



January 27, 2022

*Via Email*

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**Re: Environmental Notification Form for Memorial Drive, Cambridge, MA  
(Memorial Drive Reconstruction Phase III), EEA No. 16495**

Dear Christina:

Charles River Watershed Association (“CRWA”) submits the following comments on the Environmental Notification Form (“ENF”) for the Memorial Drive Phase III Reconstruction Project in Cambridge, MA (the “Project”) filed with the MEPA Office on December 15, 2021. The Project consists of the reconstruction and narrowing of Memorial Drive, from Eliot Bridge east to the intersection of Memorial Drive and John F. Kennedy Street into a 26-foot-wide cross section, construction of a new 10-foot-wide multi-use path and 5-foot-wide aggregate path, and parkland improvements in landscaping and recreation areas to provide for a pedestrian and bicycle corridor. Stormwater system improvements are also proposed.

We are pleased to see this project reduce roadway and impervious cover to improve bike and pedestrian access along the Charles River. Access to green space with trees, vegetation and water has a direct impact on human health and wellness. Additionally, preserving and increasing vegetation and permeable areas and green stormwater infrastructure (GSI) are great ways to naturally improve climate resiliency and improve stormwater management. This project has an opportunity to be an example of how reducing traffic lanes and increasing pervious cover and green space is a benefit to the community’s wellness and resiliency.

### ***Impervious Surface and Stormwater Management***

Impervious surfaces exacerbate stormwater pollution, increase runoff quantity, and contribute to heat island effects and should therefore be minimized to the greatest extent possible. Where impossible due to necessary uses, impervious cover impacts should be mitigated through modern stormwater management. We are pleased to see that the project considered 12 alternatives and ultimately selected the option that reduces the width of Memorial Drive from 40- to 44-feet to 26 feet, the minimum considered through the analysis, which will reduce impervious cover within the project site by 1 acre. We urge the Project Proponent to consider pervious materials or cool pavement techniques for the new multi-use trail (currently proposed to be 10-foot wide hot mix asphalt) in addition to the pervious pavement for the sidewalk on the north side of Memorial Drive.

The ENF also notes that the project is expected to manage stormwater runoff volumes and peak flows through implementation of Best Management Practice (BMPs), specifically updates to the drainage features required for the roadway improvements, three dry swales and four rain gardens. The ENF explains that these stormwater management features will collect and manage the first flush of runoff from Memorial Drive and will be used to improve water quality. During larger storm events, stormwater will still overflow into the traditional drainage structures that lead to existing outfalls to the Charles River. Because there will be a net reduction of impervious cover for this site, the additional stormwater management features will increase overall stormwater infiltration on site. We are pleased to see that impervious surface will be reduced and new GSI will be installed to help mitigate stormwater flooding and runoff.

The ENF does not provide information on what storm events were used to model/analyze stormwater flooding and runoff. We request the Project Proponent provide clarification on what storm events were modeled to analyze current and future stormwater flow rates and volumes for the project.

### ***Wetlands Impacts***

The ENF does not provide clear information on the construction of the four new river overlooks along the Charles River within the 100-year floodplain. We request more information regarding how the proponent will build and maintain the overlooks on top of existing outfalls/concrete headwalls.

### ***Water Quality***

Stormwater runoff from the project site will ultimately reach the Charles River which is an impaired waterbody according to the Massachusetts Year 2016 Integrated List of Waters. Two Total Maximum Daily Loads (TMDLs) apply to this segment of the river: the TMDL for nutrients in the Lower Charles River Basin (2007), which is acknowledged in the ENF, and the final pathogen TMDL for the Charles River (2007).

DCR is regulated by the General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) (MS4GP). The MS4GP requires DCR to reduce its phosphorus load and achieve a total allowable load of 330 kg/yr (Town-wide in Charles River watershed), or 307 kg/year (Urbanized Area only in Charles River watershed) to comply with the TMDL for nutrients in the Lower Charles River. Rather than being a target or a goal, achieving the total allowable load is a legally-binding requirement under the MS4GP, with which failure to comply would be a violation of the permit and the Clean Water Act. We do note that the percent reduction of 22% for DCR listed in Appendix F is based on the baseline load and allowable load, and is not the individual project-based reduction expectation. Reduction requirements contained within Appendix F of the MS4 General Permit are based on the TMDL; the baseline phosphorus load, load reduction requirement, and allowable phosphorus load follow the assumptions that (1) commercial, industrial, high-density residential, and medium density residential land use will achieve or exceed an average annual phosphorus load reduction of 65%, (2) low-density residential land uses will achieve 45% load reduction, (3) agriculture and open land will achieve 35% load reduction, and (4) forest/undeveloped areas will not increase the load. DCR should match these reductions in order to achieve the allowable phosphorus load under the MS4 General Permit. While we appreciate that the project will provide a total phosphorus reduction of just under 35% for the project area and calculations were completed using U.S. EPA's BATT tool, more phosphorus should be reduced by capturing larger precipitation events, managing a larger drainage area, or adding more BMPs, as it is much more efficient and cost-effective to accomplish phosphorus reductions at the time projects are constructed, rather than going back and retrofitting DCR land during the remaining compliance period for the Phosphorus Control Plan.

The ENF does not provide any analysis related to addressing the discharge of pathogens 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 water bodies; 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.

### ***Trees & Vegetation***

Trees and other vegetation improve air and water quality, help control stormwater runoff and flooding, and provide natural cooling. The ENF states that approximately 11 mature trees greater than 14 inches in diameter at breast height will be removed from the project site to

accommodate the new multi-use paths and parkland uses. The Landscape Plans in Appendix D include a note that “the quantity of trees to be removed may increase when path grading is finalized.” According to the project proponent, the trees are in poor health and exhibit deteriorating conditions, including decayed trunks and dead tree sections. Approximately 140 existing trees within the project site will remain and approximately 50 new tree plantings are proposed along the project corridor as a mitigation solution. How many additional trees are possibly going to be removed due to grading? When will the final quantity of trees to be removed be determined?

We support the addition of 50 new trees and recommend the planting of native trees and shrubs wherever possible. While the benefits of new young trees will not be the same as any mature trees removed, it will be a start to increasing climate resiliency for this area. We also recognize the community’s concerns around losing the 11 mature London Plane trees proposed for removal and strongly urge the proponent to consider retaining any London Plane trees that can recover or including London Plane trees in the list of new tree plantings.

### ***Climate Resilience***

An analysis using the RMA Climate Resilience Design Standards Tool demonstrates that this project is at “high risk” for extreme precipitation/urban flooding, extreme precipitation/riverine flooding, and extreme heat. The proponent has committed to taking some measures to address these impacts, but minimizing impervious surface by utilizing pervious alternatives and preserving trees as much as possible would further reduce the risks posed by both flooding and extreme heat. Stormwater management systems should be designed to not only accommodate current storms, but future storms as well. More information should be provided on how the stormwater systems will accommodate climate change including ability to discharge into the River and avoid flooding.

### ***Construction Period Impacts***

Due to the project’s proximity to the Charles River, we are concerned about construction period impacts. We appreciate the ENF notes that the project will be subject to a U.S. EPA Construction General Permit. The Permit Plans included in Appendix C note the use of compost filter tubes. The Permit Plans do not provide a detail associated with proper installation of the compost filter tubes nor do the Project Plans document how existing catch basins will be protected. In addition, the ENF does not clarify how soils will be stabilized temporarily during construction and permanently following construction. Given this information, CRWA requests the project proponent provide the following:

1. Clarification on how existing and new catch basins will be protected during construction
2. An additional erosion and sediment control linear feature along with the compost filter tubes, such as a silt fence properly staked and buried in accordance with manufacturers recommendations on the River side of the compost filter tubes. This will provide a second barrier to prevent pollution.
3. More detail on plans for temporary and permanent stabilization of soils during and post-construction.
4. More information on temporary material storage and management.

If these cannot be provided in a response to comments, during what permit applications will additional information be provided?

***Community Engagement & Education***

We are pleased to see that the project included listening sessions and an online system to solicit public and stakeholder input.

To increase community engagement and awareness of climate change impacts and stormwater management, we suggest installing educational signage at green infrastructure installations and river overlooks. Educational messaging can include expected climate change impacts in the area and community, how green infrastructure assists in mitigating stormwater flooding and runoff, and how trees provide natural cooling effects. We also urge that these messages be available in various languages that cater to the broader Environmental Justice community living in proximity to the project site.

Thank you for considering these comments.

Sincerely,



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Program Associate for Community Resilience



Janet Moonan, PE  
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