

ARTICLE 19: PROJECT REVIEW SPECIAL PERMIT

Alewife Park

Cambridge, MA

December 2021



SUBMITTED TO

Cambridge Community
Development Department

SUBMITTED BY

IQHQ-Alewife, LLC

PRODUCED BY



IN ASSOCIATION WITH

Gensler
Shadley and Associates
Galluccio and Watson, LLP
Goulston & Storrs
The Green Engineer
R.W. Sullivan Engineering
Haley & Aldrich

December 27, 2021

Cambridge Planning Board
Community Development Department
Attn: Swaathi Joseph
City Hall Annex
344 Broadway
Cambridge, MA 02139

Re: Alewife Park – Article 19 Project Review Special Permit Application

Dear Chair and Members of the Board,

IQHQ-Alewife, LLC (the “Applicant”) is pleased to submit this Project Review Special Permit Application, pursuant to Article 19.20 of the Cambridge Zoning Ordinance. This submission reflects revisions and updates made to address comments from the Cambridge Community Development Department (“CDD”) received on July 13, 2021 and additional community input.

The Applicant proposes to redevelop an approximately 19.6-acre previously developed site located at 36-64 Whittemore Avenue in the Alewife neighborhood (the “Project Site”) into a smaller scale research based complex or “village” comprised of three new buildings, a new parking garage and improvements to two existing buildings (the “Project”). The Applicant has confined new development to previously disturbed areas and parking lots, with the exception of a small portion of the parking garage, which is required to be constructed above grade pursuant to applicable zoning. The Project Site includes four (4) surface parking lots located on the northern side of Whittemore Avenue that will be used for accessory parking.

The Project presents an exciting redevelopment opportunity to modernize and expand upon the existing GCP (formerly W.R. Grace) site, which consists of seven multi-story and single story structures of various ages and uses (office, lab, hazardous chemical storage, storage, warehouse/shipping and campus-wide mechanical systems) by providing a world-class hub for research and innovation, restoring public access to the surrounding natural areas, as well as creating meaningful connections among adjacent communities. The goal for the Project is to create a vibrant, resilient, highly connected, and inclusive community in this North Cambridge neighborhood. Two of the existing buildings, One Alewife and Building 29, will remain and will be improved as part of the Project’s proposed Buildings 1 and 2.

The Project benefitted from over fifty (50) meetings with community members, some of whom who worked on the original zoning applicable to the Project Site and newer residents who provided significant



input during the public process that improved the Project. Three large public meetings were attended by one hundred to two hundred participants and included mailings to approximately 3,000 households.

Key benefits of the Project include:

- › On-site Urban Design/Public Realm: Provide various public areas with programming, including a new landscaped promenade through the Project Site, to activate the Project Site and provide a community benefit.
- › Off-site Urban Design/Public Realm (also known as the “Commitment Areas”):
 - Restore the MBTA Alewife Station headhouse plaza, subject to MBTA approval.
 - Improve public access around Jerry’s Pond with raised wooden boardwalk-style pedestrian paths, viewing stations, picnic tables and seating at appropriate locations, new Communal Garden and new Ecological Center programmed in partnership with Green Cambridge and Mass Audubon.
 - Improve the RTE 16 sidewalk by repairing and adding new lighting to the path for enhanced safety. Construct a new 6’ wide asphalt pedestrian path approximately 10’ east of existing sidewalk.
- › Landscaping: Incorporating planting of more than 656 new trees on-site, as well as an addition of thirty (30) trees within the surface lots north of Whittemore Avenue.
- › Connectivity: Providing new, improved public pedestrian and bicycle connections to the MBTA Red Line Alewife Station, and nearby community spaces, as well as providing vehicular access/connections that mitigate cut-through traffic through both the Project Site and adjacent neighborhood.
- › Sustainability:
 - Targeting LEED Gold level certification
 - Reducing urban heat island effect through high albedo roofs, green roofs, and light color paving.
- › Energy Efficiency: Incorporating high performance building design measures that target a 15% energy use reduction below code, generating on-site renewable energy through installation of PV panels on top of the enclosed penthouses of the new construction lab buildings and providing a solar array canopy at the east surface parking lot, and providing electric vehicle parking and charging stations.
- › Stormwater Management/Water Quality: Improving stormwater infiltration and retention with rain gardens and permeable paving, as well as green roof areas.
- › Water Resources: Providing efficient water fixtures selections that reduce the indoor water use and storm-water harvesting system that reduces the outdoor water use.
- › Economic Benefits: Generate a significant increase in the amount of annual real estate tax revenue for the City and significant State sales and business tax revenue to the Commonwealth.
- › Jobs: Creating approximately 1,538 permanent jobs and 1,200 construction jobs in a variety of trades.
- › Voluntary Commitments:
 - › \$12.8 Million dollars in voluntary commitments including build, operation and maintenance of commitment areas, and additional contributions noted below:
 - Creation of a \$500,000 scholarship fund and other career building contributions.
 - Contribute \$500,000 to Just a Start – Biomedical Career Program.



- Maintenance of communal garden in partnership with Green Cambridge at a cost of \$40,000 per year.
- › Additional community benefits, including coordinating with Mass Audubon to run an Ecological Center and coordinating with Green Cambridge to maintain a tree nursery on the rooftop of the garage supporting the Backyard Tree Planting Program.

The MBTA Alewife Station headhouse, Jerry's Pond, and DCR Route 16 (each a "Commitment Area" and, collectively, the "Commitment Areas",) are each located outside of the Project Site; however, the Applicant acknowledges the importance of delivering the proposed improvements to the Commitment Areas as community benefits to be used and enjoyed by residents of the City of Cambridge. The Applicant is committed to working with the respective approving authorities and soliciting further input from the community during the approval process to deliver the proposed improvements in the Commitment Areas.

We have reviewed the Project described in this application extensively with City staff (CDD, DPW, CWD, and TP&T) and believe that all comments and questions have been addressed at this time. We look forward to meeting with the Board and sincerely thank you for your time and consideration of this Project.

Sincerely,

David Surette

David Surette
Senior Vice President of Development
IQHQ



Alewife Park

Cambridge, Massachusetts

SUBMITTED TO **Cambridge Community Development Department**
City Hall Annex
344 Broadway
Cambridge, MA

PROPONENT **IQHQ-Alewife LLC**
201 Washington Street, Suite 3920
Boston, MA 02108

PREPARED BY **VHB**
99 High Street, 10th Floor
Boston, MA 02110

In association with:
Goulston & Storrs
Galluccio and Watson, LLP
Gensler
Shadley Associates
The Green Engineer
Haley & Aldrich

December 27, 2021

Table of Contents

VOLUME I

Special Permit Application Form

- Cover Sheet
- Dimensional Form
- Fee Schedule
- Ownership Certificate

Supplemental Documentation

Chapter 1: Project Description

- 1.1 Project Overview 1-2
- 1.2 Existing Site Conditions..... 1-3
- 1.3 Proposed Project Description 1-3
 - 1.3.1 Proposed Site and Building Design 1-4
 - 1.3.1.1 Existing Buildings to be Improved (Buildings 1 and 2)..... 1-5
 - 1.3.1.2 New Buildings (Buildings 3, 4 and 5) 1-5
 - 1.3.1.3 Building Design and Facades..... 1-6
 - 1.3.1.4 Parking 1-7
 - 1.3.2 Project Schedule and Phasing..... 1-7
 - 1.3.3 Site Planning and Landscaping 1-8
 - 1.3.3.1 Site Circulation..... 1-8
 - 1.3.3.2 Pedestrian Access 1-9
 - 1.3.3.3 Public Realm and Streetscape Improvements..... 1-9
- 1.4 Project Benefits..... 1-10
- 1.5 Zoning Compliance..... 1-15
 - 1.5.1 General Applicable Criteria for Approval of a Special Permit (Section 10.43) 1-16
 - 1.5.2 Required Findings for a Project Review Special Permit (Section 19.25)..... 1-16
 - 1.5.2.1 Section 19.25.1: Traffic Impact Findings 1-16
 - 1.5.2.2 Section 19.25.1: Urban Design Findings 1-17
 - 1.5.3 Conformance with Citywide Urban Design Objectives (Section 19.30)..... 1-17
 - 1.5.4 Incentive Zoning..... 1-17
- 1.6 Agency and Community Outreach 1-17

Chapter 2: Urban Design

2.1	Citywide Urban Design Objectives.....	2-1
2.1.1	19:31: Responsive to Existing or Anticipated Development	2-2
2.1.2	19:32: Pedestrian and Bicycle-Friendly/Relationship to Surroundings.....	2-3
2.1.3	19:33: Environmental Impacts and Mitigation.....	2-5
	2.1.3.1 Noise Impacts Related to Mechanical Equipment and Service/Loading.....	2-6
	2.1.3.2 Trash and Service/Loading Impacts.....	2-6
	2.1.3.3 Stormwater Management	2-7
	2.1.3.4 Shadow Impacts	2-8
	2.1.3.5 Changes in Grade	2-8
	2.1.3.6 Building Scale and Wall Treatment.....	2-8
	2.1.3.7 Outdoor Lighting Design.....	2-8
	2.1.3.8 Tree Protection	2-9
2.1.4	19:34: Adequate City Infrastructure Services	2-9
2.1.5	19:35: Reinforce and Enhance Urban and Historical Context.....	2-11
2.1.6	Section 19.36: Expansion of the inventory of housing in the city is encouraged.	2-12
2.1.7	19:37: Enhance and Expand Open Space/Public Realm	2-13

Chapter 3: Criteria for Issuance of Special Permits

3.1	Demonstration of Conformance with Section 10.43	3-1
3.1.1	Project-Related Traffic and Access.....	3-1
3.1.2	Health, Safety, and/or Welfare of Occupants and Public.....	3-2
3.1.3	Project-Related Impacts to the District or Adjoining Districts.....	3-2
3.1.4	Consistency with Urban Design Objectives	3-2

Chapter 4: Sustainable Design and Development

4.1	Summary of Green Building Narrative	4-1
4.2	Summary of Net Zero Energy Assessment	4-2
4.3	Preliminary Energy Model Inputs	4-3

Chapter 5: Transportation

5.1	Transportation Study Summary	5-1
5.1.1	Traffic Impact Study Overview	5-1
5.1.2	Existing Public Transportation Services.....	5-2
5.1.3	Existing Private Transportation Services	5-3
5.1.4	Existing Shared Mobility Services	5-3
5.1.5	Proposed Vehicular Access and Circulation	5-3
5.1.6	Service and Loading.....	5-4

5.1.7	Proposed Bicycle and Pedestrian Access.....	5-4
5.1.8	Bicycle and Pedestrian Path Accessibility.....	5-5
5.1.9	Proposed Transportation Mitigation.....	5-6
5.2	Compliance with Bicycle Parking Requirements.....	5-10
5.3	Vehicle Parking Analysis.....	5-11

Chapter 6: Infrastructure

6.1	Sewer and Water Infrastructure.....	6-1
6.1.1	Sanitary Sewer Infrastructure.....	6-1
6.1.2	Water Service Infrastructure.....	6-4
6.2	Stormwater Management.....	6-5
6.2.1	Compliance to Article 20:70 - Floodplain Overlay District.....	6-7
6.2.2	Cambridge 2070 Resiliency.....	6-8
6.3	Other Utilities.....	6-9
6.3.1	Natural Gas Service.....	6-9
6.3.2	Electrical Service.....	6-10
6.3.3	Telecommunications.....	6-10

List of Tables

Table No.	Table Title	Page No.
1-1	Proposed Development Program Summary	1-4
1-2	Planning Board (PB) Criteria and Project Mitigation Summary	1-17
4-1	LEED Points Targeted for v4 Gold Certification Pathway	4-2
5-1	Required Bicycle Parking Ratios Summary	5-10
5-2	Summary of Proposed Bicycle Parking	5-11
5-3	Proposed Parking Spaces	5-11
5-4	Vehicle Parking Requirements for the Project, Based on Different Parking Rates: Expected Vehicle Mode Share; Envision Goal; Zoning Requirements	5-12
6-1	Preliminary Sanitary Sewer Generation	6-3
6-2	Preliminary Impervious and Pervious Areas	6-8

VOLUME II — Supporting Figures

Figure No.	Figure Title
1.1	Existing Site Survey
1.2	Project Site Context
1.3	Proposed Notice Panel Locations
1.4	Site Context Photos
1.5a	Existing Buildings
1.5b	Site Analysis
1.6	Planning Opportunities
1.7a	Covenant Area Plan
1.7b	Proposed Development Plan
1.8	Building Setback Plan
1.9	Dimensional Plan
1.10a	Design Process Diagram
1.10b	Concept and Diagrams: Building 3
1.10c	Concept and Diagrams: Building 4
1.10d	Concept and Diagrams: Building 5
1.10e	Final Massing Diagram
1.10f	Facade Logic: Structural/Facade Module
1.10g	Facade Logic: Lab Planning Module
1.11a	Floor Plans: Building 1 - LEVELS 1-2
1.11b	Floor Plans: Building 1 - LEVEL 3 & ROOF
1.11c	Floor Plans: Building 2 - FLOORS B-1
1.11d	Floor Plans: Building 2 - LEVEL 2- ROOF
1.11e	Floor Plans: Building 3 - LEVELS 1-2
1.11f	Floor Plans: Building 3 - LEVEL 3- MPH
1.11g	Floor Plans: Building 4 - LEVELS 1-2
1.11h	Floor Plans: Building 4 - LEVEL 3- MPH
1.11i	Floor Plans: Building 5 – LEVELS 1-2
1.11j	Floor Plans: Building 5 – LEVEL 3-MPH
1.12	Green Roofs & Biosolar
1.13a	Site Section @ Whittemore Ave.
1.13b	Site Section @ Promenade
1.13c	Site Section @ Garage
1.14a	Material Approach: Opaque Wall with Openings
1.14b	Material Approach: Glazed Curtain Wall
1.14c	Material Approach: Entrances & Identity
1.14d	Facade Logic: Wall Type Elements
1.14e	Facade Logic: Panelization
1.14f	Context Color Palette
1.14g	Context Color Palette Swatches
1.14h	Context Color Palette Application
1.15a	Campus Overall Elevations
1.15b	Campus Overall Elevations

1.15c	Promenade Overall Elevations
1.15d	Promenade Overall Elevations
1.15e	Bldg 2 Elevations
1.15f	Bldg 2 Elevations
1.15g	Bldg 2 Material Palette
1.15h	Bldg 3 Elevations
1.15i	Bldg 3 Elevations
1.15j	Bldg 3 Material Palette
1.15k	Bldg 4 Elevations
1.15l	Bldg 4 Elevations
1.15m	Bldg 4 Material Palette
1.15n	Bldg 5 Elevations
1.15o	Bldg 5 Elevations
1.15p	Bldg 5 Material Palette
1.16a	View Looking South Towards Building 3
1.16b	View Looking East Down Promenade
1.16c	View Looking North Towards Building 3
1.16d	View Looking North Towards Building 3
1.16e	View Looking East Towards Building 3
1.16f	View Looking West Towards Building 4 F&B Locations
1.16g	View Looking West Towards Building 4 F&B Locations
1.16h	View Looking East Towards Garage and Habitat
1.16i	View Looking East Towards Building 5 on Ring Road
1.16j	View Looking South Towards Garage and Building 4
1.17a	Overall Landscape Plan
1.17b	Central Plaza
1.17c	Pedestrian Corridor
1.17d	Pedestrian Corridor
1.17e	East Plaza
1.17f	Secondary Entrance
1.17g	25' Setback on Whittemore Ave.
1.17h	4-Acre Natural Habitat
1.17i	Multi-Modal Path
1.17j	Proposed Plaza & Ped. Corridor Trees
1.17k	Proposed Open Space Trees
1.18	Public Landscape Benefits
1.19	Landscape Materials Plan
1.20a	Landscape Furniture Plan
1.20b	Landscape Furniture Plan
1.21	Landscape Lighting Plan
1.22a	Commitment Areas, DCR Multi-Use Path and Jerry's Pond Only
1.22b	Jerry's Pond – Bird's Eye View
1.22c	Jerry's Pond – Renderings
1.22d	Jerry's Pond – Renderings
1.22e	Jerry's Pond – Renderings
1.23a	Commitment Areas, MBTA Headhouse
1.23b	MBTA Headhouse Renderings

1.24	Sequence of Construction
1.25	Subdivision Plan
2.1a	Shadow Studies: Summer Solstice - June 21
2.1b	Shadow Studies: Fall Equinox - Sept 21
2.1c	Shadow Studies: Winter Solstice - Dec 21
2.2a	Tree Protection Plan Development Site & Commitment Areas
2.2b	Tree Protection Plan Development Area
2.3a	Natural Habitat Area: Proposed Trees
2.3b	Natural Habitat Area: Proposed Trees
2.3c	Natural Habitat Area: Proposed Trees
5.1	Study Area Intersections
5.2	Public Transit
5.3	Private Transit Services
5.4	Bike and Car Sharing Services
5.5	Vehicular Access/Circulation
5.6a	Overall Site Circulation
5.6b	Enlarged Site Circulation
5.7	Enlarged Site Pedestrian Circulation
5.8	Enlarged Site Bike Circulation
5.9a	Proposed Long-term Bike Storage - Building 1
5.9b	Proposed Long-term Bike Storage - Building 2 & 3
5.9c	Proposed Long-term Bike Storage - Building 4 & 5
5.9d	Proposed Short-term Bike Storage Spaces, Building 2
5.9e	Proposed Short-term Bike Storage Spaces, Building 3
5.9f	Proposed Short-term Bike Storage Spaces, Building 4
5.9g	Proposed Short-term Bike Storage Spaces, Building 5
5.10	Parking Plan
5.11a	Parking Garage - Level 1 & 2
5.11b	Parking Garage - Level 3 & 4
5.12c	Parking Lot - East Lot
5.12d	Parking Lot - North Whittemore Lot
5.12e	Parking Lot - North Whittemore Lot
5.13	Loading Plan
5.14	Loading Service
6.1	Existing Infrastructure
6.2	Proposed Infrastructure
6.3	Wetland Resource Area

VOLUME III — Appendices

- A: Article 22 Green Building Reports
- B: Copy of the Certified Transportation Impact Study (TIS)
- C: Tree Study
- D: Responses to Comments Matrix
- E: Escrow Funds
- G: Commitments
- H: Flood Storage
- I: Whittemore Lots
- J: Community Survey

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CITY OF CAMBRIDGE, MASSACHUSETTS

PLANNING BOARD

CITY HALL ANNEX, 344 BROADWAY, CAMBRIDGE, MA 02139

SPECIAL PERMIT APPLICATION • COVER SHEET

In accordance with the requirements of the City of Cambridge Zoning Ordinance, the undersigned hereby petitions the Planning Board for one or more Special Permits for the premises indicated below.

Location of Premises: _____

Zoning District: _____

Applicant Name: _____

Applicant Address: _____

Contact Information: _____

Telephone #

Email Address

Fax #

List all requested special permit(s) (with reference to zoning section numbers) below. *Note that the Applicant is responsible for seeking all necessary special permits for the project. A special permit cannot be granted if it is not specifically requested in the Application.*

List all submitted materials (include document titles and volume numbers where applicable) below.

Signature of Applicant:

David Surette

For the Planning Board, this application has been received by the Community Development Department (CDD) on the date specified below:

Date

Signature of CDD Staff

ALEWIFE PARK
COVER SHEET TO ARTICLE 19
SPECIAL PERMIT APPLICATION

Zoning District Note: As shown on the City of Cambridge Zoning Districts Map, the portion of the Project Site on the south side of Whittemore Avenue is primarily located in the Special District 3 with a small portion located in Special District 2. All of the proposed structures are proposed in this area. The portion of the Project Site on the north side of Whittemore Avenue is located in a Residence B Zoning District. This portion of the site will continue to be used as surface parking lots. A portion of the Project Site is located in the Floodplain Overlay District. Some improvements are proposed in this area. A portion of the Property is located in the Parkway Overlay District; however, none of the proposed structures are located in this portion of the Property.

DIMENSIONAL FORM

Project Address: 36-64 Whittemore Ave.

Application Date:

	Existing	Allowed or Required (max/min)	Proposed	Permitted
Lot Area (sq ft)				
Lot Width (ft)				
Total Gross Floor Area (sq ft)				
Residential Base				
Non-Residential Base				
Inclusionary Housing Bonus				
Total Floor Area Ratio				
Residential Base				
Non-Residential Base				
Inclusionary Housing Bonus				
Total Dwelling Units				
Base Units				
Inclusionary Bonus Units				
Base Lot Area / Unit (sq ft)				
Total Lot Area / Unit (sq ft)				
Building Height(s) (ft)		55' -0"		
Front Yard Setback (ft)		25' -0"		
Side Yard Setback (ft)				
Side Yard Setback (ft)				
Rear Yard Setback (ft)				
Open Space (% of Lot Area)				
Private Open Space				
Permeable Open Space				
Other Open Space (Specify)				
Off-Street Parking Spaces				
Long-Term Bicycle Parking				
Short-Term Bicycle Parking				
Loading Bays				

Use space below and/or attached pages for additional notes:

The proposed campus includes 3 new construction buildings, 1 new parking structure and two existing buildings on site.

FEE SCHEDULE

Project Address:

Application Date:

The Applicant must provide the full fee (by check or money order) with the Special Permit Application. Depending on the nature of the proposed project and the types of Special Permit being sought, the required fee is the larger of the following amounts:

- If the proposed project includes the creation of new or substantially rehabilitated floor area, or a change of use subject to Section 19.20, the fee is ten cents (\$0.10) per square foot of total proposed Gross Floor Area.
- If a Flood Plain Special Permit is being sought as part of the Application, the fee is one thousand dollars (\$1,000.00), unless the amount determined above is greater.
- In any case, the minimum fee is one hundred fifty dollars (\$150.00).

Fee Calculation

New or Substantially Rehabilitated Gross Floor Area (SF): × \$0.10 =

Flood Plain Special Permit Enter \$1,000.00 if applicable:

Other Special Permit Enter \$150.00 if no other fee is applicable:

TOTAL SPECIAL PERMIT FEE **Enter Larger of the Above Amounts:**

OWNERSHIP CERTIFICATE

Project Address: 62 Whittemore Ave

Application Date:

This form is to be completed by the property owner, signed, and submitted with the Special Permit Application:

I hereby authorize the following Applicant: IQHQ-Alewife LLC

at the following address: 201 Washington Street, Suite 3920, Boston, MA 02108

to apply for a special permit for:

on premises located at: Alewife Park

for which the record title stands in the name of: IQHQ-Alewife LLC

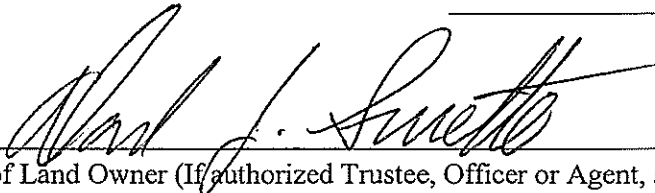
whose address is: 674 Via De La Valle, Suite 206, Solana Beach, CA 92075

by a deed duly recorded in the:

Registry of Deeds of County: S. Middlesex Book: 75297 Page: 443

OR Registry District of the Land Court,
Certificate No.:

Book: Page:



Signature of Land Owner (If authorized Trustee, Officer or Agent, so identify)

To be completed by Notary Public:

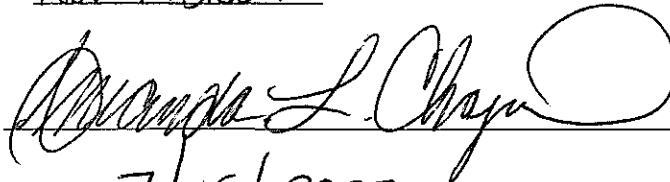
Commonwealth of Massachusetts, County of

Suffolk

The above named David J. Surette personally appeared before me,

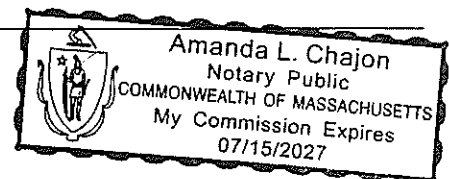
on the month, day and year Nov. 9, 2021 and made oath that the above statement is true.

Notary:



My Commission expires:

7/15/2027



Special Permit Application Form Supplemental Documentation

The following section provides supplemental information to support the Special Permit Application Form for the Alewife Park redevelopment (the "Project") proposed by IQHQ (the "Applicant") in Cambridge MA. It provides a list of requested special permits for the Project, a list of submitted materials for the application, and describes coordination of proposed plans with city departments. Certification of Receipt of Plans forms will be signed by each department after receipt of the Special Permit Application.

List of Requested Special Permits

- Section 19.20 - Project Review Special Permit

List of Submitted Materials

- Special Permit Application Cover Sheet
- Dimensional Form
- Fee Schedule
- Notarized Owner Certificate
- Project Narrative
- Urban Design Narrative
- Noise Mitigation Narrative
- Sustainable Design/LEED Narrative
- Sewer Service Infrastructure Narrative
- Water Service Infrastructure Narrative
- Tree Study
- Access and Circulation Study

- Site Plans
- Elevations
- Sections
- Perspective Renderings
- Floor Plans

Coordination with City Departments

The Applicant has met on several occasions with various Community Development Department (CDD) staff members regarding the overall Project and certain aspects of the development, including public realm improvements, urban design approach, sustainability approach and the community outreach program, as well as the Special Permit Project Review application and process.

The Applicant along with its site civil engineering team attended meetings with the Cambridge Department of Public Works (DPW) and Cambridge Water Department (CWD) to discuss the design of the infrastructure anticipated to serve the Project, as well as stormwater measures pursuing on-site. Additionally, the Applicant and project landscape architect met with DPW to discuss proposed streetscape and landscape improvements.

In conformance with Section 22.25 of Article 22 of the Zoning Ordinance, the Applicant developed and submitted a detailed Green Building Report for 36-64 Whittemore Avenue (the new buildings) to CDD on April 23, 2021 and for One Alewife Center (Existing Building 1) and Building 2 at Alewife Park (Existing Building 2) on November 12, 2021. The City has determined that the Green Building Reports provided by the Applicant is complete and demonstrates compliance with the Green Building Requirements of Section 22.24 at the special permit stage of review. Please refer to Appendix A for the Green Building Report, and a copy of the certification letters issued on June 11, 2021 and November 19, 2021 for the new and existing buildings, respectively.

The Applicant along with its transportation planners attended a meeting with the Department of Transportation, Parking, and Traffic (TP&T) to confirm the scope of the Circulation and Access Study, and, more specifically, bike parking, and building service and loading design. The Transportation Impact Study (TIS) submitted by the Proponent was certified by the City of Cambridge Traffic, Parking and Transportation (TP&T) Department on June 18, 2021. Both the full TIS and certification letter from TP&T are provided in Appendix B.

The Applicant retained a landscaping consultant, in association with an arborist, to prepare a tree study and mitigation plans consistent with the requirements of the Cambridge Tree Protection Ordinance (Section 8.66 Cambridge City Code). The Applicant submitted the tree study to DPW and the City Arborist on December 13, 2021. The Tree Study is provided in Appendix C.

1

Project Description

This is an application for a Project Review Special Permit, pursuant to Article 19.20 of the Cambridge Zoning Ordinance, for the Alewife Park redevelopment in the Alewife neighborhood of Cambridge, MA (the "Project"). The application was highly influenced by wide community input and members of the Alewife Study Group who helped create the underlying zoning. IQHQ-Alewife, LLC (the "Applicant") is proposing to redevelop an approximately 19.6-acre site, which is bound by Whittemore Avenue to the north, Alewife Brook Parkway to the west, the MBTA Alewife Headhouse and Jerry's Pond to the south and Russell Field and the Alewife Linear Park to the east (the "Project Site"). The Project Site includes four (4) surface parking lots located on the northern side of Whittemore Avenue that will be used for accessory parking. Refer to Figure 1.1 for the site survey and Figure 1.2 for site context. The Project will comply with SD-3 Zoning, the Flood Plain Overlay Zoning, Parkway Overlay District Zoning and the Asbestos Protection Ordinance. Intensive community meetings including over 50 focused meetings led by the Alewife Study Group began in January of 2021. IQHQ hosted major public meetings noticed to over 3,000 households each meeting and attended by 100-200 residents. Each public meeting was followed by a public meeting led by the Alewife Study Group for additional follow up. There was also a site walk of the interior of Jerry's Pond to determine best locations for public access which was recorded. All questions over the 12 months of process were responded to directly and are listed in the Responses to Comments Matrix (refer to Appendix D).

The Project creates a smaller scale research based complex or "village" comprised of three new buildings, a new parking garage and a combination of improvements and internal renovations to two existing buildings. The Applicant has confined new development to previously disturbed areas and parking lots, with the exception of the parking garage which is required to be constructed above grade pursuant to applicable zoning.

The Project includes several new pedestrian and bike paths designed to connect the three distinct neighborhoods along Whittemore Ave, Harvey Street, and Rindge Avenue. These improvements are designed to improve bicycle and pedestrian circulation across the Project Site and adjacent areas, and are intended to improve the experience of both pedestrian and bicyclists while promoting increased use by both. Today these neighborhoods are disconnected and there is not a clear exchange between Jerry's Pond, the baseball fields, the recreational facility, and the MBTA Alewife headhouse. The new pedestrian paths included as part of the Project are designed to improve public access to each of these areas while offering protection of natural spaces and habitats. In addition, while the Jerry's Pond area is not part of the Project Site, the Applicant is offering conditions and commitments related to creating pedestrian connections and amenities on and adjacent to the site containing Jerry's

Pond located immediately to the south of the Project Site and other improvements to DCR Property along Route 16 and the MBTA Alewife Park headhouse as part of the special permit (each of these areas are referred to collectively and individually as the "Commitment Areas"). (The Commitment Areas are depicted more particularly on Figures 1.22 and 1.23.)

The Project Site and the Jerry's Pond Commitment Area are separate parcels. As noted above, the Project Site is an approximately 19.6-acre site, which is bound by Whittemore Avenue to the north, Alewife Brook Parkway to the west, the MBTA Alewife Headhouse and Jerry's Pond to the south, and Russell Field and the Alewife Linear Park to the east. The Jerry's Pond Commitment Area is approximately 7-acres bounded by the Project Site and MBTA Alewife Headhouse to the north, Alewife Brook Parkway to the west, Rindge Avenue to the south, and Comeau Field, the Francis J. McCrehan Memorial Swimming and Wading Pool and Russell Field to the east. The boundary separating the Project Site and the Jerry's Pond Commitment Area is shown on the draft Subdivision Plan attached hereto as Figure 1.25. The Applicant requests an Article 19 Special Permit for the Project Site and proposes the improvements to the Jerry's Pond Commitment Area and other Commitment Areas totaling approximately \$12,820,000 (twelve million eight hundred twenty thousand dollars).

As demonstrated herein, the Project, as submitted, conforms to the City of Cambridge Citywide Urban Design Objectives of Article 19.30, the Sustainable Design and Development requirements of Article 22.20, and satisfies all other requirements necessary for the issuance of the requested Project Review Special Permit.

This chapter provides an overview of the Project, the existing site conditions and the proposed redevelopment plan, including public realm improvements. A summary of the Project's public benefits, a summary of regulatory context applicable to the Project, as well as public outreach efforts to date are also provided.

1.1 Project Overview

The Project proceeds under existing zoning and presents an exciting redevelopment opportunity to modernize and expand upon the existing GCP Applied Technologies ("GCP"), formerly W.R. Grace, site by providing a world-class hub for research and innovation, restoring public access to the surrounding natural areas, as well as creating meaningful connections among adjacent communities. The goal for the Project is to create a vibrant, resilient, highly connected, and inclusive community in this North Cambridge neighborhood.

The Project consists of the reuse of two existing buildings, demolition of several existing structures and the new construction of three buildings and a structured parking garage, presenting a mix of office and life science laboratory uses as well as a small retail space, totaling approximately 735,500 square feet ("sf") of Gross Floor Area ("GFA"). The Project will provide approximately 653 parking spaces, including 350 parking garage spaces and 303 surface spaces. The Project will result in a net reduction in the number of registered parking spaces serving the Project Site of 69 parking spaces down from the current existing registered parking count of 722 spaces.¹

¹ The Project Site that LMC is acquiring is comprised of New Lot 38 (registered land) and Parcels 1-1, 5-1 and 6 (recorded Land). The Alewife Park site is registered for a total of 722 parking spaces based on TP&T records.

The Project will provide numerous public benefits relating to site access and open space, including the creation of a north-south connection from Whittemore Avenue to the MBTA Alewife Station headhouse and on to Rindge Avenue, as well as an east-west connection from Route 16 to Harvey Street. While the Jerry's Pond area is not part of the Project Site, the Applicant is offering to make significant improvements to this area as a condition of the Special Permit. Refer to Section 1.4 for a list of public benefits associated with the Project.

1.2 Existing Site Conditions

The Project Site is bound by Whittemore Avenue to the north, Alewife Brook Parkway to the west, The MBTA Alewife Station and the Jerry's Pond to the south and the multi-model linear path to the east. The Project Site also includes four (4) surface parking lots located on the northern side of Whittemore Avenue that the Applicant intends to maintain as accessory parking for the Project. The existing development of the approximately 19.6-acre parcel is concentrated in the northern section of the Project Site, closest to Whittemore Avenue and is occupied by the current tenant, GCP.

The existing GCP campus consists of seven multi-story and single-story structures of various ages and uses, including office, lab, hazardous chemical storage, storage, warehouse/shipping and campus-wide mechanical systems. The buildings vary in materiality from brick, metal paneling, and glass storefront. The majority of the footprints of these existing structures will be demolished as part of the Project. Two of the existing buildings, One Alewife and Building 29, will remain and will be improved as part of the Project's proposed Buildings 1 and 2.

Adjacent to the existing buildings are surface parking lots and service driveways that provide parking and access to the campus buildings from Whittemore Avenue. The primary entrance to the campus is located to the west of the existing buildings off of Whittemore Avenue. This entrance will be maintained as the primary entrance to the Project Site. Surrounding the developed areas to the south and west are mainly vegetated open spaces that range from maintained lawns and shrubs to fenced areas that have remained in a natural state for several years.

The current land use is a mix of office, lab, storage, and campus support areas. The total square footage of existing buildings is approximately 382,000 sf of GFA. Of this total, approximately 198,000 sf of GFA will be demolished with 184,000 sf of GFA to remain. The Alewife Park site is registered for a total of 722 parking spaces based on TP&T records. Refer to Figure 1.4 for photographs of existing conditions, and Figures 1.5a and 1.5b for the existing buildings and site analysis.

1.3 Proposed Project Description

Table 1-1 below presents the proposed development program.

Table 1-1 Proposed Development Program Summary

Use/Element	Approximate Dimensions¹
Office/Lab/Lobby Total ²	611,000 sf of GFA
Building 1	91,000 sf of GFA
Building 2	100,000 sf of GFA
Building 3	147,400 sf of GFA
Building 4	130,000 sf of GFA
Building 5	140,200 of GFA
Building 28 (Existing)	2,400 of GFA
Retail	3,500 sf of GFA
Parking Structure ³	121,000 sf of GFA
Parking Spaces	653 spaces ⁴
Total Proposed	735,500 sf of GFA⁵
Total Existing to Remain	184,000 sf of GFA
Total Existing to be Demolished	198,000 sf of GFA
Net New Total	353,500 sf of GFA

- 1 All areas are provided as sf of GFA as defined in Article 2 of the Cambridge Zoning Ordinance, which excludes mechanical/unusable spaces (e.g., back-of-house (BOH) and core areas).
- 2 Section 17.32.2 of the Zoning Ordinance provides that all of Office and Laboratory Uses, paragraphs a-f, are permitted in the SD-3.
- 3 Section 17.34.1 of the Zoning Ordinance provides that there shall be no minimum parking requirement for any use within the SD-3.
- 4 Includes the proposed 350 spaces in the parking structure and 303 surface spaces.
- 5 The SD-3 allows for a total of 782,500 sf of GFA. Pursuant to Section 17.33.12 of the Zoning Ordinance, the MBTA lot and the residential lot adjacent to the Project Site are each allotted a minimum FAR of 0.45 which totals approximately 17,649 sf of GFA in the aggregate, thereby leaving approximately 764,751 sf of GFA that can be allocated towards the Project Site. The Applicant, as the owner of the Project Site and the Jerry's Pond Commitment Area, will execute and record a document evidencing the transfer of all allocable FAR from the Jerry's Pond Commitment Area to the Project Site as permitted by Section 17.33.12 of the Zoning Ordinance.

1.3.1 Proposed Site and Building Design

The current proposed total area for the Project is approximately 735,500 sf of GFA; of the total proposed area to be developed, only 353,500 sf of GFA will be net new. The Project proposes the demolition of existing structures except for two buildings (the former One Alewife and Building 29, to be renamed Buildings 1 and 2 respectively) and the construction of three new three-story lab/office buildings (Buildings 3, 4, and 5) and a four-story parking structure.

The proposed program mix for Buildings 3, 4 and 5 consists of approximately 60-percent lab and 40-percent office in addition to campus amenities, including pedestrian plaza, outdoor seating areas, space for food trucks, temporary performance platform and other such programming and design features and retail space for two distinct concepts. In addition to the new construction buildings, Buildings 1 and 2 will be improved and converted to include

lab use with a ratio of lab to office consistent with the new buildings. Figure 1.6 shows the planning opportunities for the Project Site, Figure 1.7 presents the proposed site plan for the Project, Figure 1.8 shows the building setbacks, and Figure 1.9 presents a dimensional plan for the Project Site.

The proposed site plan includes six structures connected by a service drive, pedestrian paths and landscaped areas. Buildings 1-2 are existing buildings that will be improved as part of the new development. Buildings 3, 4 and 5 are the new proposed buildings. The proposed parking garage will also be a new building and will consolidate at-grade parking spaces that are currently spread throughout the Proposed Site.

1.3.1.1 Existing Buildings to be Improved (Buildings 1 and 2)

Building 1 is an existing four-story building with a brick and punched window façade. The height to the roof of the building is approximately 52'-6", and the building has a floor to floor height of 13'-0" on each floor. The mechanical equipment at the roof level is behind a 14'-0" high screen wall. The building's primary use is office and is proposed to be converted to 60% lab and 40% office.

Building 2 is an existing three-story building with a brick, punched window and curtain wall façade. The building contains a basement level and two levels above grade. The height to the uppermost roof of the building is approximately 40'-6" and the building has a floor to floor height of 10'-2" at the basement level, 17'-1/2" at the first level and 14'-0" at the second level. There are two small penthouses at the southeast and southwest corners of the building that are approximately 20'-4" above the roof level. Mechanical equipment at the roof level will be screened by a new proposed 14'-0" high screen wall. The building's primary uses are office and laboratory.

1.3.1.2 New Buildings (Buildings 3, 4 and 5)

Buildings 3, 4 and 5 are located adjacent to the two remaining existing buildings within the northern, developed portion of the Project Site. The height to the roof of each of the new construction buildings, Buildings 3, 4 and 5 is approximately 48'-8". Each building has a floor-to-floor height of 15'-0" on the typical upper floors and 18'-0" at the ground floor. Above the highest occupied floor is an enclosed mechanical penthouse, which measures less than one-third of the floor below. The height of the penthouse is 24'-0" above the roof level. The mechanical equipment at the roof level outside of the enclosed penthouse is screened by a 24'-0" roof screen consistent with the penthouse exterior cladding. The buildings' primary uses are office and laboratory. Figure 1.10a-g presents the design process and concepts for the Project. Refer to Figures 1.11a-h for details of building floor plans and Figures 1.13a-c for site sections.

All three new construction lab/office buildings include green roofs at the main building roof, as well as a biosolar installation at the roof of the mechanical penthouse. The extent of the green roof is compliant with the recent amendment to Article 22.000 of the Cambridge Zoning Ordinance adopted by the City of Cambridge. Refer to the building roof plans presented in Figure 1.12 for the layout of green roof/biosolar roofs. The green roof systems will include growth media as well as a layered stormwater detention concept. This system

not only lessens heat island impacts, but also works to reduce stormwater detention systems below the roof level.

1.3.1.3 Building Design and Facades

The proposed building designs have several massing moves that work to break down the scale of the overall building massing. The length of the buildings along Whittemore Avenue is divided in half with a full height notch that both signifies entry and visually divides the building into two sections. The façades of these two sections are treated differently to reinforce the building division. Refer to Figures 1.14a-h for details on the design development. On the short sides of the building, cantilevers and angled walls respond to the adjacent plazas and public areas to provide cover and bring the scale down to the pedestrian level. Along the pedestrian walk running east to west through the Project Site, the building height has been reduced to two-floors in certain sections to reduce the overall building scale. Refer to Figures 1.15a-p for details on the elevations and material palettes throughout the Project Site, and refer to Figures 1.16a-j for view perspectives.

The proposed building façades are a combination of mainly three wall types: punched windows in a metal-panel façade, vertical curtainwall in an ultra-high performance concrete (UHPC) façade, and glazed curtain wall areas. The materiality and scale of the façades facing Whittemore Avenue have been designed to respect the adjacent residential neighborhood scale. Both the metal panel and UHPC materials will have warm tones and provide texture and panel sizes appropriate to the scale of the buildings and their surroundings. Areas that contain retail or other amenity programming will have more vision glass to best connect the interior spaces with the exterior landscaped plazas and street level. Improvements to the façade of Building 2 will provide a consistent material palette compatible with the new buildings. The new façade of Building 2 will also greatly improve the building envelope's performance and provide a transition from the existing Building 1 façade, which will remain in place as it is in good condition, to the new construction Buildings 3-5, by utilizing metal panel patterns similar to Buildings 3-5 and adopting color tones more consistent with Building 1.

The design of each building's facade takes into account the residential character of the North Whittemore Avenue neighborhood and also considers bird safety. The American Bird Conservancy's ("ABC") research has identified many strategies to help reduce the rate of mortality resulting from a bird colliding with a building facade. According to research included in ABC's Bird Friendly Building Design guide, the most effective way to reduce the number of such collisions is to limit the amount of glass, particularly continuous glazing, included in a building's facade. The three new construction buildings (Buildings 3, 4 and 5) and the new envelope of Building 2 have been designed with a window-to-wall ratio ("WWR") of approximately 30% to limit the amount of glass.² In addition to a low WWR, the building facades are primarily comprised of "punched window" openings that are organized in a syncopated pattern that helps create "visual noise", which hasn't been explored in detail but could be an important factor. The glazing specification has also been selected to

² Buildings 3 and 5 are 29% and building 4 is 31%.

minimize reflectivity. The glass specification of Guardian SNX 62/27 is 11/12% in/out reflectance, which is very low, while providing high thermal performance.

1.3.1.4 Parking

The parking for the Project is comprised of both structured parking and surface lots. The existing surface lots north of Whittemore Avenue are included in the development area and serve as part of the overall parking supply for the Project, continuing the long-standing use of the spaces as accessory parking for the Project Site. New trees are proposed within the parking lots to provide beautification of the lots as well as help reduce the heat island effect. Thirty Eleven (30) trees are proposed across the four parking lots, reducing the amount of parking by 11 spaces in the aggregate. To help reduce the heat island effect on the surface lot east of Whittemore Avenue and east of Building 3, a series of solar array canopies are proposed above certain parking aisles. Refer to Figures 5.12c-e for layout of surface lots, proposed trees and solar array.

The proposed parking garage is located south of the lab/office buildings and is a four-story (with partial fifth floor parking/tree nursery) single helix parking structure. An elevator and stair tower are located in the northeast corner adjacent to the pedestrian connection to the lab/office buildings. This will be primarily a glass curtainwall stair and elevator tower with glazing that is consistent with the low reflectivity glass used for the new construction buildings. The north and south long facades of the garage will include a textile fabric graphic scrim to partially mask the structure of the garage, providing a pleasing building façade facing the headhouse and four-acre natural area to the south. A publicly accessible bike repair facility is proposed at the west side of the ground floor conveniently located adjacent to the new multi-modal path. The height of the garage to the fifth floor parking/tree nursery level is 46'-4". At the partial fifth floor, a 6,700 SF tree nursery is being proposed in coordination with Green Cambridge's Urban Forest program. This nursery will support the growth of approximately 350 trees to be planted across the City of Cambridge every three to four months. The floor to floor height of level one is 11'-4" and 10'-8" for levels 2, 3 and 4. The parking garage is designed above-grade as required by applicable zoning.

The Applicant has agreed to provide neighborhood residents access to the Project's parking areas and electric vehicle ("EV") charging stations on weekdays between 6 PM and 8 AM and on weekends from Friday at 6 PM to Monday at 8 AM, subject to any posted restrictions.

1.3.2 Project Schedule and Phasing

The Applicant anticipates beginning construction during the first quarter of 2022. The total construction timeframe for the Project is three (3) years. The renovation of Building 1, demolition of the existing buildings, renovation of and addition to Building 2, and construction of Building 3, Building 4, Building 5 and the parking garage may be developed together with or independently of one another and in differing sequences. The creation of the compensatory flood storage will be completed prior to filling of Bordering Lands Subject to Flooding so that the construction does not outpace compensatory flood storage availability. Refer to Figure 1.24 which illustrates the phasing plan for the Project.

Refer to Figure 1.3 for the proposed notice panel locations.

1.3.3 Site Planning and Landscaping

The limit of development for the Project has been carefully sited, to the extent possible, within previously developed land to minimize disturbance to existing vegetation, soil, and other environmental resources. The landscaping will provide new community connections, public spaces, the creation of a four-acre natural habitat, and the planting of over 656 new trees that will surpass the total caliper of existing trees on site upon planting. The tree and understory plantings will be derived from the native New England plant palette to be compatible with the existing site conditions and to emphasize the indigenous character of this important landscape type.

The Project includes a landscaped buffer along all of its perimeter except where the existing Building 2 abuts the back of the sidewalk on Whittemore Avenue. The Project will retain as many trees as possible and only remove those that occur within the footprints of the new buildings, parking garage, roads and the new flood storage area at the southeast side of the Project. Tree removals are due to a variety of reasons, as follows: dead trees, trees conflicting with new buildings and associated access sidewalks and roads, and trees impacted by the construction of floodplain compensatory storage. In addition, the logistics related to construction under the Asbestos Ordinance present challenges to tree protection. Refer to Figure 2.2 and Section 2.1.3.8 for more detail.

The Project is proposing the creation of a four-acre natural habitat within the Project Site that will be comprised of a series of landscape solutions appropriate to the areas within the current floodplain. A bioswale makes up the lowest elevations of this area with native wildflower meadows and woodland preserves making up the higher elevation areas of the habitat. Located at the northern and western edges, three overlooks and seating areas have been included to provide for public enjoyment of the habitat. The new Building 3 on Whittemore Avenue will be set back 25 feet to allow for the installation of trees and understory plantings, creating a well-landscaped interface with the adjacent community. Refer to Figures 1.17a-1.21 for landscape plans and details.

A recommendation was made at an Alewife Study Group sub-committee meeting to explore additional compensatory flood storage at the south-west corner of Jerry's Pond in order to save trees. Based on technical analysis and broader community support, we presented this plan to the Conservation Commission on November 29, 2021 and December 20, 2021. On December 20, 2021, the Conservation Commission voted to approve the project and issue an Order of Conditions.

1.3.3.1 Site Circulation

Vehicular access for the Project will be provided via a new loop road that makes use of existing curb cuts that are located along Whittemore Avenue. Driveways on Whittemore Avenue to the west of Seagrave Road and Alewife Station Access Road are both being maintained, and they will serve all users including garage traffic, loading, as well as bicycles and pedestrians. These two driveways will provide access to the new parking structure, as well as allowing for

deliveries to the loading docks located at the new buildings. Another driveway is also proposed along the east side of Whittemore Avenue where the existing surface lot curb-cut exists (between Harrison and Madison Avenue), but this driveway will be restricted for use by emergency use only and occasional maintenance activities, as well as bicycles and pedestrians – this driveway will not be used by general users. Harvey Street will be restricted to emergency vehicle access only, and pedestrian and bicycle use. Both of these restrictions were put in place in order to prioritize the separation of vehicles and non-motorists, along with installation of a gate located at the western side of the site loop road and a gate located at the eastern side of the site loop road to protect neighborhood roadways from unintended cut-through traffic conditions. Deliveries will be via either the driveway on Whittemore Avenue to the west of Seagrave Road or via Alewife Station Access Road. Details on access and circulation for loading/service, vehicles, and bicycles/pedestrians can be found in Sections 5.1.5 through 5.1.7 as well as in the TIS (located in Appendix B). Additionally, vehicular access to the at-grade parking north of Whittemore Avenue will occur over the existing curb cuts serving those parking lots.

The Applicant has worked with the neighborhoods adjacent to the Project Site and the City of Cambridge TP&T Department (“TP&T”) to provide police details at the Route 16 and Whittemore Avenue intersection in the evening.

1.3.3.2 Pedestrian Access

The primary pedestrian routes through the Project Site will be north to south from a new entrance on Whittemore Avenue to the Alewife MBTA station, and east to west from the Alewife Linear Park on the east to the loop road and Project entry on the west. It will also provide access for emergency vehicles through the Project Site. A new connection at the current dead-end at Harvey Street will only permit pedestrian, bicycle, and life/safety vehicle access through the Project Site south of the buildings, to Alewife Brooke Parkway to the west, and to the MBTA Alewife Station and Alewife Linear Park to the south. In addition, the existing bicycle and pedestrian connection from Whittemore Avenue to the Alewife Linear Park at the east end of the Project Site will be retained and enhanced.

The Project will provide pedestrian access through the Project Site for the residents of the surrounding communities to important local resources including the MBTA Alewife Station, Russell Field, and the Alewife Linear Park. Primary entrances to Buildings 1, 2, 3, 4 and 5 will be along the new east-west promenade – a landscaped pedestrian street featuring an attractive paving pattern, landscaping, and street furniture (the “Promenade”). Secondary entrances will be provided from Whittemore Ave at the north side of building three, and from the service road on the south side of buildings 4 and 5.

All pedestrian routes and building entries will be accessible and will be illuminated at night with full cut-off pedestrian pole lights that eliminate light pollution and employ dark sky fixtures. The new loop road will also be illuminated with full cut-off roadway fixtures.

1.3.3.3 Public Realm and Streetscape Improvements

In addition to the Promenade, the heart of the Project Site will be a new public plaza with food and beverage amenity. The primary entrances to the buildings will be located along the

Promenade, which will feature street furnishings, permeable paving, rain gardens and landscaping, and which leads into the plaza. Refer to Figure 1.7 for the proposed site plan, and Figure 1.17a for the overall landscape plan.

A smaller plaza with areas of sloped lawns will be located at the east end of the Promenade. This location will have year-round sunshine and will be an ideal informal gathering space. The central plaza of the Promenade includes an area that can accommodate food trucks and outdoor performance programming.

There will be approximately two hundred fifty-three (253) seats on the Promenade, up to forty-four (44) temporary seats in the retail patio area and approximately one hundred seventy-five (175) seats on the Commitment Areas—sixty (60) seats in the overlook area and one hundred fourteen (114) in the Jerry's Pond area.

On Whittemore Avenue, where the existing buildings currently form a continuous barrier to the surrounding community, the new campus will provide a welcoming public portal into and through the heart of the Project Site. The 25-foot setback for the new Building 3 on this street will allow for the installation of trees and understory plantings. This landscape will also form a rain garden to capture and treat stormwater runoff, creating a small green oasis for the community that also provides important ecological functions.

1.4 Project Benefits

The Project will provide a range of public and community benefits, including:

Urban Design/Public Realm

Project Site:

- › Providing various public areas, including a new public central plaza (at the heart of the Project Site) with food and beverage amenity; and a smaller, more informal plaza at the east end of the Promenade with sloped lawns. Programming such as food trucks and a temporary performance platform will provide activation and community benefit to the Project Site.
- › Enhancing existing pedestrian/bike connections including lighting, new paving and landscaping.
- › Providing a Promenade that runs through the campus with landscaping, permeable paving and street furnishings.
- › Providing a new Bluebike Station at the entrance to the Project Site from Harvey Street.

Commitment Areas:

- › (1) MBTA Alewife Station headhouse: Working with MBTA to restore the head house plaza including; new plaza surface, adding more and new lighting, providing trees in large planters, repainting the head house on west, east and south side, adding new

community mural on the north wall, provisions for food trucks, and replacing existing entry doors.

- › (2) Jerry's Pond: Improving public access around Jerry's Pond, with raised wooden board walk style pedestrian paths and viewing stations off the boardwalk with picnic tables and seating at appropriate locations. At Rindge Avenue, a new boardwalk with viewing stations are proposed. The public access plan will include short- and long-term maintenance plans, and an ecological education program. See below for additional details.
- › (3) DCR Route 16: The Project will create as an east-west connection from Route 16 to Harvey Street and significant improvements to Route 16, subject to DCR's approval.

Transportation, Access and Circulation

- › Providing new, improved, public pedestrian and bicycle connections to the MBTA Alewife Station, Russell Field, Harvey Street, and the Alewife Linear Park.
- › Providing direct access/connection to the MBTA Red Line Alewife Station.
- › Providing vehicular access/connections that mitigate cut-through traffic through both the Project Site and adjacent neighborhood and separates vehicles from non-auto users whenever possible.

Environment/Sustainability

- › Improving stormwater infiltration and retention with rain gardens and permeable paving.
- › Providing a solar array canopy at the east surface parking lot.
- › At the request of members of the neighborhood adjacent to the Project Site, the Project includes a stormwater control system that is compliant with the City of Cambridge stormwater requirements and mitigates impacts of stormwater runoff from the Whittemore Avenue surface parking lots. The Applicant will also plant (30) new trees and create permeable green space in the surface parking lots north of Whittemore Avenue.
- › Incorporating planting of approximately 656 new trees on-site.
- › Incorporating high performance building design measures that target a 15% energy use reduction below code, and target LEED Gold level certification.
- › Generating on-site renewable energy through installation of PV panels on top of the enclosed penthouses of the new construction lab buildings.
- › Installing green roofs on Buildings 3-5, including biosolar roof installation at the mechanical penthouse roof of Buildings 3-5.
- › Reducing urban heat island effect through high albedo roofs, green roofs, and light color paving.
- › Providing 40 electric vehicle parking and charging stations day 1 and providing an additional 68 EV-ready parking spaces in the parking garage, equal to 25% of the total garage spaces.

- › Providing water fixture selections that reduce the indoor water use by 30%.
- › Providing storm-water harvesting system that reduces the outdoor water use by 50% or greater.
- › Providing an active chilled beam system for the office portion of the new construction buildings.
- › The Applicant is committed to using an organic landscaping maintenance program for the Project.
- › The Applicant has agreed to enter into a restrictive covenant with regard to which the City will be the beneficiary that will prohibit construction of buildings in the four-acre natural habitat area situated within the Project Site in the area depicted on Figure 1.7a with the exception of minor improvements to amenities included in the site plan.

Economic and Other Community Benefits

- › Based on FY 2021 Commercial Property Tax Rate (\$11.85), the addition of 232,500 sf of GFA of net new office and lab space and substantial renovation of existing buildings, the Project will generate a significant increase in the amount of annual real estate tax revenue for the City and significant State sales and business tax revenue to the Commonwealth.
- › The Applicant will make Incentive Payments to the City of Cambridge Affordable House Trust totaling approximately \$4.6 million.
- › The Applicant is coordinating with the Department of Public Works to identify project(s) that will satisfy Applicant's inflow and infiltration removal requirements.
- › Creating approximately 1,538 permanent jobs and 1,200 construction jobs in a variety of trades.
- › Voluntary Commitments:
 - › Total of \$12,820,000 (twelve million eight hundred twenty thousand dollars) committed to fund, build, maintain, secure and operate voluntary community commitments
 - › Creation of an IQHQ scholarships fund worth \$500,000.
 - › Contribute \$500,000 to Just a Start – Biomedical Career Program.
 - › Maintenance of communal gardens in partnership with Cambridge Green at a cost of \$40,000 per year.
 - › Exploring additional community benefits including coordination with Mass Audubon to partner on running an Ecological Center and with Green Cambridge to partner on a tree nursery on the rooftop of the garage supporting the Backyard Tree Planting Program. This nursery will support the growth of approximately 350 trees to be planted across the City of Cambridge every 3 to 4 months.
 - › The Applicant has created an internship program for local young adults that provides them with hands-on working experience. Six (6) young adults participated in the first cycle of the internship program.

- › IQHQ has established and will continue partnerships with a number of local youth sports and non-profit organizations.
- › Neighborhood residents shall be allowed to park in the Whittemore Avenue parking lots, or in the garage when these parking lots are unavailable, on weekdays between 6 PM and 8 AM and on weekend from Friday at 6 PM to Monday at 8 AM, subject to any posted restrictions (“Neighborhood Parking Hours”).
- › The Applicant has agreed to provide neighborhood residents access to the Project’s parking areas and electric vehicle (“EV”) charging stations on weekdays between 6 PM and 8 AM and on weekends from Friday at 6 PM to Monday at 8 AM, subject to any posted restrictions.
- › During a City announced snow emergency, neighborhood residents can park in the garage and the surface parking lots after such lots have been cleared of snow, until such time as on street parking is restored.

Jerry’s Pond – Commitment Areas Project

The program and design principles for the Jerry’s Pond area were developed in alignment to a community survey facilitated by the Ocean River Institute. The Applicant participated in a listening session with the community held on January 7, 2021 to hear the results of the survey. Refer to Appendix J for the survey results. The Applicant’s proposed design meets approximately 95% of the communities surveyed requests.

The proposed includes:

- › Providing new, raised boardwalk style pedestrian circulation on the east side of the pond at the water’s edge to allow for views of the pond. The new boardwalk will have lighting to illuminate the path of travel as well as security “blue lights.”
- › Providing view vista areas off the new boardwalk to allow for picnic and seating areas.
- › Eastern pedestrian path will have multiple connections to the Linear Path.
- › Improve the RTE 16 sidewalk by repairing and adding new lighting to path for enhanced safety. Construct a new 6’ wide asphalt pedestrian path approximately 10’ east of existing sidewalk. The new path will be an irregular serpentine layout to avoid existing trees.
- › Provide an open air, roofed Ecological Center pavilion for youth and community learning at the eastern boardwalk of the Project Site.
- › The Ecological Center design will include an outdoor grill for community use by reservation.
- › Construct new boardwalk at the north of Rindge Avenue with a green planting strip for new trees and native plantings.
- › The design of the Jerry’s Pond Commitment Area will accommodate a 10’ bidirectional, multi-use path along Rindge Avenue.
- › Plant (9) new trees along the southern sidewalk of Rindge Avenue.

- › The Applicant has agreed to enter into a restrictive covenant with regard to which the City will be the beneficiary that will prohibit construction of buildings in the Jerry's Pond Commitment Area, with the exception of minor improvements to amenities included in the site plan.

As noted above, each of the Commitment Areas (MBTA Alewife Station headhouse, Jerry's Pond & DCR Route 16), all of which are outside of the Project Site, require approval from certain City and State authorities. The design of the improvements in the Commitment Areas may change based on input from each respective approving authority, including the Conservation Commission, and further input from the community during the approval process.

The Applicant acknowledges the importance of delivering the public access improvements in the Commitment Areas as community benefits to be used and enjoyed by residents of the City of Cambridge. In order to ensure delivery of the public improvements, the Applicant agrees as follows:

- › Permitting Public Access Improvements: it shall diligently pursue to completion all permits, approvals and entitlements relative to the public access improvements immediately following issuance of the Special Permit and the Order of Conditions needed for the redevelopment of the Project Site, and the expiration of any appeal periods associated with the same without any appeals having been taken;
- › Construction of Public Access Improvements: it shall substantially complete the installation and construction of the public access improvements on or before the date that is thirty (30) months from the date on which all required permits, approvals and other entitlements for the public access improvements in the Commitment Areas (Jerry's Pond improvements and improvements on DCR and MBTA property) are final and any applicable appeal period has expired (the "Projected Completion Date");
 - "Substantially Complete": As used herein, "substantially complete" shall mean that all structural facets of the respective public improvement are complete with the exception of minor finishing work and so-called "punch-list" items;
- › Escrow Contingency: in the event that, notwithstanding the good faith and diligent efforts of the Applicant in completing the public access improvements, the Applicant is not able to substantially complete any component of the public access improvements on or before the Projected Completion Date, the Applicant shall deposit funds equal to 110% of the costs reasonably estimated by the Applicant at the time that the Applicant establishes the escrow to complete any portion(s) of the public access improvements, minus costs already incurred by the Applicant (any such amounts, collectively, the "Escrow Amounts").³ In the event the Applicant is unable to substantially complete any of the public access improvements on or before the Projected Completion Date due to events beyond its reasonable control (including, but not limited to a work order stoppage order issued by any federal, state or local

³ For reference purposes, the currently estimated costs of the public access improvements are included as [Appendix E](#).

- agency), the thirty (30) month period used to calculate the Projected Completion Date shall toll for a period of time equal to the delay caused by such circumstances;
- › Terms of Escrow: The Escrow Amounts shall be held in an escrow account with a mutually acceptable escrow agent upon such terms and conditions as the Applicant and the City shall agree to in writing. The Applicant shall be permitted to withdraw funds from the escrow account once the public access improvements are substantially complete; and
 - › Remaining Escrow Amounts: in the event that, notwithstanding the good faith and diligent efforts of the Applicant in completing the public access improvements, the Applicant is not able to substantially complete a certain component of the public access improvements by or before the second anniversary of the Projected Completion Date or if the Applicant notifies the City that a particular component of the public access improvements cannot be completed, any funds designated for such improvement remaining in the escrow account as of such date shall be used by the Applicant, with input from the community, to provide for public access and other improvements on the Commitment Site that will benefit the Alewife community generally or to be disbursed to other community programs which may include the IQHQ scholarship fund or Just a Start – Biomedical Career Program.

1.5 Zoning Compliance

The Project Site is approximately 27 acres with frontage along Whittemore Avenue in the North Cambridge neighborhood of Cambridge. As shown on the City of Cambridge Zoning Districts (the "Zoning Map"), the portion of the Project Site on the south side of Whittemore Street is primarily located in Special District 3 ("SD-3") with a small portion located in Special District 2 ("SD-2"). A portion of the Project Site is located in the Parkway Overlay District; however, none of the proposed structures or improvements shown on the site plan are located in this area. The portion of the Project Site on the north side of Whittemore Street is located in a Residence B Zoning District ("Res-B").

All of the buildings to be constructed or renovated as part of the Project are located in the SD-3. The surface parking lot included as part of the Project that is located adjacent to the southerly line of Whittemore Street is partially located in the SD-3 and partially located in SD-2. The surface parking lots located on the north side of Whittemore Street, which are to be improved as part of the Project, are located in Res-B.

The office and laboratory uses proposed as part of the Project are allowed as-of-right in the SD-3. The Project's compliance with the dimensional requirements of the City of Cambridge Zoning Ordinance (the "Ordinance") is summarized in the Dimensional Form of this application. The Project does not require zoning relief from use or bulk and dimensional regulations applicable in SD-3 pursuant to Section 17.30 of the Ordinance.

The surface parking lots to be improved as part of the Project either comply with applicable zoning or allowed as a preexisting nonconformity. As shown on the dimensional form, the Project provides a number of parking spaces within the total authorized amount in the SD-3. The portion of the surface parking lot located in the SD-3 complies with applicable zoning.

The portion of the surface parking lot located in the SD-2 and the surface parking lots located in the Res-B are allowed pursuant to Section 8.20 of the Ordinance, which allows any for the continued use of certain nonconforming uses or structures.

A portion of the Project Site is located within the limits of the Special Flood Hazard Area designated Zone AE according to the Middlesex County Flood Insurance Rate Map and is subject to the Floodplain Overlay District requirements set forth in Article 20.70 of the Ordinance. Section 6.2.1 of this Application details how the Project complies with the Floodplain Overlay District requirements.

As detailed in the Article 22 Green Building Reports included as Appendix A of this Application (required for all new construction and the substantial rehabilitation of the Buildings 1 and 2), the Project, as submitted, conforms to the Sustainable Design and Development requirements of Article 22.20. All three new construction lab/office buildings include green roofs at the main building roof as well as a biosolar installation at the roof of the mechanical penthouse which comply with the recent amendment to Article 22.000 of the Cambridge Zoning Ordinance adopted by the City of Cambridge.

1.5.1 General Applicable Criteria for Approval of a Special Permit (Section 10.43)

The Project meets all of the requirements for the approval of a Special Permit. Refer to Chapter 3, *Special Permit Criteria*, of this application for more details.

1.5.2 Required Findings for a Project Review Special Permit (Section 19.25)

1.5.2.1 Section 19.25.1: Traffic Impact Findings

The Proponent has submitted a Transportation Impact Study (TIS) to the City of Cambridge TP&T Department (TP&T), which was certified on June 18, 2021. Within the TIS, the Planning Board Criteria consider the Project's vehicular trip generation, impact to intersection level of service and vehicle queuing, as well as increase of traffic volume on residential streets, and walking and bicycling conditions.

The Project has an estimated 26 exceedances out of 161 (16%) data entries, which are summarized in Table 1-2 below. The Project's impacts do not exceed any of the criteria under *Project Vehicle Trip Generation*, *Traffic on Residential Streets*, nor *Lane Queues at Signalized Intersections*.

Table 1-2 Planning Board (PB) Criteria and Project Mitigation Summary

PB Criteria	Percent of Exceedances to Entries	Mitigation
A: Project Vehicle Trip Generation	0%	n/a
B: Vehicular LOS	10%	Police detail commitment, ambitious site planning solutions, and TDM commitments. Support of potential signalization of Steel Place at Alewife Station Access Road.
C: Traffic on Residential Streets	0%	n/a
D: Lane Queue	0%	n/a
E-1: Pedestrian Delay	43%	Ambitious site planning solutions proposed in the site planning including safe accommodations for all users.
E-2, 3: Pedestrian and Bicycle Facilities	50%	Ambitious site planning solutions proposed in the site planning including safe accommodations for all users.
Total	16%	

Note: Detailed mitigation is included in Section 14 of the TIS provided in Appendix B.

Refer to Appendix B for the findings of the Traffic Impact Study (TIS).

1.5.2.2 Section 19.25.2: Urban Design Findings

As discussed further in Chapter 2, *Urban Design*, the Project will be consistent with the urban design objectives of the City set forth in Section 19.30.

1.5.3 Conformance with Citywide Urban Design Objectives (Section 19.30)

The Project meets all of the requirements that demonstrate conformance to Article 19:30 Citywide Urban Design Objectives. Refer to Chapter 2, *Urban Design*, for more details.

1.5.4 Incentive Zoning

The City of Cambridge’s Incentive Zoning, pursuant to Section 11.202 of the Zoning Ordinance, requires development of more than 30,000 sf of GFA to provide a housing contribution to mitigate the impact of the development on the need for affordable housing in the city. This requirement is applicable to the Project, as such the Proponent will work with the City to determine the appropriate fee payment, as outlined in the Ordinance.

1.6 Agency and Community Outreach

Since January 2021, the Applicant has been engaging closely with the community of North Cambridge, especially with the Whittemore Avenue, Harvey Street, and Rindge Avenue neighborhoods. The Applicant held an early engagement community meeting on January 21, 2021 to gather feedback and input, and address concerns raised by community members. Visit iqhqcommunityprocess.com to view the recorded virtual early engagement community meeting and other public engagement materials related to the Project.

The Applicant has also been coordinating closely with City agencies, including the Community Development Department (CDD), the Water Department, the Department of Public Works (DPW), and the Traffic and Parking Department (TP&T). Discussions with the staff of City departments have covered a diverse range of topics including urban design and public realm, zoning, circulation and access, infrastructure and utilities, and sustainability and resiliency. Meetings held to date include:

July 14, 2020	Alewife Neighbors Call (Jen Sweet)
November 23, 2020	Alewife Study Group (ASG)/IQHQ Intro call
December 8, 2020	DPW
December 16, 2020	CDD Pre-file Meeting
January 6, 2021	CDD
January 7, 2021	Jerry's Pond Listening Session; Ocean Institute Rindge Tower Survey presented to IQHQ
January 8, 2021	Jerry's Pond AUL & Testing with CDD (Kathy Watkins)
January 14, 2021	ASG Community Meeting
January 21, 2021	IQHQ Community Meeting (mailing to approximately 3,000 households and over 200 people attended); content included presentation of Ocean Institute Rindge Tower Survey by Mohahmed Mahamed and Anusha Blum
January 27, 2021	TIS Scope Discussion with CDD (A. Shulman)
February 12, 2021	ASG
February 17, 2021	Project Discussion with CDD
February 18, 2021	Cambridge Guaranteed Income Funder Info Session
March 2, 2021	Cambridge Guaranteed Income Funder Info Session #2
March 19, 2021	ASG
March 26, 2021	Project Review with Cambridge Historical Commission
April 2, 2021	Focused Meeting with CDD to Discuss Article 22
April 2, 2021	ASG
April 12, 2021	Site Plan and Building Design with CDD (Erik T)
April 13, 2021	Alewife Call with CDD (Kathy Watkins)
April 16, 2021	IQHQ/Just A Start Intro

April 16, 2021	ASG
April 23, 2021	ASG – Friends of Jerry’s Pond Plan Presentation
April 25, 2021	IQHQ/Earth Day Event @ Jerry’s Pond
April 28, 2021	Project Discussion with CDD
April 30, 2021	ASG – IQHQ Presentation of Development Site and Jerry’s Pond Plans
May 4, 2021	Meeting with Cambridge Fire Department to Review Project Plan
May 7, 2021	ASG – IQHQ Habitat Assessment Presentation
May 13, 2021	Meeting with Cambridge Green to Discuss Communal Gardens
May 14, 2021	Focused Meeting with DPW
May 14, 2021	ASG – IQHQ Reported Results of Testing Near Pond
May 18, 2021	Focused Meeting with Utilities/Resilience of CDD
May 20, 2021	Focused Meeting with TP&T (Adam Schulman)
May 21, 2021	Focused Meeting with Planning Zoning/Urban Design of CDD
May 21, 2021	ASG – IQHQ Update on Parking, Traffic and Paths
May 22, 2021	IQHQ @ Little League/Youth Soccer
May 24, 2021	Follow-up meeting with Cambridge Fire Department to review Project Plan
May 24, 2021	Focused Meeting with Transportation (Cara Seiderman) of CDD
May 24, 2021	Focus Meeting with Parking and PTDM (Stephanie Groll) of CDD
May 25, 2021	Local Intern Orientation
May 26, 2021	IQHQ Community Meeting #2 (mailing to approximately 3,000 households and over 100 people attended)
June 2, 2021	JAS/IQHQ
June 4, 2021	Mass Audubon/IQHQ
June 4, 2021	ASG
June 9, 2021	Cambridge Joint Bicycle, Pedestrian, Transit Advisory Committee Meeting
June 9, 2021	Meeting with Green Cambridge
June 10, 2021	James Williamson/IQHQ
June 11, 2021	ASG
June 18, 2021	ASG
Week of June 14	IQHQ/Mass Audubon Site Walk/ASG
June 24, 2021	Meeting with Cambridge Arborist
June 25, 2021	ASG
July 8, 2021	Meeting with Audubon and Friends of Jerry’s Pond to discuss the Eco-Center design

July 14, 2021	Meeting with DCR Meeting with DPW
July 15, 2021	Meeting with CDD Staff
July 16, 2021	ASG
July 30, 2021	ASG for presentation of community benefits
August 3, 2021	ASG and Friends of Jerry's Pond to discuss MBTA improvements
August 11, 2021	Meeting with DPW
August 13, 2021	ASG
August 20, 2021	ASG
August 24, 2021	ASG
August 27, 2021	ASG
August 30, 2021	Meeting with DPW
September 2, 2021	Working Session with ASG and Friends of Jerry's Pond to discuss compensatory flood storage and tree removal
September 8, 2021	ASG
September 15, 2021	Meeting with Green Cambridge
September 17, 2021	ASG
September 27, 2021	Working Session with ASG and Friend's of Jerry's Pond to discuss compensatory flood storage and tree removal
September 30, 2021	ASG
October 5, 2021	Meeting with EEA Environmental Justice and MEPA Office
October 21, 2021	Public Meeting to present RAM Plan
October 22, 2021	ASG
October 22, 2021	Site Walk to review NOI
October 25, 2021	Public NOI Conservation Commission Hearing #1
November 8, 2021	Meeting with Just-A-Start
November 10, 2021	Working Session with ASG and Friends of Jerry's Pond to discuss compensatory flood storage and tree removal
November 12, 2021	ASG
November 17, 2021	Community Meeting #3 (mailing to approximately 3,000 households and approximately 100 people attended)
November 29, 2021	Public NOI Conservation Commission Hearing #2
December 1, 2021	MEPA Virtual Site Consultation
December 5, 2021	ASG Presentation to Community
December 8, 2021	On-site Review of Concerns at Harvey Street with neighbor
December 10, 2021	ASG

December 20, 2021	Public NOI Conservation Commission Hearing #3
January 7, 2021 (upcoming)	ASG
January 12, 2021 (upcoming)	Presentation of Jerry's Pond plan to Committee on Public Planting (CPP)

Appendix D includes a comments and responses matrix, which responds to the various public comments received prior to this application.

The Project Team welcomes the input of the City and the Project's neighbors, and will continue to meet with community members and groups, such as the Alewife Study Group, as the Project moves through the Article 19 review process and construction.

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2

Urban Design

The following section demonstrates that the Project conforms with Article 19:30: Citywide Urban design Objectives.

2.1 Citywide Urban Design Objectives

The Project Site is located in Alewife neighborhood of Cambridge. As shown on the Zoning Districts map (the "Zoning Map"), the portion of the Project Site on the south side of Whittemore Street is partially located in Special District 3 ("SD-3") and partially located in Special District 2 ("SD-2"). The portion of the Project Site on the north side of Whittemore Street is located in a Residence B Zoning District ("Res-B").

The City of Cambridge has developed a series of urban design objectives over the last several decades, the most recent being the Alewife District Plan (the "District Plan") as part of Envision Cambridge. The District Plan outlines several sub-districts including the Whittemore Avenue sub-district which contains this Project Site. Land use, open space planning, street planning, climate resilience, and other urban objectives have been outlined in the District Plan.

In addition to complying with Article 19.30, the Project incorporates many of the District Plan's recommendations. The development footprint of the Project is located primarily in the northern portion of the Project Site and outside of the floodplain as recommended by the District Plan. The Applicant has confined new development to previously disturbed areas and parking lots, with the exception of the proposed parking garage, which is required to be constructed above grade pursuant to applicable provisions of the Ordinance. The Project's design also includes a layout of new streets to create connections across the Project Site, which is also a goal noted in the District Plan.

The buildings included in the Project are designed to be consistent with the goal set forth in the District Plan of creating consistency among new development and the existing residential buildings by restricting height. The Project also achieves the goal of creating more public open space by developing the central plaza and Promenade linking the new buildings along an east-west axis.

Climate resilience is a critical issue within this subdistrict that is addressed by the Project's design. The Project's design includes elevating floor levels to the City of Cambridge's 2070 projected floodplain levels and enhanced resiliency of critical building systems. The new proposed parking garage is setback in the Project Site, away from adjacent neighborhoods

and public streets. Finally, the Project is leveraging the bicycle and public transportation infrastructure by creating meaningful connections to the Alewife Linear Path and the MBTA Alewife Station.

2.1.1 19:31: Responsive to Existing or Anticipated Development

New projects should be responsive to the existing or anticipated pattern of development.

Indicators include:

(1) Heights and setbacks provide suitable transition to abutting or nearby residential zoning districts that are generally developed to low scale residential uses.

The heights and setbacks of each of the buildings included in the Project provide suitable transition to the adjacent Res-B Zoning District which is generally developed to low scale residential uses. The heights of the buildings included in the Project are consistent with the existing structures and are allowed by right under applicable zoning. The setback to the face of the new Building 3 along Whittemore Avenue continues the streetscape established by the existing Building 1 and includes a 25-foot setback that will provide space for landscape features such as trees and other plantings. This setback establishes a transition from the commercial buildings in SD-3 to the existing residential development along Whittemore Avenue.

(2) New buildings are designed and oriented on the lot so as to be consistent with the established streetscape on those streets on which the project lot abuts. Streetscape is meant to refer to the pattern of building setbacks and heights in relationship to public streets.

One of the four new buildings included in the Project (Building 3) will front on Whittemore Avenue. The setbacks of this new building are compliant with the applicable requirement of a 25-foot setback along Whittemore Avenue. These setbacks are designed to include landscaping and other pedestrian related improvements.

These setbacks and other improvements will activate the street edge for the length of the buildings along Whittemore Avenue. The Project will include sidewalks that accommodate pedestrians, street trees, lighting, site furnishings and landscaping. These improvements will enhance the pedestrian experience and increase pedestrian connectivity in the SD-3 and adjacent zoning districts.

The campus style setup of the Project also provides pedestrian pathways that will promote connectivity between the adjacent residential neighborhoods and the open space and recreational areas abutting the Project Site.

(3) In mixed-use projects, uses are to be located carefully to respect the context, e.g. retail should front onto a street, new housing should relate to any adjacent existing residential use, etc.

Uses are located carefully in the Project to respect context. All buildings have centralized building lobbies and entrances. These entrances are located on both the internal campus Promenade, as well as along Whittemore Avenue and the internal campus service road. Entrances along Whittemore Avenue provide not only through-building access but also an

opportunity to create architectural elements scaled to the adjacent neighboring residential structures. The retail space proposed in Building 4 fronts the plaza located at the center of the campus. See Figure 1.7 for the proposed development plan.

(4) Where relevant, historical context are respected, e.g. special consideration should be given to buildings on the site or neighboring buildings that are preferably preserved.

There are no neighboring historic buildings or buildings that are preferably preserved on or adjacent to the Site. The Project Site is not located in a Cambridge District.

2.1.2 19:32: Pedestrian and Bicycle-Friendly/Relationship to Surroundings

Development should be pedestrian and bicycle-friendly, with a positive relationship to its surroundings. Indicators include:

(1) Ground floors, particularly where they face public streets, public parks, and publicly accessible pathways, consist of spaces that are actively inhabited by people, such as retail stores, consumer service businesses and restaurants where they are allowed, or general office, educational or residential uses and building lobbies. Windows and doors that normally serve such inhabited spaces are encouraged to be a prominent aspect of the relevant building facades. Where a mix of activities are accommodated in a building, the more active uses are encouraged facing public streets, parks and pathways.

The ground floors of the Project will be actively inhabited by people. The ground floor of each of the buildings included in the Project along Whittemore Avenue include active use areas such as lobbies and long-term bike storage.

Along Whittemore Avenue, proposed Building 3 includes active spaces associated with the lab/office use. The lobby is located in the center of the building and the façade elements have been organized to accentuate the entrance and reduce the scale of the building relative to pedestrians. Recessing the entrance helps with wayfinding, breaks up the overall massing of the buildings, and provides a weather-protected entrance from Whittemore Avenue. On the east side of Building 4, 3,500 SF of retail space is located to provide visibility and access from the central plaza as well as from pedestrians heading west from Harvey Street. Oriented in the south-west portion of Building 4, this retail space will provide outdoor seating along the north-south axis through the campus. The façade is primarily vision glass at the retail space, creating more visibility and connection between the plaza, Whittemore Avenue and the building interior space.

In commercial districts, such active space consists of retail and consumer service stores and building lobbies that are oriented toward the street and encourage pedestrian activity on the sidewalk. However, in all cases such ground floor spaces should be occupied by uses (a) permitted in the zoning district within which the building is located, (b) consistent with the general character of the environment within which the structure is located, and (c) compatible with the principal use for which the building is designed.

The ground floor spaces are occupied by lab and office space, or accessory uses thereto, and retail. These uses are (a) permitted in SD-3, (b) consistent with the general character of the

environment within which the structure is located, and (c) compatible with the principal use for which the building is designed.

(2) Covered parking on the lower floors of a building and on-grade open parking, particularly where located in front of a building, is discouraged where a building faces a public street or public park, and publicly accessible pathways.

The Project is designed with an on-grade parking garage located to the rear of the Project Site (the "Parking Garage") because construction below the existing mean grade is prohibited in the SD-3. The new parking garage will be on-grade, and has a stair and elevator tower clad in a glass curtainwall to provide a visible and safe connection between the garage and walking path that connects to the buildings. The Parking Garage has been located to minimize the visibility of this parking area from the neighboring streets. Trees, tensile scrim systems, and other screening and buffer improvements will work to minimize visibility of this parking area from the adjacent recreational fields. The Parking Garage will replace and condense the existing, large surface parking area behind the existing buildings.

Additional parking for the Project will be provided in existing surface lots on to the north of Whittemore Avenue, which will continue to serve as accessory parking for the uses on the Project Site. The Project does not include any on-street parking within the Project Site, including where the buildings face public pathways.

(3) Ground floors should be generally 25-50% transparent. The greatest amounts of glass would be expected for retail uses with lesser amounts for office, institutional or residential use.

The architectural treatment of the ground floors of each of the buildings facing Whittemore Avenue is at least 30% glass and highlights the active ground floor uses. For all the new construction (Buildings 3-5) and within the new re-clad portion of existing Building 2, the ground floor façade is primarily vision glass, particularly at retail and building lobby areas. The Project seeks a balance between revealing the active people-focused spaces and creating a façade expression that is compatible with the adjacent houses along Whittemore Avenue. Specifically, the ground floor is approximately 38% transparent at all ground floor areas of each new construction building. At the retail area of Building 4, the façade is approximately 75% transparent.

(4) Entries to buildings are located so as to ensure safe pedestrian movement across streets, encourage walking as a preferred mode of travel within the city and to encourage the use of public transit for employment and other trips. Relating building entries as directly as possible to crosswalks and to pathways that lead to bus stops and transit stations is encouraged; siting buildings on a lot and developing site plans that reinforce expected multi-modal pathways over the lot and through the district is also encouraged.

Building entrances have been located primarily along the Promenade (the pedestrian-only main street running east-west connecting all 5 buildings). Where entrances are facing public or private roads, pedestrian paths have been provided to connect to safe, well-marked crossings. Along the new service road on the campus, the main pedestrian connection between the MBTA Alewife Station and parking garage is made with a wide, raised table-top crossing to allow safe crossing of the road.

The Project has been designed to encourage safe pedestrian access to and from the Project Site and adjacent properties, including the MBTA Alewife Station. The buildings have been organized to create a clear, direct and safe pedestrian path to and from the Alewife Station. Lighting and cover from the weather will be provided at appropriate locations to encourage use of the MBTA Alewife Station. In addition, the Project is located along the Alewife Linear Path. Direct bicycle and pedestrian connections have been made between this multi-modal path and the Promenade connecting all building entrances to encourage use of the linear path.

(5) Pedestrians and bicyclists are able to access the site safely and conveniently; bicyclists should have, secure storage facilities conveniently located on-site and out of the weather. If bicycle parking is provided in a garage, special attention must be paid to providing safe access to the facilities from the outside.

Pedestrians and bicyclists will be able to access the Project safely and conveniently. The Project Site is located in close proximity to the MBTA Alewife Station which allows for pedestrian travel from the Station to the Project Site. The new Project design provides generous pedestrian and bicycle accommodations. There are unsignalized crosswalks at the intersection of Whittemore Avenue and Seagrave Road, Kimball Street, Harrison Avenue and Madison Avenue.

The Project will also be supported by a total of approximately 140 long-term bicycle parking spaces and approximately 44 short-term bicycle parking spaces. This bicycle parking program proposes a quantity of proposed bicycle parking spaces that exceed requirements of city zoning to support the full build-out of the Project. Each of the newly constructed buildings (Buildings 3-5), along with the two existing buildings, will have interior long-term bike storage with direct access to outdoors and safe bike path connections. Adjacent to the interior bike storage will be shower and bathroom facilities. The bicycle storage facilities are designed in accordance with City of Cambridge guidelines, separated from the automobile parking area and provide safe, direct access to the outside. Bicycle pump and repair facilities will also be provided for Project employee use. Additionally, outdoor racks are provided near the entries to the Project for short-term bicycle parking to encourage the use of bicycles for multiple trips throughout the day. For the existing Buildings 1 and 2, bike storage area will be added to the interior of the building as part of a renovation. The Project plans to include a bike maintenance facility at a convenient location (to be determined) on site for public use.

(6) Alternate means of serving this policy objective 19.32 through special building design, siting, or site design can be anticipated where the building form or use is distinctive such as freestanding parking structures, large institutional buildings such as churches and auditoriums, freestanding service buildings, power plants, athletic facilities, manufacturing plants, etc.

The Project complies with the policy objective 19.32.

2.1.3 19:33: Environmental Impacts and Mitigation

The building and site design should mitigate adverse environmental impacts of a development upon its neighbors. Indicators include:

2.1.3.1 Noise Impacts Related to Mechanical Equipment and Service/Loading

(1) Mechanical equipment that is carefully designed, well organized or visually screened from its surroundings and is acoustically buffered from neighbors. Consideration is given to the size, complexity and appearance of the equipment, its proximity to residential areas, and its impact on the existing streetscape and skyline. The extent to which screening can bring order, lessen negative visual impacts, and enhance the overall appearance of the equipment should be taken into account. More specifically:

All of the mechanical equipment will be located either in an enclosed mechanical penthouse or screened at the roof level with a permanent roof screen of sufficient height to hide the equipment visually. The majority of the mechanical equipment will be located in the enclosed mechanical penthouse at the roof level of the building. This enclosure will contain the noise associated with this equipment. Outdoor mechanical equipment located behind the permanent roof screen will be selected for quiet operation, including quiet selection, available noise control options from the manufacturer, and VFD controls to modulate fan and compressor speed to match loads. Equipment will operate under reduced loads at night and on weekends.

Noise from all mechanical equipment will be calculated using a computer model that includes noise from each item of equipment, its location, any sound attenuating barriers, and distance to the receiver location. If needed, sound attenuation measures such as acoustic louvers or sound barriers would be added to the design and documented in the CD's. Equipment and noise controls will be designed to comply with City of Cambridge noise regulation and the MassDEP noise regulation.

A noise monitoring study was performed to understand the existing ambient sound at the neighborhoods closest to the Project. Four (4) monitors were installed for one week to monitor multiple days and nights including a weekend. Results at the four (4) locations have created an existing baseline for noise design goals for the Project in addition to MassDEP and City of Cambridge noise ordinances.

2.1.3.2 Trash and Service/Loading Impacts

(2) Trash that is handled to avoid impacts (noise, odor, and visual quality) on neighbors, e.g. the use of trash compactors or containment of all trash storage and handling within a building is encouraged.

The trash/recycling storage and handling for the Project are contained within the Project to avoid noise, odor, and visual impacts on the neighbors and residents. Generally, loading activities will occur interior to the loading dock, with trash and recycling pickups occurring weekly, or as needed. The loading area which includes the trash and compactor storage will be screened from the street.

(3) Loading docks that are located and designed to minimize impacts (visual and operational) on neighbors.

The loading area will include an architectural screening element so that interior loading operations, including trash and compactor storage, will be screened from the street.

Buildings 1 and 2 will have one exterior loading bay. Each loading bay is located in the area between these buildings and may be accessed from the west portion of the Promenade. For Buildings 3-5, each building will have two loading bays located in the interior of the building. These loading bays may be accessed via the service road running adjacent to these buildings. Additionally, the loading dock has been sited to minimize the visual and operational impact on neighboring buildings, adjacent neighborhoods, and nearby open space and recreational uses.

2.1.3.3 Stormwater Management

(4) Stormwater Best Management Practices and other measures to minimize runoff and improve water quality are implemented.

The Project implements Stormwater Best Management Practices and other measures to minimize runoff and improve water quality in accordance with the Massachusetts Stormwater Handbook for both water quality and quantity. The proposed building and garage roof areas are designed to discharge through subsurface detention systems designed to reduce peak stormwater rates. Stormwater infiltration systems will be located on site where existing conditions allow for stormwater recharge. Stormwater infiltration will promote groundwater recharge and reduce stormwater peak rates and volumes, in addition to reducing total phosphorus load from the Project Site.

The final design will incorporate facilities to reduce phosphorus on-site by 65 percent compared to the existing conditions, in compliance with DPW standards. These facilities may include added pervious area such as green roofs, stormwater infiltration systems, stormwater bio-retention areas, and/or proprietary water quality structures designed to remove total phosphorus from stormwater discharge. The Project will provide stormwater Best Management Practices (BMPs) in conformance with DEP's Stormwater Management Standards.

Refer to Section 6.2 of Chapter 6, *Infrastructure* for more details regarding stormwater management for the Project.

(5) Landscaped areas and required Green Area Open Space, in addition to serving as visual amenities, are employed to reduce the rate and volume of stormwater runoff compared to pre-development conditions.

The Project has been carefully sited on previously developed land to minimize disturbance to existing vegetation, soil, and other environmental resources. The landscaping will provide new community connections, public spaces, and the planting of over 656 new trees. The tree and understory plantings will be derived from the native New England plant palette, including wetlands, to be compatible with the existing site conditions and to emphasize the indigenous character of this important landscape type.

The new Building 3 on Whittemore Avenue will be set back 25' to allow for the installation of trees and understory plantings. This landscape will also form a rain garden to capture and treat stormwater runoff, creating a small green oasis for the community that also provides important ecological functions.

2.1.3.4 Shadow Impacts

(6) The structure is designed and sited to minimize shadow impacts on neighboring lots, especially shadows that would have a significant impact on the use and enjoyment of adjacent open space and shadows that might impact the operation of a Registered Solar Energy System as defined in Section 22.60 of this Zoning Ordinance.

The buildings included as part of the Project are concentrated in the north portion of the Project Site to minimize impact to the floodplain and limit disturbing area that has not been developed previously. This design minimizes impacts of shadows on the adjacent open space and recreation areas. The limited building height and setbacks minimize new net shadow impacts on the residential structures located on the north side of Whittemore Avenue. As anticipated, the winter solstice late day analysis has the greatest shadow impact on the adjacent parcels resulting in some net new shadows. Refer to Figures 2.1a-c for details of the net new shadow cast by the Project.

2.1.3.5 Changes in Grade

(7) Changes in grade across the lot are designed in ways that minimize the need for structural retaining walls close to property lines.

The Project minimizes changes in grade across the relevant property and minimizes the need for structural retaining walls. The Project has limited all at-grade equipment to those required by the utilities providing energy sources to the buildings. For example, gas meter assemblies will be located as required by the gas service company.

2.1.3.6 Building Scale and Wall Treatment

(8) Building scale and wall treatment, including the provision of windows, are sensitive to existing residential uses on adjacent lots.

The Project's scale is designed to carefully address the residential scale north of Whittemore Avenue and to the east of the Project Site. The Project complies with the applicable height and setback requirements.

The façade material treatment along Whittemore Avenue has been organized to accentuate a two-story reading of the building, complementing the scale of the adjacent residential neighborhood buildings. The windows along this façade are punched windows of a scale and proportion complementary to the neighboring residential district. Facades that face east toward the Harvey Street neighborhood also contain this approach to punched windows and scale of the building.

2.1.3.7 Outdoor Lighting Design

(9) Outdoor lighting is designed to provide minimum lighting and necessary to ensure adequate safety, night vision, and comfort, while minimizing light pollution.

The Project will be designed to provide the minimum lighting necessary to ensure adequate safety, night vision and comfort as well as to minimize light pollution. The layout of outdoor light fixtures will create both functional light levels in the central plaza, at building entrances,

and along the new Promenade within the Project Site, while minimizing light spilling beyond the property line and into adjacent streets and parcels. The fixture specification will be a cut-off type fixture to minimize light pollution and impact on adjacent neighborhoods and the natural habitats in nearby natural environments. Ultimately, outdoor building and landscape lighting will provide sufficient light levels for safety and an active public realm, but respect the dark-sky requirements of LEED and the City of Cambridge Outdoor Lighting Ordinance.

2.1.3.8 Tree Protection

(10) The creation of a Tree Protection Plan that identifies important trees on the site, encourages their protection, or provides for adequate replacement of trees lost to development on the site.

The Project will retain as many trees as possible and only remove those that occur within the footprints of the new buildings, parking garage, roads and the compensatory flood storage areas at the southeast side of the Project. Since almost all of the new construction for Buildings 3-5 is sited on the location of existing buildings, parking lots or other paving, the required removal of existing trees will be minimized. Appendix C presents the complete tree protection plan, including an existing conditions survey, the Arborist report with a tree inventory and management plan, and the proposed tree removal and replacements, as well as other proposed mitigation. The locations and species of the new trees will be finalized as the site design evolves and consultations with the Cambridge Conservation Commission progress. A Tree Study and plans were initially submitted to the City Arborist on June 24, 2021. Since that submittal, the City has revised the Tree Ordinance to extend jurisdiction to trees 6-inches in diameter or greater. A revised tree study will be submitted reflecting the changes to the Tree Ordinance.

All existing street trees on Whittemore Avenue will be retained except for those which are dead or in extremely poor health. These trees will be replaced with a similar species per the City of Cambridge's current street tree standards. All existing trees to remain will be protected during construction with fencing as shown in Figure 2.2. In addition, Figure 2.2 depicts the location of trees to be removed. The proposed site plan is provided on the same figure. Hence, any proposed removal that is not within the footprints of the new buildings, roadways, sidewalks, etc. is located within the compensatory flood storage area (primarily east and south of the proposed parking garage).

The Project is making additional commitments to the Cambridge community. One of these community benefits that relates to trees is the construction of a garage roof-top tree nursery. IQHQ has been working with Green Cambridge on the specifications to allow urban trees to be grown upon the proposed garage's roof. Once these trees have been sufficiently grown, they will be planted within the City of Cambridge to increase the urban tree canopy in other areas of the City.

2.1.4 19.34: Adequate City Infrastructure Services

Projects should not overburden the City infrastructure services, including neighborhood roads, city water supply system, and sewer system. Indicators include:

(1) The building and site design are designed to make use of water-conserving plumbing and minimize the amount of stormwater run-off through the use of best management practices for stormwater management.

As described above, the Project's stormwater management system has been designed to incorporate best management practices and will be presented to the Cambridge Conservation Commission later this year. Water-conserving plumbing fixtures will be installed.

The proposed stormwater management system will be designed to comply with the City of Cambridge standards and the MA DEP Stormwater Management Policy for new construction projects and will not produce changes in either the pattern of, or rate of, stormwater runoff. This includes the management of stormwater for the difference between the 2-year 24-hour pre-construction runoff hydrograph and the post-construction 25-year 24-hour runoff hydrograph, in addition to proposed facilities to reduce phosphorus on-site by 65 percent compared to the existing conditions, in compliance with Cambridge DPW standards.

(2) The capacity and condition of drinking water and wastewater infrastructure systems are shown to be adequate, or the steps necessary to bring them up to an acceptable level are identified.

The Project proposes to generate 92,096 GPD of sanitary sewer compared to 29,005 GPD within the existing condition, totaling a net increase of 63,091 GPD of sanitary sewer generation for the proposed development. This net increase of sanitary sewer generation will be served by the Cambridge DPW 8-inch sewer main within Whittemore Avenue.

The estimated domestic water demand for the Project is based on the projected new approximate daily wastewater flow for the Project. As detailed within Chapter 6, the project's approximate domestic water demand is 69,400 GPD. This estimated water demand will be served by a private 12-inch water main loop within the site, making connections to the CWD 12-inch water mains within Whittemore Avenue and Harvey Street.

In addition to stormwater management, sanitary sewer, domestic water and fire protection; each building within the Project will also require electrical, natural gas, and telecommunication services which are immediately available adjacent to the Project Site. The Project will connect to existing City of Cambridge and private utility company systems in the adjacent public streets. Existing infrastructure systems will be reviewed with the appropriate agencies to ensure that they are adequately sized to accept any increase in demand associated with the Project.

Please refer to Chapter 6, *Infrastructure* for more details.

(3) Buildings are designed to use natural resources and energy resources efficiently in construction, maintenance, and long-term operation of the building, including supporting mechanical systems that reduce the need for mechanical equipment generally and its location on the roof of a building specifically. The buildings are sited on the lot to allow construction on adjacent lots to do the same. Compliance with Leadership in Energy and Environmental Design (LEED) certification standards and other evolving environmental efficiency standards is encouraged.

In compliance with Sections 22.20 through 22.25.1 of Article 22, Sustainable Design and Development, of the Ordinance, the Project has developed a sustainability approach that will result in a high performance, low-carbon, healthy building that is resilient to future changes in climate. Each new building will demonstrate Article 22 compliance following the LEED for Core and Shell (LEED-CS) version 4 rating system. The team has committed to pursue formal LEED certification for the development. Additionally, the Project will exceed the requirements of the Massachusetts Stretch Energy Code, 780 CMR Chapter 13, amended February 7, 2020. Pursuant to Article 22.25.1 we have provided a complete NZE assessment to evaluate the feasibility of a future all-electric system option. Please refer to Appendix A for our complete NZE assessment and LEED credit by credit compliance approach for the Project.

2.1.5 19.35: Reinforce and Enhance Urban and Historical Context

New construction should reinforce and enhance the complex urban aspects of Cambridge as it has developed historically. Indicators include:

Development Consistency and Sensitivity to Urban Context

(1) New educational institutional construction that is focused within the existing campuses.

Not applicable to the Project.

(2) Where institutional construction occurs in commercial areas, retail, consumer service enterprises, and other uses that are accessible to the general public are provided at the ground (or lower) floors of buildings. Where such uses are not suitable for programmatic reasons, institutional uses that encourage active pedestrian traffic to and from the site.

Not applicable to the Project.

(3) In large, multiple-building non-institutional developments, a mix of uses, including publicly accessible retail activity, is provided where such uses are permitted and where the mix of uses extends the period of time the area remains active throughout the day.

Consistent with the current use of the Project Site, the Project includes a mix of Commercial Office, Lab and Retail uses. The Project Site will remain actively primarily throughout the course of a typical workday.

The Project will also increase pedestrian connectivity between the adjacent residential neighborhoods and the MBTA Alewife Station headhouse and provide open space and landscaping improvements that soften the edges of the property to allow for a transition from the Project Site to the adjacent open spaces and outdoor recreational areas.

A food and beverage publicly accessible retail business will be included within the ground floor of Building 4 adjacent the main north-south axis running through the campus. The retail will be approximately 3,500 SF and will include indoor and outdoor dining as well as quick-serve pickup of food and beverage items. The goal is to activate the public areas as well as create a convenient location for the public retail. The location in Building 4 provides great visibility from pedestrians heading westbound from Harvey Street or Southbound from Whittemore Street as people walk toward the MBTA headhouse. This location also creates a

neighborhood destination that will leverage the adjacent outdoor plaza areas. The retail will be open 7 days a week, with business hours TBD.

Development Consistency and Sensitivity to Historical Context

(4) Historic structures and environments are preserved.

Not applicable to the Project.

(5) Preservation or provision of facilities for start-up companies and appropriately scaled manufacturing activities that provide a wide diversity of employment paths for Cambridge residents as a component of the development; however, activities heavily dependent on trucking for supply and distribution are not encouraged.

The Project offers potential for start-up companies and incubator space.

2.1.6 Section 19.36: Expansion of the inventory of housing in the city is encouraged.

N/A to the Project as residential use is not included in the Project.

- i. Pursuant to Section 19.36 of the Ordinance, expansion of the inventory of housing in the city is encouraged. Indicators include:**

Housing is a component of any large, multiple building commercial development. Where such development abuts residential zoning districts substantially developed to low-scale residential uses, placement of housing within the development such that it acts as a transition/buffer between uses within and without the development.

The Project does not include any residential uses.

Over the course of the Project, the Applicant will make Housing Contributions to the Affordable Housing Trust under Section 11.202 because the new laboratory and office uses of the Project, as well as the substantially rehabilitated portions of the Project where a change in use is involved (such as a change from office to laboratory use within an existing building) will be deemed to be an "Incentive Project." As noted above, the Project will include the demolition of approximately 198,000 SF of GFA of existing commercial space and reconstruction thereof in new structures, as well as the construction of approximately 232,500 square feet of new commercial SF for office and laboratory uses. In addition, while the Project will retain the existing GFA of Buildings 1 and 2, which contain approximately 184,000 SF of commercial GFA, the 91,150 SF of GFA comprising Building 1 that is currently utilized for office space will be renovated for laboratory use and, therefore, such Building 1 square footage will be deemed to be an Incentive Project for the purposes of calculating the Housing Contribution. Based on the above, the Housing Contribution will be calculated for each building, to the extent applicable, at the time that the Applicant applies for such building, with such amounts being payable upon the issuance of a certificate of occupancy of such building. Based on the current Housing Contribution Rate of \$20.10/square foot of GFA, the Project would generate approximately \$6,505,365.00 in Housing Contributions (i.e.,

323,650 SF [232,500 SF of net new office and lab space + 91,150 SF of office converted to lab] x \$20.10) if it was all constructed presently.

The 121,000 SF of GFA comprised of the new above-grade parking structure is not contained in the calculation of the Incentive Payment pursuant to Article 11.202(a) because the square footage of an accessory parking use within a project is not considered an "Incentive Project" under Article 2.000 of the Ordinance.

2.1.7 19.37: Enhance and Expand Open Space/Public Realm

Enhancement and expansion of open space amenities in the city should be incorporated into new development in the city. Indicators include:

- (1) On large-parcel commercial developments, publicly beneficial open space is provided.*
- (2) Open space facilities are designed to enhance or expand existing facilities or to expand networks of pedestrian and bicycle movement within the vicinity of the development.*
- (3) A wider range of open space activities than presently found in the abutting area is provided.*

The Project will make significant contributions to the community's open space and public realm. These contributions include multiple new connections through the Project Site and Commitment Areas, providing improved access to adjacent uses including the MBTA Alewife Station, the Alewife Linear Park, Russell Field and Jerry's Pond.

Residents of adjacent neighborhoods will now be able to pass through well-designed and attractively landscaped public spaces on the Project Site and Commitment Areas to each of the noted adjacent uses. These spaces will feature amenities including numerous new trees and understory plantings. The new Promenade will also pass through the central plaza, which forms the heart of the Project.

The Project is proposing to enhance and curate a large open space located generally between the proposed garage, Russell Field and the MBTA headhouse. This open space will require modifications including excavations and associated tree removal (see Section 2.1.3.8) to create compensatory flood storage. These modifications will also allow for the installation of carefully selected trees and plantings that will create a natural habitat more consistent with recent habitat improvements in the area – like the Alewife Reservation.

The Project provides pedestrian access from the Alewife Linear Path to the east, through the center of the Project Site, to the west end of the Project Site with connections to Whittemore Avenue to the north and the MBTA Alewife Station to the south. The Promenade will be limited to pedestrians (with exception of emergency vehicles). It will also pass through the East Plaza, which will feature mounded lawn areas for informal gathering in this sunny location.

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3

Criteria for Issuance of Special Permits

The following section demonstrates how the Project conforms with Section 10.43: Criteria for Issuance of Special Permits.

3.1 Demonstration of Conformance with Section 10.43

As demonstrated by the Table 1 Dimensional Form and the list of requested Special Permits presented in the Special Permit Application Form Supplemental Documentation section of the application, the Project will meet all applicable requirements of the Ordinance.

3.1.1 Project-Related Traffic and Access

The Applicant has completed a detailed analysis of the traffic impacts associated with the Project as evidenced in the Transportation Impact Study (TIS). The TIS includes an analysis of the existing and future vehicular traffic, bicycle and pedestrian volumes, defines site access requirements, identifies specific improvements on the Project Site, and presents a detailed Transportation Demand Management (TDM) program.

The TIS evaluates the Project in the context of the Planning Board Criteria to determine whether the Project has any potential adverse transportation impacts. Exceeding one or more of the Planning Board Criteria is indicative of a potentially adverse impact on the City's transportation network. However, the Planning Board will consider mitigation efforts, their anticipated effectiveness, and other information that identifies a reduction in adverse transportation impacts.

The Planning Board Criteria consider the Project's vehicular trip generation, impact to intersection level of service and vehicle queuing, as well as increase of traffic volume on residential streets. In addition, the Planning Board Criteria consider walking and bicycling conditions. The Planning Board Criteria Performance Summary is presented below; further discussion is presented in the final section of this TIS.

The Project has an estimated 26 exceedances out of 161 (16%) data entries. 23 of the 26 exceedances pertain to existing pedestrian and bicycle infrastructure as shown on the Tables provided for Criteria E-1 (Pedestrian Delay) and E- 2 and 3 (Pedestrian and Bicycle Facilities). Three exceedances pertain to vehicular level of service as shown on the Table provided for Criteria B (Vehicular LOS). The Project's impacts do not exceed any of the criteria under *Project Vehicle Trip Generation, Traffic on Residential Streets, nor Lane Queues at Signalized Intersections*. Details on the Planning Board Criteria is available in the TIS provided in Appendix B.

The TIS, certified by the City of Cambridge Traffic, Parking and Transportation (TP&T) Department on [TP&T finalizing its review], responds to the scope dated February 5, 2021, as defined by the TP&T Department in response to VHB's Request for Scoping dated January 6, 2021. (Copies of the City's scoping letter and VHB's Request for Scoping are included in the Appendix to the TIS for reference.) The TIS has been prepared in conformance with the current City of Cambridge guidelines for Transportation Impact Studies as well as the Supplemental/Updated TIS Guidelines, as required under the Article 19 Special Permit Project Review. Refer to Appendix B for a copy of the TIS.

3.1.2 Health, Safety, and/or Welfare of Occupants and Public

The Project will not adversely affect the continued operation of adjacent residential neighborhoods.

The active ground floor uses will bring more life and activity and promote a pedestrian corridor that links the existing residential neighborhoods to nearby MBTA Alewife Station and other amenities and natural resources, such as Russell Field, Alewife Linear Park, and Jerry's Pond.

The addition of more than 200 new trees, green space, and seating in various locations throughout the Project Site and Commitment Areas will provide relief on a formerly industrial area with limited green space and public realms.

The Proponent is committed to working with the City of Cambridge and surrounding neighborhoods to ensure that the Project, and associated improvements, ensure safety and enhance health and welfare of building occupants and the surrounding public.

3.1.3 Project-Related Impacts to the District or Adjoining Districts

As noted in Section 2.1.1 of Chapter 2, *Urban Design*, the portion of the Project Site in which the buildings included in the Project will be constructed is located within the SD-3 zoning district in North Cambridge. This unique district borders residential zones to the north and east. The applicable zoning includes height and setback requirements intended to mitigate impacts on the three adjacent residential neighborhoods – Whittemore Avenue, Harvey Street, and Rindge Avenue. The setback to the face of the new Building 3 along Whittemore Avenue continues the streetscape established by the existing Building 1, including a 25-foot setback that will provide space for landscape features such as trees and other plantings. This setback establishes a transition from the commercial buildings in SD-3 to the existing residential development along Whittemore Avenue. No new impacts are anticipated to any existing structure in the SD-3 adjacent zoning districts.

The Project will not impair the integrity of any of the zoning districts in which it is located or any adjoining district, nor will the Project derogate from the intent and purpose of the Ordinance. The construction of the Project will enhance the SD-3 Zoning District in which it is located and all adjoining districts.

3.1.4 Consistency with Urban Design Objectives

As proposed, the Project's design is consistent with the Urban Design Objectives as discussed in Chapter 2, *Urban Design*.

4

Sustainable Design and Development

In compliance with Sections 22.20 through 22.25.1 of Article 22, Sustainable Design and Development, of the Ordinance, the Applicant has developed a sustainability approach that will result in a high performance, low-carbon, healthy building that is resilient to future changes in climate.

The following chapter summarizes the Project's sustainable design measures to meet Leadership in Energy and Environmental Design (LEED) for Core and Shell version 4 (v4) - Gold certification, as well as proposed strategies for possible future transition to net zero energy and associated greenhouse gas (GHG) emissions. The detailed Green Building Report, including the Net Zero Energy (NZE) Assessment, as well as response to initial city review comments are provided in Appendix A.

4.1 Summary of Green Building Narrative

In conformance with Section 22.23 of Article 22, the Applicant developed a detailed Green Building Report, outlining the Project's approach, on a credit-by-credit basis, to meet the Gold "Certifiable" requirements using the LEED v4 rating system.

A draft Special Permit submission was submitted to the City on March 15, 2021. The team met with City representatives on April 2, 2021 to review this submission. A revised package was submitted on April 23, 2021 based on comments received during the April 2, 2021 meeting. The Applicant met CDD again on April 28, 2021.

Each new building will demonstrate compliance with Article 22 following the LEED v4 rating system. This application presents a prototypical LEED checklist and compliance strategy as the design and compliance approach will be the same for all new buildings.

The Applicant has committed to pursue formal LEED certification for the development. Additionally, because all portions of the Project is designed as a campus with combined site and infrastructure elements the Applicant intends to pursue a LEED Master Site. This will allow the Project to show compliance with various LEED elements from a "campus approach."

Additionally, all of the buildings included in the Project will participate in the MassSave energy-efficiency utility incentive program. The Applicant met with the utility service

providers on March 15, 2021 to discuss the Project. The Project will also pursue Fitwel certification.

Note that improvements to the existing buildings to remain have not been included in this Article 22 assessment.

The Project is targeting 61 out of a possible 110 credit points with an additional 29 credit points still undergoing evaluation to determine feasibility of achievement. By targeting 61 credit points, the project anticipates meeting the City of Cambridge requirement to be LEED v4 Gold certifiable.

In addition to the City of Cambridge requirements, the projects will be registered under the LEED-CS v4 rating system and will be pursuing formal certification with the USGBC.

Table 4-1 LEED Points Targeted for v4 Gold Certification Pathway

LEED Credit Category	Points Targeted (Yes)	Maybe Points
IP: Integrative Process	1	0
LT: Location and Transportation	18	0
SS: Sustainable Sites	4	6
WE: Water Efficiency	4	2
EA: Energy and Atmosphere	14	12
MR: Materials and Resources	6	3
EQ: Indoor Environmental Quality	5	5
ID: Innovation in Design	6	0
RP: Regional Priority	3	1
TOTAL:	61	29

The Applicant intends to continue to evaluate design options against LEED requirements with the goal to design and construct a building which minimize its impact on the environment, create an engaging and healthy space for occupants and reduce operating costs. Several credits remain designated as 'Maybe' due to the uncertainty of future design decisions, which is common at this phase of the Project. The team will continue to evaluate LEED credits to pursue to ensure enough of a "point cushion" to ensure the LEED Gold requirement is met.

Please refer to Appendix A for our complete LEED credit by credit compliance approach for the Project.

4.2 Summary of Net Zero Energy Assessment

The Applicant provided a complete NZE Assessment, pursuant to Article 22.25.1 to evaluate the feasibility of a future all-electric system option. This includes a full LCCA to assess cost,

impact and feasibility of the non-fossil fuel system. The assessed system leverages structural capacity and other infrastructure improvements incorporated into the current design to replace (i) conventional boilers with an air-water chilled/hot water heat pump plant and (ii) gas storage service hot water heaters with similar heat pump equipment. It is assumed that heat pump condensing units would use the vast majority of available roof area (including possible green roof area) under this scenario. The payback for this system is approximately 39 years using present day demolition and replacement costs.

As a result of the assessment, and as a reflection of the shared commitment to decarbonizing buildings, the Applicant has committed to upgrading the structural design to be capable to carry the additional equipment of the identified all-electric solution.

Refer to Appendix A for our complete NZE Assessment for the Project.

4.3 Preliminary Energy Model Inputs

The Project is designed to be highly energy efficient as compared to the Massachusetts Stretch Energy Code, 780 CMR Chapter 13, amended February 7, 2020. Preliminary energy modeling conducted for the Project shows the proposed design achieves an approximately 21 percent reduction in energy use, which equates to an approximately 17 percent reduction in stationary source GHG emissions. The preliminary energy model also demonstrated an Energy Use Intensity, or EUI (kBtu/SF/year), of 145 in the proposed design as compared to a baseline of 184. This far exceeds the minimum Stretch Energy Code requirement of a minimum 10 percent reduction in energy use per square foot.

The proposed building envelope design exceeds the prescriptive performance of a Code compliant baseline. The largest contributors are a window-to-wall ratio of 30 percent, R-25 wall construction, and high-performance glazing with SHGC of 0.29, in excess of code minimums.

The proposed building design utilizes energy efficient building systems including the use of a magnetic bearing centrifugal chiller plant, an additional heat recovery chiller for cooling and supplemental hot water generation, lab exhaust heat recovery, and a dedicated outdoor air system (DOAS) with energy recovery at 80 percent effectiveness and passive dehumidification wheel for the office spaces. The core and shell building mechanical systems will allow for high efficiency active chilled beam to be provided in the tenant fit-out of the interior office areas. Space heating and service water heating will be provided via high efficiency condensing boilers. Further, all pumping systems will include variable speed drives and all lighting will be LED.

For more details on the Project's anticipated energy loads and GHG emissions, refer to Section 4 of the NZE Assessment provided in Appendix A.

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5

Transportation

This section represents a cumulative discussion of the existing and proposed transportation conditions for the Project. The Transportation Impact Study (TIS) submitted by the Proponent was certified by the City of Cambridge Traffic, Parking and Transportation (TP&T) Department on June 18, 2021. Appendix B provides a copy of the full TIS and the certification letter from TP&T.

5.1 Transportation Study Summary

5.1.1 Traffic Impact Study Overview

The TIS responds to the scope dated February 5, 2021, as defined by the TP&T Department in response to VHB's Request for Scoping dated January 6, 2021. Copies of the City's scoping letter and VHB's Request for Scoping are included in Appendix B. The TIS was prepared in conformance with the current City of Cambridge guidelines for Transportation Impact Studies, as well as the Supplemental/Updated TIS Guidelines, as required under the Article 19 Special Permit Project Review.

The TIS is comprised of three components, as follows:

- › Introduction and Project Overview – describing the framework in which the transportation component of this Project was evaluated;
- › TIS – presenting the technical information and analysis results as required under the guidelines; and,
- › Planning Board Special Permit Criteria – summarizing the evaluation of the Project as defined under the guidelines.

The TIS includes inventories of physical and operational conditions in the study area including roadways, intersections, crosswalks, sidewalks, on-street and off-street parking, transit facilities, and land uses. Transportation data that were collected and compiled are presented, including intersection turning movement counts, pedestrian and bicycle counts, vehicle crash data, and transit service data. Traffic volumes were evaluated for a 2021 Baseline Condition, a 2021 Build Condition, and a 2026 Future Condition scenario that include future background growth and other developments, as well as Project trips. The

required TIS Summary Sheets and Planning Board Criteria Performance Summary are also included in Appendix B.

The study area for the TIS comprises of fifteen intersections, including intersections. Figure 5.1 shows the traffic study area intersections. The traffic capacity Level-of-Service (LOS) analysis indicated that the Project will have a minimal impact on the transportation network at all study area intersections.

5.1.2 Existing Public Transportation Services

The Project Site is directly served by five Massachusetts Bay Transportation Authority (MBTA) bus routes: Routes 62/76 (combined route), 67, 77, 83, and 350. Figure 5.2 illustrates existing services in the study area. Bus route 77 stops on Mass Avenue at Magoun Street approximately 0.25 miles northwest of the Project Site, while Routes 62/76, 67 and 350 stop at Alewife Station which has a headhouse adjacent to the Project Site. In addition, Route 83 stops at Rindge Ave at Russel Field approximately 0.25 miles south of the Project Site.

The Alewife Station headhouse, the northern terminus for the MBTA Red Line, is adjacent to the Project Site to the southwest. Buses that serve Alewife Station include Routes 67, 62/76, and 350. A combined Braintree/Ashmont Red Line service is provided every 9 minutes during the peak period/rush hours and about every 12-16 minutes during off-peak periods.

Route 77 provides services to Harvard Square from Belmont Center. Transit connections at Harvard Square include Routes 1, 66, 69, 71, 73, 86, and 96, in addition to the MBTA Red Line service. Travel time from the Project Site to Harvard Square via bus route 77 is approximately thirteen minutes (based on MBTA travel times) but varies based on traffic and time of day. Route 83 provides services to Central Station which connects to Bus Routes 1, 47, 64, 70, and 91, as well as the MBTA Red Lines service. Route 67 provides services to Turkey Hill and Arlington Heights. The combined 62/76 Route provides service to the Bedford VA Hospital.

Routes 77 and 83 operate on approximately 10- to 20-minute headways during peak period times, while Routes 67, 62/76 and 350 operate at approximately 25- to 35-minutes headways during peak period times, respectively. During off peak hours headways for bus Routes varies.

The MBTA is advancing two major initiatives that will result in more frequent Red Line train service and greater passenger capacity. Under the Red Line Systemwide Improvement Program (aka Red Line Transformation Project) the MBTA has committed to implement through 2023 (as stated in its Focus 40 document):

- › Fleet Replacement and Maintenance Facility Upgrades
- › Capacity and Reliability Improvements (3-Minute Headways)
- › Signal Improvements

The fleet replacement has begun and will continue through 2023, increasing the fleet from 218 vehicles to 252. The elimination of older trains will reduce the occurrence of breakdowns, and thus, passengers should experience greater reliability than what they experience today.

5.1.3 Existing Private Transportation Services

There are several Transportation Management Associations (TMAs) that operate private shuttle services from Alewife Station. These TMAs are non-profit organizations that provide alternative transportation to various commercial areas for member organization employees/residents. The Alewife TMA, 128 Business Council, and Middlesex 3 TMA all provide shuttle routes serving the Alewife area and the routes are shown in Figure 5.3.

5.1.4 Existing Shared Mobility Services

There are two available Bluebikes bike sharing stations located nearby the Project Site: (1) Alewife Station at Russell Field (23-docks) and (2) Alewife MBTA at Steel Place (19-docks). As for carsharing services, Zipcar vehicles are available at the Alewife MBTA station and 2400 Massachusetts Avenue (Figure 5.4).

5.1.5 Proposed Vehicular Access and Circulation

A key goal of the site planning was to minimize impacts on neighborhood streets, buses, bikes, and automobiles entering and exiting the MBTA Alewife Station. All Project components including vehicle access/egress to the proposed garage, and truck access to the proposed loading as well as conflicting movements with bicycle and pedestrians either passing thru or accessing the Project's bicycle parking were all key considerations during the planning and formulation of proposed site design.

The Project Site is unique from a transportation perspective in its ability to easily and efficiently access the regional roadway network without traveling on neighborhood streets. In addition to this opportunity, it was also important to maintain multiple access/egress points (as they exist today) that allow circulation in all the directions vehicles may be coming from/travelling to while mitigating any existing or future internal site vehicular cut-through traffic.

Each driveway location was carefully selected with these goals in mind. Driveways on Whittemore Avenue to the west of Seagrave and Alewife Station Access Road are both being maintained, and they will serve all users, including garage traffic, loading, as well as bicycles and pedestrians. Another driveway is also proposed on Whittemore Avenue where the existing surface lot curb-cut exists (between Harrison and Madison Avenue), but this driveway will be restricted for use by emergency use and occasional maintenance activities, as well as bicycles and pedestrians – this driveway will not be used by general users. Harvey Street will be restricted to emergency vehicle access only, and pedestrian and bicycle use. These restrictions were put in place in order to prioritize the separation of vehicles and non-motorists, along with installation of a gate located at the western side of the site loop road off Wittemore Avenue, a gate located at the eastern side of the site loop road at Whittemore Avenue, and a gate at the Harvey Street access point to protect neighborhood roadways from unintended cut-through traffic conditions. Deliveries will be via either the driveway on Whittemore Avenue to the west of Seagrave Road or via Alewife Station Access Road. The locations of the proposed gate locations, and vehicle access is shown graphically in Figure 5.5.

The following analysis assumes that most of the new vehicle trips will access/egress the Project Site via either the Whittemore (west) driveway or the Alewife Station Access Road driveway. Further, it is understood through conversations with the community that the surface lots along Whittemore Avenue were not fully occupied pre-COVID. Understanding that the proximity of these surface lots, and convenience of accessing buildings makes these lots particularly attractive (especially for commuters arriving from Massachusetts Avenue), a small percent (on average between the morning and evening peak hours about 7-10%) of the entering and exiting traffic was assumed to park in these lots with the remaining trips travelling to/from the garage.

5.1.6 Service and Loading

The Project is expected to generate a limited number of delivery trips over the course of a typical day. Typical daily deliveries are expected to include mail and other delivery services, removal of waste, and deliveries from various lab vendors. These types of service activities will be directed to use the loading dock areas on the east side of building 3, or south sides of buildings 4 or 5. The loading docks are designed to accommodate a WB-40 truck. Refer to Figures 5.13 and 5.14 for loading and service plans.

The Project has an estimated truck generation of approximately 36 individual deliveries per day. Daily truck trips were estimated based on the Transportation Research Board's (TRB) *National Cooperative Highway Research Program (NCHRP) Synthesis 298 – Truck Trip Generation Data (Table D-2d – Boston/Office which estimates 0.059 trips per ksf)*. This publication estimates daily truck trip rates, by vehicle size and by land use. Using this methodology, the full-build out of the Project is expected to attract approximately 36 deliveries per day, including a variety of sizes of cars, vans and trucks. Using the same methodology, the net-new uses of the Project Site are only expected to generate approximately 14 deliveries per day.

The loading dock locations were selected based on what would best serve the Project buildings and operations, as well as the location that would create the least impact on the public realm, including impact on proposed pedestrian and bicyclist paths.

5.1.7 Proposed Bicycle and Pedestrian Access

The proposed bicycle and pedestrian pathways are shown graphically in the following figures:

- › Figure 5.6 – the proposed site plan – bike circulation
- › Figure 5.7 – Enlarged site pedestrian circulation
- › Figure 5.8 – Enlarged site bike circulation

The following provides a summary of the critical considerations that played a part in developing the site plan's bicycle and pedestrian pathways:

- › Separation of bicycles and pedestrians (when possible) to create safe pathways for the individual users

Note that throughout the promenade, the presence of bicyclists mixed with pedestrians (during both the beginning and end of their bicycle trips) are expected as a result of the proposed bicycle parking through the Project Site. Signage will be present to require riders to dismount and walk bicycles to the proposed bicycle parking in order to prevent conflicts with bicyclists and pedestrians.

- › Pathways that both serve leisure-users and commuters – where commuter pathways are framed based on desire lines whenever possible to arrive at common destinations like Rindge Avenue of the MBTA headhouse most efficiently.
- › Maintain the legal eastbound bicycle movement through the tunnel (under Alewife Brook Parkway) on Alewife Station Access Road

Though the Project proposes improved, attractive bicycle infrastructure through the site that can be travelled by bicyclists in the future, to avoid travelling eastbound by bicycle through the tunnel, the proponent understands that users often will continue to use desire lines that provide the shortest travel time regardless of the provided infrastructure which is why this movement is maintained

Site planning specifically of the pedestrian and bicycle pathways were developed in coordination with the Alewife Study Group (ASG) and other community input over the course of several months at the beginning of 2021 when the Proponent shared and revised bicycle and pedestrian pathways on the proposed site plans to respond to comments received at several community meetings.

5.1.8 Bicycle and Pedestrian Path Accessibility

The Project includes new bicycle and pedestrian paths within the Development Area that will be available for use by members of the public. Additionally, the Proponent proposes off-site improvements to existing bicycle and pedestrian paths on land controlled by the MBTA and DCR (subject to approval of each agency) as well as pedestrian improvements along Jerry's Pond, which abuts the Development Area to the south. The Proponent will guarantee access for pedestrians and bicyclists through each of the Development Area and Jerry's Pond by means of a permanent easement, covenant, conservation restriction, or other similar legal device acceptable to the City, and subject to commercially reasonable terms and conditions and rules and regulations as may be put in place by the Proponent from time to time. Pedestrian and bicycle access to the improvements on MBTA and DCR controlled property will be subject to the use requirements, and consent, of each agency.

5.1.9 Proposed Transportation Mitigation

5.1.9.1 Transportation Demand Management

The Proponent is committed to minimizing auto travel and encouraging alternative travel modes. The Proponent will support a program of proactive transportation demand management (TDM) actions to reduce single occupancy vehicle (SOV) automobile trips, support carpooling, and encourage the use of transit, biking and walking.

The Project does not trigger PTDM because there is a net-reduction of the overall proposed number of parking spaces and there is no net-increase in the proposed number of parking spaces by parcel. Regardless, the Proponent is still committed to TDM measures that help to support the City's goals for reducing drive alone trips. The following TDM actions are proposed for inclusion in the Project's Special Permit commitments (to be reviewed by the City's PTDM Officer) to encourage Project employees and visitors to use alternative travel modes to SOV (drive alone) travel:

- › Establish membership in the Alewife TMA, which provides employees with the benefit of free access to the shuttle buses operated by the TMA, ride-matching services, and access to emergency ride home to all employees who use alternative commute modes.
- › Require tenants to provide, at a minimum, a 50% transit pass subsidy to employees.
- › Provide a 19-dock Bluebikes Station to support the Project.
- › Provide Bluebikes corporate membership (minimum Gold level) paid by employer for employees who choose to become Bluebikes members.
- › Dedicate preferential carpool/vanpool parking spaces on-site. Monitor the use of the carpool/vanpool spaces to designated additional spaces as needed to satisfy demand.
- › Provide a bicycle repair station, to include air pumps and essential bike repair tools.
- › Designate a Transportation Coordinator for the site responsible for:
 - Aggressively promoting and marketing non-SOV modes of transportation to employees, including posting information on the Project's website, social media, and property newsletters
 - Informing employees about dynamic carpool (ridesharing) services
 - Performing annual transportation surveys
 - Coordinating with the Alewife TMA
 - Providing up to date information to all new employees through a New Employee Packet
 - Responding to individual requests for information

The complete set of proposed TDM actions and strategies will be detailed in the Special Permit package for this Project.

5.1.9.2 Transportation Mitigation

The development area and related site plan include separated bicycle and pedestrian connections. Most importantly a new Linear Path connection from the Minuteman Commuter Bikeway and the Fitchburg Cutoff to the Linear Path using our new service road. In addition, we have improved bicycle and pedestrian circulation across the development area and to and from the MBTA Red Line Alewife Station headhouse.

Outside of the development plan, the Proponent is working on various improvements which will improve bicycle and pedestrian travel beginning at the Alewife Station headhouse. The Proponent has committed to working with the MBTA to provide surface improvements on the Project side of the headhouse.

Also, outside of our development area, the Proponent has also committed to public access improvements to Jerry's Pond (subject to various approvals and land use agreements). There are two components of this that are transportation related: (1) a new pedestrian path that serves as a pedestrian alternative from the linear path from Rindge Avenue to the MBTA Red Line headhouse and (2) widening of the path along Alewife Brook Parkway to the MBTA Red Line headhouse. While the Proponent has not yet finalized the site plan as it relates to Jerry's Pond, the Proponent anticipates that the final site plan for this area will be materially consistent with the conceptual site plan attached to this Application as Figure 1.22 subject to the Applicant's receipt of all entitlements necessary to complete the public access improvements to Jerry's Pond.

The scoping letter from TP&T identified that the Project is located in an area where there is a confluence of transportation issues. Some of these key issues are listed below and addressed:

1. Peak hour and in some cases, all-day traffic congestion on area roadways.
 - *The Proponent proposes to help to mitigate existing and future area traffic congestion through:*
 - *Leveraging and maximizing the Project Site's unique ability to provide efficient and direct access and egress to regional highway connections without making use of the Alewife Brook Parkway or local streets for a significant percentage of its generated traffic.*
 - *We have committed to continuing the prior owner's practice of securing afternoon peak hour commitment to an afternoon peak police detail as available and needed to reduce unwanted cut-through traffic through the Project Site and adjacent neighborhood.*
 - *Ambitious site planning solutions (described further below) to incentivize non-auto commute modes including significant protected new and improved bicycle and pedestrian connections through the Project Site that will more strongly interconnect to other area pedestrian and bicycle infrastructure and transit nodes as well as a proposed Bluebikes station and bicycle parking exceeding the minimum required by Zoning.*
 - *An extensive TDM program (Section 5.1.9) which is expected to incentivize non-auto mode shares which differs significantly from the existing vehicle-centric site.*
2. Cut-through traffic on Whittemore Avenue and complaints about the turning restrictions at the Alewife Brook Parkway/Whittemore Avenue intersections.

- *The Proponent proposes to provide proactive commitments to mitigate cut-through traffic that impacts the adjacent neighborhood, including a police detail at Alewife Brook Parkway/Whittemore Avenue intersection during the evening peak hour to help exiting vehicles (from Whittemore Avenue) and to discourage neighborhood cut-through traffic (which is restricted from travelling eastbound on Whittemore during the afternoon weekday commuter peak traffic period).*
 - *The Proponent will also install access gates that are activated with employee-issued proxy cards to prevent cut-through vehicles internal to the Project Site (see Figure 5.5). These gates would not impede proposed bicycle and pedestrian connections.*
 - *Further, vehicle access at the proposed east and west driveways along Whittemore, and driveway connection at Harvey street will both be gated and available for emergency access only, and occasional site maintenance needs.*
3. Providing accessible, clear, wide, safe and well-maintained access and circulation for public bicycle and pedestrian connections between the North Cambridge neighborhood, Project Site, and key travel corridors, such as Alewife Linear Park, Minuteman commuter bikeway, Jerry's Pond, Fitchburg cut off bike path, MBTA Alewife subway and bus station, connection(s) over the railroad tracks to Fresh Pond Shopping Center, and access and potential improvements to the MBTA Bus #83 stop and turn-around area near Comeau Field.
 - *A carefully planned proposed site plan has been developed by the design team that prioritizes non-auto users and is detailed in the certified TIS within Appendix B. The Project is designed to promote pedestrian and cyclist access to the Project Site and surrounding areas including the multi-modal Alewife Linear Path and the recreational areas south and east of the Project Site. The Promenade connects the Project Site to adjacent uses. Access to this Promenade is limited to pedestrians, bicyclists and emergency vehicles. All buildings have entrances along the Promenade. Building entrances are highlighted with forms, materials and landscape improvements that signal entry and provide clear visibility into the building lobbies. These entrances also reduce the scale of the three-story buildings to a one-story entry portal.*
 - *Additionally, the MBTA #83 bus turn-around at Comeau Field is discussed previously in the certified TIS within Appendix B. VHB has conducted some preliminary turning studies, that confirm the curb cut width does not provide adequate space to accommodate the bus going into the driveway without riding up on the sidewalk. This analysis would require additional study, and coordination between the City and the MBTA. Graphics showing the revised curb to accommodate the MBTA bus turn are provided in Appendix B.*
 4. Dedicated bus lanes and transit priority for the Alewife Access Road Jug handle to Westbound Route 2.
 - *As requested by TP&T, VHB conducted a preliminary assessment of the high-level study conducted by the Boston Region MPO regarding potential implementation of a priority bus lane along the Alewife Access Road jug handle adjacent to the Project Site as part of the certified TIS. A summary of that preliminary assessment is provided in the certified TIS within Appendix B.*
 5. Improvements to the Linear Park crossing at Harvey Street.

- *The Project does not include any work at Linear Park crossing at Harvey Street as this area not controlled by the Proponent. However, the Project creates a gated vehicular access connection at Harvey Street that does provide an opportunity for Harvey Street pedestrians and cyclists to connect to the Linear Park via the Project Site.*
6. Parking supply that meets the Envision Cambridge Alewife District Goals (i.e., market rate parking fees, maximum 0.8 parking spaces per 1,000 square feet).
 - *IQHQ is committed to a development plan that results in a 69 space reduction in parking on-site with the Project completed and fully occupied (as compared to the existing registered conditions). The Project will construct a 350-space parking garage (replacing 350 surface parking spaces) and maintain approximately 214 (of the existing 253) registered surface parking spaces (north of Whittemore Avenue) and approximately 89 (of the existing 119) registered surface parking spaces (south of Whittemore Avenue) to support the Project for a total of 653 parking spaces on-site. In connection with that effort, the Proponent is committed to the development and implementation of proactive TDM measures that will be set forth and adopted as part of their forthcoming PTDM Plan submission. That PTDM Plan will strive to achieve an aggressive employee drive-alone mode share goal per the Envision Cambridge recommendation for the Alewife area district. The plan's TDM program strategies include employee commute incentives, transit pass subsidies, preferential carpool parking spaces, Gold-level Bluebikes bike sharing membership, and a new Bluebikes docking station on the Project Site. However, among the strongest measures to reduce drive-alone trips is a constrained parking supply and market-based parking pricing. Collectively, these measures are intended to support and foster long-term reductions in parking demands.*
 7. Support for non-automobile modes of travel for on-site employees and guests (i.e., Bluebikes bicycle sharing network, 100% transit-pass subsidies, and other transportation demand management measures).
 - *As described previously, the Project is designed to promote pedestrian and cyclist access to the Project Site and surrounding areas including the multi-modal Alewife Linear Path and the recreational areas south and east of the Project Site. The Promenade connects the Project Site to adjacent uses. Access to this Promenade is limited to pedestrians and emergency vehicles. All buildings have entrances along the Promenade. Building entrances are highlighted with forms, materials and landscape improvements that signal entry and provide clear visibility into the building lobbies.*
 - *Further, the Proponent proposes an extensive TDM program (Section 5.1.9) which is expected to incentivize non-auto mode shares which differs significantly from the existing vehicle-centric site. This includes but is not limited to:*
 - *Require tenants to provide, at a minimum, 50% transit pass subsidy to employees.*
 - *Provide a 19-dock Bluebikes to support the Project.*
 - *Provide Bluebikes corporate membership (minimum Gold level) paid by employer for employees who choose to become Bluebikes members.*
 8. Limited width to improve bicycle, pedestrian and transit connections in the culvert that carries the Alewife Access Road under Alewife Brook Parkway.

- *The Proponent has evaluated the feasibility of providing for non-auto users in the culvert underneath the Alewife Brook Parkway. Both the width and the vertical clearance on the outside edges of the roadway provide no reasonable opportunity to achieve this kind of modification with the existing. However, very significant improvements are proposed to and through the Project Site that will create measurable improvements to both pedestrians cyclists travelling to the Project Site, as well as to Alewife Station, and along the Linear Path and Minuteman Bike Trail, and between adjacent nearby residential neighborhoods.*
9. Potential traffic signal at the unsignalized intersection of Steel Place at Alewife Access Road (Route 2 Connector), including transit priority treatment for the future dedicated bus lane on the Alewife Station Access Road.
 - *The Proponent is supportive of the City of Cambridge’s desire to study and possibly implement potential signalization of Steel Place at Alewife Station Access Road including transit priority treatment. The proposed site plan does not impact or change the physical condition or configuration of this intersection and does not preclude the ability to implement this concept in the future. The Proponent is interested in hearing more about the City’s planning initiatives for these ideas.*

5.2 Compliance with Bicycle Parking Requirements

The Project will also be supported by a total of approximately 140 long-term bicycle parking spaces and approximately 44 short-term bicycle parking spaces. This bicycle parking program proposes a quantity of proposed bicycle parking spaces that exceed requirements of city zoning to support the full build-out of the Project. Table 5-1 provides a summary of the required minimum bicycle parking ratios by zoning. Table 5-2 provides a summary of the proposed bicycle parking by building.

Table 5-1 Required Bicycle Parking Ratios Summary

Land Use	Parking Ratios		# of Long-term Bicycle Spaces Required	# of Short-term Bicycle Spaces Provided
	Long Term	Short Term		
Office/R&D	0.22 spaces per 1,000 sf	0.06 spaces per 1,000 sf	137	39
Retail/Amenity	0.10 spaces per 1,000 sf	0.60 spaces per 1,000 sf	1	3
			Total	42

Source: Article 6.107 of the Ordinance

Table 5-2 Summary of Proposed Bicycle Parking

Building #	1	2	3	4	5	28	Total
Long-term spaces (Employees)	Required spaces per zoning are accommodated within Buildings 2, 3, 4, and 5	24	40	38	38	Required spaces per zoning are accommodated within Buildings 2, 3, 4, and 5	140
Short-term spaces (Visitors)	8	6	12	8	10	0	44

Source: Article 6.100 of the Ordinance

Figures 5.9a-5.9g illustrate the location and layout of the long-term and short-term bicycle parking spaces and associated amenities.

In addition, the Project proposes to provide a 19-dock Bluebikes to support the Project.

5.3 Vehicle Parking Analysis

5.3.1.1 Supply

The Project will construct a 350-space parking garage (replacing 350 registered surface parking spaces) and maintain approximately 214 (of the existing 253) registered surface parking spaces (north of Whittemore Avenue) and approximately 89 (of the existing 119) registered surface parking spaces (south of Whittemore Avenue) to support the Project for a total of 653 parking spaces on-site (as summarized in Table 5-3). A net-reduction of 69 parking spaces are proposed in connection with the Project as compared to the Project Site’s current registered parking space count of 722 spaces. Figures 5.10 through 5.12e demonstrates where all parking facilities and capacities will be located and lays out the parking spaces proposed.

Table 5-3 Proposed Parking Spaces

Parking Location	# Parking Spaces
Proposed Parking Garage	350
Existing Surface Lots (to be maintained)	<u>303</u>
Total	653¹

5.3.1.2 Demand

A parking demand analysis was conducted for the Project to compare the City’s off-site parking space requirements per zoning to the expected parking demand based on the anticipated number of employees and automobile mode share (see Table 5-4 below). Both the proposed mode share used in the analysis of this TIS (58% SOV) and the mode share

¹ The Alewife Park site is registered for a total of 722 parking spaces based on TP&T records.

goal stated in the Cambridge Envision Alewife District Plan (40% SOV) are used in the analysis for comparison. For this type of land use development, the expected number of employees is anticipated to total approximately 2.5 employees per 1,000 GFA (which yields a total of approximately 1,538 employees). Applying an automobile mode share of 58% SOV and 2% HOV results in an expected unconstrained parking demand of 908 vehicle spaces. This demand falls below the vehicle parking space maximum in the City of Cambridge’s Vehicle Parking Zoning Ordinance (1,000 spaces) for Special District 3. However, the estimated demand is higher than the number of spaces proposed by the Project.

Table 5-4 Vehicle Parking Requirements for the Project, Based on Different Parking Rates: Expected Vehicle Mode Share; Envision Goal; Zoning Requirements

	Parking Demand		Parking Supply		
	Expected/ Proposed Vehicle Mode Shares (58% SOV, 2% HOV)	Envision’s Alewife Goal Vehicle Mode Shares (40% vehicle mode share)	City of Cambridge Min. Parking Requirement	City of Cambridge Max. Parking Requirement	Parking Provided by Project
Rate	2.5 employees per 1,000 GFA, at mode shares noted above		There is no minimum parking requirement in the SD-3 per Section 17.34.1	1 per 615 GFA	1 per 941 GFA
Parking Spaces	908	615	N/A	1,000 ²	653

City of Cambridge Parking Requirements are stated in the Ordinance (Article 6.36; and Article 17.34 for Special District 3)

1 Based on Alewife Critical Sums (Revised, January 2019) analysis mode share target, Envision Cambridge

2 Includes existing registered accessory parking spaces in lots north of Whittemore Avenue

5.3.1.3 Parking Management

The parking provided by the Project will be restricted to use by the tenant employees and visitors. Spaces will not be available for commercial (public parking) use.

6

Infrastructure

The following narrative describes the existing and proposed infrastructure systems within and surrounding the Project Site and discusses utility requirements for the Project and potential impacts to this infrastructure.

The Project will connect to existing City of Cambridge and private utility company systems in the adjacent public streets. As design progresses, all required engineering analyses will be conducted, and the final design will adhere to all applicable protocols and design standards ensuring that the proposed buildings are properly supported by this infrastructure. Detailed design of the Project's utility systems will proceed in conjunction with the design of the buildings and interior mechanical and plumbing systems.

The systems described herein include those owned or managed by the City of Cambridge Department of Public Works (DPW), Cambridge Water Department (CWD), Eversource Electric, Eversource Gas, private telecommunication systems, and on-site infrastructure. Existing infrastructure systems will be reviewed with the appropriate agencies to ensure that they are adequately sized to accept any increase in demand associated with the Project.

6.1 Sewer and Water Infrastructure

6.1.1 Sanitary Sewer Infrastructure

The Project Site currently hosts existing office, commercial, and warehouse buildings. The Project design anticipates that two office buildings will remain and proposes to construct three new commercial office and laboratory buildings that will include a limited amount of retail and a single above-grade parking structure. In the final condition, the sanitary sewage from these six (6) building structures will be collected within the Project Site and ultimately discharged into the existing 8-inch diameter municipal sewer main within Whittemore Avenue abutting the Project Site.

The Project proposes to maintain two (2) existing buildings along the frontage of Whittemore Avenue, herein described as Buildings 1 and 2. Under current conditions, both respective buildings are independently served by 6-inch diameter sanitary sewer services which connect directly to the 8-inch diameter DPW municipal sewer main within Whittemore Avenue. The Project proposes to maintain these existing services for both Buildings 1 and 2.

Three new buildings (Buildings 3, 4, and 5) to be used primarily for commercial office and lab uses are proposed as part of the Project, as described in further detail in Chapter 1, *Project Description*, and shown on Figure 1.7. Building 3 fronts Whittemore Avenue and Buildings 4 and 5 are set back within the Project Site. The proposed parking garage structure is set back from Buildings 4 and 5. Buildings 3, 4, and 5 anticipate the installation of new sewer infrastructure to Whittemore Avenue, along with a lab waste line serving the lab uses due to the presence of a pH neutralization system within the buildings. The new waste lines for the respective lab buildings will connect to the on-site 8-inch sanitary sewer main at a proposed sewer manhole structure for access purposes. The proposed garage structure anticipates sanitary sewer service only.

Building 3 will be served directly by the 8-inch municipal sanitary sewer within Whittemore Avenue abutting the building frontage, similar to Buildings 1 and 2. Buildings 4 and 5 and the garage structure are proposed to be served by an on-site 8-inch sanitary sewer main. This on-site sewer main anticipates connection to the DPW 8-inch sewer main within Whittemore Avenue via gravity, adjacent to Buildings 2 and 3 in the vicinity of Kimball Street.

The Project's sanitary sewer generation has been estimated using design sewage flow rates obtained from 310 CMR 15.000: Septic Systems ("Title 5"). The following flow criteria has been evaluated for existing and proposed anticipated gallons per day (GPD) of sanitary sewer usage:

- › 75 GPD per 1,000 SF for Office
- › 200 GPD per 2,000 SF of Lab
 - This is an assumed rate based on similar Cambridge area projects
- › 75 GPD per 1,000 SF for Back-of-House
- › 50 GPD per 1,000 SF for Retail

The Project proposes to generate approximately 87,912 GPD of sanitary sewer compared to 28,650 GPD within the existing condition, totaling a net increase of approximately 59,262 GPD of sanitary sewer generation for the proposed development. The estimated sanitary sewer generation is summarized by building in Table 6-1 below.

Table 6-1 Preliminary Sanitary Sewer Generation

Proposed Program	Unit/Area	DEP Category	Generation Rate*	Total Generation (GPD)
Building 1				
Lab	26,137 SF	Lab**	200 GPD / KSF	5,227
Office	32,100 SF	Office Building	75 GPD / KSF	2,408
Lobby/BOH	26,415 SF	Office Building	75 GPD / KSF	1,981
Retail	0 SF	Retail Store	50 GPD / KSF	0
Fitness	20 Lockers	Lockers & Showers	20 GPD / Locker	<u>400</u>
Building 1 Total				10,016
Building 2				
Lab	53,273 SF	Lab**	200 GPD / KSF	10,655
Office	36,848 SF	Office Building	75 GPD / KSF	2,764
Lobby/BOH	9,469 SF	Office Building	75 GPD / KSF	710
Retail	0 SF	Retail Store	50 GPD / KSF	0
Fitness	22 Lockers	Lockers & Showers	20 GPD / Locker	<u>440</u>
Building 2 Total				14,568
Building 3				
Lab	80,100 SF	Lab**	200 GPD / KSF	16,020
Office	53,400 SF	Office Building	75 GPD / KSF	4,005
Lobby/BOH	11,908 SF	Office Building	75 GPD / KSF	893
Retail	3,500 SF	Retail Store	50 GPD / KSF	175
Fitness	30 Lockers	Lockers & Showers	20 GPD / Locker	<u>600</u>
Building 3 Total				21,693
Building 4				
Lab	74,100 SF	Lab**	200 GPD / KSF	14,820
Office	49,400 SF	Office Building	75 GPD / KSF	3,705
Lobby/BOH	10,932 SF	Office Building	75 GPD / KSF	820
Retail	0 SF	Retail Store	50 GPD / KSF	0
Fitness	30 Lockers	Lockers & Showers	20 GPD / Locker	<u>600</u>
Building 4 Total				19,945

Table 6-1 Preliminary Sanitary Sewer Generation (Continued)

Proposed Program	Unit / Area	DEP Category	Generation Rate*	Total Generation (GPD)
Building 5				
Lab	81,071 SF	Lab**	200 GPD / KSF	16,214
Office	54,048 SF	Office Building	75 GPD / KSF	4,054
Lobby/BOH	10,945 SF	Office Building	75 GPD / KSF	821
Retail	0 SF	Retail Store	50 GPD / KSF	0
Fitness	30 Lockers	Lockers & Showers	20 GPD / Locker	<u>600</u>
Building 5 Total				21,689
Existing Buildings				
To Remain	184,000 SF	Office Building	75 GPD / KSF	13,800
To Be Demolished	198,000 SF	Office Building	75 GPD / KSF	<u>14,850</u>
Existing Buildings Total				28,650
Total Flow				87,912
Existing Sewer Flow				28,650
Net New Sewer Flow				59,262
Proposed Water Demand***				96,703

* 314 CMR7.00 Sewer System Extension and Connection Permit Program.

** Assumed lab use rate.

*** Proposed water demand based on estimated sewage generation with an added factor of 10 percent for consumption.

**** **All square footages are approximate and may be re-allocated between buildings**

The sanitary sewer generation threshold for local Cambridge DPW Inflow/Infiltration (I/I) mitigation is 15,000 GPD. The Project anticipates continued discussions with Cambridge DPW regarding identifying an applicable I/I mitigation project for the development. The Project anticipates identifying the applicable mitigation project during the Stormwater Control Permit (SWCP) process, with the construction of this mitigation project anticipated to be complete prior to issuance of a final Certificate of Occupancy (COO) for a building that will contain new flow in excess of 15,000 gallons per day. Refer to Figures 6.1 and 6.2 for details of existing and proposed infrastructure for the Project.

6.1.2 Water Service Infrastructure

In the existing condition, domestic water service for Buildings 1 and 2 are directly served by the 12-inch water main within Whittemore Avenue. Domestic water service for both buildings is anticipated to remain in the final condition. In addition, the Project Site currently contains a small 2-story structure adjacent to Harvey Street, which is understood to contain

an existing fire pump that supports fire protection services for the existing buildings. This existing structure and fire pump will be demolished and abandoned in the final condition.

The Project anticipates the installation of a new 12-inch diameter private water main loop, making connections to CWD infrastructure within Whittemore Avenue and Harvey Street. This proposed on-site water main loop is intended to replace the existing water loop, with existing connections to be cut and capped in accordance to CWD standards.

The estimated domestic water demand for the Project is based on the projected new approximate daily wastewater of for the Project. As shown in Table 6-1 above, the Project's approximate domestic water demand is 96,703 GPD.

Domestic water service will be provided to Buildings 3, 4, and 5, and the proposed parking garage via the private water main proposed within the Project Site. Redundant services for each individual building will be provided in addition to operable gate valves, which will provide redundancy to the looped water main.

The Project will also require fire protection services, which will tie into the same private water main loop that will supply domestic water service. These fire protection services will include gate valves and redundant services as required by the CWD and Cambridge Fire Department (CFD). Prior to construction, hydrant flow tests will be completed on various fire hydrants adjacent to and within the Project Site to verify adequate flow and pressure for the Project's sprinkler systems. The Project will provide all new site hydrants in replacement of existing site hydrants, as required by the CWD and CFD.

The proposed water meter room locations will be closely coordinated with CWD during final design. All water meter rooms are intended to be located adjacent to the building façade, with all new water meters abutting the building wall, as required by CWD. New water meters will be screened from neighboring uses.

The Applicant will work with CWD on the development of the Project design and submit plans for formal approval prior to the issuance of the Building Permit for the Project. Refer to Figures 6.1 and 6.2 for existing and proposed infrastructure for the Project.

6.2 Stormwater Management

Under existing conditions, the northern portion of the Project Site is developed and predominantly covered by impervious surfaces comprised of building roof areas and surface parking lots. The existing site contains natural open space within the southern portions of the Project Site, adjacent to the MBTA headhouse and Russell Field. The City of Cambridge owns the adjacent Russell Field parcel to the east, which is approximately 8.5-acres of watershed that discharges to the Project Site via two existing stormwater outfalls. Stormwater runoff from the existing Russell Field watershed is expected to be maintained within the proposed condition of the Project Site via surface conveyance through a proposed stormwater swale to the south of the proposed garage structure, discharging from the Project Site at an existing stormwater swale adjacent to the Alewife Station Access Road through an existing stormwater pumphouse structure. Furthermore, Jerry's Pond, an existing water feature in the southern portion of the Project Site, and the adjacent City of Cambridge

owned Comeau Field parcel discharge approximately 13.5-acres of watershed through the Project Site via the Alewife Station Stormwater Management Facility north of the MBTA headhouse. This watershed is also expected to be maintained within the final condition.

The existing buildings on the Project Site do not contain any form of known stormwater management in the existing condition. Stormwater is conveyed via enclosed pipe roof conduit through the existing 24-inch City of Cambridge owned storm drain within a 15-ft wide sewer easement through the Project Site. All existing tributary drainage within this 24-inch storm drain has appeared to have been previously abandoned through Harvey Street, based on available record plans. The portion of this 24-inch storm drain within the Project Site within the 15-ft sewer easement is intended to be removed and abandoned in the final condition. The Project will coordinate this abandonment with DPW through design and the SWCP process.

The proposed stormwater management system will be designed to comply with the City of Cambridge standards and the MA DEP Stormwater Management Policy for new construction projects. This includes the management of stormwater for the difference between the 2-year 24-hour pre-construction runoff hydrograph and the post-construction 25-year 24-hour runoff hydrograph. The Project proposes to achieve this goal by implementing natural stormwater management and the use of supplemental subsurface detention and/or stormwater infiltration systems, as allowed by the existing on-site subsurface conditions.

The Project anticipates evaluating storm events using rainfall volumes based on the National Oceanic and Atmospheric Administration (NOAA) Atlas Type III, 24-hour storm event for Boston (Station – Boston Logan International Airport). Local Cambridge rainfall depths may be evaluated for the year 2030 and/or the year 2070 storm events, as requested by Cambridge DPW.

Under proposed conditions, the Project Site will not produce changes in either the pattern of or rate of stormwater runoff. Stormwater management controls will be established in compliance with DPW standards. The Project is not designed to result in the introduction of any peak flows, pollutants, or sediments that would potentially impact the receiving waters of the local municipal stormwater drainage system.

For the current design, the proposed building and garage roof areas will discharge through subsurface detention systems designed to reduce peak stormwater rates. Stormwater infiltration systems will be located on the Project Site where existing conditions allow for groundwater recharge. Stormwater infiltration will promote groundwater recharge and reduce stormwater peak rates and volumes, in addition to reducing total phosphorus load from the Project Site.

The final design will incorporate facilities to reduce phosphorus on-site by 65 percent compared to the existing conditions, in compliance with DPW standards. These facilities may include added pervious area such as green roofs, stormwater infiltration systems, stormwater bio-retention areas, and/or proprietary water quality structures designed to remove total phosphorus from stormwater discharge. The Project will implement stormwater Best Management Practices (BMPs) in conformance with DEP's Stormwater Management Standards.

The Project's construction documents will include measures and specifications regarding erosion and sediment controls and barriers (e.g. silt fence, silt sacks). Construction dewatering discharges will be appropriately controlled and discharged in accordance with National Pollutant Discharge Elimination System (NPDES) and state and local dewatering standards.

The Project anticipates detailed design review with DPW throughout the design process. The detailed stormwater management report is anticipated to be coordinated with DPW throughout final design and submitted in part to the SWCP process, prior to Building Permit submission.

6.2.1 Compliance to Article 20:70 - Floodplain Overlay District

Based on a review of the Federal Emergency Management Agency (FEMA) maps and current topographic information, a portion of the Project Site is located within the limits of the Special Flood Hazard Area designated as Zone AE according to the Middlesex County Flood Insurance Rate Map (#25017C0419E dated June 4, 2010) issued by FEMA. This flood elevation is defined by FEMA as elevation +7.1' NAVD88 datum. This narrative serves to summarize the anticipated impact on the floodplain, as identified in the City of Cambridge Zoning Article 20.70 – Floodplain Overlay District.

The current 100-year flood elevation is +18.76' Cambridge City Base (CCB) datum. This elevation has been depicted within the Project Site existing conditions plans based upon a field survey performed by Feldman Land Surveyors from February to December 2020. The 100-year flood elevation limit based on field-measured elevations varies from the limits shown on the FEMA mapping. For the purposes of this narrative, impacts are measured based on the surveyed current 100-year flood elevation of +18.76' CCB.

Under existing conditions, the Project Site is previously developed with existing building roof areas and impervious surface parking areas. Existing open space areas are present within the Project Site, which will be maintained to the maximum extent in the final condition. Under proposed conditions, the Project will aim to limit the area disturbed to previously disturbed areas to the extent commercially possible for the redevelopment. This limit of development is intended to mitigate impacts to the current existing open space areas.

As indicated below with Table 6-2 below, the Project is currently proposing a net increase of pervious surface area in the final condition within the Project Site. The final impervious and pervious area quantities will be submitted to the Cambridge Conservation Commission as part of the Notice of Intent (NOI) for the Project.

Table 6-2 Preliminary Impervious and Pervious Areas

Cover Type	Existing Condition (SF)	Proposed Condition (SF)	Delta (SF)
Permeable Paver Area	0	41,000	(+) 41,000
Open Space Area	373,400	386,600	(+) 13,200
Pavement Area	307,800	186,000	(-) 121,800
Building Area	<u>171,600</u>	<u>239,200</u>	(+) 67,600
Total Area	852,800	852,800	-0-

The proposed site grading will be designed to mitigate impacts to the existing flood storage volume, while providing resiliency to the Cambridge 2070 flood elevations described within Section 6.2.2.

The portion of the Project Site within the floodplain is primarily open space area set back from the existing buildings along Whittemore Avenue. A portion of this area collects and conveys stormwater from Russell Field, which is tributary to the Project Site. Additionally, an existing man-made settling basin exists immediately east of the MBTA headhouse at approximately elevation 20.0 CCB.

The Project proposes a vehicular access road which serves as a general dividing line from the proposed redevelopment areas towards the northern portion of the Project Site and the existing open space areas towards the southern portion of the Project Site. A portion of the proposed garage structure has been located within this existing open space area. The lobby of the garage structure is proposed to be set to elevation 23.0 CCB to meet the Cambridge 2070 100-year flood elevation. Below a portion of the garage structure, existing topography, ranging from 17.5-19.0 CCB, will be maintained to allow for compensatory flood storage beneath this structure. Additionally, a portion of the raised earthen berms associated with the existing man-made settling basin will be removed and the area regraded to allow for additional flood storage at this location.

As currently proposed, the project is generally consistent with the requirements of the City of Cambridge Zoning Article 20.70 – Floodplain Overlay District. The Project intends to finalize these specific details in coordination with the Cambridge Conservation Commission for the Notice of Intent (NOI) intended to be submitted during Summer 2021.

6.2.2 Cambridge 2070 Resiliency

The City of Cambridge has developed the Climate Change Preparedness & Resilience Plan (CCPR), which is intended to commit to prepare the community for impacts to anticipated climate change. In part to the CCPR, the City has developed an online FloodViewer (v2.1), which provides anticipated flood event elevations for the year 2070.

The Project team has reviewed the 2070 resiliency elevations within the Cambridge FloodViewer for both Precipitation and Sea Level Rise / Storm Surge (SLR/SS). In review of the existing Project Site, the current 2070 10-year storm event is equal to elevation 22.0 CCB,

and the 2070 100-year storm event ranges from elevation 22.5 to 22.8 CCB. Considering both elevations are relatively similar, the Project anticipates designing all new buildings towards and being resilient to the 2070 100-year storm event elevation of 22.8 CCB, which is greater than the current DPW design requirements.

The Project is designed to set all proposed building Finished Floor Elevation's (FFE's) to elevation 23.0 CCB, allowing for a few inches of freeboard from the 2070 100-year elevation of 22.8 CCB. This elevation will allow for the proposed Buildings 3, 4, and 5 to be resilient towards the 2070 100-year storm elevation. Additionally, critical infrastructure such as electric switchgear and transformers will be raised to a minimum of elevation 22.8 CCB on the Project Site or within the proposed buildings.

At locations where it will not be feasible for the Project to meet the 2070 100-year flood elevation, such as existing Buildings 1 and 2 and proposed loading docks, temporary deployable flood measures will be installed to provide additional resiliency at critical locations.

6.3 Other Utilities

In addition to sanitary sewer, water service and stormwater management infrastructure, each proposed building within the Project Site will also require natural gas, electrical, and telecommunication services, which are available adjacent to the Project Site.

The design team will work with the respective private utility providers on sizing and configuration of services. The design of these utilities will be included on the DPW and CWD permit drawings to ensure that the work is coordinated as part of the public review process.

6.3.1 Natural Gas Service

Natural gas service is provided by Eversource Energy near the Project Site. The existing natural gas service includes a 12-inch main in Whittemore Avenue and a 4-inch main in Harvey Street. There are two existing service connections to the Project Site from the 12-inch main in Whittemore Avenue. The 4-inch main in Harvey Street is capped as it approaches the Project Site.

The Project proposes to connect to the 12-inch main in Whittemore Avenue and provide an internal natural gas line within the Project Site to provide service to Buildings 3, 4, and 5. This internal natural gas line will also provide a connection to the existing 4-inch main in Harvey Street. The existing natural gas services for Buildings 1 and 2 will be maintained.

The total estimated natural gas demand for the Project based on the current building program is approximately 199,200 CFH. Each building will require multiple gas meters for infrastructure and future tenant load. The gas meters will be located against an exterior wall for each building.

As the energy system designs for the proposed buildings are further developed, the Proponent will coordinate service connection locations and system requirements with Eversource Energy to ensure adequate capacity for natural gas service is available for the

Project. Final design and installation of natural gas services will similarly be coordinated with Eversource Energy.

6.3.2 Electrical Service

Electrical service is provided by Eversource Energy near the Project Site. Underground electrical service is available in Harvey Street. However, underground electrical service is not available in Whittemore Avenue; only overhead service appears to exist based on record survey information. Electrical service to the Project Site is currently provided from the underground service in Harvey Street.

The Project proposes to connect to the existing underground electrical service in Harvey Street. A new 13.8 kV ductbank will be provided from Harvey Street and run internally through the Project Site to provide electrical service to existing Buildings 1 and 2 and proposed Buildings 3, 4 and 5. In addition, a separate 4 kV ductbank will be provided for the proposed Garage.

The total estimated electrical demand for the Project based on the current building program is approximately 17,800 kVA connected. Electric vaults will be provided within Buildings 3, 4 and 5 to house transformers and switchgears. Similarly, existing Building 2 will be renovated to provide an electric vault room. The existing electric vault for Building 1 will remain. Lastly, a pad mounted exterior transformer will be provided for the Garage.

As the electric system designs for the Project are further developed, the Proponent will coordinate service connection locations and system requirements with Eversource. On-site transformer facilities are required and will be subject to design and construction approval from Eversource. Final design and installation of electric services and components will similarly be coordinated with Eversource.

6.3.3 Telecommunications

Record survey information indicates that overhead telecommunication service is available in Whittemore Street. Further research and coordination with the private telecommunication providers is required to confirm available existing service in the area.

The Proponent will select private telecommunications companies to provide telephone, cable TV and data services. Upon confirmation of providers, the Proponent will coordinate service connection locations and system requirements and obtain appropriate approvals.