



Charles River Watershed Association

February 16, 2007

Boston Redevelopment Authority  
One City Hall Square  
Boston, MA 02201

Attn: Gerald Autler

*Re: Harvard University IMPA and HUAM Art Center PNF*

Dear Mr. Autler:

Charles River Watershed Association (CRWA) has reviewed the Institutional Master Plan Amendment (IMPA) along with the Project Notification Form (PNF) for the above mentioned project (the Project), submitted by Harvard University (Harvard) and offers the following comments to assist the Boston Redevelopment Authority (BRA) and Harvard as the planning process moves forward.

As previously mentioned in our two comment letters on the IMPNF, and the Science Complex PNF, dated June 1 and December 4<sup>th</sup>, 2006, respectively, CRWA's general concern remains **Harvard's decision to proceed with the review process for both the Science Complex and the Art Center before completing a new Institutional Master Plan (IMP), which makes it extraordinarily difficult for the public and the regulators, to review the project in an appropriate context.** To avoid segmentation issues, Harvard and the BRA need to ensure that the comments made by CRWA and others as a part of the above two filings as well as upcoming comments on the IMPNF are adequately addressed before the IMPA is approved. CRWA firmly believes that **it is not appropriate for Harvard to start construction of the projects -- especially the Science Complex for which site preparation is scheduled to begin in Spring 2007 with construction to follow in Summer 2007<sup>1</sup> -- before the anticipated submission, let alone approval of the new IMP.**

*IMPA Scope and Comprehensiveness*

Because the IMPA is not comprehensive enough in its scope, it fails to address overall neighborhood level issues as they relate to the two projects and their relationship to the rest of the Master Plan. It is inadequate that the IMPA only "refers generally to the consistency of these projects with the longer term vision for the Allston Campus."<sup>2</sup> While it is

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<sup>1</sup> Harvard University IMP Amendment page 3-22

<sup>2</sup> Ibid page 1-5

somewhat helpful to have the executive summary of the new IMP included in the IMPNF, many issues raised by CRWA in its comments on the original IMPNF are still not addressed.

In addition:

- **There is a missed opportunity to use open space and water as a structuring elements in the IMP, which should start with these two projects.** The IMPA fails to show ways in which the open space and pedestrian systems allow through-access for the surrounding resident community both within the Science Complex and the HUAM Arts Center. While Harvard claims in Sections 5.3.1 and 5.3.2 that the IMPA is consistent with the Boston Open Space Plan as well as the Charles River Master Plan, it is very apparent that the open space framework developed by Harvard falls short of realizing the various goals<sup>3</sup> articulated in the two documents. Figure 3-1 (Phase 1 Interim Condition) on page 3-3 shows a piecemeal approach to connecting the two projects to an overall system of interconnected public realm opportunities and underscores the fact that the open space and infrastructure networks need to be planned before buildings on specific sites limit options for making meaningful connections. One crucial connection that should be made explicit as a part of the IMPA is the Allston Creek corridor which successfully provides the critical east-west connection between the residential neighborhood and the Charles River. The current IMPA and IMP Executive Summary not only fail to incorporate the corridor as a part of the overall master plan, but are precluding the option of realizing this connection in the future by not preserving adequate right of way. The above connections will not only go a long way in realizing the NANSP Guiding Principles for the Public Realm as cited in Section 7.7.1 but also in the process maximize the environmental benefits.
- Landscape typologies, techniques, spatial characteristics, and maintenance, are not discussed in the IMPA's sustainability section, 8.3. While building and site planning measures are outlined, landscape forms and function, which will have a significant influence on overall sustainability of the projects, have not been included as a part of the discussion. Since the Sustainability Guidelines and the Utility Master Plan are not scheduled to be completed before summer, 2007, it is hard to believe that the IMPA projects are in anyway guided by these system-wide plans. The projects therefore are precluding options for campus design in which the buildings are designed within the context of the design for open space and infrastructure, rather than the other way around. Without the development and adoption of specific standards both at the site specific level as well as at a campus-wide level for a variety of environmental quality aspects, and metrics must be developed to reflect how impacts are being measured and the strategies being adopted to achieve these standards cumulatively, the projects can not do justice to achieving true environmental sustainability. **It is crucial that the Allston Sustainable Design Guidelines inform the design of both the projects and**

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<sup>3</sup> Harvard University IMP Amendment page 5-5 and 5-6

**accordingly, the DPIR for the two projects should not be filed before the work on the guidelines is completed and the appropriate sustainability standards established for both the projects and the overall campus.**

- Water systems, including wastewater, water supply, and surface drainage, are integral parts of the infrastructure and roadway designs for the Allston campus. However, sustainable treatment, recharge and conveyance of water has not been discussed or incorporated into the IMPA sections 6.3-6.5. Harvard should aim to go beyond regulatory requirements because all evidence points to the fact that bare bones compliance with existing regulations will not protect the Charles River and other urban ecosystems to the extent necessary. Contemporary best management practices and technologies should be a priority and expressly described.
- Given the existing conditions with regard to drainage and the infrastructure upgrades that need to be undertaken to address issues of flooding acknowledged in section 6.5.1, Harvard cannot simply offer temporary fixes at a site scale. There is a need to look at **a comprehensive solution at a watershed scale incorporating green infrastructure to the maximum extent possible. This will not only respect and enhance the historic groundwater and land/water connections but also build in resilience to vagaries of climate change.** The research undertaken by CRWA through its “Blue Cities” initiative offers Harvard a much more environmentally sustainable development model than what is currently offered in the IMPA and IMPNF.
- **The IMPA should also include public realm improvement guidelines that include provisions for street “greening.”**<sup>4</sup> CRWA encourages Harvard to incorporate plans for street greening with appropriate Low Impact Development (LID) best management practices as a part of the streetscape redesign for Western Ave, North Harvard St, Spurr St. and the design and construction of new streets such as Stadium Way. It is also critical that stormwater management be an important consideration in the design and landscaping of the new Science Complex courtyard, the HUAM Arts Center sculpture garden as well as the other open space, parking areas, pedestrian access-ways (including internal pathways connecting public and semi private open spaces) and streetscape improvements that are going to be implemented throughout the campus in the near future. CRWA also encourages Harvard specifically to consider “greening” the Teele Hall parking lot and retrofitting it with LID best management practices along with the buildings and sites for the 2002 Amendment Properties before they can be rezoned for institutional use. Also, the landscaping plans for the properties that Harvard currently owns, but has no plans for the next 20 years, should incorporate these LID BMP’s in the near term (instead of undertaking “interim” landscaping).

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<sup>4</sup> According to the “Green Streets” manual published by Metro OR, a “green” street is designed to incorporate a system of stormwater treatment within its right of way so as to minimize the quantity of water that is piped directly to streams or rivers. It makes visible a system of “green” infrastructure that maximizes the use of street tree coverage for stormwater interception as well as temperature mitigation, water and air quality improvement.

CRWA therefore requests that the BRA require Harvard to meet certain baseline conditions for environmental restoration at a sub-watershed level, so as to ensure that the projects will allow for the implementation of system-wide green infrastructure features. This includes the analysis of how the two projects relate to the Allston Creek daylighting options that Harvard is currently developing and the commitment to incorporate other LID BMP's on system-wide/watershed level, including retrofitting streets and parking lots, as a part of a commitment to improve the public realm area-wide. CRWA would like to meet with the BRA and Allston Development Group to discuss and reach agreement on how to address our concerns before the IMPA is approved. CRWA's earlier comment letters on the IMPNF and the Science Center PNF, which include specific concerns not yet addressed, are attached to this letter for ease of reference.

### **Arts DPIR Scoping Requirements**

Since CRWA's comment letter on the Science Complex PNF pointed out several areas where significant, detailed information was necessary in the DPIR, please refer to the sections under Transportation and Parking, Environmental Protection, Urban and Landscape Design, Public Realm Improvements, Infrastructure and Sustainable Design of the attached letter for inclusion in the Scoping Determination for the HUAM Arts Center. **The scope for the DPIR should require Harvard to address how the Project is promoting environmental restoration at a neighborhood scale rather than simply mitigating the impacts at the site scale.** In addition to the same concerns discussed for the Science Complex, CRWA offers the following additional comments on the HUAM Arts Center PNF:

- The PNF does not provide enough detail on how the Arts Center fits into the planning framework laid out by the NANSP. Also, given the fact that the site seems to be really tight for the amount of program that the building needs to accommodate, Harvard should evaluate other appropriate sites before proceeding any further with the building design. While in principle the location of the project at Barry's Corner adds a use that will improve the conditions from current conditions, it will also preclude having a more substantial retail use on this site in the future. The absence of information on how the rest of Barry's Corner, and for that matter the rest of Western Avenue corridor, would be developed makes it very difficult to justify the use of this site for the HUAM Art Center.
- The design and construction methodology adopted for the below-grade section of the building should be detailed in the DPIR to ensure that important environmental issues are addressed both during and after construction. Given the high groundwater table in the area, creative approaches need to be adopted for managing stormwater and details of these approaches should be provided in the DPIR.
- Just as Harvard plans to assist the City in developing an area-wide computer model of the transportation system,<sup>5</sup> it should work with various City agencies and CRWA to create area-wide hydrologic models to study impacts of development on the

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<sup>5</sup> Harvard University IMP Amendment Page 5-4

water regime, and based on this, develop appropriate measures for restoration. Although the PNF states that the projects will “attempt to mimic the natural flows and the hydrology in the area” lacking is any discussion of how that will be done.

- **“Harvard must select target goals for runoff reduction and treatment now and direct its engineering, planning and design teams to achieve these goals at the outset, rather than just committing to “reducing flows and minimizing pollutants.” Other institutions have achieved similar measures.** While Harvard has verbally acknowledged a goal to reduce stormwater runoff by 50% and infiltrating a two-year storm, specific language such as: “meet or exceed x % runoff reductions and x % removal of suspended solids, nutrients, and heavy metals” should be included at both the site specific and overall sub-watershed scale in future project filings.
- It is important that Harvard not only treat the volume of runoff it generates from its own properties but also intercept and treat runoff that has come from “upstream” pipe networks. These drainage pipes pass beneath Harvard-owned land and if pipe systems need to be retrofitted to accommodate this new development, it would be timely for Harvard to tackle some of the larger runoff issues in Allston.

CRWA appreciates the opportunity to comment on the IMPA and the HUAM Art Center PNF through the Article 80 review process and we look forward to working with the BRA and Harvard as the planning moves forward. Please feel free to contact either of us if you have any questions.

Sincerely,



Kate Bowditch  
Director of Projects



Pallavi Kalia Mande  
Urban Restoration Specialist

Encl.

cc: Senator Steven A. Tolman  
Senator Jarrett T. Barrios  
Representative Kevin G. Honan  
Representative Michael J. Moran  
City Councilor Jerry P. McDermott  
James Hunt, City of Boston Environment Dept.  
Allston Development Group  
Harvard Green Campus Initiative  
Allston Brighton CDC  
Allston Civic Association  
Boston Water and Sewer Commission  
Boston Parks and Recreation  
Boston Transportation Department  
Boston Department of Public Works



*Charles River Watershed Association*

Boston Redevelopment Authority  
One City Hall Square  
Boston, MA 02201

Attn: Gerald Autler

*June 1, 2006*

***Re: Harvard University Allston Campus IMPNF***

Dear Mr. Autler:

Charles River Watershed Association (CRWA) has reviewed the Institutional Master Plan Notification Form (IMPNF) submitted by Harvard University (Harvard) and offers the following comments to assist the Boston Redevelopment Authority (BRA) and Harvard as the planning process evolves.

It is our understanding that Harvard is in the process of preparing a new Institutional Master Plan (IMP) to incorporate plans for its entire new campus in Allston, and that the new IMP will be submitted to the BRA by the end of this year. The proposed Amendment to the existing IMP is intended to be an interim measure, allowing Harvard to move forward expeditiously on the three projects described in the IMPNF, while the larger scale IMP planning process takes place.

Nevertheless, the Amendment to the existing IMP is an important planning tool and a significant element in the BRA's regulatory program: the content of the Amendment will guide planning until a new IMP is approved. We recognize that the BRA's Scoping Determination will set out the requirements of the Amendment. The BRA has made the commitment not to approve the IMP Amendment until the new IMP is filed. However, the Scope for the Amendment has to be detailed and thorough to truly "provide a basis for evaluating...the impact on the surrounding neighborhoods of the Institution's current and future projects" (Section 80D-3). Also since the Adequacy Determination will be issued based on the Scoping Determination, the Scope for the IMP Amendment must ensure that "nothing in the Institutional Master Plan will be injurious to the neighborhood or otherwise detrimental to the public welfare, weighing all the benefits and burdens" (Section 80D-4).

While CRWA appreciates Harvard's need to move forward in the near term with design of these specific projects, and recognizes that the IMP Amendment will include far more detail, only limited information is provided in the IMPNF, and CRWA is concerned about the lack of commitment expressed in it to the larger planning concepts that have been agreed to in principle by so many stakeholders during the past several years. This lack of information makes it very difficult to comment on the submitted IMPNF in a meaningful way.

We urge Harvard and the BRA to ensure that the Amendment includes an assessment of how these projects will fit into the larger campus plan, and indeed, into the restoration efforts for the entire neighborhood. It is particularly important that the science building, major new construction, will not be simply incorporated into the existing IMP as a stand-alone project. This would contradict the scope, purpose and function of the BRA's IMP process.

CRWA believes the Amendment should contain sufficient detail about Harvard's campus plan, including approaches to open space, stormwater management, transportation, energy, and utility infrastructure so that the design of the sites fits within a campus plan context. Design of the building sites should include consideration of stormwater management at a sub-watershed scale; open space corridor plans; transportation networks; utility plans; and energy planning.

Infrastructure planning for the new campus - water supply and wastewater generation, stormwater management, energy systems and other aspects related to infrastructure – is particularly important and should not be considered at the site-specific scale. The first three projects, to be covered under the Amendment, must be evaluated within the larger context of the coming development, and the infrastructure planning, design and development should match the long-term needs of the campus and the neighborhood. Economies of scale are especially relevant, and opportunities should be sought through the planning process to design infrastructure improvements at a long time scale and a large spatial scale.

The Scope should require Harvard to address how the projects are promoting environmental restoration at a neighborhood scale rather than simply mitigating the impacts at a project scale. Instead of addressing sustainability as a stand alone section, the Scope should require Harvard to spell out how the approaches and indicators of sustainability will be incorporated in each of the areas that the project will impact: transportation, environmental protection, urban design, historic resources and infrastructure. Specific standards need to be adopted at a campus-wide level for a variety of environmental quality aspects, and metrics must be developed to reflect how impacts are being measured and the approaches being adopted to achieve these standards cumulatively. CRWA's specific recommendations are as follows.

#### Project Area

The Scope should require more specific detail about the aerial extent of land that the Amendment is to cover. While the three buildings described in the text of the IMPNF are at specific locations, the graphic in the IMPNF depicting the area to be covered in the Amendment includes substantially more land than those buildings appear to require. In particular, there is one parcel that has no apparent designated use (the parcel behind the Genzyme building). The Scope should require a clear description of all land parcels to be included in the Amendment, and a plan for their use. If no use is yet planned for a parcel, or a portion of a parcel, it should not be included in this Amendment, but should rather be included in the new IMP to be filed later this year.

#### Transportation

The detailed transportation analysis that will be submitted as a part of the IMP Amendment should go well beyond documenting how “the proposed projects will not result in significant changes in traffic generation and parking as compared to the existing

conditions,” and instead include recommendations to “significantly improve” the existing conditions. The preliminary analysis that Harvard has carried out based on which it is claiming the above should be substantiated with detailed studies and data collection. Since transportation infrastructure and parking (especially given the extent of underground parking being considered) have huge impacts on stormwater management, these two aspects of the master plan should be designed in tandem to ensure that the opportunities for integrative planning are maximized to the extent possible, and that there are no unforeseen long term impacts.

#### Environmental Protection

In addition to detailed impact analysis on various elements such as wind, shadow, daylight, solar glare, air quality, water quality, wetland, flooding, geotechnical and groundwater, solid and hazardous waste, noise, construction impacts, and wildlife habitat, the IMP should focus on how each of the elements is being improved or restored (approximating pre-development conditions). Given that a major part of the land under Harvard’s ownership was marshland and there are now major drainage issues stemming from the way the area was developed, a restorative approach is critical to ensure that the drainage problems are not further exacerbated and that past mistakes are remedied to the extent possible.

#### Urban Design

Each and every aspect of the design and planning for the campus, whether it relates to public realm improvements, density or massing considerations, or even the open space framework, should take into account the functioning of the natural landscape and systems that govern it. Accordingly, the interface of land and water, both on the surface and underground, should guide development from improvement of existing conditions to creation of new buildings, streets or open spaces. Wherever possible, re-development should seek to restore the natural hydrology and landscape processes at the sub-watershed level, which will ensure that long-term sustainability can be achieved. CRWA strongly believes that environmental restoration should be at the heart of the design approach here and detailed analysis and recommendations should be included as a part of the IMP Amendment.

#### Historic Resources

The Scope should include an assessment of the impacts that the proposed projects will have on Charles River parklands. These impacts will include transportation impacts on Soldiers Field Road; on the Harvard Bridge and the Western Avenue Bridge; pedestrian impacts on the pathways, walkways and bikeways; pedestrian and vehicular impacts on intersections; and active and passive recreational uses in the parks. The Scope should also require a plan to mitigate impacts that are identified and a long-term plan to improve and restore the parklands to the extent possible. The numerous planning documents that have been prepared to date can provide excellent guidance on options to mitigate the impacts of increased use.

#### Infrastructure

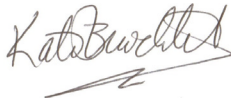
The information in the IMPNF does not reflect system-wide planning for infrastructure. The Scope should require an analysis of neighborhood-scale infrastructure, and detail what upgrades, improvements or redesign may be needed to accommodate not only the three buildings in the Amendment but the total anticipated campus needs over the coming decade. The infrastructure assessment should include an analysis of what opportunities there may be to reduce impacts on infrastructure, either through conservation measures,

alternative infrastructure elements, or innovative technologies. We suggest the following be required in the Amendment:

- 1 Water Supply: an institutional water audit; an assessment of options for reducing demand; managing peak demands; finding alternative water supply sources for irrigation and other non-potable water uses; assess the potential for reuse.
- 2 Stormwater Management: assessment of existing stormwater runoff conditions (quality and quantity, for the 2-, 10-, 20- and 100-year storms) from the areas in the current IMP and those to be included in the Amendment; potential stormwater management designs at the three new building sites to minimize pollutant loads and runoff volumes from the same areas; potential retrofits or larger scale stormwater management approaches to managed stormwater runoff from all of the area covered under the existing IMP as well as the areas to be included in the Amendment; and identification of opportunities for shared stormwater management projects with potential partners including Boston Water and Sewer Commission, Boston Department of Public Works and the Department of Conservation and Recreation.
- 3 Wastewater: assessment of wastewater generation; assessment of existing wastewater infrastructure and opportunities to improve carrying capacity, reduce Inflow and Infiltration (I/I) and reduce loading during potential CSO events; an assessment of the alternatives for wastewater management, including potential construction of small-scale package treatment plants, wastewater greenhouses, and other innovative wastewater management technologies.
- 4 Other infrastructure: energy and transportation infrastructure should be evaluated in the context of the numerous alternative design approaches that may be taken. Low Impact Development (LID), Leadership in Energy and Environmental Design (LEED) and other 'green' approaches may significantly reduce the demands on the energy, water and transportation infrastructure as the new campus develops.

In sum, the scoping determination should address these areas in a comprehensive manner. CRWA appreciates the opportunity to comment on this project through the Article 80 review process and we look forward to working with the BRA and Harvard as the planning moves forward. Please feel free to contact either of us if you have any questions.

Sincerely,



Kate Bowditch  
Director of Projects



Pallavi Kalia Mande  
Urban Restoration Specialist

cc: Allston Development Group  
Harvard Green Campus Initiative  
Allston Brighton CDC  
Allston Civic Association  
City of Boston Environment Dept.  
Boston Water and Sewer Commission



Charles River Watershed Association

December 4, 2006

Boston Redevelopment Authority  
One City Hall Square  
Boston, MA 02201

Attn: Gerald Autler

***Re: Harvard's Allston Science Complex PNF***

Dear Mr. Autler:

Charles River Watershed Association (CRWA) has reviewed the Project Notification Form (PNF) for the above mentioned project (the Project) submitted by Harvard University (Harvard) and offers the following comments to assist the Boston Redevelopment Authority (BRA) and Harvard as the planning process moves forward.

At the outset, our general concern remains that Harvard's decision to proceed with the review process for the Science Complex before completing a new Institutional Master Plan (IMP) makes it difficult for the public, and regulators, to review the project in an appropriate context. Harvard's campus expansion plans are extensive, and will radically transform this part of the City. Appropriate design of the Science Complex – building massing, transportation infrastructure, water resources, and open space – is dependent on and significantly impact the surrounding neighborhood. The IMP process is intended to provide a meaningful context in which project-specific decisions can be made. Since Harvard has filed a PNF for this project without a new or amended IMP in place, the BRA needs to fundamentally restructure the requirements for its Scoping Determination for the Draft Project Impact Report (DPIR) so as to include information that would customarily be detailed in an IMP.

We are aware that Harvard is in the process of preparing a new IMP, as well as amending their existing IMP. But these documents are not available for review, so the burden is upon Harvard to provide all of the information that members of the public, and regulators, need to evaluate the Project as a part of the DPIR. In these comments therefore, we highlight several areas where significant, detailed information is needed in the DPIR. We urge Harvard and the BRA to ensure that the DPIR includes a clear indication of how the Project will fit into the larger campus plan, and indeed, into the restoration efforts for the entire neighborhood. It is particularly important that the Science Complex, a major new construction, will not be simply incorporated into the existing IMP as a stand-alone project. This would contradict the scope, purpose and function of the BRA's IMP process.

Infrastructure planning for the new campus is particularly important and should not be considered only at the site-specific scale. All three projects covered under the Amendment must be evaluated within the larger context of the overall campus plan, and the infrastructure planning, design and development should match the long-term needs of the campus and the neighborhood. Economies of scale are especially relevant, and opportunities should be sought through the planning process to design infrastructure improvements for a long time scale and a large spatial scale. CRWA therefore believes that the DPIR should contain sufficient detail on how the Science Complex ties into the larger infrastructure network for the campus and the neighborhood so that the design of the site fits within a more comprehensive planning context. Design of the building and the landscape for the Project should thus include consideration of open space corridor plans; transportation networks; utility plans; energy planning and stormwater management at a sub-watershed or a larger watershed scale.

The scope for the DPIR should require Harvard to address how the Project is promoting environmental restoration at a neighborhood scale rather than simply mitigating the impacts at the site scale. Instead of addressing sustainability as a stand alone section, the scope for the DPIR should require Harvard to spell out how the guidelines and indicators for sustainability will be incorporated in each of the areas that the project will impact: transportation, environmental protection, urban design, historic resources and infrastructure. Specific standards need to be adopted both at the site specific level as well as at a campus-wide level for a variety of environmental quality aspects, and metrics must be developed to reflect how impacts are being measured and the strategies being adopted to achieve these standards cumulatively. It is crucial that the Allston Sustainable Design Guidelines inform the design of the Science Complex and thus the DPIR should not be filed before the work on the guidelines is completed and the appropriate sustainability standards established for both the Project and the overall campus. CRWA's specific recommendations are as follows.

#### Science Site and Planning Context

The PNF does not provide enough detail on how the Science Complex fits into either the new campus master plan or the planning framework laid out by the North Allston Strategic Framework for Planning (NASFP). CRWA is concerned about the lack of commitment expressed in it to the larger planning concepts that have been agreed to in principle by so many stakeholders during the past several years. The language used to describe the relationship of the Project to the Campus Wide Concept Plan is very vague and full of general vision statements without a commitment to specific strategies or action plans to implement these visions of a "...green, welcoming and environmentally conscious campus"<sup>1</sup>. The DPIR needs to provide more details regarding specific projects that the Science Complex will initiate as a part of the Project's commitment to public realm improvements and "...to enhance the area's open space system and to develop new community amenities with the participation of neighborhood representatives and the support of city and state officials and public agencies"<sup>2</sup>

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<sup>1</sup> PNF for Harvard Allston Science Complex. Pg 1-10

<sup>2</sup> Ibid

### Transportation and Parking

The detailed transportation analysis that will be submitted as a part of the DPIR and IMP Amendment should include studies and data collection undertaken to not only alleviate the concerns voiced by the residents of the surrounding neighborhood, but also address more regional traffic impacts. Since transportation infrastructure and parking (especially given the extent of underground parking being considered) have huge impacts on stormwater management, these two aspects of the master plan should be designed in tandem to ensure that the opportunities for integrative planning are maximized to the extent possible, and that there are no unforeseen long term impacts. The design and construction of the new Stadium Way and Rena Street extension needs to be very carefully planned to not only minimize traffic impacts in the surrounding neighborhood, but to also ensure that appropriate Low Impact Development (LID) best management practices are incorporated in the design of the streetscapes.

The design and construction methodology adopted for the below-grade parking structure needs to be detailed out in the DPIR to ensure that it addresses important environmental issues both during and after construction. The location of this project in close proximity to historic tidelands that were filled, and the ongoing problems throughout many areas of the City with groundwater levels, make it all the more important that this aspect of the project be designed with the utmost care and in anticipation of any potential impacts. Also, since a major stormwater trunk line (36-inch) would need to be re-routed or redesigned due to the underground parking, details of this system and how it's tied into the surrounding infrastructure layout needs to be included in the DPIR.

### Environmental Protection

In addition to documenting the impact of the Project on various elements such as wind, shadow, daylight, solar glare, air quality, water quality, wetland, flooding, geotechnical and groundwater, solid and hazardous waste, noise, construction impacts, and wildlife habitat, the DPIR should focus on how each of the elements is being improved or restored (to approximate pre-development conditions). Given that a major part of the land under Harvard's ownership was marshland and there are now major drainage issues stemming from the way the area was developed, a restorative approach is critical to ensure that the drainage problems are not further exacerbated and that past mistakes are remedied to the maximum extent possible.

As a part of evaluating the Project's impact on the Charles River, the DPIR needs to put together a Stormwater Management Program to ensure that every effort will be made to protect the River from flooding and water quality impairments. It is our hope that the DPIR will study various alternatives for impact mitigation and demonstrate how improvements will be made over the existing conditions. As a part of its efforts to mitigate its impact the River, CRWA would also encourage Harvard to consider retrofitting not only its own campus but also sections of the surrounding neighborhood's public realm with LID best management practices. The retrofits would not only help with stormwater treatment but also provide infiltration to recharge groundwater levels in the area. These improvements can be easily designed and implemented in concert with other pedestrian safety improvements that Harvard is committed to implementing with the City of Boston.

CRWA would like Harvard to initiate the development of a Stormwater Management Program at a sub-watershed level for all of North Allston in coordination with the various City agencies like Boston Environment Department (BED), Boston Water and Sewer Commission (BWSC) and Department of Public Works (DPW) and other stakeholder groups before filing the DPIR and the new IMP.

#### Urban and Landscape Design

In addition to addressing concerns regarding the height and massing of the Science Complex being voiced by the neighboring residents, each and every aspect of the design and planning for the Project and the campus, whether it relates to public realm improvements or the open space framework, should take into account the functioning of the natural landscape and the hydrologic systems that govern it. Accordingly, the interface of land and water, both on the surface and underground, should guide development from improvement of existing conditions to creation of new buildings, streets and open spaces. The contemporary architectural vocabulary for the Science Complex which incorporates state of the art building systems and façade needs to be complemented by a landscape design that is more interpretive of the site's history. A more progressive and interpretive approach to landscape design will not only go beyond simply replicating the traditional "Harvard Yard" aesthetic but actually contribute to improving the ecological functionality of the open space. The DPIR should therefore include specific guidelines that would address how the Project seeks to restore the natural hydrology and landscape processes at the sub-watershed level. CRWA strongly believes that environmental restoration should be at the heart of the building and landscape design approach for the Project and would like to see detailed landscape plans and recommendations for it included as a part of the DPIR.

#### Open Space and Public Realm

While there isn't a separate section included in the PNF, on open space and public realm, it is one of the most crucial aspects of the development that needs to be addressed both in the DPIR as well as in the IMP Amendment that will be filed soon. The Project offers not only an opportunity to provide open space for the Harvard community but also a means to integrate the Science Complex with the rest of the neighborhood through a greenway that ties the resident community through the Library Park to the Charles River Parklands. The DPIR should therefore include an overall open space plan (with appropriate urban and landscape design details) which explicitly provides the above connection for both pedestrians and bicyclists. The DPIR should also include public realm improvement guidelines that include provisions for street "greening"<sup>3</sup>. Whether it's the design of new streets like Stadium Way or Rena Street extension or retrofitting existing streets like Western Ave, North Harvard or Travis Street, LID best management practices need to be incorporated in their construction/ reconstruction. This would not only improve groundwater recharge, control stormwater runoff and improve water quality in the River, but also provide for very attractive urban streetscapes and increased public health benefits.

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<sup>3</sup> According to the "Green Streets" manual published by Metro OR, a "green" street is designed to incorporate a system of stormwater treatment within its right of way so as to minimize the quantity of water that is piped directly to streams or rivers. It makes visible a system of "green" infrastructure that maximizes the use of street tree coverage for stormwater interception as well as temperature mitigation and air quality improvement.

It is therefore critical that stormwater management be an important consideration in the design and landscaping of the new “Yard” at the Science Complex as well as the other open space, parking areas and streetscape improvements that are going to be made throughout the campus in the near future. CRWA also suggests that Harvard work with the BRA, the Boston Park and Recreation Department, and the Allston Brighton Green Space Advocates to develop a program to provide support for the community-wide effort that is underway to create new open space, improve access to existing open space network and retrofit various hard-scaped sites to make them “greener” and more ecologically functional. This contribution could be made as a linkage payment (as a part of the public benefits package) or through the implementation of a specific capital improvement project for improving access to and maintenance of the parks and for environmental restoration projects in North Allston as a whole.

### Infrastructure

It is not appropriate for the PNF to address infrastructure at the site specific level only. To ensure a system-wide planning for infrastructure, the DPIR scope should require an analysis of neighborhood-scale infrastructure, and detail what upgrades, improvements or redesign may be needed to accommodate not only the Science Complex, but the total anticipated campus needs over the coming decade. The infrastructure assessment should include an analysis of what opportunities there may be to reduce impacts on infrastructure, either through conservation measures, alternative infrastructure elements, or innovative technologies on a more comprehensive level.

We suggest the following be required in the DPIR and the IMP:

1 *Water Supply:*

- an institutional water audit;
- an assessment of options for reducing demand;
- techniques for managing peak demands;
- finding alternative water supply sources for irrigation and other non-potable water uses;
- assessment of the potential for reuse.

2 *Stormwater Management:*

- assessment of existing stormwater runoff conditions (quality and quantity, for the 2-, 10-, 20- and 100-year storms) from the areas included in the Amendment and the final IMP;
- potential stormwater management designs at the Science Complex site to minimize pollutant loads and runoff volumes from the areas included in the Amendment and the final IMP; current watershed science suggests the most effective stormwater management program provides water quality treatment for the 1 year storm and flood control for the 25- and 100-year storms.
- potential retrofits or larger scale stormwater management approaches to manage stormwater runoff from all of the area covered under the IMP amendment and the final IMP;
- identification of opportunities for shared stormwater management projects with potential partners including BWSC, DPW and the Department of Conservation

and Recreation (DCR). The DPIR should include specific, detailed information and alternatives analyses of stormwater management on the site. Stormwater management should aim to maximize infiltration, slow runoff from the site, maximize the use of vegetation, capture rooftop runoff for irrigation, and minimize sediment and nutrient loading.

We suggest that the scoping for the DPIR and the IMP require more documentation about the proposed Stormwater Management Program including:

- Detailed information about the final design of the proposed stormwater management plan, including both “green” and “gray” infrastructure. The plan should include site-specific information about surface stormwater management features such as swales, biofiltration areas, rain gardens, green roofs, stormwater planters, permeable pavement or vegetated storage areas. It should identify the location and design of proposed catch basins, particle separators, drains, and additional water quality structures, as well as details of the storm drain system (owned by Harvard, by the City of Boston, the DCR, or any other owner) that any flows discharged from the site will discharge into.
  - An assessment of how the site would meet DEP’s stormwater management policy in its entirety, not just “to the maximum extent practicable;”
  - A plan to minimize the primary pollutants of concern for the Charles River, bacteria, nutrients, metals and toxic sediments;
  - A maintenance plan for the stormwater management plan.
- 3 *Stream Daylighting*: The DPIR should include a detailed version of the analysis done by Harvard's consultant team Nitsch Engineering, on the Allston Creek daylighting through the Science Complex, based on which the recommendation summarized in the PNF was made. The DPIR should also include details of the various alternatives that are currently being studied for daylighting through the campus and how the Science Complex is tied into the proposed alternatives. It is not appropriate that the design of the Project be done independent of the design of the Allston Creek Daylighting, since the Science Complex site is a key contributor to how the inflow and outflow system for the stream from both the engineering and landscape design points of view. It is thus imperative that daylighted stream form and integral part of the building and landscape design for the Project and details of the design be included in the DPIR, in addition to details on other BMP’s like green roofs and bio swales that form a part of the overall hydrologic cycle on the site.
- 4 *Wastewater*: The DPIR needs to include a detailed assessment of wastewater generation; assessment of existing wastewater infrastructure and opportunities to improve carrying capacity, reduce Inflow and Infiltration (I/I) and reduce loading during potential CSO events; an assessment of the alternatives for wastewater management, including potential construction of small-scale package treatment plants, wastewater greenhouses, and other innovative wastewater management technologies. The DPIR should analyze opportunities to recycle and reuse various components of the wastewater stream, and to capture roof runoff for infiltration and/or storage for slow release to recharge groundwater levels.

- 5 *Groundwater:* The Scoping Determination for both the DPIR and the IMP should include an assessment of groundwater flow directions, as well as a determination of whether those directional flows change seasonally. If the Project shows any potential for altering flows, either slowing or reducing flows into the Charles River, or conversely reducing flows back into the ground during periods of high groundwater, or causing any groundwater “mounding,” the DPIR should document a mitigation plan for any such alterations. In addition, the DPIR should specify what source of water would be used should groundwater recharging be necessary during or after construction. In case on-site infiltration of stormwater is not possible the DPIR should evaluate the possibility of seeking off-site locations for groundwater recharge and stormwater infiltration. Finally, a detailed plan for the treatment and disposal of water from dewatering activities should be included in the DPIR.
- 6 *Other infrastructure:* energy and transportation infrastructure should be evaluated in the context of the numerous alternative design approaches that may be taken. In addition to Leadership in Energy and Environmental Design (LEED) and Low Impact Development (LID), other ‘green’ approaches may significantly reduce the demands on the energy, water and transportation infrastructure as the new campus develops. It is thus not only imperative that green infrastructure BMP’s be put in place at the Science Complex site, but the overall infrastructure system be designed so as to meet sustainability standards for the site, the overall campus and the entire system of impacted sub-watersheds, which would include section of the residential neighborhood.

While each of the above categories represents specific realms of water management, it is CRWA’s recommendation that a comprehensive Water Resource Management Plan be developed at a sub watershed level that would incorporate the above categories as part of a single system that would replicate the natural hydrologic cycle in comprehensive manner.

#### Sustainable Design

While there is some discussion on sustainability goals and the Allston Sustainable Design Guidelines in the PNF document, the DPIR should provide specifics on what kinds of best management practices and technologies will be incorporated at the building/ site, the campus and the overall neighborhood level. The Scoping Determination for the DPIR and the IMP need to explicitly define what the Project aims to achieve in terms of standards for environmental sustainability on the three levels mentioned above.

CRWA would encourage the proponents to consider a green roof for not only the new Science Complex, but also as a retrofit for all other existing buildings that it owns in North Allston. Green roofs would not only provide cleaner roof runoff, a habitat for birds and insects and an aesthetically pleasing amenity for the building occupants but also provide long term public health benefits for the neighborhood. Green building standards should also be adopted for wastewater reuse for flushing toilets etc. (through double plumbing the building) as well as capturing, filtering and storing roof run-off.

While the LEED system provides one metrics for incorporating green building standards

and requirements, there are only limited credits available for stormwater management in the LEED system. Therefore CRWA would encourage the proponents to go beyond the LEED rating system, when considering “greening” strategies for the buildings/ sites. This project offers a huge potential to expand the purview of green practices from individual building scale to looking a “greening of infrastructure” at an overall neighborhood level. Through retrofitting the entire campus area with LID best management practices, the proponent can achieve a much larger impact than the cumulative impact of a collection of individual green buildings.

Given that the Allston campus “...can and should represent Harvard’s strongest expression yet of its commitment to sustainability”<sup>4</sup>, the University needs to not only set the bar high in terms of the standards that this project and the rest of the campus will need to meet, but truly commit resources and time to working with various stakeholders to develop partnerships for an ongoing conversation on sustainability. CRWA appreciates the opportunity to comment on this project through the Article 80 review process and we look forward to working with the BRA and Harvard as the planning moves forward. Please feel free to contact either of us if you have any questions.

Sincerely,



Kate Bowditch  
Director of Projects



Pallavi Kalia Mande  
Urban Restoration Specialist

cc: Senator Steven A. Tolman  
Senator Jerrett T. Barrios  
State Representative Kevin G. Honan  
State Representative Michael J. Moran  
City Councilor Jerry P. McDermott  
Allston Development Group  
Harvard Green Campus Initiative  
Allston Brighton CDC  
Allston Civic Association  
City of Boston Environment Dept.  
Boston Water and Sewer Commission  
Boston Parks and Recreation  
Boston Department of Public Works

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<sup>4</sup> PNF for Harvard Allston Science Complex. Pg 3-22