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CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
EXPANDED ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Regency at Boxborough
PROJECT MUNICIPALITY : Boxborough
PROJECT WATERSHED : SuAsCo River Basin
EEA NUMBER : 15624
PROJECT PROPONENT : Boxborough Town Center, LLC
DATE NOTICED IN MONITOR : December 21, 2016

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project *requires* the preparation of an Environmental Impact Report (EIR). The Proponent requested that I allow a Single EIR to be prepared in lieu of the usual two-stage Draft and Final EIR process pursuant to 301 CMR 11.06(8) of the MEPA regulations. I am declining the request for a Single EIR. The Proponent must submit a Draft EIR (DEIR) in accordance with the Scope provided in this Certificate.

Project Description

As described in the Expanded Environmental Notification Form (EENF), the project consists of a senior housing development on 63.9 acres off Massachusetts Avenue (Route 111) in Boxborough. It will include 100 townhouse-style duplex units (50 buildings); 236 parking spaces; a clubhouse, pool, and pickleball and bocce courts; internal roadways; landscaping; irrigation wells; and other associated infrastructure, including a stormwater management system. The project will use two on-site wells which were constructed recently as a community public water system (PWS) and will construct a privately owned wastewater treatment plant (WWTP). The condominium owners will be responsible for the operation and maintenance of the on-site water, sewer, irrigation, and private driveway network with

associated stormwater controls. The site will be accessed via a driveway from Massachusetts Avenue that will loop around the site. Secondary access, for emergency use only, will be located off Priest Lane and off Stow Road. A single-family dwelling and detached barn will be demolished.

Project Site

The 63.9-acre project site is located off Massachusetts Avenue (Route 111), which is under the jurisdiction of the Massachusetts Department of Transportation (MassDOT). The site is bounded to the north by Massachusetts Avenue, to the east by two senior housing complexes and residential and limited commercial uses, to the south by Priest Lane, and to the west by residential uses.

The site contains a single family dwelling, detached barn, and undeveloped woods within upland and wetland resource areas, including Bordering Vegetated Wetland (BVW) systems and Bank associated with an intermittent stream. The intermittent stream and a portion of the site drain to a fire pond on-site and under Stow Road through a culvert. Existing access is via two driveways off Massachusetts Avenue. The site also has frontage along a second public way, Priest Lane and has access rights over an abutting 50-foot wide easement to Stow Road (on Sheriff's Lane).

Jurisdiction and Permitting

The project is subject to a Mandatory EIR pursuant to 301 CMR Section 11.03(1)(a)(2) of the MEPA regulations because it requires a State Agency Action and will create 10 or more acres of impervious area. The project also exceeds ENF review thresholds at 301 CMR 11.03(1)(b)(1) for alteration of 25 or more acres of land and 301 CMR 11.03(5)(b)(3)(c) for construction of one or more new sewer mains one-half mile or more miles in length. The project will require a Vehicular Access Permit from MassDOT and a Groundwater Discharge Permit (GWDP) and Water Supply Permits from the Massachusetts Department of Environmental Protection (MassDEP). The project is subject to the MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol (the Policy).

The project will require an Order of Conditions from the Boxborough Conservation Commission (and, on appeal only, a Superseding Order of Conditions from MassDEP) and a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) from the United States Environmental Protection Agency (EPA).

Because the Proponent is not seeking Financial Assistance from the Commonwealth for the project, MEPA jurisdiction extends to those aspects of the project that are within the subject matter of required or potentially required State Agency Actions and that may cause Damage to the Environment as defined in the MEPA regulations. In this case, MEPA jurisdiction extends to land alteration, transportation, wetlands, stormwater, water supply, wastewater, and GHG emissions.

Environmental Impacts and Mitigation Measures

Potential environmental impacts associated with the project include: alteration of 32.98 acres of land; creation of 11.97 acres of impervious area for a total of 12.14 acres; generation of 634 new average daily trips (adt) for a total of 644 adt; creation of 234 new parking spaces for a total of 236 spaces; use of 20,330 gallons per day (gpd) of water for a total of 20,660 gpd; generation of 20,330 gpd of wastewater for a total of 20,660 gpd; and construction of 0.84 miles and 0.95 miles of water and sewer

mains, respectively. The project will alter wetland resource areas including 136 linear feet (lf) of Bank (permanent), 471 square feet (sf) of BVW (temporary), and 371 sf of Land Under Water (LUW) (temporary).

Measures to avoid, minimize, and mitigate the project's environmental impacts will include a reduction in the total number of proposed units as compared to the number allowed under zoning, minimization of wetland resource area alteration, installation and maintenance of a stormwater management system, and improvements to pedestrian access.

Single EIR Request

In accordance with Section 11.05(7) of the MEPA regulations, the Proponent has submitted an EENF with a request that I allow the Proponent to fulfill its EIR obligations under MEPA with a Single EIR, rather than the usual process of a Draft and Final EIR. According to 301 CMR 11.06(8), I may allow a Single EIR provided that the EENF: a) describes and analyzes all aspects of the project and all feasible alternatives, regardless of any jurisdictional or other limitation that may apply to the Scope; b) provides a detailed baseline in relation to which potential environmental impacts and mitigation measures can be assessed; and c) demonstrates that the planning and design of the Project use all feasible means to avoid potential environmental impacts.

Consistent with this request, the Proponent submitted an EENF that was subject to an extended comment period of 30 days. The waiver request was discussed at the consultation session for the project which was held on January 9, 2017. The EENF includes a project description, a discussion of alternatives, a baseline of potential impacts and proposed mitigation related to traffic, wetlands, water quality, and stormwater. The EENF does not include a GHG emissions analysis or any specific information regarding compliance with the MEPA GHG Policy nor does it identify mitigation measures associated with energy efficiency and GHG emission reductions.

Review of the EENF

The EENF provides a description of the project, preliminary project plans, an alternatives analysis, and a Traffic Impact and Access Study (TIAS), and identifies measures to avoid, minimize and mitigate the project's environmental impacts.

Traffic and Transportation

The Proponent proposes to provide access to the site via an unsignalized driveway along Massachusetts Avenue and emergency access via Priest Lane and Stow Road, which may be gated. MassDOT comments indicate that the study area, which includes five intersections, is sufficient to assess project-related impacts on the surrounding roadway network.

Based on the Institute of Transportation Engineers (ITE) Trip Generation Manual's Land Use Code 230 (Townhouse/Condominium), the project is expected to generate 644 new unadjusted adt on weekdays, including 52 and 60 new vehicle trips during the weekday morning and evening peak hours, respectively. The analysis did not identify any safety deficiencies based on motor vehicle crash history at the study area intersections.

The TIAS indicates that traffic analyses to address operations and capacity were conducted for the 2016 Existing, 2023 No-Build, and 2023 Build conditions. The analysis indicates that the projected increase in traffic at study area intersections will not significantly impact intersection operations. All intersections are projected to operate at a Level of Service (LOS) C or better during peak hours under 2023 Build conditions.

The proposed full-access driveway will permit entering movements from both directions on Massachusetts Avenue and exiting movements in a single lane under stop sign control. Stopping sight distance (SSD) measurements performed at the driveway intersection with Massachusetts Avenue indicate that the observed SSD will exceed the recommended minimum requirements based on the 85th percentile speed observed for eastbound vehicles. Westbound vehicles will have the sight distance impeded due to the alignment of Massachusetts Avenue and slope along the site frontage. The Proponent recommends that a sight distance easement be established east of the site driveway and that this area be regraded to provide the sight lines and be kept clear of plantings that would obstruct sight distances. Proposed landscaping will not exceed three feet in height to maintain these sight lines.

The project will provide sidewalks and crosswalks in compliance with the Americans with Disabilities Act (ADA) and the Massachusetts Architectural Access Board (AAB). The project will designate a transportation coordinator to work with tenants interested in carpooling and rideshare programs. Bicycle racks will be provided on-site.

Wetlands and Stormwater

The project will add approximately 12 acres of impervious area and will include a stormwater management system designed in accordance with the MassDEP Stormwater Management Handbook. The Boxborough Conservation Commission will review the project to determine its consistency with the Wetlands Protection Act (WPA), the Wetlands Regulations (310 CMR 10.00), and associated performance standards, including stormwater management standards (SMS). The project will alter 136 lf of Bank (permanent), 471 sf of BVW (temporary), 371 sf of LUW (temporary) and 128,844 sf of Buffer Zone associated with a stream crossing and sidewalk extension along Massachusetts Avenue. Proposed work will include the construction of an open bottom concrete box culvert to span the intermittent stream for the access drive from Massachusetts Avenue to the site. Disturbed areas will be restored.

The Boxborough Conservation Commission issued an Order of Resource Area Delineation (ORAD) on August 17, 2011 confirming the locations of BVW on-site, which is valid until August 17, 2018. An Order of Conditions permitting soil testing was issued on May 18, 2016 and will expire on May 18, 2019.

The EENF briefly describes the project's consistency with the SMS. The system will include best management practices (BMPs) such as deep sump hooded catch basins, infiltration basins, subsurface infiltration areas, and roof drywells.

Water Supply

Because there are no municipal water systems in Boxborough, the project will require construction of an on-site PWS. The project received approval from MassDEP on June 30, 2016 to site

two PWS wells and conduct a pumping test. Comments from MassDEP indicate that the proposed water supply demand was 20,400 gpd (compared to 20,660 gpd described in the EENF). In its approval, MassDEP commented that the proposed pumping rate may not be sufficient and required the Proponent to submit the results of the step test prior to performing the prolonged pumping test. Consequently, MassDEP suggested a pumping rate of 12 gallons per minute (gpm) for each well. The Proponent submitted a pumping test approval application on January 5, 2017. According to the submittal, the pumping rates were 8 and 11 gpm. Plans in the EENF depict overlapping Zone I areas because of the different pumping rates (262 feet for Well #1G and 240 feet for Well #2G). The Proponent will acquire land within the Zone I land which currently extends onto an abutting parcel (Parcel A).

Wastewater

The project will construct a WWTP to treat and discharge project flows pursuant to 314 CMR 5.00. The project will require a GWDP from MassDEP. The existing single-family dwelling is served by an on-site private well and septic system. The EENF includes a preliminary report on proposed wastewater treatment facilities. Plans in the EENF depict the discharge of treated wastewater outside the proposed interim wellhead protection areas (IWPA) of the two private water supply wells.

Conclusion

Based on review of the EENF and consultation with State Agencies, I hereby require the Proponent to file a Draft EIR and Final EIR. I acknowledge that the EENF provides a detailed transportation analysis, and identifies existing conditions, potential impacts, and mitigation related to traffic, wetlands, water supply, wastewater, and stormwater. However, significant issues have not been addressed to a level commensurate with the request for a Single EIR. In particular, the EENF does not include a GHG analysis in compliance with the requirements of the GHG Policy and has not committed to feasible measures to further reduce land alteration and impervious surface. In addition, the alternatives analysis does not provide a comparison of project-related impacts. The Scope below identifies additional analysis and information that should be provided in the DEIR. The primary emphasis of this Scope is to identify how the project will be proposed consistent with the GHG Policy and to demonstrate that impacts related to transportation, wetlands, water supply, wastewater, and stormwater have been avoided and mitigated to the maximum extent feasible.

SCOPE

General

The DEIR should follow Section 11.07 of the MEPA regulations for outline and content, as modified by this Scope. It should respond to comments received on the EENF, provide additional commitments to and specificity of environmental mitigation measures, and propose draft Section 61 Findings.

The DEIR should identify any changes to the project since review of the EENF. It should include existing and proposed conditions plans at a legible scale to provide context for the limited Scope and Responses to Comments. It should provide a brief description and analysis of applicable statutory and

regulatory standards and requirements, and explain how the project will meet those standards. It should include a list of required State Agency Permits, Financial Assistance, or other State approvals, as well as any local or federal permitting.

Alternatives Analysis

The DEIR should analyze project alternatives to demonstrate that Damage to the Environment can be avoided, minimized or mitigated. It should include conceptual site layout plans, a summary of potential environmental impacts (land alteration, creation of impervious area, impacts to wetland resource areas, traffic generation, parking, water use, and wastewater) for each of the alternatives listed below. It should provide a comparison of impacts in a supporting narrative and tabular format for the following.

- A No-Build Alternative;
- Alternative 1 described in the EENF for the construction of professional and mixed use space in addition to elderly housing;
- Alternative 3 described in the EENF for a c. 40B development of 96 single-family dwellings;
- Reduced Build Alternative (i.e. reduced land alteration, impervious area, and surface parking); and
- The Preferred Alternative.

The analysis should consider how Damage to the Environment can be avoided, minimized and mitigated to the maximum extent practicable through consideration of increases in density or site design to minimize impervious surfaces and maximize open space. It should consider reduced parking to limit impervious surfaces.

Land Alteration

The EENF indicates that the project will alter approximately 33 acres of land. The DEIR should quantify the total amount of alteration in upland and wetland areas associated with the proposed project including areas to be altered for buildings, roadways, wastewater, water and stormwater infrastructure, landscaping, areas of tree clearing and other project components. The DEIR should include a breakdown showing the amount of alteration for each project element. The DEIR should include site plans that clearly locate and delineate areas proposed for development and those to be left undisturbed.

The DEIR should provide a comprehensive evaluation of all measures to reduce the amount of land alteration, including reductions in roadway widths and impervious surfaces, pervious pavement for low intensity parking areas and sidewalks, and banking parking until such time as it is warranted by demand.

Transportation

The DEIR should describe how the site will be designed to provide a seamless, safe, and inviting pedestrian/bicycle connection to and from Massachusetts Avenue. The DEIR should include conceptual plans as outlined in MassDOT comments for site access improvements and other measures that encourage safety and traffic calming. Any proposed mitigation measures within the state highway layout and all internal site circulation must be consistent with a Complete Streets design approach that provides

adequate and safe accommodation for all roadway users, including pedestrians, bicyclists, and public transit riders. Where these criteria cannot be met, the Proponent should support the need for a design waiver. The DEIR should provide additional information on the proposed sidewalk construction along the site's frontage with Massachusetts Avenue.

The DEIR should describe the methodology used to determine the proposed parking supply. The parking supply should be compared to the amount required based on the most recent edition of the ITE's *Parking Generation* as well as the local zoning code. The DEIR should reevaluate the parking supply and consider measures to further minimize the proposed parking supply to minimize Single Occupancy Vehicle (SOV) trips, including car sharing services and banking some parking spaces until and unless needed, based on monitoring.

The Proponent will designate a transportation coordinator and include bicycle racks on-site. The DEIR should include a TDM plan that includes, but is not limited to, the following measures identified by MassDOT:

- Posting of information regarding public transportation services, maps, schedules, and fares in a central location;
- Provide a packet to new residents detailing available public transportation services, and bicycle and walking alternatives;
- Contacting the Council on Aging to provide services to the site;
- Supporting ride-matching/carpooling through the active promotion of NuRide, the Commonwealth's web-based trip planning and ride-matching system that allows users to earn rewards for taking greener trips;
- Limiting the number of parking spaces;
- Provision of sheltered and secure bicycle parking; and
- Provision of convenient and safe bicycle and pedestrian access throughout the site.

The Proponent should consult with MassRIDES, the Commonwealth's Travel Options provider, to assist in developing and implementing the TDM Program.

Wetlands and Stormwater

The DEIR should include a narrative and supporting data or graphics as necessary to demonstrate that the project can be designed and constructed consistent with applicable WPA performance standards. It should include plans at a reasonable scale that clearly delineate all applicable resource area boundaries, including BVW, LUW, Bank and buffer zones. It should describe the nature of all impacts that cannot be avoided, such as grading, clearing and construction-related disturbances, and whether they will be temporary or permanent in nature. The DEIR should identify and evaluate all feasible methods to minimize the creation of impervious surfaces, including increased building massing, reduced parking ratios, banking of parking, and narrow roadway widths.

MassDEP comments indicate that because the stream is intermittent there appears to be no LUW at the location of the proposed wetland crossing. MassDEP considers clearing and removal of vegetation as a wetland resource alteration. Wetland replication is required if temporary or permanent impact results in the loss of mature wetland vegetation and should be described in the DEIR. The DEIR should

clearly describe all temporary and permanent impacts to determine total impacts to wetland resource impacts in a narrative and tabular format. The DEIR should clearly identify on project plans the extent of proposed clearing within wetland resource areas.

Wetland impacts will occur at the location of a driveway crossing and will be minimized by the use of an open-bottom box culvert. The DEIR should include a detailed drawing of the crossing and address the design's consistency with the Massachusetts Stream Crossing Standards. The DEIR should include a discussion of how the project meets the performance standards contained in 310 CMR 10.54 and 10.55. The DEIR should indicate whether the proposed culvert work within the vicinity of Wetland Flags 120 and 158 will result in the extension of culverts that convey stream channels and whether additional wetland resources will be impacted in these locations. If the existing culverts in these locations qualify as stream crossings, the proposed culverts must meet the Massachusetts Stream Crossing Standards for replacement culverts. The DEIR should describe how the project will be consistent with these standards.

The DEIR should include a stormwater management plan which demonstrates that source controls, pollution prevention measures, erosion and sediment controls and the drainage system will comply with the wetlands regulations and stormwater standards for water quality and quantity both during construction and post-development. In addition to a description of the stormwater management system, the DEIR should include supporting information such as drainage plans, calculations, and hydrogeologic modeling. If subsurface infiltration is proposed, the DEIR should demonstrate that soils and groundwater conditions are suitable for such discharges. It should include a commitment to develop an operations and management plan to ensure the long-term effectiveness of the stormwater management system. The locations of detention basins, distances from wetland resource areas, and the expected quality of the effluent from the basins should be discussed. The DEIR should demonstrate that the proprietary BMPs proposed will be sized appropriately.

The DEIR should consider incorporation of Low Impact Development (LID) such as porous pavements, water quality swales, box-tree filters, and rain gardens. The DEIR should also confirm that the project will provide narrower roadways and compact parking spaces to further minimize impervious surfaces. The Proponent will be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the NPDES Permit.

Greenhouse Gas Emissions

This project is subject to review under the May 5, 2010 MEPA GHG Policy. The DEIR should include a comprehensive analysis of GHG emissions and mitigation measures for the proposed project in accordance with the standard requirements of this Policy. I refer the Proponent to the guidance provided in the comments from the Massachusetts Department of Energy Resources (DOER). The DEIR should provide a comprehensive response to these comments. New construction such as that proposed by this project presents an ideal opportunity for incorporation of sustainable design and green building elements. Adoption of energy efficiency measures in particular can, over the course of the project life, reduce GHG emissions, prevent Damage to the Environment, and reduce operating costs.

The Policy requires projects to quantify carbon dioxide (CO₂) emissions and identify measures to avoid, minimize or mitigate such emissions. The analysis should quantify the direct and indirect CO₂

emissions associated with the project's energy use (stationary sources) and transportation-related emissions (mobile sources). Direct emissions include on-site stationary sources, which typically emit GHGs by burning fossil fuel for heat, hot water, steam and other processes. Indirect emissions result from the consumption of energy, such as electricity, that is generated off-site by burning of fossil fuels, and from emissions associated with vehicle use by employees, vendors, customers and others. The DEIR should identify and commit to mitigation measures to reduce GHG emissions.

Stationary Sources

The DEIR should include a GHG emissions analysis that calculates and compares GHG emissions associated with: 1) a Base Case corresponding to the 8th Edition of the Massachusetts Building Code, as amended, and 2) a Preferred Alternative that achieves greater reductions in energy use and GHG emissions than required by the amended Building Code. The 8th edition of the Building Code was amended on August 12, 2016, referencing the International Energy Conservation Code (IECC) 2015 and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 standards. In residential construction, Massachusetts amendments also allow alternative performance methods, including RESNET, Passive House Institute, and Energy Star. See <http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/buildings/amendments-to-780-cmr-effective-august-12-2016.html>. The GHG analysis should model energy use, GHG emissions, and mitigation measures associated with the project in accordance with the GHG Policy.

The GHG analysis should clearly demonstrate consistency with the objectives of MEPA review, one of which is to document the means by which Damage to the Environment can be avoided, minimized and mitigated to the maximum extent feasible. The Proponent should identify the model used to analyze GHG emissions, clearly state modeling assumptions for each project element, explicitly note which GHG reduction measures have been modeled, and identify whether certain building design or operational GHG reduction measures will be mandated by the Proponent to future occupants or merely encouraged for adoption and implementation. The DEIR should include the modeling printout for each alternative and emission tables that compare base case emissions in tons per year (tpy) with the Preferred Alternative showing the anticipated reduction in tpy and percentage by emissions source (direct, indirect and transportation). Other tables and graphs may also be included to convey the GHG emissions and potential reductions associated with various mitigation measures as necessary.

The DEIR should present an evaluation of mitigation measures identified in the GHG Policy Appendix. In particular, the feasibility of each of the mitigation measures outlined below should be assessed for the project. GHG emissions reduction potential associated with major mitigation elements should be evaluated to assess the relative benefits of each measure. The DEIR should explain, in reasonable detail, why certain measures, that could provide significant GHG reductions, were not selected – either because it is not applicable to the project or is considered technically or financially infeasible.

- Minimize energy use through building orientation and evaluate its impacts on energy usage, including solar gain, and day-lighting;
- High performance building envelopes and fenestration (i.e., increased roof/wall insulation, high-efficiency windows with low-E glass);
- Use of Air-Source or Variable Refrigerant Flow (VRF) heat pumps;

- Evaluate viability of on-site renewable energy including:
 - Solar photovoltaic (PV);
 - Combined heat and power (CHP);
 - Solar thermal for hot water heating; and
 - Geothermal energy.
- Use of high-albedo or reflective roofing materials;
- Heat pumps water heating
- Energy recovery;
- Install high-efficiency HVAC systems and adequate numbers of thermal zones to support temperature controls;
- Responsive systems and controls such as economizers and demand controlled ventilation;
- Increased furnace efficiency;
- Duct sealing;
- Install energy efficient lighting, both exterior and interior, and incorporate reduced lighting power density (LPD);
- Evaluate measures to reduce project plug loads, including the use of more efficient equipment (such as Energy Star), consider energy consumption as a factor in the selection of special equipment, and consider power management techniques;
- Low-flow plumbing fixtures, low-volume irrigation system and water conservation measures;
- Purchase of green power;
- Consider Passive House design approach;
- Use of recycled materials; and
- Minimization of tree clearing.

The DEIR should analyze the feasibility and benefits of incorporating on-site generation of renewable energy sources thoroughly in the DEIR. At a minimum, the DEIR should analyze the feasibility of employing solar photovoltaic (PV) systems, combined heat and power (CHP), solar hot water (thermal), and/or heat pumps, and document the expected energy savings and reduction in GHG emissions from each generating technology. I note that the site is unobstructed by other buildings and well-suited to rooftop solar installations.

The solar feasibility analysis should consider solar PV and solar thermal options and the benefits of various ownership structures (i.e., outright ownership or third party lease). The Proponent should contact the MEPA office or the DOER for recently updated data on solar installation costs and a solar financial modeling spreadsheet. The analysis should:

- Estimate available roof area (excluding areas dedicated for mechanical equipment) on all buildings, parking lot canopy space, or ground space for solar panel installation;
- State the assumed panel efficiency;
- Estimate electrical or thermal output of the potential system; and
- Estimate annual GHG reductions due to the use of renewable energy versus electricity or natural gas.

The analysis should include a narrative and data to support the Proponent's adoption (or dismissal) of solar PV or solar thermal systems as a feasible measure to avoid, minimize or mitigate

project-related GHG emissions and Damage to the Environment. If the Proponent determines that implementation of solar is not feasible the analysis should include:

- A commitment to construct the project as “solar-ready”. At a minimum, this commitment should include design of a structure capable of supporting solar-related infrastructure. Such a commitment may also include provision of interconnection and inverter equipment, or other design features to facilitate future solar installations.
- Completion of cost analysis to determine the overall financial feasibility of installation of solar, including potential payback periods.
- Discussion of potential environmental constraints (shading, presence of wetlands, etc.) limiting the application of solar on-site.

If applicable, I encourage the Proponent to consider design options that will allow for cost-effective integration of efficiency or renewable energy measures in the future when such measures may become more financially or technically feasible.

I also encourage the Proponent to consult with local utilities about rebates or to consider other incentives for implementing energy efficiency measures. For more information, I recommend that the Proponent consult the Executive Office of Energy and Environmental Affairs website: <http://www.mass.gov/eea/energy-utilities-clean-tech/energy-efficiency/ee-for-your-home/>.

The DEIR should include a commitment to a specific construction waste management goal, and establish similar waste management goals as part of ongoing operations that could be memorialized in condominium documents. The DEIR should consider minimizing irrigation demand through the use of native, drought-tolerant plants and evaluate the use of small, localized stormwater capture systems (such as cisterns or rain barrels) to eliminate the use of potable water for irrigation purposes in all or portions of the property.

Mobile Sources

The GHG analysis should include an evaluation of the potential GHG emissions of the project’s mobile emissions sources using the EPA MOVES emissions model. The DEIR should follow the guidance provided in the Policy for *Indirect Emissions from Transportation* and use data gathered as part of the mesoscale analysis to determine mobile emissions for Existing Conditions, and future No-Build, Build, and Build with Mitigation Conditions. The DEIR should review measures to promote the use of low-emissions vehicles, including installing electric vehicle (EV) charging stations and providing designated parking spaces for these vehicles. The Build with Mitigation model should incorporate anticipated roadway improvements and TDM measures to be implemented by the project and document the resulting reductions in GHG emissions.

Mitigation

The DEIR should include a commitment to provide a self-certification to the MEPA Office at the completion of the project to be signed by an appropriate professional (e.g. engineer, architect, transportation planner, general contractor) indicating that all of the GHG mitigation measures, or equivalent measures that are designed to collectively achieve identified reductions in stationary source

GHG emission and transportation-related measures, have been incorporated into the project. The Proponent should refer to the Policy for additional guidance on the GHG analysis. MEPA and DOER staff are available to assist with these efforts and the Proponent should consult with them regarding the analysis prior to submission of the DEIR.

Sustainable Design

The Proponent should also consider adoption of additional sustainable design measures for which GHG reductions cannot be easily quantified, such as water conservation measures, including the use of low flow water fixtures; rainwater harvesting; construction waste recycling; recycling areas; and recycled content/regional materials. Additional GHG reductions can be achieved through effective materials management during the design, construction, and operations phases of the project. These measures will be considered when evaluating whether the project can mitigate its GHG emission to the greatest extent practicable.

The DEIR should also evaluate sustainable design elements that will be incorporated into buildings and exterior site areas, including measures identified in the Leadership in Energy and Environmental Design (LEED) rating system. I encourage the Proponent to design the buildings to incorporate sustainable design such that the buildings may be LEED certifiable. The DEIR should discuss the use of recycled building materials and incorporation of recycling and source reduction into the project design.

Water Supply

MassDEP comments indicate that following its review of the pumping test application, it will determine the total approved volume and the Zone I areas will be adjusted accordingly if the rates for each well differ. The DEIR should describe the use of appropriate controls as part of the water system design to ensure that each well does not exceed its approved rate. The Proponent should continue its consultation with MassDEP and provide an update in the DEIR.

Based on the results of the water quality testing, the PWS may require treatment and subsequently, additional applications for approval (e.g. WS23A water treatment plant and WS06 Underground Injection Control (UIC) Registration). The DEIR should provide the results of water quality testing and include a discussion of required treatment and permitting. The DEIR should confirm and describe the mechanism through which the Zone I protective radius for each well will be owned or controlled by the owner of the PWS.

The DEIR should include a water conservation plan and describe outreach it will conduct to residents regarding the need to preserve and protect the PWS. The DEIR should describe the use of drought tolerant ornamental plants and grasses and limitations of nonessential outside watering. The DEIR should describe how the project will limit the use of irrigation wells to the extent possible because they may negatively impact groundwater levels in wetlands and the PWS wells.

Wastewater

The project will require the submission of a BRP WP 83 (Hydrogeologic Evaluation) application to MassDEP for its review and approval. The DEIR should demonstrate the project's consistency with the GWDP regulations. The DEIR should confirm the treatment technology chosen for the WWTP.

MassDEP comments indicate that it has no record of any soil evaluations conducted. Its records show that percolation testing was performed in 1998; however, given the lapse of time, MassDEP will request revisiting the soil and site evaluation during the scope of work meeting for the Hydrogeologic Evaluation. The Proponent will only be authorized to apply for a GWDP once the Evaluation is approved. The DEIR should confirm that it will be conduct additional soil evaluations and provide an update on the project's status regarding GWDP permitting.

The DEIR should describe how the project will establish a financial assurance mechanism to fund repair and/or replace the WWTP, which will be a condition of the GWDP. MassDEP comments indicate that the financial assurance mechanism must be fully funded if the Proponent intends to transfer the permit to the condominium association. The DEIR should affirm that it will appropriately establish a financial assurance mechanism.

Construction Period

The Proponent must comply with MassDEP's Solid Waste and Air Quality Control regulations, pursuant to M.G.L. Chapter 40, Section 54, during construction. All construction activities should be undertaken in compliance with the conditions of all State and local permits. The DEIR should discuss potential construction period activities and related permitting requirements. The DEIR should describe the project's removal of asbestos containing materials pursuant to 310 CMR 7.15.

The DEIR should evaluate construction period impacts, including erosion and sedimentation, air quality and solid waste disposal, and strive to minimize construction impacts (including but not limited to land disturbance, noise, dust, odor, nuisance, vehicle emissions, and construction-related traffic) and consider feasible measures that can be implemented to eliminate or minimize these impacts. I encourage the Proponent to adopt emission controls for construction vehicles. The Proponent should confirm that it will use construction equipment with engines manufactured to Tier 4 federal emission standards or best available control technology (BACT). I remind the Proponent that EPA has mandated that Ultra Low Sulfur Diesel (ULSD) fuel be used in all off-road construction equipment. The DEIR should confirm that the project will require its construction contractors to use ULSD fuel in off-road equipment and indicate whether it will incorporate additional measures to minimize construction-period emissions. I encourage the Proponent to adopt aggressive construction recycling and source reduction goals to increase the sustainability of the project.

Mitigation and Draft Section 61 Findings

The DEIR should include a separate chapter that summarizes proposed mitigation measures. This chapter should also include draft Section 61 Findings for each State Agency Action. The DEIR should contain clear commitments to implement mitigation measures, estimate the individual costs of each

proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation.

Responses to Comments

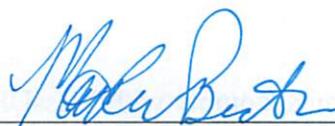
The DEIR should contain a copy of this Certificate and a copy of each comment letter received. In order to ensure that the issues raised by commenters are addressed, the DEIR should include direct responses to comments to the extent that they are within MEPA jurisdiction. This directive is not intended, and shall not be construed, to enlarge the scope of the DEIR beyond what has been expressly identified in this certificate.

Circulation

The Proponent should circulate the DEIR to those parties who commented on the EENF, to any State Agencies from which the Proponent will seek permits or approvals, and to any additional parties specified in section 11.16 of the MEPA regulations. A copy of the DEIR should be made available for review at the Boxborough Public Library.

January 27, 2017

Date



Matthew A. Beaton

Comments received:

01/10/2017	Massachusetts Department of Transportation (MassDOT)
01/19/2017	Massachusetts Department of Environmental Protection (MassDEP)/ Central Regional Office (CERO)
01/24/2017	Massachusetts Department of Energy Resources (DOER)

MAB/PPP/ppp



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF
ENERGY AND ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENERGY RESOURCES
100 CAMBRIDGE ST., SUITE 1020
BOSTON, MA 02114
Telephone: 617-626-7300
Facsimile: 617-727-0030

Charles D. Baker
Governor

Karyn E. Polito
Lt. Governor

Matthew A. Beaton
Secretary

Judith F. Judson
Commissioner

24 January 2017

Matthew Beaton, Secretary
Executive Office of Energy & Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02114

Attn: MEPA Unit

RE: Regency at Boxborough, Boxborough, Massachusetts, EEA #15624

Cc: Arah Schuur, Director of Energy Efficiency Programs, Department of Energy Resources
Judith Judson, Commissioner, Department of Energy Resources

We've reviewed the Environmental Notification Form for the above-referenced project. We understand the project will consist of a development of duplex-style residential homes.

Recommendations for Future Submissions

Future submissions should demonstrate that the project is taking all feasible measures to *avoid, minimize and mitigate* GHG emissions. The GHG Policy and supporting documentation is available at <http://www.mass.gov/eea/agencies/mepa/greenhouse-gas-emissions-policy-and-protocol-generic.html>. It is sufficient to model one duplex, then scale accordingly to represent the whole project.

For project Baseline, use the most up to date code. Note that the codes have recently changed. Code information is here: <http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/buildings/amendments-to-780-cmr-effective-august-12-2016.html>

At a minimum, we recommend future submissions evaluate the following:

- *Envelope and Glazing*: Envelope and glazing improvements are usually effective strategies toward GHG reduction. We recommend at least two above-code envelope/glazing improvement scenarios be investigated.

- *Air Source Heat Pump or VRF Systems:* Air source heat pumps (or, alternatively, VRF) systems may be an effective GHG reduction strategy for space heating and cooling. Also, a heat pump system (or a VRF system) can perform both heating and cooling, replacing two systems, which can save capital costs.

Space heating with such approaches may be eligible for thermal Alternative Energy Credits (AECs). Guidelines on details of AEC eligibility and estimates are available here: <http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/renewable-thermal/renewable-heating-and-cooling-alternative-portfolio-std.html>.

The following link provides information about AEC-qualifying, cold-climate heat pumps <http://www.neep.org/initiatives/high-efficiency-products/emerging-technologies/ashp/cold-climate-air-source-heat-pump>

With heat pump space and water heating, it's possible to avoid installation of gas service, potentially saving significant capital costs. If gas service is not in the area and the project would otherwise be using propane, fuel oil, or electric resistance, heat pump space and water heating would provide significant operational cost benefits.

- *Solar PV and Solar Thermal:* Provide an estimate of usable roof area for development of solar PV and/or solar thermal. Based on that evaluation, estimate the associated greenhouse gas reduction. Consider all taxes and incentives when evaluating financial performance.
- *Energy Star:* Energy Star appliances can also be an effective GHG reduction strategy. We recommend Energy Star appliances be used throughout the project.
- *Heat Pump Water Heating:* Heat pump water heating can be an effective GHG reduction strategy. We recommend this approach be used.
- *Energy Recovery:* Where not already required by code, we recommend energy recovery options be investigated.
- *Building Lighting:* We recommend a thorough examination of reduced lighting power densities for both interior and exterior lighting.
- *Responsive Systems and Controls:* Responsive HVAC systems, where not already required by Code, such as economizers and demand controlled ventilation usually are effective GHG mitigation strategies which we recommend be investigated.
- Consider Passive House design approach. See <http://www.phius.org/home-page>. Massachusetts allows Passive House design approach as an alternative design path. Note that this office has observed examples of this approach used for affordable housing, achieving near cost parity with a code home.

When evaluating above, consider financial benefits as part of the evaluation. These include renewable energy credits, alternative energy credits, whole building energy performance

Regency at Boxborough, EEA #15624
 Boxborough, Massachusetts

incentives from the utility program administrators, and prescriptive grants and incentives. Mass Save offers significant financial incentives, up to \$2,000 per unit for Tier III performance. See <http://www.masssave.com/en/residential/building-a-house/offers/rmc-performance-path>. Massachusetts Clean Energy Center offers significant grants for air source heat pumps here <http://www.masscec.com/get-clean-energy/residential/air-source-heat-pumps>

Other Recommendations for Submission:

In order to expedite the DOER review, we recommend the following accompany the submission:

- A table similar to the example below should be included:

Measure/Area	Code	Proposed	% Change	Comment
Roof Assembly U-value (Btu/hr-Ft ² -f)				
Bldg 1	0.032	0.028	13%	
Bldg 2	0.032	0.028	13%	
Wall Assembly U-value (Btu/hr-Ft ² -f)				
Bldg 1	0.051	0.040	21%	
Bldg 2	0.055	0.040	27%	
Area Window/Area Wall (%)				
Bldg 1	0.40	0.40	0%	
Bldg 2	0.40	0.55	-38%	
Window U-value (Btu/hr-Ft ² -f)				
Bldg 1	0.32	0.25	22%	
Bldg 2	0.32	0.25	22%	
AC Efficiency (EER)				
Bldg 1	13.5	14.5	7%	
Bldg 2	11.7	14.9	27%	
ERV Effectiveness (%)				
Bldg 1	none	none	-	
Bldg 2	none	none	-	
Boiler (% efficiency)				
Bldg 1	0.8	0.93	16%	
Bldg 2	0.8	0.93	16%	
LPD (Watts/sq ft)				
Bldg 1	1.0	0.7	30%	
Bldg 2	0.9	0.8	11%	
(continue to include service water, equipment, etc)				

Notes on table:

1. Values and proposed measures are examples, populate with proposed values and measures
2. Table shows examples of 2 buildings. Adjust the rows to the actual number of proposed buildings and/or building programming sections
3. If all buildings will have same mitigation, just one may be shown

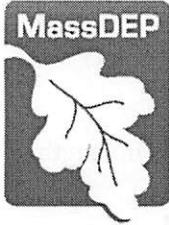
Regency at Boxborough, EEA #15624
Boxborough, Massachusetts

- A description of the proposed building envelope assembly: report both component R-values and whole assembly U-factor. Utilize the pre-calculated relationships between R-Value and U-factor contained in Appendix A.
- Submit the following:
 - A description of the building energy simulation model and procedures utilized.
 - A detailed and complete table of modeling inputs showing the item and the input value for both the base and as-designed scenarios. The area of the building should be included.
 - The output of the model showing the monthly and annual energy consumption, totalized and by major end use system.
 - Baseline (as defined above) energy use intensity and proposed mitigated building energy use intensity.
 - Project modeling files are to be submitted to the DOER with the submittal on a flash drive or may be transmitted via electronic file transfer to paul.ormond@massmail.state.ma.us.
 - Separate “side calculations” may be required for non-building energy consuming site improvements which are not included in the building energy modeling software (e.g. parking lot lighting).
- A description of the proposed project building usage and size, including a site plan and elevation views, should be included.
- Provide a summary of discussions with MassSave.

Sincerely,



Paul F. Ormond, P.E.
Energy Efficiency Engineer
Massachusetts Department of Energy Resources



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Central Regional Office • 8 New Bond Street, Worcester MA 01606 • 508-792-7650

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

January 19, 2017

Secretary Matthew A. Beaton
Executive Office of Environmental Affairs
100 Cambridge Street, 9th Floor
Boston, MA 02114

Attention: MEPA Unit – Purvi Patel

Re: Expanded Environmental Notification Form (EENF)
Regency at Boxborough
Boxborough
EEA #15624

Dear Secretary Beaton,

The Massachusetts Department of Environmental Protection's ("MassDEP") Central Regional Office (CERO) has reviewed the EENF for the proposed Regency at Boxborough Project in Boxborough (the "Project"). Boxborough Town Center, LLC (the "Proponent") is proposing the construction of a 100-unit elderly two-family development, a clubhouse, outdoor swimming pool, pickleball court, bocce court, and their associated appurtenances. Access to the Project will be provided by one proposed driveway off Massachusetts Avenue. A total of 236 parking spaces will be provided; two on-site wells are proposed as a community public water system, and a privately owned wastewater treatment plant will also be developed for the Project. The condominium owners will be responsible for the operation and maintenance of the on-site water, sewer, irrigation, and private driveway network with associated stormwater controls. The 63.90 acre site currently contains a single-family dwelling and detached barn that will be razed. The Project will alter 32.98 acres of land, create 11.97 acres of impervious area, and alter 136 linear feet of Bank, 471 square feet of Bordering Vegetated Wetland ("BVW"), potentially 371 square feet of Land Under Waterway, and 128,844 square feet (sf) of Buffer Zone to BVW. The proposed water consumption and wastewater generation is 20,660 gallons per day (gpd).

Pursuant to 301 CMR 11.03(1) the Proponent is required to file an Environmental Impact Report (EIR). This Project is being submitted as an EENF, and the Proponent is requesting that the Secretary consider the filing of a Single EIR to complete the MEPA review process.

This Project is under MEPA review because it meets or exceeds the following review threshold:

- 11.03(1)(a)(2) – creation of 10 or more acres of impervious area

This information is available in alternate format. Call the MassDEP Diversity Office at 617-556-1139. TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

- 11.03(1)(b)(1) – alteration of 25 or more acres of land
- 11.03(5)(b)(3)(c) – construction of one or more new sewer mains one-half or more miles in length

The Project requires a Massachusetts Department of Transportation (MassDOT) Access Permit, MassDEP Water Supply permits, Groundwater Discharge Permit BRP, and a potential Superseding Order of Conditions.

MassDEP offers the following comments:

Alternative Analysis

The Project is primarily located within the Boxborough Town Center Zoning District. The permitted uses within this area considered by the Proponent included two-family dwellings reserved for elderly occupancy, professional retail and office space, and a 31-seat restaurant. Alternative 1 included the construction of professional and mixed use space in addition to the elderly housing. Based on unfavorable feedback received from the Conservation Commission regarding in the wetlands buffer zone for public water supply test wells, the Proponent removed the commercial buildings from the Project. The plan was revised to show all test well work outside of the buffer zone. Alternative 2, the Preferred Alternative, is for the development of 100 units in a reduced density plan. The Preferred Alternative will be reserved exclusively for elderly residents. Alternative 3 was a proposed 40B Development with 96 detached single family dwellings that was proposed in 2012.

Wetlands

The EENF states that the Project will alter 136 linear feet of Bank, 471 sf of BVW, 371 sf of Land Under Waterway, and 128,844 sf of Buffer Zone. However, the stream depicted on the site plans is labeled as "intermittent," thus there appears to be no Land Under Waterway resource area at the location of the proposed wetland crossing. The Proponent describes temporary wetland impacts in the EENF and does not clearly indicate if these temporary impacts are accounted for in the calculations of wetland resource impacts. MassDEP considers clearing and removal of vegetation as a wetland resource alteration. Wetland replication is required if temporary or permanent impact results in the loss of mature wetland vegetation.

Wetland impacts will occur at the location of a driveway crossing and will be minimized by the use of an open-bottom box culvert span. The EENF does not include a detail drawing of the crossing, confirmation that the crossing will meet the Massachusetts Stream Crossing Standards nor a discussion of how the Project meets the performance standards contained in 310 CMR 10.54 and 10.55. The Boxborough Conservation Commission issued an Order of Resource Area Delineation on August 17, 2011 confirming the locations of the Bordering Vegetated Wetlands on the property, which will be valid until August 17, 2018. An Order of Conditions permitting soil testing was issued on May 18, 2016 and will expire on May 18, 2019. The Proponent will be required to submit a Notice of Intent for the proposed work to the Boxborough Conservation Commission and MassDEP. Upon receipt of the Notice of Intent filing, MassDEP may provide project-specific comments to the Boxborough Conservation Commission and the Proponent as part of the File Number Issuance Notification Letter.

The EENF does not confirm if the proposed culvert work within the vicinity of Wetland Flags 120 and 158 will result in the extension of culverts that convey stream channels and whether additional wetland resources will be impacted in these locations. If the existing culverts in these locations qualify as

stream crossings, the proposed culverts must meet the Massachusetts Stream Crossing Standards for replacement culverts.

Stormwater

The Proponent states that the project is designed to meet the Massachusetts Stormwater Standards, however, did not include hydrology calculations to demonstrate project compliance with the Stormwater Standards with the EENF.

Water Supply

There is no municipal water system in Boxborough; therefore the Project will require construction of an on-site Public Water System (PWS). MassDEP approved on June 30, 2016 a WS13 application for approval to site two PWS wells and conduct a pumping test. The proposed water supply demand was 20,400 gpd (compared to 20,660 gpd in the EENF). In the approval, MassDEP commented that the proposed pumping rate may not be sufficient and required that the Proponent submit to MassDEP the results of the step test prior to performing the prolonged pumping test. As a result of that submittal, MassDEP suggested a pumping rate of 12 gallons per minute (gpm) for each well. A pumping test approval application was submitted on January 5, 2017. According to the report, the pumping rates were 8 and 11 gpm. After review of the pumping test application MassDEP will determine the total approved volume. If the rates from each well differ, then the Zone I areas will be adjusted accordingly. Additionally, the appropriate controls must be included as part of the water system design so that each well does not exceed its approved rate.

Subject to the results of the water quality testing, the water supply may require treatment and therefore additional applications for approval (e.g. WS23A water treatment plant and WS06 UIC Registration). The Zone I protective radius for each well must be owned or controlled by the owner of the PWS. The EENF indicates that the PWS will obtain ownership of the Zone I land that currently extends onto an abutting parcel.

The Proponent should prepare a water conservation plan and conduct outreach to residents regarding the need to preserve and protect the public water supply. Ornamental plants and grasses should be drought tolerant and nonessential outside watering should be limited to the hours of 5 PM to 9 AM. The use of irrigation well(s) should be limited to the extent possible because the well(s) may negatively impact groundwater levels in wetlands and the public water supply wells.

Wastewater

The Project is expected to generate approximately 20,660 gallons per day (gpd) of wastewater, which will be treated and discharged on site via a wastewater treatment facility authorized pursuant to 314 CMR 5.00, the groundwater discharge permit regulations. The Project will also be served by two water supply wells permitted as a public water supply. The conceptual master plan shows the discharge of treated wastewater outside the proposed interim wellhead protection areas (IWPA) of the proposed wells.

Wastewater permitting for this Project will require the Proponent to submit a BRP WP 83 (Hydrogeologic Evaluation) application for review and approval. Although the Proponent states that MassDEP performed site soil testing years ago, MassDEP has no record of any soil evaluations. MassDEP records do show that percolation testing was performed in 1998, but given the passage of time since then (almost 20 years), MassDEP will request revisiting the soil and site evaluation during the scope

of work meeting for the Hydrogeologic Evaluation. Once the Evaluation is approved, the Proponent will then be authorized to apply for a Groundwater Discharge Permit.

The Proponent should note the requirements of the groundwater discharge permit regulations concerning establishment of a financial assurance mechanism to fund repair and/or replacement of the groundwater treatment facility. Establishment of the financial assurance mechanism will be a condition of the groundwater discharge permit, and if the Proponent intends to transfer the permit to the condominium association, the financial assurance mechanism must be fully funded.

Asbestos

Pursuant to 310 CMR 7.15(4) prior to commencing any demolition, the existing barn and single family dwelling on site must be surveyed for the presence of asbestos containing materials by a MA Department of Labor Standards licensed asbestos inspector. Any asbestos containing material or presumed asbestos containing material must be removed in accordance with 310 CMR 7.15 prior to commencement of demolition.

MassDEP appreciates the opportunity to comment on the Project. If you have any questions regarding these comments, please do not hesitate to contact Stella Tamul, Central Regional Office MEPA Coordinator, at (508) 767-2763.

Very truly yours,



Mary Jude Pigsley
Regional Director

cc: Commissioner's Office, MassDEP



Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

January 10, 2017

Matthew Beaton
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114-2150

RE: Boxborough: Regency at Boxborough – EENF
(EEA #15624)

ATTN: MEPA Unit
Page Czepiga

Dear Secretary Beaton:

On behalf of the Massachusetts Department of Transportation, I am submitting comments on the Expanded Environmental Notification Form (EENF) for the Regency at Boxborough project in Boxborough, as prepared by the Office of Transportation Planning. If you have any questions regarding these comments, please call J. Lionel Lucien, P.E., Manager of the Public/Private Development Unit at (857) 368-8862.

Sincerely,

David J. Mohler
Executive Director
Office of Transportation Planning

DJM/jll

cc: Thomas J. Tinlin, Administrator, Highway Division
Patricia Leavenworth, P.E., Chief Engineer, Highway Division
Jonathan Gulliver, District 3 Highway Director
Neil Boudreau, State Traffic Engineer
Metropolitan Area Planning Council
Montachusett Regional Transit Authority
Town of Boxborough, Town Planner
Diane Hanson, Director, MassRIDES
PPDU Files



Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

TO: David J. Mohler, Executive Director

FROM: J. Lionel Lucien, P.E, Manager, Public/Private Development Unit
Office of Transportation Planning *LL*

DATE: January 10, 2017

RE: Boxborough: Regency at Boxborough – EENF
(EEA #15624)

The Public/Private Development Unit (PPDU) has reviewed the Expanded Environmental Notification Form (EENF) for the proposed Regency at Boxborough project in Boxborough. The project site consists of a 63.9 -acre parcel of land containing a single-family dwelling and detached barn, wooded upland, and wetland resource areas. The proposal is to demolish the existing structures on the site and construct 100 age-restricted townhouse units, a clubhouse, outdoor swimming pool, pickleball court, bocce court, and associated appurtenances. The proposal will create an additional 234 parking spaces for a total of 236 spaces.

The project requires a Vehicular Access Permit from MassDOT, as a proportion of traffic will access the site via Massachusetts Avenue (Route 111), a state-controlled highway. It does not exceed transportation ENF thresholds but includes a "Traffic Impact and Access Study."

Study Area

The study area for the ENF was selected to contain the major roadway providing access to the project site, Massachusetts Avenue, as well as the following intersections:

- Massachusetts Avenue (Route 111) at Stow Road and Middle Road;
- Massachusetts Avenue (Route 111) at Burroughs Road and Hill Street;
- Stow Road at Sheriff's Meadow Driveway;
- Stow Road at Burroughs Road; and
- Burroughs Road at Priest's Lane.

The study area is generally acceptable and is adequate in capturing the impact of the project on area roadways.

Trip Generation

According to information included in the EENF, the project is expected to generate 644 additional vehicle trips on an average weekday including 52 trips during the AM peak hour and 60 trips during the PM peak hour.

Traffic Operations

Capacity analyses were conducted for the weekday AM and weekday PM peak periods that make up the study area. According to the analysis summary table, the project will not have a significant impact (increase) on motorist delays or vehicle queuing along the area roadways or on intersection operations in the study area. Under 2023 Build conditions all movements out of the site driveway are projected to operate at LOS C during the weekday morning and weekday evening peak hours, the current conditions along Massachusetts Avenue (Route 111).

Site Access Improvements

The project will be served by a full-access driveway on Massachusetts Avenue (Route 111). Emergency access is proposed by way of driveway connections at the end of Priest's Lane and through the Sheriff's Meadow residential development on Stow Road. As such the driveway will permit entering movements from both directions on Massachusetts Avenue (Route 111) and permit exiting movements in a single lane under stop sign control.

The Proponent recommends that a sight distance easement be established east of the site driveway and that this area be re-graded to provide the sight lines and be kept clear of plantings that would obstruct sight distances. Any proposed landscaping at the site driveway intersection and along the site frontage is proposed to be designed to not exceed three feet in height in order to maintain these sight lights.

These site access improvements and other measures that encourage safety and traffic calming, such as signs and pavement markings, are recommended and required to ensure that the project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner.

Conceptual Plans

Any proposed mitigation within the state highway layout and all internal site circulation must be consistent with a Complete Streets design approach that provides adequate and safe accommodation for all roadway users, including pedestrians, bicyclists, and public transit riders. Guidance on Complete Streets design is included in the *MassDOT Project Development and Design Guide*. Where these criteria cannot be met, the Proponent should provide justification, and should work with the MassDOT Highway Division to obtain a design waiver.

Multimodal Access and Facilities

There are no transportation management associations that currently serve the Town of Boxborough. The Proponent has committed to having a transportation coordinator who will work with tenants interested in carpooling and rideshare programs. Given the site's location and the age-restricted nature of the project's residents, providing opportunities for travel without use of a personal vehicle is important. A Travel Demand Management Plan should be considered by the Proponent, including consideration of the following measures:

- Posting of information regarding public transportation services, maps, schedules, and fare information in a central location;
- A packet provided to new residents of the project detailing available public transportation services, bicycle and walking alternatives;
- Reaching out to the Council of Aging to provide services to the site;
- Information and establishment of carpooling and rideshare programs, as already recommended by the Proponent; and
- Pedestrian and bicycle accommodations incorporated into the project site.

Bicycle racks will be provided on site; if feasible these should be provided in a secure area and weather protected.

We recommend that no further environmental review be required based on transportation related issues. The Proponent should continue consultation with appropriate MassDOT units, including the District 3 Office during the access permit process. If you have any questions regarding these comments, please contact me at (857) 368-8862 or Michael Clark at (857) 368-8867.