



City of Cambridge
Department of Public Works

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March 30th, 2021

TO: Planning Board

FROM: Katherine F. Watkins, PE
City Engineer

RE: MIT Volpe Redevelopment Plan: PUD Special Permit Application

We are in receipt of the Special Permit Application Documents for the MIT Volpe Redevelopment Plan Special Permit Application, dated February 3, 2021, and a Supplemental Package dated March 16th, 2021. We have reviewed the materials and have presented below some comments related to the interests of the Department of Public Works.

Generally, based on the provided documentation and narratives, the DPW does not anticipate the project having any issue meeting all of the requirements of our Department. The DPW has also met with the Applicant and their consultants to review the proposal for the proposed redevelopment project. The Applicant's team have demonstrated an understanding of our Department's requirements and have continuously expressed willingness to work with the DPW to meet the requirements and to address our concerns.

Items presented in this memo relate to broad level review associated with the PUD planning, scheduling and implementation. As the project is further advanced, DPW will work with the Applicant to ensure that the requirements noted below are addressed. Formal complete engineering review will be undertaken by the DPW at each phase of the development, at the time of each Building Permit Application, to confirm that all DPW Standards have been met.

Project Phasing and Construction:

With any phased development of this kind, the Applicant should be aware that at the completion of any phase the project shall be in compliance with all DPW standards. The DPW is always willing to consider innovative shared infrastructure solutions, particularly if they can reduce the projects impacts on the environment and community. That said, the phasing of the project shall allow for completion of these shared solutions in a manner that maintains the projects compliance with DPW regulations throughout the phasing of the PUD.

The DPW respectfully requests that the Applicant consider construction logistics and operations of each phase of the project early in the design development. Redevelopment projects can be significantly impactful to the abutting properties and rights-of-way. Considerations in this busy neighborhood will need to be made to minimize the impacts to the greater community including all modes of transportation

(vehicles, bikes and pedestrians), street trees, and adjacent buildings and operations.

Proposed Road Street Sections:

The Applicant provided some revisions to the proposed Street sections in the Supplemental materials submitted on March 16th, 2021. The DPW agrees with the intention of the proposals. The DPW will work with the Applicant and other City Departments to establish the details of these sections and connections to ensure that the network is safe for all users and is consistent with the goals and objectives of the City's broader planning objectives related to resiliency and the urban forest.

The Special Permit should condition that streets are to be open as private ways open to public use upon such terms, conditions and reservations as are acceptable to the Department of Public Works and MIT.

Resiliency to Flooding:

The Application presents a discussion related to how the redevelopment will address the future surface flooding as was modeled as part of the City's Climate Change Vulnerability Assessment. The Applicant commits establishing the finished floor elevation of each structure and all critical infrastructure to above the 2070-100 year event. The DPW supports this effort with some specific items noted below:

- The Application notes that the entrances to the below grade parking structure, may not be elevated to above the 2070 flooding elevation and that flood barrier would be provided. The DPW will advocate that the proposed barrier protection be automatic and passively deployed to avoid having to anticipate a flood event and mobilize staff to deploy the protection.
- The Application acknowledges that the flooding elevations may change as the City model is revised with changing conditions and amended parameters. They have committed to addressing the current flood elevations as the design progresses.

The DPW supports the measures that the Applicant has outlined and will work with them to confirm they are implemented as the design progresses.

Urban Forest:

The Applicant has submitted a Tree Study that is in conformance with current Tree Ordinance. Prior to any tree removals and at each issuance of a Building Permit the Applicant will need to confirm that the proposed work is consistent with the Tree Study and that the Study remains consistent with the current Tree Ordinance.

The DPW looks forward to working with the Applicant on the details and specifics of the proposed plantings on the site. The DPW will look to increase opportunities for plantings and also review the details of the plantings to ensure that the trees have the best opportunity to thrive in the urban environment. With many of the tree plantings being proposed over what will be garage structure, understanding the depths available and details proposed will be critical.

The Applicant has also been made aware that trees outside of the Project Parcel are outside of the jurisdiction of the City Tree Ordinance, and regulated as Shade Trees by the State. Proposed impacts to Shade Trees will be required to follow the State Regulations which includes a public hearing for any proposed removals. The DPW supports the changes made to the proposal in the Supplemental Package that alter the driveway circulation patterns from the Broadway side of the parcel and allow for mature Shade Trees within this Right of Way to be maintained.

The DPW will continue to work with the Applicant to look for opportunities for increased tree plantings

and that all plantings will be consistent with the Goals of the Urban Forestry Master Plan.

Public Infrastructure:

As the development progresses through the Design Review and Building Permit process, we will review the site and utility design related to DPW standards and requirements. The DPW reserves the right to establish appropriate mitigation measures, related to impacts to public utility infrastructure and the public right of way (streets and sidewalks), throughout the process as the design presents the full scope of these impacts. These may include vibration monitoring; deflection monitoring of existing utilities; pre and post construction videoing; and resident engineering services on the City's behalf, depending on the phasing of the projects.

Stormwater Management:

Under the City Land Disturbance Regulations, the Applicant will need to obtain a Stormwater Control Permit from the Department of Public Works, prior to the start of construction of each phase. The permit requirements cover the design standards and long-term operation and maintenance of a management system for the project site, as well as the construction phase erosion and sedimentation control plans.

The project is located within the Charles River Watershed for which a Total Maximum Daily Load (TMDL) has been established for Phosphorous, the pollutant of concern. In response to the TMDL the City requires that projects within the watershed treat stormwater to reduce the Phosphorous load by 65% from the existing condition.

The Application included acknowledgement of the City Standards and provided some discussion related to how these standards will be met. Some specific items of interest are noted below:

- The Stormwater Control Permits also includes the standard to mitigate the stormwater runoff from the site from the proposed 25-year storm to a rate below the pre- redevelopment 2-year storm event. There is an allowance in the regulations for projects in direct proximity to an outfall to not over detain stormwater to meet this standard, as there is a benefit to our system to have the stormwater released prior to the peak discharge of runoff from the upper reaches of the drainage area. The DPW will be reviewing the proposed stormwater flows from the redevelopment to see if the waiver from meeting this standard is appropriate for this project.
- For the above noted calculations, the Applicant has acknowledged that the City will request that the modeled systems utilized the projected 2030 and 2070 rain fall events to ensure that designed systems will continue to operate effectively under future projected rainfall intensities and events.

Sanitary Sewer:

The Application has indicated that the project will result in an estimated sewer flow generation of approximately 465,000 gallons per day, at full build out.

The Application indicates that the project will propose a blackwater treatment and reuse system for approximately 250,000 gallons per day of this proposed flow. The DPW applauds the proposal for this innovative approach to reduce the projects impact and demands on City Infrastructure. The DPW is committed to working with the Applicant and applicable State Agencies to get this system permitted and approved, as it will be one of the first in the State in an urban environment.

Over and above the reuse blackwater the resulting increase in sewer flow will also trigger the requirement for the project to remove 4 times the net increase in flow of Infiltration and/or inflow (I/I) from the sewer

system. The City will work with the Applicant to establish mitigation for the added flows as the program is developed.

Private Utilities:

The Application provides some narrative related to the what will be required at the site to support the private utility connections. The Narrative does not include any specific information related to the scope of the utility work required within the Public Right of way. The DPW will look to understand the scope of this work for the entire buildout prior to any construction commencing, as it will be critical for us to evaluate sequencing, construction impacts and surface mitigation requirements.

Eversource Electric is currently working on significant infrastructure in the Kendall Square / East Cambridge area to provide additional capacity to support to increased electrical loads in the city. The City will work closely with MIT to coordinate Eversource upgrades with the Volpe development and will look for synergies between the two projects.

In summary, the comments above are specific to the PUD Special permit. The DPW anticipates having addition comments to the Board as the discussion progresses to the Design Review Materials.

We look forward to working the Applicant on this project. Please feel free to contact me with any questions or concerns related to the comments or information provided above.

Sincerely,



Katherine F. Watkins, P.E.

City Engineer