The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Deval L. Patrick
GOVERNOR

Timothy P. Murray
LIEUTENANT GOVERNOR

Ian A. Bowles
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181
http://www.mass.gov/envir

May 15, 2009

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
FINAL ENVIRONMENTAL IMPACT REPORT

PROJECT NAME	: Hamilton Canal District
PROJECT MUNICIPALITY	: Lowell
PROJECT WATERSHED	: Merrimack
EEA NUMBER	: 14240
PROJECT PROPONENT	: Trinity Hamilton Canal Limited Partnership
DATE NOTICED IN MONITOR	: April 8, 2009

As Secretary of Energy and Environmental Affairs, I hereby determine that the Final Environmental Impact Report (FEIR) submitted on this project **adequately and properly complies** with the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62I) and with its implementing regulations (301 CMR 11.00).

Project Summary

The proposed project consists of a transit-oriented, mixed use development on a 13-acre site in the Hamilton Canal District. The project includes housing (affordable and market-rate), commercial and retail space, restaurants, a theatre, and art gallery, and includes new construction as well as adaptive reuse of historic buildings. Based on the comments received and on consultations during the Integrated MEPA Review and Permitting process, it is clear that the proponent has worked cooperatively with federal, state, regional, and local entities on project design and development of mitigation plans. The proponent has also conducted numerous public meetings to obtain input through neighborhood charettes.

The project has made noteworthy commitments to green building and sustainable design. The project is being designed to meet Leadership in Energy and Environmental Design for Neighborhood Development (LEED-ND) criteria. All new buildings will be LEED for New

Construction (LEED-NC) certifiable and thirty percent of the project's gross square footage will be certified at the silver level under LEED-NC. The proponent has also committed to green roofs on thirty percent of the project's roof area and to incorporate renewable energy features into the project design.

The project is located within the boundaries of three historic districts including the Lowell National Historic Park and Preservation District, the Downtown Lowell Historic District and the Locks and Canals Historic District. The site is adjacent to the National Historical Park Visitor Center and the proposed new Lowell Trial Court. The City of Lowell has partnered with the proponent in developing a Master Plan for the project, which is considered a significant next step in the redevelopment and revitalization of downtown Lowell. The project site includes historic mill buildings associated with former textile manufacturing operations. It is a brownfields site, which is currently undergoing assessment and remediation in accordance with the Massachusetts Contingency Plan (MCP).

The total development proposed, approximately 1.8 million square feet, includes 767,000 gross square feet (gsf) of housing (623 units), 54,800 gsf of retail space, 424,000 gsf of commercial spaces and 627,000 gsf of parking (1,964 surface, above and below-grade spaces including a 980-car garage). The proponent has developed an alternative plan for Parcel 10, which consists of an additional 50 units of housing, if the proposed office space for this parcel is not marketable. According to the FEIR, the project will generate approximately 10,440 new vehicle trips on an average weekday and 10,450 new vehicle trips on an average Saturday. The project is being designed as a transit-oriented development with an expanded trolley system proposed from Dutton Street to the Gallagher Transportation Terminal, located a quarter mile south of the site. The transportation component of the project also includes a new four-way intersection and reconfiguration at the Lord Overpass, pedestrian linkages and canal walks, a new Jackson Street extension to Thorndike Street, and an extension of Broadway Street across the Merrimack Canal. The project includes new bridge construction across the Hamilton and Pawtucket Canals, rehabilitation of existing canal crossings, and a temporary bridge across the Hamilton Canal.

The project involves rehabilitation of mill buildings, including restoration of the majority of the Freudenberg building (an existing building addition is proposed for demolition), and retention of historic walls remaining from other structures, primarily the Appleton Manufacturing Company buildings.

While I find the FEIR to be adequate, and acknowledge the proponent's commitment to sustainable design and its intent to develop a model project, I also note that commitments to Transportation Demand Management (TDM), bus service, and renewable energy could have been stronger. I ask that the proponent consider additional measures to maximize the potential air quality benefits based on the project's proximity to public transit and opportunities for on-site renewable energy generation. I also expect that state agencies will consider these issues as part of the project permitting and state funding process, and I note that additional mitigation beyond what was proposed in the FEIR may be required.

Phase I

In a Final Record of Decision (FROD) dated July 11, 2008, I granted a waiver allowing the proponent to proceed to permitting for Phase I of the project prior to completion of the EIR for the entire project. Phase I consists of adaptive reuse of the Appleton Mill complex for 161 housing units and the Freudenberg Building for 50,000 sf of commercial space. A temporary bridge will be constructed across the Hamilton Canal to accommodate construction vehicles during Phase I.

Permits and Jurisdiction

The project is undergoing review and requires the preparation of a mandatory EIR pursuant to Section 11.03 (6)(a)(6) of the MEPA regulations because it will result in generation of 3,000 or more new average daily trips (adt) and Section 11.03 (6)(a)(7) due to construction of 1,000 or more new parking spaces at a single location. The project is also undergoing environmental review pursuant to: Section 11.03(1)(b) (3) because it involves conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97; Section 11.03(1)(b)(7) because it requires approval in accordance with M.G.L. c. 121B of a modification to an existing urban renewal plan; Section 11.03(3)(b)(6) because it involves reconstruction of a pile-supported structure of 2,000 or more square foot (sf) base area that occupies waterways; Section 11.03(10)(b)(1) because it involves demolition of a historic structure located in a Historic District listed in the State Register of Historic Places; and Section 11.03(5)(b)(3)(c) because it involves construction of one-half or more miles of new sewer mains.

The proposed project is being reviewed under the Integrated MEPA/Permitting Review pilot process and it is subject to the EEA/MEPA Greenhouse Gas Emissions Policy and Protocol. Permits and approvals required include a Vehicular Access Permit from the Massachusetts Highway Department (MassHighway); a Chapter 91 License and Sewer Connection/Extension Permit from the Massachusetts Department of Environmental Protection (MassDEP); and approval of an Urban Renewal Plan Amendment from the Department of Housing and Community Development (DHCD). The project involves disposition of property that is under the care and control of the Department of Conservation and Recreation (DCR). The disposition requires legislative approval pursuant to Article 97 of the Massachusetts Constitution and a conveyance from the Division of Capital Assets and Management (DCAM). An approval from the National Park Service is also required since land that is the subject of the disposition was acquired by the Commonwealth using federal Land and Water Conservation Funds (LWCF). The project is subject to review by the Massachusetts Historic Commission.

There are several ownership entities involved in the project, including the City of Lowell, the Lowell National Historic Park (LNHP), DCAM and DCR, Boot Hydropower, and the proprietors of the Locks and Canals. Implementation of the project will require conveyance of parcels of land from the City to the proponent and a conveyance or lease from the LNHP for redevelopment of existing parking lots. The City of Lowell will retain ownership of streets,

bridges, and rights of way connecting the project parcels. The City will also be conveying parcels to DCAM for the proposed Trial Court.[1]

The project involves state funding; transportation funding, funding associated with the Executive Office of Housing and Economic Development's Growth Districts Initiative, and potentially State Historic Tax Credits. Therefore, MEPA jurisdiction is broad and extends to all aspects of the project with the potential to cause Damage to the Environment as defined in the MEPA regulations.

REVIEW OF FINAL EIR

Article 97 Land Disposition

The project requires easements over DCR property. DCR has care and control of Commonwealth-owned property and associated volumetric air rights on the project site, including narrow strips of abutting land along certain sections of the Hamilton Canal, Pawtucket Canal, and land to the easterly side of Merrimack Canal. DCR acquired the land in 1985 using federal Land and Water Conservation Funds (LWCF). In addition to the state approvals required for the land transfer, the project requires federal approval because the land was purchased using federal funds. The EEA Division of Conservation Services submitted a request to the National Park Service (NPS) for an amendment to the LWCF agreement to allow the proposed transfer of land to the City. The amendment has recently been approved by the NPS.

The FEIR includes an update on the Article 97 land transfer process. As noted in the FEIR, there are nineteen separate parcels to be conveyed, including seven bridge crossings, which are composed of multiple parcels. Seventeen of the parcels are associated with Phase One of the project. According to the FEIR, DCR property on the project site comprises approximately 5,969 square feet. As noted in the DCR comment letter, the current land transfer plan consists of conveyance of fee interests (and other volumetric rights) from the Commonwealth to the City of Lowell. The disposition was authorized under Section 25 of Chapter 312 of the Acts of 2008.

As mitigation for the land disposition, Parcel 3, a 12,307 sf area located at the confluence of the Hamilton, Pawtucket and Merrimack Canals, has been designated for open space purposes. This parcel will be owned and maintained by the City of Lowell, and dedicated as permanent parkland open to the general public. DCR believes that this replacement land, properly designed and developed as a public park, would be acceptable to meet the requirements of the Article 97 Land Disposition Policy.

Greenhouse Gas Emissions

The FEIR included an updated GHG analysis, as required by the Scope, that uses the October 18, 2008 revised 7th edition of the MA Building Code for the Base Case analysis. The analysis uses the Tech Environmental Energy Model and compares the base case with an

[1] The proposed new Lowell Trial Court is not part of the Hamilton Canal District Project but was considered in the traffic analysis included in the Expanded Environmental Notification Form (EENF) and Draft and Final EIR.

alternative that includes some energy saving design features, and a Mitigation alternative that includes additional energy saving elements. Based on the revised analysis, the project is estimated to achieve a Carbon dioxide (CO_2) emission reduction of 20.6 percent for direct and indirect stationary sources, and 5.0 percent for mobile sources. CO_2 emissions from project-related vehicle trips were analyzed using the EPA MOBILE6.2 Mobile Source Emission Factor Model. The overall CO_2 emission reduction for the project is estimated at 19.8 percent in the FEIR. The percentage reduction of CO_2 is less in the FEIR compared with the DEIR. This is primarily due to the correct use of the most recent building code, which increases the standards for energy efficiency for the base case analysis. The FEIR estimates that the project (without mitigation) would result in a 17,767 tons per year (tpy) increase in CO_2 emissions. The mitigation measures proposed in the FEIR are estimated to reduce CO_2 emissions by 3,515 tons per year (this estimate does not include potential additional reductions that may be achieved using on-site renewable energy generation).

The FEIR evaluates several options for renewable energy use including hydro-electric power, wind power, use of canal waters for heating and cooling, and photovoltaic (PV) systems. The FEIR concludes that PV systems may offer the best alternative to generate renewable energy on-site. The FEIR includes a feasibility analysis of the economics of a PV system and concludes that an owner-installed PV system is infeasible and that the economics for a third-party vendor may be more favorable. I note comments from the MassDEP (which incorporates Department of Energy Resources (DOER) comments) suggesting that the model be rerun using updated tools, which may result in a more favorable economic projection for the owner-installed PV system. The analysis in the FEIR indicates that the project's five percent renewable energy goal could be achieved with a 500 kilowatt (kW) PV array, which would require 50,000 sf of roof area and most likely be installed in several 100-200 kW sections on different building roofs. The proponent has committed to reserve 50,000 sf of the project's flat roof area as solar-ready space for a third-party PV installation. Implementation of a 500kW PV system would further reduce CO_2 emissions by 367 tons per year (for a total reduction of 3,882 tpy).

The site was historically used for water power generation. The proponent has committed to undertake a feasibility study in association with development of Parcel 8 to evaluate the potential for generation of hydro-electric power on-site. The proponent is also investigating solar thermal systems for residential buildings, which include Parcels 2, 4, 8, 9, and 11.

The proponent has committed in the FEIR to a range of mitigation measures to reduce GHG emissions, which include building design and operation measures and TDM measures as further detailed in the mitigation section below and in the FEIR. I refer the proponent to the MassDEP and EOT comment letters for recommendations on additional measures to consider.

The FEIR is generally responsive to the Scope and to agency comment letters on the DEIR. However, for certain TDM measures, the proponent will encourage project tenants to implement them (e.g. parking cash-out, guaranteed ride home, subsidized transit passes, use of pre-tax dollars for transit and vanpool commuting). The FEIR does not address the option of providing a funding commitment or identifying the responsible party (developer, landlord or tenant) that will implement and maintain these TDM measures. I note MassDEP's concern that

without a firm commitment by the proponent, the full potential air quality benefit of the TDM program remains tentative. I strongly encourage the proponent to consider how lease agreements or other means, including a funding commitment for transit pass subsidies for future tenants, could ensure implementation and maintenance of the TDM measures. I acknowledge the proponent's commitment to advocate for formation of a Transportation Management Association (TMA) at a later stage of the project and to provide a trip reduction coordinator in the meantime. MassDEP recommends that the proponent contact MassCommute for assistance and work towards early establishment of a TMA to facilitate greater participation by future tenants and employers in the area and success of the TDM program.

The proponent has indicated that TDM requirements for tenants would be a disincentive from a marketing perspective for the project. However, the transit-oriented location of the project, together with transportation improvements and other potential incentives that the proponent may provide, could be seen as an opportunity for cost-savings by tenants and employees. I encourage the proponent to develop a Tenant Manual that would include a set of guidelines that requires and/or encourages future tenants to adopt appropriate TDM, sustainable design, and GHG emission reduction measures to the extent feasible as part of their respective lease agreements. I note that MassHighway may require additional TDM commitments, such as tenant registration with MassRides, as a condition of funding and/or permitting.

Transportation

As required by the Scope, the FEIR includes revised draft Section 61 Findings for use by the Executive Office of Transportation and Public Works (EOT) and MassHighway during permitting. The revised draft findings identify the party responsible for funding and implementing proposed mitigation. The proponent is identified in the FEIR as the party responsible for funding transportation mitigation measures. The FEIR indicates that the City of Lowell will implement roadway, intersection, and other infrastructure improvements including bridges, canalwalks, and parks. The City of Lowell or MassHighway will be implement construction of the Lord Overpass, Jackson Street Extension and Thorndike/Jackson/Dutton Street intersection and other local off-site mitigation design and construction. The proponent will be responsible for implementing TDM measures.

Since the filing of the FEIR, the City of Lowell has submitted a request to EOT for the discontinuance of a section of State Highway in Lowell. Depending on the outcome of EOT's review and decision-making, it is possible that the project may not require a MassHighway Vehicular Access Permit. If a MassHighway Permit is not required, I expect that transportation and related GHG mitigation commitments will be incorporated as conditions of state funding and in MassDEP permits.

Since the filing of the DEIR, the proponent has entered into an agreement with the National Park Service and the Lowell Plan to proceed with the next phase of the Trolley expansion planning study. The study will identify the preferred trolley route linking the historic trolley line to the Gallagher Terminal as well as additional trolley service routes throughout Lowell, and include a feasibility analysis and explore funding opportunities.

The FEIR includes additional detail on the proposed pedestrian access improvements, which include sidewalks, canalwalks, and lighting. The proponent is coordinating with the City of Lowell and the National Park Service regarding construction of the Hamilton Canalwalk and related improvements to complete the pedestrian connection to downtown Lowell. The proposed improvements will enhance walking and connectivity between the Hamilton Canal District, downtown Lowell and the Kennedy Transportation Center at the Gallagher Terminal. The pedestrian improvements proposed by the proponent are outlined in the Mitigation section below.

The FEIR includes a revised transportation study prepared in conformance with EEA/EOT guidelines for the preparation of Traffic Impact Assessment. EOT indicates that the study addresses most of the concerns raised in its comment letter on the DEIR, and the proponent has committed to a comprehensive mitigation package to address the project's traffic impacts. The proposed mitigation measures include roadway improvements, traffic signal coordination, pedestrian, bicyclist and public transit improvements, and TDM measures. The proponent should work closely with MassHighway to design and construct the infrastructure improvements and work with the EOT Public/Private Development Unit and MassRides to implement the TDM measures.

The roadway improvements include the reconfiguration of the Lord Overpass to improve traffic flow and the extension of Jackson Street to create a new four-way intersection with Fletcher Street, Thorndike Street, and Dutton Street. The FEIR includes additional revisions to the concept plan for these improvements that reduces the proposed Thorndike Street cross-section under the Lord Overpass, thereby eliminating the need to reconstruct the Middlesex Bridge. The proponent has consulted with EOT and MassHighway to discuss these changes and EOT indicates in its comment letter that, with implementation of the proposed changes, the intersections in the vicinity of the project would continue to operate at acceptable levels of service.

The DEIR and FEIR identify traffic congestion issues and propose mitigation at the Thorndike Street/Gallagher Transportation Center Driveway. The traffic capacity analysis indicates that the intersection would operate at a level-of-service F with high levels of congestion under the future No-Build condition (PM and Saturday peak hours). The traffic associated with the proposed project would exacerbate conditions. The FEIR proposes as mitigation the restriping and widening of Thorndike Street northbound approach to provide a separate left-turn lane and two through travel lanes. These improvements will require additional right-of-way along South Common Park, which requires legislative approval for disposition of Article 97 land. The proponent is in consultation with EOT and MassHighway regarding an alternative mitigation proposal that would avoid the need to acquire parkland right-of-way. I note EOT's concerns that the alternative under consideration by the proponent may not adequately mitigate the project-related impacts at this intersection. Should the ongoing conversations concerning this intersection identify the need for material changes to the mitigation proposal reflected in the FEIR, the proponent is reminded that the submission of a Notice of Project Change in accordance with 301 CMR 11.10 may be required. The proponent should consult with the MEPA office to discuss filing requirements for any changes to FEIR mitigation measures that may be proposed based on the outcome of further discussions with MassHighway.

The proposed intersection and roadway improvements will provide new connections through the district, which provide opportunities to expand bus service to the site. The proponent has been in consultation with the Lowell Regional Transit Authority (LRTA) and the Northern Middlesex Council of Governments (NMCOG) to discuss bus service including modification of the existing downtown shuttle route to redirect it through the project site providing a connection between downtown Lowell, the Hamilton Canal District, and the Gallagher Transportation Terminal. The FEIR identifies potential route modifications and the proponent has committed to work with LRTA to explore the feasibility of providing new bus stops adjacent to the site. The FEIR indicates that the LRTA has agreed to review the potential route alternatives at the appropriate stage of project development. However, as noted in EOT's comment letter, the FEIR falls short on a specific commitment to provide on-site and off-site amenities to encourage the implementation of these services. EOT will require a revised letter of commitment from the proponent to address its comments, and indicates that the proponent should make a clear commitment to provide, at a minimum, all on-site amenities such as bus shelters, bus signage, and pullouts that would be necessary to accommodate potential routes identified in the FEIR.

As noted in the comment letter from EOT, some of the proposed transportation improvements would require programming through the Transportation Improvement Program (TIP). The proponent should consult with EOT to clarify the financing of the proposed transportation improvements. Subsequent to these discussions, the proponent should submit a revised letter of commitment to the EOT Public/Private Development Unit, which will serve as the basis for MassHighway to issue a Section 61 Finding for the project.

Stormwater

The proponent has re-evaluated the stormwater management system as recommended by MassDEP and has replaced the Stormceptor 450i units proposed in the Draft EIR with larger sized units that are more appropriate for the site.

As noted in the FEIR, the project design includes several Low Impact Development (LID) features. Impervious area is reduced through use of road widths of 22 feet (in lieu of the 24 foot typically required by the City of Lowell). Other measures to reduce impervious include decentralized parking, basement level parking, and a multi-story garage. The project includes cisterns to capture and store stormwater run-off, which will be used for irrigation. Bioretention/rain gardens and green roofs will be incorporated in project design to increase storage and evapotranspiration. Implementation of certain LID techniques, such as groundwater recharge, is restricted on-site due to the presence of contaminated soils and the potential for migration of contaminants.

The FEIR includes an Inspection and Maintenance plan, which should be amended to include maintenance requirements for green roofs. As noted by MassDEP in its comment letter, the Stormwater Pollution Prevention Plan (SWPPP) has been improved. The proponent should make further modifications to the SWPPP as necessary to eliminate items that are not applicable to the project (e.g. septic system maintenance) and to ensure all appropriate site-specific measures are included. In addition, the Stormwater Checklist should include the requirement for

an illicit discharge compliance statement to comply with the Stormwater Management regulations and performance standards.

Historic Resources

The FEIR includes an update on the status of federal and state historic tax credits, historic regulatory review requirements, and the Memorandum of Agreement for the project. The proponent has submitted Historic Preservation Certification Applications (HPCAs) to the Massachusetts Historic Commission (MHC) for Buildings # 1 and 4 and the office building of the Appleton Manufacturing Company mill complex, and is awaiting completion of MHC review. The proponent intends to file HPCA applications for the Saco-Lowell Shops Building #14 in the near future.

A Memorandum of Agreement (MOA) has recently been executed between the Lowell National Historic Park (LNHP), the MHC, the proponent, and the City of Lowell, with the Lowell Historic Board as a consulting party. The MOA outlines measures to avoid, minimize or mitigate adverse project impacts. The FEIR includes a copy of the draft MOA and a final version was circulated during the FEIR review. Mitigation measures stipulated in the MOA include mill building rehabilitation, attention to the design character of replacement bridges, and a commitment that Phase One of the project will have no adverse effect on the waterwheel and raceway in the Appleton Mill building (Mill #1) and will not preclude the future reuse of these structures for hydroelectric power generation. The MOA requires that buildings are rehabilitated in accordance with the Secretary of the Interior's Standards for Rehabilitation and outlines a process for review of rehabilitation of historic resources. The MOA also outlines a process for review of proposed open space and public realm improvements and design of new construction.

Wastewater

The project will include two new sewer lift stations; the South Station, which is located along Street D within Parcel 7 and the North Station located along Street G within Parcel 11. The FEIR includes revised sewer flow calculations based on Title V estimated flows. Sewage flows to the South lift station are estimated in the FEIR at 97,369 gallons per day (gpd). The North Station will receive flows of approximately 34,403 gpd. The South Station will be constructed as part of Phase One of the project, and the North Station during Phase Two. The City of Lowell will own the two sewer lift stations after completion of the project. MassDEP has issued a Sewer Extension Permit for South Station flows and is currently reviewing the proponent's permit application for the North Station.

The FEIR proposes a portable generator, which would be stored at the Lowell Regional Wastewater Utility (LRWWU) and transported to the South lift station to provide back-up power as needed. As noted in the MassDEP comment letter, both pump stations must be equipped with backup power facilities so that operations will not be interrupted during power outages. MassDEP has indicated that it will accept the use of portable generators under certain conditions, which I expect will be included as conditions for the Sewer Extension Permit. The proponent must also comply with any requirements of the LRWWU regarding facility design, since operation and ownership of the facilities will be transferred to the LRWWU.

The project will include replacement of the existing combined sewer system with a separate sewer and stormwater drain system, which will serve to reduce inflow and infiltration (I/I) to the sewer system. The proponent has also committed to using water conserving fixtures that exceed building code requirements and is evaluating appliances on the USEPA Watersense program list that may be used in residential buildings.

Wetlands and Waterway

The proposed development parcels abut three canals, which are considered wetland resource areas and include Land Under Water (LUW) and Bank. A large portion of the site is located within wetlands buffer zone (8.5 of the 13.5-acre site). Permanent impacts include approximately 2,600 square feet associated with concrete piers to be constructed within the canal. The project will result in temporary impacts on canal walls and LUW associated with cofferdams at the bridge abutments.

The project will require Chapter 91 Licenses from MassDEP for the construction of the vehicular and pedestrian bridges throughout the site, which include:

- Bridge B2-Swamp Locks Bridge, which extends over the Lower Pawtucket Canal between the northern and southern sections of the site and will provide pedestrian sidewalks and a potential trolley way;
- Bridge B3 is a proposed crossing which will be newly constructed to serve as a major vehicular and pedestrian access between the southern and northern portions of the site over the Lower Pawtucket Canal;
- Bridge B7, the Broadway Street Bridge, is an existing crossing that will be modified by adding new sidewalks on each side and will serve as a major access to the northern portion of the site from Dutton Street, crossing over the Merrimack Canal; and
- Bridge B8, the Thorndike Street/Dutton Street and Fletcher Street/Jackson Street Extension Bridge is located at the east end of the Jackson Street Extension and provides connections at the intersection of the Hamilton and Merrimack Canals.

The Draft EIR included details on the proposed bridge work and measures to avoid adverse impacts to wetlands and waterway. The FEIR reaffirms that the proposed bridge construction and modifications will not adversely affect navigation or the stability of canal walls. Proposed mitigation measures are summarized in the mitigation section below. The FEIR also includes a draft Chapter 91 permit application for the temporary bridge required during Phase I construction.

Massachusetts Contingency Plan (MCP)

The FEIR provides additional detail on the status of MCP sites located within and near the project site. The FEIR also describes proposed plans to evaluate vapor intrusion and related indoor air quality issues, as well as groundwater sampling and testing in areas where dewatering and excavation may occur. Response actions being considered by the proponent for potential indoor air quality impacts may include remediation of soil or groundwater, the design and

implementation of engineering controls such as barriers, ventilation or building design techniques, compliance with existing Activity and Use Limitations (AULs), or the implementation of new AULs.

I refer the proponent to the MassDEP comment letter for information on response actions, deadlines and relevant MCP regulatory requirements. As noted by MassDEP, some of the remedial response actions underway are being conducted by the City of Lowell. The proponent must determine the need to assess and remediate areas beyond their property boundary in accordance with M.G.L. c 21E section 5C as further detailed in the MassDEP comment letter.

Mitigation, Permit Applications and Section 61 Findings

The FEIR includes draft permit applications for review by state agencies as part of the Integrated MEPA Review/ Permitting pilot process. The FEIR also includes draft Section 61 Findings and a chapter on mitigation outlining specific measures proposed. A summary of the mitigation proposed for the project is provided below.

Mitigation Summary

Article 97 Land Transfer

- The proponent has designated Parcel 3 (12,307 sf) as an open space parcel, which will be under the ownership and control of the City of Lowell, and developed as a public park. Parcel 3 exceeds the area of land subject to the Article 97 disposition (5,969 sf).

Air Quality and GHG Emissions

The proponent has committed to a range of mitigation measures, as outlined below and in the FEIR, which are estimated to reduce CO_2 emissions from the project-related stationary and mobile sources by an estimated 19.8 percent overall compared to the base case. This constitutes a reduction of 3,515 tons per year (tpy), from 17,767 to 14,278 tpy. In addition, the proponent is committed to a goal of 5percent renewable energy generation from on-site sources, which is projected to reduce CO_2 emissions by an additional 367 tpy.

Building Design and Operation Measures:

- Renewable energy use – in order to achieve its goal of 5 percent on-site generation, the proponent has committed to reserve a total of 50,000 sf of flat roof area as "solar-ready" space for third-party PV installation. The proponent will also consider a solar hot water system for residential buildings and will conduct a feasibility study to evaluate the potential for on-site hydro-electric generation;

- The project will use third party building commissioning;

- Increased roof and wall insulation – the project will meet the most recent building code standard, which has increased the minimum R-values for roof and wall insulation. In

addition, roof and wall insulation values will be further increased to R-38 and R-25 respectively for the 30 percent of gross building area that is NEED-NC certified;

- Green Roofs will be established on 30 percent of the project's total roof area (approximately 1.8 acres of roof area);
- Cool Roof design – reflective white roofs will be used on those buildings that do not have a green roof;
- Duct sealing – HVAC supply ducts will be sealed with mastic and insulated;
- Programmable thermostats and an energy management system will be implemented to control and track energy for the commercial buildings;
- HVAC units with an Energy Efficiency Ratio (EER) of 11.4 to 14.0 will be used;
- Shallow floor plates and light shelves will be used to maximize interior day-lighting;
- Energy-efficient windows – fibreglassed frame units for residential buildings that can achieve a value of U = 0.35, which is higher than building code requirements. Other buildings will meet the revised building code U-values but may not exceed the standards due to historic replication and other design constraints;
- Energy efficient interior and exterior lighting will be used;
- Environmentally-preferable building materials including recycled content, rapidly renewable and regionally manufactured materials, will be used where feasible;
- Storage and collection of recyclable materials will be incorporated into the project design;
- Construction waste management – 50 percent of all construction debris from the site will be recycled. Recycled aggregate will be used in asphalt paving and recycled fly ash in concrete paving;
- Idling reduction signage will be posted on site, and all project contractors will be required to install appropriate diesel retrofit equipment;
- Water conserving fixtures that exceed building code requirements will be used in commercial and residential buildings; and
- Rainwater will be collected from roof run-off and used for irrigation.

Transportation Demand Management (TDM)

The project's location in an area with several public transit options will reduce the need for automobile trips to and from the proposed development. The site is located near the LRTA Gallagher Transportation Terminal, the Kennedy Bus Transfer Center, and the MBTA Lowell commuter rail station. In addition to its transit-oriented location, the project will incorporate and promote a range of TDM measures.

The proponent has committed to the following measures:

- The proponent will advocate for formation of a Transportation Management Association (TMA) once the proposed Lowell Trial Court and Parcel 1 office building are constructed. In the interim, the proponent will provide a trip reduction coordinator;

- The proponent will work with regional transit authorities to modify existing bus routes to enhance access to public transportation and avail of the new roadway connections created by the project;

- The proponent will comply with the MassRideshare Regulations, 310 CMR 7.16;

- The proponent will provide a dedicated trolley route right-of-way to expand the trolley system through the project site to the Gallagher Transportation Terminal, and is engaged in a feasibility study for the expansion of the trolley route;

- Multi-use paths will be incorporated to and through the site to encourage alternative walking and biking;

- Bicycle racks will be provided in secure, sheltered areas;

- Parking demand will be minimized by charging all tenants for parking spaces. Capacity will be sized to meet but not exceed local requirements. Preferential carpool and/or vanpool parking will be provided, and at least one space for third party vendor, such as a ZipCar;

- The project will include 130 live-work units with on site amenities including laundry and fitness services to reduce the need for commuting;

- The proponent has committed to roadway and traffic signal improvements to enhance traffic flow and reduce vehicle delays;

- The proponent will encourage future tenants to implement the following TDM measures:
  - Join MassRides and offer subsidized transit passes to employees;
  - Offer employees the option of using pre-tax dollars for non single-occupant vehicle commuting costs; and
  - Provide preferential carpool parking, a guaranteed ride home, and locker/shower room facilities.

Because the project is to be constructed over a period of years, the proponent's GHG-related mitigation commitments will be implemented in phases. Prior to the commencement of construction of each building, the Proponent will submit to the MEPA Office a list of proposed mitigation measures relating to GHG emissions for that particular building. This submission will list the applicable GHG mitigation measures outlined above relating to the proposed building or propose equivalent measures that collectively will achieve the GHG emissions reductions represented in the FEIR, which may be adjusted to account for changes in building use, project design or advances in technology. The submission shall also provide an update on implementation of GHG mitigation measures for any previous phases of the project. The proponent is reminded that major changes to a project or to its proposed mitigation may require the submission of a Notice of Project Change in accordance with 301 CMR 11.10.

Provided there is no objection from the MEPA Office within 30 days of its receipt of the proponent's pre-construction submission, the measures listed shall be deemed to satisfy the GHG emissions mitigation commitments for that particular building. Following completion of construction for each building, the Proponent shall file with the MEPA Office a certification signed by an appropriate professional (e.g. engineer, architect, general contractor) indicating that all of the mitigation measures listed in the pre-construction submission to the MEPA Office for the building have been implemented. The certification should be supported by as-built plans. For those measures that are operational in nature (i.e. TDM, recycling), the Proponent should provide an updated plan identifying the measures, the schedule for implementation and how progress toward achieving these measures will be obtained. Collectively, the mitigation measures for the project as a whole shall include all of the GHG emissions mitigation measures outlined in the FEIR, or equivalent measures that are designed to achieve the overall GHG emissions reductions represented in the FEIR.

Transportation

The proponent has committed to a comprehensive mitigation program to address traffic impacts associated with the project and to enhance future traffic operations and safety in the vicinity of the site. Traffic mitigation measures proposed in the FEIR are summarized below.

Proposed Intersection Improvements

- Reconstruction of the intersection at Thorndike Street/Dutton Street/Fletcher Street/Jackson Street extension to create a four-way intersection;
- Chelmsford Street/Westford Street intersection improvements (includes restriping for separate left-turn lane and general purpose lane, and traffic signal timing and phasing adjustments);
- Thorndike Street and Gallagher Transportation Center Driveway: widening and re-striping to provide separate left-turn lane into the Gallagher Transportation Center and two through travel lanes. Modification of traffic signal timing and phasing;
- Reconstruction of Revere Street and Jackson Street intersection to provide separate left-turn lane and shared through/right turn lane;
- Revere Street/Revere Street Extension and Middlesex Street intersection improvements (includes conversion of three-way intersection into a four-way intersection);

- Revere Street Extension and Appleton Street intersection (includes a new three-way, T type intersection with Appleton Street);
- South Street and Appleton Street (includes geometric and traffic control improvements);
- South Street and Middlesex Street (includes restriping for separate left-turn and right-turn lanes);
- Dutton Street and Broadway Street (includes restriping for separate left and right-turn lanes, traffic signal timing and phasing adjustments, and new sidewalks);
- Dutton Street and Market Street (includes restriping for shared left-turn/ through lane and shared right-turn/ through lanes and traffic signal timing and phasing adjustments);
- Broadway and Fletcher Street (includes restriping/geometric improvements and traffic signal timing modifications);
- Merrimack Street, Bridge Street and Prescott Street (includes restriping for two through travel lanes and traffic signal timing modifications and coordination);
- Church Street and Lawrence Street (geometric and traffic control improvements);
- Gorham Street and Lowell Connector (geometric improvements including restriping of Gorham Street to provide two northbound travel lanes and one southbound travel lane between Lowell Connector and South Street);
- Gorham Street and Highland Street/Elm Street (includes geometric improvements and traffic signal timing modifications);
- Gorham Street and South Street (includes restriping of South Street southbound approach for right-turn movements only under yield sign control);
- Rogers Street/Wamesit Street and Lawrence Street (proponent will work with City of Lowell to develop measures to improve operations at this intersection);

Phase One Roadway Improvements

- Lord Overpass Improvements (includes short-term geometric improvements and traffic signal timing modifications to accommodate Phase One traffic);
- Revere Street Bridge - new temporary bridge over the Hamilton Canal to accommodate construction vehicles and demolition and replacement of existing bridge with a permanent two-way, two-lane bridge including 8-foot sidewalks on both sides and a 14-foot right-of-way for the future trolley);
- New site roadways (includes extension of Revere Street);
- Hamilton Canalwalk/Jackson Street Sidewalk (includes coordination with City of Lowell on canalwalk to complete pedestrian connection to downtown Lowell).

Transportation Demand Management (TDM)

The proponent has committed to a range of TDM measures, which are summarized in the GHG mitigation section above.

Proposed pedestrian improvements

- Refurbishment of existing pedestrian bridges over Hamilton Canal;

- Reconstruction of existing vehicular bridge over Hamilton Canal to provide trolley and pedestrian access;
- A new pedestrian bridge over the Lower Pawtucket Canal with sidewalks on both sides;
- Reconstruction of the Swamps Lock Bridge with six-foot sidewalks on each side and a 14-foot dedicated right of way for a future trolley connection;
- Addition of new 6-foot sidewalks on both sides of the Merrimack Canal Bridge;
- Construction of a new 8-foot sidewalk on the north side of Jackson Street from Marston Street to Center Street, which will connect to the proposed Hamilton Canal Walk, as designed by the Lowell National Historic Park; and
- Construction of a new 8-foot sidewalk on the east side of Thorndike Street Northbound on-ramp from Middlesex Street to the proposed Jackson Street Extension.

Wetlands and Waterways

- The vertical clearance under Bridge B2, the Swamps Lock Bridge, will be increased to further facilitate movement of canal boats operated by the National Park Service. All other bridges will maintain existing clearances;
- Bridges will be subject to design review by historic agencies to ensure design is complementary to local historic districts and resources;
- All bridge structures will be designed to avoid adverse impacts to the stability of the canal walls;
- The project will include physical barriers to prevent debris from entering canals, erosion and sedimentation controls, and a monitoring system to measure any displacement or movement of canal walls during construction;
- Excavation will be done by hand directly behind canal walls when required and the proponent will conduct a structural analysis of the potential load on canal walls associated with construction equipment; and
- Other measures to avoid and minimize impacts include use silt booms, permanent sheeting installed as forms of abutment footings, cofferdam configuration for dewatering, and use of siltation bags and approved filters prior to discharge of water back to the canals.

Wastewater

- Use of Best Management Practices during construction of sewer system and implementation of a stormwater management plan prepared in accordance with the MassDEP Stormwater regulations and performance standards; and
- Water conservation measures will be incorporated in project design.

Historic Resources

A Memorandum of Agreement has been executed among the Lowell National Historical Park, Massachusetts Historic Commission, the City of Lowell, and the proponent, that includes measures to mitigate the project's adverse impacts on historic resources. Measures include:

- Rehabilitation of a portion of the former Appleton Manufacturing Company mill complex and a portion of the Saco-Lowell Shops Building #14 (Freudenberg Building) as well as three bridges spanning the Hamilton Canal;
- Open Space and public realm improvements to enhance the setting of historic districts;
- Design review for new construction; and
- A commitment that Phase One of the project will have no adverse effect on the waterwheel and raceway in the Appleton Mills.

Construction

- The proponent has committed to development and implementation of a Construction Management Plan (CMP), which will be prepared and submitted to the Lowell Public Works Department for review prior to the start of construction. The CMP will include detailed information on demolition, removal, construction activities and mitigation measures, construction materials, access and staging areas, traffic routing plans, and noise and dust controls.

Sustainable Design

- The project will remediate and redevelop an urban brownfields site;
- The project will be designed to meet LEED-ND criteria. All new buildings will be certifiable under LEED-NC. The proponent will certify 30 percent of the overall building square footage of the project under LEED-NC;
- Low Impact Development (LID) principles will be incorporated in project design (including drought-tolerant landscaping, bioretention and rainwater harvesting, and other stormwater management techniques);
- The proponent has committed to a goal of 5 percent renewable energy use, which may include third-party photovoltaic systems, solar thermal, and hydroelectric power; and
- The proponent will implement a construction management plan, which will include recycling 50 percent of construction debris.

Conclusion

I am satisfied that the FEIR adequately and properly complies with MEPA. The project may proceed to permitting. I remind the proponent that a NPC may be required should the traffic mitigation plan change for the Thorndike Street/Gallagher Transportation Center area based on consultations with EOT/MassHighway. State agencies should forward copies of the final Section 61 Findings to the MEPA Office for publication in accordance with 301 CMR 11.12.

May 15, 2009

Ian A. Bowles, Secretary

Comments Received

5/07/09	City of Lowell, Office of the City Manager
5/08/09	Department of Environmental Protection, Northeast Regional Office
5/08/09	Northern Middlesex Council of Governments
5/11/09	Department of Conservation and Recreation
5/11/09	Executive Office of Transportation, Public/Private Development Unit

IAB/AE/ae