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CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS  
ON THE  
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Volpe Exchange Parcel Redevelopment Project  
PROJECT MUNICIPALITY : Cambridge  
PROJECT WATERSHED : Charles River  
EEA NUMBER : 16468  
PROJECT PROPONENT : Massachusetts Institute of Technology  
DATE NOTICED IN MONITOR : November 10, 2021

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **does not require** an Environmental Impact Report (EIR).

Project Description

As described in the Environmental Notification Form (ENF), the project consists of the redevelopment of the U.S. Department of Transportation's approximately 14-acre Volpe Transportation Center. A new 400,000 federal building is currently under construction on a 3.77-acre portion of the site; construction of this federal facility is not subject to MEPA review and is not reviewed herein. The project site comprises the remaining 10.46 acres of the Volpe Center site. Approximately three million square feet (sf) of development will be constructed in eight buildings, including 1.128 million sf (1,400 units) of residential use, 1.757 million sf of office/lab space, 100,000 sf of retail, restaurant, recreational and arts and entertainment uses and a 25,000-sf community center in one of the residential buildings. The project includes the extension of Fifth Street from its terminus at the center of the site south to Broadway and extension of Broad Canal Way onto the site from its terminus on the east side of Third Street. The project will provide 3.5 acres of public open space, pedestrian and bicycle facilities, a wastewater recycling system and a new stormwater management system.

According to the ENF, the Proponent may acquire a 5,890-sf parcel at the corner of Third Street and Binney Street from the Cambridge Redevelopment Authority (CRA) and construct either open space

or a stand-alone building of 30,000 sf or less that will not share infrastructure with the project components reviewed herein. The transfer of the parcel from the CRA to the Proponent would be a Land Transfer subject to MEPA jurisdiction because the CRA is an Agency created or acting in accordance with M.G.L. c. 121A. The impacts of future development of this parcel have not been fully described in the ENF, as the acquisition of the parcel has yet to be completed. The Proponent should consult with the MEPA Office regarding the need for future MEPA review of proposed activities on the CRA parcel. Potential segmentation issues related to this future parcel are addressed below.

### Project Site

The Volpe Center site is located south of Binney Street, east of Third Street and north of Broadway, excluding an approximately three-acre parcel along Third Street. It is bordered to the west by Sixth Street/Loughrey Walkway/Kittie Knox Bike Path and a 10-acre portion of the Kendall Square Urban Redevelopment Project (EEA# 1891). The 10.46-acre project site includes an approximately 1.7-acre parcel at the northeast corner of the Volpe Center site bordering Binney Street and Third Street, and approximately 9.3 acres in the south and southeast parts of the Volpe Center site bordered by Third Street and Broadway. Six buildings with a combined area of 375,000 sf and two surface parking lots with 570 spaces are located on the Volpe Center Site; these structures will be demolished in connection with redevelopment of the project site and construction of the new federal building.

Approximately 1.75 acres of landlocked tidelands not subject to Chapter 91 licensing is located in the eastern part of the site. The site is located within an Environmental Justice (EJ) population designated as Minority and is within one mile of EJ populations designated as Minority; Income; Minority and Income; Minority and English Isolation; and Minority, Income and English Isolation. As described below, the ENF reviewed the Proponent's public outreach efforts and how community concerns have been incorporated into the project.

### Environmental Impacts and Mitigation

Potential environmental impacts associated with the project include the addition of three acres of impervious area, generation of 28,162 new (unadjusted) average daily trips (adt), construction of 1,759 parking spaces, use of 495,000 gpd of water and generation of 450,000 gpd of wastewater.

Measures to avoid, minimize and mitigate impacts include installation of a blackwater treatment system that will treat sanitary sewage so that it can be used on-site for irrigation and cooling tower demand purposes; construction of new pedestrian and bicycle facilities and roadway improvements; contribution of \$8.5 million to the City of Cambridge (City) for transit improvements; construction of 3.5 acres of publicly accessible open space; implementation of a Transportation Demand Management (TDM) program to minimize single-occupancy vehicle trips (SOV); and improvements to the stormwater management system consistent with the Massachusetts Stormwater Management Standards (SMS).

### Jurisdiction and Permitting

The project is undergoing MEPA review and requires preparation of an ENF pursuant to 301 CMR 11.03(5)(b)(1) because it requires Agency Actions and involves the construction of a New wastewater treatment and/or disposal facility with a Capacity of 100,000 or more gpd. The project requires a Reclaimed Water Use Permit from the Massachusetts Department of Environmental

Protection (MassDEP) and a Sewer Use Discharge Permit from the Massachusetts Water Resources Authority (MWRA).

I note that the project also exceeds mandatory EIR review thresholds for transportation at 301 CMR 11.03(6)(a)(6) and 301 CMR 11.03(6)(a)(7), generation of 3,000 or more New adt on roadways providing access to a single location and construction of 1,000 or more parking spaces at a single location. Under 301 CMR 11.01(2)(a)(3), MEPA jurisdiction is limited when a project is undertaken by a Person and requires one or more Permits or involves a Land Transfer but does not involve Financial Assistance. Limited, or subject matter, jurisdiction means that the Scope, if an EIR is required, shall be limited to those aspects of the Project within the subject matter of any required Permit that are likely, directly or indirectly, to cause Damage to the Environment. Based on review of the ENF - and as asserted by the Proponent - the traffic impacts from this project are not related to the subject matter of the required Permits for this project, namely, a Reclaimed Water Use Permit from MassDEP and a Sewer Use Discharge Permit from MWRA. Accordingly, I cannot issue a Scope for the project based on the mandatory EIR thresholds related to transportation.<sup>1</sup>

The project has received a Planned Unit Development (PUD) Permit, Project Review Special Permit, Design Review Approval and Affordable Housing Covenant and Notice of Affordable Units from the Cambridge Planning Board. It requires a National Pollutant Discharge Elimination System (NPDES) Stormwater Permit for Construction Activities from the U.S. Environmental Protection Agency (EPA) and approval from the Federal Aviation Administration (FAA) for building height and crane height.

Because the Proponent is not seeking Financial Assistance from the Commonwealth for the project, MEPA jurisdiction for any future review would extend to those aspects of the project that are within the subject matter of required or potentially required Agency Actions and that may cause Damage to the Environment as defined in the MEPA regulations.

### Review of the ENF

The ENF included a project description and plans of existing and proposed conditions. It identified environmental resources and potential impacts and included a detailed transportation study. During the review period, the Proponent provided a supplemental description of the proposed blackwater treatment and reuse system.<sup>2</sup> Consistent with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency, the ENF contained an output report from the Climate Resilience Design Standards Tool prepared by the Resilient Massachusetts Action Team (RMAT) (the “RMAT Tool”),<sup>3</sup> together with information on climate resilience strategies to be undertaken by the project. During the review period, the Proponent provided a supplemental description of the proposed blackwater treatment system and an analysis of traffic operations at Leverett Circle and Charles Circle in Boston.

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<sup>1</sup> As noted above, however, the project is in close proximity to several Environmental Justice (EJ) populations. Under new requirements imposed by Sections 56-58 of Chapter 8 of the Acts of 2021: *An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy*, similar future projects will be required to undergo an EIR review process under amended MEPA regulations that took effect on December 24, 2021.

<sup>2</sup> Email dated December 9, 2021 from Ryan Pace to Alex Strysky.

<sup>3</sup> [https://resilientma.org/rmat\\_home/designstandards/](https://resilientma.org/rmat_home/designstandards/)

According to the Massachusetts Port Authority (Massport), the Proponent has agreed to build structures consistent with Massport's Airspace Map and to continue to coordinate as the project design progresses. The Proponent should consult Massport's comment letter for more information regarding the FAA review process.

### *Segmentation*

The MEPA regulations include anti-segmentation provisions to ensure that project Proponents do not evade, defer or curtail MEPA review by segmenting one project into smaller ones that, individually, do not meet or exceed MEPA thresholds. The MEPA regulations at 301 CMR 11.01(2)(c) note that the determination as to whether various activities constitute one project should consider "whether the work or activities, taken together, comprise a common plan or independent undertakings, regardless of whether there is more than one Proponent; any time interval between the work or activities; and whether the environmental impacts caused by the work or activities are separable or cumulative."

As noted above, the Proponent may acquire a parcel from the CRA and construct a stand-alone building of 30,000 sf or less or provide open space on the parcel. I received comments expressing concern that the project has been segmented because impacts associated with the CRA parcel were not described in the ENF.

The transfer of the parcel from the CRA to the Proponent would be a Land Transfer that establishes MEPA jurisdiction because the CRA is an Agency created or acting in accordance with M.G.L. c. 121A. However, the impacts of future development of this parcel have not been described in the ENF, as the acquisition of the parcel has yet to be completed. The Proponent asserts that construction of open space or a separate building on the CRA parcel is independent from the project described in the ENF; however, the limited information provided in the ENF does not support that conclusion. If and when development plans become apparent on the CRA parcel, and prior to the transfer of the parcel from CRA, the Proponent should consult with the MEPA Office regarding the need for additional MEPA review, which will include an evaluation of whether the entire project, when including the CRA parcel, would meet or exceed any new review thresholds. I note that, in accordance with 301 CMR 11.01(2)(a)(3), the scope of MEPA jurisdiction over the CRA parcel would be broad but would extend over the area subject to the Land Transfer.

### *Alternatives Analysis*

According to the ENF, the U.S. General Services Administration (GSA) solicited proposals for redevelopment of the Volpe Center site in 2014. The Proponent was selected as the developer of the project in 2016, and in 2017 it entered into an agreement to purchase the 10.47-acre site. Under its agreement with the GSA, the Proponent is required to construct a new federal building on the 3.77-acre site to replace the existing Volpe Transportation Center prior to acquiring and developing the project site. The No Build Alternative would involve the continued use of the site as a federal facility, including the existing six buildings with a combined area of 375,000 sf and two surface parking lots with 570 spaces. The ENF did not provide any information about the trip generation, water use or wastewater generation associated with existing uses.

The Proponent engaged in a planning process with City staff and the community with the goal of ensuring that the development of the site would make it more accessible, user-friendly and a source of tax revenue. This effort was based on the 2013 Kendall Square (K2) Planning Study and Design

Guidelines and resulted in zoning amendments developed by the Planning Board. The Cambridge City Council did not adopt the zoning amendments and appointed a Volpe Working Group which established planning and urban design principles for the site. The work of this group culminated in the establishment of new zoning (the PUD-7 Overlay District) and planning and design guidelines for development of the site that are reflected in the Preferred Alternative.

The ENF described three alternative site layouts that were developed consistent with the City's planning and design guidelines. According to the Proponent, this process identified the site as an appropriate location for a large-scale project with a mix of residential, commercial and community uses, and therefore no alternative development programs were reviewed in the ENF. The three alternative layouts include one commercial and one residential building along Binney Street and three residential and three commercial buildings in the southern part of the site adjacent to Third Street and Broadway. The alternatives differ with respect to the alignment of Broad Canal Way and Kendall Way and the position and ground floor areas of residential and commercial buildings proposed adjacent to these streets. According to the Proponent, the viability of the entertainment venue, restaurants and retail uses proposed on the ground levels of buildings along Broad Canal Way west of Fifth Street depends on these uses being visible from Third Street to attract people to that end of the development.

Alternative 1 would include a more southerly alignment of the western end of Broad Canal Way. This alternative would require that Residential Building 3 (R3) be shifted to the smaller parcel south of Broad Canal Way in this alignment and Commercial Building 3 (C3) shifted to the northern parcel. According to the Proponent, the smaller ground floor area of Building R3 in Alternative 1 would not provide adequate space for the planned entertainment venue on the ground floor of that building. In addition, the southern location of Building R3 would mean that the entertainment venue would not be visible from Third Street, which the Proponent believes is important to make the venue viable.

Alternative 2 would extend Broad Canal Way in a straight alignment from Third Street to the Sixth Street Park/Loughrey Walkway/Kittie Knox Bike Path at the west end of the site. This alignment would also create two parcels north and south of Broad Canal Way of unequal size, which would not provide sufficient ground floor space in Building R2 for the entertainment venue.

Alternative 3 would shift Kendall Way to the west, which would create two narrower parcels upon which Residential Building 2 (R2) and Building R3 would be constructed. To make these narrower parcels of sufficient size to accommodate Buildings R2 and R3, the section of Broad Canal Way between Fifth Street and Sixth Street Park/Loughrey Walkway/Kittie Knox Bike Path would have to be shifted south. According to the Proponent, this would create an undesirable condition where Broad Canal Way is not continuous and the uses at the west end of the site would not be visible from Third Street.

As noted above, the Preferred Alternative was developed to meet the City's goals and design guidelines for the site, including activation of the area a mix of residential, retail, and entertainment uses. The ENF did not review the environmental impacts associated with the three alternatives or explain how environmental impacts of the project were considered during the development of the Preferred Alternative; however, the alternatives were developed to be consistent with the development and design goals for the site and would have similar environmental impacts with respect to impervious area, trip generation, water use and wastewater generation. According to the ENF, the project's impacts will be mitigated by implementation of transportation improvements, minimizing the project's water and sewer use by installing a blackwater treatment system and construction of buildings with high-efficiency

envelopes, electric heating and cooling in the residential buildings and designing the commercial buildings to be adaptable to all-electric heating, cooling and ventilation systems, consistent with the City's Net Zero Emissions Strategy.

### *Environmental Justice*

The site is located within an EJ population designated as Minority and is within one mile of EJ populations in Cambridge, Somerville and Boston designated as Minority; Income; Minority and Income; Minority and English Isolation; and Minority, Income and English Isolation. As noted above, the Preferred Alternative was developed in a planning and design process that included extensive community engagement. According to the ENF, the Proponent implemented an equity and inclusion engagement process to encourage participation by members of the EJ populations, which led to the participation of more than 450 individuals from diverse demographic backgrounds. The outreach effort included workshops focused on Housing Equity, Retail Equity, Creating an Equitable Community Center, Employment Equity, Equitable and Inclusive Open Space and Youth Engagement. As a result of these workshops, the project design and programming were developed to incorporate the following considerations to minimize impacts to EJ populations and incorporate equity considerations into the project design:

- Overcome barriers to inclusionary housing, such as unreasonable credit requirements, and adopt equitable management practices;
- Include minority and women-owned retail businesses and provide reduced entry costs, technical support and ensure a direct relationship between retailers and owners of the property in which they are operating;
- Create a Community Center that will engage a diverse set of users;
- Develop a program of mentoring, job preparedness, training and partnerships between companies and underemployed residents;
- Develop diverse open spaces that serve a variety of demographics; and,
- Incorporate the perspective of young members in the community in the development program and open space design.

The MEPA site visit notice was translated into Spanish, Haitian Creole, Portuguese, Mandarin Chinese and Cantonese Chinese and distributed to community organizations in the area. As noted above, the ENF reviewed how community input was used to influence the project design to provide benefits to EJ populations. However, it did not address potential impacts to EJ populations as a result of its automobile trip generation and associated air emissions. I note that under Section 58 of St. 2021, c. 8, *An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy*, and amendments to MEPA regulations effective December 24, 2021, all projects filed on or after January 1, 2022 and located within at least 1 mile of an EJ population will be required to provide additional analyses of environmental and public health impacts to identified EJ populations.

### *Water Resources*

The project will use 495,000 gpd of water and generate 450,000 gpd of wastewater. According to the ENF, the wastewater generated by the project will be discharged to a 22-inch sewer main in Broadway and a 24-inch main in Fifth Street that connect to the 28-inch by 32-inch sewer main in Binney Street. Water will be supplied by the City's water system via connections to existing mains in

Binney Street and Broadway and through a new 16-inch water main to be constructed by the Proponent that will connect existing 16-inch mains in Broadway and Third Street. To minimize water use and discharge of wastewater into the sanitary sewer system, the project will install a blackwater treatment and reuse system consisting of three In-building Membrane Bioreactor (IBMBR) Blackwater Plants that will treat wastewater generated by the project for reuse for toilet flushing, irrigation and cooling tower water. One IBMBR will be located in lower parking level of the North Garage adjacent to Binney Street and two IBMBR units will be installed in the lower levels of the South Garage adjacent to Broadway. Each unit consists of a membrane bioreactor, which treats wastewater using an activated sludge system with membranes that have an effective pore size of 0.08 microns. The treated wastewater will then be disinfected by a system consisting of an ozone generating and contacting system (used for oxidation and color removal) followed by an ultraviolet light system for additional disinfection. Effluent from the IBMBR treatment systems will meet reuse standards established by the MassDEP and will be stored in recycled water storage tanks until needed for irrigation, toilet flushing or cooling tower water. Surplus raw wastewater from the office/lab buildings and residual biosolids will be discharged to the City's sanitary sewer system. Combined, the three units will treat a projected total flow of approximately 240,000 to 250,000 gpd. Reuse of blackwater will reduce the volume of wastewater discharged to the sanitary sewer system from 450,000 to approximately 210,000 gpd and water use from 495,000 gpd to between 220,000 gpd and 231,000 gpd.

The blackwater treatment and reuse system requires a Reclaimed Water Use Permit from MassDEP. Comments from MassDEP recommend a pre-filing meeting so that the details of the system can be discussed to ensure that it can meet the appropriate water quality standards. Because wastewater from the City's sanitary sewer system is directed to the MWRA's collection system, the discharge of sludge and residuals from the treatment system plant and lab wastewater to the sanitary system must be approved by the MWRA through the issuance of a Sewer Use Discharge Permit. According to the MWRA, the permit application should include a detailed hydraulic analysis of the sewer system that will receive the effluent. The MWRA will require the Proponent to demonstrate that the blackwater treatment and reuse system will be designed with a capacity to hold its discharge for three days and that sludge discharged to the sewer must not exceed three percent maximum total suspended solids concentration.

According to the MWRA, the City's sanitary system in this area conveys flow to the MWRA's Cambridge Branch Sewer and the DeLauri Pump Station in Charlestown, which pumps flows to the North Metropolitan Sewer and ultimately the Deer Island Treatment Plant. The Cambridge Branch Sewer also receives flow from the combined sewer areas in parts of Cambridge, including the Binney Street overflow conduit which drains to the Prison Point Combined Sewer Overflow (CSO) Facility. In large storms, the Binney Street overflows can exceed the capacity of the MWRA's overflow system and contribute to discharges of untreated CSO to the Charles River. According to the ENF, the Proponent will consult with the City to identify appropriate measures for addressing inflow and infiltration (I/I) into the municipal sanitary sewer system.

The project will increase impervious area by three acres. According to the ENF, the project will include a stormwater management system designed to meet the requirements of the SMS. Roof runoff will be collected and directed to infiltration systems to promote groundwater recharge and remove phosphorous. Runoff from on-site roadways and open space will be directed to subsurface detention systems within the garage structures, which will be designed to reduce peak discharge rates and to pump stormwater to water quality units that will remove phosphorous. The ENF included a table showing discharge volumes and rates for the 2-, 10-, 25- and 100-year storm events under existing

conditions, but did not include this data for proposed conditions. However, the ENF indicated that the Proponent will use the 2070 storm event as calculated by the City as the basis of the design of the stormwater management system. In addition to meeting the SMS requirement for removal of 80 percent of Total Suspended Solids (TSS), the stormwater management system will be designed to remove 65 percent of phosphorous from runoff. According to the ENF, the project will incorporate the use of green roofs and pervious pavement into the project design to mitigate stormwater runoff.

I encourage the Proponent to redesign the project open space to incorporate as much pervious area as possible. The proposed design, which increases open space by 3.5 acres yet also increases impervious area by three acres, seems to be a missed opportunity for the Proponent to minimize stormwater runoff and enhance the site's climate resiliency.

### *Traffic and Transportation*

The ENF included a summary of the transportation mitigation program developed by the Proponent and provided a copy of the Transportation Impact Study (TIS) prepared in conformance with the City's requirements for preparation of traffic studies. The TIS provided an analysis of traffic conditions similar to the type required by the EEA/MassDOT *Transportation Impact Assessment (TIA) Guidelines* issued in March 2014, but used different methodologies for calculating trip generation and assessing impacts to intersection operations. The analysis was not prepared using the TIA guidelines because the project does not require a transportation-related Permit from an Agency. The TIS described existing and proposed roadway, pedestrian, and bicycle conditions, public transit capacity and infrastructure, roadway and intersection volumes and roadway safety issues.

Analyses of transit and vehicular operations were provided for the weekday morning and evening peak hours for Existing 2021, No Build 2028 and Build 2028 scenarios. The TIA identified potential pedestrian and bicycle accommodations, roadway improvements and TDM measures which will be implemented to minimize impacts to the transportation network. It analyzed the impacts of the project in a study area including the following 33 intersections:

- O'Brien Highway/Third Street;
- O'Brien Highway/Cambridge Street/East Street;
- O'Brien Highway/Land Boulevard;
- Cambridge Street/Third Street;
- Cambridge Street/First Street;
- First Street/Thorndike Street;
- First Street/Charles Street;
- Third Street/Spring Street;
- Third Street/Charles Street;
- Galileo Galilei Way/Binney Street/Fulkerson Street;
- Binney Street/Fifth Street;
- Binney Street/Third Street;
- Binney Street/Second Street;
- Binney Street/First Street;
- Binney Street/Land Boulevard;
- Hampshire Street/Cardinal Medeiros Avenue/Portland Street;
- Broadway/Portland Street;
- Broadway/Hampshire Street;



- Broadway/Galileo Galilei Way;
- Broadway/Ames Street;
- Broadway/Green Garage;
- Broadway/Main Street/Third Street;
- Third Street/Potter Street/Kendall Street;
- Third Street/Munroe Street/Linskey Way;
- Main Street/Albany Street;
- Main Street/Galileo Galilei Way/Vassar Street;
- Main Street/Ames Street;
- Main Street/Kendall Station Crosswalk;
- Main Street/Longfellow Bridge;
- Memorial Drive/Ames Street;
- Memorial Drive/Wadsworth Street;
- Memorial Drive/Western Avenue; and
- Memorial Drive/Cambridge Street/River Street.

Existing transportation conditions were established with counts of vehicles, pedestrians and bicyclists in 2019.

#### *Trip Generation*

The project's trip generation used in the analysis was not calculated based on data prepared by the Institute of Transportation Engineers (ITE). As required by the City, trip generation was based on actual vehicle counts from nearby sites with similar land uses. Mode shares and vehicle occupancy rates were applied to the vehicle trip generation in order to estimate peak hour trips and trips assigned to other modes, including walking, bicycling and transit. Using the City's methodology, the project will generate 6,553 daily vehicle trips, including 757 trips in the AM peak period and 852 trips in the PM peak hour; 6,263 daily transit trips, including 721 transit trips in the AM peak period and 814 transit trip sin the PM peak period; 2,623 daily trips by walking, including 284 in the AM peak period and 335 in the PM peak period; and 1,099 daily bicycle trips, including 138 in the AM peak hour and 152 in the PM peak period.

#### *Traffic Operations*

The TIS reviewed intersection operations under 2019 Existing, 2019 Baseline, 2019 Build, 2019 Build-Mitigated, 2024 Future and 2024 Future-Mitigated Conditions. Vehicular roadway operations were described using delay, volume to capacity (v/c) ratios and level-of-service (LOS) designations for each intersection in the study area. The LOS reflects the overall operations of an intersection, including traffic speed, delay, and capacity. For urban intersections, LOS D reflects an acceptable level of operations; LOS E or F reflect significantly congested conditions and long delays.

The 2019 Existing Condition reflects actual counts collected in 2019. The 2019 Baseline Condition modeled transportation operations of the 2019 Existing Condition assuming that three planned roadway infrastructure were completed, including the CRA's streetscape redesign for Binney Street/Galileo Galilei Way/Broadway, MassDOT's O'Brien Highway Reconstruction and the Ames Street Separated Bike Lane Project (Main Street to Memorial Drive). The 2019 Build scenario models project-generated trips added to the 2019 Baseline scenario; this scenario essentially depicts the project's impacts as if the project were fully constructed under existing conditions and does not include background growth in trips. The 2019 Build-Mitigated condition models mitigation measures proposed

by the Proponent, including signalization and other improvements to the Potter Street/Third Street intersection; an exclusive left turn lane in the eastbound direction at Broadway/Volpe Garage Driveway/Green garage intersection; an additional left turn lane in the southbound direction at the Broadway/Third Street intersection; and extension of Fifth Street through the project site to allow left turns from Binney Street westbound onto Fifth Street southbound and left turns from Fifth Street northbound onto Binney Street westbound. The 2024 Future Condition includes background trip growth added to the 2019 Build Condition, to which the project's proposed mitigation is added to establish the 2024 Build-Mitigated Conditions.

According to the TIS, many of the major intersections in the study area operate under LOS E or LOS F and continue to do so under all modeled scenarios with extended delays and increased congestion. The 2019 Build-Mitigated Condition shows that project-generated traffic will impact the following intersections:

- O'Brien Highway/Third Street: change in LOS from LOS C to LOS D in the PM peak hour;
- First Street/Charles Street: change in LOS from LOS E to LOS F in the PM peak hour;
- Third Street/Charles Street: change in LOS from LOS B to LOS C in the PM peak hour;
- Binney Street/Third Street: change in LOS from LOS D to LOS F in the AM peak hour and LOS D to LOS E in the PM peak period;
- Binney Street/Second Street: change in LOS from LOS C to LOS D in the AM and PM peak periods;
- Binney Street/First Street: change in LOS from LOS D to LOS E in the PM peak hour;
- Binney Street/Portland Street: change in LOS from LOS C to LOS D in the AM peak hour;
- Broadway/Ames Street: change in LOS from LOS C to LOS D in the PM peak hour;
- Main Street/Galileo Galilei Way/Vassar Street: change in LOS from LOS E to LOS F in the PM peak period;
- Main Street/Ames Street: change in LOS from LOS D to LOS E in the PM peak period;
- Memorial Drive/Ames Street: change in LOS from LOS E to LOS F in the PM peak period;
- Memorial Drive/Wadsworth Street: change in LOS from LOS B to LOS C in the AM and PM peak periods;
- Third Street/Spring Street: change in LOS of Spring Street westbound approach from LOS A to LOS B in the AM peak period and of Third Street southbound approach from LOS C to LOS D in the AM peak hour;
- Binney Street/Fifth Street: change in LOS of Fifth Street northbound approach from LOS A to LOS C in the AM peak period and from LOS A to LOS D in the PM peak period;
- Main Street/Albany Street: change in LOS of Albany Street northbound approach from LOS E to LOS F in the PM peak period;
- Broadway at Mid-Block Crossing/Green Garage: change in LOS of Green Garage northbound approach from LOS B to LOS D in the AM peak period; and,
- Main Street at Longfellow Bridge: change in LOS of Memorial Drive southbound approach from LOS E to LOS F in the AM peak period.

The TIS also showed increased queues and congestion (high v/c ratio) under future conditions at the O'Brien Highway intersections within the study area, Binney Street/Land Boulevard and major City intersections. The TIS did not include a comparison of a Future No Build condition to a Future Build scenario, as is provided in analyses prepared using the TIA Guidelines. As noted, no required Permit

from an Agency was identified for the project related to transportation impacts. Accordingly, these impacts will be mitigated through City of Cambridge traffic permitting.

### *Supplemental Analysis of Charles Circle and Leverett Circle*

Approximately 24 percent of the office/lab trips and 14 percent of the residential trips associated with the project (169 trips in the AM peak period and 187 trips in the evening peak period) will travel over the Longfellow Bridge to Charles Circle in Boston, which provides connections to Storrow Drive and Interstate-93 (I-93) via Leverett Circle. In addition, the project will generate 44 AM peak period trips and 50 PM peak period trips on Charles River Dam Road, which is connected to Leverett Circle in Boston. The TIS study area did not include Charles Circle and Leverett Circle.<sup>4</sup> At the request of DCR, the Proponent provided a supplemental traffic study that evaluated traffic operations at Charles Circle and Leverett Circle under 2019 Existing, 2028 No Build and 2028 Build conditions.<sup>5</sup>

Under 2019 Existing conditions, Charles Circle operates at LOS C in the AM peak hour and LOS D in the PM peak hour. According to the analysis, the intersection will operate at LOS D during both peak periods under the 2028 No Build scenario. The addition of project generated traffic under 2028 Build conditions will increase delays and congestion at Charles Circle, but it will continue to operate at LOS D. Leverett Circle, which consists of a set of two signals, operates at LOS F during both peak periods under all modeled scenarios; increased delays and v/c ratios are anticipated under both 2028 No Build and 2028 Build conditions.

The supplemental study reviewed potential improvements to operations at the intersections that could be achieved by signal optimization. According to the Proponent, signal optimization at Charles Circle would not significantly reduce delays. However, optimization of the two signals at Leverett Circle would reduce overall delays at the signals by 60 seconds to over 100 seconds. I have consulted with DCR regarding the supplemental analysis. DCR has not requested additional information from the Proponent, and has indicated that the recommended signal optimization for Leverett Circle will be evaluated and implemented if feasible.

### *Transportation Mitigation*

The ENF described existing and proposed facilities for pedestrians and bicyclists in the study area. To meet the Proponent's pedestrian and bicycle mode share goals, the Proponent will implement the following mitigation measures to encourage walking and bicycling to the site:

- Construct and maintain 1,876 long-term and 338 short-term bicycle parking spaces;
- Construct and maintain privately-owned roadways, sidewalks, paths and bike facilities and provide approximately \$8.5 million to the City for the Grand Junction multi-use path;

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<sup>4</sup> The Charles Circle intersection would have been included in the transportation study area under the TIA preparation guidelines, which require analysis of intersections and roadway segments where site-generated trips increase peak hour traffic volume by five percent or more, or by more than 100 vehicles per hour.

<sup>5</sup> Memo dated January 14, 2022 from Selma Mandzo-Prelidzic to Jeff Parenti, including an appendix with modelling reports. This supplemental transportation study was circulated to the ENF distribution list and commenters on the project.

- Contribute to the design and construction of Binney Street (between Third and Fifth Street), Third Street (between Broadway and Binney Street), and Broadway (between Third Street and Ames Street), to improve safety and meet the needs for all users of these street;
- Update the traffic signal equipment at the Binney Street/Third St. intersection to accommodate proposed new sidewalk level separated bicycle lanes;
- Prepare 100 percent design plans for Third Street between Binney St. and Broadway, based on the plans being developed by the CRA;
- Prepare 100 percent design plans and reconstruction of Broadway between Ames Street and Third Street, including a left turn lane from Broadway westbound and new crossing on the east side of the intersection signalized with a Rectangular Rapid Flashing Beacon (RRFB) at Broadway/Fifth Street and a new crossing near the intersection of Broadway/ Kendall Way / Green Garage, signalized with an RRFB;
- Construct sidewalk level separated bicycle lanes on Fifth Street;
- Construct sidewalk-level, separated bicycle lanes and a two-way separated cycle track on sections of Potter Street;
- Reconstruct Munroe Street between Third Street and Fifth Street, including, installation of new sidewalk, curb, and street signs on the north side of the street, and pavement markings;
- Design and construct a pedestrian and bicycle connection from Potter Street to Kittie Knox Path/Sixth Street walkway, and a second connection from Broad Canal Way to Kittie Knox Path/Sixth Street walkway; and,
- Construct and maintain bus stops, which may include bus shelters and real-time transit display screens, along Fifth Street at two locations (one northbound and one southbound) between Broadway and Binney Street.

### *Transportation Demand Management*

The ENF included a comprehensive Transportation Demand Management (TDM) program for the residential uses that will be implemented to minimize single occupancy vehicle (SOV) trips to the site. The Proponent will implement the following TDM measures:

- Provide two carsharing spaces;
- Offer each adult member of each household a transit pass for two months of subway and bus ridership;
- Offer each adult member of each household a one-year Gold- Level Bluebikes membership;
- Provide air pumps and other bike tools in the bicycle storage room;
- Join the Charles River Transportation Management Association (TMA);
- Provide a free EZRide Shuttle sticker for each adult member of each household each year;
- Install a real-time multimodal transportation display screen in the lobby of each building;
- Charge parking separately from the residential rent; and,
- Designate a transportation coordinator (TC) for the site to manage the TDM program and oversee the marketing and promotion of transportation options to all residents at the site.

### *Climate Change*

Governor Baker's Executive Order 569: Establishing an Integrated Climate Change Strategy for the Commonwealth was issued on September 16, 2016. The Order recognizes the serious threat presented by climate change and direct Executive Branch agencies to develop and implement an

integrated strategy that leverages state resources to combat climate change and prepare for its impacts. The urgent need to address climate change was again recognized by Governor Baker and the Massachusetts Legislature with the recent passage of St. 2021, c. 8, An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy, which sets a goal of Net Zero emissions by 2050. I note that the MEPA statute directs all Agencies to consider reasonably foreseeable climate change impacts, including additional greenhouse gas emissions, and effects, such as predicted sea level rise, when issuing permits, licenses and other administrative approvals and decisions. M.G.L. c. 30, § 61.

Additionally, the City is a participant in the Commonwealth's Municipal Vulnerability Preparedness (MVP) program. The MVP program is a community-driven process to define natural and climate-related hazards, identify existing and future vulnerabilities and strengths of infrastructure, environmental resources, and vulnerable populations, and develop, prioritize and implement specific actions the City can take to reduce risk and build resilience. Through the MVP program, the City received funding to conduct a planning process for climate change resiliency and implementing priority projects. The City completed the "Climate Change Vulnerability Assessment" in November 2015 and the "Resilient Cambridge Climate Change Preparedness and Resiliency Plan" (Plan) in 2021. These studies have identified precipitation-based flooding, and extreme temperatures as near-term (2030) hazards and coastal flooding due to sea level rise and storm surges that overtop the Charles River and Amelia Earhart Dams as a longer-term (2070) climate hazard.

According to the Cambridge Flood Viewer (version 2.1 dated November 4, 2019), the 2070 100-year storm event will reach elevation 20.1 ft to 21.4 ft Cambridge City Base (CBC). The proposed buildings will be designed with first floor elevations at or above elevation 21.4 ft CBC and all critical infrastructure will be raised above 21.4 ft CBC. Temporary flood barriers will be deployed as needed at garage entrances constructed below elevation 21.4 ft CBC.

The ENF included an evaluation of the design of the project with respect to its climate change resiliency using the RMA Tool. Based on the output of the RMA Tool provided in the ENF, the project is rated high risk for extreme heat, sea level rise/storm surge and urban flooding associated with extreme precipitation. Based on a 70- to 80-year useful life of the project, the RMA Tool recommends a target planning horizon of 2070 and a return period associated with a 20-year storm for proposed on-site streets, a 50-year storm for the buildings, a 100-year storm for water and stormwater infrastructure and a 200-year storm for sewer infrastructure. I encourage the Proponent to consider implementing the recommendations in the RMA Tool, which incorporates updated data from the Massachusetts Coast Flood Risk Model (MC-FRM) and other sources. In particular, future storm scenarios should be considered when designing the stormwater management system or other components that may be susceptible to flooding conditions. I also encourage the Proponent to maximize opportunities for low-impact development (LID) strategies, including incorporating tree cover and pervious surfaces wherever possible, to mitigate urban heat island effects.

### *Greenhouse Gas (GHG) Emissions*

The City has adopted a Net Zero Emissions Strategy that discourages fossil fuel use and encourages new buildings to be designed with electric heating, cooling and ventilation systems or designed in such a way that the building can be converted from fossil fuel use to renewable energy sources. According to the ENF, the residential buildings will be designed with electric heating, cooling and ventilation systems and the commercial buildings will be designed to be convertible to all-electric systems. In addition, the Proponent will design the buildings with high performance envelopes to reduce

energy demand. As required by the City, the Proponent will reserve 80 percent of the roof area for green roofs or rooftop solar photovoltaic (PV) systems.

I encourage the Proponent to review the comment letter submitted by the Department of Energy Resources (DOER), which describes the benefits of Passivehouse design for residential buildings and identifies financial incentives available for construction of Passivehouse buildings and other energy efficiency measures. DOER's comment letter describes in detail an energy-efficient design that meets the unique demands of laboratory spaces through partial electrification of heating and ventilation systems. Key components of this approach include:

- A hot water distribution loop of 120 F;
- A centralized heating plant consisting of both an air-to-water heat pump and a gas-fired condensing boiler;
- Boiler sized for 100 percent of the peak load;
- Air source heat pump sized for 25 to 50 percent of the peak load; and,
- Prioritized air source operation with use of the boiler only when loads exceed 25 to 50 percent of the peak load.

The goal of this approach is to minimize Greenhouse Gas (GHG) emissions by providing up to 90 percent of the total annual heating with heat pumps. The design approach described in DOER's comment letter has been adopted by several development projects with significant lab space that are currently undergoing MEPA review, including Boynton Yards (EEA#16195) and Gateway Innovation Center (EEA# 16289). DOER's comment letter also provides guidance on building envelope design measures that minimize utility costs and GHG emissions and comply with the energy provisions of the Building Code. While the project is not subject to mandatory EIR review, the scope and scale of the proposed development are in line with other similar projects that are required to undergo EIR review and submit a corresponding GHG analysis pursuant to the 2010 MEPA GHG Policy. I encourage the project to voluntarily strive to achieve maximum reductions in GHG emissions associated with the project, particularly, the energy-intensive lab uses proposed. I encourage the Proponent to contact DOER for additional information. The City has required the Proponent to install 180 electric vehicle (EV) charging stations and to construct all other parking spaces as EV-ready.

### *Construction Period*

All construction and demolition (C&D) activities should be managed in accordance with applicable MassDEP's regulations regarding removal of asbestos-containing material (ACM) and disposal of asbestos-containing waste materials (ACWM), including the Air Pollution Control regulations at 310 CMR 7.09 and 310 CMR 7.15 and the Solid Waste Management regulations at 310 CMR 19.061 and waste ban provision at 310 CMR 19.017. I encourage the Proponent to reuse or recycle C&D debris to the maximum extent. The project should include measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management) and emissions of air pollutants from equipment, including anti-idling measures in accordance with the Air Quality regulations (310 CMR 7.11). I encourage the Proponent to require that its contractors use construction equipment with engines manufactured to Tier 4 federal emission standards, or select project contractors that have installed retrofit emissions control devices or vehicles that use alternative fuels to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD). If oil and/or hazardous materials are found during construction, the Proponent should notify MassDEP in accordance

with the MCP (310 CMR 40.00). All construction activities should be undertaken in compliance with the conditions of all State and local permits.

Conclusion

The ENF has adequately described and analyzed the project and its alternatives, and assessed its potential environmental impacts and mitigation measures. Based on review of the ENF and comments received on it, and in consultation with State Agencies, I have determined that an EIR is not required.



January 28, 2022

Date

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Kathleen A. Theoharides

Comments received:

11/15/2021	Stephen Kaiser
11/24/2021	Department of Energy Resources (DOER)
12/06/2021	Stephen Kaiser
12/07/2013	Stephen Kaiser
12/13/2021	Charles River Watershed Association (CRWA)
12/13/2021	Massachusetts Department of Environmental Protection (MassDEP)/Northeast Regional Office (NERO)
12/13/2021	Massachusetts Water Resources Authority (MWRA)
12/13/2021	Ovadia R. Simha
12/13/2021	Massachusetts Port Authority (Massport)
12/13/2021	Department of Conservation and Recreation (DCR)
01/12/2022	Steve Kaiser
01/21/2022	Steve Kaiser
01/26/2022	Ovadia Simha

KAT/AJS/ajs



# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard  
100 First Avenue, Building 39  
Boston, MA 02129

Frederick A. Laskey  
Executive Director

Telephone: (617) 242-6000  
Fax: (617) 788-4899  
TTY: (617) 788-4971

December 13, 2021

Kathleen A. Theoharides, Secretary  
Executive Office of Energy and Environmental Affairs  
100 Cambridge St, Suite 900  
Attn: MEPA Office, Alex Strycky  
Boston, MA 02114

Subject: EOEEA #14668 – Environmental Notification Form  
The Volpe Exchange Parcel Redevelopment Project, Cambridge MA

Dear Secretary Theoharides,

The Massachusetts Water Resources Authority (MWRA) appreciates the opportunity to comment on the Environmental Notification Form (ENF) submitted by Massachusetts Institute of Technology (the “Proponent”) for The Volpe Exchange Parcel Redevelopment Project (the “Project”) in Cambridge, Massachusetts. The approximately 14-acre Project site currently contains the existing Volpe Transportation Center in the Kendal Square neighborhood of East Cambridge. The Project involves development of eight buildings containing mostly commercial and residential uses as well as ground floor retail, restaurant, art, entertainment and recreational space. The Project is also proposed to include a blackwater treatment plant to collect, treat, and reuse all available greywater and blackwater from the project site. Excluded from this ENF is a separate project called “US DOT Volpe Exchange Project”, which involves relocation of the existing Volpe Transportation Center to an adjacent parcel.

MWRA’s comments on the ENF relate to wastewater issues and the need for Infiltration/Inflow (I/I) Removal and Discharge Permitting from the Toxic Reduction and Control (TRAC) Department.

## Wastewater

The ENF reports that the Project will generate approximately 450,000 gallons per day (gpd) of new wastewater flow. According to the City of Cambridge sewer and storm drain maps, the Project site is served by City-owned sanitary sewers. Existing wastewater flows from the Project sites convey flows to a 25-inch by 29-inch City sewer in Binney Street, which flows west to a connection with MWRA’s Cambridge Branch Sewer at the intersection of Cardinal Medeiros Avenue and Berkshire Pl (see MWRA Sewer Map). The Cambridge Branch Sewer conveys flows to MWRA’s DeLauri Pump Station in Charlestown, which pumps flows into MWRA’s North Metropolitan Sewer for transport to MWRA’s Chelsea Creek Headworks and ultimately to the Deer Island Treatment Plant.

MWRA’s Cambridge Branch Sewer also serves combined sewer areas in parts of Cambridge and Somerville. The combination of sanitary flow and stormwater can exceed the capacity of the Cambridge



Branch Sewer in large storms and contribute to combined sewer overflows via Cambridge's Binney Street overflow conduit. The Binney Street overflow conduit drains to MWRA's Cambridge Marginal Conduit and Prison Point CSO Facility. In larger storms, the Binney Street overflows can exceed the hydraulic capacity of MWRA's overflow system and contribute to discharges of untreated CSO to the Charles River Basin at Cambridge's Outfall CAM017.

To ensure that the Project's new wastewater flow does not increase surcharging and overflows in large storms, the Proponent should fully offset the Project's wastewater flows with I/I removal or sewer separation in compliance with MassDEP regulation and the City of Cambridge's I/I mitigation policy. Without offset, the new flows have the potential to compromise the environmental benefits of MWRA's \$912 million CSO Control Program, including water quality improvement in the Charles River. Removing Mall related stormwater flows from the MWRA sewer system will contribute to the required I/I removal.

### TRAC Discharge Permitting

MWRA prohibits the discharge of groundwater and stormwater into the sanitary sewer system, pursuant to 360 C.M.R. 10.023(1) except in a combined sewer area when permitted by the Authority and the local community. The Project site has access to a storm drain and is not located in a combined sewer area. Therefore, the discharge of groundwater or stormwater to the sanitary sewer system associated with this Project is prohibited.

The blackwater treatment plant will require a Reclaimed Water Permit (314 CMR 20.00) from the Massachusetts Department of Protection. A reclaimed water permit will need to be issued to the proponent prior to submitting an application to MWRA for a Sewer Use Discharge Permit (360 CMR 10.023(13)(b)). A Sewer Use Discharge Permit is required for the proposed blackwater treatment plant prior to discharging sludge, filter backwash residuals, and laboratory wastewater into the MWRA sanitary sewer system. For assistance in obtaining this permit, a representative from the proposed laboratory or commercial space should contact Emily Johnson, Industrial Coordinator, in the TRAC Department at (617) 305-5619. The permit application must include a complete and detailed hydraulic analysis of the sewer system that will receive the effluent from the blackwater treatment plant. This analysis is required for all discharges to ensure adequate capacities are available and must be prepared under the direction of a professional engineer registered in Massachusetts. The blackwater treatment plant must have a capacity to hold its discharge for three days. Further, the sludge discharged into the sanitary sewer system must not exceed the allowable 3% maximum total suspended solids concentration.

A Sewer Use Discharge Permit is also required prior to discharging process and/or laboratory wastewater from commercial or laboratory space associated with the Project into the MWRA sanitary sewer system. For assistance in obtaining this permit, a representative from the proposed laboratory or commercial space should also contact Emily Johnson, Industrial Coordinator, in the TRAC Department at (617) 305-5619.

Any gas/oil separators in parking garages associated with the project must comply with 360 C.M.R. 10.016 and State Plumbing Code. The installation of the proposed gas/oil separators may not be back filled until inspected and approved by the MWRA and the Local Plumbing Inspector. For

assistance in obtaining an inspection the Proponent should contact Alix Pierre Louis, Regional Manager, at (617) 305-5660.

On behalf of the MWRA, thank you for the opportunity to provide comments on this Project. Please do not hesitate to contact Katie Ronan of my staff at (857) 289-1742 with any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Rebecca Weidman", with a long horizontal flourish extending to the right.

Rebecca Weidman

Director

Environmental and Regulatory Affairs

cc: John Viola, MassDEP  
Adam Horst, BWSC

## **Strysky, Alexander (EEA)**

---

**From:** Ovadia R Simha <simha@mit.edu>  
**Sent:** Monday, December 13, 2021 3:57 PM  
**To:** Strysky, Alexander (EEA)  
**Cc:** mowu@mitimco.mit.edu; kbrown@mitimco.mit.edu; Stephen Kaiser; Dan Egan; East Cambridge Planning team; Kendall Squate Residents Association; Melissa Peters; Tom Evans  
**Subject:** COMMENTS TO MEPA RE VOLPE PROJECT

**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

To : Alex Strysky, MEPA

I am submitting additional comments and materials to supplement those by Stephen Kaiser regarding the MIT ENF and CRA NPC#1891 traffic studies conducted for the Kendall / East Cambridge area .

The lack of a compressive analysis of the future impact of authorized developments in the Kendall Square / East Cambridge area is worthy of serious question. the segmentation of projects even where conducted by the same Traffic engineering company leaves many questions about the impact of the proposed development and its possible expansion.

When additional projects already authorized in the same zone by other development companies is likely to create an untenable surface traffic condition at all of the major intersections in the area . We have attached a fact sheet that suggests the scope and scale of population growth that the projects noted above plus other projects in the immediate vicinity, will generate that have not been fully explored by the traffic studies submitted.

The cumulative effects of these and other developments under way also raise questions about both the capacity and access to rapid transit . the existing red line station has both portals at the eastern end of the site area. Leaving large portions of the existing and new population without easy access to the Kendall/MIT station from the west. No indication of how MIT and the Boston Properties project would employ resources they have earmarked for transit improvements.

The energy demands for this area full build out have not been available from either the City of Cambridge or The primary supplier Eversource. We cannot tell whether the plan for the sub station in planning on Broadway will be sufficient to service the needs of this area.

The level of concern for flooding in the kendall development zone continues to be of concern . I have attached an illustration of the original condition of the area under development for your reference . Hope that MEPA will take this concerns into consideration as you complete your review .

O. R. Simha

### **FACTS AND CONSIDERATIONS ABOUT THE IMPACT OF THE VOLPE / MIT- IMCO PROJECT ON KENDALL SQUARE AND ADJACENT EAST CAMBRIDGE NEIGHBORHOODS**

#### **1. FACTS**

##### Proposed Build Out

3,250,000 SF on 14 acres, consisting of:

- 400,000 SF for new Volpe Center
- 2,800,000 SF for commercial and residential development

#### Housing

1,120,000 SF, consisting of:

- 1400 new dwelling units in four buildings
- 280 affordable units

Two buildings at 250 feet and one building of 382 feet located between Potter Street and Broad Canal way.

A fourth building on the corner Binney and Third Street at 250 feet.

The zoning permits the development of one residential building to be up to 500 feet

#### Commercial Buildings

1,680,000 SF in four buildings

Three buildings at 250 feet along Broadway that will cast shadows and block the sun shine on the residential buildings throughout the day

A fourth building at 170 feet on Binney street

#### Community Center

22,000 SF, consisting of:

- Gym/ exercise space/ lap pool/ training center for Volpe residents and workers as well as the community
- If built as an unattached building, its footprint of about 10,000 SF is subtracted from the 2.5 acre open space requirement.

#### Parking

2,200 MIT-IMCO parking spaces below grade at Volpe site:

- 1,000 spaces for residences
- 1,200 spaces for commercial users ( 318 in separate Volpe garage and two separate underground garages, one with access from Binney Street and the other from Potter Street.

## 2. TRAFFIC, CIRCULATION, ACCESS AND SERVICE

### Potter Street Conflicts

Auto and truck access to the new MIT-IMCO ten-acre residential and commercial development's underground garages is proposed to come from **Potter Street**, a private way, via left and right turns from Third Street and controlled by a proposed traffic light. Traffic may also come from Monroe and Fifth Street, although a portion of Fifth Street is also a private way. Access and egress to MIT-IMCO garages would also be from Broadway. No indication of the amount of traffic assigned to each entry has been provided at this time.

**Potter Street, which is a private way**, now supports access to the existing Volpe parking. It is the principal access to the garage for the 700 residents of 303 Third Street (Third Square). In addition, the principal active loading dock for 303 Third Street is located on **Potter Street** adjacent to the residents' garage entrance. All parking space on the north side of **Potter Street** is reserved for Third Square service vehicles and clients. An earlier traffic study prepared by VHB, MIT's traffic consultants for the new Volpe Transportation Center, did not adequately address the limitations of **Potter Street** to handle the proposed traffic to MIT-IMCO's Development.

The proposed MIT-IMCO plan would place entrances to their garages and service loading docks on **Potter Street** directly across from the entrance lobby, garage and loading dock entrances of 303 Third Street. This will result in frequent conflicts between commercial and service vehicles and will result in conflicts with private vehicles seeking to enter and depart from the Third Square garage. Not only would this plan create untenable conflicts with Third Square operations, it will also create queuing conflicts and dangerous pedestrian connections between the proposed open space at 3rd and Broadway to the Volpe green way. The heavy pedestrian traffic on Third and Potter Streets will also suffer from increased vehicle volumes turning into and exiting Potter Street

MIT-IMCO could relocate their garage entrances and service traffic to a location opposite the new Volpe building further up **Potter Street** and west of Fifth Street, if they continue to pursue the use of Potter Street as a principal access to their 2,000-car garages.

### Service Traffic

The intersection of Potter, Third and Kendall Streets is the principal access to the Bio-Med garage containing 1,409 spaces. This Bio-Med garage, is underused at this point, but could be fully utilized when the current Bio-Med proposal to build a 550,000 addition on their property, without the addition of any new parking space, is approved. This may further degrade the performance of this intersection and result in both vehicle and pedestrian conflicts.

There is no indication of the amount of service traffic that would be required to serve the MIT-IMCO project. Given the similarity of development across Third Street at Bio- Med properties, the service traffic will be frequent. It will involve everything from tractor-trailers to a range of vans and will involve a considerable amount of noise pollution from backing vehicles onto loading docks. The current plan only provides for surface deliveries by large trucks that would impede safe pedestrian movements in what has been presented as a pedestrian retail zone.

To avoid conflict conditions, all service vehicles delivery and loading should be below grade or interior to the buildings

Pedestrian Path

Access to Volpe's 318 parking spaces is from the extension of Fifth Street ( a private way ) from Binney street for east bound cars only and from Third Street to Monroe Street with cars using both right turn and left turns into Monroe Street and by right and left turns into Potter Street ( a private way).

This traffic pattern conflicts with the landscape plan that would direct pedestrians to the new Volpe landscape path to Binney Street.

3. POPULATION INCREASES

Existing Population

50,000 residents and employees

The new Volpe project population will be in addition to the existing population of over 50,000 residents and employees in buildings already completed in the Kendall Square area. Source: Bancography (MIT Federal Credit Union) This number does not include visitors and the East Cambridge community.

Additional Population Added by MIT-IMCO's Volpe Development

3,000 Residents, including 3-400 Children under 18

5-6,000 Employees

8-9,000 in total

The MIT project will introduce a substantial increase in residential and day-time populations.

3,000 persons would be added in the 1,400 dwellings based on 2.1 persons per dwelling unit.

5-6,000 persons will be added in the 1.7 million SF of commercial space based on 3 persons per 1,000 SF.

A total of 8-9,000 additional people would be introduced into Kendall Square as a result of this project.

Children under 18 in the new residences will likely be in the 300-400 range. As outlined below, they will join 100 to 125 children in the new MIT Graduate Residence at 45 Hayward Street, 75 children at 165 Main Street, 125 children at Third Square, 125 children at Watermark, 70 children at 88 Ames Street and 100 children at Boston Properties proposed residence at 135 Broadway. **These developments in Kendall Square, taken together will create 950- 1000 children in the immediate vicinity of the Volpe Project.**

Additions to the Population Beyond Volpe

There will be increases in population beyond those within the Volpe project as a result of projects which are authorized, under construction and projected based on applications before the Planning Board. They include:

45 Hayward Street MIT Graduate Student Residence:

454 units

- 478 residents

165 Main Street MIT Rental Apartment House:

300 units

- 600 - 700 residents

MIT Commercial Development South of Main Street will add:

1 million SF of lab and office space

- 3,000 new employees

Boston Properties - MXD office/lab/residential:

862,000 SF of office/ lab

- 2,130 new employees

400 new residences

- 840 new residents

Alexandria Properties, Binney and Fulkerson Streets:

400,000 SF of office /lab space

- 1,000 new employees

Bio-Med Properties, 385 Third Street:

400,000 SF (net of 550,000 requested )

- 1,000 new employees

Total new population in Kendall Square from other development:

9,000- 10,000 people

**Total new employees and residents in Kendall Square from all new developments:**

**17,000-19,000 people**

Existing, Volpe and other new development in Kendall Square

The combination of the new Volpe project population and additional population generated by prospective development could amount to 17,000 to 19,000 new employees and residents in Kendall Square.

**The resulting existing and new population for the Kendall Square area could reach 70,000 plus by 2030.**

#### 4. PUBLIC OPEN SPACE ISSUES

##### Usable open space

MIT is required by the provisions of PUD 7 zoning to provide 25% of total land area to be publicly Beneficial Open Space.

10 acres of nonfederal land should produce 2.5 acres of land for that purpose.

Open space committed to the new Volpe Transportation Center on 4 acres of land will be partially restricted. A fifty-foot security zone around the building will not be accessible to the public as usable open space.

Of the 2.5 Acres of open space on the remaining 10 acres, 1 acre is proposed to be located at Third and Broadway.

The remaining open space requirement is proposed to be in a fifty-foot wide strip of land on the western edge of the property adjacent to the sixth street walkway. The current zoning required only a 10-foot buffer along the sixth street walkway designed to protect the existing tree line along the 6th street walkway.

The current plan trades off a concentrated sun filled open space with flexible uses for the area population versus an outdoor linear space with limited flexible use, shaded by a tree canopy and proposed residential, entertainment and commercial buildings to be built along the sixth street path at the western edge of the Volpe site.

The East Cambridge Area Planning Study (ECAPS) and subsequent planning studies called for at least **five** acres of usable and flexible open space to serve the existing and future population of the area. The current plan offers **one** acre of usable publicly accessible open space exposed to air and sunshine for a population considerably larger than that suggested in the ECAPS plan.

##### Trees

The city would lose 132 50-year- old trees of 5 caliper or larger that have been growing since 1970's. 84 new trees would be added with a greater variety of species, but of smaller caliper. 214 existing trees would be retained.

MIT's landscape consultant speaks of the existing trees as having a limited life expectancy thereby justifying culling some of the tree canopy. It should be noted that the trees at Volpe have been well taken care of and have thrived. On the MIT campus nearby, oak trees planted and properly maintained, have been in place for over a hundred years and should continue for the foreseeable future to provide a healthy tree canopy for the city and campus.

Trees of the size on the Volpe property are moved on a regular basis. Consideration of saving these mature trees should be explored.

#### 5. COMMUNITY BENEFITS

MIT-IMCO has proposed community benefits that would result from the project. They include :

##### Housing Trust Contribution:

\$36 million contribution to Housing Trust. This Contribution is required by Cambridge Ordinance.

##### Transportation:

\$8.5 million for transit improvements - to be determined

\$8.5 million for the Grand Junction multi path project- underway

##### Neighborhood Life:

\$8.5 to community fund for nonprofit purposes- To be determined

\$ 25.5 million for a community center including an endowment for operations.

##### Jobs and Employment:

Job connector - now located on Main Street across from Washington Elms / New Town court.

This would move to a community center or other location that would be further from the Port community.

#### 6. CONSIDERATIONS FOR IMPROVING THE VOLPE PLAN

##### The Building Plan

The proposed building plan does great damage to the existing adjacent community of 700 residents at Third Square. This problem could be avoided by building fewer and taller residential buildings, as permitted by the zoning. They could be located west of Fifth street. This would eliminate the conflict with Third Square residents ,would allow for an increase in publicly accessible open space at Third and Broadway and insure that many more of the residential units to be built will have access to sunshine all through the day

##### The Traffic Plan

The plan should recognize that most automobile commuter traffic will be approaching the site from arteries leading to Main and Broadway on the south and Binney Street from the north. The already congested Third Street should not be further diminished in service by unduly

### Flood Potential

Kendall / East Cambridge 1854



## **Strysky, Alexander (EEA)**

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**From:** Stephen Kaiser <skaiser1959@gmail.com>  
**Sent:** Wednesday, January 12, 2022 8:08 PM  
**To:** Strysky, Alexander (EEA)  
**Subject:** Stephen Kaiser, TRAFFIC IMPACT ASSESSMENT AND MITIGATION for Volpe Exchange Parcel Redevelopment EEA #16468

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

### COMMENT ON TRAFFIC IMPACT ASSESSMENT AND MITIGATION For **Volpe Exchange Parcel Redevelopment EEA #16468** By Stephen Kaiser, Cambridge MA

On December 13, 2021 DCR expressed their concerns over traffic impacts and mitigation for the DCR parkway system. Anyone familiar with the traffic predictions for Kendall Square should see an infrastructure crisis of historic dimensions. However, any open awareness of the problem appears to have escaped this proponent and the City of Cambridge.

In 1979, shortly after the initiation of scoping at MEPA and while working at MEPA, I reviewed the Lechmere Triangle EIR (EEA #3007) prepared under the supervision of the City. I noticed that they had not included the recognized bottleneck in the area -- the intersection of O'Brien Highway and Land Boulevard. Upon inquiry, the representative of the Cambridge planning department pointed to the MEPA scope listing traffic issues as simply one word : "traffic." From then on I drafted all scopes to be precise as to intersections to be studied and the format of the results. Proponents could never be trusted to scope themselves.

Over the years, precision in scoping has produced the concept of MEPA Guidelines, as developed in concert with MassDOT. About half of the Volpe ENF is consistent with the initial steps of analysis. I generally accept all traffic counts and intersection capacity calculations as submitted in the ENF, although I may have differences with detailed results. The issue that must be squarely addressed is the matter of assessment of impacts and mitigation.

I see three distinct traffic conditions for consideration :

- Existing traffic counts and capacity calculations (today)



- Future No-Build Traffic trips (with expected background growth) (year 2028)
- Future Build traffic expected from the Volpe site development parcel alone (future 6,535 daily trips)

The proper sequence of traffic analysis under MEPA begins with trip generation, followed by identification of added growth traffic to create the 2028 No Build road networks, and finally new development from this Volpe project. Next would come a capacity calculation to determine where predicted traffic exceeds available intersection capacity. The Synchro computer model reported severe LOS F occurrences at numerous intersections, with Volume/Capacity ratios as high as 2.76 AM and 3.40 PM. I have never seen numbers that high. These calculations and summary listing in a technical table ends the ENF presentation. Here compliance with MEPA stops, especially to assess impacts and mitigation.

I consider the failure to provide assessment of highly congested traffic conditions to be a flagrant violation of general MEPA requirements for ENF submissions. The ENF on page 3-1 includes a general listing of mitigation actions, with no assessment of likely effectiveness. This assessment failure means that the ENF cannot serve as a substitute for preparing an Environmental Impact Report.

Other developers share this flaw in addressing Kendall traffic problems. My observations in recent years is that proponents of projects in Cambridge are not submitting assessments of impacts. Typical evasions are to bury the technical results in an appendix table and thereafter to make no reference to those results -- thus no mention or assessment of impacts and mitigation is made. This proponent has not met his regulatory obligations under MEPA at the fundamental level of assessing impacts, to say nothing of obligations for mitigation.

One exception we should make to demand for assessment is in the matter of traffic queues, where our traffic engineering talents fail us. Queue lengths are calculated in the ENF, but with the common notation that for many congested locations “*queue lengths are theoretically infinite.*” No proponent of a project before MEPA should be required to assess such an absurd result. My recommendation is that queuing results in the ENF should be treated as useless. Queues are an important reality in Cambridge, but the flaw lies in our national computer models and in the Highway Capacity Manual. These queuing flaws have been known for forty years, and we cannot resolve them today.

The question should be placed to the proponent : did they assess the importance of the capacity calculations in the ENF and in the severe congestion levels that result ?? The only honest answer is no, they did not. If they cannot fulfill this basic MEPA obligation, the ENF should be rejected as incomplete.

A conditional acceptance could take the form of approval subject to the approval of a traffic impact study assessing both the impacts and mitigation described in the ENF. Analytically, the proponent could build on the existing ENF and add the sections that are missing. The traffic congestion situation at Kendall Square has become so

egregious in terms of expected traffic congestion that the commonplace methods of ignoring assessments should no longer be tolerated. This is the breaking point. The proponent should be obligated to discuss the expected levels of congestion and what they mean, as required by MEPA regulations.

Once the impacts have been properly identified and assessed, the issue of mitigation begins. The first rule must be to be tough but fair in terms of responsibility. Each proponent should be held responsible for the increment of each individual project, and not for the total traffic problem or the traffic increases caused by others. To the maximum degree possible, the proponent must come to believe that the mitigation obligations are fair and appropriate, and are determined without favoritism.

Like traffic analysis, mitigation assessment must be done in a series of steps. First is to brainstorm for effective ways to achieve mitigation qualitatively, with reasonable criteria for effectiveness and cost efficiency. The next step is to identify methods of application and an assessment of how much mitigation may be required quantitatively. The last step is determining action by whom and for what cost.

My reading of the MEPA regulations is that the primary obligation is on assessment and not commitments for implementation. Any Section 61 findings made by state agencies will usually spell out mitigation requirements, but Section 62 is primarily focused on identification and assessment.

Mitigation should be considered for all impacted intersections, not simply City of Cambridge streets. The ENF on page 26, item II.C. makes it very clear that the proponent has no interest in providing mitigation for state-owned roadways : *“The project is near city-controlled rather than state-controlled roadways and, as a result, (i) mitigation will be completely on the city-controlled roads and (ii) no state roadway mitigation is proposed.”* It is likely that this position caused great consternation at DCR. It is also in violation of basic MEPA regulations regarding impacts to be considered. I find it revealing how the proponent describes the Volpe site as being close to (state) transit facilities, yet so distant from state roadways.

In most transportation situations, such as highway or transit, significant mitigation will usually be achieved by public agencies. One form of valid mitigation is to assemble a packaged plan for achieving mitigation objectives. Such a packaged plan could be a change in transit operations that produces even spacing between trains (or buses) -- with the goal of avoiding bunching inefficiencies. This approach was taken in the 2015 SEIR for Kendall Square (#1891) by the Cambridge Redevelopment Authority, demonstrating that peak passenger loads could be increased from 8,600 passengers per hour per track to 13,000 -- a 36 percent improvement. This excellent idea is highly cost efficient and depends primarily on starter personnel releasing trains at scheduled spacing and thereafter using other personnel to monitor that the intended spacings are maintained. Unfortunately, such mitigation was never implemented. The proponent was not the cause of inaction, because the MBTA was responsible for implementation. Over

six years later the same mitigation concept could still be applied for the Volpe site, but management controls are needed to assure that mitigation was applied properly.

The ENF at pp. 120-123 makes no reference to peak load counts based on recent measured values of train ridership, as occurred in the 2015 SEIR. A measured count must be used and not a theoretical calculation as shown in the Volpe ENF.

If the MBTA were to accept a program to limit bunching, the Authority could apply controls against bunching to all buses and trains system-wide, not simply to those affected by a specific project like Volpe. I believe that the proponent of a bunching solution could claim a mitigation benefit based on the system-wide improvements, not just the Kendall Square Red Line and not just to buses serving Kendall Square. In some cases the mere “idea” of a mitigation improvement may be more important than a specific application. One can presume that more capacity and reliability (and less crowding) on the Red Line will induce fewer new auto trips throughout the Red Line system. A companion policy would be a freeze on total parking spaces at Kendall.

One vital transit difference in the past half dozen years has been the performance of John Dalton and his team at the MBTA to bring in the Green Line Extension project with exemplary efficiency and expeditious planning. Similar concentrated talent at the MBTA could bring notable operational improvements to the Red Line.

Dealing with group impacts is politically the most difficult factor in successful mitigation. A rule for fair assignment of mitigation responsibilities should be based on the relative increment in the number of daily trips added, so that the larger the project the larger the mitigation. If there is a problem of bad existing conditions and a likelihood that conditions will get worse (such as Kendall Square), the guiding principle should be that proponents should not do anything that makes things worse than the no-build condition. Each proponent should work on his share of the problem, with all others responsible for their proportionate share. This arrangement avoids shackling any proponent with mitigation responsibilities that are disproportionately large. For the Volpe site, the mitigation goal could become a reduction of 6,553 person-trips-per-day by car, as identified through trip generation calculations in the ENF.

The COVID era has introduced another trip reduction factor, which is work-at-home. However, in the long term, total office space will be the determining factor, after leases and subleases. A better option is to consider other land uses such as lab space or housing having a lower trip generation rate.

Clearly, it will be in the self-interest of this proponent to interest others in the Kendall Square area to consider active trip reduction programs. If developers in the Kendall area do not cooperate in such programs, the most likely result will be area gridlock, according to the ENF calculations.

One common form of mitigation should be considered undesirable to healthy urban environments. Road widening and efforts to move more traffic through intersections can

fall afoul of downstream bottlenecks, as has happened with Suffolk Downs in Boston and Revere, whereby the developer is now proposing \$50 million for road “improvements” which may have no benefit because of severe existing congestion at the Harbor crossings. The Suffolk Downs plan originally proposed 1/3 car and 2/3 transit access, but a highway model was imposed by state officials to produce 1/3 transit and 2/3 auto trips, with higher parking requirements. Such concepts cannot be described as transit-oriented development.

As I have noted earlier, the scope for a traffic study should include Leverett Circle, as well as the BU Bridge and Reid rotary. Any new traffic study could disregard uncongested intersections, and instead concentrate on high congestion locations.

A fascinating unasked and unanswered question in this discussion is the role of the Volpe Transportation Center itself. It would be embarrassing to admit that the Volpe National Transportation Research Center might become bogged down in Kendall Square gridlock, with MIT co-existing in a similar state. At Kendall, congestion mitigation should be everyone's responsibility. And the Volpe Center should contribute to the dialogue.

Stephen Kaiser, PhD  
191 Hamilton Street  
Cambridge, Mass. 02139

cc.DCR  
VHB

**Strysky, Alexander (EEA)**

---

**From:** Stephen Kaiser <skaiser1959@gmail.com>  
**Sent:** Friday, January 21, 2022 5:05 PM  
**To:** Strysky, Alexander (EEA); Kim, Tori (EEA); Boccadoro, Helena (DEP); Viola, John D. (DEP); MassDOT PPDU; michael.garrity@dot.stat.ma.us; Felix, Alison; Pillsbury, Martin; Katie Ronan (Katherine.ronan@mwra.com); Ormond, Paul (ENE); Place, Brendan (ENE); Greene, Andrew (DPU); Bartley, Geneen (DPU); jroberts@cambridgema.gov; sjoseph@cambridgema.gov; sbreen@challiance.org; scorda@cambridgema.gov; ooriordan@cambridgema.gov; nglowa@cambridgema.gov; michael@eastendhouse.org; rsrbowie@gmail.com; lamasters@vinfen.org; chuckhinds@msn.com; kmassenburg (DTA); darrink@cambridgecc.org; Freed, Rachel (DEP); Macauley, John (DEP); Viola, John D. (DEP); Jennie Moonan; simha@mit.edu; Ryan D. Pace (rpace@mitimco.mit.edu); Selma Mandzo-Predzic (SMandzo@VHB.com); Adriana Santiago; Lavery, Benjamin; Dugdale, Brian  
**Subject:** EOEEA #16468 The Volpe Exchange Parcel Redevelopment Project (Cambridge) ENF and Supplemental Traffic Study of January 14, 2022

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

**To : Alexander Strysky, MEPA Office ..... January 21, 2022**

**SUBMISSION of COMMENT on the January 14, 2022 VOLPE Parcel Supplemental Report .... EEA #16468**

**The proponent MIT has submitted a "supplemental" traffic report for the Volpe site that introduces more deficiencies and unanswered questions that are resolved by the report. The DCR concerns are expressed in the letter of Acting Commissioner Stephanie Cooper on December 13, 2021, when she referred explicitly to :**

***“DCR parkways and intersections located in proximity to Kendall Square include Memorial Drive / Western Avenue, Land Boulevard, River Street intersections with Memorial Drive and Soldiers Field Road, Leverett Circle, Charles Circle / Storrow Drive. Given current traffic conditions, the described increase is too much for DCR roads and intersections to absorb in the absence of mitigation. DCR requests that the Proponent provide a more comprehensive Transportation Impact Study to include all the DCR parkways and intersections that will be affected by the Project; DCR also requests that the Proponent contact DCR to begin discussions about mitigation strategies.”***

Except for the addition of two locations on Boston (Leverett and Charles Circles), this request has not been honored.

Through an extended comment period the reader could attempt to respond to this new material, but would likely encounter severe weaknesses in the organization of the document, possibly due to excessive haste in its production. The new submission is in two parts -- a 15-page memo of January 14 and a 54-page computer printout. Figures are not labeled, pages are not numbered, and computer printout is assembled out of order.

On or about January 11, 2022, analysis of Leverett and Charles Circles was apparently done by two different people, only one of whom made an attempt to number the pages. The January 14 memo in its last eight pages of diagrams was intended to display peak hour traffic volumes at Charles and Leverett Circles. These eight pages need to be modified because the following information is entirely absent :

*p. 8 Figure 1 Existing traffic hourly volumes at Charles and Leverett Circles, AM peak hour*

*p. 9 Figure 2 Existing traffic hourly volumes at Charles and Leverett Circles, PM peak hour*

*p. 10 Figure 3 Future 2028 No Built traffic volumes at Charles & Leverett Circles, AM peak hour*

*p. 11 Figure 4 Future 2028 No Built traffic volumes at Charles and Leverett Circles, PM peak hour*

*p. 12 Figure 5 2028 Incremental Build traffic volumes at Charles & Leverett Circles, AM peak hour*

*p. 13 Figure 6 2028 Incremental Build traffic volumes at Charles & Leverett Circles, PM peak hour*

*p. 14 Figure 7 2028 Total Build traffic volumes at Charles and Leverett Circles, AM peak hour*

*p. 14 Figure 8 2028 Total Build traffic volumes at Charles and Leverett Circles, PM peak hour*

Without these labels, the reader must match up the Synchro calculation sheets with the traffic volumes shown in the eight figures. Most readers would not have the time or ability to go through such a laborious process. In addition, all eight figures show a mislabeling of an inbound Storrow Drive (Embankment Road) "On-Ramp." It should properly be

labeled as the “Off-ramp.” I would describe the January 14 submission as unreadable.

The second file of Synchro 10 calculations contains 54 pages. For simplicity and ease of reference to the existing files I will use digital page number “#-of-54” for reference to any single page. This way the traffic volumes attached to the memo can be connected to the results shown in the computer printout.

Unfortunately, the names of intersections in some cases are so long (without abbreviations) that they block out underlying information for the AM or PM peak label. This blockage occurs on both screen and printout versions. Thus, it is difficult to tell whether any set of Synchro calculations refers to morning or afternoon traffic conditions.

Finally, the sequence of calculation sheets 1 to 54 was arranged so that a half-page queue calculation comes before the full-page capacity calculation sheet. Page #1-of-54 came before page #2. This pattern is continued throughout the 54 pages, even though the queue calculation depends on the capacity calculation sheet and should have been placed second. I have never seen another Synchro calculation presented this way, and unneeded reading difficulties are introduced. This swapping around of computer printout is unexplained and unjustified. The proper sequence should have been a much more orderly sequence of pages #2, #1, #4, #3 and #5 of 54.

At Charles Circle there was a very peculiar labeling difficulty : the designation of the intersection on page #1-of-54 as “Pleasure Road and Cambridge.” Over the years of watching traffic at Charles Circle, including five years working with DCR’s predecessor agency, the MDC, I had never encountered the phenomenally obscure Pleasure Road. I found it only after making a Google search. Pleasure Road in reality serves as an entrance road onto the Mass Eye and Ear parking lot just off Charles Street. Readers should not be presented with such obscurity. All references in the text and calculations to “Pleasure Road” should have been to the predominant and well known traffic roadway : Charles Street.

I cannot verify any of the Synchro 10 calculations, such as queues, pedestrian crossing times and delays, short-lane effects and other issues that would appear in the full eight pages of Synchro printout. We are told nothing about pedestrian WALK times. Also absent from the analysis is any consideration of the Boston University Bridge and William Reid rotary -- congested by effects of backups on the bridge, resulting in a queuing logjam that creates a no-way-out situation affecting 300 families in Cambridgeport. Cambridge officials and some state employees seem intent on ignoring the congestion that spills off the BU bridge in afternoon peak

hours, much of the traffic coming from the Kendall Square direction. The proponent continues to say nothing about these traffic impacts in Cambridgeport. As someone who is still walking around and remembers Bill Reid from his last days at the MDC fifty years ago and knew that he worked on the original overpass in 1940, I feel confident that he would not support how incomplete the submissions have been for the Volpe project.

The January 14 report fails to recognize that Charles Street in Boston -- and not Charles Circle -- is the controlling bottleneck. Charles Circle captures and holds the overflow traffic from Charles Street. Synchro 10 seems to recognize this fact by its last note on page #1-of-54 : "*Volumes for 95th percentile queue is metered by upstream signal.*" These upstream signals are located on Cambridge Street and hold back hospital and downtown congestion from reaching Charles Circle. In the eastbound direction, Charles Street congestion causes queues to spill back into Charles Circle. Sadly, there is no discussion in the January 14 memo to indicate how any of this is happening. The volume-to-capacity ratio is shown on page #2-of-54 as 0.47 as if the intersection is only half-full. The traffic volumes are cut in half because of backups on Charles Street.

Highway Capacity Manual warnings have been long established that congested intersections affected by congestion elsewhere should be rated as LOS F for failure. Yet on page #2-of-54 the traffic consultants have given Charles Circle a rating of LOS C. A good traffic analysis should have enlightened us as to the cause of traffic problems around Charles Circle, but the reality of Charles Street appears to have escaped this proponent and the traffic consultant.

At Leverett Circle, exactly the opposite occurs. Existing volume-to-capacity ratios from Table 1 and 2 are shown to be 1.72, 1.54, 1.50, 1.48, and 1.44 just for the five highest existing volume-to-capacity estimates. The problem for traffic engineers is that any figure of V/C more than 1.00 is in error because traffic capacity has a maximum and there is no way that it can be exceeded. There must be an error in the calculation, in the computer model, or volume measurements, or the Highway Capacity Manual. A V/C of 1.72 means that for existing measured traffic volumes exceed capacity by 72 percent. In statistical terms, this is a calibration error of 72 percent.

This number represents a massive error in the calculation, not the reality of traffic congestion. Neither the original ENF submission nor this new information on Leverett Circle offers an explanation of what went wrong with the calculation. At some point this proponent and this traffic consultant should have explained this rather embarrassing situation, with the understanding that other proponents and consultants are similarly afflicted with V/C errors for congested locations.



**The queuing results for Leverett Circle also display extreme and undefined length of traffic backups. On page #53-of-54 Synchro printouts are sprinkled with references to “*Volume exceeds capacity, queue is theoretically infinite,*” and “*95th percentile a volume exceeds capacity, queue may be longer,*” and “*volume of the 95th percentile queue is metered by upstream signal,*” (page 53 of 54). All three warnings apply to the same intersection. Yet the January 14 memo offers no explanation to explain these queuing exceedances or any discussion whatsoever of queues. No mitigation is given for queues and no calculations are shown for any claims of reduced congestion delay. Thus, there is no way to check these claims.**

**The remainder of the ENF and latest report offers no indication of general mitigation, especially for DCR roadways within the study area of impacts from Kendall Square development. The traffic consultant is full of assurances but no proofs.**

**In conclusion, the ENF and related documentation should be found inadequate because of the disappointing state of its organization and the lack of credible assessment of two new intersections. Some of the difficulties can be attributed to evident haste with which the amended report was prepared. In my comment of January 12, I expressed my concern about the need to assess impacts and mitigation for the traffic work done to date, and how an otherwise detailed and complete traffic analysis stopped just short of doing the assessment of impacts called for by MEPA regulations. This concern applied to all intersections considered in the Volpe study so far, in addition to Charles and Leverett Circles. Adding in two Boston intersections with poor presentation formats does not correct the previous omissions, most notably its incomplete response to DCR's original request to assess impacts on the DCR road system within the project study area.**

**With respect to the ENF for the Volpe site, the proponent has not presented a readable, professional, and worthy case that the overwhelming traffic growth of traffic at Kendall Square -- and MIT's contribution to it -- has been properly resolved by avoiding traffic overloads on existing infrastructure.**

**Fifty years ago, the MIT Department of Civil Engineering had an Associate Professor named Alexander Bone, who taught a course on traffic engineering. When he retired this course was not continued. Prof. Bone was famous for sending his students out to Leverett Circle every year to do studies of traffic flow and possible improvements. It was an annual ritual now largely forgotten. I look in vain for evidence of practical traffic engineering expertise being developed at MIT.**

**About the same time the John A. Volpe National Transportation Systems Center was established as a center of transportation and logistics expertise, operating under the United States Department of Transportation. Unfortunately, it too has been unable to develop practical traffic engineering expertise. How peculiar it is that both MIT and the Volpe Center are right in the middle of this massive traffic congestion problem at Kendall Square, and they both have so far been unable to develop useful solutions. This failure to exercise traffic candor, accuracy and evaluation skills should lead to only one conclusion by MEPA. The Secretary should call for an Environmental Impact Report to create a high quality MEPA record that so far has yet to be achieved by this proponent.**

**Submitted by :**

**Stephen H. Kaiser, PhD  
Citizen Engineer and Historian  
Mechanical Engineering '65, '67'71  
191 Hamilton Street  
Cambridge MA 02139  
=====**

## **Strysky, Alexander (EEA)**

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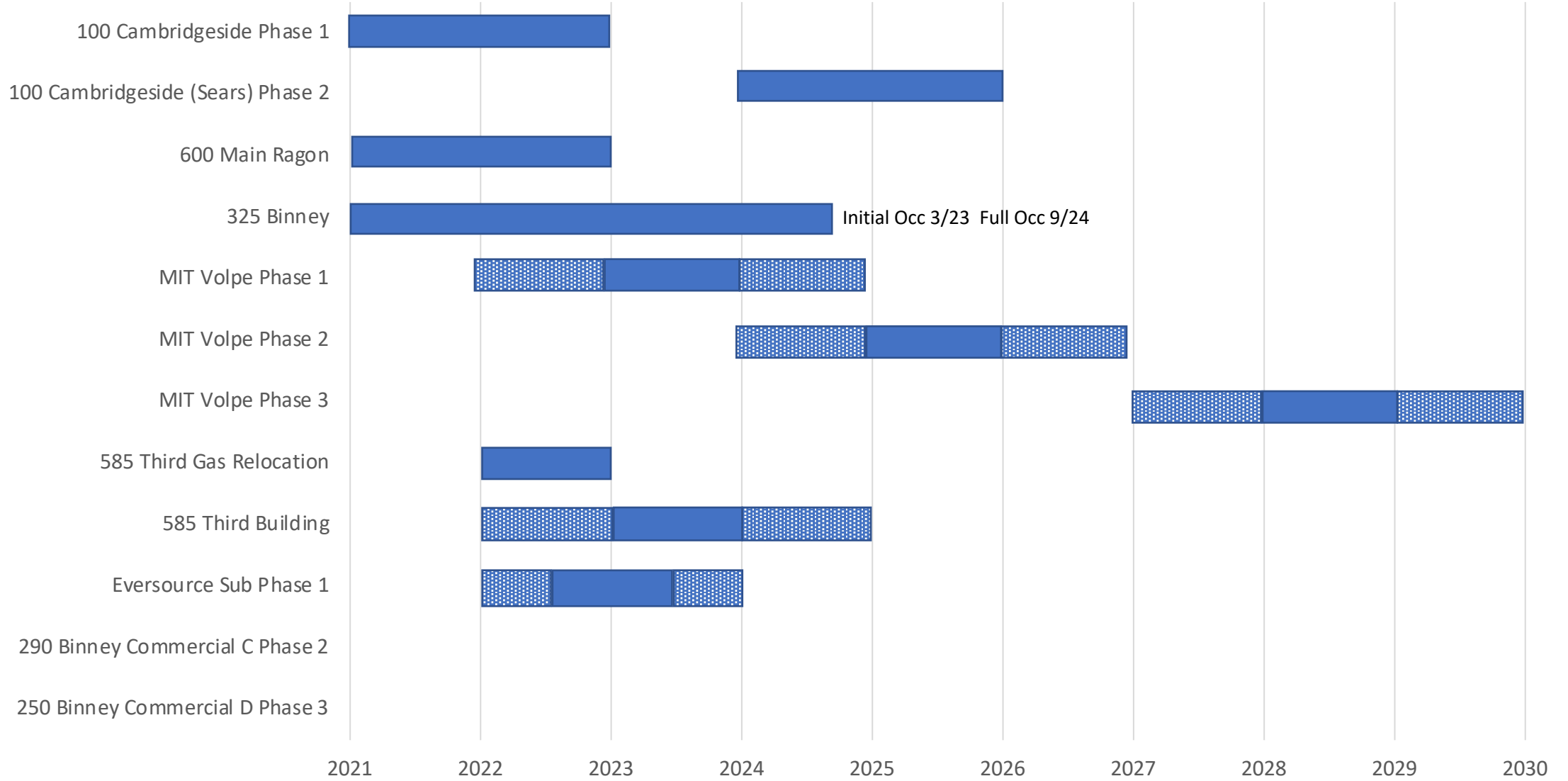
**From:** Ovadia R Simha <simha@mit.edu>  
**Sent:** Wednesday, January 26, 2022 2:06 PM  
**To:** Strysky, Alexander (EEA)  
**Cc:** Greene, Andrew (DPU); Bartley, Geneen (DPU); afelix@mapc.org; Pillsbury, Martin; Katie Ronan (Katherine.ronan@mwra.com); Ormond, Paul (ENE); Dugdale, Brian; Lavery, Benjamin; Selma Mandzo-Predzic (SMandzo@VHB.com); Ryan D. Pace (rpace@mitimco.mit.edu); Jennie Moonan; Freed, Rachel (DEP); kmassenburg (DTA); chuckhinds@msn.com; sjooseph@cambridgema.gov; lamasters@vinfen.org; Place, Brendan (ENE); Adriana Santiago; Viola, John D. (DEP); Macauley, John (DEP); Kim, Tori (EEA); darrink@cambridgecc.org; Boccadoro, Helena (DEP); Viola, John D. (DEP); MassDOT PPDU; rsrbowie@gmail.com; michael.garrity@dot.stat.ma.us; Jeff Roberts; sbreen@challiance.org; scorda@cambridgema.gov; Owen O'Riordan; nglowa@cambridgema.gov; michael@eastendhouse.org  
**Subject:** Supplemental comments re Volpe parcel Seupplemenal Report EEA#16468  
**Attachments:** East Cambridge Development Projects 012522.pdf; ATT00001.htm

**CAUTION:** This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear Mr Strysky,

In order to fully evaluate the proponents environmental impact, the enclosed materials prepared by concerned citizens in East Cambridge notes that the proponent already has in advanced development and completion over 1 million square feet of commercial development south of Main Street , Boston Properties is completing another circa half million square feet of commercial space on Main Street adjacent to the current Red line T stop and development events already approved and described in the attached graphic provide an indication of the scale of projects approved by the City of Cambridge. The cumulative effect of these developments in the time lines shown without a significant improvement and investment in public transit will overwhelm the existing circulation system and create environmental hazards that should be addressed by the proponent and other parties involved in the developments in Eastern Cambridge.

# East Cambridge Development Projects



Stephen H. Kaiser  
191 Hamilton St.  
Cambridge Mass. 02139

To : Tori Kim, MEPA Director, Exec Office of Energy and Environmental Affairs  
tori.kim@mass.gov  
cc. Alexander Strysky, alexander.strysky@mass.gov  
cc. David Hewett, dhewett@epsilonassociates.com

From : Stephen H. Kaiser

### Comment on ENF 16468 : Volpe Exchange Parcel Redevelopment 55 Broadway, Cambridge

This project includes concerns of segmentation and possible categorical inclusion of a Mandatory EIR. The ENF has identified the Project as exceeding “the following thresholds” without identifying whether they are ENF only or for a Mandatory EIR. I have added such identification labels :

ENF Only : 11.03(5)(b)1. Construction of a New wastewater treatment and/or disposal facility with a Capacity of 100,000 or more gpd.

As presented, the ENF claims “There are no transportation-related permits for the Project” – without proper consideration of segmentation – but identifies three exceedances of transportation-related thresholds :

Mandatory EIR : 11.03(6)(a)6: Generation of 3,000 or more new adt on roadways providing access to a single location.

Mandatory EIR : 11.03(6)(a)7: “Construction of 1,000 or more New parking spaces at a single location.

ENF Only : 11.03(6)(b)13: Generation of 2,000 or more new adt on roadways providing access to a single location

On page 2, the text describes possible land transfer from an agency of the Commonwealth. “The Proponent may in the future acquire an approximately 5,890 SF parcel ... from the Cambridge Redevelopment Authority. ... If it is acquired, the CRA parcel would be developed to include a small stand-alone building (less than 30,000 sf in GFA)” as being independent of the “Development Parcel” as described in the ENF.

The ENF makes no reference to MEPA regulations 310 CMR 11.01 (c) Segmentation, and no reference to the word “segmentation” :

“In determining whether a Project is subject to MEPA jurisdiction or meets or exceeds any review thresholds, and during MEPA review, the Proponent, any Participating Agency, and the Secretary shall consider the entirety of the Project, including any likely future Expansion, and not separate phases or segments thereof. The Proponent may not phase or segment a Project to evade, defer or curtail MEPA review.”

Because the CRA parcel is evaluated for a building of approximately 30,000 sf, the CRA site is more likely than less likely as a future expansion. An effort has apparently been made by the proponent to engage in project segmentation contrary to the provisions of MEPA regulations. However, inclusion of the CRA parcel would give MEPA review jurisdiction only over this small parcel for impacts such as transportation and energy. Section 11.01(2)(a)3. “provides an example of a Land transfer of a discrete portion of the Project site” and explains this limitation of MEPA scoping. An unsegmented assessment of the proposed project would mean this 2.8 million square foot development on 10.5 acres at congested Kendall Square would produce Mandated Draft and Final EIRs for the traffic impacts of only 30,000 sf at most. The CRA parcel would represent only one percent of the total site development. Clearly such an exercise is not a productive use of the MEPA process.

Therefore, I would suggest that instead of a DEIR and FEIR, a Single EIR be required -- limited in scope to a peer review of 2028 traffic calculations for all cases of V/C ratios in excess of 1.50 as prepared for the No-Build case for the recent Kendall Square Notice of Project Change #1891.

In addition, a calculation should be made of possible energy savings for the added 2.8 million sf of the proposed project – using possible reductions in the range of forty to fifty percent. It is my understanding that an established program by DOER and supervised by environmental engineers from DEP to assist private building owners to save energy has been able to achieve such results with reasonable reliability.

The likely results would be a better understanding of street traffic congestion at Kendall Square from expected growth, and mitigation to offset increased energy use from new development, especially electrical power use which is likely to increase compared to use of natural gas. Cambridge recently went through an electrical “energy crisis” and while immediate needs may have been satisfied, the possibility of another electrical energy crisis could result from buildings switching to electric heating, and future power loads due to charging of electric cars. During its recent “Envision Cambridge” Master Planning process for the city, Cambridge officials considered the possibility of preparing an energy plan but decided not to produce one. There is also no evidence of a traffic plan being prepared by City officials. Thoughtful scoping by MEPA could help meet some of the planning needs for the booming Kendall Square area.

Sincerely,

A handwritten signature in red ink that reads "Stephen H. Kaiser". The signature is fluid and cursive, with the first name "Stephen" and last name "Kaiser" clearly legible.

Stephen H. Kaiser



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF  
ENERGY AND ENVIRONMENTAL AFFAIRS  
**DEPARTMENT OF ENERGY RESOURCES**

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**Charles D. Baker**  
Governor

**Karyn E. Polito**  
Lt. Governor

**Kathleen A. Theoharides**  
Secretary

**Patrick Woodcock**  
Commissioner

24 November 2021

Kathleen Theoharides, Secretary  
Executive Office of Energy & Environmental Affairs  
100 Cambridge Street  
Boston, Massachusetts 02114  
Attn: MEPA Unit

RE: Volpe Exchange Parcel Redevelopment, Cambridge, MA, EEA #16468

Cc: Maggie McCarey, Director of Energy Efficiency, Department of Energy Resource  
Patrick Woodcock, Commissioner, Department of Energy Resources

Dear Secretary Theoharides:

We've reviewed the Environmental Notification Form (ENF) for the proposed project. The project site includes approximately 1.13M-sf residential space (1,400 units), approximately 1.76M-sf of life science space, and 125,000-sf of retail, restaurant, and arts/entertainment space. The objective of this letter is to share strategies for the project to reduce greenhouse gas emissions (GHG), improve resiliency, and affordability.

### **Key Strategies**

Deployed together, the following have been found to be effective strategies in advancing emission reduction, resilience, and affordability:

- Passivehouse (Residential buildings);
- Building design and construction practices that result in low heating and cooling thermal energy demand intensity (heating and cooling "TEDI") by: (All Buildings)



- Maintaining envelope integrity with framed, insulated walls with continuous insulation;
- Thermally-broken windows and other components to eliminate thermal bridges;
- Minimizing glass curtain wall assemblies and excessive windows;
- Low air-infiltration, confirmed with in-building air-infiltration testing;
- Energy recovery;
- Management of solar heat gains;
- Efficient electrification of space heating, including:
  - For highly ventilated buildings (life-science building, for example): low temperature, hydronic space heating with heat-input provided by hybrid, in-building, central plant consisting of air-to-water heat pump (primary) and gas boilers (secondary). Size the air to water heat pump to 20-40% of the heating peak load with the objective of providing 80-90% of the total annual space heating with air source. This approach can also work for speculative life-science buildings, as well.
  - For all other buildings (residential, office, and mixed use): hydronic space heating with 100% air to water heat pump input, air source VRF, or air to air heat pumps.
- Efficient electrification of water heating, where feasible; (All Buildings)
- Extensive rooftop solar-readiness; (All Buildings)
- Electric vehicle ready parking spaces. (All Buildings)

Experience has shown that the above deliver 50 to 80% less emissions than projects built to Code while improving affordability and resilience. In addition, significant incentives may be available, including MassSave<sup>®</sup> incentives, Alternative Energy Credits (AECs), and Solar Massachusetts Renewable Target (SMART) credits. For this project, just the MassSave<sup>®</sup> Passivehouse incentive for the residential portion of the project is worth up to **\$4.2M**.

## **Key Mitigation Strategies Explained**

### Passivehouse

Passivehouse is an energy efficiency building standard that results in an ultra-low energy building requiring little energy use for space heating and cooling. This is achieved by focusing on envelope performance, airtightness, solar heat gain management, and energy recovery. Passivehouse projects also typically have efficient electrified heating, as described above, and much smaller-sized HVAC systems. Published studies show that in low-rise and mid-rise residential

construction, Passivehouse doesn't necessarily cost more to build because improvements to envelope are offset by reductions in HVAC<sup>1</sup> costs. In high-rise residential construction, Passivehouse costs nominally more<sup>2</sup>.

Passivehouse is an energy code standard which is unlike other energy efficient building approaches in that its truly performance based by requiring mandatory, rigorous in-field tests to confirm that strict standards are being met. Passivehouse methods are recognized by both Massachusetts building Code, MassSave<sup>3</sup>, and incentives under Massachusetts' Alternative Portfolio Standard (APS). For qualifying multifamily buildings, MassSave incentive for Passivehouse is approximately **\$3,000 per dwelling unit, or \$4.2M when applied across the project.**

Passivehouse also delivers:

- *Significant reduction in utility costs:* thus is much more affordable to residents;
- *Improved resiliency:* Passivehouse buildings can stay warm (or cool, in the summer) for extended periods of time even with loss of power.

The Passivehouse pathway accesses the most incentives, while also being the most affordable and efficient.

In Massachusetts, Passivehouse is quickly becoming the go to solution for high efficiency housing in Massachusetts. At this time there are over 5,000 Passivehouse units being designed or under construction in eastern Massachusetts. Additionally, upon completion of Winthrop Square Tower, Boston will be home to a 750,000-sf office space certified as Passivehouse.

### Passivehouse Examples

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<sup>1</sup> Pennsylvania Housing and Finance Association. *Passivehouse Cost Comparison Data set 2015, 2016, 2018* [Data Set]

<sup>2</sup> Feasibility Study to Implement the Passivehaus Standard on Tall Residential Buildings, FXcollaborative, 30 March 2017, Prepared for NYSERDA

<sup>3</sup> MassSave® is a consortium of Massachusetts utility companies designed to deliver energy efficiency throughout the Commonwealth of Massachusetts.



*The Distillery  
Boston, MA*



*Winthrop Center  
Boston, MA*



*Newton Northland  
Newton, MA*



*Bunker Hill Housing Development  
Charlestown, MA*



*Newton Riverside  
Newton, MA*

### Thermal Energy Demand Intensity (TEDI) Reduction: Envelope, Heat Recovery, and Solar Gains

The combination of quality envelope, heat recovery, and management of solar gains can result in significant reduction in heating (and cooling) thermal energy demand intensity (TEDI, units of kBtu/sf-yr). In addition to reduced utility costs and emissions, the value of a targeted focus on heating and cooling TEDI results in:

- Simplified space heating electrification;
- Reduction, and possible elimination, of perimeter heating systems;
- Improved resiliency;
- Reduced peak demands;
- Improved occupant comfort;
- Reduced maintenance.

Specific TEDI reduction strategies are:

- High-performance window and walls;
- Thermal-broken windows and components to eliminate thermal bridges;
- Low air-infiltration;
- Ventilation heat recovery;

- Solar gain management via external shading and/or low solar heat gain coefficient (SHGC)

Buildings with curtain wall envelope require high performing windows and high performing opaque spandrels to achieve heating TEDI reductions. High performing windows and high performing opaque spandrels should be carefully evaluated if curtain-wall construction is considered.

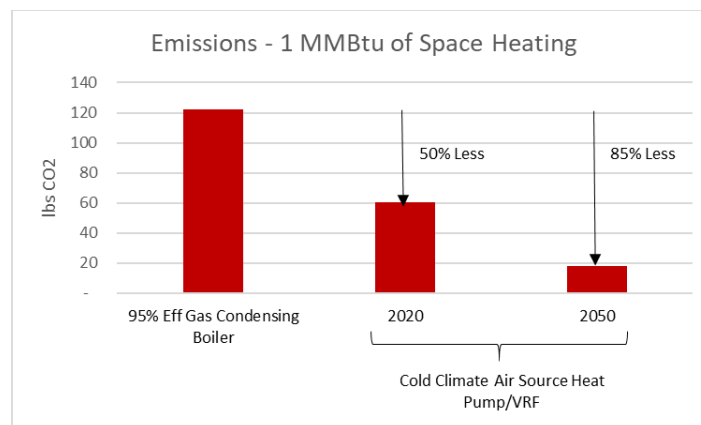
### Efficient Electrification

Efficient electrification and renewable thermal space and water heating entails the swapping of fossil fuels (natural gas, oil, and propane) or electric resistance systems with one or more of the following:

- Cold-climate air source heat pumps and variable refrigerant flow (VRF) for space heating;
- Air source heat pumps for water heating;
- Ground source heat pumps;
- Solar thermal.

Electrification of space and water heating is a key mitigation strategy with significant short- and long-term implications on GHG emissions. Massachusetts grid emissions rates continue to decline with the implementation of clean energy policies that increase renewable electricity sources. The implication is that efficient electric space and water heating with cold climate air source heat pump and VRF equipment have lower emissions than other fossil-fuel based heating options, including best-in-class (95% efficient) condensing natural gas equipment.

Currently, efficient electric heating has approximately **50% lower emissions** in Massachusetts than condensing natural gas heating. By 2050, efficient electric heating is expected to have approximately **85% lower emissions** in Massachusetts than condensing natural gas heating. See illustration below.



### Electrifying Space Heating for residential, mixed use and commercial spaces

Residential, retail, commercial, and most mixed-use spaces can readily achieve 100% efficient electrification of space heating using either air to water heat pumps, VRF, or air to air heat pumps.

### Electrifying Space Heating for highly ventilated buildings (life-science):

For highly ventilated buildings use low temperature, hydronic space heating with heat-input provided by hybrid, in-building, central plant consisting of air-to-water heat pump (primary) and gas boilers (secondary). Size the air to water heat pump to 20-40% of the heating peak load with the objective of providing greater than 90% of the total annual space heating with air source. This approach can also work for speculative life-science buildings, as well.

### Heat Pump Water Heating

Water heating can be accomplished in many ways, common technologies include fossil fuel boilers and electric resistance systems. There are approaches that utilize air-source heat pumps, as well. These applications include centrally located systems that distribute hot water to the units or distributed, unit-based heat pump water heaters.

Distributed heat pump water heating is feasible for office, retail, and restaurant spaces and is recommended for these applications. Distributed heat pump water heating may be feasible for the life sciences building, as well, and is recommended if feasible.

Distributed heat pump water heating is much more challenging to implement in dense residential, however due to limited space in the individual units. For this application, we recommended evaluating a centrally located heat pump water heating system.

### Solar PV

Rooftop PV can provide significant GHG benefits as well as significant financial benefits. The project should review opportunities to maximize on-site PV by set-aside as much roof space as possible for future rooftop PV.

Even if PV is not installed during building construction, it's important to plan the project to ensure that roof space is set aside for PV and that roof space doesn't become unnecessarily encroached with HVAC appurtenances, diminishing the opportunities for future PV. Electrification of heating and Passivehouse can both contribute to enabling more PV as these approaches can reduce rooftop equipment associated with conventional code HVAC.

### Electric Vehicle (EV) Ready Parking Spaces

EV charging stations are critical for the continual transition towards electric mobility. Even if EV charging stations are not installed during construction, it is critical to maximize EV ready spaces as it is significantly cheaper and easier to size electrical service and install wiring or wiring conduit during construction rather than retrofitting a project later.

We encourage the project to maximize EV ready and EV parking spaces for the project.

Incentives

Buildings which incorporate the above strategies can qualify for significant incentives:

- MassSave performance-based incentives<sup>4</sup> offer incentives for every kWh or therm saved compared to a program-provided energy model. The above energy efficiency strategies offer opportunities for large kWh and therm savings.
- MassSave Passivehouse incentives<sup>5</sup> are available to multifamily buildings which meet either PHI or PHIUS Passivehouse certification. In addition to a \$3,000/unit incentive, MassSave also funds pre-construction feasibility and modeling. The incentive structure is as follows:

Passive House Incentive Structure for Multi-Family Mid- and High-Rise Buildings			
Incentive Timing	Activity	Incentive Amount	Max. Incentive
Pre-Construction	Feasibility Study	100% Feasibility costs	\$5,000
	Energy Modeling	75% of Energy Modeling costs	\$500/Unit, max. \$20,000
	Pre-Certification	\$500/unit	N/A
Post-Construction	Certification	\$2,500/unit	
	Net Performance Bonus	\$0.75/kWh	
		\$7.50/therm	

- Alternative Energy Credits (AECs)<sup>6</sup> offer incentives to electrify building space heating using heat pumps and/or VRF. This program also includes multipliers which increase value if the building meets Passivehouse standards or buildings built to HERs 50 or less. These credits may be distributed on a quarterly basis over time; or, may be distributed in a lump sum to the developer if certain conditions are met.
- Massachusetts SMART program<sup>7</sup> provides significant incentives for solar development on top of federal and state tax incentives. SMART includes pathways which allow solar production to be sold without off-takers. This may be of potential interest to building developers as this allows them to develop rooftop solar without necessarily engaging with building tenants. For this reason, setting aside rooftop solar PV areas helps ensure that building owners’ ability to monetize the roof is not impacted.

<sup>4</sup> <https://www.masssave.com/en/saving/business-rebates/new-buildings-and-major-renovations/>

<sup>5</sup> <https://www.masssave.com/saving/residential-rebates/passive-house-incentives>

<sup>6</sup> <https://www.mass.gov/guides/aps-renewable-thermal-statement-of-qualification-application>

<sup>7</sup> <https://www.mass.gov/solar-massachusetts-renewable-target-smart>

## Codes and Baseline

Massachusetts Stretch Code applies to this project. Stretch Code requires a 10% energy performance improvement over ASHRAE 90.1-2013-Appendix G plus Massachusetts amendments including C402.1.5 (envelope), C405.3 and C405.4 (lighting), C405.10 (EV charging), and C406 (three additional efficiency measures).

## Recommendations

The strategies described above provide pathways to GHG mitigation, increased affordability, and improve resiliency. The following are questions that should be considered throughout the planning process:

1. Was each building and space use type modeled separately? Models should be separated by building or building area use type as follows:
  - a. Life Science
  - b. Mixed Use (retail, restaurant, entertainment)
  - c. Residential
2. Did the project ensure baseline building scenarios meet all requirements including relevant MA amendments. Each building should clearly indicate which three C406 measures are being used in the baseline. C406 measures are required for Code. For example, if the project chooses additional solar PV, the solar PV must be installed to meet Code.
3. Did the project demonstrate compliance with envelope requirements? To demonstrate compliance each building could develop two UA analysis tables, as follows:
  - a. One table that shows how the baseline complies with Table 5.5-5 of ASHRAE 90.1 2013 Appendix G plus Massachusetts Amendment C401.2.4. Fenestration limits will vary depending upon building type.
  - b. A second table that shows how the proposed complies with 2018 IECC Tables C-402.1.3, C402.1.4, and C-402.4. Fenestration limit should be 30% when calculating minimum performance requirements for all building types.
4. Was above-code envelope used throughout? The following measures should be reviewed:
  - a. Above code-threshold envelope should be used throughout (vertical walls, windows, roofs and exposed lower-level floors). Priority should be given to increasing **continuous insulation and framed insulated wall sections**. Distinguish between R value of batt and R value of continuous insulation. Continuous insulation necessarily means insulation that is uninterrupted by hangers, studs, etc. Indicate planned wall assembly U value and wall construction type (mass, wood, metal stud, etc). Confirm that the relationship between R-value and assembly U-factor conform to Appendix A of the Code.

- b. Glass curtain wall/spandrel systems should be avoided as these are the lowest performing wall systems.
  - c. Opaque curtain wall sections shall not have envelope performance larger than R-10.
  - d. Reduce air infiltration, along with field tests to confirm integrity.
  - e. Recommended envelope for all building types, in summary, is an envelope with a 15% improved UA over IECC C402.1.5 minimum plus Passivehouse level air infiltration limit of 0.08 cfm at 75 Pa.
  - f. Low heating thermal energy demand intensity (TEDI). A combination of the above listed high-performing envelope measures paired with and heat recovery can deliver heating TEDI that is significantly smaller than code heating TEDI.
5. Did the project consider additional opportunities for high performing buildings? The project should consider approaches as follows:
- a. Residential: Passivehouse with efficient electric space heating (electric air source heat pump/VRF or central air to water heat pump to 120F thermal distribution loop) and gas water heating. A study could be performed by a qualified Passivehouse consultant at little to no cost by leveraging the MassSave<sup>®</sup> funded Passivehouse feasibility study and modeling incentives.
    - Consider investigating centrally located heat pump water heating as an alternative.
  - b. Highly ventilated life sciences buildings: Improved envelope as described above. Downsize the HVAC as much as possible. Low temperature, hydronic space heating with heat-input provided by hybrid, in-building, central plant consisting of air-to-water heat pump (primary) and gas boilers (secondary). Size the air to water heat pump to 20-40% of the heating peak load with the objective of providing 90% of the total annual space heating with air source. External shading and improved solar heat gain coefficient windows to control space cooling loads. Gas hot service hot water. Energy reduction shall be attributable to reductions in heating, cooling, fan, ventilation, and pumping.
    - Consider investigate heat pump water heating as an alternative
  - c. Retail, Restaurant, Entertainment portion: Improved envelope as described above. Downsize the HVAC as much as possible. Efficient electric (electric air source heat pump/VRF) space heating. External shading and improved solar heat gain coefficient windows to control space cooling loads. Electric air source heat pump service hot water.
6. Did the project evaluate incentives? Including:



Volpe Exchange Redevelopment, EEA #16468  
Cambridge, MA

- a. Estimate of Alternative Energy Credits
  - b. Estimates of MassSave incentives, based on meeting with utility.
7. Did the project evaluate rooftop solar PV? Consider including building roof plans showing location of planned solar, or solar set aside areas, and location of roof HVAC equipment and other appurtenances.
  8. Did the project maximize EV-ready parking spaces?

Sincerely,



Paul F. Ormond, P.E.  
Energy Efficiency Engineer  
Massachusetts Department of Energy Resources



Brendan Place  
Clean Energy Engineer  
Massachusetts Department of Energy  
Resources

## **Strysky, Alexander (EEA)**

---

**From:** Stephen Kaiser <skaiser1959@gmail.com>  
**Sent:** Monday, December 6, 2021 9:16 AM  
**To:** Strysky, Alexander (EEA); Owu, Michael; Brown, Kathryn; Bob Simha  
**Subject:** Re: S-Kaiser December 6 COMMENT to MEPA on VOLPE PROJECT EEA 16468

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

**To: Alex Strysky, MEPA Office**

**From : Stephen Kaiser**

**Below is my supplemental and confirming comments on the Volpe project, EEA 16468, based on my initial comment of November 15, 2021.**

**I believe the evidence indicates that there may be an attempt to segment the project into two parts, contrary to MEPA regulations. The proponent has indicated the potential development on the adjacent CRA parcel to be 30,000 s.f., thereby indicating that the total project includes both the CRA parcel and the primary development parcel of 2.8 million gsf.**

**The first order of business is to determine whether the ENF represents segmentation and what should be the appropriate response to such a concern, including avoiding the setting of any undesirable precedents for complete or incomplete ENF submissions.**

**Second is my reading of the MEPA regulations that the CRA parcel gives general subject matter jurisdiction to MEPA review, but only for the CRA parcel impacts, and not the effects of 2.8 million s.f. of new development at Kendall Square. I believe the CRA parcel has only about 1 percent of the traffic impacts of the larger development.**

**Third : That a finding of a categorical inclusion for a required EIR would need to be made.**

**A supplement to my original comment is that the format of an EIR would be to consider No-Build conditions (including other Kendall developments as background growth), following the format of the NPC for CRA's Kendall Square. The project itself (only the 30,000 s.f. part) would be added onto the No Build case.**

**Thus, an EIR for the Volpe Project would provide a reading on future No Build traffic and energy conditions at Kendall Square, which would represent a useful independent peer review of the CRA's analysis for its project EEA #1891. Because the CRA NPC indicated severe traffic congestion problems in the Kendall area by 2028, an EIR for the Volpe Project would provide valuable confirmatory information on the No-Build condition.**

**Furthermore, the NPC for CRA's Kendall Square project indicated traffic congestion on a few turning movements on Memorial Drive which I do not believe are credible, although they should be reviewed. I reaffirm my earlier scoping proposal that the BU Bridge and BU rotary be included in the traffic impact analysis, because of the past evidence (especially in 2019) that rotary gridlock had the potential to trap 300 families in the lower Cambridgeport neighborhood, because there is no other way to get out except Granite Street - which can be blocked by BU rotary congestion.**

**I appreciate the fact that MIT is seeking to be fully compliant with MEPA draft protocols relative to environmental justice and this includes the neighborhood of Cambridgeport where I live. Fifty years ago, in December 1971, Governor Francis Sargent withdrew the plan for an eight-lane highway through Cambridgeport, after almost 25 years of the state highway department sidestepping any environmental justice concerns when it proposed to demolish 1,500 to 2,000 housing units in Cambridgeport. I hope we are living in saner times than the threatening days of the Inner Belt.**

**Stephen H. Kaiser  
191 Hamilton Street  
Cambridge, Mass. 02139**

=====

**Note : I have no trust in the capabilities of the Cambridge Planning Board, Department of Community Development and Department of Traffic and Parking to review the traffic impacts of any proposed large project in Cambridge. Therefore, the legal provisions of Chapter 30 Section 62 and the MEPA regulations become very important to achieving quality planning and consideration of community impacts.**

On Mon, Nov 15, 2021 at 4:00 PM Strysky, Alexander (ENV) <[alexander.strycky@state.ma.us](mailto:alexander.strycky@state.ma.us)> wrote:

... the comment period has been extended to 12//13 and the site visit will take place via video conference at 6:00 PM on 12/1. I will send out a site visit notice by email later this week that will also note the extension.

Alex

Alex Strysky

MEPA Office

100 Cambridge Street

Boston, MA 02114

## **Strysky, Alexander (EEA)**

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**From:** Stephen Kaiser <skaiser1959@gmail.com>  
**Sent:** Tuesday, December 7, 2021 11:34 AM  
**To:** Strysky, Alexander (EEA); Owu, Michael; Brown, Kathryn; Bob Simha  
**Subject:** Re: S-Kaiser December 7 COMMENT to MEPA on VOLPE PROJECT

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

**To : Alex Strysky, MEPA Office**

**From : Stephen Kaiser**

**Thanks to a rapid response from Epsilon for sending me a copy of the ENF (with the traffic study) -- now I have been able to determine the extent of MIT's traffic assessment.**

**To assess the value of Kendall traffic studies, my first check was to compare traffic results for both the MIT ENF and the CRA NPC #1891. I found the traffic calculations were very similar in most cases, and that both make clear that over a dozen intersections will be congested in the future study periods : 2024 and 2028.**

**For my standard of congestion, I have used volume-to-capacity ratio, which gives us a good sense of what happens when intersections become overloaded with traffic. If a glass is half full or half empty, it has a V/C ratio of 0.50. If the glass is full, the V/C is 1.00. If the overflow from the glass is the same as a full glass, the V/C ratio is 2.00.**

**The first conclusion is that the traffic results shown in the full ENF are very similar to the results presented by the CRA for their Kendall Square, NPC #1891. There is about a 95% match in the intersections studied and only three locations show differences of more than twenty percent. These are Broadway and Ames AM, O'Brien and First PM, and Binney and First AM. The calculations were done by the same consultant, but with small variations indicating they were new calculations. Thus peer review can be done and calculations checked – by the same consultant for different clients. Comparing any discrepancies allows corrections to be made.**

**Neither report contains any text describing the severity of future congestion at Kendall. The numbers are in the tables in the traffic chapter**

**(pages 226-237 of 469) , and a sharp eye is needed to pick out the locations that are in difficulty. The highest V/C ratios are 2.42, 1.91, 1.86 and 1.83. Clearly these are distress signals indicating the consequences of traffic growth in Cambridge.**

**The transit analysis is not done with enough detail to understand where efficiencies in MBTA service can be made (especially controlling train bunching). With these future scenarios now so evident, MIT should have proposed mitigation (especially for transit) to reduce the expected congestion at area bottlenecks. We have a project generating over 6,500 new daily vehicle trips. Our road system does not have adequate capacity.**

**The traffic report in the ENF uses the TIS format used by the City of Cambridge. Compared to the CRA NPC, the two studies as structured and scoped produced similar technical results. It is true that accessibility to the traffic results and understanding their meaning is a problem for both reports. However, useful information can be found by people willing to dig deeply enough.**

**The ENF includes an assessment of the River and Western Avenue bridges at Memorial Drive. I propose to add the BU bridge, which is the next bridge downstream towards MIT. There are two short lanes on the B.U. bridge, constructing traffic flow : VHB has probably the region's primary expert on short lanes – to help identify possible mitigating solutions.**

**The entirety of the Volpe Project will be all-electric, and if other trends in new development and conversions follow this trend there will be notable increases in electrical demand, including charging stations for electric vehicles. I know that Eversource has prepared a 20-year projection of electric demand, but I have been unable to obtain its growth curve and an estimate of system adequacy in the coming years. MIT should take the lead to assure that we do not need to repeat the transformer crisis of the past couple of years.**

**I am uncomfortable with the realization that MIT has proposed 3 million square feet of new development at Kendall Square, hoping it will not need to do an EIR. I recognize that there are different positions on the matter of segmentation, but a simple view of the existing CRA site demonstrates that the only likely developer who would wish to use the site would be MIT with its Volpe project. I believe that a fair resolution of the situation is for MIT to produce a Single EIR for traffic refinements and transit mitigation, plus a summary of electrical capacity estimates for Eastern Cambridge based either on work by Eversource, or MIT's own independent calculations. Because MIT has already identified the CRA**

**parcel, MEPA will agree that no future NPC need be filed if the CRA parcel is later purchased by MIT.**

**Stephen H. Kaiser**

**Cambridgeport**

=====

On Mon, Dec 6, 2021 at 9:15 AM Stephen Kaiser <[skaiser1959@gmail.com](mailto:skaiser1959@gmail.com)> wrote:

**To: Alex Strysky, MEPA Office**

**From : Stephen Kaiser**

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**Stephen H. Kaiser  
191 Hamilton Street  
Cambridge, Mass. 02139**

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... the comment period has been extended to 12//13 and the site visit will take place via video conference at 6:00 PM on 12/1. I will send out a site visit notice by email later this week that will also note the extension.



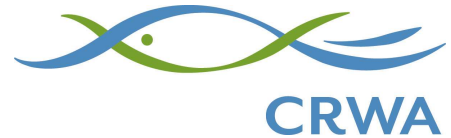
Alex

Alex Strycky

MEPA Office

100 Cambridge Street

Boston, MA 02114



Saving the Charles River since 1965

December 13, 2021

*Via Email*

Alexander Strysky, Environmental Analyst  
MEPA Office Executive Office of Energy and Environmental Affairs  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
[alexander.strycky@mass.gov](mailto:alexander.strycky@mass.gov)

**Re: Environmental Notification Form, Volpe Exchange Parcel Redevelopment,  
Cambridge, MA, EEA 16468**

Dear Alex:

Charles River Watershed Association (“CRWA”) submits the following comments on the Environmental Notification Form (“ENF”) dated November 1, 2021, for the Volpe Exchange Parcel Redevelopment Project located at 55 Broadway in Cambridge. The project covers approximately 10.5 acres (excluding the Government Services Administration lands formerly part of the total 14-acre parcel). The redevelopment as proposed consists of slightly over three million square feet of development spread among eight buildings, including four commercial buildings and four residential buildings. Residential uses will total approximately 1,400 units and 1,128,000 square feet. Twenty percent of the net residential unit square footage of each building will be designated as affordable. Commercial space will total approximately 1,756,913 square feet. The ground floors of the project will include retail, restaurant, arts and entertainment, and recreational uses comprising approximately 125,000 square feet. The project will also include an approximately 25,000-square foot community center in the base of the R1 residential building planned along Potter Street near the intersection with Fifth Street. The project will create approximately 3 acres of new impervious surface resulting in a total impervious cover of 8.93 acres on site. A total of 28,162 vehicle trips per day will be added to the area. The project is anticipated to use approximately 495,000 gallons per day of water and generate approximately 450,000 gallons per day of wastewater.

As proposed, this project states that it does not currently meet or exceed a mandatory Environmental Impact Report (“EIR”) threshold per 301 CMR 11.03, however, an EIR should be required to fully evaluate the environmental impacts of and alternatives to a project of this scope and magnitude, especially given this project is still in the preliminary design (10%) phase. An EIR is also necessary to fill critical information gaps that are not addressed in the ENF, as further discussed in the comments provided below.

Charles River Watershed Association

41 West Street, Suite 800 Boston, MA 02111 t 617 540 5650 [www.crwa.org](http://www.crwa.org)

## ***Water Quality Protection***

Stormwater runoff from the project site will discharge to the Boston Water and Sewer Commission's (BWSC) drainage system and ultimately reach the lower basin of the Charles River, which is an impaired waterbody according to the Massachusetts Year 2016 Integrated List of Water. Two Total Maximum Daily Loads (TMDLs) apply to this segment of the river:

- TMDL for Nutrients In the Lower Charles River Basin, Massachusetts, June 2007 (EPA TMDL No. 33826); and
- Final Pathogen TMDL for the Charles River Watershed January 2007 (EPA TMDL No. 32371).

There is mention in the ENF that the project will remove 65% of phosphorus through use of structural BMPs in addition to natural systems. There is no discussion in the ENF about how the project will address the pathogen pollutants or TMDL.

The project must reduce the discharge of phosphorus consistent with the phosphorus TMDL. We encourage the project to exceed the TMDL requirements given the scale of the effort and considering the City of Cambridge's overall reduction requirement city-wide. Calculations documenting the pre- and post-development annual phosphorus load from the site should be provided. Additional stormwater management plans detailing system sizing, type, and location should be provided in an EIR, along with calculations showing that the project complies with the phosphorus TMDL.

The project must also address the discharge of bacteria to the Charles River. Inflow and Infiltration (I&I) mitigation work to address aging sewer infrastructure is one important way to limit the migration of bacteria into our local waterbodies; illicit discharge detection and elimination (IDDE) is another. Under Stormwater Handbook Standard 10 - Prohibition of Illicit Discharges, for any sewer and storm drain infrastructure remaining on site, we would expect the proponent to confirm the condition and separation of stormwater utilities, and that there are no illicit connections. Bacteria in waterbodies does not only come from sewers, but also non-point source pollution—in particular, animal and pet waste that is improperly disposed of. The project should provide pet waste stations or trash cans that are emptied on a sufficiently frequent schedule, catch basin grates cast with the term "Do not Dump - Drains to River," and signs about the importance of picking up after your pet. Bacteria can also come from soils and decomposition of natural materials. Catch basins and water quality units collect much of this material, and some of it may enter the infiltration systems. Frequent cleaning as part of a long-term operation and maintenance program is a critical way to keep these materials from entering the piped network and subsurface systems.

## ***Impacts from Climate Change***

Section 5 of the ENF provides an overview of stormwater management, Section 6 provides an overview of the sustainability measures, and Section 7 provides an overview of the climate change adaptation approach of the project. We are pleased to see that the preliminary design intends to include a variety of measures to make the project more resilient to climate change, including addressing urban heat island, designing the stormwater system for 2070 precipitation estimates, planning for 2070 flood elevations, providing the largest urban district scale blackwater treatment plant in the northeast to reuse all building water on-site, planning for electrification and net zero, use of PV, buildings having LEED Gold, etc.

We acknowledge that the City of Cambridge has high standards for climate change and stormwater management, but based on the filing, it is unclear exactly how those standards will be met. Further detail about how the project will specifically address climate concerns should be provided in an EIR.

## ***Trees & Vegetation***

Trees and other vegetation protect air and water quality, help to control stormwater runoff and flooding, and provide natural cooling. We are pleased to see the use of shade trees and canopy as one of multiple methods to address urban heat island. We urge the project proponent to maximize the number of trees and plantings covering the site in an effort to minimize impervious cover. We recommend use of native species and drought tolerant plantings in all cases. More specific details such as tree canopy percentage and existing vs. future trees should be provided in an EIR.

## ***Public Engagement and Environmental Justice***

We acknowledge that the project proponent has undertaken a community engagement process and that “MIT ran an unprecedented equity and inclusion engagement process that was specifically intended to encourage the participation of members of Environmental Justice populations. The process ultimately engaged more than 450 individuals from diverse demographic backgrounds, including many local residents, on key topics areas. MIT hired equity and inclusion consultant Roosevelt Smith to ensure that objectivity and critical thinking were incorporated into the planning process.” CRWA requests that an EIR better document these processes and results, including:

- What events were held and how many people attended each event
- More detail on the outreach conducted to Environmental Justice populations, including approaches used and which/how many languages were available in promotions and during events
- What accommodations, if any, were provided
- List of organizations that have been contacted and engaged

- Summary feedback from residents and businesses
- Follow-up information for the public that engaged with the proponent from all outreach events

Additional engagement and outreach should be conducted in conjunction with the provision of more details and specifics about the project in an EIR as design progresses.

Thank you for considering these comments.

Sincerely,

A handwritten signature in blue ink that reads "Janet S. Moonan". The signature is fluid and cursive, with a long horizontal stroke at the end.

Janet S Moonan, PE  
Stormwater Program Director



December 13, 2021

Secretary Kathleen A. Theoharides  
Executive Office of Energy and Environmental Affairs  
MEPA Office Attn: Alexander Strysky  
100 Cambridge Street, Suite 900  
Boston, Massachusetts 02114

Re: EOEEA #16468 The Volpe Exchange Parcel Redevelopment Project (Cambridge) ENF

Dear Secretary Theoharides:

The Department of Conservation and Recreation (“DCR” or “Department”) is pleased to submit the following comments in response to the Environmental Notification Form (“ENF”) submitted by the Massachusetts Institute of Technology (the “Proponent”) for the Volpe Exchange Parcel Redevelopment Project (the “Project”).

As described in the ENF, the Project is proposed for a 14-acre site in Kendall Square, East Cambridge. The proposal includes three million square feet of development spread among four commercial buildings, and four residential buildings with approximately 1,400 units. The ENF indicates a substantial increase in traffic with over 28,000 new Vehicle Trips Per Day (unadjusted) and 1,759 new parking spaces.

DCR parkways and intersections located in proximity to Kendall Square include Memorial Drive / Western Avenue, Land Boulevard, River Street intersections with Memorial Drive and Soldiers Field Road, Leverett Circle, Charles Circle / Storrow Drive. Given current traffic conditions, the described increase is too much for DCR roads and intersections to absorb in the absence of mitigation. DCR requests that the Proponent provide a more comprehensive Transportation Impact Study to include all the DCR parkways and intersections that will be affected by the Project; DCR also requests that the Proponent contact DCR to begin discussions about mitigation strategies.

Thank you for the opportunity to comment on the ENF. Questions related to the Traffic Impact Study and traffic mitigation strategies can be directed to Jeff Parenti, DCR’s Deputy Chief Engineer at [jeffrey.parenti@mass.gov](mailto:jeffrey.parenti@mass.gov).

Sincerely,

Stephanie C. Cooper  
Acting Commissioner

cc: Jeff Parenti, Patrice Kish, Priscilla Geigis, Tom LaRosa





Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker  
Governor

Karyn E. Polito  
Lieutenant Governor

Kathleen A. Theoharides  
Secretary

Martin Suuberg  
Commissioner

December 13, 2021

Kathleen A. Theoharides, Secretary  
Executive Office of  
Energy & Environmental Affairs  
100 Cambridge Street  
Boston MA, 02114

RE: Cambridge  
Volpe Exchange Parcel Redevelopment  
EEA # 16468

Attn: MEPA Unit

Dear Secretary Theoharides:

The Massachusetts Department of Environmental Protection Northeast Regional Office (MassDEP-NERO) has reviewed the Environmental Notification Form (ENF) for the proposed Volpe Exchange Parcel Redevelopment in Cambridge. MassDEP provides the following comments.

### **Wastewater**

The ENF indicates that the proposed project will generate increased wastewater flows of approximately 210,130 gallons per day (gpd) to the City of Cambridge sewer system. MassDEP regulations at 314 CMR 12.04(2)(d) require sewer authorities with permitted combined sewer overflows, including the City of Cambridge, to require removal of four gallons of infiltration and inflow (I/I) for each gallon of new wastewater flow generated for any new connection to their system where greater than 15,000 gallons per day of new wastewater flows will be generated. Accordingly, the proponent should meet with staff from the City of Cambridge DPW to ensure that this mitigation requirement is met.

The ENF also indicates that the proponent intends to construct a blackwater treatment and reuse system. This wastewater reuse proposal will require a Reclaimed Water Use Permit from MassDEP, in compliance with 314 CMR 20.00. MassDEP recommends a per-permit meeting be arranged to discuss the proposal in more detail, and the proposed system for meeting the rigorous water quality requirements established for reuse. This element of the proposal will also require

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

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review under the State Plumbing Code, and potentially by the MWRA Toxics Reduction and Control (TRAC) group.

## **Solid Waste**

MassDEP's current *Massachusetts 2010-2020 Solid Waste Master Plan*<sup>1</sup> –*Pathway to Zero Waste*, issued in April 2013 identifies a key goal to reduce solid waste disposal by 30% by 2020, from 6,550,000 tons of disposal in 2008 to 4,550,000 tons of disposal by 2020. MassDEP encourages the Proponent to review the plan to identify project management and operations practices that will assist the Commonwealth in meeting its material management goals. More information on the *Solid Waste Master Plan* and yearly update reports can be found at: <https://www.mass.gov/guides/solid-waste-master-plan>.

## **Waste Ban**

Section 310 CMR 19.017 *Waste Bans* of the Massachusetts Solid Waste regulations prohibit the disposal of certain construction-related wastes in Massachusetts, including, but not limited to, metal, wood, asphalt pavement, brick, concrete, clean gypsum wallboard. Further guidance can be found at: <https://www.mass.gov/guides/massdep-waste-disposal-bans>.

MassDEP regulations also ban disposal of food and other organic wastes from businesses and institutions that dispose of more than one ton of these materials per week. The ban is one of MassDEP's initiatives for diverting at least 35% of all food waste from disposal statewide by 2020. Diverted food waste may be composted, converted to energy (through anaerobic digestion), recycled, or reused. Additional information on the Commercial Food Material Disposal Ban can be found at: <https://www.mass.gov/guides/commercial-food-material-disposal-ban>.

## **C&D Recycling**

Many construction and demolition materials are currently banned from disposal or transfer for disposal in Massachusetts (<https://www.mass.gov/guides/massdep-waste-disposal-bans>). Therefore, MassDEP encourages the Proponent to make a significant commitment to construction and demolition (C&D) waste recycling activities as a sustainable measure for the project and to assist in complying with waste ban requirements. MassDEP considers an asphalt, brick, and concrete (ABC) rubble processing or recycling facility (pursuant to the provisions of Section (2)(b) under 310 CMR 16.03), the Site Assignment regulations for solid waste management facilities), to be exempt from the site assignment requirements, if the ABC rubble at such facilities is separated from other solid waste materials at the point of generation. In accordance with 310 CMR 16.03(2)(b), ABC can be crushed on-site with a 30-day notification to MassDEP. However, the asphalt is limited to weathered bituminous concrete (no roofing asphalt), and the brick and concrete must be uncoated or not impregnated with materials such as roofing epoxy. If the brick and concrete are not clean, the material is defined as C&D waste and requires either a Beneficial Use Determination (BUD) or a Site Assignment and permit before it can be crushed.

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<sup>1</sup> Note the Draft 2020-2030 Solid Waste Master Plan is in review and may be finalized in late 2020.



Pursuant to the requirements of 310 CMR 7.02 of the Air Pollution Control regulations, if the ABC crushing activities are projected to result in the emission of one ton or more of particulate matter or other pollutant to the ambient air per year, and/or if the crushing equipment employs a diesel oil fired engine with an energy input capacity of three million or more British thermal units per hour for either mechanical or electrical power which will remain on-site for twelve or more months, then a plan application must be submitted to MassDEP for written approval prior to installation and operation of the crushing equipment.

## **Asbestos**

Pursuant to 310 CMR 7.15 the removal of asbestos from the buildings must adhere to the special safeguards defined in the Air Pollution Control regulations. An asbestos survey to identify all asbestos containing materials (ACM) shall be conducted by a Massachusetts Department of Labor Standards certified Asbestos Inspector. All identified ACM shall be abated prior to demolition activities. The Proponent is required to submit to MassDEP an Asbestos Removal Notification (Form AQ04 (ANF-001)) at least 10 working days prior to initiating work for any project involving asbestos abatement, removal, or disposal. If any ACM will need to be abated through non-traditional abatement methods, the Proponent must apply for and obtain approval from MassDEP, through Application BWP AQ36 - Application for Non-Traditional Asbestos Abatement Work Practice Approval.

Pursuant to 310 CMR 7.09, for any Construction and Demolition, except in a residential building with fewer than 20 units, the Proponent is required to submit to MassDEP a Construction/Demolition Notification (Form BWP AQ06) at least 10 working days prior to initiating work. MassDEP Asbestos, Construction and Demolition Notifications can be found at: <https://www.mass.gov/guides/massdep-asbestos-construction-demolition-notifications>.

Pursuant to 310 CMR 19.061, disposal of ACWM within the Commonwealth must be at a facility specifically approved by MassDEP. The Proponent is advised that asbestos containing waste materials (ACWM) are a special waste as defined in the Solid Waste Management regulations. There are specific ACWM disposal exceptions for intact vinyl asbestos tile (VAT) and asphaltic-asbestos felt and shingles. The disposal of the ACWM outside the jurisdictional boundaries of the Commonwealth must comply with all the applicable laws and regulations of the state receiving the material. Pursuant to 310 CMR 16.05, ACM including VAT, and/or asphaltic-asbestos felts or shingles may not be disposed of at a facility operating as a recycling facility.

## **Recycling Infrastructure**

MassDEP supports voluntary initiatives to institutionalize source reduction and recycling into operations. Adapting the design, infrastructure, and contractual requirements necessary to incorporate reduction, recycling and recycled products into existing large-scale developments has presented significant challenges to recycling proponents. Integrating those components into developments during the planning and design stage enables the project's management and occupants to establish and maintain effective waste diversion programs.

The MassDEP appreciates the opportunity to comment on this proposed project. Please contact [Rachel.Freed@mass.gov](mailto:Rachel.Freed@mass.gov) at (978) 694-3258 for more information on wastewater issues. Please contact [John.MacAuley@mass.gov](mailto:John.MacAuley@mass.gov) at (978) 694-3262 for further information on solid waste, recycling, and asbestos issues. If you have any general questions regarding these comments, please contact me at [John.D.Viola@mass.gov](mailto:John.D.Viola@mass.gov) or at (978) 694-3304.

Sincerely,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

John D. Viola  
Deputy Regional Director

cc: Brona Simon, Massachusetts Historical Commission  
Eric Worrall, Rachel Freed, John MacAuley, Kevin Brander, MassDEP-NERO



**Massachusetts Port Authority**  
One Harborside Drive, Suite 200S  
East Boston, MA 02128-2909  
Telephone (617) 568-1000  
[www.massport.com](http://www.massport.com)

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December 13, 2021

Secretary Kathleen A. Theoharides  
**Executive Office of Energy and Environmental Affairs**  
Attn: MEPA Office  
Alex Strycky, EEA #16468  
100 Cambridge Street, Suite 900  
Boston, MA 02114

**Subject: Volpe Exchange Parcel Redevelopment – ENF (EEA #16468)**

Dear Secretary Theoharides:

On behalf of the Massachusetts Port Authority (Massport), thank you for the opportunity to provide comments on the Environmental Notification Form (ENF) for the redevelopment of Volpe Exchange Parcel in Cambridge. The Project includes over three million square feet of development spread among eight buildings, including four commercial buildings and four residential buildings. The Project includes approximately 1,400 residential units and approximately 1,756,913 square feet (sf) of commercial uses. The ground floors of the Project will include retail, restaurant, arts and entertainment, and recreational uses comprising approximately 125,000 sf.

### **Building Heights**

Massport has developed the Logan Airspace Map (Airspace Map) that defines the critical airspace around Logan Airport. The Airspace Map was created with input from airlines, pilots, city officials, and the Federal Aviation Administration (FAA) to protect the flight corridors in and out of the airport and to help guide developers and regulatory authorities on building heights. The Airspace Map aids developers in their planning and informs the FAA approval process of individual projects to determine if they present a potential hazard to air navigation.

Massport has reached out to the Proponent. The Proponent has agreed to build structures consistent with the Airspace Map limits and to coordinate with Massport early in the design process, before filing the FAA Form 7460-1, to ensure that the buildings do not exceed the airspace limit as defined by the Airspace Map (see <http://www.massport.com/media/1545/boston-logan-airspace-map.pdf>). The FAA requires that the Proponent submit the FAA Form 7460-1s for the individual buildings. A separate 7460-1s must also be filed for construction cranes. It is equally important that the Proponent coordinate with FAA and Massport early in the construction planning phase to minimize the extent and duration of impacts of the temporary crane(s) on the airspace.

The Airspace Map is based on the NAVD 88 Datum as required by the FAA. To calculate the actual allowable building height, the site elevation, also based on NAVD 88, needs to be subtracted from

the Airspace Limit at that location. Please note that the height of the structure is derived from the tallest points such as rooftop utilities or any architectural design elements.

Once the project is complete, developers must file the FAA Form 7460-2 to record the as-built survey with 1A accuracy for FAA national obstruction database purposes.

### **Solar Arrays**

If solar panels are being planned, a separate glare study with the FAA may be required. The FAA guidance for solar panels can be found at:

[https://www.faa.gov/airports/environmental/policy\\_guidance/media/FAA-Airport-Solar-Guide-2018.pdf](https://www.faa.gov/airports/environmental/policy_guidance/media/FAA-Airport-Solar-Guide-2018.pdf)

### **Aircraft Noise**

Projects directly under flight paths and closer to the airport may also be impacted by overflight noise. Logan Airport operates 24 hours per day and year-round. Overflights are primarily driven by wind and weather and the FAA's selection of specific runways. We strongly recommend developers reach out to Massport for feedback and guidance on building design guidance to minimize interior noise. For more information please refer to Massport's website: <https://www.massport.com/logan-airport/about-logan/noise-abatement/>

Please do not hesitate to contact me at (617) 568-3705 or at [jbarrera@massport.com](mailto:jbarrera@massport.com) if you wish to discuss any of our comments.

Sincerely,

### **Massachusetts Port Authority**



Joel Barrera  
Director, Strategic and Business Planning  
Massachusetts Port Authority

cc: F. Leo, S. Dalzell, B. Washburn, G. Carr/Massport  
B. Dugdale/Goulston & Storrs  
David Hewett/Epsilon Associates