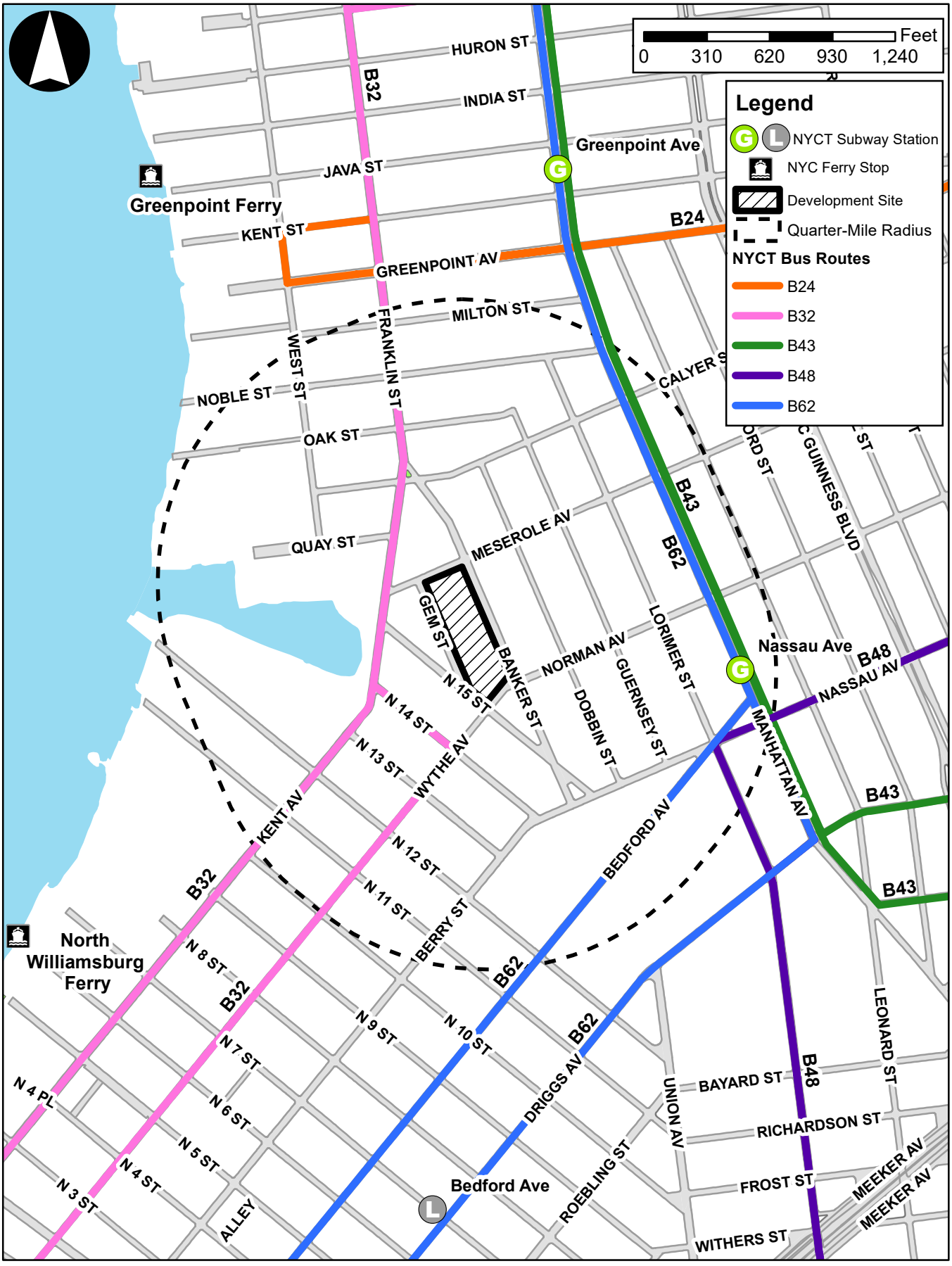


TABLE 9: Net Incremental Peak Hour Subway Trips by Station

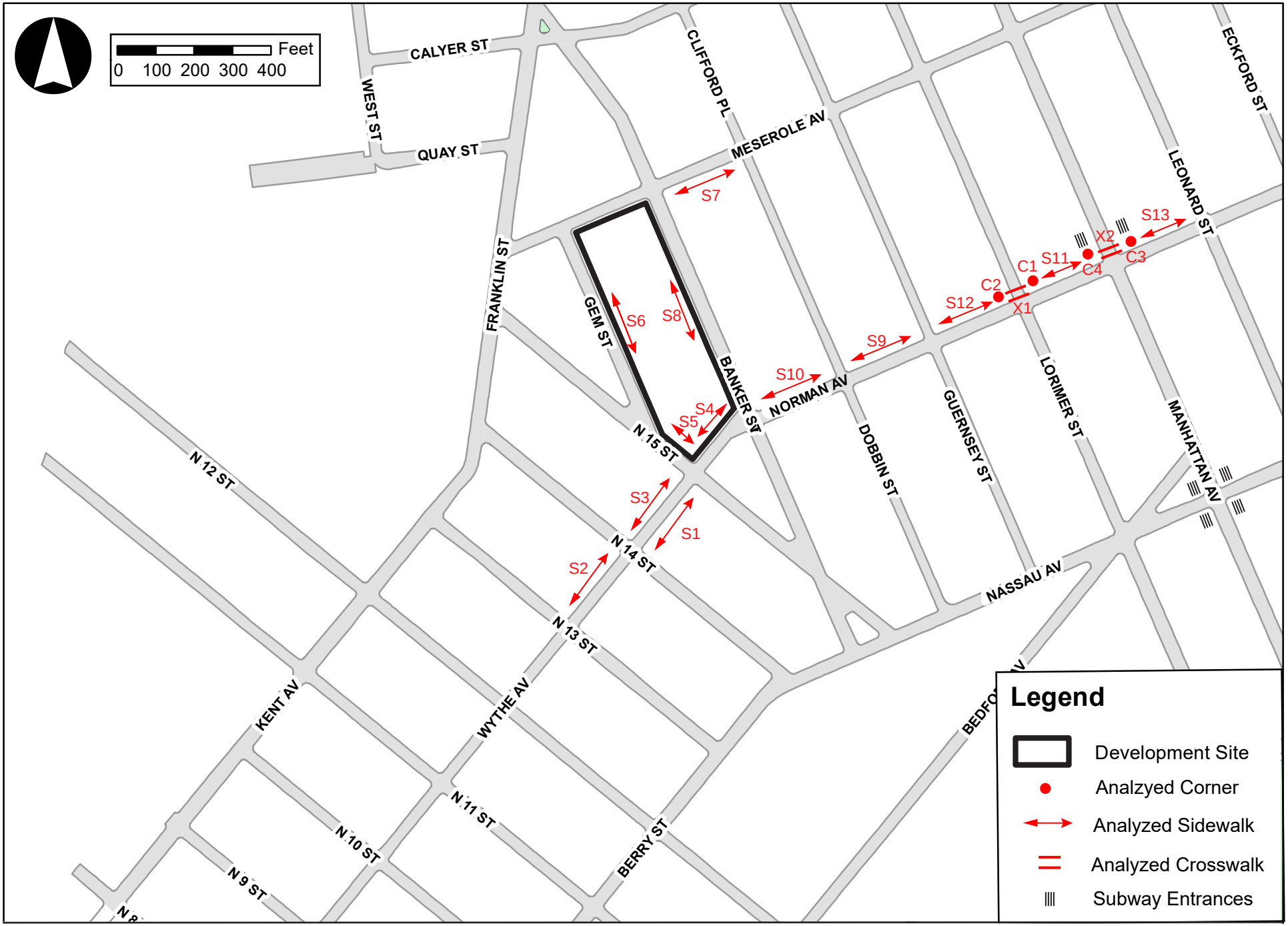
	AM Peak Hour			PM Peak Hour		
	Into Project	**Out of Project**	**Total**	**Into Project**	**Out of Project**	**Total**
Project Summary						
Project-Generated Trips:	920	126	1,046	-38	1,177	1,139
Project-Generated Subway Trips:	393	25	418	-17	455	438
Subway Station						
Bedford Avenue (L)	161	10	171	-5	188	183
Nassau Avenue (G)	232	15	**247**	-12	267	**255**
Total	393	25	418	-17	455	438
Bold – denotes 200 or more incremental peak hour trips at a station.						

Pedestrians

As shown in **Table 6**, the Proposed Actions' RWCDS is expected to generate approximately 216 incremental walk-only trips in the weekday AM peak hour, 1,495 in the midday peak hour, 371 in the PM peak hour, and 457 in the Saturday peak hour. Persons walking to and from subway station entrances and bus and ferry stops would add approximately 464, 438 and 13 incremental pedestrian trips to sidewalks and crosswalks in the vicinity of the Development Site during the weekday AM and PM, and Saturday peak hours, respectively, and there would be a net decrease of 37 such trips in the weekday midday. (Transit riders using taxi/ridesharing services to/from the site are not included in these totals.) In the weekday AM and PM peak hours, incremental pedestrian trips would be most concentrated on sidewalks and crosswalks adjacent to the Development Site as well as along corridors connecting the site to the Nassau Avenue (G) and Bedford Avenue (L) subway stations. In the weekday midday and Saturday periods, pedestrian trips would tend to be more dispersed, as people travel throughout the area for lunch, shopping and/or errands.

Given the numbers of incremental pedestrian trips that would be generated, a detailed analysis of pedestrian conditions under the Proposed Actions is warranted. As project increment pedestrian trips during the Saturday peak hour would be substantially less than in the weekday AM, midday and PM peak hours, and as pedestrian flow patterns during the Saturday peak hour are expected to be similar to those in the weekday midday, significant adverse pedestrian impacts on Saturday over and above those identified for the weekday peak hours are considered unlikely. The analysis of pedestrian conditions will therefore focus on the weekday AM, midday and PM periods, and a Saturday peak hour will not be analyzed. Based on pedestrian count data collected in proximity to the Development Site, the weekday 8-9 AM, 1-2 PM and 5:30-6:30 PM peak hours were selected for analysis.

Based on a preliminary assignment of incremental peak hour pedestrian trips, a total of 19 pedestrian elements (13 sidewalks, two crosswalks and four corner areas) expected to experience a net increase of 200 or more trips in one or more peak hours were selected for analysis. As shown in **Figure 5,** these



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Figure 5
Analyzed Pedestrian Elements

elements are primarily located in the immediate proximity of the Development Site and along the Norman Avenue/Wythe Avenue corridor which connects the Development Site to nearby subway stations and bus routes.

Vehicular and Pedestrian Safety

Under *CEQR Technical Manual* guidance, an evaluation of vehicular and pedestrian safety is needed for locations within the traffic and pedestrian study areas that have been identified as high crash locations. These are defined as locations with 48 or more total reportable and non-reportable crashes or where five or more pedestrian/bicyclist injury crashes have occurred in any consecutive 12 months of the most recent three-year period for which data are available. For these locations, crash trends will be identified to determine whether projected vehicular and pedestrian traffic would further impact safety, or whether existing unsafe conditions could adversely impact the flow of the projected new trips.

PARKING

Parking demand from retail, office and light industrial/manufacturing/warehouse uses typically peaks in the midday period and declines during the afternoon and evening, while parking demand from restaurant uses typically peaks in the evening. A parking demand forecast will be prepared to determine if the proposed 150 spaces of on-site accessory parking would be sufficient to accommodate all of the projected demand under the Proposed Actions' RWCDS. If it is determined that the on-site accessory parking supply would be insufficient to accommodate projected peak demand, a detailed analysis of parking conditions within ¼-mile of the Development Site will be prepared. Existing on-street and off-street parking inventories will be provided to document the existing supply and demand during the weekday midday period (when the combined parking demand from the proposed retail, office and light industrial/manufacturing/warehousing uses would be greatest). Changes in the parking supply and utilization under both No-Action and With-Action conditions will be forecasted.

Figure D-1

Study Area Parking Regulations
(Refer to Table D-1)

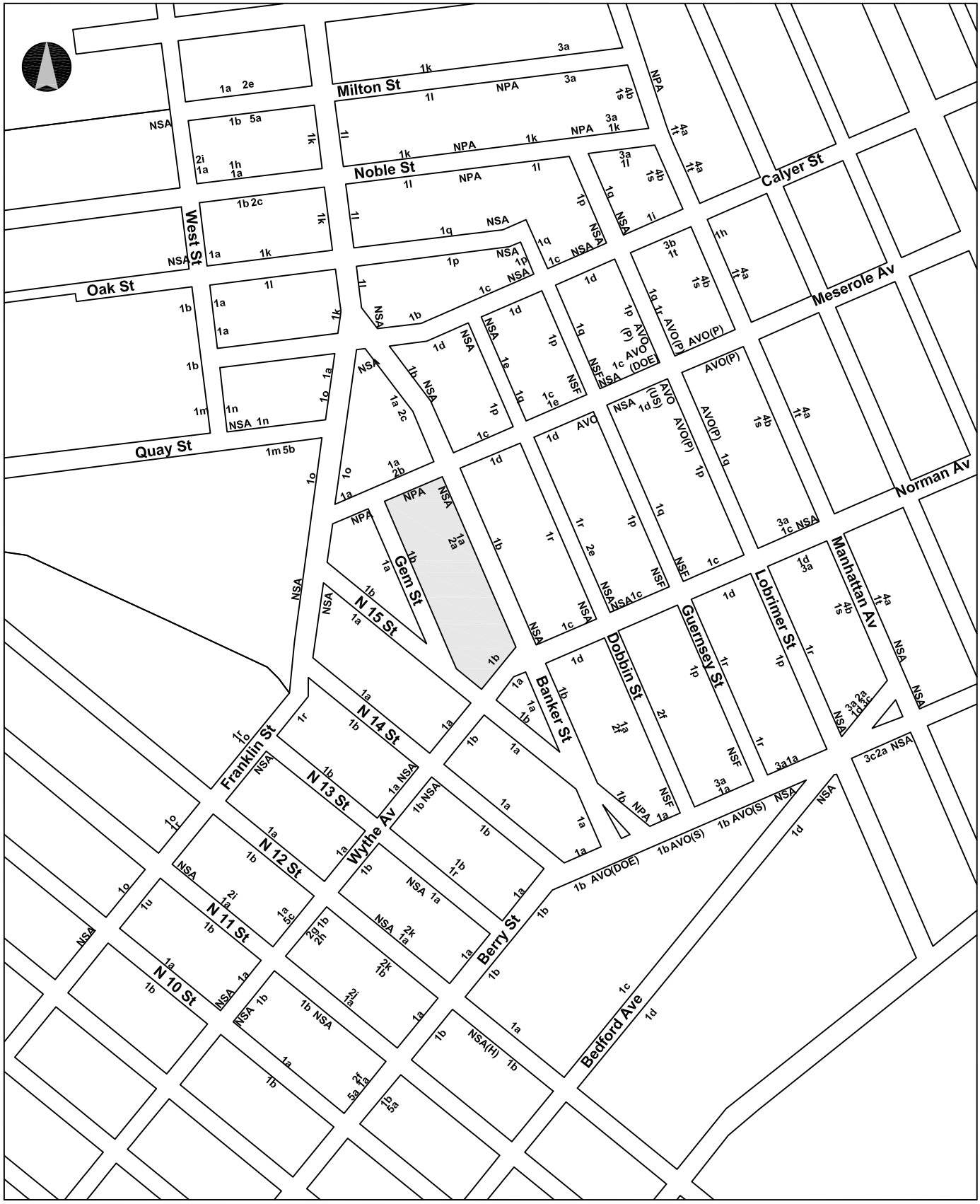


TABLE D-1: Study Area Parking Regulations (Refer to Figure D-1)

Map Ref	Parking Regulations
1a	NO PARKING MONDAYS & THURSDAYS MIDNIGHT-3 AM (STREET CLEANING) (NIGHT REGULATION)
1b	NO PARKING TUESDAYS & FRIDAYS MIDNIGHT-3 AM (STREET CLEANING) (NIGHT REGULATION)
1c	NO PARKING MONDAYS & THURSDAYS 8 AM - 9:30 AM (STREET CLEANING)
1d	NO PARKING TUESDAYS & FRIDAYS 8 AM - 9:30 AM (STREET CLEANING)
1e	NO PARKING MONDAY - FRIDAY 8 AM-5 PM
1f	NO PARKING MONDAYS & THURSDAYS 11:30 AM - 1 PM (STREET CLEANING)
1g	NO PARKING TUESDAYS & FRIDAYS 11:30 AM - 1 PM (STREET CLEANING)
1h	NO PARKING 8 AM - 6PM EXCEPT SUNDAY
1i	NO PARKING MONDAY,TUESDAY,THURSDAY,FRIDAY 7:30 AM- 8AM
1j	NO PARKING 7:30 AM- 8 AM EXCEPT SUNDAY
1k	NO PARKING MONDAYS & THURSDAYS 8:30 AM -10 AM (STREET CLEANING)
1l	NO PARKING TUESDAYS & FRIDAYS 8:30 AM - 10 AM (STREET CLEANING)
1m	NO PARKING TUESDAYS & FRIDAYS 3 AM - 6 AM (STREET CLEANING) (NIGHT REGULATION)
1n	NO PARKING MONDAYS & THURSDAYS 3 AM - 6 AM(STREET CLEANING) (NIGHT REGULATION)
1o	NO PARKING MONDAYS & THURSDAYS 2 AM - 5 AM(STREET CLEANING) (NIGHT REGULATION)
1p	NO PARKING MONDAYS & THURSDAYS 9:30 AM -11 AM (STREET CLEANING)
1q	NO PARKING TUESDAYS & FRIDAYS 9:30 AM - 11 AM (STREET CLEANING)
1r	NO PARKING MONDAY - FRIDAY 8 AM-6 PM
1s	NO PARKING 8 AM - 8:30 AM EXCEPT SUNDAY
1t	NO PARKING 7:30 AM - 8 AM EXCEPT SUNDAY
1u	NO PARKING 8 AM- 6 PM MONDAY, THURSDAY, FRIDAY
2a	TRUCK LOADING ONLY MONDAY-FRIDAY 7 AM-1 PM
2b	TRUCK LODAING ONLY MONDAY-FRIDAY 7 AM-7 PM
2c	TRUCK LOADING ONLY
2d	TRUCK LODAING ONLY MONDAY-FRIDAY 6 AM-8 PM
2e	TRUCK LODAING ONLY MONDAY-FRIDAY 6 AM-6 PM
2f	TRUCK LODAING ONLY MONDAY-FRIDAY 8 AM-6 PM
2g	TRUCK LOADING ONLY 8 AM- 4 PM ALL DAYS
2h	TRUCK LOADING ONLY MIDNIGHT - 6 AM ALL DAYS
2i	TRUCK LODAING ONLY 6 AM-6 PM EXCEPT SUNDAY
2j	TRUCK LOADING ONLY MIDNIGHT - 7:30 AM ALL DAYS
2k	TRUCK LOADING ONLY MONDAY-FRIDAY 6 AM-4 PM
2l	TRUCK LOADING ONLY 8 AM - 6 PM EXCEPT SUNDAY
3a	2 HOUR METERED PARKING 9 AM-7 PM EXCEPT SUNDAY
3b	2 HOUR METERED PARKING 8 AM-7 PM EXCEPT SUNDAY
3c	2 HOUR METERED PARKING MONDAY - FRIDAY 1 PM - 7 PM SATURDAY 9 AM- 7 PM
4a	1 HOUR METERED PARKING 8 AM-7 PM EXCEPT SUNDAY
4b	1 HOUR METERED PARKING 8:30 AM-7 PM EXCEPT SUNDAY
5a	NO STANDING MONDAY-FRIDAY 8 AM - 6 PM
5b	NO STANDING MONDAY-FRIDAY 9 AM - 6 PM
5c	NO STANDING 6 AM - 6 PM ALL DAYS
NSA	NO STANDING ANYTIME
NSA (H)	NO STANDING ANYTIME HOTEL LOADING ZONE
NPA	NO PARKING ANYTIME
AVO (US)	AUTHORIZED VEHICLE ONLY (US MAIL) 8 AM - 6 PM EXCEPT SUNDAY
AVO(DOE)	AUTHORIZED VEHICLE ONLY (DOE) SCHOOL DAYS 7 AM- 4 PM
AVO (P)	AUTHORIZED VEHICLE ONLY (POLICE DEPT)
NSF	NO STANDING FIREZONE