

**Contact: Joan Racki**

**UNIVERSITY OF IOWA FLOOD RECOVERY**

**Action Requested:** Consider the University of Iowa requests to:

1. Receive the attached report from the University of Iowa on the status of site planning for the replacement of the School of Music (including Clapp Recital Hall) and Hancher Auditorium.
2. Authorize the University to proceed with its plan for relocating the School of Music and Hancher Auditorium as follows:
  - a. Authorize the University to proceed with planning of replacement space and to seek needed approvals from Federal Emergency Management Agency (FEMA) and others as required for the School of Music and Hancher Auditorium. The replacement facilities would be within the geographic areas on the northwest portion of the University of Iowa campus (Hancher) and immediately south of the University of Iowa campus (School of Music). (See attached maps.)
  - b. Grant "permission of proceed with project planning" for the Hancher Auditorium replacement facility within the designated area in the northwest portion of the campus within land substantially owned by the University of Iowa (see attached map). This includes permission to commence the architect selection process, with the decision on the selection of the Iowa-based architect-of-record and subsequent specialty design firms subject to Board approval. This also includes permission to commence the selection process for a construction management (agency) firm, in order to assist UI project management staff during the design and construction phases of the project.
3. Request a report and further recommendations on the School of Music site development plans no later than the April 28-29, 2010 Board meeting.
4. Receive the report on overall flood recovery status by building and overall financial status report.

**Executive Summary:** The University of Iowa has provided the following report, including requested actions, as identified above. The first portion of the report addresses School of Music and Hancher Auditorium Replacement Facilities. The second component is an Overall Flood Recovery Status – February 2010, which updates the information provided at the December 2009 Board meeting.

## SCHOOL OF MUSIC and HANCHER AUDITORIUM REPLACEMENT FACILITIES

### Background:

The University of Iowa's School of Music Building and Hancher Auditorium were constructed 37 years ago and contain approximately 297,000 gross square feet of space. These facilities were damaged extensively during the 2008 flood and remain in a precarious location, subject to future flooding from both above-grade inundation and sub-grade water consistently adjacent to the building's foundation. The facilities are currently vacated but are kept at a minimum temperature of 45 degrees to prevent building finish/system degradation until confirmation of the FEMA funding obligation for replacement.

After months of FEMA study and review, on January 26, 2009, the University of Iowa announced that two UI facilities extensively damaged by the 2008 flood had exceeded the FEMA "50% rule" threshold. Essentially the "50% rule" involves FEMA's calculation of the ratio of a facility's recovery cost to the pre-disaster fair market value of the facility. When this ratio exceeds 50%, FEMA offers financial support for either "recovery/mitigation in place" or "replacement" of the damaged facilities. FEMA's financial support of eligible costs would be 90% of either option. The two facilities that exceeded FEMA's 50% threshold were the School of Music / Hancher Auditorium complex and the original Art Building complex. No other damaged UI buildings exceeded the 50% threshold of damage and therefore are not eligible to receive FEMA funding for "replacement".

Following this announcement, the University assembled a team to review the "recover in place" vs. "replacement" options. Team members included:

- UI project staff/officials responsible for flood recovery
- Consultant planners, architects, engineers and flood recovery specialists
- UI IHR – Hydrosience and Engineering
- UI Risk Management
- Iowa Homeland Security
- FEMA

With the assistance of this team, the University prepared a "Facilities Replacement Study" and provided it to the Board for discussion at its March 2009 meeting. The complete study can be found at the following site:

[http://www.regents.iowa.gov/Meetings/DocketMemos/09Memos/March/0309\\_ITEM14c.pdf](http://www.regents.iowa.gov/Meetings/DocketMemos/09Memos/March/0309_ITEM14c.pdf)

One of the elements of this study was to define overall project costs. Based upon very preliminary assessments, the UI informed the Board that the overall flood recovery costs were expected to be \$743 million. Within that total it was expected that \$276 million would be needed to replace fully and meet all the current program needs of the School of Music and Hancher Auditorium. This amount will be refined after project architects and engineers take the next steps in developing plans for the selected sites approved by FEMA.

At its April 2009 meeting, the Board approved the University's recommendation to pursue the replacement option for the School of Music and Hancher Auditorium. The supporting materials for that decision are found at the following site:

[http://www.regents.iowa.gov/Meetings/DocketMemos/09Memos/April/0409\\_ITEM10b.pdf](http://www.regents.iowa.gov/Meetings/DocketMemos/09Memos/April/0409_ITEM10b.pdf)

There were several factors that weighed most heavily in recommending and ultimately selecting the replacement option. These factors included the continued threat of flooding/adjacent to the Iowa River, flood mitigation engineering and regulatory challenges, availability of commercial insurance, and FEMA assistance in the event of further flooding. The opportunities for an environmentally sustainable design and cost factors were also pertinent. A summary of the key elements supporting replacement now with available FEMA support for eligible costs is in Appendix A.

At the University's second public forum regarding the relocation of the School of Music / Hancher Auditorium complex, a question was raised regarding the feasibility of lifting and/or relocating the existing building, as it is. These ideas have been reviewed and are not being pursued due to economic, practical engineering and risk management considerations. A summary of the analysis and conclusions are in Appendix B.

#### **Next Steps in Recovery:**

The University did not recommend to the Board in April an exact site for the replacement facilities but indicated additional study and consultations would be needed. Since that time extensive work has been done to define and consider the options:

- The UI engaged Sasaki and Associates to work with Facilities Management to analyze program requirements and all site options.
- The Flood Mitigation Task Force defined the locations where future development could occur free of flood hazards – this task force was co-chaired by UI professors with extensive experience in campus planning and hydraulics Gregg Oden and Larry Weber.
- Public forums in July and another in October were held to present options and to listen to all who spoke or submitted written comments.
- Consultation with the departmental leadership and with the faculty and students of the School of Music were held to explain the options, and to listen to their questions and issues.
- Meetings were held with the staff and volunteers of Hancher Auditorium, many of the leading Hancher patrons and with patrons of the School of Music. These were direct, lively and very valuable conversations.
- City of Iowa City leaders were engaged in talks regarding siting options.

An excellent overview of the siting options and issues was prepared for use at the October public forum. This was presented by the University and was the subject of much subsequent discussion by presenters at the forum. The detailed UI presentation is located at the web site below under "Site Selection Presentation – October 12, 2009." There is other valuable information, including the recommendations of the Flood Mitigation Task Force, located at this site as well.

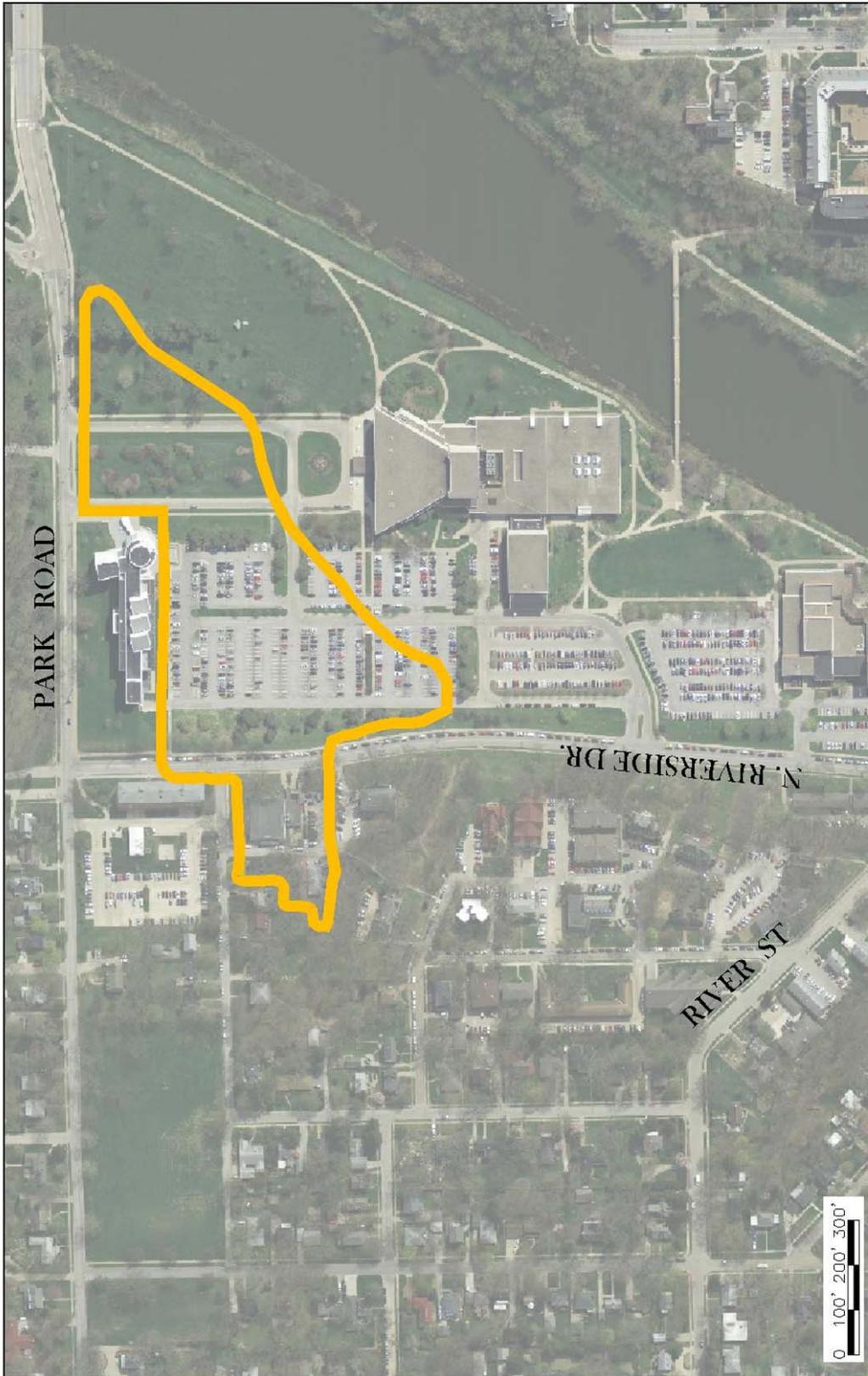
<http://www.facilities.uiowa.edu/hvc-site.htm>

The University now recommends to the Board a comprehensive set of actions:

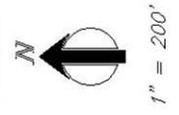
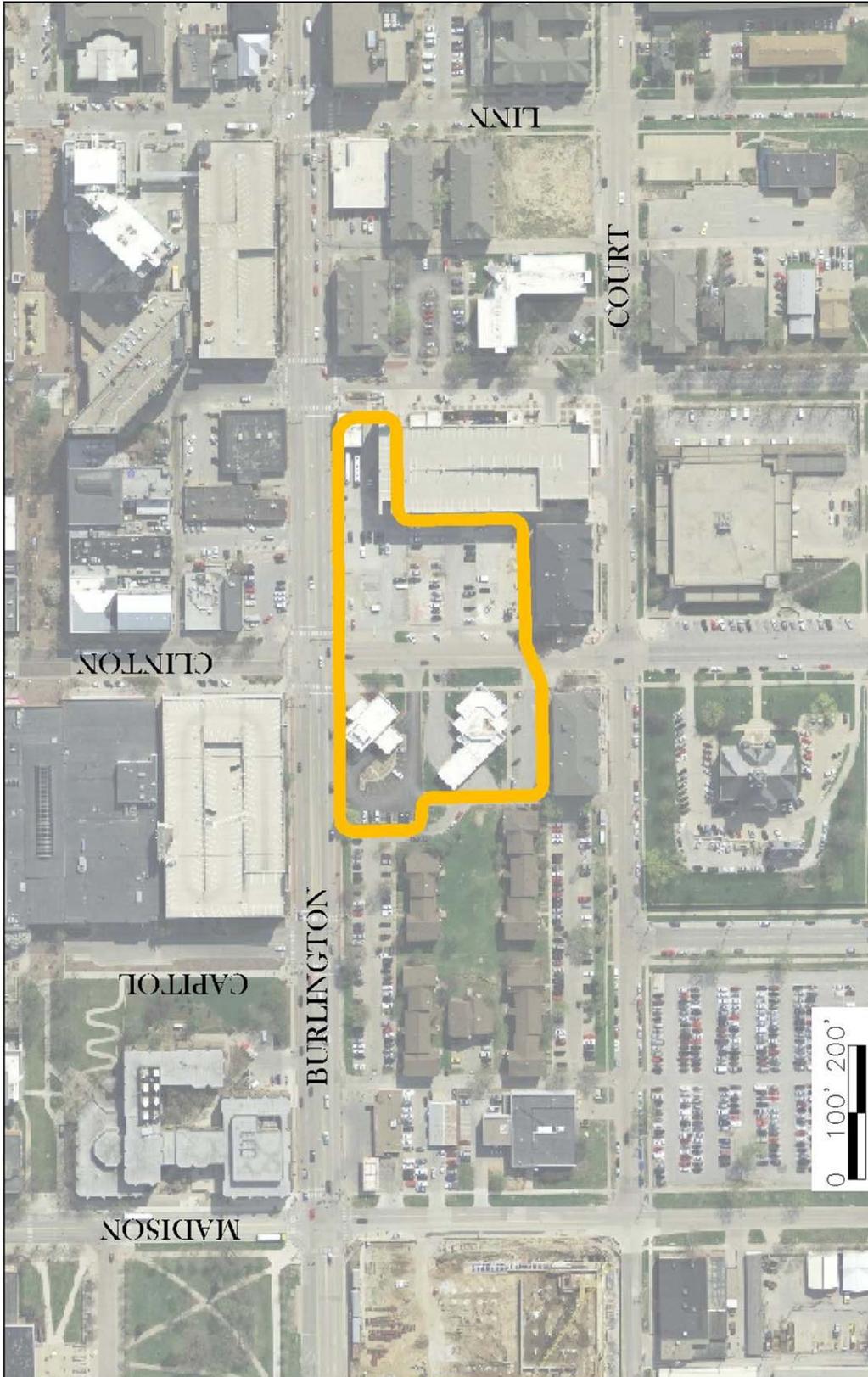
- The replacement of the School of Music facilities, including Clapp Recital Hall and other smaller practice and recital spaces needed by the School should be developed if possible on land along either side of Clinton Street immediately south of the downtown and the east campus (see attached map).
  - Pursuing this preferred site is critical to the School of Music faculty, the College of Liberal Arts & Science and for the University. The opportunity to have music classes and the vast percentage of its student activities and performances adjacent to the east campus is too important not to spend a few more months pursuing.
  - All of the land needed to accommodate the School of Music relocation is held privately. At the time of the April 28-29, 2010 Board meeting the University will either report success in this plan to relocate the School on the east campus or will recommend to the Board that the School and its recital spaces be relocated on University-owned land in the west campus, north and west of the School's former location.
- The replacement of Hancher Auditorium and associated parking be developed on University-owned land on the west campus, north and west of the current Hancher location. This is above the new 500 year flood level plus two feet, as recommended by the UI's Flood Mitigation Task Force (see attached map).

Following Regents authorization, the University will begin the selection of the architect and other professionals needed to construct functional and prominent replacement facilities. The Board Office will participate in that process.

All of these recommendations are entirely dependent upon subsequent FEMA approval of the site, all budget and project plans, and its formal obligation of funding of 90% of eligible costs of replacement. The University staff and partners within the state's Homeland Security Department are pursuing these next steps together.



<p>LOCATION MAP</p> <p>Proposed Hancher Auditorium Replacement Area Map</p>	<p>N</p>  <p>1" = 300'</p>	<p>LEGEND</p> <p>Project</p> <p>Study Area</p>	 <p>THE UNIVERSITY OF IOWA</p>
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LOCATION MAP  
Proposed School of Music  
Replacement Area Map

LEGEND  
Project Study Area



**OVERALL FLOOD RECOVERY STATUS – FEBRUARY 2010**

The following updates the previous status reports to the Board.

The University of Iowa continues to work closely with FEMA and Iowa Homeland Security on plans for recovery and protection of the flood-impacted buildings along the Iowa River. The original Art Building complex replacement site has been approved by the Board of Regents – specific site layout and use will be refined as the consultant team advances design of the new building. The siting for the replacement of both Hancher and of the School of Music are being formally presented to the Board at this meeting and as additional site investigations and study continue, the specific site layout will be refined. Flood mitigation strategies throughout campus are utilizing the recently completed river computer model and the flood mitigation principles established earlier through the UI's Flood Mitigation Task Force co-led by Professors Larry Weber and Gregg Oden. This new information is critical in establishing the most responsible siting and building protection strategies.

The financial summary of flood recovery is attached as Appendix C.

**Music and Performing Arts Center: Hancher/Voxman/Clapp**

See separate information and recommendations on these projects.

**Art Building East – Including the Original Art Building**

Based upon the Board's action at the April 2009 meeting, the University completed site selection for a replacement facility. At the August 2009 BOR meeting, the University received permission to proceed with project planning, and has initiated the consultant team search process. The on-campus interviews were conducted on January 22, 2010 and the results of that selection are presented to the Board as part of the UI Capital Register. The location of the proposed site is on River Street, adjacent to and just northwest of Art Building West (which is to be recovered and protected from future flooding). The specific site layout will be refined upon initiation of the design process.

Ultimately, FEMA must approve all aspects of replacement solutions, including building site.

The University continues to operate within the interim Studio Arts facility (former Menards) to meet the curricular and functional needs of the Arts programs displaced by the flood. FEMA is expected to provide funding support of 90% of these interim location costs.

**Art Building West**

The University, under the extraordinary authority granted by the Board in July 2008, has underway a project to restore much of the facility to its pre-flood condition. The University has proposed and submitted to FEMA a flood mitigation plan with the assistance of BNIM-Iowa Architects. FEMA funding support requires its preapproval of the recovery project and details of the flood mitigation elements. The University has been working in collaboration with FEMA throughout this investigation period.

The current estimate for building recovery to a pre-flood state is approximately \$7M. The estimated cost for the proposed flood mitigation strategy is also \$7M.

The University, in conjunction with Iowa Homeland Security, has completed and submitted the full recovery and mitigation plan and the associated project worksheet has been written. This project worksheet has been submitted for federal (FEMA) review of the plan. Following FEMA approval of the project worksheet, the University expects federal funds to be obligated. It is expected that the FEMA approval/funding obligation will occur in the spring 2010. Barring unforeseen circumstances, this will allow for the recovery and flood mitigation projects to be bid by late spring with projected completion by August 2011.

The schematic design/budget will be submitted for Board approval according to standard Regent policies.

### **Iowa Memorial Union**

The upper floors of the Iowa Memorial Union have been reoccupied. A project is being developed by architects Rohrbach Associates to relocate and protect all mechanical and electrical systems, and to establish additional flood mitigation strategies at the perimeter of the building.

The current project cost estimate of building recovery is \$6.5M. The proposed flood mitigation strategy is estimated to be \$9M. The mitigation strategy calls for relocating mechanical and electrical systems to the roof and creating a protective barrier that will permit re-occupation of the lower level.

A detailed determination of the type of restoration and uses of the ground level is in progress. The bookstore, community credit union, food service and convenience store venues were previously located on the ground level.

The Richey Ballroom has been converted into an arts education facility using portions of the Museum of Art collection. Functions that had been accommodated by the Richey Ballroom have been relocated to the University Athletic Club facility.

The University is moving forward with restoration and flood mitigation planning to enable reopening of the ground level. Temporary accommodations were installed on Hubbard Park to help with summer orientation in 2009, and will be used again in 2010.

The University, in conjunction with Iowa Homeland Security, has completed and submitted the full recovery and mitigation plan and the associated project worksheet has been written. This project worksheet has been submitted for federal (FEMA) review of the plan. Following FEMA approval of the project worksheet, the University expects federal funds to be obligated. It is expected that FEMA approval/funding obligation will occur in the spring 2010. Barring unforeseen circumstances, this will allow for the recovery and flood mitigation project to be bid by late summer. Construction is expected to take 1.5 years to complete, with occupancy of the lower level anticipated during the 2011-2012 winter break. However, some areas of the lower level may be able to be opened earlier, depending on potential phasing of the project or development of alternate project components.

The project program and the schematic design/budget will be submitted for Board approval according to standard Regent policies.

### **Theatre Building**

The upper floors of the Theatre Building have been restored and reoccupied by the Theatre Department. Flood water filled the lower level only. Neumann-Monson Architects has been hired to develop a comprehensive recovery and flood mitigation plan. The current preliminary estimate for building recovery is \$5M while the flood mitigation estimate is \$10M.

The Theatre Department is utilizing a former fraternity building at 108 River Street, in addition to space within the renovated former Menards store. These spaces house functions that had previously been located in the lower level which remains closed.

The University has reviewed a complete recovery and mitigation plan with Iowa Homeland Security and FEMA. Iowa Homeland Security and FEMA are reviewing the proposed plans. After the review, the next step will be for the University to submit the detail required for FEMA to write the project worksheet. As the project worksheet is completed and submitted, the University will proceed with design. There is no specific timetable available for the completion of FEMA's full project worksheet review and obligation of funds. However, construction of the proposed plan will take approximately 1.5 to 2 years to complete, depending on the phasing required to allow the building to remain occupied during phased construction. The project would be completed no earlier than January 2012.

### **Iowa Advanced Technology Labs**

The Iowa Advanced Technology Labs (IATL) has been partially restored and reoccupied to accommodate some of the research teams whose specialized work cannot be accommodated in other existing facilities. Architects Smith-Metzger is working on permanent recovery and flood mitigation plans for IATL.

The current estimate of building recovery is \$10M (exclusive of mitigation components). Mitigation will be complex and must be integrated with the IMU and surrounding area. The current project estimate for flood mitigation is \$13M.

The University has reviewed a complete recovery and mitigation plan with Iowa Homeland Security and FEMA. Iowa Homeland Security and FEMA have reviewed the proposed plans and the University has submitted the details required for FEMA to write the project worksheet. Following the approval of the project worksheet within FEMA, the University expects federal funds to be obligated. Obligation of project funds will allow work on the design and construction documents to move forward. Construction is anticipated to take approximately 2 years, depending on the phasing required to allow the building to remain occupied during construction.

### **Power Plant and other Energy Production and Distribution Systems**

The Power Plant's main boilers are functioning normally. A number of projects to provide alternative systems/routes for steam distribution from the Power Plant have been completed. Construction of tunnel system barriers used to isolate the Power Plant from future tunnel flooding has been completed. Another tunnel system flood mitigation project to protect academic buildings on the east side of the river is underway and will be complete by May, 2010.

Continued investigation of the condition of the east campus tunnels along the river has revealed that part or all of the tunnel system along the river, much of it more than 70 years old and not designed to endure the hydrostatic pressure created when the tunnels are kept dry while river water surrounds them, may need to be replaced in order to mitigate future flooding risk. The plan for these tunnels will be established in coordination with FEMA, similar to other flood impacted building projects. Similar investigation is taking place on the west side of the river.

In coordination with Iowa Homeland security and FEMA, the individual utilities-related components are being considered for combination into one consolidated utility service and distribution package. This would include the Power Plant, the tunnel/utility distribution system, and the Water Plant.

Original estimates of damage to the Power Plant and to the utility tunnel systems were \$20M each. The current estimate of recovery cost is \$21.5M combined (exclusive of mitigation components). Mitigation strategies are being explored and costs will be generated based on the plans that are established. Very preliminary estimates indicate combined flood mitigation costs may be in the \$40M-\$60M range for the entire utility system, not including the critically needed redundant steam supply on the west side of the river.

Complete reliance on the east campus Power Plant and distribution systems that traverse the river needs to be altered in order to protect UI Health Care and other critical functions on the west campus. Even if the Power Plant was kept dry in a significant flood event, the site would not likely be accessible for the delivery of fuels needed to keep it operational. A comprehensive solution to provide long-term reliability on the west campus is under review. Early projections indicate a cost of approximately \$40M to provide an independent steam supply source on the west campus.

### **Museum of Art Building**

FEMA has determined that it will support 90% of the cost of restoration and mitigation of the Museum of Art Building, but not replacement of the facility. The restoration of the facility must accommodate programs that are of like nature to those housed prior to the flood.

The most valuable contents of the Museum are insured by Lloyds of London and were almost entirely removed before the flood water entered the building. Current estimate of building recovery is \$5.5M (exclusive of flood mitigation components).

The north end of the Museum Building – formerly called the Alumni Center – has been temporarily renovated for use by the School of Music (~18,400 square feet). The remaining 54,733 square feet will require permanent restoration and flood mitigation prior to re-use. Discussions with FEMA must occur regarding allowed uses.

The Museum staff is exhibiting the UI collection at a number of locations other than the former Museum Building. The Figge Art Museum in Davenport has provided significant space for display and storage of a majority of the permanent collection. The Richey Ballroom and Blackbox Theater, both located in the IMU, have been converted for display of collections important to students studying arts-related subjects.

The University has charged an envisioning committee made up of University faculty and students, and donors and constituents of the Museum that will work to establish a proposal for University administration to consider. The committee is currently drafting a report of its findings.

**Appendix A**  
**Additional Considerations for Replacing Hancher and the School of Music Facilities**

- Continued threat of flooding/adjacency to the Iowa River

Any flood protection methods assume worst case water levels based on what is known today. Iowa State University professor, Gene Takle, forecasts precipitation in Iowa to increase by 50% in the next 40 years. The siting of this building remains directly adjacent to a river that will flood again, with a clear expectation that flooding threats will be more severe, not less. Therefore, given the opportunity for FEMA financial support, the case for replacement is compelling.

- Flood mitigation engineering and regulatory challenges

The recovery of building damage from the 2008 flood would be considerable and the mitigation of this complex would be even more costly and difficult. Through numerous work sessions with Iowa Homeland Security and FEMA, the University was informed that FEMA does not support the building of earthen berms, as experience has revealed that many fail over time. However, in exploring all potential solutions, the University worked with Ayres & Associates, a nationally recognized flood recovery engineering firm, and Sasaki Associates to study the feasibility and impact of utilizing a berm as a primary defense against future floods. An image is below.



Aerial image of earthen berm and required slopes (berm height is 658') – blue line is river “floodway”/flow designation

Sasaki and Ayres identify the following flaws related to the berm scheme shown above:

- Due to the immediate proximity of the southeast corner of the building to the Iowa River, the berm must be built out into the river and well beyond the designated floodway mark. The definition of a floodway as determined by FEMA is, *“The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. Communities must regulate development or “fill” in these floodways to ensure that there are no increases in upstream flood elevations.”* The Department of Natural Resources,

the Army Corps of Engineers and FEMA would be expected to reject this solution as they do not support any flood protection methods that reduce the river floodway cross section or the effective conveyance of river water in any way. This solution would create a rise in river water levels upstream and this is not allowed. Replacement of the berm with a narrower flood wall would be unsightly, difficult to maintain and would require additional physical elements to prevent it from being a dangerous attractive nuisance with daily fall risks.

- In addition to threats from river water, there is significant potential of overland storm water from the higher lands to the west. The storm water system on the west side of the berm would need to be equipped with pumping capability to prevent overland storm flows from flooding the HVC complex, and prevent intrusion of flood flows into the areas behind the berm. This involves a long-term commitment to and reliance on operational pumping to avoid flooding.
- The barrier effect of the berm between the building and its surrounding landscape would be damaging to the sense of campus coherence, particularly for students, faculty and visitors approaching from the Hancher Bridge or from the south.
- The appearance of a major utilitarian engineering element in the landscaped river corridor would be harmful to the University's long-term intent for that part of campus as a naturalistic and pedestrian-oriented setting (note that no planting is allowed on the berm or the adjacent slopes).
- The berm height shown (658') does not guarantee protection from future and unknown flood levels, that may become more severe over time.

While exterior solutions are challenging, the greatest challenges in protecting the building from flooding occur within the building. The main lobby of Hancher Auditorium is on grade, while the primary seating area, the orchestra pit area and all mechanical/electrical systems serving the complex are well below grade, with the lowest level more than 20' underground. Additionally, fully one half of the School of Music space and all of its mechanical/electrical systems exist well below the level of the 2008 flood. As such, the foundation walls are constantly susceptible to sub-grade hydrostatic pressure. The building has relied on year-round pumping at the lower levels to address adjacent high water tables and every flood event creates new stresses and water access points in the aging foundation. Should exterior barriers prevent over-land water from entering the building, the level of hydrostatic pressure below grade increases greatly – a stress not designed for within the 1972 structure. A majority of mitigation costs would be needed to rebuild and fortify the entire sub-grade foundation system.

- Availability of adequate commercial flood insurance

The recovery/mitigation option at the current site offers less assurance of future flood protection, and capability of insurance underwriting, than a replacement building located outside the area of flood threat. The University of Iowa currently has \$120 million in commercial flood insurance and \$22 million in federal flood insurance. These are amounts attainable at this point. However, overall flood insurance availability for the University is fragile and could easily worsen by a change in market conditions or increased flood risk factors. Removing this large and costly facility from the flood risk area will improve flood insurance support factors for the campus facilities remaining near the river. The replacement value of this facility alone is approximately double the current commercial insurance coverage.

- FEMA assistance in the event of future flooding

Currently, there is a FEMA directive that indicates FEMA in the future will only pay for the increased loss amount above the previous loss. Additionally, the University is expected to be able to provide insurance in the amount of the previous loss. For example: Assume a current event loss of \$250 million. If the next event loss is \$300 million, FEMA would pay no more than 75% of the \$50 million difference (\$37.5M). This would leave the UI/State/Insurance to fund the remaining \$262.5 million – and this is for one building only. FEMA's assumption with this directive is that the insurance market would need to provide insurance equal to the amount of the previous loss. Therefore, there would be a considerable future financial exposure in rebuilding the School of Music and Hancher at its current location.

- Environmental sustainability

The replacement option is designed to provide the latest in sustainability and energy conservation design. This would be a sustainability showcase not possible within the current facility.

- Cost comparison and need to expand program space to meet current standards

Anticipated costs for both repair/protect and replacement scenarios were communicated at the Board of Regents April 2009 meeting. As part of the repair scenario, it was indicated that additional off-site academic space would need to be constructed, due to the requirement that the recovery must include upgrading the building to current codes and standards, including ADA access and current academic teaching and performance standards. Without an on-site option to add to the building, this requirement would force program out of the building and away from flood risk as the current space is already undersized for its programs. With this base need included, the repair/protect costs were estimated at \$108M, with the UI/State share being \$65M. Preliminary estimates for replacement indicate a cost of \$276M, with the UI/State share at \$114M. However, the \$114M share for replacement includes \$52 in assumed costs related to a new parking ramp structure and added sustainable design features. As such, the base comparison of the two scenarios is very close in UI/State cost burdens: \$65M for repair/protection and \$62M for replacement. It may also be possible that a parking ramp is not required in order to satisfy the relocation planning. In any case, parking facilities would be added through the UI Parking Enterprise.

These critical factors point directly to the need to replace the facility and locate it free of future flood risks. Given FEMA's commitment to 90% (normally this is 75%) funding support for replacement of this important facility, it is clearly the most responsible solution with the greatest long-term benefit to the impacted programs, the University of Iowa students, faculty and staff, and the State of Iowa.

Appendix B

Obtaining approvals and acceptable designs for lifting the building on its current site, or moving the building to a nearby site, are highly unlikely, based on several conditions and criteria:

- If lifted on its current site, the entire School of Music / Hancher complex would need to be raised to a minimum of 1' above the flood level of 2008 (based on a combination of FEMA input and study by the UI Flood Task force, a minimum of 2' above the 2008 flood level is the objective for all damaged UI buildings that will be repaired). Given that the base of the structure, which includes mechanical spaces and the orchestra pit, is more than 20' below grade, the current main entry would need to be placed some 25' above the ground. As standard FEMA support prohibits any construction work within the flood hazard area (designated by the extent of the 2008 flood), the existing footprint would have to be maintained, as is, and access to the building's main and supplementary entries would be difficult and awkward, if not impossible.
- Lifting the structure some 25' out of the ground would create additional review concerns for the FEMA historians, and University planning staff. Any intent the plan (lifting the building) would have to maintain the existing building's architectural character would be cancelled by such a dramatic elevation of the building – the building saved would not be the building intended by the University or by the original architect (Max Abramovitz) or his design.
- The lifting and relocation of the complex to the north and/or west of the current site, to avoid the flood hazard area, would not eliminate the need to ensure the lower level is protected to at least 1' above the 2008 flood level. At the highest suitable site available, the building's main entrances would need to be roughly 10' above grade, creating similar code, entrance and architectural issues as the current site. Additionally, the footprint and configuration of the complex would create severe limitations on how the building could be positioned. Variances in topography in that area would accent the difficulty in accessing various entrances and critical service access for the staging areas which needs to be on-grade.

**APPENDIX C  
UNIVERSITY OF IOWA FLOOD RECOVERY  
EXPENSE AND FUNDING**

	<u>Actuals</u>	<u>Encumbrances</u>	<u>TOTAL</u>				
<b><u>Flood Expense (12-31-09)</u></b>	\$136,994,408	\$8,922,797	\$145,917,205				
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<b><u>Flood Funding (12-31-09)</u></b>	<u>Redirected Academic Bldg Rev Bond SF376</u>	<u>Dormitory Improvement Funds</u>	<u>Insurance</u>	<u>FEMA</u>	<u>Gifts</u>	<u>Flood Notes</u>	<u>TOTAL</u>
FM Global			\$50,946,212				
Federal Flood			\$5,393,881				
<b>Building/Content/Extra Exp</b>	\$1,208,016	\$258,350	\$56,340,093	\$31,484,640	\$1,000,000	\$40,000,000	\$130,291,099
			<u>FM Global Business Interruption</u>		<u>Gifts Flood Relief</u>		<u>TOTAL</u>
<b>Other</b>			\$4,053,788		\$1,138,722		\$5,192,510

7-Jan-10