Appendix D: Transportation

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TECHNICAL MEMORANDUM

TO: New York City Department of City Planning

FROM: Philip Habib & Associates

DATE: January 16, 2024

PROJECT: 500 Kent Avenue Rezoning (PHA #1814)

RE: Preliminary Travel Demand Factors (Revised)

INTRODUCTION

This memorandum summarizes the preliminary travel demand factors to be used for the project transportation analyses of the 500 Kent Avenue environmental impact statement (EIS). The Proposed Project is an approximately 684,242-gross square foot (gsf) commercial development located at 500 Kent Avenue (Block 2023, Lot 10) in the South Williamsburg neighborhood of Brooklyn Community District 2 (the "Project Site") (see **Figure 1**). As the project's net incremental development program would exceed the development density screening thresholds specified in Table 16-1 of the 2021 *CEQR Technical Manual*, a travel demand forecast is necessary to determine if detailed transportation analysis is warranted. Provided below are preliminary estimates of the Proposed Project's peak incremental travel demand, along with a discussion of preliminary trip assignment methodologies and study area definitions.

THE PROPOSED ACTION

Kent Member LLC and the United Jewish Organization of Williamsburg, Inc. (hereinafter known as the "Applicant") is seeking discretionary approvals by the City Planning Commission under the Uniform Land Use Review Procedure (ULURP) that would facilitate the Project Site's redevelopment. These actions include: zoning map amendment, height and setback special permit, public parking garage special permit and waterfront zoning authorization. The project also requires a waterfront zoning certification (ministerial action pursuant to ZR 62-81) to demonstrate compliance with applicable waterfront zoning regulations not modified pursuant to the authorization.

The Project Site encompasses an 115,244 sf lot with approximately 528 feet of shoreline along Wallabout Channel, approximately 227 feet of frontage on Division Avenue and approximately 372 feet of frontage on Kent Avenue. The Project Site is currently vacant, but until 2009 it was occupied by a power plant.

The Proposed Project, which represents the Reasonable Worst Case Development Scenario (RWCDS) for the With-Action condition, would consist of a new 23-story 352-foot tall (roof height) approximately 684,242-gsf commercial building comprised of approximately 598,442 gsf of Use Group 6b office space and 21,233 gsf of

500 Kent Avenue

Figure 1

Project Location and Transit Map



Legend

- Proposed Development Site
- 1/4 Mile Radius
- South Williamsburg Ferry
- Marcy Avenue Subway Station

Subway Lines

- J-Z
- M

Bus Routes

- B32
- B39
- B44
- B62
- B67
- Q59

Use Group 6A retail space, as well as approximately 234 parking spaces, which would be exempt from being counted as floor area. This 5.0 built floor area ratio (FAR) building would have 576,220 zoning square feet (zsf) of floor area and would provide two loading berths, as required by the office use. Additionally, the Proposed Project would provide approximately 49,453 sf (1.14 acres) of public open space.

In the vicinity of the Project Site, both the demand for workspace and the residential population have increased substantially in recent years. The Brooklyn Navy Yard (BNY), immediately south and southwest of the Project Site, has undergone a transformation and is now home to over 400 commercial and light industrial businesses employing approximately 8,000 people – with further growth anticipated. At the same time, there has been a resurgence of residential development in Williamsburg and other nearby neighborhoods. There are multiple new, high-rise residential buildings near the Project Site and additional development is expected in the future. The City is now promoting the increase of walk-to-work commuting patterns and new forms of public transportation along the waterfront – including the NYC Ferry service. By providing a new hub of business development, the Proposed Project would be compatible with the ongoing development of the neighboring BNY and would be complementary to the increased residential uses in the area, providing space for work (office), shopping (retail) and recreational activities (open space) that could reduce travel times and distances for local residents.

REASONABLE WORST-CASE DEVELOPMENT SCENARIO (RWCDS)

In order to assess the potential effects of the Proposed Action, a RWCDS for both the future without the Proposed Action (the "No-Action" condition) and the future with the Proposed Action (the "With-Action" condition) is forecasted for an analysis year, or Build Year, of 2026. To develop a reasonable estimate of future growth, tax Lot 10 on Block 2023 was identified as the Project Site and considered for the purposes of the transportation analyses. The No-Action condition represents the baseline against which the effects of the Proposed Actions will be compared in the EIS. The effect of the Proposed Action, therefore, represents the incremental effect on conditions that would result from the net change in development between the No-Action and With-Action conditions (the "Project Increment"). **Table 1** below shows a summary of the No-Action conditions, With-Action conditions, and the increment for the Project Site. No other properties that would be directly affected by the Proposed Action.

The Future Without the Proposed Action (No-Action Condition)

Under the RWCDS No-Action condition, it is projected that the existing 115,244-sf lot would be developed as-of-right under the existing M3-1 zoning district with an approximately 312,599-gsf commercial building including approximately 58,000 gsf of office space, approximately 181,401 gsf of warehouse use and roughly 279 accessory parking spaces in 73,198 gsf of space. The Project Site, under existing zoning, permits manufacturing and general service (semi-industrial) uses as well as commercial uses with a maximum FAR of 2.0, much like the neighboring Brooklyn Navy Yard. Parking requirements include one space for every 300 sf of office floor area and one space for 2,000 sf of warehouse floor area. As such, this development is required to provide 279 accessory parking spaces. Therefore, the development under the No-Action condition would be built as-of-right and would not require discretionary actions.

The Future With the Proposed Action (With-Action Condition)

Under the RWCDS With-Action conditions, the Proposed Project would be constructed pursuant to the proposed zoning map amendment, zoning special permits, zoning certification, and waterfront zoning authorizations. Combined, under the RWCDS, the Proposed Action are expected to result in the development of a new 23-story, 352-foot tall commercial building. The approximately 684,242-gsf building would consist of approximately 598,442 gsf of office space, 21,233 gsf of retail and 234 public parking spaces. Although no parking is required under the proposed M1-5 zoning district, the parking would be permitted via a special permit. The building would have a zoning floor area of approximately 576,220 zsf equaling a built FAR of 5.0. Under the RWCDS, the Proposed Project would provide approximately 49,453 sf (1.14 acres) of publicly accessible waterfront open space.

Project Increment

As shown in **Table 1**, the project increment, the difference between the No-action and With-action conditions, would result in a net increase of approximately 380,274 gsf of total commercial space – including an increase of 540,442 gsf of office, an increase of 21,233 gsf of retail, and a decrease of 181,401 gsf of warehouse use. Additionally, the Proposed Project would add approximately 1.14 acres of public open space. The Proposed Actions would also result in a decrease of 45 parking spaces.

Table 1: Project Increment Summary

Use	No-Action Scenario	With-Action Scenario	Increment
Commercial			
Office	58,000 gsf	598,442 gsf	+ 540,442 gsf
Warehouse	181,401 gsf	0 gsf	- 181,401 gsf
Retail	0 gsf	21,233 gsf	+ 21,233 gsf
Total Commercial Increment			**+ 380,274 gsf**
Parking			
Parking Spaces	279	234	- 45
Total Parking Increment			**- 45**
Open Space			
Publicly Accessible Open Space	0 acres	1.14 acres	+1.14 acres

TRANSPORTATION PLANNING ASSUMPTIONS

The preliminary transportation planning factors used to forecast travel demand for the RWCDS land uses are summarized in **Table 2** and discussed below. **Table 2** provides the daily trip generation rates, temporal and directional distributions, modal splits, vehicle occupancies and truck trip factors for the land uses discussed above. 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 local retail demand). Subway and subway-to-bus mode splits for all peak periods were adapted to reflect area transportation characteristics.

Table 2: Transportation Planning Assumptions

Land Use:	Local Retail	Warehouse	Office	Open Space
Size/Units:	21,233 gsf	-181,401 gsf	540,442 gsf	1.14 acres
No-Action	0 gsf	181,401 gsf	58,000 gsf	0 acres
Size/Units: With-Action	21,233 gsf	0 gsf	598,442 gsf	1.14 acres
Trip Generation:	(1)	(4)(5)	(1)	(1)
Weekday	329	2.36	18	44
Saturday	358	0.20	3.9	62
	per 1,000 sf	per 1,000 sf	per 1,000 sf	per acre
Temporal Distribution:	(1)	(4)	(1)	(1)
AM	4.8%	10.0%	12.4%	3.0%
MD	8.0%	9.0%	11.0%	14.0%
PM	10.9%	11.0%	10.5%	14.0%
Sat	11.7%	33.0%	14.1%	16.0%
	(2)	(6)	(9) (7)	(10)
Modal Splits:	All Period	All Period	AM/PM/Sat MD	All Period
Auto	11.0%	51.0%	12.1% 2.0%	5.0%
Taxi	0.0%	2.0%	5.9% 1.0%	5.0%
Subway-Only	1.0%	11.0%	17.0% 3.0%	2.0%
Subway-to-Bus	2.0%	17.0%	28.7% 4.0%	3.0%
Bus	2.0%	7.0%	6.2% 7.0%	5.0%
Ferry	0.0%	0.0%	2.7% 0.0%	0.0%
Walk/Other	84.0%	12.0%	27.4% 83.0%	80.0%
	100.0%	100.0%	100.0% 100.0%	100.0%
	(1)	(4)	(1)	(1)
In/Out Splits:	In Out	In Out	In Out	In Out
AM	53% 47%	77.0% 23.0%	89% 11%	59% 41%
MD	50% 50%	53.0% 47.0%	48% 52%	55% 45%
PM	50% 50%	27.0% 73.0%	17% 83%	55% 45%
Sat	50% 50%	64.0% 36.0%	50% 50%	55% 45%
Vehicle Occupancy:	(3)	(6)	(9)	(10)
	All Periods	All Periods	All Periods	All Periods
Auto	2.00	1.30	1.15	2.00
Taxi	2.00	1.30	1.85	2.00
Truck Trip Generation:	(1)	(4)(5)(8)	(1)	(10)
Weekday	0.35	0.91	0.32	n/a
Saturday	0.04	0.08	0.01	n/a
	per 1,000 sf	per 1,000 sf	per 1,000 sf	per 1,000 sf
Truck Temporal Distribution:	(1)	(4)	(1)	(10)
AM	8.0%	9.9%	10.0%	n/a
MD	11.0%	8.0%	11.0%	n/a
PM	2.0%	7.0%	2.0%	n/a
Sat	11.0%	28.0%	11.0%	n/a
Truck Directional Distribution:	In Out	In Out	In Out	In Out
	50.0% 50.0%	67.0% 33.0%	50.0% 50.0%	n/a n/a
MD	50.0% 50.0%	57.0% 43.0%	50.0% 50.0%	n/a n/a
PM	50.0% 50.0%	60.0% 40.0%	50.0% 50.0%	n/a n/a
Sat	50.0% 50.0%	42.0% 58.0%	50.0% 50.0%	n/a n/a

Notes :

(1) *2021 City Environmental Quality Review (CEQR) Technical Manual*
(2) Based on data provided by NYCDOT for local retail use in Brooklyn Transit Zone
(3) Based on data from *Atlantic Yards Arena and Redevelopment FEIS* (2014)
(4) Based on data from *ITE Trip Generation Manual, 10th Edition,* Land Use Code 150 (Warehousing)
(5) Included 1.51 adjustment factor per NYCDOT Trip Generation Survey
(6) Based on data from *East New York Rezoning Proposal FEIS* (2016)
(7) Based on data from *12 Franklin Street EAS* (2017)
(8) Adjusted per the ratio between weekday and Saturday based on information from the ITE Generation Handbook, 10th Edition
(9) Based on 2019 PHA mode choice survey data for office use in Williamsburg, Brooklyn
(10) Based on data from the *Domino Sugar Rezoning* (2010)

Local Retail

The trip generation rates, temporal distributions, and directional in/out splits for local retail uses were based on those cited in the 2021 *CEQR Technical Manual*. Modal splits were based on NYCDOT data for a Brooklyn Transit Zone and were adapted to reflect area transportation characteristics. Vehicle occupancies were based on data from the *Atlantic Yards Arena and Redevelopment FEIS* (2014). Truck trip generation factors were based on those cited in the 2021 *CEQR Technical Manual*. As it is likely that there will be overlap between office users with retail, a 25 percent linked-trip credit is assumed for local retail uses in accordance with *CEQR Technical Manual* guidelines.

Warehouse

Table 2 details the preliminary transportation planning factors for the decrease in gsf of warehouse use that would occur within the Project Area as a result of the Proposed Action which were used to forecast the warehouse travel demand. As shown in **Table 2**, the weekday person trip generation rates are based on data from *ITE Trip Generation Manual, 10th Edition*, Land Use Code 150 (Warehousing) with adjustments based on NYCDOT trip generation survey data. Modal split and vehicle occupancy rates were based on data from the *East New York Rezoning Proposal FEIS* (2016). Truck trip generation, truck temporal distribution and truck in/out split were based on NYCDOT trip generation survey data, as well as data from *ITE Trip Generation Manual, 10th Edition*, Land Use Code 150 (Warehousing).

Office

As shown in **Table 2**, the trip generation rates, temporal distributions, directional (in/out) splits, and truck trip factors for the commercial office use were based on those cited in the 2021 *CEQR Technical Manual*. The modal splits and vehicle occupancies were based on data from the 2019 PHA mode choice survey for an office use in Williamsburg, Brooklyn, and midday modal split data cited in the *12 Franklin Street EAS* (2017).

Open Space

The trip generation rates, temporal distributions, and directional in/out splits for open space uses were based on those cited in the 2021 *CEQR Technical Manual*. Modal split, vehicle occupancy and truck rates were based on data from the *Domino Sugar Rezoning FEIS* (2010).

TRIP GENERATION

Tables 3a and **3b** show estimates of incremental peak hour person trips and vehicle trips, respectively, that would occur in the 2026 future with the Proposed Action. Total incremental trips generated by the Proposed Action are further summarized in **Table 4**. As discussed above, the transportation analyses in the EIS will be based on the transportation planning assumptions made for the RWCDS detailed in **Table 2**. The estimated person, vehicle, transit and pedestrian trips generated by the Proposed Project are discussed below in the Level 1 screening assessment.

Table 3a: Travel Demand Forecast – Person Trips

		Increment									
Land Use:		**Local Retail***		**Warehouse**		**Office**		**Open Space**		**Total**	
Size/Units:		21,233 gsf		-181,401 gsf		540,442 gsf		1.14 acres			
Peak Hour Trips:											
	AM	252		-43		1,206		2		1,417	
	MD	420		-39		1,070		8		1,459	
	PM	572		-47		1,021		8		1,554	
	Sat	668		-12		298		12		966	
Person Trips:											
		In	Out	In	Out	In	Out	In	Out	In	Out
AM	**Auto**	15	13	-17	-5	129	16	0	0	127	24
	Taxi	0	0	-1	0	63	8	0	0	62	8
	Subway-Only	2	1	-3	-1	186	23	0	0	185	23
	Subway-to-Bus	2	2	-6	-2	305	38	0	0	301	38
	Bus	3	2	-2	-1	67	8	0	0	68	9
	Ferry	0	0	0	0	29	4	0	0	29	4
	Walk/Other	113	99	-4	-1	294	36	1	1	404	135
	Total	135	117	-33	-10	1,073	133	1	1	1,176	241
		In	Out	In	Out	In	Out	In	Out	In	Out
MD	**Auto**	23	23	-11	-11	10	11	0	0	22	23
	Taxi	0	0	0	0	5	6	0	0	5	6
	Subway-Only	2	2	-2	-2	14	15	0	0	14	15
	Subway-to-Bus	4	4	-4	-3	22	24	0	0	22	25
	Bus	4	4	-1	-1	36	39	0	0	39	42
	Ferry	0	0	0	0	0	0	0	0	0	0
	Walk/Other	177	177	-2	-2	426	462	4	4	605	641
	Total	210	210	-20	-19	513	557	4	4	707	752
		In	Out	In	Out	In	Out	In	Out	In	Out
PM	**Auto**	31	31	-6	-17	21	103	0	0	46	117
	Taxi	0	0	0	-1	10	50	0	0	10	49
	Subway-Only	3	3	-1	-5	30	147	0	0	32	145
	Subway-to-Bus	5	5	-2	-6	49	240	0	0	52	239
	Bus	6	6	-1	-2	11	53	0	0	16	57
	Ferry	0	0	0	0	5	23	0	0	5	23
	Walk/Other	241	241	-2	-4	48	231	5	3	292	471
	Total	286	286	-12	-35	174	847	5	3	453	1,101
		In	Out	In	Out	In	Out	In	Out	In	Out
Sat	**Auto**	37	37	-4	-2	18	18	0	0	51	53
	Taxi	0	0	0	0	9	9	0	0	9	9
	Subway-Only	4	4	-1	0	26	26	0	0	29	30
	Subway-to-Bus	6	6	-1	-1	42	42	0	0	47	47
	Bus	7	7	-1	0	9	9	0	0	15	16
	Ferry	0	0	0	0	4	4	0	0	4	4
	Walk/Other	280	280	-1	-1	41	41	6	6	326	326
	Total	334	334	-8	-4	149	149	6	6	481	485

Note: 25% link trip applied to Local Retail trips

Table 3b: Travel Demand Forecast – Vehicle Trips

		Increment									
Land Use:		**Local Retail***		**Warehouse**		**Office**		**Open Space**		**Total**	
Size/Units:		21,233 gsf		-181,401 gsf		540,442 gsf		1.14 acres			
Peak Hour Trips:											
	AM	252		-43		1,206		2		1,417	
	MD	420		-39		1,070		8		1,459	
	PM	572		-47		1,021		8		1,554	
	Sat	668		-12		298		12		966	
		Increment								*Total*	
Vehicle Trips :											
		In	Out	In	Out	In	Out	In	Out	In	Out
AM	**Auto (Total)**	8	7	-13	-4	112	14	0	0	107	17
	Taxi	0	0	-1	0	34	4	0	0	33	4
	Taxi Balanced	0	0	-1	-1	38	38	0	0	37	37
	Truck	0	0	-11	-5	9	9	0	0	-2	4
	Total	8	7	-25	-10	159	61	0	0	142	58
		In	Out	In	Out	In	Out	In	Out	In	Out
MD	**Auto (Total)**	12	12	-8	-8	9	10	0	0	13	14
	Taxi	0	0	0	0	3	3	0	0	3	3
	Taxi Balanced	0	0	0	0	6	6	0	0	6	6
	Truck	0	0	-8	-6	10	10	0	0	2	4
	Total	12	12	-16	-14	25	26	0	0	21	24
		In	Out	In	Out	In	Out	In	Out	In	Out
PM	**Auto (Total)**	16	16	-5	-13	18	90	0	0	29	93
	Taxi	0	0	0	-1	5	27	0	0	5	26
	Taxi Balanced	0	0	-1	-1	32	32	0	0	31	31
	Truck	0	0	-7	-5	2	2	0	0	-5	-3
	Total	16	16	-13	-19	52	124	0	0	55	121
		In	Out	In	Out	In	Out	In	Out	In	Out
Sat	**Auto (Total)**	19	19	-3	-2	16	16	0	0	32	33
	Taxi	0	0	0	0	5	5	0	0	5	5
	Taxi Balanced	0	0	0	0	10	10	0	0	10	10
	Truck	0	0	-2	-2	0	0	0	0	-2	-2
	Total	19	19	-5	-4	26	26	0	0	40	41

Note: 25% link trip applied to Local Retail trips

Table 4: Incremental Travel Demand Forecast Summary

Peak Hour	**Person Trips**																	
	Net Vehicle[1]			**Total Subway[2]**			**Total Bus[3]**			**Net Ferry**			**Net Walk**			**Total Pedestrian Trips[4]**		
	In	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
AM	**142**	**58**	**200**	**486**	**61**	**547**	**369**	**47**	**416**	**29**	**4**	**33**	**404**	**135**	**539**	**987**	**209**	**1,196**
MD	**21**	**24**	**45**	**36**	**40**	**76**	**61**	**67**	**128**	**0**	**0**	**0**	**605**	**641**	**1,246**	**680**	**723**	**1,403**
PM	**55**	**121**	**176**	**84**	**384**	**468**	**68**	**296**	**364**	**5**	**23**	**28**	**292**	**471**	**763**	**397**	**935**	**1,332**
Sat	**40**	**41**	**81**	**76**	**77**	**153**	**62**	**63**	**125**	**4**	**4**	**8**	**326**	**326**	**652**	**421**	**423**	**844**

[1]Includes Auto, Taxi and Truck trips for all peak hours

[2]Includes Subway-Only and Subway-to-Bus trips

[3]Includes Subway-to-Bus and Bus-Only trips

[4]Includes Walk-Only and pedestrians en route to/from nearby subway stations and bus stops

LEVEL 1 SCREENING ASSESSMENT

According to the *CEQR Technical Manual* guidelines, a two-tier screening process is used to determine whether quantified analyses of any technical areas of the transportation system are necessary. A Level 1 screening is typically necessary if a proposed project has the potential to exceed either 50 vehicle or ferry trips, 200 transit trips or 200 pedestrian trips during any given peak hour. If these thresholds are exceeded, a Level 2 screening assessment is required in order to ensure that there are not 50 vehicle trips, 50 bus trips, 200 subway/rail trips, or 200 pedestrian trips assigned to an individual transportation element (intersections, bus routes, subway stations, etc.), during any analysis peak hour. Based on the preliminary planning factors shown in in **Table 2**, a preliminary travel demand forecast (Level 1 screening) was prepared for the Proposed Project and is shown below in **Tables 3a** and **3b** and summarized in **Table 4**.

Traffic

Under *CEQR Technical Manual* criteria, if a proposed action is expected to generate 50 or more peak hour vehicle trips, there is likely a need for further analysis. As shown in **Table 4**, the Proposed Project would result in a net increase of 200, 45, 176 and 81 vehicle trips in the weekday AM, weekday midday, weekday PM, and Saturday peak periods, respectively. As the number of incremental peak hour trips would exceed the *CEQR Technical Manual* analysis thresholds for vehicular traffic during the weekday AM, PM, and Saturday peak hour periods, a Level 2 screening analysis is warranted to identify if any area intersections may require additional detailed analyses.

Transit

According to the general thresholds used by the Metropolitan Transportation Authority (MTA) and specified in the *CEQR Technical Manual*, detailed transit analyses are generally not required if a proposed development is projected to result in fewer than 200 peak hour subway/rail or bus transit riders. If a proposed action would result an increase of 200 or more passengers at a single subway station or on a single subway line/bus route, a detailed subway and/or bus 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 system is usually highest.

Subway

As shown in **Table 4**, the project would generate a net increase of approximately 547 and 468 person trips by subway (subway-only and subway-to-bus combined) in the weekday AM and PM peak hours, respectively. 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.

Bus

According to the general thresholds used by the MTA and specified in the *CEQR Technical Manual*, a detailed bus-line haul analysis is generally not required if the project generated increase in person trips by bus is fewer than 200 additional passengers during a peak hour or fewer than 50 peak hour passengers in a single direction on a single route. Due to the Project Site's placement within the City's subway network, some subway trips

would be expected to include a subway-to-bus connection, depending on the trip origin.

As shown in **Table 4**, the project would generate a net increase of 416 and 364 person trips by bus (subway-to-bus and bus-only combined) during the weekday AM and PM peak hours, respectively. While the projected bus trips would exceed 200 trips only during the PM peak hour, the Proposed Project could generate 50 or more passengers per hour during both the AM and PM peak periods and, therefore, a Level 2 analysis is warranted.

Pedestrians

According to *CEQR Technical Manual* guidance, 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 4**, the Proposed Actions' RWCDS would generate an incremental increase of 539, 1,246, 763 and 652 walk-only trips (in and out combined) during the weekday AM, weekday midday, weekday PM and Saturday peak periods, respectively. In addition to the walk-only trips, the Proposed Project would generate pedestrian trips en route to and from nearby subway stations, bus stops, and ferry landings. Including these additional pedestrian trips, the total project generated pedestrian demand would be 1,196, 1,403, 1,332 and 844 trips in the weekday AM, midday, PM and Saturday peak hours, respectively. As the total walk trips exceed the *CEQR* threshold during the weekday AM, midday, PM and Saturday peak hours, a more detailed analysis is warranted.

Citywide Ferry Service

According to *CEQR Technical Manual* guidance, detailed analyses of the citywide ferry service (CWFS) are not typically required if a proposed action would result in 50 or fewer peak hour CWFS peak hour ferry riders. The Proposed Actions' RWCDS would generate a net incremental increase of 33, 0, 28, and 8 ferry trips (in/out combined) in the weekday AM, midday, PM, and Saturday peak hours, respectively. Therefore, based on *CEQR Technical Manual* criteria, the Proposed Action is not expected to result in significant adverse impacts to the CWFS, and a detailed analysis of ferry conditions is not warranted.

LEVEL 2 SCREENING ASSESSMENT: TRIP ASSIGNMENT

Traffic

A Level 2 traffic screening assessment involves the assignment of action-generated vehicle trips to the study area street network and the identification of specific locations where the incremental increase in demand may potentially exceed the *CEQR Technical Manual* analysis threshold of 50 or more vehicle trips at an intersection and, therefore, require a quantitative analysis. As shown in **Table 4** and discussed above, the Proposed Action's RWCDS is expected to result in a net incremental increase of approximately 200, 45, 176 and 81 vehicle trips during the weekday AM, midday, PM and Saturday peak hours, respectively. As these traffic volumes would exceed 50 trips in the weekday AM, PM and Saturday peak hours (the *CEQR Technical Manual* Level 1 screening threshold for a detailed analysis), an assignment of net increment traffic volumes was prepared (a Level 2 screening assessment) to help identify individual intersections for analysis.

The assignments of auto and taxi trips to the street network in proximity to the Project Site are based on the

anticipated origins and destinations of vehicle trips associated with the different land uses projected under the RWCDS (i.e. office, local retail and warehouse uses). The origins/destinations of office and warehouse uses were based on 2012-2016 American Community Survey (ACS) five-year reverse journey-to-work data and AASHTO Census Transportation Planning Products program (CTPP). Origins/destinations for local retail, which generate mostly local trips, were based on population density in proximity to the Project Site and surrounding neighborhoods within an approximately three quarter-mile radius. It should be noted that the majority of Census Tract 543 consists of the Brooklyn Navy Yard, a light industrial and manufacturing hub differing from the surrounding residential neighborhoods, and therefore was not included in the population density calculations. Using these distributions, auto and taxi trips were assigned to various portals on the periphery of Williamsburg and from there were assigned to the Project Site via the most direct route. Auto trips were assigned to the parking garage entrance on Division Avenue, while taxi trips were assigned to the Kent Avenue frontage. **Tables 6** and **7** below shows the directional distributions of auto and taxi trips by land use based on this data. Trucks were assigned to DOT designated truck routes – i.e., Kent Avenue, Broadway, and Williamsburg Street East – and then the most direct paths to and from the Project Site's loading dock entrances along Kent Avenue.

Table 6: Origin Distribution for Office and Warehouse Uses

Origin Location	Percent of Total
Bronx	6.5%
Brooklyn	37.9%
Manhattan	2.4%
Queens	15.6%
Staten Island	6.2%
Long Island	16.7%
New Jersey/Pennsylvania	5.5%
Upstate NY/Connecticut	2.3%
Westchester	6.9%

Source: U.S. Census Bureau, 2012-2016 5-year estimates and AASHTO Special Tabulation: Census Transportation Planning Products program (CTPP)

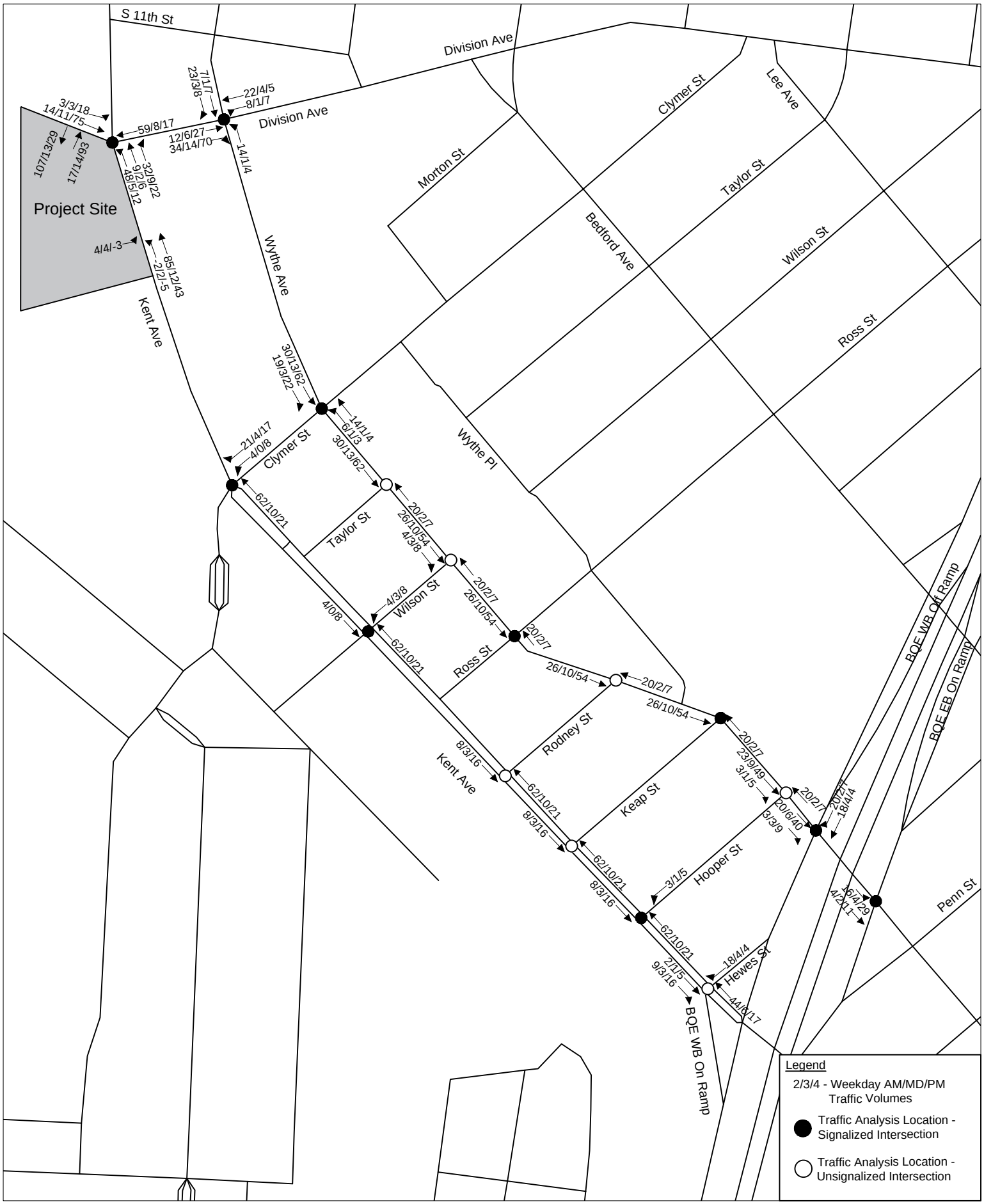
Table 7: Origin Distribution for Local Retail Uses

Origin Location	Percent of Total
North	40%
East	60%

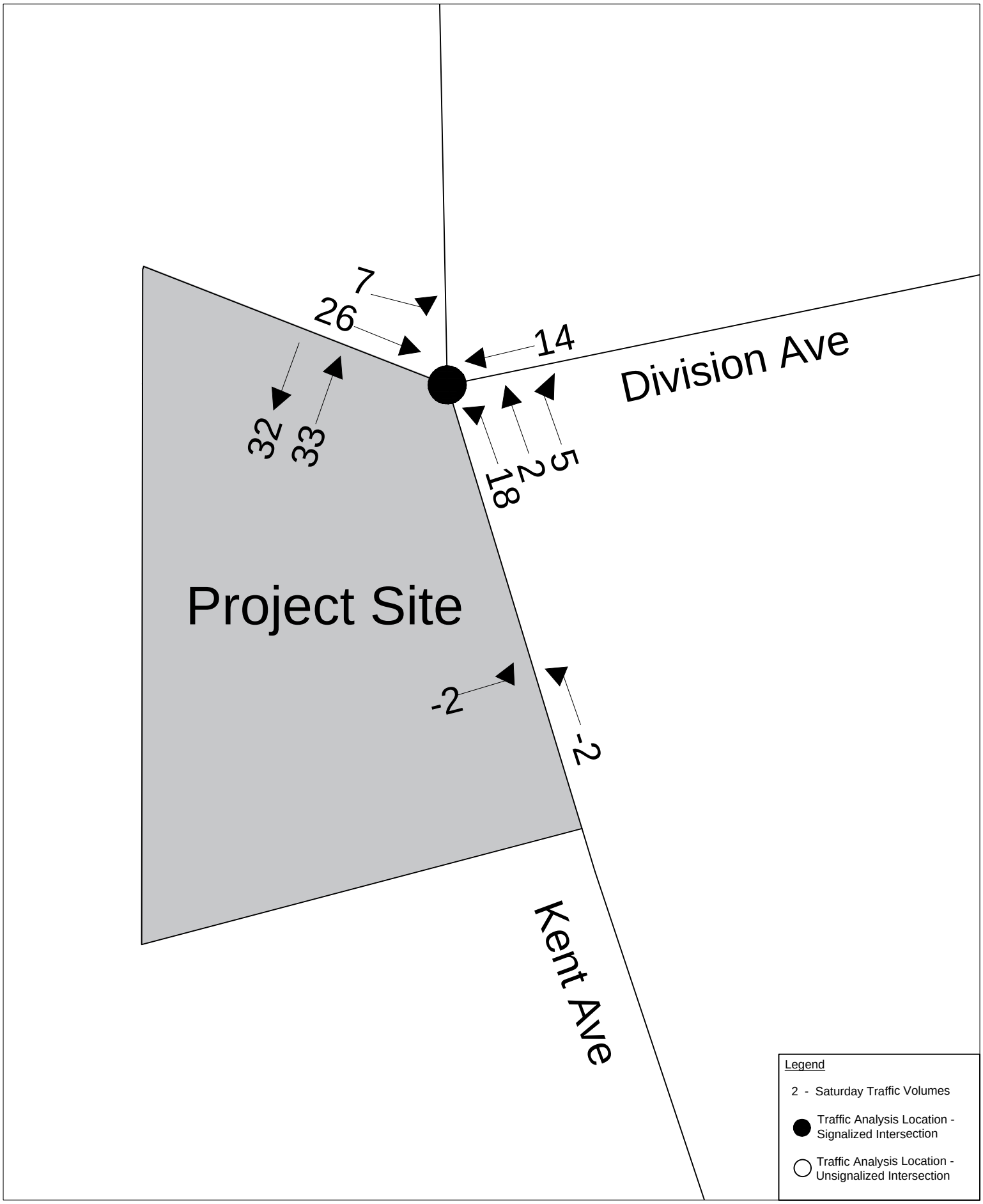
Note: Based on population density within approximately ¾-mile of the Project Site

Figure 2 shows the assignment of incremental vehicle trips generated by the Proposed Actions during the weekday AM, weekday midday, weekday PM and Saturday peak hours, along with the intersections expected to exceed the 50-trip *CEQR Technical Manual* analysis threshold. As shown in **Figure 2,** a total of 17 intersections (10 signalized, seven unsignalized) exceeded this threshold and were selected for detailed analysis. These intersections are listed below along with the peak hour in which the 50 vehicle threshold is expected to be exceeded:

Project Increment Weekday AM/MD/PM Traffic Volumes



Project Increment Saturday Traffic Volumes



Traffic Analysis Locations

1. Kent Avenue at Division Avenue *(signalized*)
2. Kent Avenue at Clymer Street *(signalized)*
3. Kent Avenue at Wilson Street *(signalized)*
4. Kent Avenue at Rodney Street *(unsignalized)*
5. Kent Avenue at Keap Street *(unsignalized)*
6. Kent Avenue at Hooper Street *(signalized*)
7. Kent Avenue at Hewes Street *(unsignalized)*
8. Wythe Avenue at Division Avenue *(signalized*)
9. Wythe Avenue at Clymer Street (*signalized*)
10. Wythe Avenue at Taylor Street *(unsignalized)*
11. Wythe Avenue at Wilson Street *(unsignalized)*
12. Wythe Avenue at Ross Street *(signalized)*
13. Wythe Avenue at Rodney Street *(unsignalized)*
14. Wythe Avenue at Keap Street *(signalized*)
15. Wythe Avenue at Hooper Street *(unsignalized)*
16. Wythe Avenue at Williamsburg Street West *(signalized*)
17. Wythe Avenue at Williamsburg Street East *(signalized*)

Subway

Subway Stations

Typically, transit analyses examine conditions during the weekday AM and PM commuter peak periods, as it is during these times that overall transit demand (and the potential for significant adverse impacts) is generally greatest. As indicated above in **Table 2**, approximately 45.7 percent of office trips, the land use which represent the largest number of action-generated peak hour trips, are expected to utilize the subway while 3 percent of local retail trips and 28 percent of warehouse trips would be made by subway. **Figure 1** shows the nearest subway station to the Project Site (the Marcy Avenue station), as well as nearby bus routes and ferry landing.

As shown below in **Table 8**, it is anticipated that the majority of project-generated subway trips would utilize the Marcy Avenue subway station, which is located approximately 0.6-miles northeast of the site and served by the J/M/Z subway lines. Only project-generated trips commencing or terminating at the Marcy Avenue Station are considered subway-only trips and are included in the subway analysis. The remaining action-generated subway trips are expected to be dispersed among other nearby subway stations were riders are assumed to complete their journey via bus (i.e. Subway-to-Bus trips). This dispersion is detailed in **Table 8** below and is based on U.S Census Bureau, American Community Survey (ACS) 5-year (2012-2016) reverse journey-to-work data utilizing the AASHTO Census Transportation Planning Products program (CTPP). Subway-to-bus trips were added to the bus-only trips to derive the total bus trips and are evaluated in the bus analysis below.

As shown in **Table 8**, the Proposed Action would generate approximately 356 and 303 subway trips (in and out combined) in the AM and PM peak periods, respectively, at the Marcy Avenue station, which exceeds

the 200-trip CEQR threshold. Therefore, the EIS transit analysis will quantitatively examine subway conditions of circulation and fare control elements, such as stairs and fare arrays, at this station.

Subway Line Haul

The Marcy Avenue subway station is served by the J, M, and Z subway routes. The peak direction of travel along the J, M, and Z routes is typically Manhattan-bound (westbound) in the weekday AM and Queens-bound (eastbound) in the weekday PM. **Table 9**, below, provides the assignment of project-generated subway trips for the weekday AM and PM peak hours for the J, M, and Z routes, by direction.

Table 8: Subway Assignment Summary

Subway Station/Line Summary	AM Peak Hour Projected Sites			PM Peak Hour Projected Sites		
	In	Out	Total	In	Out	Total
Marcy Avenue (J/M/Z) - subway only	185	23	208	32	145	177
Marcy Avenue (J/M/Z) - subway to bus transfer	131	17	148	22	104	126
York Street (F)	34	4	38	6	27	33
Atlantic Terminal (2/3/4/5/B/D/N/Q/R/LIRR)	34	4	38	6	27	33
DeKalb Ave (B/D/N/R/W)	15	2	17	3	12	15
Jay Street-Metrotech (A/C/F/R)	44	5	49	8	35	43
Franklin Ave (C/S)	24	3	27	4	19	23
Bedford Ave (G)	19	3	22	3	15	18
Total	486	61	547	84	384	468

Source: U.S. Census Bureau, ACS 2012-2016 5-year reverse journey-to-work estimates and AASHTO Census Transportation Planning Products (CTPP)

As shown in **Table 9**, the Proposed Project would generate would generate approximately 47 Manhattan-bound trips along the J subway route in the weekday AM peak hour, and 43 Queens-bound trips during the weekday PM peak hour. In addition, the Proposed Project would generate would generate approximately 62 Manhattan-bound trips along the M subway route in the weekday AM peak hour, and 58 Queens-bound trips during the weekday PM peak hour. Along the Z subway route, the Proposed Project would generate approximately 17 Manhattan-bound trips in the weekday AM peak hour, and 15 Queens-bound trips in the weekday PM peak hour. As the Proposed Project would not generate the *CEQR Technical Manual* threshold of 200 or more new peak hour subway trips in any one direction of the J, M, and Z subway routes, an analysis of subway line haul conditions is not warranted as impacts are not expected.

Table 9: Subway Assignments by Direction – J, M, and Z Routes

Subway Line	Direction	AM			PM		
		In	Out	Total	In	Out	Total
J	Manhattan-Bound	37	10	47	6	64	70
	Queens-Bound	81	5	86	14	29	43
	Bi-Directional Total	**118**	**15**	**133**	**20**	**93**	**113**
M	Manhattan-Bound	49	13	62	8	85	93
	Queens-Bound	108	6	114	19	39	58
	Bi-Directional Total	**157**	**19**	**176**	**27**	**124**	**151**
Z	Manhattan-Bound	13	4	17	2	22	24
	Queens-Bound	28	2	30	5	10	15
	Bi-Directional Total	**41**	**6**	**47**	**7**	**32**	**39**
Marcy Avenue Station (J,M,Z) Total		**316**	**40**	**356**	**54**	**249**	**303**

Bus

The Project Site is primarily served by the B67 New York City Transit (NYCT) bus route which operates between Kensington and Williamsburg via Downtown Brooklyn and the Brooklyn Navy Yard. The route runs along Kent Avenue and Wythe Avenue in the vicinity of the Project Site. Service is also provided by the B62 NYCT bus which is routed along Wythe Avenue in proximity to the Project Site and operates between Queens Plaza and Downtown Brooklyn. Additional service is provided by the B44 select bus service (SBS), the B32 and the Q59. These services and the principle corridors on which they operate in proximity to the Project Site are listed below in **Table 10**.

Table 10: Bus Routes Serving the Project Site

Route	Operating Agency	Rout Endpoints	Corridors Served in Proximity to the Project Site
B67	NYCT	Kensington – Downtown Brooklyn	Kent Av/Wythe Av
B62	NYCT	Queens Plaza – Downtown Brooklyn	Wythe Av/Division Av
B44	NYCT	Sheepshead Bay - Williamsburg	Bedford Av/Lee Av
B32	NYCT	Long Island City - Williamsburg	Kent Av/Wythe Av/Broadway
Q59	NYCT	Rego Park – Williamsburg	Kent Av/Wythe Av/Broadway

As shown in **Table 3a**, the Proposed Project is expected to generate a net total (in and out combined) of approximately 77 and 73 incremental bus-only trips during the weekday AM and PM peak hours, respectively. As discussed above, due to the location of the site some subway trips are expected to also include a bus element to complete the journey. These additional subway-to-bus riders are expected to increase the number of incremental bus trips by 339 and 291 in the AM and PM peak hours, respectively, for a net total of 416 and 364 trips utilizing local bus routes in the AM and PM peak hours, respectively. Total bus trip dispersion was based on ridership data provided by NYC MTA and is detailed in **Table 11** below.

Table 11: Bus Line Assignment Summary

Bus Line	Bus Only						Subway to Bus						Total Bus Trip					
	AM			PM			AM			PM			AM			PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Peak Hour Incremental Bus Trips	68	9	77	16	57	73	301	38	339	52	239	291	369	47	416	68	296	364
B67	14	2	16	3	11	14	64	7	71	12	51	63	78	9	87	15	62	77
B62	15	2	17	4	13	17	213	28	241	36	169	205	228	30	258	40	182	222
B44	17	3	20	4	15	19	24	3	27	4	19	23	41	6	47	8	34	42
B32	11	1	12	3	9	12	0	0	0	0	0	0	11	1	12	3	9	12
Q59	11	1	12	2	9	11	0	0	0	0	0	0	11	1	12	2	9	11
Total	**68**	**9**	**77**	**16**	**57**	**73**	**301**	**38**	**339**	**52**	**239**	**291**	**369**	**47**	**416**	**68**	**296**	**364**

Source: U.S. Census Bureau, ACS 2012-2016 5-year reverse journey-to-work estimates and AASHTO Census Transportation Planning Products program (CTPP)

According to the general thresholds used by the MTA and specified in the *CEQR Technical Manual*, a detailed analysis of bus conditions is generally not required if a proposed action is projected to result in fewer than 50 peak hour trips being assigned to a single bus route (in one direction), as this level of new demand is considered unlikely to result in significant adverse impacts. As shown in **Table 11**, two routes (the B62 and B67) are expected to experience 50 or more new trips during both peak hours.

Table 12, below, provides the assignment of project-generated bus trips for the weekday AM and PM peak hours for the B62 and B67 routes, by direction. As shown in **Table 12**, the B62 bus route would experience and increase of 139 northbound and 119 southbound trips in the weekday AM peak hour and 104 northbound and 118 southbound trips in the weekday PM peak hour. Additionally, the B67 bus route would experience an increase of 78 northbound and 9 southbound trips in the weekday AM peak hour and 15 northbound and 62 southbound trips in the weekday PM peak hour. Therefore, detailed bus analyses of the B62 and B67 bus routes are warranted and will be provided in the EIS.

Table 12: Bus Assignment by Direction –B62 and B67 Routes

Bus Line	Direction	AM			PM		
		In	Out	Total	In	Out	Total
B62	NB	125	14	139	22	82	104
	SB	103	16	119	18	100	118
B67	NB	78	0	78	15	0	15
	SB	0	9	9	0	62	62

Pedestrians

As discussed above and summarized in **Table 4**, the Proposed Action would generate 1,196, 1,403, 1,332 and 844 incremental pedestrian trips (including walk-only, subway and bus trips) during the weekday AM, weekday midday, weekday PM and Saturday peak hours, respectively. The analysis of pedestrian conditions focuses on the pedestrian elements – sidewalks, corner areas and crosswalks – where the new trips generated by a proposed development are expected to be concentrated. These elements are primarily located within the vicinity of the Project Site and corridors connecting the site to area subway station entrances, bus stops, and ferry landings. A pedestrian assignment was conducted to determine which pedestrian elements exceeded the *CEQR* threshold of 200 or more incremental pedestrian trips.

Although the number of pedestrian trips in the Saturday peak hour would also exceed the 200-trip *CEQR Technical Manual* analysis threshold, the 844 trips generated during this period would be less than the trips generated in the weekday peak hours. Additionally, the distribution of trips to area sidewalks and crosswalks in the Saturday peak hour is expected to be similar to the distribution in the weekday midday. Consequently, significant adverse pedestrian impacts on Saturday over and above those identified for the weekday peak hours are considered unlikely. Therefore, the analysis of pedestrian conditions will focus on the weekday AM, midday and PM peak hours and the Saturday peak hour is not analyzed.

The locations of elements where incremental pedestrian trips generated by the Proposed Action during the weekday AM, midday and PM peak hours are expected to exceed the 200 or more incremental pedestrian trip threshold are shown in **Figure 3**. As presented in **Figure 3** the Proposed Project would generate 200 or more pedestrian trips at 22 pedestrian elements during the weekday AM, midday and PM peak hours. Accordingly, the EIS will provide detailed analyses for the weekday AM, midday and PM peak hours for these 22 pedestrian facilities (six sidewalks, five crosswalks and 11 corner areas), which are listed below.

Preliminary Pedestrian Analysis Locations

Sidewalks

1. Kent Avenue between S. 11th Street and Division Avenue *(west sidewalk)*
2. Kent Avenue between Division Avenue and Rush Street *(west sidewalk)*
3. Kent Avenue between Rush Street and Clymer Street *(west sidewalk)*
4. Division Avenue between Kent Avenue and Wythe Avenue *(north sidewalk)*
5. Division Avenue between Kent Avenue and Wythe Avenue *(south sidewalk)*
6. Division Avenue between Wythe Avenue and Bedford Avenue *(south sidewalk)*

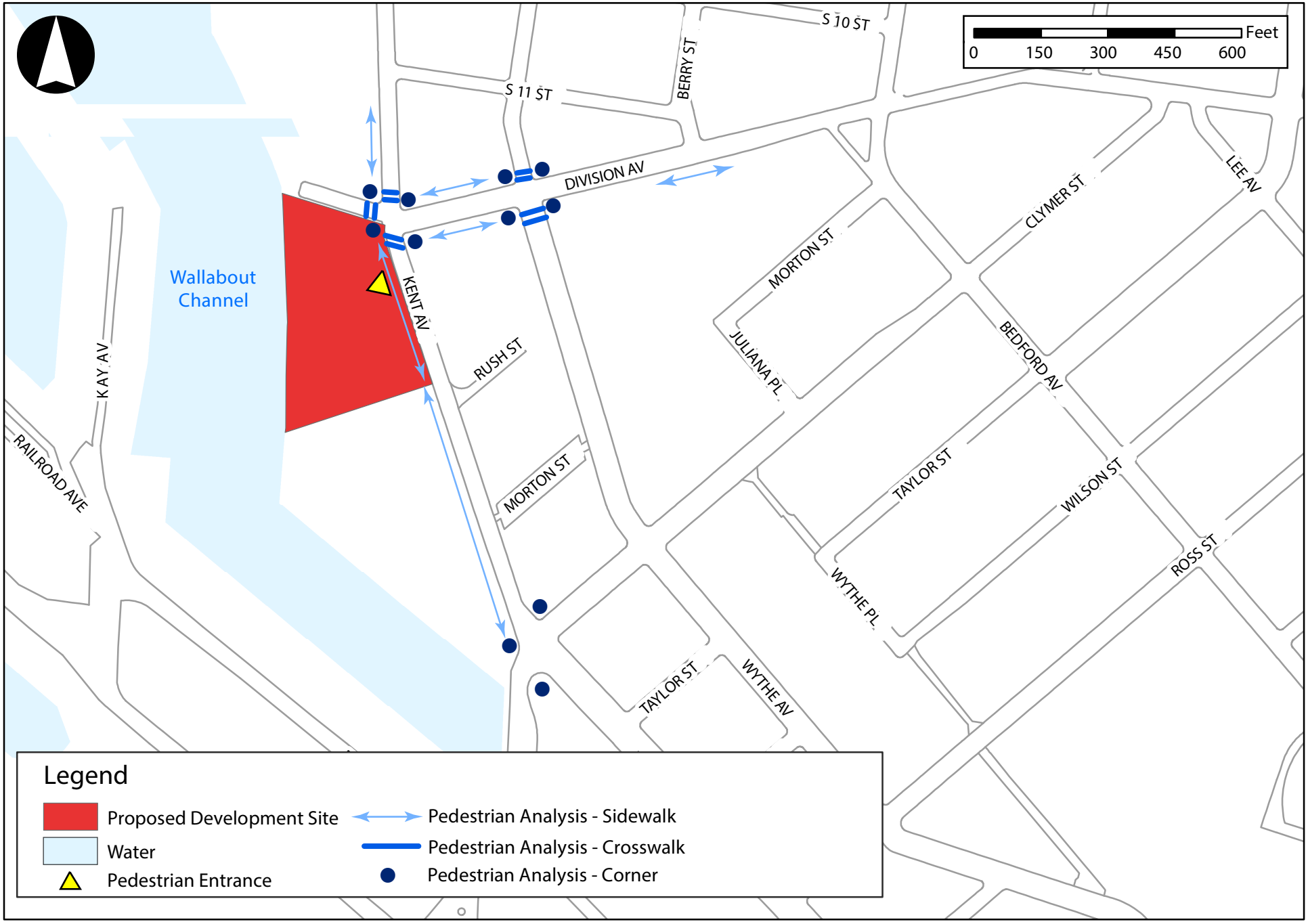
Crosswalks

1. Kent Avenue and Division Avenue *(north crosswalk)*
2. Kent Avenue and Division Avenue *(south crosswalk)*
3. Kent Avenue and Division Avenue *(west crosswalk)*
4. Division Avenue and Wythe Avenue *(north crosswalk)*
5. Division Avenue and Wythe Avenue *(south crosswalk)*

Corners

1. Kent Avenue and Division Avenue *(northwest corner)*
2. Kent Avenue and Division Avenue *(northeast corner)*
3. Kent Avenue and Division Avenue *(southeast corner)*
4. Kent Avenue and Division Avenue *(southwest corner)*
5. Kent Avenue and Clymer Street *(northwest corner)*
6. Kent Avenue and Clymer Street *(northeast corner)*
7. Kent Avenue and Clymer Street *(southwest corner)*
8. Wythe Avenue and Division Avenue *(northwest corner)*
9. Wythe Avenue and Division Avenue *(northeast corner)*
10. Wythe Avenue and Division Avenue *(southeast corner)*
11. Wythe Avenue and Division Avenue *(southwest corner)*

Figure 3
Pedestrian Analysis Locations



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 along a Vision Zero intersection 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. In addition, any location along a Vision Zero priority corridor with three or more pedestrian/bicyclist injury crashes in any consecutive 12 months of the most recent three-year period for which data is available should be identified as a high crash location. 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.

Vision Zero Brooklyn Pedestrian Safety Action Plan

Consistent with the City's Vision Zero initiative, the *Vision Zero Brooklyn Pedestrian Safety Action Plan* was released in 2015 and updated in 2019. The plan identifies a series of engineering/planning, enforcement, and education/awareness campaign strategies to enhance pedestrian safety along the borough's Priority Corridors and Priority Intersections. These strategies include measures such as reducing the speed limit to 25 miles per hour, expanding exclusive pedestrian crossing time, installing additional lighting around key transit stops, expanding the bicycle network, prioritizing targeted enforcement and deploying speed cameras, and targeting intensive street-level outreach. In proximity to the project site, the plan identifies Bedford Avenue, to the east of the project site, as a "Priority Corridor".

Crash Data

Table 13 shows the crash data summary for the three-year reporting period between January 1, 2017 and December 31, 2019 that were obtained from NYCDOT. This is the most recent three-year period for which data are available.

The data obtained quantify the total number of reportable crashes (crashes involving a fatality, injury, or more than $1,000 in property damage), as well as a yearly breakdown of fatalities, injuries, and vehicular crashes involving pedestrians and bicycles at each location. **Table 13** summarizes the crash data for each intersection within the quarter-mile study area during the study period, including a breakdown of pedestrian and bicycle crashes by year.

During the three-year period, a total of 114 reportable and non-reportable crashes, zero fatalities, 60 total injuries, and 25 pedestrian/bicyclist-related crashes occurred at intersections within the quarter-mile study area. As shown on the following page in **Table 13**, no intersections were found to have experienced a total of three or more pedestrian/bicyclist-related crashes in any one year during the three-year period. Therefore, no intersections were identified as high-crash locations in the quarter-mile study area.

Table 13: Crash Data Summary 2017-2019

Intersection		Pedestrian Injury Crashes			Bicycle Injury Crashes			Total Pedestrian/Bicyclist Injury Crashes			Total Crashes (Reportable + Non-Reportable)		
		2017	2018	2019	2017	2018	2019	2017	2018	2019	2017	2018	2019
Kent Ave	S 8th St	0	0	0	0	0	0	0	0	0	0	1	0
	S 9th St	0	0	0	0	0	0	0	0	0	0	1	1
	S 10th St	0	0	0	0	0	0	0	0	0	0	0	0
	S 11th St	0	0	0	1	0	0	1	0	0	3	1	1
	Division Ave	0	0	0	0	0	1	0	0	1	2	1	4
	Clymer St	0	0	0	0	0	1	0	0	1	1	3	2
	Taylor St	0	0	0	0	0	0	0	0	0	0	1	0
	Wilson St	0	0	0	1	0	0	1	0	0	2	0	1
Wythe Ave	S 8th St	0	0	0	0	0	0	0	0	0	0	1	2
	S 9th St	0	1	0	0	1	0	0	2	0	1	2	1
	S 10th St	1	0	0	0	0	0	1	0	0	2	6	2
	S 11th St	1	0	0	0	1	1	1	1	1	2	2	1
	Division Ave	1	0	0	0	0	0	1	0	0	2	3	5
	Clymer St	1	0	0	1	1	0	2	1	0	4	4	1
	Taylor St	0	0	0	0	0	0	0	0	0	0	0	1
	Wilson St	0	0	0	0	0	1	0	0	1	1	1	2
Berry St	S 8th St	0	0	0	0	0	0	0	0	0	0	2	2
	S 9th St	1	0	0	0	0	0	1	0	0	2	2	1
	S 10th St	0	0	1	1	0	0	1	0	1	1	1	4
	S 11th St	0	0	0	0	0	0	0	0	0	0	1	0
	Division Ave	0	0	0	0	0	0	0	0	0	0	0	0
Bedford Ave	S 10th St	0	1	0	1	0	0	1	1	0	1	1	0
	Division Ave	1	0	0	1	0	1	2	0	1	2	7	7
	Morton St	0	0	0	0	0	1	0	0	1	0	2	1
	Clymer St	0	0	0	1	0	0	1	0	0	2	1	1
Clymer St	Juliana Pl	0	0	0	0	0	0	0	0	0	0	0	2

Parking

In the future with the Proposed Action, the Project Site would be rezoned from M3-1 to M1-5. As such, on-site parking would not be required for the proposed uses – although it is anticipated that the proposed 234 on-site parking spaces to be provided at the Project Site will be sufficient to accommodate the overall demand generated by the Proposed Actions. The proposed parking supply is based on the weekday peak parking demand that would be generated by the Proposed Project, shown below in **Table 14**. As mentioned earlier, 234 spaces would be provided as part of the Proposed Project. Therefore, as the proposed parking supply would accommodate the peak parking demand generated under the RWCDS, a detailed parking analysis is not warranted and will not be included in the EIS.

Table 14: Weekday Parking Accumulation

	Local Retail 21,233 gsf			Office 598,442 gsf			Total
	In	Out	Accum.	In	Out	Accum.	Accum.
Overnight			2			2	
12-1 AM	0	0	2	0	0	2	4
1-2	0	0	2	0	0	2	4
2-3	0	0	2	0	0	2	4
3-4	0	0	2	0	0	2	4
4-5	0	0	2	0	0	2	4
5-6	0	0	2	0	0	2	4
6-7	0	0	2	0	0	2	4
7-8	5	4	3	11	1	12	15
8-9	7	6	4	125	15	122	126
9-10	10	8	6	109	18	213	219
10-11	10	7	9	18	15	216	225
11-12	10	9	10	8	22	202	212
12-1 PM	12	12	10	9	9	202	212
1-2	12	12	10	10	11	201	211
2-3	13	14	9	42	18	225	**234**
3-4	13	12	10	14	22	217	227
4-5	12	14	8	13	91	139	147
5-6	16	16	8	20	98	61	69
6-7	12	12	8	5	43	23	31
7-8	7	9	6	1	22	2	8
8-9	4	6	4	0	0	2	6
9-10	1	3	2	0	0	2	4
10-11	0	0	2	0	0	2	4
11-12	0	0	2	0	0	2	4
Total	144	144		385	385		