

MEMORANDUM

Date: October 15, 2021

To Lexington Planning Board

From Scott Turner, PE, AICP, Environmental Partners

CC Bradley Cardoso AIA, Hobbs Brook Real Estate, LLC
Monica M. Audette AIA, Margulies Perruzzi

Subject 99/95 Hayden Avenue Sketch Plan Submission
Facility Assessment

On behalf of Hobbs Brook Real Estate, LLC, Environmental Partners (EP) is pleased to present this facility assessment to accompany the Sketch Plan submitted for the redevelopment project located within the Ledgemont Technology Center campus at 95 and 99 Hayden Avenue. The combined property at 95 and 99 Hayden Avenue is approximately 36 +/- acres and is currently developed with an office building complex, two parking garages, site driveways, surface parking, sidewalks, site landscaping, and site utilities. The proposed project includes the demolition of a portion of one of the existing office building complexes, which will be replaced by two new laboratory buildings that will include a ground level connection with the remainder of the existing building which is planned to be renovated. The project will also include new surface and garage parking as well as various associated site improvements. The Applicant is proposing to establish a new Planned Development District to allow for the redevelopment of the project on the site.

Existing Conditions

The 36 acre site consisting of 95 and 99 Hayden Avenue is located within the Planned Commercial ("CD") District as well as the Transportation Management Overlay ("TMO") District. The partially developed site currently includes a 229,982 s.f. office building located at 95 Hayden Avenue and a 194,150 s.f. office/laboratory building complex located at 99 Hayden Avenue. 95 Hayden Avenue contains a 631 space parking garage and 99 Hayden Avenue contains a 325 space parking garage. In addition to the garage parking, there are a combined 158 existing surface parking spaces on-site. Total existing parking between the garages and surface parking on-site is 1,114 spaces. The existing combined site includes 11.5 acres of impervious surface including buildings, surface parking, site driveways and sidewalks.

Existing Access

The site contains two site drives including one driveway off Hayden Avenue and one driveway off of Spring Street. The existing site contains numerous internal drives throughout the property to maintain access to on-site parking areas, on-site parking garages, and to directly access the buildings. There is an existing sidewalk that is located along the Hayden Avenue frontage. There is a sidewalk that is located along Spring Street opposite the project site. There are pavement markings for bicycles on both Hayden Avenue and Spring Street.

Existing Site Topography, Soils, and Wetlands Resources

There is significant topographic change on the property. Elevations on the northeast side of the site are approximately 310. The edge of wetlands on the eastern side of the site is approximately 190. This represents an elevation change of over 100 feet. The site is characterized by significant ledge outcroppings. The site generally slopes from the northwest corner of the site to the east towards a large bordering vegetated wetlands located on the 95 Hayden Avenue property. There is also a large perched wetlands located on the northern side of the site that flows into the site's stormwater management system.

The National Resource Conservation Service Cooperative Soil survey characterizes soils conditions on site as Urban Land, Rock Outcrop – Hollis complex, Hollis-Rock outcrop-Charlton complex, and Freetown muck. All of these soil types are characterized as Hydrologic soil group D, which are the soil groups with the least infiltrative capacities. As the site design progresses, the project development team will perform exploratory test holes to confirm soil conditions to support the sites stormwater management design. This soil testing will also confirm seasonal high groundwater.

According to the MASSGIS Oliver website, the property does not contain any Priority or Estimated Habitat of Rare and Endangered Species. Furthermore, there are no certified or potential vernal pools on the property. The site is not located within an Area of Critical Environmental Concern. The site is not listed on the Massachusetts Historical Commission historic properties database.

Areas of the site that were not previously developed remain in a natural condition. The existing development appears to have been built in a manner to minimize cuts and fills and ledge excavation. Due to the high cost – and disruption – associated with blasting and ledge removal, areas that are not developed remain undisturbed and are characterized by ledge outcroppings and natural areas. A significant buffer is present between the developed portion of the site and the residential neighborhood located to the north of the property. This area of the site was the planned location of a new building approved in 2009 that was never constructed.

Existing Stormwater Management

The existing commercial site development was constructed beginning in the 1960's, prior to the promulgation of the Massachusetts Stormwater Management Standards. The existing stormwater management system consists of a traditional gray infrastructure system that simply collects and conveys stormwater generated by the site without treatment, detention, or groundwater infiltration. Stormwater generated by the site is discharged to either the Hayden Avenue stormwater system or to the wetlands located on the east side of the 95 Hayden Avenue site without pretreatment or

attenuation. Due to the size of the site and soils conditions, there are 3 12-inch reinforced concrete pipes, one 24-inch reinforced concrete pipe, and two 36-inch reinforced concrete pipes that discharge directly to the wetlands system.

Existing Water Service

Existing Water service is provided to 99 Hayden Avenue from Spring Street. There is an existing 8" line that feeds 99 Hayden Avenue. 95 Hayden Avenue is serviced via an existing 8" line from Hayden Avenue. The project development team has analyzed water bills for both 95 and 99 Hayden Avenue prior to the Covid-19 pandemic. Analyzing water bills prior to the Covid-19 pandemic indicates that 95 Hayden Avenue uses 3,000 gallons per day for potable use and 4,300 gallons per day for irrigation use in the summer months. The same analysis indicates that 99 Hayden Avenue uses 10,000 gallons per day for potable water use and 2,700 gallons per day for irrigation use in the summer months. This data indicates the two properties combined require approximately 13,000 gallons per day for potable water use within the buildings and approximately 7,000 gallons per day during summer months for irrigation water.

Typically, potable water use is approximately 10% higher than sanitary sewer flows. Therefore, based on Title V flow rates, estimated potable water use is approximately 35,000 gallons per day. This is almost three times higher than observed water use pre-Covid.

Fire flow tests were performed on site in September, 2021. The results of this test indicate adequate pressure on-site.

Existing Sanitary Sewer

Sanitary sewage from the buildings located at 95 Hayden Ave and 99 Hayden Ave is collected by an eight-inch sewer line that flows to a sewer pump station located near the wetlands on the 95 Hayden Avenue site just outside the Hayden Avenue right-of-way. This pump station, which was upgraded in the mid-1990's, collects sewage from the site as well as portions of Lexington located south of Route 2. This pump station pumps sanitary sewage via an 8-inch force main through the wetlands located on site to a 16" gravity line located just north of the 95 Hayden Avenue property.

Sewer flows are generally 90% of water flows. Based on historic water bills, sanitary sewer flows from the existing buildings can be estimated to be approximately 12,000 gallons per day including 2,700 gallons per day from 95 Hayden Avenue and 9,000 gallons per day from 99 Hayden Avenue.

Title V of the State Environmental Code is customarily used for estimating sanitary sewer flows. Estimated existing sanitary flows from 95 Hayden Avenue based on Title V flow factors are approximately 17,250 gallons per day using an office flow factor of 75 gpd/1000 s.f. Flows from 99 Hayden Avenue are estimated to be 14,560 gallons per day for a total estimated flow of 31,810 gallons per day. These flows are significantly higher than flows that are described in the historic water bills. Based on our research of existing water bills and also applying Title V factors, using Title V flow factors yields a sanitary sewer flow that is roughly 2.5 times the observed flows.

Existing Electrical

Eversource currently provides electrical service to the Town of Lexington and the site.

Existing Gas

National Grid currently provides gas service to the Town of Lexington and the site.

Existing Noise

A noise study is currently being prepared for the project. Noise experienced on the property is typical noise you would expect to hear at a suburban office park. There is some background noise experienced on the property generated from Hayden Avenue, Spring Street and Route 2.

Existing Air Quality

The project proponent is not aware of any air quality issues currently being experienced on site.

Existing Site Lighting

Site lights are located along the site driveways located throughout the property. The light fixtures appear to be consistent with light fixtures installed in the 1970's.

Proposed Conditions

The proposed project includes the demolition of approximately 56,747 s.f. of the existing 99 Hayden Avenue building complex. The project proposes the construction of two new buildings (Buildings 1 and 2) and a connector space connecting new Building 1, new Building 2, and the remaining portions of the existing building which is planned to be renovated. These buildings will be constructed in three separate phases. Once completed, 99 Hayden Avenue will include a total of approximately 463,903 square feet.

Additional parking on the site is largely proposed in subsurface garage parking beneath new Buildings 1 and 2. The project proposes to construct one level of structured parking beneath new Building 1 and three levels of structured parking beneath new Building 2. This will provide a total of an additional 308 parking spaces on site. The project also proposes to build a four story addition to the existing parking garage on the 99 Hayden Avenue property which will add an additional 160 parking spaces. The project includes the elimination of 35 surface parking spaces and addition of 44 parking spaces for a total addition of 9 surface parking spaces. Existing laboratory space within the existing 99 Hayden Avenue garage will be converted to 48 parking spaces. Total surface parking at 99 Hayden Avenue will be 108 spaces at the completion of the project. At completion, the 99 Hayden Avenue project will include 972 parking spaces and a total of 463,903 square feet. Per Section 5.1.6 of the Lexington Zoning Bylaw, required parking spaces are based on 80% of the gross floor area, which is 371,122 s.f. Therefore, the proposed project will provide a parking ratio on the 99 Hayden Avenue site of 2.60 parking spaces per 1,000 sf. The project represents a net increase of approximately 269,753 square feet in office and laboratory space. The project also includes a net increase of 2.1 acres of impervious surface, within previously developed area on site.

Combined for the 95 and 99 Hayden Avenue properties, total building square footage will be 686,107 sf and total parking will be 1,671 parking spaces. Total impervious area on site will be 13.6 acres.

Proposed Access and Fire Protection/Access

As a redevelopment, access to the new project buildings within the campus will rely on the existing site access drives along Hayden Avenue and Spring Street. The existing site drives will remain generally consistent with the existing site access located throughout the site. All existing site access points and driveways have been in existence for years and have provided adequate access for emergency vehicles. The site access and driveways will remain appropriate for emergency vehicles. There will also be site driveways located in the courtyard between buildings 1 and 2. Consistent with LEED certified buildings, the project will include priority electric charging spaces and accommodations for bicycles including bicycle storage and shower facilities.

Proposed Site Topography, Soils, and Wetlands Resources

The proposed building and site work will be generally confined to the 99 Hayden Avenue site. Care is being taken to limit the amount of additional land clearing and changes in elevation associated with the project improvements. Unlike the new building approved for the site in 2009, the design of the project has thoughtfully been developed to preserve the existing knob of ledge and trees north of the proposed buildings to maintain a buffer between the project and the residential neighborhood north of the project.

At this stage in preliminary planning and design of the project, we do not anticipate any work within the wetlands resources on site. The only work that may be performed within 100-feet of wetlands resources may be resizing of storm drain piping. However, the project team is working diligently to avoid performing this work, or any other work within the 100-foot buffer zone.

Proposed Grading

Site grading is generally limited to a very confined area of the site located proximate to the two proposed new buildings and connector. Due to the occurrence of ledge and the desire to maintain as much of the existing vegetation as possible on site, the vast majority of changes in grade are located on the 99 Hayden Avenue site in areas that have been previously developed. Much of the proposed increase in parking is confined to structured parking which significantly reduces the need for additional surface parking as well as site clearing and changes in grading.

Proposed Stormwater Management

As described above, the site's stormwater management system was constructed prior to the promulgation of the Massachusetts Stormwater Management Standards. The project will upgrade the existing stormwater management system in the areas around the proposed building and site improvements to include – at a minimum – enhanced water quality treatment in accordance with applicable stormwater standards. The project will endeavor to incorporate Green Infrastructure practices depending on soils conditions. Since the site consists of hydrologic group D-soils with significant ledge, we expect that opportunities to provide infiltrative stormwater best management practices will be limited. The project will provide stormwater detention to mitigate any increase in peak flows from the site caused by approximately 2 acres of increased impervious surface. Strategies that are being explored include providing landscape based stormwater management facilities within the proposed courtyard or potentially a subsurface stormwater detention system

below the courtyard. When appropriate, water quality treatment systems will be included in the design. Overall the project will result in an improvement in stormwater quality and management over the existing condition.

The project proponent intends to file a Notice of Intent with the Lexington Conservation Commission because the site's stormwater management system discharges into wetlands located on the 95 Hayden Avenue property. The site will be considered a mix of new development and redevelopment. The project will be designed to comply with the Massachusetts Stormwater Management Standards as well as the Rules adopted by the Lexington Conservation Commission Pursuant to the Code of the Town of Lexington for Wetland Protection, Chapter 130, and the Lexington Stormwater Management Regulations, Chapter 181, Article VI.

Proposed Water Service

The project will generally maintain the same water connections from Spring Street and Hayden Avenue. The connection to 95 Hayden Avenue will be maintained. The connection to the buildings at 99 Hayden Avenue will utilize the existing service connection from Spring Street. Connections to the new buildings on 99 Hayden Avenue will tap off of the existing water main that is coming into the site from Spring Street. Pressure tests performed on site indicate that adequate pressures exist to service the proposed development.

Potable water demand can be estimated based on pre-Covid water demand. The new site development at 99 Hayden Avenue will be 2.4 times the existing square footage as the existing development at 99 Hayden Avenue. Multiplying existing flows by 2.4 times yields a proposed water demand of 24,000 gallons per day from the project at 99 Hayden Avenue. The project team expects irrigation demand during the summer months to be consistent with existing flows. Since no changes are proposed at 95 Hayden, we expect both potable and irrigation water demand to remain the same.

Total water demands from the property are expected to be 27,000 gallons per day for potable demand and 7,000 gallons per day for irrigation water in the summer months.

Proposed Sanitary Sewer

As described above, sanitary sewage discharges are approximately 90% of potable water flows. Based on the analysis described above, discharge of sanitary sewage will be approximately 24,300 gallons per day.

Based on Title V flow factors, we expect there will be an increase in sanitary sewer generation of approximately 20,200 gallons per day. This utilizes a flow factor of 75 gallons/day/1000 square feet which is used for office uses. A project with considerable amounts of laboratory space – such as this project – will have a lower flow factor than office use. However, Title V does not include a flow factor for laboratory space. Also, Title V flow factors have been developed to account for peaks and average daily flows are typically 60% of the calculated Title V flows. Therefore, we expect the average increase in daily sanitary sewer flows to be approximately 12,000 gallons per day based on Title V flow rates.

The project team expects sanitary sewage from the site to continue to flow to the existing Hayden Avenue pump station located on the 95 Hayden Avenue property. Sanitary sewer will be conveyed to this pump station utilizing the same piping that currently exists on site. We are not aware of any conditions that would preclude the discharge of sanitary sewer to this pump station.

Proposed Electrical

Eversource currently provides electrical service to the Town of Lexington and the site. The project team will coordinate with Eversource as the project progresses and electrical loads are developed to ensure that they can continue to provide service to the proposed buildings. The project will include emergency back-up generators to provide service in the event there is a power outage.

The project proponent anticipates seeking LEED certification for the new project buildings. As part of that process, the project's Mechanical-Electrical-Plumbing engineers are expected to produce an energy model to quantify proposed energy savings.

Proposed Gas

National Grid currently provides gas service to the Town of Lexington and the site. The project team will coordinate with National Grid as planning for the project progresses and gas loads are developed to ensure they can provide service to the proposed buildings.

Proposed Noise

The project team is currently preparing a noise study. We expect the noise generated by the proposed project will be consistent with a typical suburban office park development. In contrast to the new building approved on the site in 2009 but never built, the project has been thoughtfully designed in an existing developed area and away from the buffer area between the proposed buildings and the residential neighborhood located along Spring Street north of the project. The Applicant will evaluate the need for rooftop penthouse enclosures and otherwise ensure the building design and acoustic dampening equipment provided for the project are in accordance with Massachusetts and Lexington noise regulations.

Proposed Air Quality

The project is anticipated to require the preparation of an Environmental Notification Form (ENF) under the Massachusetts Environmental Policy Act which will require an air quality analysis.

Proposed Lighting

Proposed new site lighting will incorporate LED fixtures that meet dark-sky requirements and will be to the general architecture and style of the existing development on the site.