Charles River Watershed Association

March 2, 2021

Via Email

Alex Strysky
Environmental Analyst, MEPA Office
Executive Office of Energy and Environmental Affairs
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Re: Comments on Harvard Enterprise Research Campus Project (EEA No. 16320)
Environmental Notification Form

Dear Mr. Strysky:

Charles River Watershed Association ("CRWA") submits the following comments on the Environmental Notification Form ("ENF") for the Enterprise Research Campus Project located at 100 Western Avenue, Boston, Massachusetts filed with the MEPA Office on February 1, 2020. This project consists of development of an approximately 14.2-acre parcel located at 100 Western Avenue in the Allston neighborhood. Specifically, the project includes 1.94 million square feet (SF) gross floor area of mixed-use development, which will be constructed in multiple phases and consist of residential (750 units at 570 SF), office/lab area (1,160,000 SF), hotel (135,000 SF), conference function (75,000 SF), some restaurant and retail use, along with new public realm and open space areas, including the "Project Greenway," and utilities to support development. The project will create approximately 9.8 acres of new impervious surface resulting in a total impervious cover of 13.95 acres on site. A total of 6,030 vehicle trips per day will be added to the area. The project intends to install a total of 1,280 parking spaces (600 spaces below ground, 640 spaces ultimately in a garage, and some on-street as well as temporary proximate parking during construction phasing). The project is anticipated to use approximately 256,500 gallons per day of water and generate approximately 233,250 gallons per day of wastewater. As proposed, this project currently meets/exceed more than one mandatory Environmental Impact Report ("EIR") threshold per 301 CMR 11.03, and therefore will be preparing and submitting an EIR.

Impervious Surfaces and Stormwater Management

The project is proposing to cover this 14.2-acre site almost entirely (over 98%) with impervious surface (the proponent is proposing to add 9.8 acres of new impervious surface for a total of 13.95 acres). Impervious surfaces exacerbate stormwater pollution and runoff and contribute to heat island effects.

Page 6 and Section 1.4.6.1 of the ENF discuss Stormwater Management:

- "The available site area between the buildings, referred to herein as the Project Greenway, will be used to provide stormwater storage and promote stormwater infiltration to recharge groundwater via underground stormwater chambers. Runoff

from building roofs will be collected internally and directed to the stormwater infiltration systems."

- "The on-site drainage systems that will service the Project are designed to collect and discharge the current BWSC 10-year design storm" (24-hour storm duration, NRCS Type III rainfall pattern, total rainfall depth of 5.15 inches)

- "The Project will aim to provide stormwater infiltration systems and other green infrastructure measures underneath the Project Greenway and within the roadways. The infiltration systems will be used to provide storage and promote infiltration via groundwater recharge, and Project Site runoff will be collected by catch basins, area drains, and trench drains, and directed to the infiltration systems. The roadways surrounding the buildings will also be collected by catch basins with deep sumps and hoods and directed to the infiltration systems. The infiltration systems will be designed to capture 1.25-inches of runoff from the impervious site areas to meet BWSC and BPDA requirements, along with an additional 1.5- inches of runoff. The total 2.75-inches equals the amount of runoff anticipated from a 32- year storm event. For storms greater than a 32-year event, overflow pipes will be provided to direct excess runoff to the storm drain mains in the roadways."

- "The infiltration systems will be designed so as to not increase existing runoff rates and volumes of stormwater for the 2- year, 10-year, 25-year, and 100-year storms will be explored by the Proponent as the design progresses, which could further minimize the size of the stormwater chambers."

Figure 1.5, Existing and Planned Utilities, shows planned drains, including the approximate extent of the subsurface stormwater infiltration chamber area.

According to the National Climate Assessment, the amount of precipitation falling in very heavy events increased by 71% in New England from 1958 to 2012. The Climate Ready Boston Map Explorer shows that areas of this project site, as well as BWSC drainage catchments upstream and downstream of the project site, have predicted stormwater flooding in the near-, medium-, and long-term.[1] The BWSC City of Boston Inundation Model shows extensive areas of flooding, many of which are predicted to be over one foot, in a 100-year storm even with 2030 sea level rise and a 100-year storm s[2]

Given this site's proximity to the Charles River, stormwater runoff from impervious surfaces on the site will have a significant environmental impact. CRWA requests the project proponent provide significantly more detail related to stormwater management in the EIR:

- The ability of the stormwater management systems to accommodate larger storms (such as the 100-year storm event) than the 32-year storm event should be evaluated.

[1] https://boston.maps.arcgis.com/apps/View/index.html?appid=7a599ab2ebad43d68adabc9a9ebea0e6&extent=-71.1583,42.2897,-70.9309,42.4060
[2] https://www.bwscstormviewer.com/index.html

- The ability of the stormwater management systems to handle current and predicted future rainfall amounts using the best available science should be evaluated (see addition comments under climate change section).

- Creation of new impervious surfaces should be avoided and existing impervious surfaces should be removed wherever possible. CRWA acknowledges that the project incorporates some structured parking, which is far preferable to surface parking. The proponent should consider whether more can be done to reduce the amount of surface parking.

- The ENF narrative vaguely indicates that stormwater management techniques will include green infrastructure measures. Figure 1.5, Existing and Planned Utilities, shows planned drains, including approximate green infrastructure locations. Green infrastructure must be extensively incorporated into the design to capture and treat stormwater generated by impervious surfaces. More information about the types of green infrastructure specifically intended to be employed and the anticipated stormwater management benefits should be provided in the EIR so that the public can fully understand the environmental impacts of impervious surfaces on this site and mitigation alternatives.

- The ENF also does not say whether the proponent has considered alternatives to impervious surfaces such as porous pavement for walkways or use of green roofs or cisterns to reduce the volume of runoff generated by the project. Additional alternative stormwater management opportunities should be presented and evaluated in the EIR.

Concerns about Water Quality Protection

Stormwater runoff from the project site will discharge to the BWSC's drainage system and ultimately reach segment MA72-36of the Charles River,[3] which is an impaired waterbody requiring a Total Maximum Daily Load ("TMDL") according to the Massachusetts Year 2016 Integrated List of Waters for the following pollutants:[4]

Impairment	EPA TMDL No.
(Fish Passage Barrier*)	
(Flow Regime Modification*)	
(Non-Native Aquatic Plants*)	
Chlorophyll-a	33826
DDT in Fish Tissue	
Dissolved Oxygen	
Escherichia Coli (E. Coli)	32371
Fish Bioassessments	
Harmful Algal Blooms	33826
Nutrient/Eutrophication Biological Indicators	33826
Oil and Grease	
PCBs In Fish Tissue	
pH, High	
Phosphorus, Total	33826
Sediment Bioassay (Acute Toxicity Freshwater)	
Transparency / Clarity	33826
Unspecified Metals in Sediment	

[3] 6.1 miles from Watertown Dam (NATID: MA00456), Watertown, to the Boston University Bridge, Boston/Cambridge.

[4] Note that impairments with a * do not require development of a TMDL

Two TMDLs apply to this segment of the river:

- Total Maximum Daily Load 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 no discussion in the ENF about how the project will address these pollutants and TMDLs. Complete documentation of how the project is designed to address the pollutants of concern and TMDLs, including calculations, should be provided in the EIR. Additional stormwater management plans detailing system sizing, type, and location should be provided in the EIR, along with calculations showing that the project complies with the phosphorus TMDL, which requires no additional inputs of phosphorus to the river and a significant reduction from existing development.

Impacts from Climate Change

Section 1.4.5 provides an overview of the sustainability and resiliency approach of the project. This is the only section in the ENF that specifically mentions climate change resiliency. There are a number of places in the ENF that mention energy conservation and reduction in greenhouse gas emissions, however, the overall ENF is lacking in documentation on how the proposed project will address concerns about impacts due to climate change, as well as mitigate and not further exacerbate these concerns.

The 2018 Massachusetts State Hazard Mitigation and Climate Adaptation Plan[5] or "SHMCAP" outlines the following climate projections:

- Precipitation. Total annual precipitation is projected to increase by 1 to 6 inches by mid-century, and by 1.2 to 7.3 inches by the end of this century. This will result in up to 54.3 inches of rain per year, compared to the 1971-2001 average annual precipitation rate of 47 inches per year. Precipitation during winter and spring is expected to increase, with the number of days with rainfall accumulation over 1 inch reaching 11 days by the end of this century, representing an increase of 4 days from the observed average between 1971 and 2000. At the same time, precipitation during summer and fall is expected to decrease, with number of continuous dry days projected to increase to nearly 20 days per year at the end of this century compared to the observed average of 16.64 days per year from 1971 to 2001.

- Flooding. More intense and frequent downpours will result in more stormwater runoff, higher surface water levels, more frequent flooding in areas that lie within the floodplain, and inundation of land not typically affected by flooding. Projected increases in extreme precipitation events will also increase the risk of flash flooding and damage to drainage systems not designed to accommodate the higher flows. Flooding caused an average of over $9.1 million in damages per year between 2007 and 2014, with highly developed areas being most vulnerable.

- Heat. The average, maximum, and minimum temperatures in Massachusetts are likely to increase significantly over the next century. The average annual temperature is projected

[5] https://www.mass.gov/files/documents/2018/10/26/SHMCAP-September2018-Full-Plan-web.pdf

to increase from 47.6 degrees Fahrenheit (°F) to 50.4 to 53.8°F (a 2.8 to 6.2°F change) by mid-century, and to 51.4 to 58.4°F (a 3.8 to 10.8°F change) by the end of this century. Summer highs are projected to reach 85.6°F by mid-century, and 91.4°F by the end of this century, compared to the historical average of 78.9°F. The number of days per year with daily maximum temperatures over 90°F is projected to increase by 7 to 26 days (up to 31 days total) by the 2050s, and by 11 to 64 days (up to 69 days total) by the 2090s, compared to the average observed range from 1971 to 2000 of 5 days per year.

- Drought. As precipitation patterns change and average temperatures increase, the frequency and intensity of drought is projected to increase during the summer and fall. Increased drought frequency may also exacerbate the impacts of flood events, as droughts can cause vegetation that would otherwise have helped mitigate flooding to die off. Vegetated areas not only reduce the risk of downstream flooding but also increase the rate of groundwater recharge, which in turn increases an area's resilience to future drought events.

- Storms. Severe winter storms and nor'easters are currently the most frequently occurring natural hazard in the state. Massachusetts also experiences 20–30 thunderstorm days per year, with high winds occurring even more frequently. Tropical storms and hurricanes also impact the state, with an average occurrence of one event every two years. All of these severe weather events are expected to increase in intensity and frequency, including higher precipitation amounts.

Further detail about how the project will specifically address these climate concerns should be provided in the 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 glad to see that the project will include planting trees and shrubs within proposed vegetated areas. We urge the project proponent to maximize the amount 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.

Relationship to Proposed North Allston Storm Drain Extension Project (NASDEP) (EEA No. 16319)

The ENF acknowledges that Boston Water and Sewer Commission (BWSC) has also filed an ENF (EEA no. 16319) that covers a project proposing to construct a new 84" drain line and a new outfall that will discharge directly to the Charles River between 500 Soldiers Field Road and Cambridge Street. The proposed drainage system will redirect runoff from the catchment area located on the south side of Western Avenue that currently discharges to Charles River north of Western Avenue via two outfalls, including the Harvard ERC land.

We appreciate that the ENF clarifies that, "in the event that the NASDEP is not available in time to serve the Project, storm drain improvements will be constructed to convey the current 10-year BWSC design storm runoff from the Project to the existing 30-inch by 36-inch BWSC storm drain main in Cambridge Street, which ultimately discharges to the Charles River (via BWSC outfall SDO-034)." (Page 1-10) The ENF further explains that, in this case, "peak flows

will be attenuated through a stormwater storage facility before discharging to the existing BWSC drainage system in Cambridge Street, so that neither the downstream drainage system nor the upstream catchment area is adversely impacted. The storm drain improvements described in this paragraph, unlike the completed NASDEP, would not provide improved long-term resiliency to storm events and alleviate flooding for the thousands of residents in the North Allston neighborhood catchment area, and our current understanding is that those storm drain improvements would be decommissioned by BWSC when the NASDEP is completed. The drainage systems that will service the Project are designed to collect and discharge the current BWSC 10-year design storm." (Page 1-10)

The EIR should provide additional detail, including description and plans, showing the proposed drainage routes from the project site to the Charles River under both scenarios described above. The EIR should also include information (description of extent, duration, frequency, etc.) in both written and visual format on the historical flooding areas that will contribute to the downstream route and provide calculations and modeling showing that the proposed project will not have adverse impacts on the downstream drainage system nor the upstream catchment area as indicated in the ENF (see quote above), both under present and anticipated climate conditions (see previous comment sections).

Water Use & Sewer Generation

Page 3 of the ENF lists anticipated water use and wastewater generation. Page 15 of the ENF provides information on the anticipated wastewater generation. Section 1.4.6.2 generally describes water and wastewater connections and that "the Proponent will coordinate with the BWSC for approval of these connections, as well as the increase in sewage flows. Improvements and connections to BWSC infrastructure will be reviewed as part of the BWSC's Site Plan Review." (Page 1-11)

However, the ENF does not provide any supporting information to document the estimated water use and wastewater generation. The EIR should provide documentation and calculations to support the numbers given in the ENF. In addition, the project development program listed in Table 1-1 of the ENF shows almost 60% (1,160,000 SF of the 1,940,000 SF total) of the project will be lab/office space. The range of possible water use and wastewater generation from this broad use is significant. The EIR should provide further estimates about likely space uses and provide a real-world basis for anticipated water and wastewater needs based on constructed projects in the area with similar uses.

Construction Period Impacts

The ENF identifies the project's need to obtain coverage under the EPA NPDES Construction General Permit, and, if necessary, a Construction Site Dewatering Discharge Permit from the Massachusetts Water Resources Authority (MWRA).

Given the proximity of this site to the Charles River, we are concerned that this project may have significant dewatering needs during construction. It is likely dewatering discharges will enter the BWSC drainage system and therefore the Charles River. In addition, as mentioned in the ENF (see Page 6 and Page 1-5, Section 1.2 Existing Site Conditions), the project site has been regulated under the Massachusetts Contingency Plan (MCP). Further detail on construction period

dewatering, including volumes, flow rates, anticipated water quality concerns, including any posed by MCP-documented contamination, and potential impacts on the drainage system and river should be provided in the EIR.

Operation & Maintenance of the Drainage System

The ENF provides no information on proposed operation and maintenance of the drainage system, including the green stormwater infrastructure and the subsurface infiltration system. Such documentation should be provided in the EIR.

Public Engagement

We are concerned there has been a lack of public education and engagement around this project. Section 1.8, Community Outreach, documents only two specific meeting dates (Harvard Allston Task Force on January 19, 2021 and the Allston Civic Association (ACA) on January 20, 2021), which were held right before the ENF was submitted, and states that "various other meetings with leaders of local community groups" have been conducted. The ENF anticipates "additional outreach, public meetings, and community engagement will be conducted as part of the City of Boston Article 80 review process, as well as the review process for this ENF. As required by MEPA regulations, the Proponent will participate in a site consultation (assumed to be held virtually given COVID-19). The Proponent is also committed to facilitating access to persons with limited English proficiency. This is expected to include development of a Project-specific language access plan, which will be in accordance with the BPDA's Language Access Plan (once finalized) and will be subject to approval by the BPDA, to facilitate outreach and communications with person with limited English proficiency."

We share the concerns raised by other stakeholders that there has not been adequate public education and engagement around this project. The project proponent should undertake an extensive program to provide information to local residents and businesses, as well as the public and entities who will be impacted by the construction period (e.g., commuters, businesses etc.), about the perceived necessity for the project, its benefits, and its impacts. This outreach should be conducted in conjunction with the provision of more details and specifics about the project in the EIR.

Thank you for considering these comments.

Sincerely,

Janet Moonan, PE
Stormwater Program Director