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October 16, 2007

FINAL RECORD OF DECISION

PROJECT NAME: Harvard University – Allston Campus 20-Year Master Plan
PROJECT MUNICIPALITY: Boston
PROJECT WATERSHED: Boston Harbor
EEA NUMBER: 14069
PROJECT PROPONENT: Harvard University (through the Allston Development Group)
DATE NOTICED IN MONITOR: September 25, 2007

Pursuant to the Massachusetts Environmental Policy Act (MEPA) (G.L.c.30, ss. 61-62H) and Section 11.11 of the MEPA regulations (301 CMR 11.00), I have reviewed the Expanded Environmental Notification Form (EENF) submitted on this project and **hereby grant a Phase 1 Waiver** allowing the commencement of the Science Complex project prior to completion of the Master Plan for the development of Harvard University's Allston Campus. In separate Certificates issued on September 14, 2007, I have issued a Scope for the Master Plan Environmental Impact Report (EIR) and have established a Special Review Procedure (SRP) to guide the review of this project. Pursuant to 301 CMR 11.09(2), I will provide notice of membership of the Citizens Advisory Committee in the next *Environmental Monitor*.

Project Description

As outlined in the EENF, the 20-year Master Plan to accommodate the growth of Harvard's campus in Allston envisions the redevelopment of currently underutilized, predominantly industrially-zoned land, and creation of a pedestrian-friendly campus environment. Harvard's current Allston campus contains approximately 140 acres and is located predominantly on land bounded by Soldiers Field Road and Western Avenue, with North Harvard Street separating two distinct areas of the existing campus, the Harvard Business School

and the athletic area. The growth of Harvard's campus in Allston over the next 20 years is expected to involve an additional approximately 85 acres of land, increasing the size of the Allston campus to approximately 215 acres.

The Science Complex project will be a 589,000 square foot (sf) scientific research and education complex that will consist of four separate building components. The Science Complex will include 537,000 sf of above-ground floor area; approximately 52,000 sf of research support facilities below-grade; an underground distributed energy facility (DEF) and loading and mechanical facilities; below-grade parking for 350 vehicles; and dedicated use of 150 existing surface parking spaces north of Western Avenue. The Science Complex will also include approximately 6,400 sf of retail space, approximately 6,800 sf of atrium, approximately 11,250 sf of day care facilities, an approximately 10,100 sf auditorium for lectures and special events, and a cafeteria.

The 8.5-acre Science Complex site is located on the southerly side of Western Avenue east of the intersection of Western Avenue and North Harvard Street, east of Travis Street, and across the street from the Charlesview Apartments and the "WGBH" buildings. The site currently contains several industrial buildings and surface parking lots. The total Science Center building footprint will cover approximately 108,000 square feet of the 8.5 acre site.

New roadway infrastructure is proposed to support the Science Complex and to establish a pattern of local streets and blocks in the vicinity. Two new roadways are proposed: "Stadium Way", which will connect the Rena Street extension to Western Avenue and the "Rena Street Extension" extending westerly from Stadium Way and terminating in a cul de sac. The Science Complex also will include a wide landscaped area supporting a pedestrian/bicycle pathway to the west of the Science Complex called Academic Way. This roadway infrastructure anticipates subsequent connections to a network of streets anticipated under the 20-year Master Plan, which will reduce regional traffic demands through the North Harvard Street, Hopedale Street and Windom Street neighborhoods, and will provide a valuable connection between the regional roadway network, the Science Complex, and the subsequent build-out of the 20-year Master Plan. The two short roadways proposed as part of the Science Complex are being advanced prior to construction of the Master Plan to take project-related parking and delivery activities off public roadways, provide for emergency vehicle access to all sides of the Science Complex, and co-locate the realignment of an existing drainage structure beneath roadway surfaces to facilitate access to the drainage structure for future maintenance/repair.

The electricity and energy needs of the Science Complex will be met by construction of an on-site, below-grade Distributed Energy Facility (DEF). The DEF has been designed to provide energy to not only the Science Complex itself, but also, in the future, to a portion of the continued development to the Allston Campus in the vicinity of the Science Complex. The DEF is a combined heat-and-power "trigeneration" system that will generate electricity using clean natural gas, provide high pressure steam needed for laboratory support systems in the Science Complex, and will be part of the chilled water system to provide mechanical cooling. Initially, the DEF will be sufficiently sized to meet the energy needs of the Science Complex, but it is designed to facilitate the future installation of an additional turbine.

Jurisdiction

The Science Complex project does not exceed any MEPA review thresholds at 301 CMR 11.03 for the filing of an Environmental Notification Form. The project will require the following state permits and/or approvals: a Limited Plan Approval; a Sewer Extension/Connection Permit; and a possible Groundwater Discharge Permit from the Department of Environmental Protection (MassDEP); and a Sewer Use Discharge Permit from the Massachusetts Water Resources Authority (MWRA). The Proponent has stated that it may seek tax exempt bond financing from the Commonwealth for the project. Due to the possibility of state financial assistance, MEPA has full scope jurisdiction over the Science Complex project.

Waiver Request

The Proponent submitted an EENF for the project with a request for a waiver to allow the Science Complex project to proceed as Phase 1 of prior to completion of the 20-Year Master Plan for the Allston campus. The waiver request was discussed at the consultation/scoping session for the project which was held on August 23, 2007. The EENF and the waiver request underwent an extended review period pursuant to 301 CMR 11.05(7).

Criteria for a Phase I Waiver

Section 11.11 of the MEPA Regulations provides that the Secretary may waive any provision or requirement of 301 CMR 11.00 not specifically required by MEPA, and may impose appropriate and relevant conditions or restrictions, provided that the Secretary finds that strict compliance with the provision or requirement would:

- (a) Result in undue hardship to the Proponent, unless based on delay in compliance by the Proponent; and,
- (b) Not serve to minimize or avoid damage to the environment.

The MEPA regulations at 301 CMR 11.11(4) state that, in the case of a partial waiver of a mandatory EIR review threshold that will allow the Proponent to proceed with Phase 1 of the project prior to preparing an EIR, I shall base the finding required in accordance with 301 CMR 11.11(1)(b) on a determination that:

- (a) the potential environmental impacts of Phase 1, taken alone, are insignificant;
- (b) ample and unconstrained infrastructure facilities and services exist to support Phase 1;
- (c) the project is severable, such that Phase 1 does not require the implementation of any other future phase of the project or restrict the means by which potential environmental impacts from any other phase of the project may be avoided, minimized or mitigated; and
- (d) the agency action(s) on Phase 1 will contain terms such as a condition or restriction, so as to ensure due compliance with MEPA and 301 CMR 11.00 prior to commencement of any other phase of the project.

Findings

I have carefully considered the several comment letters on the Draft Record of Decision that express concern with the issuance of a Phase 1 Waiver. While I appreciate the commenters' perspectives, I find that subject to conditions described below, the Proponent has met the tests for a Phase 1 Waiver for the Science Complex project. My determination is based on the information submitted by the Proponent, consultation with the relevant state agencies, and consideration of comment letters received. As further outlined below, I have determined that the preparation of an EIR for the Master Plan in advance of the Science Complex would not serve to minimize Damage to the Environment, that adequate and unconstrained infrastructure exists to support the Science Complex project, that the Science Complex is severable from the Master Plan, and that agency actions on the Science Complex project can be conditioned to ensure compliance with MEPA for the Master Plan.

1. Requiring the preparation of an EIR in advance of undertaking Phase 1 would cause undue hardship and would not serve to minimize Damage to the Environment:

The Science Project does not exceed MEPA review thresholds that would require the Proponent to file an Environmental Notification Form. The MEPA thresholds were designed conservatively to ensure that projects that are likely to cause damage to the environment file with MEPA. The converse is also true: for projects that fall below all MEPA thresholds, such as this one, there is a presumption that they are not likely to cause damage to the environment. My careful review of the Science Complex confirms this presumption. As explained in Section 2 below, the project's impacts associated with transportation and impervious surfaces are less than existing conditions. Through the displacement of existing trips and the implementation of a comprehensive Transportation Demand Management program, the Science Complex project will result in fewer trips on project area roadways than under current conditions. The Science Complex project will replace existing industrial buildings and surface parking lots with a more compact set of buildings, underground parking, significant green space and landscaping, and an innovative stormwater management system. The Proponent has also committed to a 50% reduction in GHG emissions compared to a typical laboratory designed to the current ASHRAE 90.1 standard, using Harvard's 2006 energy profile. Overall, the Proponent proposes a Phase 1 development that avoids, minimizes, and mitigates impacts to a degree significantly greater than that required under applicable state regulations.

Agency actions associated with the Science Complex are limited to wastewater, air, and, potentially groundwater. The Proponent has provided an extensive amount of information on the potential impacts and proposed mitigation for the construction and operation of the Science Complex project in the EENF. The EENF contained sufficient information to allow state permitting agencies to understand the environmental consequences of their permit decisions.

Given the foregoing, and subject to the conditions described above, I find that a requirement to prepare an EIR for the Science Complex is not necessary in order for the Proponent to demonstrate that it has avoided, minimized, and mitigated potential Damage to the Environment to the maximum extent practicable, and that a requirement to do so would therefore

cause undue hardship and would not serve to minimize Damage to the Environment.

2. The potential environmental impacts of Phase 1 are insignificant:

The Science Complex has been designed to draw upon Harvard's sustainability efforts and serve as a flagship for future sustainability development standards for the Allston campus. The project will optimize energy efficiency, conserve water, reuse stormwater for irrigation, recycle DEF cooling water for toilet flushing and divert over 75% of construction debris from landfills. The project will include green building measures to result in the "Gold" level of certification under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program.

The Science Complex project site is an underutilized brownfield property, and as part of the project, the Proponent has committed to the remediation of on-site historic hazardous waste.

The development of the Science Complex will result in reduction of 1.7 acres of impervious surface at the project site. The project includes an innovative stormwater management concept to capture, cleanse and recycle site stormwater. Stormwater will be collected from the site and rooftops, cleansed in a series of vegetated swales, and stored in an underground cistern. From the cistern the stormwater will receive secondary treatment and be distributed to the site for irrigation and various interior building uses. The Proponent anticipates that water quality will meet or exceed removal standards for 80% total suspended solids (TSS) and 40% phosphorus. In response to the DROD, the Proponent has submitted a Preliminary Drainage Report for the Science Complex project to the MEPA office. The Preliminary drainage report illustrates that the proposed stormwater management System will be designed to reduce stormwater runoff volume generated from the site as well as provide a reduction for the peak rates through the use of on site greening efforts, rainwater harvesting for irrigation and infiltration. The drainage system will also provide water quality treatment by removing sediments and pollutants from the stormwater runoff using Best Management Practices in accordance with MassDEP's Stormwater Management Policy.

The Science Complex project will include street tree plantings along Western Avenue, Stadium Way and the Rena Street extension, where there are currently no street trees. Landscaping and plantings at the Science Complex are designed to increase biodiversity, reduce the need for irrigation and increase drought tolerance.

The Proponent has committed to fund and create Library Park, a 43,000 sf park behind the existing Allston-Honan branch of the Boston Public Library on North Harvard Street. The Proponent estimates that the design and construction of the park will cost \$3 million. Pedestrian connections will be made between North Harvard Street and the Library Park, to the Science Complex and Western Avenue.

Although the Science Complex will generate 2,770 average daily trips (adt) and require the construction of 500 new parking spaces, which exceeds MEPA transportation thresholds, the project will displace an even greater number of trips and parking spaces, so the net new – the standard by which project impacts are assessed to determine the applicability of MEPA

thresholds - is below ENF review thresholds. According to the EENF, the displacement of 2,950 adt will result in a net reduction of 1,470 adt on the study area roadways once the Science Complex is complete. In addition, the displacement of 864 parking spaces will result in a net reduction of 514 on-site parking spaces. In response to the DROD, the Proponent has submitted additional information that clarifies the methodology used to determine existing, displaced and anticipated trips for the Science Complex project. I find that the Proponent has adequately documented its traffic impact analysis methodology, and, as discussed below has provided adequate mitigation to ensure that the project will not have a significant impact on traffic.

Air quality and noise modeling conducted for the project indicate that operation of the Science Complex will not exceed National Ambient Air Quality Standards for mobile or stationary sources. The Proponent notes in the EENF that the DEF can achieve 75% efficiency as compared to conventional large-scale generators which typically have efficiencies of 40%. The DEF will significantly reduce energy use and greenhouse gas emissions. The Proponent should note comments submitted by MassDEP on the EENF regarding permitting of the DEF.

As noted in the EENF, the Proponent is currently investigating the installation of open-loop or closed-loop geothermal wells at the Science Complex. If closed-loop wells are proposed, the proponent will be required to self-certify compliance with the MassDEP policy on closed-loop geothermal heat pump wells. If open loop wells are proposed, the Proponent will be required to secure a Groundwater Discharge Permit from MassDEP and demonstrate in that permit application that adverse impacts to groundwater will be avoided and minimized. In supplemental information provided to MEPA, the Proponent has stated that it will comply with all applicable MassDEP policies and regulations for either an open- or closed-loop system. The Proponent should ensure that adverse impacts to groundwater and the discharge of excess heat into the ground are avoided, minimized and mitigated.

The Proponent has committed to a comprehensive program of construction-period diesel emission mitigation, based on MassDEP's Diesel Retrofit Program and U.S. Environmental Protection Agency guidelines. Subcontractors will be required to use retrofitted equipment and ultra-low sulfur diesel fuel in off road construction equipment. The Proponent will implement a Transportation Demand Management (TDM) program for construction personnel. During construction, Harvard and its contractors must comply with the Massachusetts Anti-Idling regulation at 310 CMR 7.11. To control construction-period air quality impacts, the Proponent has committed to using wetting agents to control and suppress dust, covering all trucks used for the transportation of excavated material, and street and sidewalk cleaning.

As noted above, the Science Project does not exceed MEPA review thresholds that would require the Proponent to file an Environmental Notification Form, which establishes, by definition, a presumption of insignificance. The proponent's proposed reductions in impacts over existing conditions, proposed improvements, and commitments to exceed baseline regulatory standards all support that presumption. I note that 'insignificant' is not the same as 'no impacts,' and that construction-related impacts of the Science Complex have the potential to affect the quality of life of local residents. Local, construction-related impacts are largely the purview of the Boston Redevelopment Authority and the City of Boston agency permitting process, and I am confident that concerns expressed during the MEPA comment period will be

adequately addressed by the City. I find that the potential environmental impacts of Phase 1 subject to MEPA jurisdiction are insignificant.

3. Ample and unconstrained infrastructure facilities and services exist to support Phase 1:

The Science Complex will rely on service from the Boston Water and Sewer Commission (BWSC) for water supply and from the BWSC and the Massachusetts Water Resources Authority (MWRA) for wastewater disposal. According to the EENF, there is sufficient capacity in the existing system to accommodate water demand and wastewater flows associated with the project. The Proponent has proposed minor improvements including new water mains beneath Stadium Way and the Rena Street extension. The Proponent intends to replace an existing 36-inch storm drain with a 72-inch storm drain around the periphery of the site.

As required by MassDEP, the MWRA and the BWSC, the Proponent is responsible for eliminating inflow and infiltration (I/I) at a ratio of 4:1 to offset the additional project-related wastewater flows to the system. The Proponent must coordinate with the BWSC and MassDEP to address this mitigation. In response to the DROD, the Proponent has submitted additional information detailing the design of on-site wastewater facilities, how it determined overall net flows (sanitary and infiltration/inflow) to the BWSC and MWRA collection systems, and a plan to offset any increase in flow in accordance with MassDEP and BWSC policies. The Proponent should submit final designs, calculations and any necessary offset plans to BWSC and MWRA prior to commencement of the Phase 1 work. The Proponent should also note comments from the MWRA on the DROD regarding coordination for the MWRA's planned CSP control project.

The proposed DEF will produce sufficient energy to meet the needs of the proposed Science Complex and will also be able to supplement the capacity of the electrical transmission grid in the vicinity of the site.

One of the primary concerns about the Science Complex relates to existing constraints on transportation infrastructure in the vicinity of the project site. As noted above, the Proponent asserts that there will be a decrease in vehicle trips traveling to and from the Science Complex as compared to existing conditions, meaning that demands on existing infrastructure will also be reduced. In addition, the Proponent states in the EENF that it will make improvements to pedestrian and bicycle facilities, enhance existing transit and shuttles, provide adequate but limited parking, and implement a comprehensive Transportation Demand Management program to achieve a 50% mode share for employee automobile trips to the Science Complex. In a separate Certificate issued on September 14, 2007, I have directed the Proponent to describe in the Master Plan how it will achieve goals of a 50% mode share for the entire Allston campus.

As a condition of this FROD and to demonstrate that the 50% target is met for the Science Complex, the Proponent has committed to developing a monitoring plan, publicly sharing the results of trip monitoring, and outlining measures that will be undertaken if the 50% mode share target is not met. The Proponent shall monitor and provide to MEPA the results of trip monitoring on an annual basis for the Phase 1 project after completion of the project. The Proponent shall also discuss the 50% mode share goal and any additional necessary mitigation in each 3-year update as required under the Special Review Procedure and in any subsequent

project-specific filings. In all subsequent filings and trip monitoring reports, the Proponent should clarify the baseline that is used for calculating reductions in personal automobile trips.

The Proponent will make improvements to the existing pedestrian, bicycle and transit systems in the project area to support the Science Complex project:

- Pedestrian facilities along existing and proposed streets near the Science Complex will be enhanced. The Science Complex will feature a 100-foot wide pedestrian corridor as the north-south connector between the Rena Street extension and Western Avenue, referred to as Academic Way. Connections will be established between North Harvard Street, the Science Complex, and Western Avenue and from the Science Complex to the Charles River Reservation.
- The Proponent will make upgrades to 25 blocks of sidewalk (7,500 linear feet) on North Harvard Street and Western Avenue. Sidewalks that are in poor condition will be replaced and sidewalks that are in fair to good condition will be repaved and repaired as needed. The Proponent has also committed to roadway improvements on North Harvard Street.
- The Science Complex will include sheltered bicycle parking and convenience bicycle parking near public entrances to buildings. The Proponent will provide lockers, showers and other facilities for building users to encourage bicycling as a transportation mode.
- The Science Complex is supported by existing Massachusetts Bay Transportation Authority (MBTA) bus routes, and the Proponent has made suggestions in the EENF for improvements to existing services. The Proponent intends to expand and enhance the Harvard University shuttle system to support the Science Complex. The Proponent must ensure that proposed shuttle connections between the Allston campus and other Harvard University campuses do not result in the inappropriate use of Department of Conservation and Recreation (DCR) parkways, including Soldiers Field Road, the Fenway, and Park Drive.

Several other suggestions have been made in comments on the EENF for short-term improvements that would enhance the pedestrian and bicycle infrastructure in the vicinity of the Science Complex. The Proponent should work with the City of Boston and the DCR to identify and implement additional mitigation to improve the safety and effectiveness of pedestrian and bicycle facilities in the vicinity of the project.

Based on the foregoing, I find that ample and unconstrained infrastructure exists to support Phase 1.

4. The project is severable, such that Phase 1 does not require the implementation of any other future phase of the project or restrict the means by which potential environmental impacts from any other phase of the project may be avoided, minimized or mitigated.

Proposed improvements including the construction of two short segments of new roadway, installation of a new 72-inch storm drain, and the construction of the DEF do not require the future build-out of any other phase of the Master Plan. The severability standard

restricts Proponents from moving forward with portions of a project that depend entirely on infrastructure improvements or other mitigation that will not be realized until future phases of the larger project. Aspects of the project that anticipate the implementation of future improvements or additional capacity do not constitute segmentation and Proponents may construct oversized infrastructure at their own peril. I find that development of the Science Complex and associated infrastructure improvements do not depend on implementation of the 20-Year Master Plan.

I note concerns that the construction of the Science Complex will preclude the installation of bike paths on Western Avenue in the future. The Proponent has clarified in supplemental materials provided to MEPA that proposed improvements to Western Avenue do include bicycle lanes from Barry's Corner east to the Charles River. The Proponent will submit proposed design improvements for Western Avenue including the proposed bicycle lanes to the Boston Transportation Department for approval. In addition, the Proponent will address additional bicycle infrastructure improvements at other locations in the Master Plan. I am confident that subsequent design proximate to the Science Center will ensure that bicycle and pedestrian mitigation can be accommodated.

5. The Agency Action on Phase 1 will contain terms such as a condition or restriction in a Permit, contract or other relevant document approving or allowing the Agency Action, or other evidence satisfactory to the Secretary, so as to ensure due compliance with MEPA and 301 CMR 11.00 prior to Commencement of any other phase of the Project.

The Science Complex project requires a number of state permits, including a Sewer Connection/Extension Permit and a Limited Plan Application for the DEF boilers from MassDEP and a Sewer Use Discharge Permit from the MWRA for the discharge of industrial wastewater. The EENF has provided sufficient information to demonstrate that the project can adequately meet the performance standards for required state permits. I expect that implementation of the Master Plan will require a number of state agency actions. Permits for future projects reviewed by MEPA as part of the Allston Master Plan will ensure due compliance with MEPA and 301 CMR 11.00 prior to Commencement of any other phase of the Project.

As a condition of the Phase 1 Waiver, the Proponent must prepare draft Section 61 findings outlining all the proposed mitigation measures associated with Phase 1 for consideration during the MassDEP permitting process. These Section 61 findings should be consistent with the mitigation measures presented in the EENF.

Conclusion

I have determined that this waiver request has merit, and issued a Draft Record of Decision (DROD), which was published in the Environmental Monitor on September 25, 2007 in accordance with 301 CMR 11.15(2), which began the public comment period. The DROD was subject to a 14-day public comment period which ended on October 9, 2007. Based on a review of the Expanded ENF, consultation with state agencies and review of comments submitted on the DROD, I hereby grant the waiver requested for this project, which allows the Proponent to

proceed with Phase 1 of the project prior to preparing a mandatory Environmental Impact Report (EIR) for the entire project, subject to the above findings and conditions.

October 16, 2007
Date



Ian A. Bowles

Comments Received on the DROD

10/3/2007	WalkBoston
10/4/2007	Allston Development Group, Harvard University
10/4/2007	Phil Goff
10/4/2007	Metropolitan Area Planning Council
10/4/2007	Ken Field, Cambridge Bicycle Committee
10/4/2007	Matthew E. Snyder
10/5/2007	Charles River Watershed Association
10/5/2007	Chris Porter, MassBike Metro Boston Chapter
10/5/2007	Allston Brighton Community Planning Initiative
10/8/2007	Alex Selvig
10/8/2007	Karen Smith
10/9/2007	Tim McHale
10/9/2007	Department of Conservation and Recreation
10/9/2007	Stephen H. Kaiser
10/9/2007	Allston Development Group, Harvard University
10/9/2007	Catherine Hornby, Cambridge Bicycle Committee
10/9/2007	Massachusetts Water Resources Authority
10/9/2007	John S. Mangiaratti
10/9/2007	Harry Mattison
10/9/2007	Conservation Law Foundation & Charles River Watershed Association
10/10/2007	Christopher M. Kilian, Conservation Law Foundation
10/10/2007	Metropolitan Area Planning Council
Undated	Mark Ciommo
	Allston Brighton Community Planning Initiative

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