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November 25, 2015

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS  
ON THE  
SINGLE ENVIRONMENTAL IMPACT REPORT

PROJECT NAME : Kendall Square Urban Renewal Project (KSURP) -  
Amendment #10  
PROJECT MUNICIPALITY : Cambridge (Kendall Square)  
PROJECT WATERSHED : Boston Harbor (Charles River)  
EEA NUMBER : 1891  
PROJECT PROPONENT : Cambridge Redevelopment Authority  
DATE NOTICED IN MONITOR : October 19, 2015

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G. L. c. 30, ss. 61-62I) and Section 11.08 of the MEPA regulations (301 CMR 11.00), I have reviewed the Single Environmental Impact Report (SEIR) and hereby determine that it **adequately and properly complies** with MEPA and its implementing regulations. The Department of Housing and Community Development (DHCD) may act on the Proponent's request for a Major Amendment to its Urban Renewal Plan (URP) pursuant to 301 CMR 11.12 (4). The MEPA regulations indicate that an EIR can be found adequate even if certain aspects or issues require additional review and consideration, as long as these issues and aspects have been adequately described during MEPA review and subsequent permitting and review processes provide opportunities for additional public review and comment. The Proponent has thoroughly addressed the project's potential environmental impacts, considered alternatives and identified mitigation measures to avoid, minimize and mitigate these impacts. To provide additional public review of final mitigation commitments, the Proponent is required to file a Notice of Project Change (NPC) with

the MEPA Office that will include revised mitigation commitments and revised draft Section 61 Findings for review and comment.

The project consists of significant redevelopment, comprised of a mix of residential, office and retail uses, in a dense urban area in proximity to transit. As a transit-oriented-development (TOD), environmental impacts such as new traffic generation, land alteration, creation of impervious areas, will be minimized compared to greenfield development or projects with reduced density. The SEIR, submitted by the Cambridge Redevelopment Authority (CRA, "the Proponent") in consultation with Boston Properties (the "Redeveloper"), included a revised transit analysis, provided an update on consultations with State Agencies and other stakeholders, and identified potential mitigation measures to address project impacts. The SEIR demonstrates that environmental impacts associated with the project change are within the envelope of impacts identified and analyzed in previous MEPA filings.

Because the project is at a conceptual level of design, mitigation measures are not detailed to the extent typical of Final MEPA review, particularly in regards to measures to avoid impacts to the transit system and improvements to transit infrastructure and operations. The roadway system in the project area, which consists primarily of streets and intersections under the jurisdiction of the City of Cambridge, is constrained and the majority of intersections operate at degraded conditions during peak periods. The traffic and transit analysis provided in the SEIR is predicated on high mode shares for walking, bicycling and transit use, consistent with documented uses in the Kendall Square Area. These high mode shares reduce the project's generation of vehicle trips and, therefore, limit emissions of air pollutants, Greenhouse Gas (GHG) emissions, and potential impacts on traffic operations. The project will generate a significant level of additional transit users. The SEIR documents and acknowledges that the project will impact Massachusetts Bay Transportation Authority (MBTA) assets, including the Red Line and bus service, and degrade capacity during certain periods, particularly during the morning peak period. To the extent that the increase in transit users cannot be absorbed by the system and identified mode shares are not obtained, the project would have a greater impact on roadway operations and result in higher levels of air pollutants and GHG emissions.

The Proponent and Redeveloper have proposed a unique transit mitigation strategy that seeks to provide a sustainable source of funding to ensure that the transit infrastructure and assets in the Kendall Square Urban Renewal Plan (KSURP) area can continue to accommodate additional growth. The strategy may be guided through development of a Memorandum of Understanding (MOU) between the Massachusetts Department of Transportation (MassDOT), the MBTA, the Proponent, the Redeveloper, and the City. In addition, the Proponent, MassDOT, and MBTA indicate that a Kendall Square Transit Enhancement Fund (KSTEF) will be established. The Proponent and Redeveloper have committed to providing an initial contribution of \$6 million dollars to the KSTEF.

I applaud the Proponent's commitment to achieve high rates of transit use, walking and bicycling and appreciate its support for addressing impacts to the transit system. I am proud to partner with Secretary Pollack and MassDOT to facilitate this innovative mitigation mechanism. I note that the analysis provided regarding impacts to transit assets and identification of mitigation is consistent with MEPA review of other TOD projects. The Boston Garden (EEA#

15052) and the Government Center Garage (EEA# 14383) projects included high transit mode shares and evaluated the impacts on the transit system. Both of these projects provided significant and meaningful mitigation to address potential impacts and improve MBTA infrastructure. These included improvements to busways and headhouses, creation of and improvements to pedestrian connections, and lighting and security-related amenities. Wynn Everett (EEA # 15060) has also committed to provide an annual operating subsidy to the MBTA to preserve the service and capacity improvements associated with the addition of new Orange Line trains and mitigate the impacts of its project on operations. We have worked collaboratively with MassDOT, the MBTA and project proponents in the development of appropriate mitigation for mode share that involves public transit.

Comment letters from MassDOT and the City of Cambridge acknowledge constructive consultation with the Proponent and indicate that clarity is necessary regarding the funding mechanism (such as a state Fund), amount of funding and, ultimately, final mitigation performed. The SEIR indicates support for this approach and establishment of the KSTEF. It is critical that any contributions made in lieu of specific mitigation, are developed, managed and expended with the utmost transparency and accountability. Subsequent coordination must provide certainty regarding: how funding allocations are determined commensurate with the scope and scale of the proposed project and associated impacts; the vehicle and entity responsible for managing funds; and, how funding will be prioritized and expended.

The SEIR and MassDOT comments indicate that an MOU will be developed by July, 2016. I expect that by that time more detailed mitigation will also be developed through consultation with the City of Cambridge through its permitting process. The NPC should include revised mitigation measures, revised Section 61 Findings and provide the information described above concerning funding, funding management and expenditure, including but not limited to development of an MOU or similar document.

#### Original Project Description and MEPA Procedural History

The Kendall Square Urban Renewal Project (KSURP) was created by the Proponent in 1965. The KSURP regulates the level of development through a cap on aggregate Gross Floor Area (GFA) of all land uses in the KSURP area. The level of development is further restricted through land use controls, including identification of Floor Area Ratios (FARs). The KSURP initially consisted of construction of up to 14 buildings totaling approximately 2.77 million gross square feet (GSF), three parking garages, open space, and other public improvements. The project was the subject of previous review under MEPA beginning with an Environmental Notification Form (ENF) in 1975, and followed by Draft and Final EIRs in 1977 and 1978 respectively, both of which were found to be adequate. Five NPCs were filed since 1978. The NPCs adjusted the permitted mix of uses within the area, increased the maximum allowed GFA within the area, and extended the term of the KSURP. None of the NPCs required further MEPA review.

A NPC for this project (KSURP Amendment No. 10) was submitted to the MEPA Office in April 2015. The extensive and detailed NPC included a request that I allow submission of a SEIR, and in a Certificate issued May 29, 2015, I granted the request for a SEIR. The Scope for

the SEIR requested further information on specific mitigation to address impacts on transit service and capacity. The Certificate noted that I may require the Proponent to file a Final EIR if the SEIR does not adequately address the Scope and substantive issues that remained to be addressed. The Proponent filed an SEIR for the project on October 15, 2015.

### Project Description

The SEIR identifies redevelopment within 24 acres of the 43-acre KSURP area. The 24-acre project site is coincident with the boundaries of the Cambridge Center Mixed-Use Development (MXD) Zoning District. The project consists of the addition of 1,034,000 sf of net new commercial and residential development to the KSURP area. The proposed amendment to the KSURP includes exemptions to the GFA cap intended to incentivize ground floor retail, require innovation space, and balance commercial and residential uses. According to the NPC and SEIR, the analysis of environmental impacts is based on a total of 4,341,600 sf of development and includes increases in development beyond the GFA cap<sup>1</sup> that would be allowed based on proposed exemptions. As such, the analysis of environmental impacts is presented based on the maximum amount of development that could be permitted in the KSURP area under the GFA cap. The NPC and SEIR also extend the completion date for the full build-out of the KSURP from 2020 to 2030.

Specifically, the project consists of the following project components:

- **Phase 1A - Cambridge Center North Garage:** Proposed commercial office (546,000 sf), innovation space (39,000 sf) and retail space (5,000 sf) over the existing Cambridge Center North [Parking] Garage.
- **Phase 1B - Eleven Cambridge Center:** Demolition of existing structure. Proposed 22-story residential building (210,000 sf and up to 294 units) and ground floor retail space (25,000 sf).
- **Phase 2 - Three Cambridge Center:** Demolition of existing structure. Proposed mixed-use building consisting of a 19-story building with commercial office space (106,200 sf) on the lower floors, up to 266 residential units (190,000 sf) on the upper floors, and approximately 20,000 sf of ground-floor retail.

The project also includes a 60,000 sf commercial office addition at the existing Whitehead Institute building at Nine Cambridge Center and the conversion of 15,100 sf of mechanical space into commercial office space at the Broad Institute at 75 Ames Street.

The project is proposed in two phases. Phase 1 will include two sub-phases (Phase 1A and 1B). Phase 1A will consist of the redevelopment of the Cambridge Center North Garage and Phase 1B will include demolition of the existing Eleven Cambridge Center building and construction of the new residential building with ground-floor retail space and below-grade parking. Phase 2 will include demolition of the Three Cambridge Center commercial office

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<sup>1</sup> The proposed GFA cap associated with this NPC is 4,302,100 square feet of development. This excludes the exempted 19,500 sf of Innovation Space and 20,000 sf of ground floor retail space; however, this development is included in the analysis of environmental impact presented in the NPC.

building and construction of a new mixed-use building with commercial office space, ground-floor retail space, and residential units.

### Permitting and Jurisdiction

The project as previously reviewed was subject to a mandatory EIR pursuant to Sections 11.03(1)(a)(2) and 11.03(6)(a)(6) of the MEPA regulations because it required State Agency Action(s), and was expected to create more than 10 acres of new impervious surface, and generate more than 3,000 new average daily vehicle trips.

The project, as currently proposed and described in the SEIR, is subject to a mandatory EIR as a stand-alone project pursuant to Section 11.03(6)(a)(6) of the MEPA regulations because it requires a State Agency Action and, on its own, will generate greater than 3,000 new average daily trips (adt) on roadways providing access to a single location. Traffic generation will exceed the EIR threshold even when adjusted to account for mode share. The project requires an approval of an Urban Renewal Plan Amendment from the Massachusetts Department of Housing and Community Development (DHCD). The project may also require an Air Quality Permit from the Massachusetts Department of Environmental Protection (MassDEP). The Urban Renewal Plan Amendment also requires approval by the CRA and Cambridge City Council. Components of the project will also require review and Infill Development Concept Plan approval as a Special Permit by the Cambridge Planning Board. The project is subject to review under the May 2010 MEPA GHG Emissions Policy and Protocol ("the Policy").

Because the project is not seeking Financial Assistance from the Commonwealth, MEPA jurisdiction is limited to those aspects of the project that are within the subject matter of required, or potentially required, State Agency Actions and that may cause Damage to the Environment as defined in the MEPA regulations. However, the subject matter of the Urban Renewal Plan approval and associated regulations (760 CMR 12.00) is sufficiently broad to confer the equivalent of broad scope jurisdiction over the potential environmental impacts of the project. Therefore, MEPA jurisdiction is broad in scope and extends to all aspects of a project that are likely, directly or indirectly, to cause Damage to the Environment, as defined in the MEPA regulations.

### Review of the SEIR

The SEIR included a detailed description of existing and proposed conditions, project plans, and identified applicable statutory and regulatory standards and requirements and described how the project will meet those standards. The SEIR included responses to comments submitted on the NPC and indicated that no significant changes have been made to the project since the NPC filing. The SEIR provided an updated GHG analysis and Traffic and Transit Impact Assessment. It described the planning process and proposed revisions to zoning that provides context for the proposed amendments to the KSURP. The planning process has included analysis of alternative development scenarios. The project is consistent with the Commonwealth's Sustainable Development Principles. I have received comments from MassDOT, MassDEP, MAPC, and the City that support the Proponent and Redeveloper's efforts

to establish a comprehensive and creative solution that will identify and fund transit improvements within the KSURP area.

### *Traffic and Transportation*

The SEIR includes an updated Transportation Study prepared in accordance with the *EEA/MassDOT Guidelines for Transportation Impact Assessments (TIA)*. The Transportation Study included a comprehensive assessment of the transportation conditions in the KSURP study area based on a thorough analysis of existing and future conditions. The SEIR updated the transit analysis to incorporate appropriate MBTA data and statistics in the evaluation of the project's transit impacts. MassDOT comments note that this updated evaluation provides a better understanding of the potential impacts of the KSURP on the transit system over the next ten years.

### *Kendall Square Transit Enhancement Program (KSTEP)*

In recognition of the importance of improved transit system and Red Line reliability, capacity, and overall enhanced public transit services to maintain a favorable mode share in the KSURP area, the Proponent and Redeveloper have advanced a Kendall Square Transit Enhancement Program (KSTEP). The KSTEP is a public-private partnership that will address these transit issues through coordination with MassDOT, the MBTA, the City, and other stakeholders. Designed to enhance mobility around the KSURP area, the KSTEP will include major transportation initiatives identified by the Kendall Square Mobility Task Force (Task Force) that will improve transit operations and services. Both the Proponent and Redeveloper are active members of the Task Force. The Task Force is led by MassDOT and will identify feasible initiatives, based on technical and cost issues, to be implemented over the short, medium, and long-term planning horizons. The Task Force's study is anticipated to be completed in February 2016.

According to the SEIR, transit mitigation projects and programs under consideration include the following:

- **MBTA Red Line Kendall Station Improvements** – Immediate operating and capital improvements to the existing transit infrastructure at Kendall Station, including station capacity and egress, Kendall Square transit information, communications and way-finding, Red Line ticketing, climate change adaptation and resiliency, bus and bicycle connectivity, and overall station functionality and appearance.
- **Kendall Station/Kendall Square Connection Enhancements** – Capital support for improving existing or new ground transportation via non-MBTA shuttles and/or MBTA buses or Bus Rapid Transit (BRT) aimed at facilitating access to and from Kendall Square.
- **MBTA Red Line Service Modernization and Improvements** – Signal, track, and other technology improvements designed to increase capacity and reliability especially at peak-of-the-peak including enhancing headways and other improvements.

- **Long-Range Feasibility Investigations** – Planning for and potential capital investment toward new public transit services.

I refer the Proponent to comments from the City which request the Proponent expand the KSTEP to increase the bicycle share of the mode split and identify measures that can be implemented to expand bicycle infrastructure and use.

The Proponent and Redeveloper have proposed to enter into a MOU with MassDOT, MBTA, and the City, as a mechanism to implement the KSTEP. The SEIR included a commitment to file a draft MOU with MEPA for review by July 1, 2016. The Proponent, in coordination with the City and other parties to the MOU intend to establish and maintain a transit fund to implement transit improvement projects in the Kendall Square area. The KSETF may receive additional funding from other developments. The SEIR indicates that an initial contribution, of not less than \$6 million dollars, will be provided to a transit fund to mitigate the project's impacts to transit.

The SEIR did not include a draft MOU or identify the subsequent process for addressing outstanding transit issues, including identification of specific mitigation to address impacts on transit service and capacity. MassDOT and the City have indicated that they will continue to work with the Proponent and Redeveloper to establish a process to guide the development of a mitigation plan and infrastructure improvements and its implementation.

#### *Transit System*

In response to comments from MassDOT and MBTA, the SEIR provided an updated transit analysis for the 2024 No-Build and Future Build conditions based on the most recent ridership and operational statistics for the Red Line segment between the Charles/MGH and the Kendall/MIT stations. Specifically, the analysis was expanded to include an evaluation based on the On-Time Performance (OTP) statistic (86 percent) that affects the headways and hourly capacity of the Red Line.

Based on this analysis, future conditions in this MBTA segment are expected to operate below service standards during some peak hours (Kendall Square Inbound entering and exiting trains in the morning peak hour and Kendall Square outbound exiting trains in the evening peak hour). Based on identified mode shares, the project will generate a significant number of new riders. The Proponent asserts that the percentage of increase contributed by the project is not significant compared to overall ridership; however, the 2024 Build condition demonstrates that additional transit riders associated with this project would further degrade peak hour utilization of this segment that is over capacity in the 2024 No-Build condition. Use of the Standard Capacity Methodology to evaluate performance indicates that the MBTA will operate over capacity with or without the project for one peak hour (Kendall Square Inbound entering trains in the morning peak hour). The SEIR also evaluated future conditions based on the platform loading capacity of the Kendall Square/MIT Station. Although operations will be further degraded, the evaluation indicates that there is sufficient capacity to accommodate transit riders while maintaining Level-Of-Service (LOS) D criteria, which is the MBTA Standard for transit stations in urban areas. The space requirements to maintain LOS C criteria will not be met in the morning Peak hour for either inbound or outbound platforms. As indicated above, the purpose of

the MOU and KSTEP is to provide a mechanism to identify, implement, and fund transit enhancement projects to support transit in Kendall Square.

The SEIR also provided an updated transit analysis that presents a more comprehensive representation of the project impacts and travel times for all bus lines (MBTA and EZRide) within the study area. Based on this analysis, some bus lines would experience various levels of delay as a result of increased density, bus dwelling times, bicycle and pedestrian intersections, or traffic delay at some intersections. The MBTA routes which currently operate close to capacity (64 Inbound-AM, 85 Inbound-AM, CT2 Outbound-AM and PM) will operate over capacity with the addition of the Project-generated transit trips (volume to capacity ratios of 1.15, 1.07, 1.01 and 1.07, respectively). In addition, based on an evaluation of total route delay, the EZRide Shuttle will experience total delays of approximately 60 seconds in the AM peak hour inbound and total delays of 281 and 46 seconds in the PM inbound and outbound routes (respectively). The CT2 outbound route will experience a 55 second total delay in the PM peak hour. A majority of the remaining bus routes will experience increased delays between 8 and 13 seconds. The Proponent has identified a number of mitigation measures to address the high volume to capacity ratios of some bus route peak hour utilization and the total route delay due to the project's traffic impacts. The SEIR did not provide a specific plan to mitigate these impacts but indicates that the mitigation studies and strategies will be discussed as part of the KSTEP and included in a draft MOU.

### *Safety*

The SEIR included an updated safety analysis. It identified the following three intersections within the study area as having crash rates above the district average which are, therefore considered Highway Safety Improvement Program (HSIP) clusters subject to a Roadway Safety Audit (RSA):

- Main Street at Galileo Galilei Way/Vasser Street,
- Massachusetts Avenue at Vasser Street; and
- Massachusetts Avenue at Memorial Drive.

The Proponent has committed to preparing the RSAs for these locations and has indicated that timing of the RSAs will be phased with the project schedule. MassDOT has indicated it will continue to work with the Proponent and the City to ensure that the RSAs are completed and that appropriate safety improvements are identified and implemented.

### *Trip Generation and Parking*

According to the NPC and SEIR, the proposed project change will generate approximately 10,512 unadjusted adt or 3,638 adjusted adt. The adjusted trip generation calculations reflect credits allowed for pass-by trips and mode share based on rates derived from the Proponent's existing traffic monitoring program. When the adjusted trips are added to the expected future traffic as projected in 2010 when the project was last reviewed under MEPA (Amendment No.8), traffic generation is estimated at 17,352 adt, which is less than the originally projected 19,300 vehicle trips.



The SEIR presented a vehicle capacity analysis for study area intersections in accordance with the 2000 Highway Capacity Manual (HCM). Based on this data, the following five intersections within the study area are expected to operate at or close to LOS F during the weekday morning and afternoon peak hours:

- Cambridge Street/ Third Street
- Broadway/Galileo Galilei Way
- Main Street/Vassar Street/Galileo Galilei Way
- Memorial Drive/Route 3/Ames Street; and
- Massachusetts Avenue/Memorial Drive Off-Ramps

In response to comments from the City, the SEIR also provided a Multimodal Level of Service (MMLOS) analysis performed in accordance with the 2010 HCM on the following intersections: Cambridge Street /Third Street, Binney Street/Third Street, and Main Street/Ames Street. THE MMLOS evaluates how intersection characteristics affect vehicle, pedestrian, bicycle, and transit users and is not focused on one individual user or transportation mode. The SEIR includes a comprehensive list of improvements related to each mode and has committed to work with the City to determine the specific access and circulation improvements to be made within the study area. The goal of the improvements will be to provide a balanced design and ensure that improvements are equitable for all users or modes of travel. I refer the Proponent to comments from the City which identifies concerns with impact of the proposed vehicular improvements on pedestrians and bicyclists. I expect that this issue will be addressed during the local review process.

The SEIR proposes a comprehensive Transportation Demand Management (TDM) Program to minimize new trip generation. In addition to its existing TDM Program, the Proponent has committed to incorporate additional TDM measures that could include: a car sharing program, MBTA transit pass subsidy, free rides on some existing shuttle routes, parking pricing, Hubway pass subsidy, transportation coordinator, and provision of “real-time” transportation information in all new and renovated lobbies and at select public plazas on the project site. In addition, the Proponent will continue to participate in the Charles River Transportation Management Association (TMA). Comments from the City support the Proponent’s commitment to a robust TDM and traffic monitoring program.

The NPC and SEIR provided detailed parking calculations based on the proposed development program and described the methodology and assumptions used to estimate parking demand. Based on this information, the project will add 740 parking spaces to the area. When added to the existing 2,667 parking spaces that have been built, this results in a total of 3,407 parking spaces. This is below the total maximum off-street parking (3,545 parking spaces) reviewed during KSURP Amendment No. 3. All new parking will be located in parking structures and will be shared amongst all project components. I refer the Proponent to comments from the City which request the Proponent further reduce the parking supply. I note that the provision of reduced parking may minimize single occupant vehicle (SOV) use and encourage

the use of transit options, resulting in reduced GHG emissions. I encourage the Proponent to re-evaluate the proposed number of parking spaces during the local permitting process.

### *Pedestrian/Bicyclist Accommodations*

The KSURP is located within an area that is well served by pedestrian accommodations, including sidewalks and crosswalks at all study area intersections. The SEIR provided a comprehensive inventory of all existing, planned, and proposed services, facilities, and routes for accessing the site on foot, and a detailed inventory of the bicycle network, including on-street bike lanes, cycle tracks, and multi-use pathways. The SEIR identified potential pedestrian access, safety, and streetscape improvements, including an improved Sixth Street connector, a potential mid-block pedestrian crossing on Broadway, and a commitment to work with the City to determine specific pedestrian and bicycle access and circulation improvements. I refer the Proponent to comments from the City which question the need for the proposed mid-block connection and identify bicycle and pedestrian improvements that warrant additional review.

### *Water Supply and Wastewater*

According to the NPC and SEIR, the project will require approximately 118,740 gallons per day (gpd) of net new potable water demand. The SEIR includes a commitment to conserve water through the use of low-flow plumbing fixtures, efficient air conditioning systems, use of native vegetation and minimal irrigation systems. The Proponent will continue to explore the viability of alternate water sources such as water reuse systems, rainwater harvesting, and xeriscaping.

The City of Cambridge will require the removal of four gallons of infiltration and inflow (I/I) for each gallon of new wastewater flows generated by the project. The SEIR acknowledged the need to mitigate I/I into the sewer system at a rate of 4:1 (431,780 gpd total) to accommodate the approximately 107,945 gpd of wastewater flow that will be generated by the project. The SEIR indicates that these requirements will be addressed by coordinating with the City's Department of Public Works (DPW) to either correct I/I issues within the KSURP area or by funding other I/I reduction projects. According to the SEIR, the Proponent has been consulting with the City's DPW and will continue to work with the City as specific projects are identified.

The City also requires that the project provide on-site sanitary holding capacity equivalent to 24 hours of sanitary flows (approximately 107,945 gallons of storage) to address significant combined sewer capacity issues that arise during large storms. The SEIR indicates that this will be addressed by coordinating with the City and may include additional improvements to the sanitary sewer system in lieu of providing on-site storage capacity for sanitary flows. As the project is phased, I refer the Proponent to comments from CRWA and expect that the Proponent will implement identified I/I removal improvements to ensure that the increased project flow for each phase of the project does not contribute to combined sewer overflows into the Charles River.

The SEIR identifies the extent of wet weather sewer surcharging in the project area and identifies potential improvements to the sewer system in areas with pipe surcharge greater than

or equal to the two-foot manholes with a flood depths greater than or equal to 2.5-ft. I refer the Proponent to comments from the MWRA which request that the Proponent and the City share the results of their wastewater mitigation strategy evaluations. MWRA also suggests there may be benefit in considering I/I mitigation strategies beyond Kendall Square to further minimize discharges of untreated combined sewer overflows to the Charles River Basin during large storms.

### *Stormwater*

The SEIR provided an expanded discussion of the existing stormwater infrastructure, conceptual drainage design, and an evaluation of the design in terms of stormwater peak rate, volume runoff, and pollutant loadings. According to the SEIR, stormwater management infrastructure will be designed in accordance with City and MassDEP Stormwater Management Standards (SMS) as design for each project component progresses. The SEIR indicates that all stormwater infrastructure serving the project site drains to the Charles River Basin at Broad Canal Way. Comments from MWRA note that stormwater from the project should not enter a City or MWRA sanitary or combined sewer outfall. MWRA comments also address the elimination of a potential connection between a storm drain in Galileo Way to a combined sewer in Broadway.

The project is located near and drains directly to the segment of the Charles River that is subject to a Lower Charles River Nutrient Total Maximum Daily Load (TMDL) and the Bacteria TMDL. The phosphorus TMDL requires a 62 percent reduction in phosphorous loading for this segment of the river. The SEIR identifies potential Low Impact Design (LID) and Best Management Practices (BMPs) that may be incorporated into the final design to treat stormwater runoff and achieve TMDL compliance. Comments from the Charles River Watershed Association (CRWA) and MassDEP indicate that these BMPs have the potential to meet regulatory requirements, though the limited information provided in the SEIR does not support an evaluation of the system's compliance with TMDL requirements. Comments from MassDEP and CRWA note that the Proponent should further consider how the incorporation of green roofs may affect phosphorous loading and consistency with TMDL requirements.

According to the SEIR, the Proponent will coordinate with the City to evaluate creative solutions to stormwater management to provide district-wide or neighborhood-wide benefits, including a potential connection to the Broad Canal. Comments from CRWA suggest retrofitting other open spaces (Point Plaza and Grand Junction Park) with green infrastructure and support the incorporation of green streets and other regional green infrastructure to meet water quality standards and provide flood storage on a regional level.

### *Air Quality*

In accordance with the State Implementation Plan (SIP) for ozone attainment, the SEIR includes a mesoscale analysis for 2014 existing conditions, 2024 No-Build, and 2024 Build conditions. The analysis indicates that emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>) for the 2024 Build scenario would be greater than the 2024 No-Build scenario. Because the project will increase emissions of VOCs, transportation mitigation is

required, including a TDM program. Under the 2024 No-Build condition, VOC emissions would be 7,507.71 kilograms per day (kg/day) and NO<sub>x</sub> emissions would be 9,257.12 kg/day. Under the 2024 Build condition, VOC emissions would be 7,507.82 kg/day and the NO<sub>x</sub> emissions would be approximately 9,257.75 kg/day. The project is estimated to generate 0.11 kg of VOC and 0.63 kg of NO<sub>x</sub> per day. The proposed mitigation, as previously described, will reduce VOCs by 0.04 kilograms per day (kg/day) and NO<sub>x</sub> emissions by 0.08 kg/day under the 2024 Build scenario.

The SEIR indicates that the project may require an Air Quality Permit (under 310 CMR 7.00) from MassDEP for heating boilers and emergency generators.

### *Greenhouse Gas Emissions*

This project is subject to review under the May 2010 MEPA GHG Policy and it is subject to the Massachusetts Stretch Energy Code (Stretch Code) adopted by the City of Cambridge. The Stretch Code increases the energy efficiency code requirements for new construction (both residential and commercial) and for major residential renovations or additions in municipalities that adopt it. The Policy requires projects to quantify carbon dioxide (CO<sub>2</sub>) emissions and identify measures to avoid, minimize or mitigate such emissions. The analysis quantifies the direct and indirect CO<sub>2</sub> emissions associated with the project's energy use (stationary sources) and transportation-related emissions (mobile sources). The GHG analysis evaluated CO<sub>2</sub> emissions for two alternatives as required by the Policy including 1) a Base Case and 2) a Preferred Alternative that includes additional energy saving measures and, at a minimum, complies with the Stretch Code. The analysis used the eQUEST, version 3.64, modeling software to perform the GHG analysis and included modeling assumptions and emissions rates.

At the time of the filing of the SEIR, the building code is the Massachusetts Building Code 8<sup>th</sup> Edition; however, the City has adopted the Stretch Code. The current Stretch Code requires energy efficiencies of 20 percent better than American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2007 and requires modeling of base and proposed cases based on the methodology as defined in ASHRAE 90.1-2007 (Appendix G). Based on this, ASHRAE 90.1-2007 was applied to define the Base Case. The SEIR also compared the proposed energy efficiency with the current Massachusetts Building Code, which is based on IECC 2012 and ASHRAE 90.1-2010. The Preferred Alternative is expected to meet the current Stretch Energy Code. Mobile GHG emissions were estimated using the standard methodology in the EEA/MassDOT Guidelines for EIR/EIS Traffic Impact Assessments and EPA's MOVES2014 emission factors. Potential project-related mobile GHG emissions were compared for the 2014 Existing Condition, the 2024 No-Build Condition, and the 2024 Build Condition (with physical and operational upgrades). The revised analysis indicates that the Base Case for the entire project will generate approximately 9,368 tons per year (tpy) of GHG emissions, consisting of 8,322 tpy of stationary source emissions and 1,046 tpy of mobile source emissions. The Preferred Alternative will reduce stationary source emissions by 1,927 tpy, an approximately 23 percent reduction, and will reduce mobile source emissions by 102 tpd, a 10 percent reduction. Overall emissions will be reduced by 2,029 tpy for an approximate 22 percent reduction.

I commend the Proponent's commitment to creating a sustainable development and its efforts to address climate change impacts in coordination with the City and other stakeholder groups. Comments from the Department of Energy Resources (DOER) indicate the revised GHG analysis was very responsive to the scope and incorporated many suggested energy efficiency measures. The SEIR included a draft tenant manual that identifies specific strategies to encourage adoption of GHG reduction measures and an updated GHG analysis based on specific mitigation commitments. Although energy efficiency components for each building will vary, the SEIR summarizes the stationary source energy conservation measures. They include high performance buildings with double pane curtainwalls and insulation, improved lighting power density (LPD), variable volume condensing and chilled hot water pumping, high efficiency centrifugal chillers, variable frequency drives (VFD) on cooling tower fans and higher efficiency cold water Delta T system, 96-percent efficiency condensing gas-fired hot water boilers, high efficiency water source heat pumps, high efficiency energy recovery ventilator, differential CO<sub>2</sub>-based demand control ventilation for offices, and CO control and variable air volume (VAV) for underground garage fans. Based on comments from DOER, the project design and GHG analysis was revised to reduce window-to-wall ratios and to reduce LPD in the office and retail spaces by approximately 20 percent.

The GHG analysis assumed implementation of a number of local intersection operation improvements, bicycle and pedestrian enhancements, and the TDM Plan. I note that the Proponent has not committed to specific intersection improvements or bicycle and pedestrian enhancements. I expect that the Proponent's self-certification will confirm that these or equivalent reduction measures have been implemented to demonstrate a commensurate GHG reduction. I refer the Proponent to comments from MassDEP which encourage the installation of electric vehicle (EV) charging stations and request that one percent of the parking supply be set aside for this equipment as an additional measure to reduce GHG emissions.

According to the SEIR, an additional 605 tpy of CO<sub>2</sub> could be reduced by installing solar on the available rooftop space of the proposed buildings. The SEIR analyzed the viability of a roof-mounted solar photovoltaic (PV) system for the buildings. The SEIR acknowledges that PV systems have been installed on other developments under the Redeveloper's control. In the SEIR, the commitment is limited to making the rooftops solar-ready. Comments from the City, DOER, and MassDEP encourage the Proponent to provide a commitment to add solar arrays to the project.

The SEIR also evaluated the purchase of energy from the Veolia (f/k/a Dalkia) Cambridge Combined Heat and Power (CHP) district steam network and included an expanded analysis that evaluated a connection to the Kendall CHP district plant for both heating and cooling energy using absorption chillers. These evaluations were completed in compliance with the draft *Guidance for the Application of the MEPA GHG Policy and Protocol to the Use of the Dalkia Cambridge CHP District Steam* document. According to this evaluation, use of steam from the Kendall CHP district plant for heating and cooling would reduce the total source energy used by the project by 90 percent. Use of steam to offset only natural gas used for heating would reduce the project's total source energy use by 62 percent. The SEIR identifies several challenges that make these options less financially attractive and note that additional analysis is needed. Comments from the City indicate that additional information will be required during

review of the Special Permit to assess the physical and financial feasibility of connecting to the Veolia district steam system. Given the significant GHG reductions associated with this potential measure, I expect the Proponent to continue evaluating use of the district steam system. In addition, I encourage the Proponent to work with DOER to consider how identified constraints may be addressed. Comments from CRWA identify other opportunities to integrate wastewater and energy reduction strategies into the project design.

#### *Climate Change Adaptation and Resiliency*

The SEIR noted the importance of planning for climate change impacts and resiliency resulting from sea level rise, increased storm frequency and duration, and extreme temperature events. The SEIR provided an update on the City's ongoing work with MassDOT to extend the scope of MassDOT's Advanced Circulation Model ("ADCIRC Model") for the Central Artery to the project area. Preliminary results from the ADCIRC Model indicate that there is a less than 0.1 percent chance of flooding due to climate driven sea level rise for the project site through 2030. I refer the Proponent to comments from the City which indicate that the storm surge may propagate through the piped infrastructure and cause flooding on a portion of Broadway. Comments from the City indicate that the project site is susceptible to flood risks from precipitation driven flooding via backups in the piped stormwater infrastructure. I anticipate that this will be evaluated and addressed during the local permitting process.

The SEIR included an assessment of sea level rise for the year 2075 which is calculated on a 50-year design life for the buildings. The assessment is based on the Office of Coastal Zone Management's (CZM) December 2013 report entitled *Sea Level Rise: Understanding and Applying Trends and Future Scenarios for Analysis and Planning* which presents estimates ranging from 0.60 ft to 3.92 ft. According to the evaluation, the adjacent roadway networks may be vulnerable to sea level rise; however this will be further evaluated once the final ADCIRC model results are available. Similarly, the MBTA Kendall Square Station may be vulnerable to flooding in the year 2075, which could affect accessibility to transit, an important consideration for the Redeveloper. The SEIR identified potential site elements that can be incorporated into project design to reduce the impact of sea level rise, extreme heat waves, and limit the potential impact of more frequent and intense precipitation.

#### *Hazardous Materials & Solid Waste*

According to the SEIR, the potential for vapor intrusion (VI) into new buildings will be evaluated in and assessed early in the building design phase to identify site conditions that may indicate when a VI pathway is probable in accordance with MassDEP Vapor Intrusion Guidance (WSC #14-434). The SEIR identified potential mitigation measures that may be implemented depending on the results of environmental investigations including protective barriers and vapor mitigation systems.

#### *Landlocked Tidelands*

A portion of the project will occur within landlocked tidelands as defined by the MassDEP's Waterways Regulations (310 CMR 9.00) and is subject to the Public Benefit Determination regulations (301 CMR 13.00). The SEIR provided a public benefits analysis of

the project consistent with the provisions of *An Act Relative to Licensing Requirements for Certain Tidelands* (2007 Mass. Acts ch. 168) (the Act). The area and type of activities proposed within the landlocked tidelands is summarized below.

<b>Project Component</b>	<b>Total Area within Tidelands</b>	<b>Nature of Work</b>
Cambridge Center North Garage	60,288 sf	Construction of commercial office space with innovation space, ground-floor retail, and indoor/outdoor public open space
Eleven Cambridge Center	28,600 sf	Change in use from office to residential
Broad Institute Conversion	64,230sf	Conversion of mechanical space to commercial office space
<b>Total</b>	<b>153,118 sf</b>	

The benefits of the project identified in the SEIR include the redevelopment of the site to activate the area and facilitate residential development in the area. It will also provide pedestrian and bicycle improvements, public open space, and circulation improvements aimed at improving permeability throughout and around project components.

Consistent with Section 8 of the Act, I must conduct a Public Benefits Review as part of the EIR review of projects located on landlocked tidelands that entail new use or modification of an existing use. I will issue a Public Benefits Determination (PBD) within 30 days of the issuance of this Certificate.

#### *Construction Period Impacts*

The SEIR identifies the construction period impacts of the project, including truck traffic, air quality (dust), noise, stormwater runoff, and construction waste. Mitigation measures identified in the SEIR include development of Construction Management Plans (CMP) for each project component to address numerous temporary construction-related impacts, including mitigation measures, road closures, detours, and staging. Mitigation measures to be included in the CMP include: erosion and sedimentation control, identification of designated truck routes, maintenance and protection of pedestrian and bicycle accommodations, dust suppression, covering trucks used for transportation of construction debris, daily cleaning of streets and sidewalks, and construction noise mitigation measures. The SEIR indicates that ultra-low-sulfur diesel fuel will be used for construction vehicles to mitigate construction-related air pollution and commits to meeting the requirements of the MassDEP State Revolving Fund (SRF) for diesel construction equipment. The SEIR also includes a commitment to divert at least 75 percent of construction and demolition waste from landfills.

### Mitigation/Draft Section 61 Findings

The SEIR includes a summary of potential mitigation measures to avoid, minimize, and/or mitigate environmental impacts. I note identification of and commitment to implementing many of the identified potential mitigation measures remains to be determined based on consultation with the City and MassDOT. The Proponent and/or Redeveloper have committed to implement the following measures to avoid, minimize, and mitigate environmental impacts:

#### *Traffic/Transportation*

- Traffic Monitoring Program: The Proponent will continue to conduct annual traffic monitoring and employee survey program to evaluate the success of the TDM program and accuracy of trip and traffic projections, and adjust mitigation as necessary.

#### *Vehicular Access and Circulation Improvements*

- Analyze and propose adjustments to signal timing and phasing for study area local intersections, as appropriate, in coordination with the City

#### *Public Transit Improvements*

- Establish the KSTEP in coordination with MassDOT, the MBTA, and the City through the establishment of an MOU, or similar document
- Implement the project-related improvement projects, program, and/or service improvements identified in the KSTEP, in coordination with MassDOT, the MBTA, and the City

#### *Pedestrian and Bicycle Access and Circulation Improvements*

- Review all pedestrian crossings and study area intersections and evaluate potential improvements to accommodate pedestrians, in coordination with the City
- Improve the Sixth Street Connector
- Enhance the Main Street streetscape from Ames Street to Galileo Galilei Way
- Enhance the Broadway streetscape from Ames Street to Galileo Galilei Way
- Enhance the Binney Street and Galileo Galilei Way streetscape from Sixth Street to Broadway
- Enhance lighting along sidewalks and pathways
- Support roadway and streetscape improvements along Galileo Galilei Way between Binney and Main Streets
- Review and evaluate potential bicycle improvements to connect each project component to other area wide improvements, in coordination with the City
- Provide approximately 800 bicycle long-term storage spaces for residents/tenants and provide approximately 142 short-term bicycle exterior parking spaces
- Explore opportunities to create a full service bike station within the area

#### *GHG Emissions*



- Information on how to train/inform maintenance staff and employees on sustainable operation and design features.
- Implement TDM Program, including a car sharing program, MBTA transit pass subsidy, free rides on some existing shuttle routes, parking pricing, Hubway pass subsidy, transportation coordinator, and provision of “real-time” transportation information in all new and renovated lobbies and at select public plazas on the project site. The Proponent will continue to participate in the Charles River TMA.
- The project will be designed to meet the applicable version of the Stretch Code in effect at the time of construction.
- The Proponent will submit a post-construction self-certification document to the MEPA Office which will be signed by an appropriate professional (e.g., engineer, architect, transportation planner, general contractor) and indicate that all of the required mitigation measures, or their equivalent, have been completed for each project component. The certification should be supported by plans that clearly illustrate what type of GHG mitigation measures have been incorporated into the project. For those measures that are operational in nature (i.e. TDM, recycling, parking management), the Proponent should provide an updated plan identifying the measures, the schedule for implementation and how progress towards achieving the measures will be obtained.

#### *Water and Wastewater*

- Coordinate with the City to correct I/I issues in the vicinity of the Project or providing funding for projects that the City is performing to reduce I/I.
- The project will include water use reduction strategies to achieve a 20% reduction in water use. The reduction in water use will also reduce wastewater generation.

#### *Stormwater*

- The project will mitigate stormwater effluent from the post-development, 25-year design storm to the rates of the pre-development, 2-year design storm and reduce TSS by 80% from the pre-development condition.
- Proponent will work with the City to evaluate a district-wide stormwater management solution that will treat stormwater runoff beyond the scope of individual project components.
- Use of green roofs and continued evaluation of pervious pavers in project design.

#### *Climate Adaptation and Resiliency Measures*

- The Proponent and/or Redeveloper will continue to evaluate and implement (as appropriate) the following measures:
  - Potential Site Design Measures: increased pervious surfaces on the ground level, green roofs, increased tree plantings and landscaping, use of native vegetation to minimize irrigation requirements, implementation of efficient irrigation system, rainwater harvesting, xeriscaping, and use of portable flood protection systems.
  - Potential Kendall Square MBTA Station Resiliency measures: construction of trench drains with greater capacity than existing systems at entrance to the station

to redirect runoff away from staircases, use of mobile flood barriers at station entrances, ground level utility valves, and adjacent to air intake/exhaust, elevation critical electrical infrastructure, and installing pumping equipment to minimize the effects of flooding.

- Potential Building Design Measures: Locating critical infrastructure above the first floor level, limiting basement areas, evaluating raised finish floor elevations, and potential use of flood-resistant building materials.

#### *Hazardous Waste*

- Develop a Release Abatement Measure (RAM) Plan to manage contaminated soil and/or groundwater (if encountered) and implement measures as required to reduce the risk of exposure of contaminants at each project component.
- Perform Vapor Intrusion (VI) evaluations in accordance with MassDEP guidelines and design and implement a vapor mitigation system (if required).
- Use of protective barriers in landscaped areas and exterior hardscape areas to mitigate risk of direct contact with contaminated soils.

#### *Construction Period*

- Development of a Construction Management Plan (CMP) for each project component including: erosion and sedimentation control, identification of designated truck routes, maintenance and protection of pedestrian and bicycle accommodations, dust suppression, covering trucks used for transportation of construction debris, daily cleaning of streets and sidewalks, and noise mitigation measures.
- Divert a minimum of 75 percent of construction and demolition waste from landfills.

#### Notice of Project Change

As noted above, the SEIR identified many potential mitigation measures and included a commitment to work with the City and MassDOT/MBTA to identify the specific measures that will be implemented. The purpose of the NPC is to document the proposed project mitigation when it has been more fully developed and submit it for public review and comment.

The NPC should include revised mitigation measures and revised Section 61 Findings. The NPC should contain clear commitments to implement these mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation (either funding design and construction or performing actual construction), and identify a schedule for implementation. The NPC should address, in particular, the process for identifying and funding transit enhancements, and include a MOU or similar document. It should address how funding allocations are determined commensurate with the scope and scale of the proposed project and associated impacts; the vehicle and entity responsible for managing funds; and, how funding will be prioritized and expended.

Circulation

In accordance with Section 11.10 of the MEPA Regulations and as modified by this Certificate, the Proponent should circulate a hard copy of the NPC to each Agency or Person who received the ENF or commented on the ENF, any EIR, or any prior NPC. Per 301 CMR 11.16(5), the Proponent may circulate copies of the NPC to these other parties in CD-ROM format or by directing commenters to a project website address. However, the Proponent should make available a reasonable number of hard copies to accommodate those without convenient access to a computer and distribute these upon request on a first-come, first-served basis. The Proponent should send correspondence accompanying the CD-ROM or website address indicating that hard copies are available upon request, noting relevant comment deadlines, and appropriate addresses for submission of comments. A CD-ROM copy of the filing should also be provided to the MEPA Office. A copy of the NPC should be made available for review at the Cambridge Public Library.

Conclusion

Based on a review of the SEIR, consultation with State Agencies, and review of public comments, I hereby determine that the SEIR adequately and properly complies with MEPA and its implementing regulations. DHCD may act on the Proponent's request for a Major Amendment to its Urban Renewal Plan (URP) pursuant to 301 CMR 11.12 (4).



November 25, 2015

Date

Matthew A. Beaton

## Comments received:

11/18/2015 Massachusetts Water Resources Authority  
 11/18/2015 Stephen H. Kaiser  
 11/18/2015 Charles River Watershed Association (CRWA)  
 11/18/2015 Massachusetts Department of Environmental Protection – Northeast Regional Office  
 11/18/2015 Massachusetts Department of Transportation (MassDOT)  
 11/18/2015 Metropolitan Area Planning Council (MAPC)  
 11/19/2015 Massachusetts Department of Energy Resources (DOER)  
 11/20/2015 City of Cambridge

MAB/PC/pc