LEC WETLANDS WILDLIFE WATERWAYS

Bylaw Notice of Intent Application

September 16, 2022

Subject Property

1021 and 1025 Massachusetts Avenue

Parcel IDs: 55-2-19 and 55-2-20

Arlington, Massachusetts

Applicant

MAJ Investment, LLC

Matthew P. Maggiore, Contact

13 Wheeling Avenue

Woburn, MA 01801

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LEC WETLANDS WILDLIFE WATERWAYS

September 16, 2022

Electronic Delivery

Arlington Zoning Board of Appeals
23 Maple Street
Arlington, MA 02476

Re: Bylaw Notice of Intent Application [LEC File #: TMCo\21-334.02]
Comprehensive Permit Application
1021 and 1025 Massachusetts Avenue
Parcel IDs: 55-2-19 and 55-2-20
Arlington, Massachusetts

Dear Members of the Conservation Commission:

On behalf of the Applicant, MAJ Investment, LLC (Matthew P. Maggiore, Contact), LEC Environmental Consultants, Inc., (LEC) is filing the enclosed Bylaw Notice of Intent (NOI) Application with the Arlington Zoning Board of Appeals (ZBA) as part of a Comprehensive Permit Application being filed under M.G.L. c. 40B. The project includes demolition of two (2) structures and associated driveways, parking lots, and site appurtenances, and construction of a 50-unit, 5-story affordable housing condominium building with ground-level parking garage and retail space. Portions of the proposed project are located within the outer portion of Riverfront Area associated with Mill Brook. Site grading, a retaining wall, erosion controls, invasive species management and native revegetation, establishment of a meadow, and stormwater management are proposed.

This NOI Application is being filed with the ZBA under the *Town of Arlington Wetlands Protection Bylaw* (Article 8, the *Bylaw*) and its implementing *Wetlands Protection Regulations* (March 1, 2018, the *Bylaw Regulations*) under the Comprehensive Permit process.

Thank you for your consideration of this NOI Application. We look forward to discussing the project further during the ZBA Comprehensive Permit review process. Should you have any questions, please do not hesitate to contact me in our Wakefield office at 781-245-2500 or at rkirby@lecenvironmental.com.

Sincerely,

LEC Environmental Consultants, Inc.

Richard A. Kirby
Senior Wetland Scientist

cc: MAJ Investment, LLC; Paul Feldman, Attorney; 1021 Massachusetts Avenue, LLC; Johnathan M. Nyberg & Sara Q. Dolan; Patriot Engineering

Notice of Intent Report

Appendices

1. Introduction

On behalf of the Applicant, MAJ Investment, LLC (Matthew P. Maggiore, Contact), LEC Environmental Consultants, Inc., (LEC) is filing the enclosed Bylaw Notice of Intent (NOI) Application with the Arlington Zoning Board of Appeals (ZBA) as part of a Comprehensive Permit Application being filed under M.G.L. c. 40B. The project includes demolition of two (2) structures and associated driveways, parking lots, and site appurtenances, and construction of a 50-unit, 5-story affordable housing condominium building with ground-level parking garage and retail space. Portions of the proposed project are located within the outer portion of Riverfront Area associated with Mill Brook. Site grading, a retaining wall, erosion controls, invasive species management and native revegetation, establishment of a meadow, and stormwater management are proposed.

This NOI Application is being filed with the ZBA under the *Town of Arlington Wetlands Protection Bylaw* (Article 8, the Bylaw) and its implementing *Wetlands Protection Regulations* (March 1, 2018, the Bylaw Regulations) under the Comprehensive Permit process.

Patriot Engineering has prepared the *1021 & 1025 MASSACHUSETTS AVENUE (1021 ASSESSORS MAP 55 LOT 19) (1025 ASSESSORS MAP 55 LOT 20) COMPREHENSIVE PERMIT PLAN SET LOCATED IN ARLINGTON, MA* dated September 19, 2022 (*Plan Set*) showing the existing and proposed conditions, and the *Stormwater Management Report* dated September 9, 2021. Kyle Zick Landscape Architecture has prepared the *Draft Construction Document Set* for the native woodland dated September 8, 2022 (*Planting Plan*). All of these documents are being provided to the Arlington ZBA under separate cover as part of the Comprehensive Permit Application.

2. General Site Description

The 47,085± square foot property contains two lots located along the north side of Massachusetts Avenue, between Arlington Heights and the Arlington High School, and directly across from the Massachusetts Avenue intersection with Orchard Place. Commercial and residential development generally surround the property on all sides,

with apartment/condominium buildings located east and west of the site along Massachusetts Avenue and Brattle Street.

Northerly views of 1021 (top) and 1025 (bottom) Massachusetts Avenue structures and associated parking lots

The property contains two (2) 3-story, wood-framed structures situated along Massachusetts Avenue, both with paved driveways extending northerly from Massachusetts Avenue toward paved parking lots situated north of the site structures. Impervious walkways provide access to the front entrances, and lawn and landscaping generally surround the structures and pavement. Roughly the northern half of the property is undeveloped, containing a wooded upland located within the Riverfront Area to Mill Brook. Site topography descends northerly, with gently sloping topography extending through the northern and southern portions of the site, and a comparatively steep topographic slope bifurcating the property in an east-west direction.

Westerly view of wooded upland within northern portion of site

Easterly view of parking lot separating site from Mill Brook

Scattered trash and debris within wooded upland

The wooded upland is separated from Mill Brook by a parking lot associated with an adjacent apartment complex, and dominated by invasive/exotic plants, including a canopy of Norway maple (*Acer platanoides*), and an understory of sapling Norway maple, burning bush (*Euonymus alatus*), and tartarian honeysuckle (*Lonicera tartarica*). The groundcover contains dense patches of ivy (*Vinca* sp.) and scattered patches of garlic mustard (*Alliaria petiolatta*). Scattered piles of landscape debris and trash occur throughout the woodland.

Utilizing a hand-held, Dutch-style soil auger, LEC inspected soil conditions within the wooded upland, and observed a 20+ inch thick, gravelly loamy sand fill layer (C Horizon) with a soil matrix color ranging between 10YR 2/2 and 3/3. No redoximorphic features or other indicators of hydrology were observed in the soil profile, and is not considered hydric according to the *Field Indicators for Identifying Hydric Soils in New England* (Version 4, April 2019, the *Field Indicators Guide*).

2.1 Natural Heritage and Endangered Species Program Designation

According to the 15th Edition of the *Massachusetts Natural Heritage Atlas* (effective August 1, 2021) published by the Natural Heritage & Endangered Species Program (NHESP), no areas of Estimated Habitats of Rare Wildlife or Priority Habitat of Rare Species, or Potential or Certified Vernal Pools exist on the site (Appendix A, Figure 3).

2.2 Floodplain Designation

According to the June 4, 2010 *Federal Emergency Management Agency Flood Insurance Rate Map* for Middlesex County, Massachusetts (Map No: 25017C0416E), the entire property is located within Zone X (not shaded): – *Areas determined to be outside the 1% Annual Chance Floodplain* (Appendix A, Figure 2). According to the FEMA FIRM, Zone AE occurs north of the property adjacent to Mill Brook, roughly between elevations 73 and 74 (Datum: NAVD 88). The lowest elevation on the subject property is elevation 82 (NAVD 88), well above the Zone AE elevation. Accordingly, the site is not located within Bordering Land Subject to Flooding.

3. Wetland Resource Areas

LEC conducted a site evaluation on October 15, 2021 to identify and characterize existing protectable Wetland Resource Areas located on or immediately adjacent to the site, and to accompany the project surveyor to locate the Bank-Mean Annual High Water (MAHW) Line associated with Mill Brook. The extent of Wetland Resource Areas was determined through observations of existing plant communities and hydrologic indicators in accordance with the *Massachusetts Wetlands Protection Act* (the *Act,* M.G.L. c. 131, s. 40), its implementing Regulations (the *Act Regulations,* 310 CMR 10.00) *Regulations*, the *Bylaw,* and the *Bylaw Regulations*.

Based on these methods and review of pertinent maps, LEC determined that the Bank-MAHW Line to Mill Brook occurs north of the property, placing Riverfront Area on roughly the northern half of the property. No Bordering Vegetated Wetlands (BVW) were observed on or within 100 feet of the subject property.

3.1 Bank-Mean Annual High Water

Easterly view of Mill Brook north of the site

According to Section 4 of the *Bylaw Regulations: BANK - shall be defined as the portion of the land surface which normally abuts and confines a water body, often between the mean annual low flow level and the first observable break in the slope or the mean annual flood level, whichever is lower;*

The Bank boundary associated with Mill Brook is consistent with the Bank-Mean Annual High Water (MAHW) Line as defined in the *Massachusetts Wetlands Protection Act Regulations* (*Act Regulations* 310 CMR 10.00), and was determined through observation of multiple corroborating Bankfull Indicators, including scouring, wrack deposition, stain, changes in vegetation, and a relatively distinct separation between predominantly aquatic and terrestrial land. LEC met with the project surveyor on October 15, 2021 to provide instruction regarding the location of the Bank-MAHW boundary, which occurs along the top of slope containing Mill Brook. An MWRA sewer line occurs adjacent to Mill Brook.

3.2 Riverfront Area

Riverfront Area to Mill Brook

According to Section 4 of the *Bylaw Regulations, RIVERFRONT AREA shall mean the area of land between a river's mean annual high water line and a parallel line measured 200 feet horizontally landward of the mean annual high water line.*

Riverfront Area includes land within 200 feet of the Bank-MAHW line associated with Mill Brook and encompasses roughly the northern half of the property. This 20,429± square foot area includes the wooded uplands, and 2,517± square feet of the paved parking lot associated with 1021 Massachusetts Avenue which is considered 'Degraded' in accordance with the *Act Regulations* at 310 CMR 10.58 (5).

4. Proposed Activities

The Applicant proposes to demolish the existing structures, pavement, and associated site appurtenances, and construct a 50-unit, 5-story affordable housing condominium building, with ground-level parking and retail space. The 25,017± square-foot structure will measure 137 feet wide and 183 feet long. Living space will be provided on floors 2 through 5, and the 5th floor will be set back from the building façade to mitigate the massing of the structure, so it will appear more as a 4-story building from the ground.

A single vehicle entrance to the ground-level parking (53 spaces) from Massachusetts Avenue is proposed along the western portion of the front building façade, and a paved walkway will extend from the sidewalk to the retail space situated within the southeastern portion of the building. A paved walkway extends from the rear of the structure toward Massachusetts Avenue along the western property boundary for fire access and safety.

The garage floor elevation will be set at Elevation 99.5, near the elevation of the existing sidewalk along Massachusetts Avenue. Fill will be required beneath the structure to carry this elevation toward the rear of the structure and to accommodate a stormwater infiltration system proposed off the rear of the structure. The land above the stormwater management system slopes away from the structure, and a retaining wall measuring up to 7 feet high is proposed to minimize site grading and preserve as much of the wooded Riverfront Area as possible.

5. Mitigation Measures

The Applicant intends to implement erosion controls to protect adjacent properties during construction, provide stormwater management, provide Riverfront restoration and enhancement by creating a native woodland, establish a meadow, and install a green roof and cool roof as part of the proposed project. These mitigating measures are intended to meet or exceed the regulatory requirements enumerated in the *Act Regulations* and *Bylaw*

Regulations to promote climate resiliency in accordance with the *Bylaw Regulations.* A description of each of these mitigating measures is provided below.

5.1 Erosion and Sedimentation Control

The Applicant proposes to implement an erosion control program to protect Mill Brook and adjacent properties from sedimentation and maintain surface water quality during construction activities. The plan for the control of potential impacts to the adjacent Wetland Resource Areas is based on DEP guidelines and will be comprised of staked compost filter tubes along the Limit-of-Work line. All erosion control measures will remain in place and maintained in good working order until disturbed areas are stabilized by vegetation. The location of the proposed erosion controls and a detail are shown on the *Site Plan*.

5.2 Stormwater Management

Under existing conditions, no stormwater management measures are in place to attenuate peak rates and volumes of stormwater runoff flowing from the roof areas and pavement. All stormwater run-off flows untreated toward the woodland comprising the northern portion of the property. The project engineer, Patriot Engineering, has designed a comprehensive stormwater management system that meets the Town of Arlington and MassDEP standards. The Applicant proposes to install a single subsurface infiltration system to collect and infiltrate stormwater run-off from the proposed structure as depicted on the *Site Plans.* The *Stormwater Management Report* contains the DEP Stormwater Checklist, supporting calculations, and an *Operation and Maintenance Plan*, and demonstrates that peak rates and volumes of stormwater run-off will be maintained or reduced for the 2, 10, 50, and 100-year statistical storm events. The system has been designed using the Extreme Precipitation Tables for the Northeast Regional Climate Center (Cornell University), in an effort to promote climate resiliency associated with the project.

5.3 Riverfront Area Restoration and Enhancement

The Applicant proposes to remove invasive species and install native shrubs and groundcover plants within the roughly 7,700 square-foot wooded Riverfront Area to remain; and establish a 6,000± square-foot meadow north of the proposed structure, above and adjacent to the stormwater infiltration system, as further described below.

5.3.1 Invasive Species Management and Revegetation

As described above, the 7,700 square foot woodland within the northern portion of the site contains almost entirely invasive/exotic plants and contains scattered trash and debris. The Applicant proposes to remove the invasive canopy and understory, remove piles of fill material and trash/debris, re-grade and replant the area to create a native woodland, as depicted on the *Planting Plan*. The native woodland will contain a diversity of native deciduous and evergreen trees (58 total), shrubs (110 total), and tree seedlings (60 total). The proposed woody plants will be planted at various stages of growth, ranging from 4-foot-high seedlings to saplings measuring up to 12' tall and/or with calipers measuring 1 to 2 inches. The intent of this variability is to create a wooded landscape that mimics a natural woodland where trees, saplings, and shrubs of various sizes and age provide a diverse vegetated landscape. The groundcover will be seeded with *Partially Shaded Roadside Mix* available from Ernst Conservation Seeds (or native equivalent) to provide a native, stabilizing groundcover. A stone dust path way will provide access from the building through the woodland for residents.

The restored woodland will be monitored for two (2) growing seasons by a qualified wetland scientist to document restoration success, identify any re-growth of invasive/exotic plants to be managed, and/or identify any re-planting efforts required due to mortality. The wetland scientist shall prepare annual monitoring reports describing the success of the restoration effort and any required management efforts, and representative site photographs, and will submit these reports to the Commission by October 31.

5.3.2 Meadow

A native meadow measuring 6,000± square feet will be established by seeding the altered land off the rear of the structure with the *shall be seeded with a 50/50 mixture of the Conservation Shade Mix and Partially Shaded Area Roadside Mix,* both available from Ernst Seeds. The Applicant recognizes that sunlight penetration for the area adjacent to the proposed structure will be limited, which is why shade-tolerant seed mixtures are proposed. Once established, this meadow will be mowed once annually in the fall after October 15 to promote seed dispersal and inhibit establishment woody invasive plants. Signage will be posted off the northeastern and northwestern building corners indicating the meadow is to be mowed once annually in the fall after October 15.

5.4 Green Roof and Cool Roof

The Applicant is committed to promoting climate resiliency for the project by establishing and maintaining green roof and cool roof spaces for the entire roof area. Common outdoor space (a courtyard) is provided on the 2nd story roof, roughly 40% of which will be a green roof vegetated with sapling trees, perennials, ferns, and grasses, including:

Trees:
Sweetbay Magnolia (*Magnolia virginiana*)
Flowering Dogwood (*Cornus florida*)
Eastern Redbud (*Cercis canadensis*)
Shadblow/Serviceberry (*Amelanchier canadensis*)

Shrubs:
Inkberry (*Ilex glabra*)
Creeping juniper (*Juniperus communus*)
Red twig dogwood (*Cornus sericea*)
Lowbush blueberry (*Vaccinium angustifolium*)

Perennials, Grasses, and Ferns:
Black-eyed Susan (*Rudbeckia hirta*)
Purple Coneflower (*Echinacea purpurea*)
Wild Blue Lupine (*Lupinus perennis*)
Wild Bergamot (*Monarda fistulosa*)
Switchgrass (*Panicum virgatum*)
Fescue (*Fetusca* sp.)
Broom Sedge Bluestem (*Andropogon virginicus*)
Sedum (*Sedum* sp.)
Christmas Fern (*Polystichum acrostichoides*)
Maidenhair Fern (*Adiantum pedatum*)

The remaining roughly 60% of the courtyard will comprise of a combination of wood (ipe) decking and light-colored pavers. The 4th floor roof will be a combination of 'cool roof' light-colored rubber membrane and wood or composite decking, while the 5th floor roof will be 'cool roof' light-colored rubber membrane only. In addition to providing usable outdoor space, the intent of using plantings, wood (or composite) decking, and light-colored roofing materials is to mitigate for the heat-island that can result from black rubber membrane roofs and increased impervious areas.

6. Regulatory Performance Standards

According to Section 27 of the *Bylaw Regulations, the Commission accepts and adopts the definitions, requirements, and performance standards for Riverfront Area as specified in the Massachusetts Department of Environmental Protection's Wetlands Regulations in 310 C.M.R. 10.58.* The *Act Regulations* provide specific performance standards for work within Riverfront Area. Citations of the pertinent performance standards are provided below, along with a description of how the project meets these standards. The Applicant has implemented design elements intended to comply with the *Bylaw* and *Bylaw Regulations.* The Applicant will be requesting waivers from the ZBA for those *Bylaw* performance standards that cannot be met, such as the tree replacement requirements provided in Section 24 of the *Bylaw Regulations.*

6.1 Riverfront Area

The performance standards outlined in 310 CMR 10.58 (4) apply to the project and include:

(a) *Protection of Other Resource Areas:* No other Wetland Resource Areas will be altered as part of the proposed project

(b) *Protection of Rare Species*: The site is not contained within Rare Species Habitat as noted above in Section 2.1;

(c) *Practicable and Substantially Equivalent Economic Alternatives*: An Alternatives Analysis is provided below; and

(d) *No Significant Adverse Impact*: A discussion of Significant Adverse Impacts is provided below.

6.1.1 Alternatives Analysis

The purpose of this project is to construct an affordable housing condominium building in Arlington. The Applicant has evaluated: a no build alternative; other locations in town; a smaller building footprint with additional stories; a smaller building footprint with less units; and the preferred alternative, as further described below.

6.1.1.1 No Build Alternative

A No-Build Alternative does not contribute to the need for affordable housing in Arlington, and does not include the mitigating measures intended to improve the

Riverfront Area function and value compared to existing conditions, including invasive species management and revegetation with native plants, and stormwater management where none exists today.

6.1.1.2 Alternative Locations in Arlington

The *Act Regulations* at 310 CMR 10.58 (4) (c) 2. c. state: *…the area under consideration for practicable alternatives extends to the original parcel and the subdivided parcels, any adjacent parcels, and any other land which can reasonably be obtained within the municipality for: i. activities associated with residential subdivision or housing complexes, institutional, industrial, or commercial projects…*

The purpose of this project is to construct an affordable housing condominium building in the Town of Arlington. On September 13, 2022, the Applicant conducted MLS searches for alternative land opportunities. The criteria for the first search were as follows: Land or Multifamily properties, 1-1.5 acres in size, located within 1 mile, 2 mile, and 5 mile radii of 1021 Massachusetts Avenue. The search yielded 0 results.

Given this analysis of MLS offerings, the Applicant is confident that there are no viable alternative land parcels to the properties at 1021 and 1025 Massachusetts Avenue.

6.1.1.3 Smaller Building Footprint with More Stories

The Applicant also analyzed the possibility of constructing a taller building with a smaller footprint to meaningfully reduce the footprint of Riverfront Area alteration. The current building is designed as a 5-story building totaling sixty feet in height, with the fifth floor set back from the plane of the remaining floors to give the appearance and massing of a 4-story structure.

The construction is currently comprised of one level of steel and concrete podium and four stories of wood framing on top of the podium. Increasing the building to six stories or seventy-two feet in height would require construction of two levels of steel and concrete and four stories of wood framing. Construction costs for the 5-story building prototype are approximately $300.00 per square foot in today's market. Adding a second level of steel and concrete will increase construction costs by nearly 15%, making the project financially unfeasible. Further, the Applicant does not believe that a 6-story building would be appropriate for the neighborhood with respect to scale and massing.

6.1.1.4 Smaller Building Footprint with Less Units

The Applicant also explored reducing the number of units for the project and making the building smaller to enable us to meaningfully reduce Riverfront Area alteration.

6.1.1.5 Preferred Alternative

The preferred alternative balances the requirement for a 50-unit count with an acceptable amount of Riverfront Area alteration (<5,000 square feet – not including stormwater management, as further discussed below), and includes significant mitigating measures that in many ways will improve the function and value of the Riverfront Area compared to existing conditions. These include a robust invasive species management and revegetation plan for the wooded Riverfront Area to remain within the northern portion of the site; a meadow; and a conservatively-designed, climate-resilient stormwater infiltration system where none exists today. The preferred alternative also includes interior, ground-level parking, which minimizes the impervious footprint associated with an exterior parking lot.

6.1.2 **No Significant Adverse Impact**

As described above, the wooded Riverfront Area on the site is largely vegetated with invasive exotic plants, contains scattered trash and debris, and is separated from Mill Brook by an off-site paved parking lot. Many of the functions and values the on-site Riverfront Area provides is intrinsically limited. While Riverfront Area alteration is proposed as part of the project, the Applicant also proposes mitigating measures intended to improve the Riverfront Area functions and values.

310 CMR 10.58 (4) (d) states:

The work, including proposed mitigating measures, must have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131, s. 40…

310 CMR 10.58 (4) (d) 1. states:

Within 200 foot Riverfront Areas, the issuing authority may allow the alteration of up to 5000 square feet or 10% of the riverfront area within the lot, whichever is greater, on a lot recorded on or before October 6, 1997 or lots recorded after October 6, 1997 subject to the restrictions of 310 CMR 10.58 (4) (c) 2.b.vi., or up to 10% of the riverfront area within a lot recorded after October 6, 1997, provided that:

According to the deeds, the properties were both established in 1864, and combined contain 20,429± square feet of Riverfront Area, 10% of which is 2,042.9± square feet which is less than the 5,000 square foot threshold referenced above. Of the total Riverfront Area on the site, roughly 2,517 square feet are impervious – comprising of the paved parking lot associated with 1025 Massachusetts Avenue. The balance of the

Riverfront Area on the site contains an island of wooded upland surrounded by residential and commercial development on all sides, and is separated from Mill Brook by the paved parking lot located north of the site. This isolation and separation reduces the value of the Riverfront Area on the subject property. In total, the Applicant proposes to alter 4,210± square feet of Riverfront Area for the proposed structure within Riverfront Area.

The *Act Regulations* at 310 CMR 10.58 (4) (d) 1. d. also state: *…The calculation of square footage of alteration shall exclude areas of replication or compensatory flood storage required to meet performance standards for other resource areas, or any area of restoration within the riverfront area.* ***The calculation also shall exclude areas used for structural stormwater management measures****, provided there is no practicable alternative to siting these structures within the riverfront area and provided a wildlife corridor is maintained (e.g. detention basins shall not be fenced)* [Emphasis added].

The Applicant has proposed the stormwater infiltration system north of the proposed structure, as far away from Mill Brook as possible. Situating the stormwater infiltration system elsewhere on the property (such as along Massachusetts Avenue, or along one of the side property boundaries) would result in relocating and/or reconfiguring the building closer to Mill Brook. Accordingly, the 5,850± square feet of alteration associated with the stormwater infiltration system is excluded from the calculation of Riverfront Area alteration, and the proposed Riverfront Area alteration measures 4,210± square feet.

(a) At a minimum, a 100-foot wide area of undisturbed vegetation is provided…If there is not a 100-foot wide area of undisturbed vegetation within the riverfront area, existing vegetative cover shall be preserved or extended to the maximum extent feasible to approximate a 100-foot wide corridor of natural vegetation…

No work is proposed within the 0-100' Riverfront Area. This area is currently comprised of woodland dominated by invasive/exotic species, and an off-site parling lot separating the property from Mill Brook. The on-site portion of the Riverfront Area (roughly 7,700± square feet), including the 0-100' Riverfront Area, will be restored and enhanced via trash and debris removal; invasive species management; and re-vegetation with native shrubs, ferns, and a native seed mix.

(b) Stormwater is managed according to the standards established by the Department in its Stormwater Policy.

Stormwater management exceeding DEP requirements is proposed by collecting and infiltration roof run-off via a subsurface stormwater management system located north of the structure. The system was designed using the Extreme Precipitation Tables for the Northeast Regional Climate Center (Cornell University).

(c) *Proposed work does not impair the capacity of the riverfront area to provide important wildlife habitat functions…*

The Applicant proposes improvements to the existing Riverfront Area by removing trash and debris, removing invasive/exotic shrubs and groundcover plants, and by installing and maintaining native shrubs and groundcover plants. Additionally, a meadow is proposed off the rear of the structure. These efforts will improve wildlife habitat function and value associated with the site.

(d) *Proposed work shall not impair groundwater or surface water quality by incorporating erosion and sedimentation controls and other measures to attenuate nonpoint source pollution.*

Erosion controls will be installed along the Limit-of-Work line, and stormwater management exceeding DEP requirements is proposed to collect and infiltrate stormwater runoff from the roof area. The project improves groundwater and surface water quality by providing stormwater management where none exists today.

6.2 Bylaw Regulations and General Climate Resiliency

The Applicant has made efforts to comply with *Bylaw* and *Bylaw Regulations* to the extent practicable given that this is an affordable housing development. Waivers will be requested from the ZBA for those sections of the *Bylaw* and *Bylaw Regulations* that cannot be met and the Applicant will demonstrate to the ZBA that they are entitled to such waivers during the Comprehensive Permit review process. For example, the Applicant will not be able to comply with the Vegetation Removal and Replacement requirements enumerated under Section 24 of the *Bylaw Regulations*; however, invasive species management and replanting with native shrubs and groundcover plants is proposed. Alternatively, Section 31 of the *Bylaw Regulations* discusses Climate Change Resilience. This is a section of the *Bylaw Regulations* that the Applicant has made efforts to comply with as further described below.

The Applicant shall, to the extent practicable and applicable as determined solely by the Commission, integrate considerations of adaptation planning into their

project to promote climate change resilience so as to protect and promote resource area values into the future. These considerations are especially important in Land Subject to Flooding (floodplain) and Riverfront Area and other Resource Areas which protect the interest of Flood Control and Storm Damage Prevention, including Adjacent Upland Resource Areas. These Resource Areas may be directly impacted by extreme weather events expected to be more prevalent or more intense due to climate change, in surface runoff of pollutants, and in wildlife habitat due to changes in temperature. The Applicant shall consider the project's adaptation to potential climate change impacts by addressing the following:

(1) Describe project design considerations to limit storm and flood damage during extended periods of disruption and flooding as might be expected in extreme weather events. See Vegetative Wetlands Section 21, Land Subject to Flooding Section 23, and Adjacent Upland Resource Area Section 25, of these Regulations.

While no work is proposed within Vegetated Wetlands, Land Subject to Flooding, or the Adjacent Upland Resource Area, the Applicant proposes a stormwater management system that exceeds DEP standards by incorporating the Extreme Precipitation Tables for the Northeast Regional Climate Center (Cornell University). Little to no stormwater management exists on the site today. Accordingly, the project improves the site's climate change resiliency in accordance with the requirements in the *Bylaw Regulations*.

(2) Describe project stormwater surface runoff, which may increase due to storm surges and extreme weather events, and how this will be managed / mitigated to prevent pollution (including nutrients from fertilizers, roadway runoff, etc.) from entering the resource area with consideration of eliminating impervious surfaces as feasible. See Stormwater Management Section 33 of these Regulations.

The project includes a conservatively-designed stormwater management system that will collect and infiltrate stormwater run-off from the proposed roof area. Lawn areas associated with the site have been minimized and a meadow is proposed for the rear portion (which eliminates the need for fertilizers and/or pesticides often needed to establish and maintain lawn areas). Lastly, the Applicant has selected a building design with interior ground-level parking, which reduces overall impervious surface, and significantly reduces surface run-off and pollutants associated with a standard

exterior parking lot. Peak rates and volumes for the 2, 10, 50, and 100-year statistical storm events are maintained or reduced.

(3) Describe project vegetation / planting plans and other measures to improve the resiliency of the wildlife habitat of the resource area to withstand potential temperature and rainfall changes (drought and excess) due to climate change. See Vegetation Removal and Replacement Section 24 of these Regulations.

The Applicant proposes to create a native woodland by removing invasive/exotic plants and establishing and maintaining a native understory and groundcover within the woodland north of the proposed building. A meadow also is proposed to be established and maintained north of the structure. Further, heat island effect will be mitigated for by including green roof space and cool roof space. The green roof portion of the courtyard will be planted largely with native plants.

(4) Describe measures to protect proposed structures and minimize damage to structures due to the impacts of climate change.

While the site is located well above the 1% Annual Chance Floodplain elevation associated with the Mill River, all living space has been elevated above the ground-level parking garage, which mitigates for flash flooding within the street that could occur during or following heavy precipitation.

7. Summary

On behalf of the Applicant, MAJ Investment, LLC (Matthew P. Maggiore, Contact), LEC is filing this Bylaw NOI Application with the Arlington ZBA as part of their review of a Comprehensive Permit application to demolish two (2) structures and associated driveways, parking lots, and site appurtenances, and construct a 50-unit, 5-story affordable housing condominium building with ground-level parking garage and retail space. Portions of the proposed project are located within the outer portion of Riverfront Area associated with Mill Brook. Site grading, a retaining wall, erosion controls, invasive species management and native revegetation, meadow establishment, and stormwater management are proposed.

Arlington Conservation Commission, *Town of Arlington Wetlands Protection Bylaw* (Article 8) Town of Arlington, Massachusetts.

Massachusetts Department of Environmental Protection, Division of Wetlands and Waterways 1995. *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act, A Handbook*. 89 pp.

Massachusetts Natural Heritage and Endangered Species Program Atlas of Estimated Habitat of State-listed Rare Wetlands Wildlife, Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, Route 135, Westborough, MA 01581, www.state.ma.us/dfwele/dfw

Massachusetts Wetlands Protection Act (M.G.L. c. 131, §. 40), www.state.ma.us/dep
Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00), www.state.ma.us/dep

National Flood Insurance Program, Federal Emergency Management Agency Flood Insurance Rate Map (Map Number 25017C0416E), Middlesex County, June 4, 2010.

New England Hydric Soils Technical Committee. 2019, 4th ed., *Field Indicators for Identifying Hydric Soils in New England,* New England Interstate Water Pollution Control Commission, Lowell, MA.

Reed, P.B. 1988. *National List of Plant Species that Occur in Wetlands: 1988 Massachusetts*. U.S. Department of the Interior, Fish and Wildlife Service. NERC-88/18.21

Appendix A

Locus Maps

Figure 1: USGS Topographic Quadrangle

Figure 2: FEMA Flood Insurance Rate Map

Figure 3: MassGIS Orthophoto & NHESP Estimated Habitat Map

LEC
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Wakefield, MA
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Figure 1: USGS Topographic Map
1021 & 1025 Massachusetts Avenue
Arlington, MA

December 17, 2021

N
0 250 500 Feet

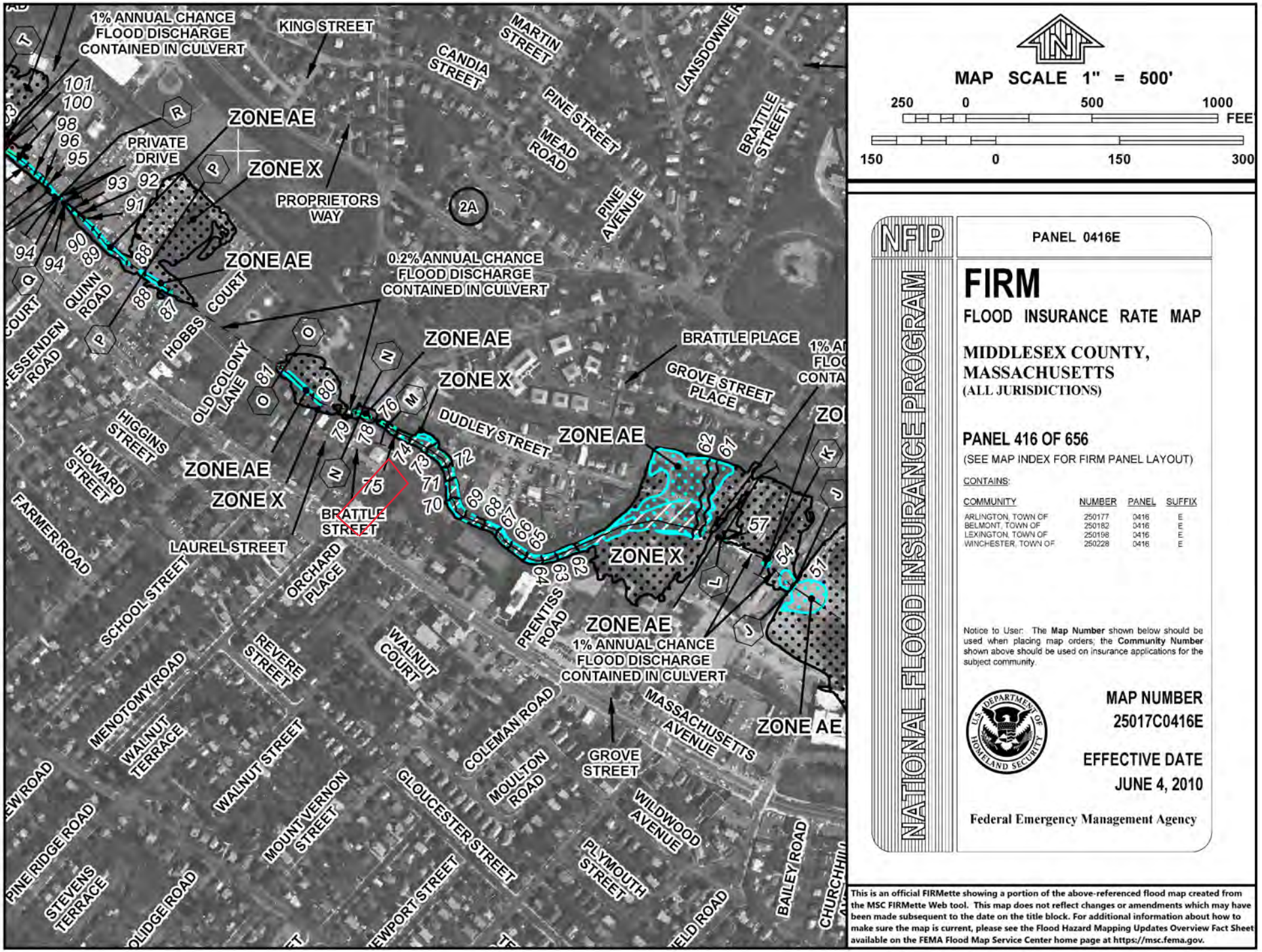

Figure 2: FEMA Flood Insurance Rate Map

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 — 23	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
$^{24}76^{000m}$N	1000-meter Universal Transverse Mercator grid values, zone 19
600000 FT	5000-foot grid values: Massachusetts State Plane coordinate system, Mainland zone (FIPSZONE 2001), Lambert Conformal Conic projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
● M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
June 4, 2010

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

LEC
Environmental Consultants, Inc.
Wakefield, MA
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Figure 3: MassGIS Orthophoto & NHESP Map
1021 & 1025 Massachusetts Avenue
Arlington, MA

December 17, 2021

N

0 100 200 Feet