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October 12, 2012

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
EXPANDED NOTICE OF PROJECT CHANGE

PROJECT NAME : Strategic Development Plan 2011-2016
PROJECT MUNICIPALITY : Lowell
PROJECT WATERSHED : Merrimack River
EEA NUMBER : 14881
PROJECT PROPONENT : University of Massachusetts Lowell
DATE NOTICED IN MONITOR : September 5, 2012

Pursuant to the Massachusetts Environmental Policy Act (M.G.L. c. 30, ss. 61-62I) and Sections 11.06 and 11.11 of the MEPA Regulations (301 CMR 11.00), I have reviewed this project and hereby determine that it **does not require** the submission of an Environmental Impact Report (EIR).

Project Description

The Proponent, the University of Massachusetts Lowell (UMass Lowell), has submitted the Expanded Notice of Project Change (Expanded NPC) to describe all projects currently underway or to be undertaken at UMass Lowell during the next five years. Projects include the following: Emerging Technologies and Innovation Center (ETIC), North Campus; North Parking Garage, North Campus; Manning School of Business, North Campus, University Suites Residence Hall, East Campus; University Crossing, East Campus; Health and Social Science Building (HSSB), South Campus; and the South Parking Garage, South Campus.

The Strategic Development Plan 2011-2016, included as part of the Expanded NPC, provides a description of the current conditions at UMass Lowell, the projects planned for the next five years, projected future conditions in 2016, the environmental effects of the planned projects, and the mitigation measures that UMass Lowell will employ to reduce traffic volumes,

conserve water, manage stormwater, reduce the production of solid and hazardous wastes, reduce greenhouse gas emission, and limit construction period impacts. The supplemental attachments accompanying the Expanded NPC include additional detail on traffic generation and distribution and greenhouse gas emissions.

Jurisdiction

This project is subject to MEPA review and originally required the preparation of a mandatory EIR because it is being undertaken by a State Agency and would generate 3,000 or more unadjusted new additional daily trips (adt) on roadways providing access to a single location (301 CMR 11.03(6)(a)(6)). During the review of the Expanded NPC, the Massachusetts Department of Transportation (MassDOT) determined that although the unadjusted trip generation for this project is 5,700 adt, the project is spread among three campuses, North Campus, East Campus and South Campus, and therefore, should not be considered a single location. MassDOT has also determined that the adt would be unlikely to result in a significant impact on traffic that would necessitate the implementation of traffic signal and other improvements at state highway locations.

The implementation of the five-year development program is now subject to MEPA review pursuant to Environmental Notification Form (ENF) threshold Section 11.03 (6)(b)(13) of the MEPA regulations because it is being undertaken by a State Agency and will generate 2,000 or more unadjusted new daily trips on roadways providing access to a single location. The Proponent states that the project will not require any State Agency permits. However, the project may require a Sewer Connection Permit from the Massachusetts Department of Environmental Protection (MassDEP). The project may also require a National Pollutant Discharge Elimination System Construction General Permit (NPDES CGP) from the United States Environmental Protection Agency (U.S. EPA).

Because the proponent is a State Agency, MEPA jurisdiction for this project is broad and extends to all aspects of the project that are likely, directly or indirectly, to cause Damage to the Environment as defined in the MEPA regulations.

Project Background

In August 2011, UMass Lowell filed an ENF for the North Campus Garage (EEA# 14777) that did not require the preparation of an Environmental Impact Report (EIR). That project, as described in the ENF, entailed the construction of a 650-space parking garage on UMass Lowell's North Campus. In accordance with the ENF Certificate issued on September 9, 2011, the University was directed to develop a Special Review Procedure (SRP) for any new projects at UMass Lowell. On March 23, 2012, I entered into a SRP with the Proponent to guide the environmental review of the UMass Lowell Master Plan/Strategic Development Plan under MEPA. In April 2012, UMass Lowell filed an ENF (EEA# 14881) for the South Campus Garage that did not require the preparation of an EIR.

Under the SRP in accordance with 301 CMR 11.05(7), UMass Lowell was required to present potential cumulative environmental impacts, analysis of alternatives, and appropriate

mitigation measures for projects covered under its Master Plan for the next five years in an Expanded NPC. This analysis would include cumulative impacts of implementation of the Master Plan/Strategic Development Plan, including an evaluation of: new construction, including the South Campus Parking Structure (EEA# 14881); student housing; transportation; long-term parking needs; infrastructure impacts including stormwater, water, wastewater, energy, utilities, telecommunication, and technology; sustainability; stormwater management; water quality and groundwater; greenhouse gas emissions; construction-period impacts; and potential impacts to wetlands and historical and archeological resources, as applicable.

Review of the Expanded NPC

The Expanded NPC consists of a Strategic Development Plan 2011-2016, supplemental information on the project and a NPC Form, dated August 31, 2012, (Attachment A). Attachment B contains details of the data sources and calculations used to fill out the NPC Form, a comparison of project metrics to MEPA thresholds, and a description of the greenhouse gas analyses for transportation and for buildings. The Proponent also submitted details on the trip generation associated with the anticipated growth in student population, background data on levels-of-service at intersections near the three campuses of UMass Lowell, and data related to greenhouse gas emissions and mitigation for the projects now in construction or soon to be started. Attachment C provides analysis of expected trip generation, a comparison to the "raw" Institute of Transportation Engineers (ITE) estimates based on student population used in the NPC Form, and an estimate of the indirect greenhouse gas emissions of existing and future UMass Lowell traffic. Attachment D is the UMass Lowell Campus Transportation Plan, which identifies the level-of-service for the major intersections providing access to UMass Lowell and proposes a Transportation Demand Management program to offset the effects of growth in student population. Attachment E contains direct and indirect greenhouse gas summary for the Emerging Technologies and Innovation Center, University Suites, University Crossing, and the Health and Social Science Building, the Manning School of Business, and the North and South Garages.

Traffic and Transportation

The Expanded NPC includes a Campus Transportation Plan but did not include a transportation analysis performed in accordance with Institute of Transportation Engineers (ITE) data. Using ITE data, the implementation of the five-year development program is projected to generate 5,700 new vehicle trips per day. MassDOT has stated in its comment that the methodology used by the Proponent to calculate the trip generation for the project seems inconsistent with the recommendation of the ITE Trip Generation Manual. The Proponent provided ITE trip generation estimates using both employees and students as variable resulting in projected trip generation of 1,252 and 5,700 daily vehicle trips respectively. For this particular Land Use Code, the ITE Trip Generation Manual recommends the use of students as a more reliable variable for trip generation calculations; therefore the unadjusted trip generation for this project should be 5,700.

MassDOT determined that the overall project is spread among three campuses that are apart from each other. MassDOT also states that because the 5,700 daily vehicle trips will be

distributed among the three campuses, it would unlikely result in a significant impact on traffic that would necessitate the implementation of traffic signal and improvements at state highway locations. The Proponent proposes to implement a Transportation Demand Management (TDM) program as part of its Campus Transportation Plan, which will include a range of measures to reduce vehicle trips.

While the Northern Middlesex Council of Governments has raised concerns related to traffic, as part of MEPA review, I cannot condition approvals on subject matters strictly under the purview of local permitting authorities. The MEPA review process does not generally address issues commensurate with those often reviewed at the local site plan review or zoning board review levels within a municipality. Resolution of the final project planning details will therefore fall primarily to the City of Lowell. I strongly encourage the Proponent to continue to work with various stakeholders, such as the Northern Middlesex Council of Governments, to ameliorate concerns raised in its comments on the Expanded NPC. C-1

Wastewater

The Expanded NPC includes a discussion of existing and proposed conditions associated with wastewater flows and infrastructure. The Expanded NPC states that the development program will generate an additional average of 25,000 gallons per day (GPD) of wastewater and a daily peak of 50,000 GPD. These estimates are based upon water meter readings for 2011 with consideration for the future anticipated uses.

The Proponent states that the average and the peak new flows will be between 15,000 GPD and 50,000 GPD so that a Sewer Connection Permit will not be required from MassDEP. However, MassDEP could not determine whether the development program will generate only an additional peak of 50,000 GPD of wastewater, and consequently a Sewer Connection Permit may be required from MassDEP. MassDEP has stated in its comments that implementation of the of the new projects will generate a total of 346,000 gallons per day of peak wastewater flow, although the basis of this flow estimate has not been provided. In addition, the Expanded NPC does not include any detailed information on the wastewater infrastructure, need for improvements to the system, or for mitigation to offset new flows. These actions should to be incorporated into the planning, design, and potential wastewater permitting for the projects. The Proponent should provide additional detail on these aspects of the proposed projects and consult with MassDEP staff to discuss permitting requirements for the projects. C-2
C-3

The MassDEP comment letter provides additional guidance regarding the form and content of future permit applications that the Proponent should consider when preparing the final application documents for MassDEP review and approval.

Stormwater

The Expanded NPC provides information on the existing and proposed conditions of stormwater drainage infrastructure on the three campuses. The Expanded NPC, however, does not include a discussion of how the stormwater management system will comply with the Stormwater Management Regulations, including the ten standards for stormwater quality and C-4

quantity control. Compliance must be achieved via the implementation of Best Management Practices (BMPs) identified in the MassDEP Stormwater Handbook.

According to the Expanded NPC, stormwater management plans have been prepared for all three campuses. The contents of the stormwater management plans and their implementation should be provided to MassDEP, with any necessary additional information to understand the applicable regulatory requirements. C-5

I note that stormwater from the project site ultimately discharges to the Merrimack River, which is listed on the Massachusetts Year 2012 Integrated List of Waters among the waterbodies subject to total maximum daily loads (TMDLs). Therefore, to the extent practicable, stormwater BMPs for this project should be designed to control pathogens, which are sources of impairment in the river. C-6

The Proponent should consult with MassDEP to provide stormwater management plans and detailed information on the BMP designs so that MassDEP may assess whether the stormwater management system would be consistent with the total maximum daily loads established for the Merrimack River. It is recommended that guidance, such as the USEPA's Stormwater Best Management Practices (BMP) Performance Analysis, March 2010 (Revised), be utilized to understand the effectiveness of BMPs in controlling specific contaminants for consistency with the TMDLs. Consideration also should be given to utilizing BMPs that control other impairments identified in the Integrated List of Waters for which TMDLs have not been prepared, including mercury and phosphorus. C-7

Greenhouse Gas Emissions

UMass Lowell's Climate Action Plan will facilitate mitigation of the development program's climate-related impacts. The Expanded NPC indicates that the University's 2020 short-term goal is to reduce 14,000 metric tons (MT) of CO₂ a year, compared with the baseline. The long-term goal under the Climate Action Plan is to become carbon neutral.

The Expanded NPC included a summary of UMass Lowell's Climate Action Plan, which aims to reduce campus-wide greenhouse gas emissions in 2020 from about 74,000 MT CO₂ to about 60,000 MT CO₂, a reduction of 14,000 MT CO₂. Attachments C and E show the contribution of the Strategic Development Plan student population and projects to these total emissions. Attachment C estimates the indirect emissions of student and faculty commuting. These total 34,834 MT CO₂ in 2011 and 37,217 MT CO₂ in 2016, an increase of 2,383 MT CO₂. As discussed in Attachment C, the implementation of the Campus Transportation Plan, including an extensive TDM program already underway and a move toward a 50% residential undergraduate population, will reduce this increment. Attachment E provides an analysis of the direct and indirect greenhouse gas emissions associated with the Five Year Capital Projects described in the Strategic Development Plan. Taken together, the Expanded NPC states that the Five Year Capital Projects will generate 5,362 MT CO₂.

As discussed in Attachment E, these emissions are 30% less than the baseline "code compliant" emissions under ASHRAE 90.1. The emissions will be offset by reductions from

buildings to be demolished of 3,198 MT C02, for a net increase of 2,163 MT C02 for the buildings. Thus, transportation and buildings together will add 4,546 MT C02 of greenhouse gas emissions annually.

As noted in the Massachusetts Department of Energy Resources' (DOER) comments the Expanded NPC does not substantially comply with the requirements of the MEPA Greenhouse Gases Policy and Protocol, which requires that for each of the planned building projects as described in the "UMass Lowell Capital Projects Update/March 2012" the Proponent would be required to include a GHG analysis. However, because the Expanded NPC is not subject to the preparation of a mandatory EIR the project is not subject to the MEPA Greenhouse Gases Policy and Protocol.

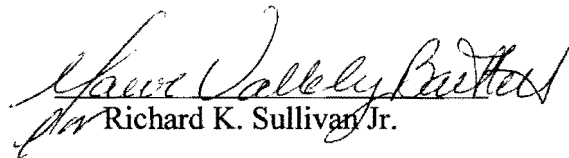
C-8

Conclusion

The Expanded NPC has sufficiently defined the nature and general elements of the project for the purposes of MEPA review and demonstrated that the project's environmental impacts will be avoided, minimized and/or mitigated to the extent practicable. Based on review of the Expanded NPC and comments received, and in consultation with state agencies, I have determined that no further MEPA review is required.

October 12, 2012

Date


for Richard K. Sullivan Jr.

Comments received:

10/05/2012	Massachusetts Department of Environmental Protection – NERO
10/05/2012	Northern Middlesex Council of Governments
10/09/2012	Massachusetts Department of Energy Resources
10/09/2012	Massachusetts Department of Transportation
10/09/2012	WalkBoston

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Secretary

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Commissioner

RECEIVED
OCT 5 2012

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

Attn: MEPA Unit

October 5, 2012

RE: Lowell
UMass Lowell Strategic
Development Plan 2011-2016
Broadway Street
EEA # 14881

Dear Secretary Sullivan:

The Department of Environmental Protection Northeast Regional Office (MassDEP, NERO) has reviewed the Expanded Notice of Project Change (ENPC) submitted by UMass Lowell for the capital projects proposed over the next five years, which will expand the size of the university campus from 3.4 million to 4.1 million square feet on 134.98 acres in Lowell (EEA# 14881). The elements of the capital improvement project appear to include the following: three academic buildings, (the 84,000 square foot, Emerging Technology and Innovation Center (2012), a 69,000 square foot Health and Social Sciences Building (2013), and a new, 65,000 square foot building for the Manning School of Business (2016)); the University Suites dormitory with 472¹ beds (2013); University Crossing, a new student services center (2014); and the North (2012) and South (2013) garages, which provide 650 and 760² spaces, respectively. In addition, work on interior and exterior space of unspecified buildings, and upgrades to the Fox Hall Dining Center, as well as utility and infrastructure work are proposed. Older buildings also will be vacated and repurposed on the South Campus, according to the Strategic Development Plan (SDP) (page 70), which was submitted with the ENPC. The project is categorically included for the preparation of an environmental impact report; however, the proponent is requesting a waiver of that requirement. The Department provides the following comments.

The planned expansion covers areas of UMass Lowell's three campus sites. It is a major project that would increase the size of the university by nearly 20 percent. A project of this magnitude would be expected to have an impact, which may potentially be significant, such that an environmental impact report would be beneficial to provide an understanding of impacts and identify practicable opportunities to address them. A review of the ENPC and the SDP provides a

¹ The ENPC indicates that 500 beds are proposed.

² The parking for the South Campus garage also is reported to be 720 spaces, Section 4, page 88.

framework for understanding the project, but more in depth information that evaluates impacts and considers the potential need for mitigation is needed, as explained in the comments that follow.

General Information

The descriptions of the project elements and topical information are dispersed throughout the package of materials submitted as an ENPC, which makes the submittal difficult to review. Basic information, such as the square footages for the University Crossing student center and the university suites dormitory are not provided in the SPD. Consequently, it was not possible to add the project elements to calculate the total square footage of the project, which the ENPC estimated to be 622,544 square feet. The inclusion of Table 1 in Attachment E (Technical Memorandum), with a total square footage for the capital projects of; the actual total of the square footages for the projects should have been 990,109 sf. Similarly, there is a need for basic information, to understand how a project of this magnitude has held new impervious surfaces to less than an acre. Supporting information with the impervious cover tables in the SDP (page 99) would be useful. It also would be important to know which building(s) or structure(s) would be 170 feet in height, and how that compares with other building heights in the city of Lowell. Estimated water use and wastewater generation for the project elements are not available, and information appears to be very limited on the renovations and utility and infrastructure work proposed. As a result, there also is a question whether new water and sewer lines are needed, even though the ENPC does not indicate any increase in the length of water and sewer mains.

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Stormwater

MassDEP applauds the proponent for focusing on reducing and minimizing imperviousness in the design and layout of the master plan project, and for using other low impact development techniques such as raingardens. It also is noted that the general approach to handling stormwater on the sites of the new developments, as briefly described in the SDP, appears to be consistent with water quality and volumetric controls advanced by MassDEP, primarily through regulations. However, the lack of specificity leaves little opportunity for comment on the stormwater management plan and design. According to the SPD, stormwater management plans have been prepared for the North Campus and all the campuses. The contents of the stormwater management plan and its' implementation should be made available, with any necessary additional information to understand the regulatory requirements applicable to the project site, and in order to comment on the plan and have an opportunity to verify the statement in the SDP indicating, "(d)ischarges from storm and sewer drains will not affect the watershed's endangered species."

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Stormwater from the project site ultimately discharges to the Merrimack River, which is listed on the *Massachusetts Year 2012 Integrated List of Waters* among the waterbodies requiring total maximum daily loads (TMDLs). A TMDL is a pollution budget; it identifies maximum pollutant loads and allocates loads to their sources. According to the *Draft Pathogen TMDL for the Merrimack River Watershed*, "Sources of indicator bacteria in the Merrimack River watershed were found to be many and varied. Most of the bacteria sources are believed to be storm water (sic) related." Therefore, to the extent practicable, stormwater best management practices (BMPs) for this project should be designed to control pathogens, which are sources of impairment in the river. The TMDL can be found at the following link on the MassDEP website: <http://www.mass.gov/dep/water/resources/merrimack1.pdf>, and the Integrated List of Waters is accessible at the following website: <http://www.mass.gov/dep/water/resources/12list2.pdf>.

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The stormwater management plan and information on the BMP designs are needed to assess whether the stormwater management system would be consistent with the Total Maximum Daily Load established for the Merrimack River. It is recommended that guidance, such as the USEPA's *Stormwater Best Management Practices (BMP) Performance Analysis*, March 2010 (Revised), be utilized to understand the effectiveness of BMPs in controlling the specific contaminant for consistency with the TMDL. Consideration also should be given to utilizing BMPs that control other impairments identified in the Integrated List of Waters for which TMDLs have not been prepared yet, including mercury and phosphorus. The USEPA's stormwater guidance is available on the following website: <http://www.epa.gov/region1/npdes/stormwater/assets/pdfs/BMP-Performance-Analysis-Report.pdf>.

Wastewater

The Lowell Regional Wastewater Utility (LRWWU) owns and operates a combined sewer system, with nine combined sewer overflow (CSO) locations which discharge to the Merrimack and Concord Rivers typically under wet weather conditions when the sewer system is surcharged. LRWWU is under the terms and conditions of an Administrative Order from the Environmental Protection Agency (EPA) to address violations of the Clean Water Act associated with these untreated wastewater discharges. While the City has committed considerable resources toward mitigating CSO discharges and made progress, much work remains to address CSO's and their impacts on the Merrimack River, which has a multitude of uses, including use as a drinking water supply source in downstream communities.

An important aspect of the strategy to address CSO discharges is to assess infrastructure needs, and impacts of major new connections to the sewer system, to ensure that such connections do not exacerbate CSO discharges, nor compromise the benefits achieved by the LRWWU investments in CSO abatement work. The ENPC indicates that implementation of the Plan will generate an additional 346,000 gallons per day of peak wastewater flow, although the basis of this flow estimate has not been provided. Moreover, the ENPC submitted by UMass Lowell for the SDP does not include any detailed information on the wastewater infrastructure, need for improvements to the system, or for mitigation to offset the new flows to be generated by implementation of the plan. These actions need to be incorporated into the planning, design, and permitting for the projects. The project proponent should provide additional detail on these aspects of the proposed projects, and meet with LRWWU and MassDEP staff to discuss permitting requirements for each phase of the project.

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Greenhouse Gas Emissions

The UMass Lowell is recognized for steps that are being taken to reduce its carbon footprint. A Climate Action Plan is facilitating mitigation of climate-related impacts, and the SDP indicates that the University's 2020, short-term goal is to reduce 14,000 metric tons of CO₂ a year, compared with the "business as usual" baseline. The long-term goal under the Climate Action Plan is to become carbon neutral (SDP, page 79). Specific GHG reduction activities are being implemented, emissions data are being collected, and systems for data collection are being developed. Table 3.6 identifies efficiency projects underway, ongoing, or completed in 2012, which are predicted to reduce GHG emissions by 10-12 percent. However, it is not clear how the University will increase

the 8.5 MTeCO₂ reported for these projects to reach the short-term goals. In addition, the information on the Climate Action Plan does not appear to have considered energy efficiency of the capital improvement project in terms of the short and long term goals.

Presumably, Appendix E, *Technical Memorandum* is provided for compliance with the *MEPA Greenhouse Gas Emissions Policy and Protocol*. This seven page memo estimates that the baseline emissions of the five-year capital projects would be 7,035 MTCO₂/yr and emissions from the projects with mitigation would be 5,362 MTCO₂/yr, which is a reduction of 1,673 MTCO₂/yr, or nearly a 24 percent reduction. These estimates are based on a variety of reports and sources that are identified in tables 2 and 3. However, there is not enough information about the models or the sources of the emissions data to assess whether the information conforms to the *Policy* requirements. It also is a concern that a single, conforming model was not used to generate the data, and that input and default values for the simulation models were not provide to have the opportunity to verify the conclusions. It also is not clear that this approach would be consistent with the *Policy and Protocol*, because the building descriptions are insufficient to understand the “(c)onfiguration, occupancy, envelope attributes, operation schedule, and building systems (e.g., HVAC, and lighting, etc).” Without a more transparent analysis and the ability to understand how the energy demand was assigned to achieve the predicted reductions of the mitigation, it is not possible to evaluate the proposed energy efficiency plans for the capital improvement projects.

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It was noted, however, that the estimated GHG emissions for the Manning School of Business did not change from the baseline to the preferred design (comparison of data in Table 2 and Table 3). This should be explained. There also is a discrepancy in the ENPC reporting of the efficiency of the Health and Social Sciences Building. The SPD (page 108) indicates that there will be a 112 MTCO₂/yr (23 percent) reduction of emissions, while the *Tech Memo* estimates only a 52 MTCO₂/yr reduction, which equates to less than a 14 percent reduction. This also should be explained.

In addition, for conformance with the *Policy and Protocol*, an analysis of mobile sources of emissions is needed. The GHG emissions analysis also should have provided more in-depth information on the mitigation measures and explained why mitigation measures, including renewable energy sources have not be adopted for the capital improvement projects.

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Recycling Issues

The project includes demolition and reconstruction, which will generate amount of construction and demolition (C&D) waste. Although the ENPC has not made a commitment to recycling construction debris, UMass Lowell apparently is striving to achieve higher rates of recycling on the campus, so MassDEP anticipates that the project proponent will 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:

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“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.

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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.

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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.

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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)).

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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, contained in The Solid Waste Master Plan that places a priority on source reduction and recycling. Efforts to reduce waste generation and promote recycling have yielded significant environmental and economic benefits to Massachusetts' residents, businesses and municipal governments over the last ten years. Waste diversion will become even more important in the future as the key means to conserve the state's declining supply of disposal capacity and stabilize waste disposal costs.

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 UMass Lowell Strategic Development Plant at the planning and design stage will 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.

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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 should be aware there are several organizations that provide additional information and technical assistance, including WasteCap, the Chelsea Center for Recycling and Economic Development, and MassRecycle.

Massachusetts Contingency Plan/M.G.L. c.21E

Contaminated Soil and Groundwater: The project proponent is advised that excavating, removing and/or disposing of contaminated soil, pumping of contaminated groundwater, or working in contaminated media must be done under the provisions of MGL c.21E (and, potentially, c.21C) and OSHA. If permits and approvals under these provisions are not obtained beforehand, considerable delays in the project can occur. The project proponent cannot manage contaminated media without prior submittal of appropriate plans to MassDEP, which describe the proposed contaminated soil and groundwater handling and disposal approach, and health and safety precautions. If contamination at the site is known or suspected, the appropriate tests should be conducted well in advance of the start of construction and professional environmental consulting services should be readily available to provide technical guidance to facilitate any necessary permits. If dewatering activities are to occur at a site with contaminated groundwater, or in proximity to contaminated groundwater where dewatering can draw in the contamination, a plan must be in place to properly manage the groundwater and ensure site conditions are not

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exacerbated by these activities. Dust and/or vapor monitoring and controls are often necessary for large-scale projects in contaminated areas. The need to conduct real-time air monitoring for contaminated dust and to implement dust suppression must be determined prior to excavation of soils, especially those contaminated with compounds such as metals and PCBs. An evaluation of contaminant concentrations in soil should be completed to determine the concentration of contaminated dust that could pose a risk to health of on-site workers and nearby human receptors. If this dust concentration, or action level, is reached during excavation, dust suppression should be implemented as needed, or earthwork should be halted.

Potential Indoor Air Impacts: Parties constructing and/or renovating buildings in contaminated areas should consider whether chemical or petroleum vapors in subsurface soils and/or groundwater could impact the indoor air quality of the buildings. All relevant site data, such as contaminant concentrations in soil and groundwater, depth to groundwater, and soil gas concentrations should be evaluated to determine the potential for indoor air impacts to existing or proposed building structures. Particular attention should be paid to the vapor intrusion pathway for sites with elevated levels of chlorinated volatile organic compounds such as tetrachloroethylene (PCE) and trichloroethylene (TCE). MassDEP has additional information about the vapor intrusion pathway on its website at <http://www.mass.gov/dep/cleanup/laws/vifs.htm>. 1-18

New Structures and Utilities: Construction activities conducted at a disposal site shall not prevent or impede the implementation of likely assessment or remedial response actions at the site. Construction of structures at a contaminated site may be conducted as a Release Abatement Measure if assessment and remedial activities prescribed at 310 CMR 40.0442(3) are completed within and adjacent to the footprint of the proposed structure prior to or concurrent with the construction activities. Excavation of contaminated soils to construct clean utility corridors should be conducted for all new utility installations. 1-19
1-20
1-21

The MassDEP Northeast Regional Office appreciates the opportunity to comment on this proposed project. Please contact Kevin.Brande@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

Assistant Regional Director

cc: Brana Simon, Massachusetts Historical Commission
Jerome Grafe, MassDEP-Boston
Eric Worrall, Kevin Brander, MassDEP-NERO
John Ballam, DOER

AC

COMMENT 2



Northern Middlesex Council of Governments

October 5, 2012

RECEIVED

OCT 5 2012

MEPA

Richard K. Sullivan, Secretary
Executive Office of Energy and Environmental Affairs
Attention: MEPA Office
100 Cambridge Street
Suite 900
Boston, MA 02114-2509

A Multi-Disciplinary
Regional Planning
Agency Serving:

Billerica
Chelmsford
Dracut
Dunstable
Lowell
Popperell
Tewksbury
Tyngsborough
Westford

RE: EOEEA #14881/NMCOG #635
Expanded NPC: Special Review Procedure for the Strategic Development
Framework for University of Massachusetts Lowell

Dear Secretary Sullivan:

The Northern Middlesex Council of Governments (NMCOG) has reviewed the Notice of Project Change (NPC) for the Strategic Development Framework for the University of Massachusetts Lowell. The Secretary's Certificate of March 23, 2012 established a special review procedure whereby the University agreed to submit a Master Plan/Strategic Development Plan (SDP) as an expanded NPC. The Master Plan/SDP Plan would discuss and analyze the cumulative environmental impacts of all University projects that are in the planning stage or under construction, with the exception of the North Campus Parking Garage. After reviewing the Expanded NPC, the Secretary will then determine whether a Single EIR is required for the project.

While highly supportive of the University's strategic development program, NMCOG staff has some questions and concerns regarding the traffic analysis provided within the NPC. The University originally submitted trip generation numbers that were calculated using ITE trip generation rates for Land Use Code (LUC) 550 based on the projected increase in student enrollment. This analysis estimated that 5,700 trips per day would be generated as a result of the University's expansion. Additional information was later provided that significantly revised this estimate by deducting trips for online, continuing education and graduate students, resulting in a revised student-based trip generation number of 1,402 trips per day, a reduction of 75% from the initial trip generation estimate.

To the best of our knowledge, ITE trip generation rates for LUC 550 are based on actual data provided by universities across the country. We question whether the substantial adjustments made to the initial calculations are appropriate, given that the universities supplying the ITE data likely have student bodies similar to

2-1

Stephen C. Themelis
Chair

Beverly A. Woods
Executive Director

40 Church Street
Suite 200
Lowell, MA
01852-2686

TEL: (978) 454-8021

FAX: (978) 454-8023

www.nmcog.org

UMass Lowell in composition, and therefore online, graduate and continuing education students are already considered in the development of the trip generation rates produced by ITE. The University has chosen to further revise the trip generation numbers by also basing the revised calculation on the number of employees. While the ITE Trip Generation Manual offers a methodology for such a calculation, it clearly states that trip generation calculations are more accurate when based on students rather than staff. 2-2

While we commend the University for developing a strong travel demand management program, we are concerned that the overall traffic impacts from the Strategic Plan are being underestimated. MEPA requested that the University evaluate operating conditions at the intersections surrounding the University, and that appropriate mitigation be outlined to address impacts resulting from the completion of the University's Strategic Plan. While the *Campus Transportation Plan* (provided in the second MEPA submittal as Attachment D) contains some information on existing operating conditions at area intersections, no analysis is provided on the effect of the University's expansion on these locations. 2-3

Furthermore, the Implementation Plan within the *Campus Transportation Plan* provides general information on potential intersection improvements needed to address deficiencies under existing conditions, but it does not quantify the impact of such improvements from a level of service perspective, nor does it identify what improvements will be needed in the future to address the University's expansion impacts. The Implementation Plan also lacks information identifying the party (ies) responsible for implementing the proposed improvements. 2-4

The University is requesting a "Waiver of Mandatory EIR", and the NPC indicates that UMass Lowell is comprised of three campuses and numerous parking facilities and should not be considered a 'single location'. Given the proximity of the North and East campuses, the two locations are in essence one from a traffic impact perspective. While the South Campus is approximately a mile from the East and North campuses, university-generated traffic from all three campuses impacts many of the same area intersections, and, as the NPC notes, students and faculty frequently travel between the campuses. Furthermore, given that all three campuses are located within a mile radius and are controlled by the same entity, NMCOG questions whether considering each campus location separately is consistent with MEPA's project segmentation rule. 2-5

NMCOG has received email correspondence from the City expressing their strong support for the continued growth and expansion of the University. Further, the City noted that focusing the school's expansion in a Gateway City furthers the Commonwealth's broader sustainability and growth management objectives that emphasize redevelopment of existing urbanized communities, as opposed to

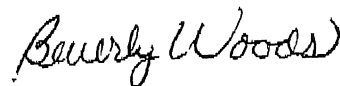
sprawl development in suburban or undeveloped locations. Despite the City's unwavering enthusiasm for this plan, the City indicated that if it had more direct permitting jurisdiction over the University, as it does with comparably sized private developments, it would likely seek additional specific commitments toward concrete actions and contributions to improve the transportation infrastructure most directly impacted by University growth, and look for even more aggressive steps to providing alternatives to the single-occupancy vehicle trip. Likely areas of focus would include Broadway and Wilder Streets near the South Campus and Sparks and Riverside Streets near the North Campus. Additional improvements in these areas would complement the City's recent and planned investments in several other intersections, and in bicycle infrastructure proximate to and between the campuses.

2-6

2-7

Should you have any questions regarding the above NMCOG comments, please feel free to contact me directly at 978-454-8021, ext 20.

Sincerely,



Beverly Woods
Executive Director

BW/jlt

CC: Lowell: Mayor
City Manager
Planning Board
Director of Planning and Development
Transportation Engineer
City Engineer
Public Works Director
Conservation Commission
Board of Health
NMCOG Councilors
Beth Rubenstein, UML

10-9-2012
UMass Lowell Strategic Development Plan (#14881)
Notice of Project Change- Stationary GHG Sources
DOER Comments
JJ Ballam

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OCT 9 2012

MEPA

The DOER has been informed that this submittal represents the only opportunity for a review of an analysis of the projected greenhouse gas (GHG) to be emitted from stationary direct and indirect sources as required by and in compliance with the requirements included in the MEPA GHG Policy and Protocol (the Protocol)

As such the submittal does not substantially comply with the requirements of the MEPA GHG Policy and Protocol, which requires that for each of the planned building projects as described in the "UMass Lowell Capital Projects Update/March 2012" the University must include a GHG analysis.

3-1

In the main, the Protocol requires that a project provide an analysis of stationary GHG sources for in any proposed project (e.g. building project) which includes the following information:

- A description of each building or other source, including: Size (sf), occupancy by area; description of envelope; building systems (HVAC, lighting, any other system or feature that will be a major energy load).
- A quantification of the projected annual energy usage both electric and other fuel (e.g. natural gas) using an approved building energy computer simulation model for both the baseline and as-proposed (i.e. mitigated building), both of which must be compliant with the current effective Mass. building energy codes.
- A quantification of the projected annual GHG emissions for both the baseline and the as-proposed cases to be determined by the application of the appropriate fuel specific CO2 emission factors to the projected energy usage as determined by the modeling performed.
- A detailed description of all mitigation measures considered with a clear distinction between those which are proposed, under study, or not to be included.
- A tabulated list of the performance related values (e.g. R and U values, EERs, LPDs, etc.) used in both the base and as-proposed modeling.
- A copy of the computer model files

The DOER strongly recommends that the proponent review the Protocol for all relevant details.

Effective Code:

As the City of Lowell applied for, and has been certified by the DOER, as a Green Community, the Mass. Stretch Energy Code (the Code) is in effect.

The Code provides both a prescriptive and performance compliance pathways for proposed building projects between 5,000 and 100,000 sf. However, in order to comply with the requirements of the Protocol, the performance path must be used.

3-2

The performance path option compares a baseline and an as-proposed design established and modeled in conformance with ASHRAE 90.1 2007 Appendix G (energy only). In this case there is a minimum threshold of a 20% reduction in the energy usage of the as-proposed design when compared with the base case.

Other:

Some of the energy design mitigation measures (EDMs) which have been included by other similar projects resulting in significant reductions in both energy usage and GHG emissions are:

3-3

- Energy Recovery Ventilation: Significantly reduces HVAC load through preconditioning of the fresh air supply by transfer of heat from the building exhaust air stream.
- Use of highly efficient AC units (DX and Chillers)
- Use of oversized cooling towers
- Use of VFD drives for pumps and fans
- Use of water source heat pumps (WSHP) for dormitories other residential occupancies.
- At least a 15% reduction of lighting power density (LPD) below code maximum by use of daylight, automatic dimmer controls, efficient fixtures and custom layout.
- Use of condensing boilers and/or furnaces.
- Glazing: Minimization of wall to window ratio; use of high performance glazing products.
- Increase R-values of roof and walls by at least 20% beyond the code required minimum.
- Incorporation of Solar Photovoltaic renewable energy systems wherever applicable (Note: All buildings should be designed to be “solar ready”).

The DOER notes that the proposed Emerging Technologies and Innovation building will include wet labs and cautions the proponent that HVAC loads imposed by the fume hoods associated with this usage should be minimized through the use of approved control systems. 3-4

In conclusion, in its role as an example to and leader of the Lowell and surrounding community, the DOER is confident that a goal of the University in the implementation of the strategic plan will be to demonstrate approaches and technologies that will provide powerful examples of how to achieve buildings which combine beauty, function, and efficiency. 3-5

Canaday, Anne (EEA)

From: Lucien, Lionel (DOT) [lionel.lucien@dot.state.ma.us]
Sent: Tuesday, October 09, 2012 2:11 PM
To: Canaday, Anne (EEA)
Subject: UMass Lowell project

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OCT 9 - 2012

MEPA

Hi Anne

Sorry I could not get to the above project last Friday. But as discussed, I do not believe that this project will require a Vehicular Access Permit; therefore, MassDOT will not be providing official comments. However, the methodology used by the Proponent to calculate the trip generation for the project seems inconsistent with the recommendation of the ITE Trip Generation Manual. The Proponent provided ITE Trip Generation estimates using both employees and students as variable resulting in trip generation of 1,252 and 5,700 daily vehicle trips respectively. For this particular Land Use Code, the ITE Trip Generation Manual recommends the use of students as a more reliable variable for trip generation calculations; therefore the unadjusted trip generation for this project should be 5,700. Nevertheless, the overall project is spread among three campus that are apart from each other, and if the 5,700 daily vehicle trips were to be distributed among the three campus, it would unlikely result in a significant impact on traffic that would necessitate the implementation of traffic signal and/or highway improvements on state infrastructures. The University has identified a TDM program in its Campus Transportation Plan, which include a range of measures to reduce site vehicle. The University should pursue the implementation of the program that should be monitored and updated as need.

4-1

4-2

4-3

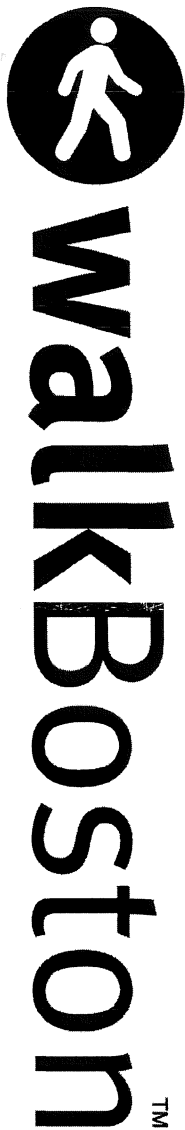
4-4

Any questions, please contact me.

Lionel

J. Lionel Lucien, P.E., Manager
 Public/Private Development Unit/Office of Transportation Planning
 Massachusetts Department of Transportation
 10 Park Plaza, Room 4150 Boston MA 02116
 Phone: (617) 973-7341 Fax: (617) 973-8035 Lionel.Lucien@state.ma.us
 For news and updates check out our blog at www.mass.gov/blog/transportation or follow us on twitter at www.twitter.com/massdot.

Please Note: On Monday, September 24, my phone number will change to 857-368-8862.



AC

COMMENT 5

October 3, 2012

Secretary Richard K. Sullivan, Jr.
Executive Office of Energy and Environmental Affairs (EEA)
100 Cambridge Street, Suite 900
Boston MA 02114
Attn: MEPA Office

RECEIVED

OCT 9 2012

MEPA

RE: Comments on Strategic Development Plan, University of Massachusetts Lowell,
Lowell, MA Notice of Project Change

Dear Secretary Sullivan:

WalkBoston has reviewed the Notice of Project Change for the University of Massachusetts – Lowell Strategic Development Plan, and submits our comments on the plan, with a focus on the “Action Steps” outlined in the Campus Transportation Plan (Section 3.6).

Infrastructure Improvements

WalkBoston applauds UMass Lowell’s commitment to improving infrastructure on and between its campuses to improve pedestrian safety and comfort. Because there is considerable distance between UMass Lowell’s campuses and other venues such as the Tsongas Center and the Inn & Conference Center, it is crucial that the University facilitate the movement of pedestrians between them to increase the sense of place for the University, encourage physical activity, reduce vehicle trips and reduce GHG emissions.

In order to more effectively work towards these goals, the proponent should develop a more robust wayfinding system within and between UMass Lowell’s campuses. Because walkers tend to think in terms of times (minutes of walking rather than miles), signs that give the walking time to given destinations such as: “Fox Hall – 11 minutes” or “O’Leary Library – 9 minutes,” should be installed where there are high pedestrian volumes and/or where directional information is needed. Signs with simple and highly relevant information would make the decision to walk between campuses an easier one by giving people the information they need to make an informed choice about walking as a convenient option. Timed wayfinding signs can make a fairly spread out university feel like its campuses are closer together, and increased pedestrian activity along the streets between campuses would make the walk safer and more enjoyable.

5-1

Policy Initiatives

WalkBoston also applauds the “park once” policy mentioned under Policy Initiatives: Action Steps. If embraced by the UMass Lowell community, this initiative will help decrease congestion and also generate more pedestrian activity on and around the campuses. A robust wayfinding system will contribute to this campaign. The university might consider a marketing effort that highlights the pluses of walking such as:

5-2

5-3

MAKING MASSACHUSETTS MORE WALKABLE

Old City Hall | 45 School Street | Boston MA 02108 | T: 617.367.9255 | F: 617.367.9285 | info@walkboston.org | www.walkboston.org

Choose your Mode for a South Campus to East Campus Trip

1. Walk the 15 minutes to East Campus

- Burn XX calories
- Get some fresh air
- Pass a friend and chat briefly on the way
- Relax and arrive on time

2. Drive the XX miles which will take XX minutes

- Walk to parking lot, exit and drive to East Campus, find parking space, walk from car to building
- Get stuck in traffic – grrr!
- Create XX tons of GHG emissions
- Arrive a bit frazzled

Which choice feels better? Help UMass Lowell Get Fit and Go Green – Walk!

We hope that our suggestions will be useful and please feel free to contact us with any questions you may have. Thank you for the opportunity to comment on this proposal.

Sincerely,



Wendy Landman
Executive Director

Robert Sloane
Senior Planner

Cc add names of folks at UMass Lowell and lead consultants