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

PROJECT NAME : Strategic Development Plan 2022-2027
PROJECT MUNICIPALITY : Lowell
PROJECT WATERSHED : Merrimack River
EEA NUMBER : 14881
PROJECT PROPONENT : University of Massachusetts Lowell
DATE NOTICED IN MONITOR : January 11, 2023

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G. L. c. 30, ss. 61-62L) and Sections 11.06 of the MEPA regulations (301 CMR 11.00) and the Special Review Procedure (SRP) established for the project, I hereby determine that the 2022-2027 Strategic Development Plan **does not require** an Environmental Impact Report (EIR).

Project Description

The Strategic Development Plan (SDP) identifies improvements over a five-year planning horizon (2022-2027) at the University of Massachusetts Lowell Campus (UMass Lowell). Projects include building additions and renovations; site and landscaping improvements; and construction and improvements to campus facilities. The review of capital plan projects identified in the SDP is governed by a SRP, as discussed below, that provides for a capital planning update (in the form of a Notice of Project Change (NPC)) every five years. The SRP was established in recognition of a Strategic Development Framework developed by the university for an emerging UMass Lowell campus, including a Strategic Plan 2020, a Campus-wide Transportation Plan, and a Campus-wide Climate Plan. As detailed in the 2022-2027 SDP, UMass Lowell has also committed to filing an Environmental Notification Form (ENF) for any individual project that separately meets/exceeds a MEPA review

threshold. This NPC is the third required five-year SDP update, and the SRP did not contain a termination date. Additionally, since 2012, construction has proceeded on several projects, none of which have individually met or exceeded MEPA review thresholds.

The 2022-2027 SDP, included as part of the NPC, provides a description of the current conditions at UMass Lowell, the new projects planned for the next five years, projected future conditions in 2027, 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 solid and hazardous wastes, reduce greenhouse gas emission, and limit construction period effects.

The NPC also describes all projects undertaken and completed at UMass Lowell during the last 5-year planning period (from 2016-2021). Completed projects include the following: North Quad Pod Addition, Southwick Courtyard, Perry Hall Engineering Building, South Campus Mall, Central Services and Facilities Operations Buildings, Perkins Properties (renamed River Hawk Village), Fox Hall Elevator Addition, Aiken Street Recreation Fields (renamed the Campus Recreation Complex), Pawtucket Street Riverfront Park (renamed the Northern Canal Overlook), and the Accelerated Energy Program (AEP).

Project Background

In August 2011, UMass Lowell filed an Environmental Notification Form (ENF) for the North Campus Garage (EEA#14777) that did not require the preparation of an 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, UMass Lowell was directed to develop a SRP for any new projects at UMass Lowell. On March 23, 2012, the Secretary of EEA entered into a SRP with UMass Lowell to guide the environmental review of the UMass Lowell Master Plan/SDP (at the time, covering the period 2011-16 as outlined in the 2012 Capital Projects Update), as well as projects proposed in subsequent five-year time periods.

Under the SRP in accordance with 301 CMR 11.05(8), UMass Lowell was required to submit an NPC that presented potential cumulative environmental impacts, analysis of alternatives, and appropriate mitigation measures for projects covered under its initial Master Plan for the five-year period of 2011- 2016. This analysis would include cumulative impacts of implementation of the Master Plan/SDP, 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.

The 2011-2016 SDP was prepared to document the projects proposed at UMass Lowell between 2011 and 2016, to determine the cumulative environmental effects of those projects, and to adopt appropriate measures to avoid, minimize, and mitigate those effects. An NPC containing the 2011-2016 SDP was filed in August 2012 and a Certificate requiring no further MEPA review was issued on October 12, 2012. Subsequently, the 2017-2021 SDP was prepared to document the new projects proposed at UMass Lowell between 2017 and 2021, to determine the cumulative environmental effects

of those projects, and to adopt appropriate measures to avoid, minimize, and mitigate those effects. An NPC containing the 2017-2021 Strategic Development Plan was filed in January 2017 and a Certificate requiring no further MEPA review was issued on February 10, 2017.

In 2020, the COVID-19 pandemic and associated impacts on UMass Lowell’s financial position resulted in a temporary freeze of the campus’s construction activity and a delay in developing its capital plan. Consequently, the MEPA Office granted a request from UMass Lowell for a one-year extension of the deadline to file an NPC under SRP. As noted above, the current NPC addresses the five-year planning period of 2022-2027.

Environmental Impacts and Mitigation

UMass Lowell’s North, South, and East Campuses currently occupy approximately 140.09 acres of land, contain 58 buildings, and house 4.44 million gross square feet (sf) of built space. Through the implementation of the 2022-2027 SDP, the project area will increase by approximately 4.74 acres to a total of 144.83 acres. Due to the 2022-2027 SDP focus on building retrofits and modernization of existing facilities (versus construction of all new facilities), only 1.63 new acres of impervious area will be created for a total of 83.69 acres. Overall campus square footage will increase by 0.02 million sf, for a campus total of 4.46 million sf and no change in the number of parking spaces is anticipated, for a campus total of 6,716 parking spaces. New traffic trips generated by the increased enrollment and staffing within the five-year planning horizon is estimated to be 632 New average daily trips (adt) for a total of 15,850 adt. Based on anticipated increases in efficiencies, water use and wastewater generation are anticipated to decrease on average by 19,000 gallons per day (gpd) and 17,000 gpd respectively, for total campus water demand and wastewater discharges of 264,000 gpd and 237,000 gpd respectively. The following table provides a comparison of cumulative impacts projected by the 2016-2021 SDP for the campus as a whole and those actualized, as well as the anticipated difference (increase/decrease) in cumulative impacts resulting from the implementation of 2022-2027 SDP¹:

¹ The first column of the table details the cumulative impacts of all projects across the campus (both projected and actualized) from the filing of the original ENF and inclusive of the two past SDPs (all impacts as of 2021). The middle column notes the impacts associated solely with projects proposed to occur during the 2022-2027 time frame and the last column details the new projected cumulative impact numbers of the campus as a whole.

Summary of Project Size & Environmental Impacts	Previously Reviewed 2021	Net Change 2022 Projected - 2027	Currently Proposed 2027
LAND			
Total site acreage	Projected: 139.39 Actual: 140.09	4.74	144.83
Acres of land altered	Projected: 0 Actual: 0	0	0
Acres of impervious area	Projected: 80.41 Actual: 82.06	1.63	83.69
Square feet of bordering vegetated wetlands alteration	Projected: 0 Actual: 0	0	0
Square feet of other wetland alteration	Projected: 0 Actual: 0	0	0
Acres of non-water dependent use of tidelands or waterways	Projected: 0 Actual: 0	0	0
STRUCTURES			
Gross square footage	Projected: 4.42M Actual: 4.44M	0.02 million	4.46 million
Number of housing units ⁽¹⁾	Projected: 4,876 Actual: 4,570	0	4,570
Maximum height (in feet) ⁽²⁾	Projected: 226 Actual: 226	0	226
TRANSPORTATION			
Vehicle trips per day	Projected: 18,965 Actual: 15,217 ⁽³⁾	632 ⁽⁴⁾	15,850
Parking spaces	Projected: 6,651 Actual: 6,716	0	6,716
WATER/WASTEWATER			
Gallons/day (GPD) of water use Average/Peak ⁽⁵⁾	Projected: 220k/440k Actual: 283k/566k	-19,000/ -38,000	264,000/ 528,000
GPD water withdrawal	Projected: 0 Actual: 0	0	0
GPD wastewater generation/ treatment Average/Peak ⁽⁵⁾	Projected: 198k/396k Actual: 254k/508k	-17,000/ 34,000	237,000/ 474,000
Length of water/sewer mains (in miles)	Projected: 0 Actual: 0	0	0

(1) Numbers used are Student Beds, dormitory housing is difficult to quantify in "units"; 2022 Actual includes 786 beds in leased properties; 2027 Proposed includes the same beds in leased properties.

(2) UMass Lowell did not add any new tall building/structures between 2016 to 2022. The tallest University building is the Fox Hall at 226' tall.

(3) Estimated based on ITE LUC 550 method and the number of employees, including both faculty and staff members.

(4) Estimated based on ITE LUC 550 method and the growth in number of employees and staff between 2022 and 2027

(5) Average based on water meter readings and projected use for 2019. Peak estimated as twice the average.

Measures to avoid, minimize, and mitigate environmental impacts include the use of erosion and sedimentation controls during construction; implementation of Storm Water Pollution Prevention Plans (SWPPPs); development of traffic management plans; and monitoring noise, dust, and vibration. Additionally, projects will be designed to be consistent with UMass Lowell's Carbon Reduction and Alternative Energy Master Plan, the Climate Action Plan (CAP), meet or exceed Leadership in Energy and Environmental Design (LEED) Silver for all new construction, and comply with Executive Order

No. 594 – *“Leading By Example: Decarbonizing and Minimizing Environmental Impacts of State Government.”*

Jurisdiction and Permitting

The implementation of the five-year development program is subject to MEPA review through a NPC pursuant to the SRP. The cumulative projects presented in the NPC do not collectively exceed any mandatory EIR thresholds or require any Permits. Projects detailed in the 2022-2027 SDP may require review the Massachusetts Historical Commission (MHC) pursuant to M.G.L. c. 9, Section 26-27C and/or Section 106 of the National Historic Preservation Act of 1966.

The implementation of the 2022-2027 SDP is being undertaken by UMass Lowell, in coordination with the University of Massachusetts Building Authority (UMBA) and the Division of Capital Asset Management and Maintenance (DCAMM) and may seek Financial Assistance for the implementation of individual projects. Therefore, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

Review of the NPC

As required by the SRP, the NPC consists of the 2022-2027 SDP, supplemental information on the project, and the completed NPC Form. Attachments contain details of the data sources and calculations used to fill out the NPC Form and a comparison of project metrics to MEPA thresholds.

The NPC describes the need for growth of instructional and research space campus-wide; however, the SDP also recognizes the inherent costs and challenges in addressing all of UMass Lowell's space demands through new construction. As detailed in the 2022-2027 SDP, UMass Lowell's approach to meet its space needs prioritizes rehabilitation and reuse of existing facilities wherever possible. As enrollment growth slows along with increases in hybrid administrative work and virtual delivery of some instruction, UMass Lowell expects that this focus will be reinforced with nearly all capital projects over the next five years involving work on existing buildings as opposed to new construction. The 2022-2027 SDP also contains a focus on addressing deferred maintenance and improving energy performance. The primary drivers of the need for growth of instructional and research space include:

- The continued expansion of UMass Lowell's research program, requiring larger and more complex facilities, particularly in the Sciences and Engineering, which must be consistently renewed to support rapid advances in these fields.
- The modernization of existing spaces to adequately accommodate new technology and other needs for instruction and research.
- The creation of new academic programs that must be integrated into existing facilities and interdisciplinary academic communities.
- The transition from a predominantly commuter school to a residential campus which must respond to evolving student expectations and cost considerations, as well as the need to address deferred maintenance in residence hall buildings.

The NPC also provides information on the new projects planned for the 2022-2027 time frame which are designed to address growth at each of the three campuses. Those projects include:

North Campus

- Olsen Hall Infrastructure – Complete the current phases of a multi-phase renewal of the mechanical, electrical, plumbing, and fire protection infrastructure serving Olsen Hall.
- North Power Plant Boiler #3 Replacement – Replace an existing 800 horsepower (HP) boiler, originally installed in 1966, with two smaller ones (300HP and 500HP, respectively) to allow for more efficient partial load plant operations.
- Olney Hall Renewal – UMass Lowell is preparing for a multi-phased investment in Olney Hall that will include the demolition of the lecture hall appendage on the east side of the building and replacement with a new addition that includes several new instructional spaces, a new primary north entrance to the building, redesigned and relocated loading, a new code-compliant chemical handling facility, and key enabling facilities for future critical repairs – a shell mechanical room and a new vertical shaft to the roof level of the main building. The project will also include the modernization of instructional spaces in the main building, enabling relocations of academic offices, and coordinated investments in mechanical and electrical systems and building envelope, consistent with the recommendations of UMass Lowell’s Alternative Energy Master Plan (AEMP).
- Ball Hall Renewal – Begin phase I of a multi-phase effort to address electrical, mechanical, and building envelope improvements to improve program space for Engineering students and faculty.
- Costello Athletic Center Phase II – Begin phase II of a multi-stage renewal of the primary Athletics building on North Campus which will eliminate an antiquated indoor pool, significantly reducing energy consumption and ongoing building deterioration, and construct a new strength and conditioning facility.

South Campus

- South Campus Steam and Electrical Infrastructure – Upgrade the underground electrical distribution network and the steam distribution and condensate return lines on its South Campus.
- Weed Hall Renewal – Convert two fixed-seating tiered lecture halls to flat-floor active learning instructional labs, creating new mechanical space below; construct a new entrance on the east side, along with student study space and a second means of egress from the basement level; and introduce new electrical service, mechanical systems, toilet rooms, and other code compliance measures. Subject to receipt of federal grant funding, the project's initial phase may also include improvements to third-floor research laboratory spaces.

East Campus

- Acquisition of LeLacheur Park – Acquire LeLacheur Park baseball stadium from the City of Lowell and invest in capital projects to address significant deferred maintenance, code compliance, and facility condition issues following the completion of the real estate transaction.
- Hoff Center Pedestrian Bridge – Repair and reconstruct the pedestrian bridge across the Lawrence Feeder Canal.
- River Hawk Village Central HW Heating System – Construct a central water heating plant and eliminate the distributed hot water tanks to significantly improve efficiency, reduce energy consumption, and eliminate maintenance issues.
- Tsongas Center Rooftop HVAC Unit Replacements – Replace rooftop air handling, heating, and cooling equipment that dates to the building's original construction in the late 1990s.
- East Campus Development Initiative – Establish a public/private partnership with a private developer to facilitate the redevelopment of up to ten acres of land on the East Campus which would consist of a mix of uses including research & development, education, athletics, and residential.² If this redevelopment initiative does not require a separate MEPA review through the filing of an ENF, the next five-year SDP should clearly identify impacts associated with this development.

I note that the NPC, based on the programming and conceptual location of the future SDP elements, provided a summary of “build-out” environmental impacts associated with fulfillment of the 2022-2027 SDP. For the benefit of the MEPA process and to inform Agencies of potential future impacts, the NPC notes that estimates are conservative and are based on a “maximum potential impact” development scenario with regard to environmental impacts. UMass Lowell has stated, and the MEPA process will continue to require with subsequent filings, a goal to avoid, minimize and mitigate Damage to the Environment to the extent practicable as design advances with regard to SDP implementation.

UMass Lowell has indicated it will continue to engage with and work collaboratively with the City of Lowell to ensure that each project is appropriately permitted, performance standards are met, and specific mitigation measures are identified. I strongly encourage UMass Lowell to expand its level of engagement to include Community Based Organizations (CBOs), neighborhood groups, business groups, officials from the Lowell National Historical Park, and tribes/indigenous organizations early and often in the design and construction process for each SDP element to ensure that projects are reviewed and constructed based on input provided by the community.

Land and Stormwater

According to the NPC, implementation of the 2022-2027 SDP will result in the addition of approximately 4.74 acres for a total of 144.83 acres of land comprising the project site and creation of 1.63 acres of new impervious area. The projects planned for in the 2022-2027 SDP are not expected to

² The NPC notes that as the project advances, the private developer will have full responsibility for applicable land use and environmental permitting, including any required filings with the MEPA Office.

result in any significant changes to campus land use. The acquisition of LeLacheur Park from the City of Lowell will increase the acreage of landholding, impervious area, and building square footage on campus; however, it will be a continuation of the current use of the facility under new ownership and is not anticipated to generate new impacts. Additionally, the NPC notes several projects that have resulted in reducing impervious surfaces, including the conversion of the Southwick Courtyard from impervious surface parking to landscaped open space on the North Campus; the removal of redundant concrete pathways around Weed Hall, introduced new pervious landscaping at the South Campus bus hub on Wilder Street, and redesigned walking paths around Coburn Hall to reduce impervious surfaces on the South Campus; and completion of the Campus Recreation Complex which replaced a large, paved parking lot and warehouse structure with athletic fields and a subsurface groundwater recharge system that retains nearly all of the stormwater that falls on the property on the East Campus.

Stormwater from the project site ultimately discharges to the Merrimack River, which is among the waterbodies subject to total maximum daily loads (TMDLs). To the extent practicable, stormwater BMPs that control pathogens should be incorporated into 2022-2027 SDP projects. 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.

The NPC also provides information on the existing and proposed conditions of stormwater drainage infrastructure on the three campuses. UMass Lowell's Stormwater Management Program has been updated from the 2009 version to address the requirements of the new National Pollutant Discharge Elimination System (NPDES) MS4 General Permit, including compliance with the required six Minimum Control Measures to the extent practical. In addition, UMass Lowell has implemented green infrastructure and Low Impact Development (LID) techniques to the extent possible in its recent projects. Minor projects to rehabilitate parking areas and outdoor landscapes have also worked to reduce net impervious area. Green roof features have been developed on two campus buildings and groundwater recharge systems have been incorporated into several recent campus development projects.

Consistent with sustainability goals set by UMass Lowell and described in the NPC, each project should be designed in a manner that further reduces stormwater flows and improves runoff water quality. UMass Lowell should continue to look at stormwater management infrastructure from a comprehensive perspective when determining the layout of future buildings, impervious pathways and roadways, and parking. UMass Lowell should continue to explore LID options, green roofs, use of existing natural drainage patterns, recharge of clean roof runoff to groundwater, and pervious pavement during the design of building sites and roadway improvements.

Traffic and Transportation

The NPC included an analysis of existing and projected traffic conditions and proposed mitigation measures to address future operational deficiencies within the University and local roadway network. The NPC projected increases in traffic associated with the growth of UMass Lowell over the 2022-2027 period using trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual and Land Use Code (LUC) 550 University/College. Using ITE data, the implementation of projects listed in the 2022-2027 SDP is projected to generate 632 New adt. A total of 15,850 adt is anticipated by 2027 associated with implementation of the 2022-2027 SDP and all past projects. Trip generation estimates utilized data on existing employee numbers, including both faculty

and staff members, and the anticipated growth in number of employees and staff between 2022 and 2027.

UMass Lowell has committed reduce the use of single-occupancy vehicles (SOV) by the campus population through the implementation of MassDOT's Comprehensive Sustainability Initiative (GreenDOT) and an aggressive Transportation Demand Management (TDM) program. Components of the TDM program include instituting a robust work-from-home program; collaborating with regional transit agencies; providing numerous individual courses online or in various hybrid formats; carpool and vanpool matching coordinated through a partnership with Middlesex 3 Transportation Management Association (TMA); offering a preferential parking program for commuters who carpool to the campus; preferential parking spaces for fuel-efficient vehicles (FEVs); installing twenty dual-head electric vehicle (EV) charging stations; and providing direct financial incentives for its faculty and staff to purchase or rent housing in the City of Lowell, thereby shortening their commutes and expanding their transportation options.

In addition to working with the City of Lowell and other partners to improve bicycling and walking routes on surrounding City streets, the NPC notes that the University also invests in sustainable transportation facilities on the University campus, including a well-distributed system of bike racks, EV charging stations, and dedicated parking spaces for carpool vehicles. The University also operates a campus bike share program called FreeWheelers, which is available to all UMass Lowell students, faculty, and staff members, as well as sponsoring Zipcar to provide discounted car sharing program to students, faculty, and staff. Zipcar locations are available at the parking garages on each campus

Transit

UMass Lowell operates a day, evening, and weekend shuttle system (UMass Lowell Riverhawk Roadster) to serve campus and community destinations. This is a significant investment which benefits the entire UMass Lowell community. Additionally, UMass Lowell works with the Lowell Regional Transit Authority (LRTA) to extend public transit access to regional bus service and the MBTA commuter rail network at the Charles A. Gallagher Transit Terminal. To support the use of transit by commuters, the UMass Lowell has developed partnerships with the LRTA and Merrimack Valley Regional Transit Authority (MVRTA), offering faculty, staff, and students the ability to ride all LRTA buses and MVRTA Route 1/41 at no cost. The NPC indicates that UMass Lowell will continue to consult with LRTA regarding additional opportunities for collaboration.

Prior to COVID-19, ridership for the shuttle system was averaging 5,000 riders on typical school days and reaching as high as 6,400 riders on peak class days. Since in-person classes have resumed, the ridership has averaged 4,400 on a typical school day, largely proportional to reductions in in-person on-campus course enrollment. UMass Lowell will continue to monitor ridership over the next five years and adjust schedules as necessary.

The NPC provided an update on the status of projects intended to improve transit access. As described in the NPC, the recently completed Broadway Street Bridge and the Pawtucket Street Bridges over the Pawtucket Canal and Northern Canal has greatly improved transit access between the South Campus and the North and East Campuses. The bridges also include pedestrian and bicycle accommodations to improve multi-modal transportation options. Additionally, UMass Lowell is leading

an effort in partnership with the City of Lowell and the Massachusetts Department of Transportation (MassDOT) to redesign Pawtucket Street, which connects the South Campus to the East Campus, as a complete street with enhanced pedestrian and cycling infrastructure.

Bicycles and Pedestrians

The 2022-2027 SDP continues to emphasize pedestrian needs and accommodations and the importance of eliminating conflicts with other modes of transportation to improve pedestrian safety. The NPC identified the existing off-campus bicycle networks that connect the campus to the City of Lowell and beyond. A system of on-street bike lanes, shared bike routes, and off-street multi-use trails link the three campuses, as well as Downtown Lowell, the ICC, and the Kennedy Bus Transfer Center and MBTA Lowell Commuter Rail Station at the Gallagher Transit Terminal. During the past five years, the City of Lowell has improved bicycling facilities, installing new dedicated and shared bike lanes on the streets across the city and around the campuses. According to the NPC, between 2016 and 2019, bike usage on campus increased by 72% based on the bike counts conducted by UMass Lowell. With the resumption of in-person classes in 2022, bike usage on campus is resuming with the return to more normal campus operations. Between 2016 and 2021, UMass Lowell installed 242 additional bike racks, bringing the total number of bike racks across campuses to 1,026, many of which are now covered. In addition to this 30% increase in total rack spaces, UMass Lowell also improved 86% of the existing rack spaces to bring them up to campus standards and integrated all the bicycle rack locations on a university-wide GIS-based online portal to make it easier for the campus community to locate these racks.

Parking

The UMass Lowell campus has approximately 6,716 parking spaces; in addition, UMass Lowell also continues to lease 280 parking spaces from private parties and the City of Lowell. According to the NPC, UMass Lowell's parking pressures have eased considerably since 2016 due to reduced student enrollment, on-campus housing demand, increased remote work, and online course delivery. However, some parking lots around UMass Lowell are still full during peak periods. Overall, parking decal ownership increased by approximately 7% between FY 2016 and FY 2022, whereas faculty and staff decal holders have reduced by 3% during this same time period. UMass Lowell has a parking rate structure that incentivizes use of alternative modes of transit and discourages vehicular use in the campus core. I encourage the University to continue to explore ways to encourage and incentivize alternative modes of transit use by faculty, students, and staff as the 2022-2027 SDP implemented.

According to the NPC, over the next five years UMass Lowell does not anticipate adding any net new parking to its inventory. Rather, with minimal projected enrollment growth, UMass Lowell will accommodate any additional parking needs by optimizing the use of the existing lots. As noted above, UMass Lowell plans to issue a permanent remote and hybrid work policy for its staff before the end of the calendar year which will further reduce parking demand during peak hours, relative to levels anticipated in 2016. Additionally, as online instruction continues to expand, a commensurate reduction in student vehicle trips is also anticipated. Based on the observed trends and continued implementation and expansion of TDM programs, the 2022-2027 SDP anticipates that vehicle usage rates in 2027 among campus populations would remain below the adt projected for the year 2021 in the 2016-2021 SDP.

Water and Wastewater

The NPC includes a discussion of existing and proposed conditions associated with water consumption and wastewater flows and infrastructure. UMass Lowell relies on the municipal Lowell Regional Water Utility (LRWU) for water supply which sources and treats water from the Merrimack River. The NPC states that despite subsequent declines during the COVID-19 pandemic, actual water use in Fiscal Year (FY) 2019 exceeded the water use projection in the 2016-2021 SDP. Actual water use intensity, incorporating the actual total floor area on campus, was also higher than projected. The NPC notes that several factors likely contributed including overall campus growth, including the addition of the River Hawk Village residence halls, and the expansion of the research program.³ According to the NPC, UMass Lowell is projecting a decrease in the water use intensity with a minor increase in enrollment and an increase in research activity over the course of the 2022-2027 SDP. This will be accomplished by having more accurate data, greater water conservation through fixture upgrades and replacements in renovated spaces, and implementing water-efficient design standards for new and existing buildings and outdoor landscapes. Additionally, UMass Lowell is in the process of procuring and implementing a cloud-based remote water management system for the irrigation system which will track water use and leaks in real-time, automatically adjust irrigation based on need, and shut off irrigation remotely. UMass Lowell anticipates the system to be fully in place by the end of 2027 and reduce the amount of water used for irrigation by up to 35%. According to the NPC, implementation of the 2022-2027 SDP will reduce water usage by 19,000 gpd on average and reduce the daily peak by 38,000 gpd.⁴

UMass Lowell's sanitary wastewater flows to Lowell City Wastewater Utility's (LRWWU) Duck Islands Waste Water Treatment Plant; however, LRWWU does not track wastewater flow associated specifically with UMass Lowell. Due to the ongoing efforts to reduce water usage and improve water efficiency, the NPC projects a reduction in wastewater generation of 17,000 gpd on average and a reduction of the daily peak by 34,000 gpd.

Historical and Archaeological Resources

In 2012, UMass Lowell engaged a qualified historic preservation consultant to complete a Historic Resources Survey of campus buildings. This study included the preparation of standard MHC Historic Survey Forms for 18 campus buildings, documenting their historic and architectural status and significance, and establishing the eligibility of campus buildings for listing on the National Register of Historic Places (National Register). Since many campus buildings were constructed in the 1960s and early 1970s, a new portfolio of 18 additional buildings have reached their fifty-year anniversaries since 2012 or soon will. As a result, UMass Lowell has reengaged their historic preservation consultant to complete additional survey forms to identify those buildings which are now also eligible for listing on the National Register. The 2022-2027 SDP states that these forms will be submitted to the MHC in the first half of 2023.

³ The NPC also notes that UMass Lowell has experienced some inconsistency in tracking water use in past years due to missing, incomplete, or delayed water meter readings dating back to before 2011.

⁴ As noted in the NPC, the average is based on water meter readings and projected use for 2019 and peak estimated as twice the average.

The 2022-2027 SDP summarizes the proposed repair and reconstruction of the Hoff Center Pedestrian Bridge, due to deteriorating structural conditions. The bridge is connected to a building listed on the National Register and crosses the Lawrence Feeder Canal, which is one of Lowell's historic power canals. UMass Lowell should coordinate directly with MHC and local historic authorities during the permitting process to ensure compliance with M.G.L. c. 9, Section 26-27C and/or Section 106 of the National Historic Preservation Act of 1966.

Climate Change

Adaptation and Resiliency

According to the NPC, UMass Lowell is exposed to potential climate change impacts associated with extreme precipitation (urban flooding), extreme precipitation (riverine flooding), and extreme heat. It is anticipated that climate change will increase the frequency of intense rain events. The NPC states that such storms result in flooding issues with rapid rises in river levels near the campus as well as poor drainage on streets. However, few areas of the campus are in high-risk areas for river flooding and those areas are generally undeveloped, with three significant exceptions. Two, one-story university service buildings on Middlesex Street and a multi-story residence hall are located in or near flood zones. The operations in the one-story university service buildings have adopted flood risk mitigation plans to effectively respond to incidents and protect people, equipment, and operations if they occur. The multi-story River Hawk Village residence hall has been able to go further, lifting most building equipment and critical elements above the flood elevation in the building.

As noted in the NPC, Massachusetts is starting to see increased summer temperatures and longer-duration heat waves which are exacerbated by the heat island effect associated with UMass Lowell's location in an urban area. As an immediate response, UMass Lowell has begun to employ demand response measures and encouraged remote work practices to enable reductions in loads placed on cooling equipment. Additionally, UMass Lowell has altered its design standards and is now selecting and sizing replacement equipment to operate effectively under these new conditions while preserving requirements for energy conservation and efficiency. To further mitigate the heat island effect, UMass Lowell adopted several design standards including specifications for light-colored roof materials on buildings, the installation of green roofs, and the cultivation of an arboretum on campus. UMass Lowell also partners with various non-profit organizations and the City of Lowell to increase tree planting in the neighborhoods as well as on the campus itself.

Greenhouse Gas Emissions (GHG)

The NPC provides an overview of the UMass Lowell CAP and Carbon Reduction and Alternative Energy Master Plan. UMass Lowell is in full compliance with the Department of Energy Resources (DOER's) Greenhouse Gas (GHG) and Emissions reporting requirements in support of Executive Order No. 594 and voluntarily reports its GHG emissions to the Association for the Advancement for Sustainability in Higher Education (AASHE). According to the NPC, UMass Lowell has been regularly tracking and reporting its Scope 1 GHG emissions (stationary and mobile emissions) and its Scope 2 GHG emissions (energy purchases). Prior to the start of the COVID-19 pandemic, UMass Lowell had begun assessing its Scope 3 GHG emissions (indirect emissions) but has since

suspended those efforts due to the difficulty in obtaining accurate data. UMass Lowell has committed to reverting to full Scope 3 reporting starting in FY 2023.

UMass Lowell's long-term goal is to achieve carbon neutrality by 2050. The CAP provides the criteria for achieving each phase milestone, including the net goal GHG emissions target. UMass Lowell achieved its 2020 Phase 1 milestone and emission reduction goals in 2015 despite significant growth in student enrollment and the physical campus. UMass Lowell has also met its 2030 Phase 2 milestone and emission reduction goals ahead of schedule. Based on data presented in the NPC, Scope 1 & 2 GHG emissions declined by 23% (6,786 metric tons of carbon dioxide equivalents (MT CO₂e)) over the five-year period from 2016 to 2021 while overall square footage increased by 13%.

The NPC also included a discussion on energy usage and detailed renewable energy projects. UMass Lowell purchases electricity and natural gas but relies on two heating plants for steam generation and maintains steam lines throughout the campuses for heating. Several phases of repairs to the aging underground steam infrastructure on the South and North Campuses has been completed over the past five years, specifically targeted to eliminating leaks and improving efficiency. Over the course of FY 2019, which was the last full year of operation before the COVID-related shutdown, UMass Lowell used 51.4 million kilowatt hours (kWh) of electricity and 264 Dekatherms (Dth) of natural gas. Additionally, between 2016-2021, the University completed its fifth photovoltaic (PV) solar array on top of the South Campus Parking Garage as part of the Accelerated Energy Project (AEP), which nearly doubled the generation capacity of installed solar panels to 484 kWh. AEP projects and other projects completed after AEP are expected to result in a 1,300,000-kWh reduction in electricity use annually. UMass Lowell is also reviewing opportunities to procure energy from renewable sources.

I encourage UMass Lowell to continue to explore and incorporate, to the extent feasible additional, renewable energy and energy efficiency measures to establish and showcase a new standard in State facility high performance building design. Progress in these areas should be documented in the next SDP update.

Construction Period

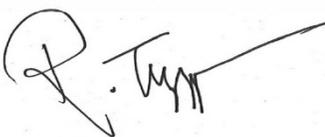
The NPC described construction period mitigation measures to limit the potential air quality, noise, earthwork, stormwater, traffic, and solid waste impacts. For all current and planned capital construction projects and on-campus renovations, construction waste management, and disposal plans are developed. All waste is identified by generation point, quantity/weight, estimated waste percentage, and target for salvage or recycling. For projects which affect public rights-of-way or have significant delivery activity, traffic management plans are prepared and submitted to the City of Lowell for review by the City Engineer and other municipal departments. Measures are put in place to address noise, dust, and vibration issues associated with construction to ensure that any adverse effect on the surrounding buildings is minimized. When a project involves demolition or hazardous materials removal, dust monitoring and dust prevention measures are employed as required by applicable laws, regulations, and policies. According to the NPC, SWPPPs are established as needed and Stormwater Management Plans are submitted to the City Engineer, LRWWU, and the Lowell Conservation Commission, as necessary, for review.

All construction and demolition activities should be managed in accordance with applicable MassDEP’s regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017). The project should include measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management) and emissions of air pollutants from equipment, including anti-idling measures in accordance with the Air Quality regulations (310 CMR 7.11). I encourage the Proponent to require that its contractors use construction equipment with engines manufactured to Tier 4 federal emission standards or select project contractors that have installed retrofit emissions control devices or vehicles that use alternative fuels to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD). If oil and/or hazardous materials are found during construction, the Proponent should notify MassDEP in accordance with the MCP (310 CMR 40.00). All construction activities should be undertaken in compliance with the conditions of all State and local permits. I encourage the Proponent to reuse or recycle construction and demolition (C&D) debris to the maximum extent.

Conclusion

The NPC has sufficiently described the nature and general elements of the projects detailed in the 2022-2027 SDP for the purposes of MEPA review and consistent with the requirements of the 2012 SRP. Accordingly, I find that an EIR is not required for the 2022-2027 SDP. In the next SDP update, UMass Lowell is directed to report on the whether the five-year updates contemplated in the 2012 SRP still relate to the planning effort referenced in the SRP, and whether modifications to the SRP may be warranted given lapse of time and any new planning efforts undertaken since 2011.

February 10, 2023
Date



Rebecca L. Tepper

Comments received: None

RLT/NJM/njm