

February 16, 2021

Jennifer Raitt
Director of Planning and Community Development
Town of Arlington
730 Massachusetts Avenue Annex
Arlington, MA 02476

**Re: Thorndike Place – Arlington, MA
Mode Split and Transportation Demand Management Review**

Dear Ms. Raitt:

BETA Group, Inc. (BETA) has completed review of the ***Transportation Demand Management (TDM) Annual Report Summary – 2019*** prepared for the Windsor at Vox on 2 residential apartment complex in Cambridge, MA. The Vox on Two residential development directly abuts Route 2 opposite the proposed Thorndike Place residential development. This letter summarizes the TDM report prepared for the City of Cambridge, and provides parallels to the proposed Thorndike Place residential development where applicable based on the document summary, the Transportation Impact Assessment (TIA) prepared by Vanasse and Associates, Inc. (VAI) previously reviewed by BETA, and the responses to BETA's traffic peer review comments on the TIA.

The following documents form the basis of this review:

- ***Transportation Impact Assessment (TIA), Thorndike Place, Arlington Massachusetts***, dated November 2020 prepared by Vanasse & Associates, Inc. (VAI) of Andover, MA
- ***Response to Peer Review Comments***, dated January 15th, 2021 prepared by Vanasse & Associates, Inc. (VAI) of Andover, MA
- ***Response to Peer Review Comments – Traffic Impact Assessment***, dated January 25th, 2021 prepared by BSC Group of Boston, MA
- ***TDM Annual Report Summary – 2019***, dated 12/11/2019, prepared for Windsor at Vox on 2
- ***Town of Arlington Zoning Bylaw***, Adopted October 8, 1975 through Town Meeting of April 2016

This letter also makes reference to traffic peer review comments provided by BETA in an initial letter dated December 1, 2020 with further review response and resolution contained in a letter dated February 1, 2021. Specific references to comments by number refer to these letters.

MODE SPLIT AND TRIP GENERATION

The Vox on 2 residential development was discussed in the November 2020 TIA to determine comparable mode split for the Thorndike Place residential development. The existing Vox on 2 and proposed Thorndike Place developments both feature residential apartments in close proximity to the MBTA Alewife station, which provides Red Line subway and bus service. Vox on 2 provides 227 units, while the Thorndike Place development proposes 176 units. Walking distance to Alewife is slightly shorter from Vox on 2 than what would be required from Thorndike Place, but can be considered fundamentally similar. Both developments promote proximity to transit and use of alternate modes of transportation, including bicycles.

The TIA included mode split data from the 2019 TDM Annual Summary for Vox on 2, and applied said mode splits to ITE trip generation projections for Thorndike Place to determine the site-generated trips by mode. Vehicle trips include 39% single occupancy vehicle (SOV) trips and 6% high occupancy vehicle (HOV) trips. This differs from data available for Census Tract 3561, which identifies 43% SOV trips and 12% HOV trips. Comment T23 and the subsequent response are repeated here for reference:

T23. Modal split includes a 35% transit split in addition to bicycling and walking. Given the proximity to Alewife Station (0.8 miles), it is assumed that all transit trips will initially be Walk/Bike trips. Provide additional justification for walk/bike trips outside of transit trips.

VAI: The Vox on Two mode split survey indicates 19 percent of commuter's bike or walk to work. The US Census data for Census Tract 3561, the tract in which the Project site is located, indicates 6.1 percent of commuters bike and 0 percent walk. However, the Vox on Two survey also indicates 1 percent "other" trips while the census data indicates 7.8 percent "other" trips. The bicycle volumes are similar from both sources. Therefore, the estimated pedestrian volumes may be higher using the Vox on Two survey than that of the Census data, however, 8 percent of the 14 percent walking trips would be converted to other trips using the census data, leaving a 6 percent increase in the auto mode share. A 6 percent increase in auto mode share would increase the anticipated site volumes by 56 daily trips, 4 weekday morning peak-hour trips and 5 weekday evening peak-hour trips. The estimated bicycle volumes would be the same using either set of data and the pedestrian volumes are high using the Vox on Two data. However, the estimated vehicle volumes do not change significantly if the pedestrian mode share is reduced to 0 in the analysis.

The Census data reveals a total of 54.5% of trips using single or high occupancy vehicles, an increase of 9.5% over Vox on 2 survey data. It can also reasonably assumed that a percentage of the "other" trips include vehicle trips. At a conservative estimate of 10% increase in vehicle trips, this results in approximately 93 more weekday daily vehicle trips, 6 weekday morning peak hour trips (2 entering, 4 exiting), and 9 weekday evening peak hour trips (5 entering, 4 exiting) when compared to the Vox on Two split percentages.

The comment (and subsequent discussion with VAI, both directly and through Board hearings) suggests that the bike and walk splits in the Vox on 2 data may not be specifically applicable to Thorndike Place, as Vox on 2 has direct access to Cambridge Discovery Park, an office and research campus. Thorndike Place residents would need to cross Route 2 to access Cambridge Discovery Park, and no direct access is proposed from the Thorndike Place site to the existing pedestrian bridge over Route 2. As such, it is unlikely that the 14 percent walking trips reported for Vox on 2 would be realized for Thorndike Place. The VAI response and subsequent BETA response suggest that revisions to the mode splits would result in more vehicle trips, although the responses differ in the quantity of additional trips.

PARKING DEMAND

The 2019 TDM Summary for Vox on 2 provides data for residential SOV rate over time, rising from 30% in 2016 to 39% in 2019. A graph comparing commute mode over time illustrates that transit trips as a percentage of total trips reduced from 40% in 2018 to 35% in 2019, resulting in SOV trips exceeding transit trips in 2019. The summary notes that survey respondents are switching from transit to taxi and rideshare services due to perceived decreases in frequency and reliability of MBTA services. This further suggests that an expectation of additional vehicle trips is likely, even before considering the impact of the current COVID-19 pandemic on work, commute, and transit usage patterns.

Additional data contained in the 2019 TDM Summary for Vox on 2 should be carefully considered when comparing potential mode splits and parking utilization between the two residential developments. Vox on 2 contains 227 parking spaces for 227 units, a ratio of 1 parking space per unit. Thorndike Place proposes 239 spaces for 176 units, a ratio of 1.36 spaces per unit; comments from the Arlington Transportation Advisory Committee (TAC) and subsequent discussions between BETA, the Board and the Applicant team have suggested a reduction in parking. 2019 data for Vox on 2 identified 212 leased/occupied units and 208 leased/occupied spaces, a ratio of 0.98 spaces per leased/occupied unit. The document also states that Vox on 2 requires residents to pay \$185/month for a single parking space and \$215/month for a second car, while overnight guests pay \$5/day. These measures discourage auto ownership and parking demand at Vox on 2; the lack of comparable measures for Thorndike Place increase the potential for a greater reliance on the automobile, which increases parking demand and vehicle trip demand when compared to Vox on 2.

TDM MEASURES

The 2019 TDM Report summarizes and provides status updates of required TDM measures for Vox on 2. The following table summarizes said measures, and provides commentary on whether comparable measures are included for Thorndike Place based on the TDM measures presented in the TIA, and summarizes the potential impact on mode split and vehicle trips. Comparable measures in **BOLD** are proposed for Thorndike Place; BETA recommendations are included in **BOLD** parenthesis (**BOLD**).

Vox on Two TDM Measure	Thorndike Place Comparable Measure
1. Implement an annual transportation monitoring program.	Not included
2. Bicycle repair station with air pump in bicycle storage area.	Discussed, not formalized on plans. (Recommend to include)
3. 114 long-term bicycle parking spaces (weather-protected, secure).	Long-term bicycle parking spaces included, number of spaces not formally identified. (Recommend to include 100 weather-protected, secure bicycle parking spaces)
4. 12 short-term bicycle parking spaces (can be outdoors).	Short-term bicycle parking is proposed outside. Capacity was not formally identified.
5. 2 Carshare parking spaces available for use by general public. (1 space is provided by Vox on 2, as Zipcar will only support 1 space)	Carshare spaces not included. Discussion noted that rideshare (Uber/Lyft) has essentially replaced Zipcar and other carshare services. (BETA agrees with this assessment.)
6. New resident packet containing CitySmart kit and info on building manager programs to support use of all transportation options.	Provide new residents transportation information packets with information on getting around Arlington sustainably.
7. Transportation Information Center (iPad kiosk is loaded with apps providing pertinent information)	Provide Transitscreen installation in the building lobby which depicts accurate real-time information for area transit, Bluebikes stations, and Uber/Lyft services in the area.

8. Parking fee structure with appropriate pricing to discourage on-street parking while balancing desire to discourage auto ownership	No parking fee structure proposed. (Recommend including parking fee structure to manage parking demand)
9. Update City whenever fees have changed	Not included. (Updates to the Town are recommended to confirm ongoing management of parking demand)
10. Charge parking separately from rent	Not included. (Recommended)
11. Ride-matching service in coordination with Alewife TMA, or a private ride-matching service. (Ride match services coordinated with the 128 Business Council using MassRIDES Bay State Commute Program)	The property management team will investigate joining either the 128 Business Council or the Alewife TMA. Either TMA could provide a ridematching program among residents of the Project and employers of the area. (Recommend stronger commitment to joining TMA)
12. TMA membership via Alewife TMA. (128 Business Council)	See #11 above
13. Provide 1-month Charlie Card with a bus/subway pass to each adult member of the household, up to two per household.	Not included. (Recommended)
14. Designate a Transportation Coordinator to manage TDM program. Must be on-site a minimum of two hours per week, plus availability via email and telephone. (Vox on 2 coordinator is full time with office in lobby)	Designate an on-site employee as the site's Transportation Coordinator to oversee marking and promoting of transportation options at the site.
15. Complete the proposed bike/ped path to Discovery Park and proposed fire lane.	N/A
16. Investigate the use of the Discovery Park shuttle bus for use by residents.	N/A
Voluntary Measures from Vox on 2:	
17. Electric vehicle charging spaces (2 provided)	(Suggest providing electric vehicle charging infrastructure, with ability to expand based on future demand.)
18. Low Emitting Vehicle Preferred Parking (4 spaces for hybrid vehicles)	N/A

In summary, additional commitment to TDM measures is recommended for Thorndike Place. BETA recommends the following conditions for TDM measures, which summarizes measures proposed by the Applicant team and BETA recommendations identified in the table above.

1. Designate an on-site employee as the site's Transportation Coordinator to oversee marking and promoting of transportation options at the site.

2. Provide new residents transportation information packets with information on getting around Arlington sustainably.
3. Provide Transitscreen installation in the building lobby which depicts accurate real-time information for area transit, Bluebikes stations, and Uber/Lyft services in the area.
4. Provide information on available pedestrian and bicycle facilities in the vicinity of the Project site.
5. TMA membership via Alewife TMA or 128 Business Council.
6. Ride-matching service in coordination with Alewife TMA, or a private ride-matching service.
7. Implement parking fee structure with appropriate fee structure to match parking demand to available parking supply.
8. Provide 1-month Charlie Card bus/subway pass to all adult residents for the 1st month of rental agreement, up to two per household.
9. Provide electric vehicle charging infrastructure with up to 2 charging stations, with ability to expand based on future demand.
10. Provide an annual update to the Arlington Department of Planning and Community Development. Annual report will include number of leased/occupied units, number of leased/occupied parking stalls, annual unit turnover, summary of parking fee structure, and any proposed changes to parking fee structure.

BETA also supports the Applicant's commitment to providing a large (23 dock) Bluebikes station in the vicinity of the existing Bluebikes station at Thorndike Field. This will provide additional capacity for area residents, including residents of the proposed site.

If we can be of any further assistance regarding this matter, please contact us at our office.

Very truly yours,
BETA Group, Inc.



Greg Lucas, PE, PTOE, RSP
Senior Associate