Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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November 29, 2011

Richard K. Sullivan Jr., Secretary
Executive Office of
Energy & Environmental Affairs
100 Cambridge Street
Boston MA, 02114

RE: Sudbury
The Residences at Johnson Farm
189 Landham Road
EEA # 14818

Attn: MEPA Unit

Dear Secretary Sullivan:

The Massachusetts Department of Environmental Protection Northeast Regional Office (MassDEP-NERO) has reviewed the Environmental Notification Form (ENF) submitted by Madison Place Sudbury LLC to construct 120 rental apartment units in ten, three-story buildings under the provisions of M.G.L. Chapter 40B on a 35.44 acre site in Sudbury (EEA #14818). Parking spaces will be provided for about 180 vehicles, including 22 spaces in parking garages. As proposed, 26 acres of open space would be preserved on site. The Department provides the following comments.

Wetlands

Wetlands occur on 39 percent of the property, including a potential vernal pool in a central wetland area. As proposed, the site access roadway would impact about 10,485 square feet (sf) of bordering vegetated wetlands (BVW). Other areas of the project would result in alteration to 130 lf of bank, 4,740 square feet of isolated vegetated wetlands (IVW), and 49,920 sf of Riverfront Area (RA) resource. The proponent has filed a Notice of Intent requesting an Order of Conditions for these wetlands alterations, DEP File # 301-1068. In addition, the discharge of fill in wetlands also requires a 401 Water Quality Certification from MassDEP.

The BVW alteration is proposed as a limited project under the wetlands regulations (310 CMR 10.53(3)(e)) for access to an upland area from a public way, where a reasonable alternative for access is unavailable. Several alternative road access locations and stream crossing structure designs were considered and rejected for reasons explained in the ENF (pages 6-8). The proponent's preferred alternative is an alignment of the site roadway that follows an existing cart path, a

narrower width of roadway through the wetlands section (42 feet)[1], and the use retaining walls on the side slopes for the roadway to minimize the wetlands alteration.

The analysis of alternative projects for the site included a 198 unit development in 13 buildings (Option 7). However, Figure 6, which is reported to be Option 7 (page 5), is a 120 unit development in 10 buildings. It is unclear why this alternative was not described. This alternative only includes one stream crossing, which would reduce the wetlands impacts, while still providing the development described in the preferred alternative. Therefore, information will be required by MassDEP to understand whether this is a reasonable alternative.

Wetlands crossing

Based on a review of the ENF, MassDEP will need additional information for a 401 Water Quality Certification. The preferred alternatives section, (page 5) refers to a "non-natural BVW" that needs to be explained. The method and analysis for determining mean annual high water is needed to understand how bank-full limits of the stream were established. This information will be considered in the demonstration of practicable alternatives for the stream crossing, in compliance with 401 Water Quality requirements.

In consideration that an alternatives analysis also is necessary for 401 Water Quality Certification, MassDEP has reviewed the evaluation of BVW crossing alternatives provided in the ENF, and requests consideration of an open bottom box culvert or arch culvert to retain native stream bottom substrate. For the proposed alternatives, it will be necessary to demonstrate fully that the culverts' openings meet the stream crossing standards. To that end, more detail on the intermittent stream openness ratios will be needed to show that the proposed culvert meets the crossing standards. In addition, the potential for downstream impacts, (if any), as a result of enlarging the existing culvert must be evaluated.

MassDEP requests further consideration of the estimated costs for the bridge alternatives in the ENF (page 7). Since significant fill material is being brought in to maintain an adequate separation to the seasonal high groundwater table beneath the site roadways for all stream crossing alternatives, the cost of fill for the bridge approaches would not be a cost associated only with this alternative. Recognizing that fill will be needed for all stream crossing alternatives, if the estimated cost for the bridge approach fill is subtracted from the total cost for a bridge, would a span over the wetlands become a reasonable alternative?

Wetlands mitigation

The wetlands mitigation described in the ENF is for BVW only. Since it is not clear from the ENF how the project would be designed to meet the performance standards for bank resource, 310 CMR 10.54 (4), and there does not appear to be any replication for loss of bank resource, MassDEP will need further clarification of this issue, recognizing that the requirements for bank replication will depend on the stream crossing proposed.

For permitting under Section 4 of the Clean Water Act, MassDEP will need the total cumulative impacts on BVW and IVW, along with soils information for determining limits of the

[1] At the MEPA consultation session, November 18, the proponent's consultant's provided the roadway width information and indicated that these dimensions had not yet been approved by the fire department.

isolated wetland. Once determined, the requirements for BVW and IVW mitigation will need to be provided. The replication plan submitted must include a site plan, cross sections, estimated depth to seasonal high groundwater, depth of organics, and the planting scheme must follow MassDEP's *Inland Wetland Replication Guidelines.*

Stormwater

The proposal is to use porous pavement and pervious pavers for the roadways, parking areas, and sidewalks. This low impact development measure would minimize the amount of imperviousness on site and has the potential to alleviate the need for detention systems to control peak rates of runoff. Although pervious pavement also is reported to achieve high levels of total suspended solids removal for compliance with the water quality standard 4, it remains to be established that this practice is appropriate the project site, which is reported to have a seasonal high groundwater table within one and a half to three feet below the surface. The proponent also needs to provide details on the construction sequencing to demonstrate that the pervious roadway will be constructed without compacting soils by the construction equipment. In addition, the parties responsible for maintenance of roadway must be identified. If a homeowners association will have responsibility for maintaining the functional capacity of the roadways and sidewalks, the funding should be clarified, in terms of the establishment of escrow accounts or other comparable financial mechanisms prior to transference of responsibility to the association.

The project is within the Hop Brook watershed, and as indicated in the ENF, this stream is impaired for nutrients, pathogens, noxious aquatic plants, and dissolved oxygen. A total maximum daily load (TMDL) is required for this impaired, Category 5 waterbody to remediate these contaminants. Therefore, the source controls, pollution prevention measures, and best management practices for this project should be designed to control runoff and avoid contributing to contamination in the watershed. Accordingly, the project's stormwater control plan should be consistent with the Town of Sudbury's Storm Water plan under its MS4 NPDES General Permit, which potentially may include stormwater control requirements for this and other impaired waterbodies.

The proponent also is reminded that pollution prevention and source control measures are required for compliance with the total suspended solids Standard 4 in the Stormwater Management regulations. The source control and pollution prevention plan for this project should specify that snow shall not be plowed toward the wetlands and that snow shall be managed in accordance with the MassDEP Snow Disposal Guidelines. These guidelines are available at the following MassDEP website: http://mass.gov/dep/water/laws/policies.htm - storm.The snow disposal plan should show the location on or off-site where snow will be plowed or disposed. The plan should commit to a schedule for parking lot sweeping that is sufficiently rigorous to maintain the functional capacity of the porous pavement. Sweeping should be timed to occur more frequently in the fall and spring months for removal of leaves and sand.

Wastewater/Groundwater Discharge Permit

As noted in the ENF, the project would generate 19,800 gpd of wastewater, and a MassDEP groundwater discharge permit is required for this project. On August 23, 2011, MassDEP approved a scope for the hydrogeological study needed to support a groundwater discharge permit application. The scope of work and conditions of the approval require the

proponent to assess the impacts of the proposed groundwater discharge on surface and groundwater resources, and on nearby properties which may be impacted by the discharge. The field investigation work included in the approved scope is now underway. MassDEP must approve the resulting hydrogeological report before an application for a groundwater discharge permit can be submitted. The proponent must conform to the requirements of 314 CMR 5.00 and the procedural requirements of 314 CMR 2.00 before MassDEP can issue a groundwater discharge permit.

Greenhouse Gas Emissions

The ENF (Appendix E) acknowledges that if an EIR is required, a GHG analysis in accordance with the MEPA Greenhouse Gas Emissions Policy and Protocol would be required to provide an understanding of the building design and mobile source controls that would be adopted to reduce greenhouse gas emissions.

The proponent understands the importance of energy efficiency and is proposing energy efficiencies in the building envelop, lighting, and appliances as mitigation for GHG emissions from the project, which would need to, at a minimum, meet the Massachusetts Stretch Code, which is effective in the Town of Sudbury. While MassDEP appreciates the proponent's commitment to using Energy Star appliances, the proponent is encouraged to take a step forward and integrate energy efficiencies into the entire project from the design stage, and commit to an EnergyStar-rated development, or an energy efficient equivalent development to achieve a reduction in energy use of 20-25 percent or more, when compared with a development that meets the current Building Code standards. Economical energy efficiencies can be achieved by a combination of measures, such as taking full advantage of ambient light with building and window orientation, optimizing window-to-wall ratios, high ceilings, interior or exterior light shelves with separate glazing for high and low visual transmittance, and "smart windows," which adjust to collect or block solar heat and light when needed and not needed. Measures such as these can reduce artificial lighting needs without contributing to higher heating and cooling loads.

MassDEP recommends that installation of photovoltaic units (PV) be revisited from the perspective that lower energy demand and costs from a renewable source would enhance the "affordable housing nature of the project" for tenants with low and moderate income levels. Therefore, MassDEP requests that the proponent carefully reconsider PV and available financial incentives, such as Commonwealth Solar II, to eliminate or minimize economic barriers to installation of solar power.

The Department recognizes the proponent for proposing electric vehicle charging stations and wiring to accommodate future stations in apartment buildings. Since there are alternative modes of transportation available to tenants, MassDEP recommends that the proponent maintain current transit information for tenants in public areas, such as kiosks and the rental office. It also would be useful to provide manuals to educate the tenants on the importance of energy efficiency and the tenant behavior necessary to achieve it. The manuals could provide instructions on ways to reduce energy use and control plug loads, as well as key information on transit.

Lastly, the proponent should not overlook the role of building and maintenance staff in controlling energy efficiency in the proposed facilities, by making a commitment to provide an allowance for maintenance staff training, and for maintenance and replacement of essential systems.

Recycling

The project includes demolition and reconstruction, which will generate a significant amount of construction and demolition (C&D) waste. Although the ENF has not made a commitment to recycling construction debris, MassDEP encourages the project proponent to incorporate C&D recycling activities as a sustainable measure for the project. In addition, the proponent is advised that demolition activities must comply with both Solid Waste and Air Pollution Control regulations, pursuant to M.G.L. Chapter 40, Section 54, which provides:

> "Every city or town shall require, as a condition of issuing a building permit or license for the demolition, renovation, rehabilitation or other alteration of a building or structure, that the debris resulting from such demolition, renovation, rehabilitation or alteration be disposed of in a properly licensed solid waste disposal facility, as defined by Section one hundred and fifty A of Chapter one hundred and eleven. Any such permit or license shall indicate the location of the facility at which the debris is to be disposed. If for any reason, the debris will not be disposed as indicated, the permittee or licensee shall notify the issuing authority as to the location where the debris will be disposed. The issuing authority shall amend the permit or license to so indicate."

For the purposes of implementing the requirements of M.G.L. Chapter 40, Section 54, MassDEP considers an asphalt, brick, and concrete (ABC) rubble processing or recycling facility, (pursuant to the provisions of Section (3) under 310 CMR 16.05, the Site Assignment regulations for solid waste management facilities), to be conditionally exempt from the site assignment requirements, if the ABC rubble at such facilities is separated from other solid waste materials at the point of generation. In accordance with 310 CMR 16.05(3), ABC can be crushed on-site with a 30-day notification to MassDEP. However, the asphalt is limited to weathered bituminous concrete, (no roofing asphalt), and the brick and concrete must be uncoated or not impregnated with materials such as roofing epoxy. If the brick and concrete are not clean, the material is defined as construction and demolition (C&D) waste and requires either a Beneficial Use Determination (BUD) or a Site Assignment and permit before it can be crushed.

Pursuant to the requirements of 310 CMR 7.02 of the Air Pollution Control regulations, if the ABC crushing activities are projected to result in the emission of one ton or more of particulate matter to the ambient air per year, and/or if the crushing equipment employs a diesel oil fired engine with an energy input capacity of three million or more British thermal units per hour for either mechanical or electrical power which will remain on-site for twelve or more months, then a plan application must be submitted to MassDEP for written approval prior to installation and operation of the crushing equipment.

In addition, if significant portions of the demolition project contain asbestos, the project proponent is advised that asbestos and asbestos-containing waste material are a special waste as

defined in the Solid Waste Management regulations, (310 CMR 19.061). Asbestos removal notification on permit form ANF 001 and building demolition notification on permit form AQ06 must be submitted to MassDEP at least 10 working days prior to initiating work. Except for vinyl asbestos tile (VAT) and asphaltic-asbestos felt and shingles, the disposal of asbestos containing materials within the Commonwealth must be at a facility specifically approved by MassDEP, (310 CMR 19.061). No asbestos containing material including VAT, and/or asphaltic-asbestos felts or shingles may be disposed at a facility operating as a recycling facility, (310 CMR 16.05). The disposal of the asbestos containing materials outside the jurisdictional boundaries of the Commonwealth must comply with all the applicable laws and regulations of the state receiving the material.

The demolition activity also must conform to current Massachusetts Air Pollution Control regulations governing nuisance conditions at 310 CMR 7.01, 7.09 and 7.10. As such, the proponent should propose measures to alleviate dust, noise, and odor nuisance conditions, which may occur during the demolition. Again, MassDEP must be notified in writing, at least 10 days in advance of removing any asbestos, and at least 10 days prior to any demolition work. The removal of asbestos from the buildings must adhere to the special safeguards defined in the Air Pollution Control regulations, (310 CMR 7.15 (2)).

Facilitating future waste reduction and recycling and integrating recycled materials into the project are necessary to minimize or mitigate the long-term solid waste impacts of this type of development. The Commonwealth's waste diversion strategy is part of an integrated solid waste management plan, which has been updated in the Draft 2010 Solid Waste Master Plan: A Pathway to Zero Waste, July 10, 2010. The revised plan places a priority on paper and organic waste materials reduction and recycling for commercial and residential development. This draft includes a Massachusetts plan for 2020 to reduce solid waste disposal by 30 percent, and by 2050 achieve an 80 percent reduction in waste. Not only will this result in significant financial savings, waste reduction also is linked to reductions in greenhouse gas emissions. Taking into account the lifecycle of materials from production, use, transportation, and disposal of materials and packaging; disposal of solid waste is considered energy intensive and a significant source of greenhouse gas emissions.

As the lead state agencies responsible for helping the Commonwealth achieve its waste diversion goals, MassDEP and EEA have strongly supported voluntary initiatives by the private sector to institutionalize source reduction and recycling into their operations. Adapting the design, infrastructure, and contractual requirements necessary to incorporate reduction, recycling and recycled products into existing large-scale developments has presented significant challenges to recycling proponents. Integrating those components into developments such as the Residences at Johnson Farm at the planning and design stage enable the project's management and occupants to establish and maintain effective waste diversion programs. For example, facilities with minimal obstructions to trash receptacles and easy access to main recycling areas and trash chutes allow for implementation of recycling programs and have been proven to reduce cleaning costs by 20 percent to 50 percent. Other designs that provide sufficient space and electrical services will support consolidating and compacting recyclable material and truck access for recycling material collection.

By incorporating recycling and source reduction into the design, the proponent has the opportunity to join a national movement toward sustainable design. Sustainable design was endorsed in 1993 by the American Institute of Architects with the signing of its *Declaration of Interdependence for a Sustainable Future.* The project proponent may be aware of organizations that provide additional information and technical assistance, including Massachusetts Materials Trader (http://www.massmaterialtrader.com/), USEPA's WasteWise Program (www.epa.gov/wastewise/), WasteCap (www.wastecap.org), and MassRecycle (http://www.massrecycle.org/). The listed organizations and programs are notable for offering valuable and effective waste reduction and recycling assistance, resources, case studies, and tools for C&D projects.

The MassDEP Northeast Regional Office appreciates the opportunity to comment on this proposed project. Please contact Michael.Abell@state.ma.us , at (978) 694-3257 for additional information on wetlands issues and Kevin.Brander@state.ma.us , at (978) 694-3236 for further information on the wastewater issues. If you have any general questions regarding these comments, please contact Nancy.Baker@state.ma.us , MEPA Review Coordinator at (978) 694-3338.

Sincerely,

John D. Viola
Deputy Regional Director

cc: Brona Simon, Massachusetts Historical Commission
Phil Weinberg, MassDEP-Boston
Kevin Brander, Jill Provencal, Michael Abell, Pam Merrill, MassDEP-NERO
Town of Sudbury Conservation Commission