



# CITY OF CAMBRIDGE TRAFFIC, PARKING, + TRANSPORTATION

## MEMORANDUM

**To:** Cambridge Planning Board

**From:** Joseph E. Barr, Director *JB*

**Date:** November 27, 2019

**Subject:** 87-101 Cambridgepark Drive, HCP/ King 101 CPD LLC (PB#354)

The Cambridge Traffic, Parking, and Transportation Department (TP+T) has reviewed the Transportation Impact Study (TIS) and Special Permit Application for the proposed 87-101 Cambridgepark Drive project by HCP/King 101 CPD LLC.

The existing 97 Cambridgepark Drive parcel contains a 63,851 square foot office/lab building and 111 surface parking spaces. The existing building's address is 87 Cambridgepark Drive. The Applicant proposes to maintain the existing building and construct a new 141,834 square foot technical office building with ground floor retail on the site located in front of the existing building.

As shown in Table 1, the project proposes 254 total parking spaces. Parking would be located in a 247 space below-grade garage and 7 on-site surface parking spaces. One question that the Applicant needs to clarify is why the Special Permit Application Dimensional Form indicates 143 spaces for 101 Cambridgepark Drive while page 13 in the Special Permit application indicates 146 spaces will serve the tenants and visitors to the new building. It should be clarified whether the project proposes 143 or 146 parking spaces.

**Table 1**

Existing Conditions				
Address	Land Use	SF	Parking Spaces	Parking Ratio
87 CPD	Office/Lab	63,851	111	1.7

  

Proposed Conditions				
87 CPD	Office/Lab	63,851	111	1.6
101 CPD	Office/Lab	139,131	143*	1.1
	Retail/Restaurant	2,703		
<b>Full Site</b>	<b>Total</b>	<b>205,685</b>	<b>254</b>	<b>1.2</b>

\* Subject to clarification as noted.

For both the existing and new building the project proposes a total of 64 long-term bicycle parking spaces and 28 short-term bicycle parking spaces, which meets bicycle zoning requirements. The Project also proposes 1 loading bay for the 87 Cambridgepark Drive building and 2 loading bays for the 101 Cambridgepark Drive building.

TP+T certified the Project's TIS as complete and reliable on September 11, 2019, following significant discussions and modifications to the traffic analysis. The TIS evaluated the area's transportation conditions at ten intersections, including the Project's trip generation and cumulative traffic impacts with other development projects as required in all Traffic Impact Studies. The TIS reviewed all modes of transportation (vehicle, transit, walking, and bicycling) and the Project's service and loading plan.

The TIS indicated that the project will generate a total of:

827 daily vehicle trips including, 111 AM and 79 PM peak hour vehicle trips,  
439 daily transit trips (54 AM / 40 PM peak hour transit trips),  
526 daily pedestrian trips (48 AM / 41 PM peak hour pedestrian trips),  
112 daily bicycle trips (14 AM / 10 PM peak hour bicycle trips),

It should be noted that the TIS analyzed a slightly different square footage compared to the current Special Permit application. For example, the TIS analyzed a 146,000 square feet office/lab building and 4,000 square feet ground floor retail space compared to the current proposed 139,131 square feet office/lab building and 2,703 square feet of ground floor retail space. TP+T believes that these differences do not change the overall traffic impact findings reported in the TIS.

The TIS indicated that the Planning Board Special Permit transportation criteria were exceeded in 18 instances. Two exceedances were due to vehicle queues during the peak hours at 1. Cambridgepark Drive at Steel Place and 2. Alewife Brook Parkway at Rindge Avenue. More specifically, the traffic model showed 8 more vehicles added to the queue during the PM peak hour for the Cambridgepark Drive eastbound approach to Steel Place, and 15 more vehicles were added to the queue during the AM peak hour for Alewife Brook Parkway northbound at Rindge Avenue.

Fifteen exceedances were due to Pedestrian Level of Service (PLOS) during peak hours at nine study area intersections. The exceedances were due mostly because of existing PLOS E or F, which trigger the transportation criteria threshold.

The TIS includes maps and tables showing the differences in vehicle and pedestrian delays at intersections between the Existing and Build condition (i.e., delay due to project trips) and between Existing and a 5-Year Future condition (i.e., delay due to project trips, cumulative impacts with other development project trips, and a background growth rate of 0.5% per year for five years).

The TIS found that during the morning and evening peak hours for the Build condition, the Project impacts are no greater than 10 seconds of delay at most of the study area intersections due to the project trips. Looking forward five years and taking into account other development projects and an assumed 0.5% traffic growth rate per year, the 5-Year Future conditions could see an increase in delay of an additional 20 to 30 seconds, such as at Cambridgepark Drive at Steel Place, Cambridgepark Drive at Alewife Brook Parkway, and Alewife Brook Parkway at Rindge Avenue. However, as stated by TP+T in

the past memorandums to the Planning Board, traffic models and assumptions tend to be conservative and generally represent worst-case scenarios. Nonetheless, traffic is congested during the peak hours in the Alewife area and the proposed Project will add additional vehicle trips.

In addition to vehicle and pedestrian analysis, the TIS included bicycle analysis and a detailed transit analysis. The bicycle analysis documented conflicting bicycle and vehicle movements (i.e., intersections or driveways where vehicles cross bicycle paths). The transit analysis focused on the Alewife MBTA station, not on the overall Red Line system capacity. Because the Alewife MBTA station is a terminus station, the TIS shows there is available capacity for passengers boarding a train in the morning and evening peak hours and getting off the train in the evening peak hour at Alewife Station. Farther down the line, however, the Red line gets very crowded, as is well known. However, with the 252 new Red Line cars scheduled to be delivered by 2023-2024, along with improvements in signal equipment, Red Line train headways will be able to be decreased from about 4.5 minutes to 3 minutes, significantly increasing capacity.

The full Planning Board criteria summary sheet is attached. TP+T offers the Planning Board the following initial comments:

### **1.0 General Comments**

Three positive elements for the proposed Project are its nearness to the MBTA Alewife Red Line Station, which makes it a transit-oriented project; the proposed connection to the Fitchburg Cut Off multi-use path, which improves the site's bicycle and pedestrian access and overall bicycle and pedestrian network connectivity for the area; and closing a curb cut on Cambridgepark Drive, which will reduce a conflict point between vehicles, pedestrians and bicyclists along Cambridgepark Drive.

At the same time, the Project will add additional vehicle trips to the area roadways. Furthermore, because it is a commercial building, compared to a residential building, the project's vehicle trips will be in the peak traffic flow direction (i.e., entering Cambridgepark Drive in the morning and exiting in the evening), as compared to residential buildings that have some level of reverse commute characteristics, (i.e., exiting Cambridgepark Drive in the morning and enter in the evening) and which help transition the Alewife area to a mixed-use district

People likely to be most negatively impacted from this project are those working farther west on Cambridgepark Drive and driving home in the evening peak hour because the proposed Project will add more vehicles onto Cambridgepark Drive in the eastbound direction toward Alewife Brook Parkway. People walking or biking will also be impacted because of increased conflicts and lower levels of comfort due to additional automobile trips. In the evening peak hours, Cambridgepark Drive eastbound queues extend to and sometime past this project. The best way to mitigate the impact is to reduce the number of parking spaces at the site (see additional information below), which will then reduce the vehicle trip generation.

## 2.0 Site Plan and Access

As stated above, two existing site access driveways will be consolidated into one driveway. TP&T supports this change because reducing curb cuts is a safety improvement by reducing conflict points.

The proposed bicycle and pedestrian path connecting the Fitchburg Cut-Off Path and Cambridgepark Drive is positive and strongly supported by TP+T. Some modifications are needed to strengthen this proposal:

- The path design and width need to approve by the City. The 2' offsets can be any level material, including grass. Root barriers may be required. The path may be permeable asphalt.
- In order to make a safe, useable and viable connection, the path must be off-road. It is not acceptable to have users travel along a heavily used driveway with large truck/vehicle traffic. Ideally the proposed alignment along the MBTA property will be approved, but if not, then the path must continue on the proponent's property. This will involve exploring the feasibility of a redesign of the driveway.
- The final path design should be explicitly and clearly permitted for public bicycle and pedestrian access, maintained by the Applicant (i.e., debris, snow, and ice removal) and lighted. The final design should be approved by the City prior to an issue of Building Permit and open at the same time as issuance of a Certificate of Occupancy.

TP+T supports the service and loading plan because that activity will all be accommodated on site.

## 3.0 Auto Parking

The current project site has a 63,851 square foot office/laboratory building with 111 surface parking spaces or 1.7 spaces per 1,000 sf. The site has more parking spaces than needed because the TIS indicated that the peak parking utilization is 90 parking spaces or 1.4 spaces per 1,000 sf. The building was built in 1985 so the parking supply is reflective of that time period when ample parking was common for suburban-type office park development on Cambridgepark Drive. The parking utilization is also likely high because of free parking and limited Transportation Demand Management Measures provided to employees.

The Applicant is requesting 143 net new parking spaces or approximately 1.0 spaces per 1,000 square feet for the proposed 141,834 square foot building.

For comparison, the City's recently published 2019 Alewife District Plan would recommend a maximum of 115 net new parking spaces for the building as shown in Table 2.

**Table 2**

**Alewife District Plan Recommended Zoning Parking Ratios**

Land Use	SF	Parking Ratio	Parking Spaces
Office/lab	139,131	Max. 0.8 spaces/1,000 sf	111
Retail	2,703	Max. 1.5 spaces/1,000 sf	4
<b>Total</b>	<b>141.834</b>		<b>115</b>

Because the Alewife District Plan has not yet been incorporated into zoning, the current existing zoning results in a minimum of 137 parking spaces for the new building as shown in Table 3. TP+T generally recommends that minimum parking ratios should be the maximum number of parking spaces provided for any new project.

**Table 3**

**Current Zoning Minimum Parking Ratios**

Land Use	SF	Parking Ratio	Parking Spaces
Office/lab	139,131	Min. 0.95 spaces/1,000 sf	133
Retail	2,703	Min. 1.4 spaces/1,000 sf	4
<b>Total</b>	<b>141.834</b>		<b>137</b>

The difference between the 143 parking spaces proposed by the Applicant and current minimum zoning parking is only 6 spaces (143 spaces vs. 137 spaces). However, for the overall site the difference is significant because of the site's existing high parking ratio. Table 4 shows the proposed project compared to Alewife District Plan's recommended parking ratios and compared to the current zoning minimum parking ratios for a total build out of the site.

**Table 4**

**Comparison of Parking Spaces for Total Site Build Out**

Site	Proposed Spaces	Alewife District Plan Proposed Parking Ratios	Spaces based on Current Minimum Zoning
Current Site	111	51 <sup>1</sup>	61 <sup>2</sup>
Proposed Building	143	115 <sup>3</sup>	137 <sup>4</sup>
<b>Total Build Out</b>	<b>254</b>	<b>166</b>	<b>198</b>

1. Existing 87 Cambridgepark Drive building (63,851 sf @ 0.8 spaces/1,000 sf)
2. Existing 87 Cambridgepark Drive building (63,851 @ 0.95 spaces/1,000 sf)
3. See Table 2
4. See Table 3

For the proposed 101 Cambridgepark Drive building, as a starting point, TP+T recommends the building not exceed current zoning minimum parking ratios (i.e., 0.95 spaces/1,000 sf for R&D use) which is 137 parking spaces (compared the proposed 143 parking spaces).

Furthermore, in addition to the final number of parking space for the new building, the Planning Board members may want to ask the Applicant for more information about the necessity to maintain the existing 111 parking spaces, such as more information on the existing parking lease agreement terms and timeline. Planning Board members may also want to ask the Applicant about establishing a path forward to reduce the site's overall number of parking spaces to better align with current minimum parking zoning (i.e., 198 spaces) and to achieve the Alewife District Plan's recommended parking ratios (i.e., 166 build out parking spaces). Such as mechanism might also be explored as part of the PTDM Plan. However, this may be difficult to achieve if the Project builds a 247 space below-grade parking garage now.

#### **4.0 Bicycle Parking**

TP+T supports the Projects' bicycle plan which will meet the zoning required bicycle parking spaces for both buildings by providing 64 long-term and 28 short-term bicycle parking spaces. All short-term bicycle parking spaces will be located on the Project's property.

Because the traffic counts for the TIS were done in December 2018, the Applicant should re-do peak hour counts for bicyclists and pedestrians as recommended and generally required in the TP+T's TIS Guidelines.

#### **5.0 Transportation Mitigation:**

TP+T provides the following initial recommendations for transportation mitigation to off-set the project's transportation impacts.

Item#	Transportation Mitigation	Due Date
1	As recommended in the Alewife District Plan, the Applicant should provide a one-time \$5 per square foot contribution to the City toward the Alewife Pedestrian Bicycle Bridge or other Transportation Improvements in Alewife Area. (example: 141,834 sf x \$5/SF =\$709,170)	Prior to the issuance of the Building Permit.
2	Contribute \$140,000 to the City toward planning, design and or installation of transportation improvements in the Alewife District, such as advancing the redesign of Cambridgepark Drive between Steel Place and Alewife Brook Parkway/Rindge Avenue.	Prior to the issuance of the Building Permit.
3	To prevent vehicles from stopping or parking in the existing bicycle lane in front of the site, the Project should replace the bicycle lane in frontage of the site with a raised protected cycle track as approved by TP+T, CDD, DPW and the Conservation Commission. The Permittee shall also be required to maintain the raised bicycle lane free of snow or debris unless and until the Department of Public Works (DPW) relieves the Permittee of such obligation explicitly in writing. TP+T and DPW shall approve all final construction plans.	Design approved by the City prior to the issuance of a Building Permit. Completed prior to issuance of an Occupancy Permit.
4	Fund and install a Bluebikes bikesharing station as required in the PTDM plan with location approved by the City.	Prior to issuance of an Occupancy Permit.

### 6.0 PTDM Plan

Because the project proposes adding new parking spaces to the site, it is required to complete a Parking and Transportation Demand Management Plan (PTDM). The PTDM will include the Transportation Demand Management (TDM) measures and a transportation monitoring requirement that the Applicant will be required to implement to meet a single occupancy (SOV) mode share goal, which will also minimize and off-set the Project's traffic impacts.

**PROJECT**

Project Name: 101 Cambridgepark Drive Development  
 Project Address: 101 Cambridgepark Drive  
 Cambridge, MA 02138  
 Owner/Developer Name: King Street Properties, Inc.  
 Contact Person: Tyson Reynoso  
 Contact Address: King Street Properties  
 800 Boylston Street, Suite 1570  
 Boston, MA 02199  
treynoso@ks-prop.com  
 Contact Phone Number: (617) 910-5504

**SIZE (New Building)**

ITE sq. ft. : 146,000 SF  
 Land Use Type: Research & Development  
 ITE sq. ft. : 4,000 SF  
 Land Use Type: Retail/Restaurant  
 (LUC 932 – High-Turnover (Sit-Down) Restaurant)

**PARKING**

Existing Parking Spaces: 111 Use: Office/Lab  
 Net New Parking Spaces: 158 Use: Office/Lab  
 Total Parking Spaces: 269

**TRIP GENERATION\*:**

	<b>Daily</b>	<b>Morning Peak Hour</b>	<b>Evening Peak Hour</b>
Total Trips	2,009		
SOV	807	109	77
HOV	20	2	2
Transit	439	54	40
Bike	112	14	10
Walk	526	48	41
Other	105	14	10

**MODE SPLIT (Person Trips)**

	<b>R &amp; D</b>	<b>Retail/Restaurant</b>
SOV	58%	18%
HOV	2%	2%
Transit	23%	20%
Bike	6%	5%
Walk	4%	52%
Other	7%	3%

**TRANSPORTATION CONSULTANT**

Company Name: VHB  
 Contact Name: R. David Black  
 Contact Phone Number: 617-607-2906  
 Date of Building Permit Approval: \_\_\_\_\_



**Planning Board Criteria**

**Total Data Entries = 139**

**Total Number of Criteria Exceedances = 18**

**Criteria A – Project Vehicle Trip Generation**

Time Period	Criteria (trips)	Build	Exceeds Criteria?
Weekday Daily	2,000	827	No
Weekday Morning Peak Hour	240	111	No
Weekday Evening Peak Hour	240	78	No

**Criteria B – Vehicular LOS**

Intersection	Morning Peak Hour				Evening Peak Hour			
	Existing Condition	Build Condition	Traffic Increase	Exceeds Criterion?	Existing Condition	Build Condition	Traffic Increase	Exceeds Criterion?
Cambridgepark Drive/125 Cambridgepark Drive West Driveway	B	B	0%	No	B	B	0%	No
Cambridgepark Drive/125 Cambridgepark Drive East Driveway	C	C	0%	No	C	C	0%	No
Cambridgepark Drive/Site West Driveway	C	D	8%	No	C	D	20%	No
Cambridgepark Drive/Site East Driveway	C	C	17%	No	C	C	16%	No
Cambridgepark Drive/Steel Place	C	C	9%	No	D	D	7%	No
Cambridgepark Drive/Alewife Brook Parkway	F	F	2%	No	D	E	2%	No
Alewife Brook Parkway/Rindge Avenue	F	F	2%	No	D	D	1%	No
Steel Place/Alewife Station Access Road (Route 2 Connector)	F	F	2%	No	F	F	1%	No
Alewife Brook Parkway at Route 2/16	E	E	0%	No	D	D	1%	No
Fresh Pond Rotary	F	F	2%	No	F	F	1%	No

**Criteria C – Traffic on Residential Streets**

Roadway	Segment	Amount of Residential	Morning Peak Hour			Evening Peak Hour		
			Existing <sup>1</sup>	Increase <sup>2</sup>	Exceeds Criteria?	Existing <sup>1</sup>	Increase <sup>2</sup>	Exceeds Criteria?
Cambridgepark Drive	West of 125 Cambridgepark Drive West Driveway	> 1/3 but < 1/2	203	0	No	117	0	No
	Between 125 Cambridgepark Drive West Driveway and East Driveway	1/3 or less	426	0	No	265	0	No
	Between 125 Cambridgepark Drive East Driveway and Site West Driveway	1/3 or less	427	0	No	288	0	No
	Between Site West Driveway and Site East Driveway	1/3 or less	429	-2	No	323	-35	No
	Between Site East Driveway and Steel Place	1/3 or less	663	111	No	489	79	No
	Between Steel Place and Alewife Brook Parkway	1/3 or less	983	88	No	1,087	63	No
Steel Place	Between Cambridgepark Drive and Alewife Station Access Road	1/3 or less	878	22	No	1,002	16	No
	North of Alewife Station Access Road	1/3 or less	1,052	15	No	1,058	2	No
Rindge Avenue	West of Alewife Brook Parkway	1/2 or more	948	10	No	683	2	No
Concord Avenue	West of Fresh Pond Rotary	1/3 or less	1,610	24	No	1,057	18	No
	East of Fresh Pond Rotary	1/3 or less	3,410	39	No	2,844	27	No
Alewife Brook Parkway	Between Fresh Pond Rotary and Rindge Avenue	1/3 or less	3,157	63	No	2,791	45	No
	Between Rindge Avenue and Cambridgepark Drive	1/3 or less	3,738	73	No	3,121	47	No
	Between Cambridgepark Drive and Route 2/16 Interchange	1/3 or less	3,643	16	No	2,950	16	No
	North of Route 2/16 Interchange	1/3 or less	2,290	14	No	2,495	11	No
Route 2	West of Route 2/16 Interchange	1/3 or less	4,433	10	No	4,699	18	No

Roadway	Segment	Amount of Residential	Morning Peak Hour			Evening Peak Hour		
			Existing <sup>1</sup>	Increase <sup>2</sup>	Exceeds Criteria?	Existing <sup>1</sup>	Increase <sup>2</sup>	Exceeds Criteria?
Alewife Station Access Road	Between Route 2/16 Interchange and Steel Place	1/3 or less	257	8	No	930	14	No

1 Where driveways/on-street parking created a segment inflow/outflow volume imbalance, an average was calculated per direction and added  
 2 New project trips

**Criteria D – Lane Queue (for signalized intersections)**

Intersection	Lane	Morning Peak Hour			Evening Peak Hour		
		2018 Existing	2018 Build	Exceeds Criteria?	2018 Existing	2018 Build	Exceeds Criteria?
Cambridgepark Drive/Steel Place	Steel Place NB L/T/R	2	1	No	2	2	No
	Steel Place SB L	4	4	No	28	29	No
	Steel Place SB L/T/R	8	9	No	28	30	No
	Cambridgepark Drive EB L/T/R	4	5	No	26	34	Yes
	Cambridgepark Drive WB L/T	6	7	No	4	4	No
	Cambridgepark Drive WB R	4	4	No	2	2	No
Cambridgepark Drive/Alewife Brook Parkway	Alewife Brook Parkway NB L	6	8	No	5	5	No
	Alewife Brook Parkway NB T	5	6	No	8	8	No
	Alewife Brook Parkway SB T	38	38	No	30	36	No
	Cambridgepark Drive EB	4	5	No	18	18	No
Alewife Brook Parkway/Rindge Avenue	Alewife Brook Parkway NB	14	29	Yes	11	10	No
	Alewife Brook Parkway SB	5	5	No	11	11	No
	Rindge Avenue WB L	18	17	No	8	6	No
	Rindge Avenue WB R	71	71	No	22	18	No
Alewife Brook Parkway at Route 2/16	Alewife Brook Parkway (Signal 10b) NB L <sup>1</sup>	11	11	No	12	12	No
	Alewife Brook Parkway (Signal 10c) NB T <sup>1</sup>	4	4	No	3	3	No
	Alewife Brook Parkway (Signal 10b) SB T <sup>1</sup>	7	7	No	5	6	No
	Alewife Brook Parkway (Signal 10a) SB R <sup>1</sup>	7	7	No	8	7	No
	Route 2 (Signal 10b) EB L <sup>1</sup>	110 <sup>+2</sup>	110 <sup>+2</sup>	No	110 <sup>+2</sup>	110 <sup>+2</sup>	No
	Route 2 (Signal 10d) EB R <sup>1</sup>	110 <sup>+2</sup>	110 <sup>+2</sup>	No	110 <sup>+2</sup>	110 <sup>+2</sup>	No
	Alewife Station Exit Ramp (Signal 10c) WB T	3	4	No	8	9	No
	Alewife Station Exit Ramp (Signal 10c) WB R	1	1	No	3	3	No

Notes: Synchro provides queue data in feet, the table presents queue data in number of vehicles (1 vehicle = 25 ft)  
 Based on observations conducted by VHB on Tuesday, April 23, 2019 at most signalized intersections unless noted  
<sup>1</sup>Based on observations conducted by VHB on Thursday, December 6, 2019  
 Queue modeling was done using Sim Traffic  
<sup>2</sup> Due to limitations of both Synchro and SimTraffic, the presented SimTraffic modeled queues for this approach were approximated based on observations of the queuing as the model is running. Due to required model geometry, the SimTraffic reports underestimate the total length of the approach queues and is not presented above.  
 + Queues extend out of sight and may be longer

**Criteria E – Pedestrian Delay**

Intersection	Crosswalk	Morning Peak Hour			Evening Peak Hour		
		Existing	Build	Exceeds Criteria?	Existing	Build	Exceeds Criteria?
Cambridgepark Drive/ Steel Place	East	D	D	No	E	E	Yes
	West	D	D	No	E	E	Yes
	North	D	D	No	E	E	Yes
	South	D	D	No	E	E	Yes
Cambridgepark Drive/ Alewife Brook Parkway	No pedestrian facilities provided						
Alewife Brook Parkway/ Rindge Avenue	East	E	E	Yes	E	E	Yes
	South	E	E	Yes	E	E	Yes
Alewife Brook Parkway at Route 2/16	East	E	E	Yes	E	E	Yes
Cambridgepark Drive/ 125 Cambridgepark Drive West Driveway	West	B	B	No	A	A	No
	East	D	D	No	C	C	No
Cambridgepark Drive/ 125 Cambridgepark Drive East Driveway	West	D	D	No	C	C	No
Cambridgepark Drive/ Site West Driveway	West	D	-	No	C	-	No
	East	D	-	No	C	-	No
Cambridgepark Drive/ Site East Driveway	West	D	D	Yes	C	D	Yes
	East	F	F	Yes	E	E	Yes
Steel Place/Alewife Station Access Road (Route 2 Connector)	South	F	F	Yes	F	F	Yes

**Criteria E – Pedestrian and Bicycle Facilities**

Adjacent Street	Link (between)	Sidewalk or Walkway Present	Exceeds Criteria?	Bicycle Facilities or Right of Ways Present	Exceeds Criteria?
Cambridgepark Drive	Site Driveway	Yes	No	Yes	No