


**CITY OF CAMBRIDGE**  
**Traffic, Parking and Transportation**  
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## MEMORANDUM

**To:** Cambridge Planning Board  
**From:** Joseph Barr, Director   
**Date:** April 12, 2018  
**Re:** Alexandria Real Estate Equities, Inc. Amendment #3 (Major), Special Permit Project Review, and Design Review for 50 Rogers Street (Planning Board Special Permit #243)

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The Cambridge Traffic, Parking, and Transportation Department (TP&T) reviewed the Alexandria Real Estate Equities, Inc. (ARE) application for Amendment #3 (Major), Special Permit Project Review, and Design Review for 50 Rogers Street (Special Permit #243). TP&T offer the Planning Board the following comments for this project:

### Major Amendment #3 to Special Permit #243

The Major Amendment proposes changes to the original approved plans for the 161 First Street parcel from a 150 unit residential building with 150 parking spaces provided in the 75/125 Binney Street garage to an approximately 136 unit residential building with 102 on-site parking spaces (0.75 spaces per unit). The project proposes to renovate and continue to use the existing 161 First Street building (approximately 30,300 square feet) for office space including 10,000 square feet of innovation space. Eighteen (18) parking spaces (0.9 spaces/1,000 square feet) will be provided at ARE's other parking garages, including 75/125 Binney Street and 50/60 Binney Street. The proposed residential project will include 132 long-term and 10 short-term bicycle parking spaces.

A transportation analysis by VHB, dated February 12, 2018 determined that when compared to the approved Traffic Impact Study (TIS) the project changes will have an increase in 11 morning peak hour vehicle trips and no change in the evening peak hour vehicle trips. TP&T believes VHB's analysis was accurately and professionally completed and we agree with VHB's conclusion that there will be no measurable impact to area roadway operations from this Major Amendment. ARE's projects will continue to meet the approved parking ratios. Attached is VHB's February 12, 2018 memo and parking allocation plan.

### Design Review for 50 Rogers Street

TP&T offers the following comments on the 50 Rogers Street Design Review:

#### Bicycle Parking.

- The number of, and layouts for the 10 short-term and 132 long-term bicycle parking spaces appear to meet city guidelines.
- It is unclear how people will access the bicycle room in the basement, such as through the front door and elevator? If that is the plan, bicycles must explicitly be allowed to be

wheeled through the lobby. TP&T also recommends all doors to/from the bicycle room have power assist doors which will make it more convenient for cyclists.

#### **Vehicle Parking.**

- The 102 residential parking spaces in a two-level below-grade garage for the 136 housing units is appropriate for this location and meets the project's Special Permit 0.75 space per unit parking ratio.

#### **Site Plan and Loading and Delivery Services.**

- TP&T believes that closing the curb cut on Binney Street would be a positive improvement because it would reduce a conflict point between vehicles, pedestrians and cyclists.
- TP&T is open minded to a new curb cut on Rogers Street for the 161 First Street building's loading and delivery services, but some questions or comments are listed below:
  - How will trucks safely maneuver in and out (i.e. Provide sightline triangles and truck turning movements plotted on a site plan)?
  - Will the loading area also serve loading and delivery services for the 50 Rogers Street residential building?
  - For the 50 Roger Street residential parking garage driveway, TP&T recommends that mechanical room should be cut back to provide better sightlines for vehicles exiting the garage. The wall on the left side of the parking garage driveway should also be cut back or be transparent (i.e. Provide a window).
  - The parking garage and loading zone driveways should have "vehicle exiting" warning devices.
  - All driveways must meet City-standards, such as a level concrete sidewalk across the driveway with transition curbs.
  - A clear pavement marking and signage plan for Rogers and Binney Streets should be provided, which should include existing and future parking meter pole locations. Street trees and street furniture should be shown on this plan to ensure that proposed meter and sign pole locations do not conflict.

#### **Special Permit for Five-Foot Driveway Setback**

ARE is seeking a Special Permit to waive the five foot driveway setback for a proposed loading zone driveway between 161 First Street and 50 Rogers Street.

- TP&T has no issues with the five-foot setback however, additional information about the driveway width, management, access (i.e. trucks backing in may have impacts on parking on the opposite side of Rogers Street for clearance), and proposed driveway materials (i.e. grass pavers, asphalt, etc.) should be provided. TP&T will work with ARE and the Community Development Department (CDD) on these details during the building permit review process.



To: Joseph Barr, Director of Cambridge TP&T  
Adam Shulman, Transportation Planner

Date: February 12, 2018

Memorandum

Project #: 14150.00

From: Susan Sloan-Rossiter, VHB  
Ryan White, VHB

Re: Alexandria Center at Kendall Square  
Major Amendment Transportation Impact Analysis

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## Overview

The transportation analysis described in this memo has been conducted at the request of Alexandria Real Estate Equities (ARE) to demonstrate that the Alexandria Center at Kendall Square application for a Third Amendment of Planned Unit Development (PUD) and Project Review Special Permit (Case No. PB #243) is consistent with the findings of the certified Binney Street Project Transportation Impact Study (TIS). ARE seeks a Third Amendment to the PUD Special Permit and Project Review Special Permit (collectively referred to herein as "Special Permit") to allow: (i) relocation of residential Gross Floor Area from the existing 161 First Street building to a modification of a previously approved new residential building on the 161 First Street development site; (ii) up to 30,319 square feet (SF) of non-residential use (as allowed under the Special Permit) for adaptive reuse of the existing building at 161 First Street, which includes up to 10,000 SF of Innovation Space; and (iii) a two level subsurface parking garage for approximately 102 parking spaces at the reconfigured 50 Rogers Street parcel (without increasing the number of project-authorized parking spaces).

As discussed below, the proposed changes to the Special Permit do not change the findings of the Binney Street Project Transportation Impact Study (TIS) certified by the City of Cambridge Traffic, Parking and Transportation Department (TP&T) on November 19, 2009 which studied the mixed-use development known as Alexandria Center at Kendall Square (ACKS). The proposed project is estimated to have a slight increase in the overall vehicle trips in the morning peak hour (11 trips) and have no change in the overall vehicle trips during the evening peak hour. Based on this minor change to trip generation in the morning peak hour, we expect there to be no measurable impact to area roadway operations.

## Background

In 2010, the Planning Board granted the Special Permit authorizing approximately 1.53 million SF of commercial space and 220,000 SF of residential housing at six development sites as part of a mixed-use development. The project includes four new state-of-the-art sustainable buildings, two residential buildings, and adaptive reuse of three existing buildings. ARE and its affiliates also agreed to convey, among other things, land for Rogers Street Park and Triangle Park to the City, contribute \$9.5 million for future development of the parks, and construct improvements to Binney Street.

ARE has substantially completed construction of buildings at 50 Binney Street, 100 Binney Street, 75/125 Binney Street, 225 Binney Street (including adaptive reuse of two existing buildings) and the residential building at 270 Third Street totaling more than 1.47 million SF of commercial space and about 88,000 SF of residential space. ARE also has conveyed to the City land for Rogers Street and Triangle Parks, contributed \$9.5 million for design and construction of the parks and substantially completed the Binney Street improvements.

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Next steps in project implementation are planned to include construction of the approximately 133,000 SF of residential housing at 50 Rogers Street and adaptive reuse of 161 First Street, both of which are the subject of this technical memorandum.

## Proposed Changes to Final Development Plan

The previously-approved ACKS Final Development Plan includes the adaptation of the existing 161 First Street for re-use as a residential building with a new residential annex constructed to the west of the existing building. ARE proposes to create two new lots at the 161 First Street development site, creating a separate parcel to be known as 50 Rogers Street and a parcel to be known as 161 First Street. Instead of developing residential use on the entire 161 First development site, as previously contemplated, ARE proposes to consolidate the balance of the project-related residential development at 50 Rogers Street and adapt the existing building at 161 First Street (excluding the annex portion which will be demolished) for non-residential use. A two-level subsurface parking garage for approximately 102 parking spaces also is proposed at 50 Rogers Street for the residents above. Tenants of 161 First Street will park within the existing garages at 50/60 Binney and 75/125 Binney. An updated site plan and parking supply figure are attached to this memo.

Table 1 below shows a comparison of the project program for the 161 First Street development site as studied in the TIS to the current project program for 50 Rogers Street and 161 First Street.

**Table 1 Project Program Comparison**

	<b>2009 Approved Binney Street TIS 161 First Street</b>	<b>2018 Proposed 50 Rogers Street/ 161 First Street</b>
<b>Residential Use</b>	150 units (150,000 SF)	Approx. 136 units (approx. 133,000 SF)
<b>Non-Residential Use</b>	None	Approx. 30,300 SF
<b>On-Site Vehicle Parking</b>	None	102 spaces <sup>2</sup>
<b>Off-Site Vehicle Parking</b>	150 Spaces <sup>1</sup>	18 spaces <sup>3</sup>

Source: VHB, 2009 Binney Street Project TIS

1. Parking provided in 75/125 Binney Garage
2. Parking provided at proposed 50 Rogers Garage
3. Parking provided in 50/60 Binney and 75/125 Binney garages

The 2009 Approved TIS studied a 150,000 SF (150 units) residential building on the 161 First Street site with 150 parking spaces provided in the 75/125 Binney Garage. The proposed residential program includes approximately 136 units with 102 parking spaces (0.75 spaces per unit) for vehicles in a two-level below grade garage on-site and 142 long-term bicycle parking spaces. As part of a previously approved minor amendment to the Special Permit, ARE applied for the residential parking ratio to be reduced from 1.0 space per unit to 0.75 space per unit. The existing 161

First Street building will be renovated and continue to be used as technical office space (approx. 30,300 SF), of which 10,000 SF will be Innovation Space (which is exempt from GFA per Cambridge Zoning Ordinance). Eighteen (18) parking spaces (0.9 spaces/1000 SF of office) for the 161 First Street building will be provided in a combination of the 75/125 Binney and the 50/60 Binney garages.

### Mode Share and Average Vehicle Occupancy Update

The Approved TIS used mode share and average vehicle occupancy (AVO) characteristics for the project derived from both PTDM Data as well as 2000 US Census Raw Data for Census Tract 3523/3521. Since that filing, more recent mode shares and AVO data has become available that better represents current commuting trends. Updated information was taken from the Kendall Square Central Square Planning Study (K2C2) and a recent nearby project - the KSURP Infill Development Concept Plan TIS – which was certified by the City of Cambridge Traffic and Parking Department on July 14, 2016. A comparison of mode shares and AVO can be found in Tables 2 and 3, respectively.

**Table 2 Mode Share Comparison**

	Residential Use	
	Approved Binney Street TIS	Proposed 50 Rogers
<b>Auto (SOV)</b>	38.4%	28.8%
<b>Auto (HOV)</b>	6.9%	3.3%
<b>Transit</b>	24.5%	30.0%
<b>Bicycle</b>	6.2%	10.0%
<b>Walk</b>	24.0%	25.0%
<b>Work from Home/Other</b>	0.0%	3.0%

Sources: KSURP Infill Development Concept Plan TIS, K2C2 Study, 2009 Binney Street Project TIS

**Table 3 Average Vehicle Occupancy (AVO) Comparison**

	Residential Use	
	Approved Binney Street TIS	Proposed 50 Rogers
<b>National AVO</b>	1.08	1.13
<b>Local AVO</b>	1.12	1.11

Source: KSURP Infill Development Concept Plan TIS, 2009 Binney Street Project TIS

As seen in Table 2, the area has continued to become less dependent on automotive use as walk, bicycle and transit use have become a more common option for residents.

To most accurately estimate trips from the proposed development, the proposed 50 Rogers Street mode shares and AVO are used for the trip generation and expected impact analysis presented in this memo.

### Trip Generation Comparison

#### 2009 Approved TIS 161 First Street Trip Generation

As described above and in the Approved TIS, the original Special Permit called for the existing non-residential use to be completely removed from the project site and replaced with residential uses. For this reason, the Approved TIS took an existing vehicle trip generation credit (based on actual driveway counts) for the removal of the existing non-residential use and on-site parking facilities. To estimate the future trip generation of the residential use, the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (7th Edition) Land Use Code (LUC) 220 - Apartment was used. A summary of the Approved TIS 161 First Street trip generation during peak periods is summarized below in Table 4, including the vehicle trip credit taken.

**Table 4      Approved TIS 161 First Street Trip Generation Summary**

		<b>161 First Street Residences (150 units)</b>				<b>Non-Residential Auto Credit (vehicles)</b>
		<b>Auto (vehicles)</b>	<b>Transit (person)</b>	<b>Walk (person)</b>	<b>Bike (person)</b>	
<b>Morning Peak Hour</b>	In	7	4	4	1	(-20)
	<u>Out</u>	<u>27</u>	<u>16</u>	<u>16</u>	<u>4</u>	<u>(-2)</u>
	Total	34	20	20	5	(-22)
<b>Evening Peak Hour</b>	In	28	17	17	4	0
	<u>Out</u>	<u>15</u>	<u>9</u>	<u>9</u>	<u>2</u>	<u>(-12)</u>
	Total	43	26	26	6	(-12)

Source: 2009 Binney Street Project TIS

A summary of the 2009 Approved TIS net-new vehicle trip generation is presented in Table 5. The net-new vehicle trip estimates included the new 161 First St residential building trip generation minus the existing site vehicle trip credit.

**Table 5 Approved TIS 161 First Street Net-New Vehicle Trip Generation**

<b>Approved TIS 161 First Street (150 units)</b>		
<b>Morning Peak Hour</b>	In	(-13)
	<u>Out</u>	<u>25</u>
	Total	12
<b>Evening Peak Hour</b>	In	28
	<u>Out</u>	<u>3</u>
	Total	31

Source: 2009 Binney Street Project TIS

Proposed 50 Rogers and 161 First Street Trip Generation

The Proposed 50 Rogers Street/161 First Street project plans to maintain a portion of the technical office use in a renovated 161 First Street building and construct a new residential building of approximately 136 units at 50 Rogers Street. The trip generation methodology for the proposed project is outlined below:

1. 50 Rogers Street Residential Building: This analysis is based on the latest program of 136 residential units, an updated version of the ITE *Trip Generation Manual* (9th Edition) LUC 220 and current mode shares/AVO as shown in Tables 2 and 3. These trips are new trips to the roadway network.
2. 161 First Street - Elimination of the Auto Trip Credit: In the Approved TIS, an auto trip credit was taken out of the study area roadway network based on actual driveway counts (See Non-Residential Auto Credit in Table 4). Although a portion of the existing building will be demolished as part of the Project and decrease in size from 37,300 SF to approx. 30,300 SF, all the previously taken trip credits associated with the 161 First Street parking lot have been restored to the traffic analysis to be conservative. These trips are existing trips within the roadway network and are not new trips.

The peak period trip generation estimate for the proposed 50 Rogers Street/161 First Street project is summarized in Table 6.

**Table 6 Proposed 50 Rogers St/161 First St Project Trip Generation Summary**

		<b>Proposed 50 Rogers Street Residences New Trips (136 units)</b>				<b>Existing Non-Residential Auto (vehicles)</b>
		<b>Auto (vehicles)</b>	<b>Transit (person)</b>	<b>Walk (person)</b>	<b>Bike (person)</b>	
<b>Morning Peak Hour</b>	In	5	5	4	2	20
	<u>Out</u>	<u>18</u>	<u>19</u>	<u>16</u>	<u>6</u>	<u>2</u>
	Total	23	24	20	8	22
<b>Evening Peak Hour</b>	In	20	20	17	7	0
	<u>Out</u>	<u>11</u>	<u>11</u>	<u>9</u>	<u>4</u>	<u>12</u>
	Total	31	31	26	11	12

A summary of net-new vehicle trip generation is presented in Table 7. As previously mentioned, the Approved TIS net-new vehicle trip estimates include the 161 First Street residential building trip generation and take an existing site vehicle trip credit. The proposed 50 Rogers Street/161 First Street project net-new vehicle estimates solely includes the new residential building trip generation.

**Table 7 Project Net-New Vehicle Trip Generation Comparison**

		<b>Approved Binney Street TIS 161 First Street</b>	<b>Proposed 50 Rogers / 161 First Street</b>	<b>Difference</b>
<b>Morning Peak Hour</b>	In	(-13)	5	18
	<u>Out</u>	<u>25</u>	<u>18</u>	<u>(-7)</u>
	Total	12	23	11
<b>Evening Peak Hour</b>	In	28	20	(-8)
	<u>Out</u>	<u>3</u>	<u>11</u>	<u>8</u>
	Total	31	31	0



## Conclusion

As shown in Table 7, peak hour vehicle trips are expected to increase slightly in the morning peak hour (11 trips) and have no change during the evening peak hour. Based on these minor changes to trip generation, we expect there to be no measurable impacts to area roadway operations.

As part of the Special Permit mitigation requirements, ARE, in coordination with TP&T, developed a neighborhood traffic monitoring and parking and transportation demand management (PTDM) program for the ACKS Project. These are completed annually, with the last submitted to the City in October 2017. Based on this and previous reports, current (counted) vehicle trips made during the peak hours appear to be lower than what was estimated in the 2009 Approved TIS, which was based on ITE methodology. Current building tenants are also meeting their PTDM target goal for the single occupancy vehicles mode share. ARE, working with the City, will continue to monitor the ACKS Project's trip generation consistency with the TIS analysis and PTDM plan targets.

Please contact us if you would like to discuss the transportation impact comparison analysis presented in this memo.

## Special Permit 243 Vehicle Parking Space Allocation

50&60 Binney Street Garage Space Allocation	
Address	Spaces
50 & 60 Binney St	421
215 First St	302
100 Binney St	143
41 Linskey Way*	32
161 First St	1
<b>Total Spaces</b>	<b>899</b>

\* Building still being designed

75/125 Binney Street Garage Space Allocation	
Address	Spaces
75/125 Binney St	304
270 Third St	76
161 First St	17
<b>Total Spaces</b>	<b>397</b>

225 Binney Street Garage Space Allocation	
Address	Spaces
225 Binney Street	268
<b>Total Spaces</b>	<b>268</b>

100 Binney Street Garage Space Allocation	
Address	Spaces
100 Binney Street	185
<b>Total Spaces</b>	<b>185</b>

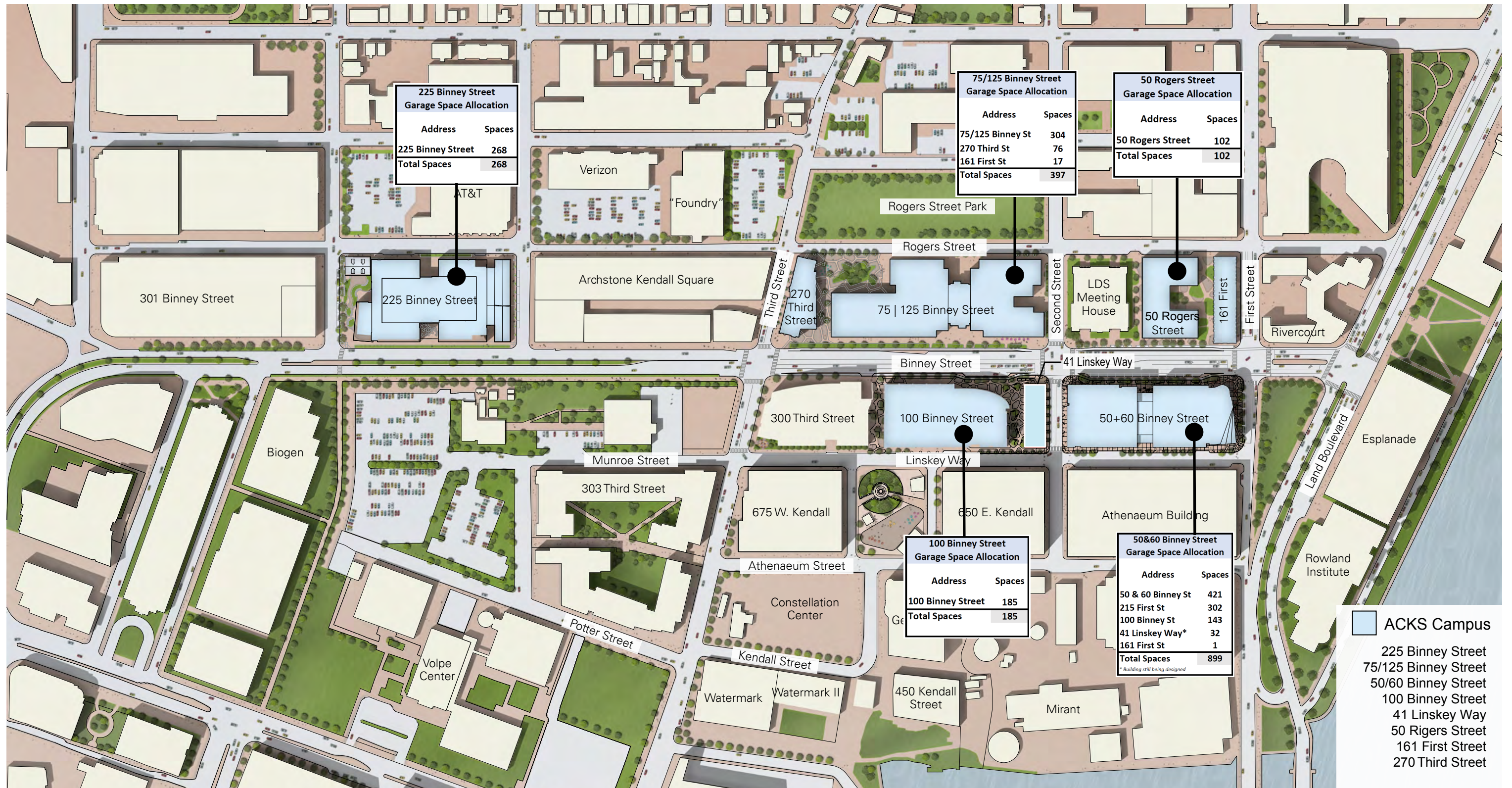
50 Rogers Street Garage Space Allocation	
Address	Spaces
50 Rogers Street	102
<b>Total Spaces</b>	<b>102</b>

<b>ACKS Total Vehicle Parking Spaces =</b>	<b>1851</b>
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**Note:**

The April 14, 2015 Amendment #1 (Minor) reduced the maximum required number of parking spaces to 1,847, which was calculated as 0.9 spaces per 1,000 SF of commercial use and 0.75 spaces per residential unit (at least 220,000 SF) + 302 spaces for the Athenaeum building. As the estimated number of residential units has increased from 220 to 227 project-wide, the total maximum/required number of parking spaces is expected to increase from 1,847 to 1,851 project-wide.

# ACKS CAMPUS PLAN





2/15/2018

Constructed/Planned Parking Space Distribution								
Parcel	Building Program (SF)		Garage Capacity on Parcel	Parking Demand & Parcel Allocation			Surplus/Deficit	Notes
	Commercial	Residential		On-Parcel Supply	Off-Parcel Supply	Total Demand		
225 Binney Street	297,687 built	0	268 built	268	0	268	0	
50/60 Binney Street	467,509 built	0	899 built	421	0	421	478	302 spaces to be used by 215 First 143 spaces to be used by 100 Binney 32 spaces to be used by 41 Linskey 1 spaces to be used by 161 First Street
215 First Street	0	0	0	0	302 (at 50/60 Binney)	302	-302	302 spaces to be parked at 50/60 Binney
100 Binney Street	364,942 built	0	185 built	185	143 (at 50/60 Binney)	328	-143	143 spaces to be parked at 50/60 Binney
75/125 Binney Street	338,262 built	0	397 built	304	0	304	93	69 spaces to be used by 270 Third Residents 7 spaces to be used by 270 Third Retail 17 spaces to be used by 161 First
270 Third Street	8,058 built & sold	87,799 (91 units)	0	0	76 (at 75/125 Binney)	76	-76	69 spaces residential to be parked at 75/125 Binney 7 spaces retail to be parked at 72/125 Binney
41 Linskey*	36,393 under design	0	0	0	32 (at 50/60 Binney)	33	-33	32 spaces to be parked at 50/60 Binney
161 First Street**	20,319 under design		0	0	18 (1 spaces at 50/60 Binney St + 17 spaces at 75/125 Binney)	18	-18	17 spaces to be parked at 75/125 Binney 1 space to be parked at 50/60 Binney
50 Rogers		132,231 (136 units)	102 under design	102		102		Residential building to be self parked
	<b>1,533,170</b>	<b>220,030</b>		<b>1,280</b>	<b>571</b>			
<b>Total</b>	<b>1,753,200</b>			<b>1,851</b>		<b>1,852</b>	<b>-1</b>	

Notes:

Assumes commercial parking ratio of 0.9 spaces/1,000 sf

Assumes residential parking ratio of 0.75 spaces/unit for 161 First Street and 270 Third Street

Total non-residential GFA allowed by Zoning - 1,533,200

Total residential GFA allowed by Zoning - 220,000

\*41 Linskey is in development and GFA is TBD, based on Zoning allowed up to 36,393 SF

\*\*10,000 of innovation spaces exempt from GFA and parking