

Contact: Sheila Doyle

**REGISTER OF UNIVERSITY OF IOWA CAPITAL IMPROVEMENT BUSINESS TRANSACTIONS**

**Actions Requested:** Consider recommending to the Board approval of:

1. Permission to proceed with project planning, including the architectural/engineering selection process, for the **Hydroscience and Engineering – Wave Basin Facility** project, a major capital project as defined by Board policy.
  - a. Acknowledge receipt of the University's initial submission of information to address the Board's capital project evaluation criteria (see Attachment A);
  - b. Accept the Board Office recommendation that the project meets the necessary criteria for Board consideration; and
  - c. Authorize permission to proceed with project planning.
2. The following actions for the **University Hygienic Laboratory** and the **University Hospitals and Clinics – Autopsy Suite Renovation** projects, both major capital projects as defined by Board policy.
  - a. Acknowledge receipt of the University's final submission of information to address the Board's capital project evaluation criteria (see Attachments B and C);
  - b. Accept the Board Office recommendation that the projects meet the necessary criteria for Board consideration; and
  - c. Approve the schematic designs and project descriptions and budgets (\$37,750,000 for the **University Hygienic Laboratory** and \$2,800,000 for the **Autopsy Suite Renovation**), with the understanding that these approvals will constitute final Board approval and authorization to proceed with construction.
3. The remainder of the University's Capital Register including permission to proceed with project planning for the **Bowen Science Building – Emergency Power Upgrade** project and a revised budget (\$35,838,000) for the **West Campus Chilled Water Plant Expansion – Phase 1B** project.

**Executive Summary:** The **Hydroscience and Engineering – Wave Basin Facility** project would construct a research building for use by IIHR - Hydroscience and Engineering (formerly the Iowa Institute of Hydraulic Research). The facility would provide space to support new University research in ship hydrodynamics, as well as field research in fluid mechanics, and water and air resources.

The facility would house a wave basin (an open pool of water) to simulate the hydraulics of oceans and other large bodies of water. The facility would also include a modernized fluid dynamics teaching laboratory for use in undergraduate core engineering courses, undergraduate and graduate student projects, and student professional club activities. The project site has yet to be determined.

The anticipated project cost of \$12 million would be funded by Hydroscience and Engineering gifts, grants and earnings.

The **University Hygienic Laboratory** project would construct a new state-of-the-art facility of approximately 112,500 gross square feet to provide a much safer and more efficient environment for the University Hygienic Laboratory (UHL) than its current location in Oakdale Hall. The new facility will include flexible laboratory spaces that can be reconfigured as needed, as well as secure bio-safety level laboratories and proper sample receiving/identification space.

The schematic design booklet is included with the Board's materials.

The project budget of \$37,750,000 would be funded by state appropriations (\$36 million), federal grants (\$1.4 million), and University Hygienic Lab earnings (\$350,000).

The **University Hospitals and Clinics – Autopsy Suite Relocation** project would renovate approximately 5,600 gross square feet of space on the first floor of the General Hospital to provide contemporary facilities for UIHC's Autopsy Service, which is currently located in spatially and environmentally inadequate space on the lower level of the Medical Laboratories Building. The schematic drawings are included as Attachment D.

The project budget of \$2.8 million would be funded by University Hospitals Building Usage Funds.

The **Bowen Science Building – Emergency Power Upgrade** project would install emergency electrical generation capacity to meet the growing demand for back-up power in the facility. In the event of the loss of electrical power, the back-up generator would supply power to the mechanical systems which support the building's research programs.

The anticipated project cost of between \$1.5 million and \$2.5 million would be funded by the Carver College of Medicine gifts and earnings.

The **West Campus Chilled Water Plant Expansion – Phase 1B** project will expand the existing West Campus Chilled Water Plant (located near UIHC) by installing two 4,000 ton chillers within a building addition on the north end of the existing Plant. The revised budget of \$35,838,000, an increase of \$5,973,000, would provide additional funding for the installation of a third 4,000 ton chiller to increase the Plant's chilled water capacity. The project is funded by Utility System Revenue Bonds.

When the previous revised budget (\$29,865,000) was approved by the Board in June 2006, the University reported that its chilled water needs beyond 2011 could be met with the installation of a third 4,000 ton chiller at the Plant as part of this project. The June 2006 revised budget included funds for the redesign of the chilled water plant to accommodate a third chiller but did not include funding for the installation of the chiller and associated equipment (estimated at \$5 million).

The University bid the installation of the chiller and associated equipment as two add alternates to the Phase 1B construction contract; the base contract was awarded by the Executive Director to McComas-Lacina Construction Company in September 2006. Based on further review of the alternate bids and available funding, the University determined that the \$5,973,000 budget increase would provide a reasonable investment in the Chilled Water Plant, increasing its capacity by 50 percent with a 16 percent increase in initial capital costs. Subject to approval of the requested revised budget, the University plans to purchase the third chiller and incorporate its installation into the construction contract with a future change order.

**Details of Projects:**

**Hydroscience and Engineering – Wave Basin Facility**

Project Summary

|   | <u>Amount</u> | <u>Date</u> | <u>Board Action</u> |
|---|---------------|-------------|---------------------|
| Initial Review and Consideration of Capital |               |             |                     |
| Project Evaluation Criteria                 |               | Sept. 2006  | Requested           |
| Permission to Proceed                       |               | Sept. 2006  | Requested           |

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**University Hygienic Laboratory**

Project Summary

|  | <u>Amount</u> | <u>Date</u> | <u>Board Action</u> |
|--|---------------|-------------|---------------------|
| Permission to Proceed  |               | March 2002  | Approved            |
| Architectural Selection<br>(OPN Architects, Cedar Rapids, IA)            |               | Sept. 2002  | Approved            |
| Negotiated Architectural Agreement<br>(OPN Architects, Cedar Rapids, IA) | \$ 469,639    | Nov. 2002   | Approved            |
| Program Statement  |               | Sept. 2006  | Not Required        |
| Final Review and Consideration of Capital                                |               |             |                     |
| Project Evaluation Criteria  |               | Sept. 2006  | Requested           |
| Schematic Design   |               | Sept. 2006  | Requested           |
| Project Description and Total Budget                                     | 37,750,000    | Sept. 2006  | Requested           |

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The schematic design consists of three levels. The lower level includes air quality and radiochemistry laboratories to the west, and building support functions (mechanical, warehousing, and storage space) to the east. The central portion of this level would be unfinished for future development, including a training laboratory and a multi-purpose conference space.

The first level has been designed with a north-south corridor which serves the main entrance and lobby to the north, and the primary staff entrance to the south. The area west of the corridor would house administrative office functions. The area east of the corridor would house loading dock functions and laboratories that require direct interaction with the dock area. A public sample drop-off entrance would be located along the east wall near the laboratory areas.

The second level, which would house the majority of the building's laboratory areas, would include three functional zones. The northern zone would include a series of closed, containment labs while the central zone would provide large, open, and flexible laboratory space. The southern zone would house an open staff area designed to encourage collaboration.

The building would be constructed primarily of limestone, aluminum and glass. The large rooftop mechanical penthouse, which would house the building's specialized mechanical systems, would be constructed with metal panels.

The schematic design square footages are identical to those in the approved building program, as follows:

Detailed Building Program

|  |              |               |     |
|--|--------------|---------------|-----|
| Laboratory Space                                 |              |               |     |
| Chemistry-Environmental Health Programs          |              |               |     |
| Laboratories                                     | 19,578       |               |     |
| Office Support                                   | <u>1,770</u> | 21,348        |     |
| Biology-Public Health Programs                   |              |               |     |
| Laboratories                                     | 12,174       |               |     |
| Office Support                                   | <u>1,770</u> | 13,944        |     |
| Chemistry/Biology Shared Lab Services            |              | 8,395         |     |
| Administrative Services                          |              | 15,340        |     |
| Unfinished Space (Lower Level)                   |              |               |     |
| Future Warehouse/Stock Room                      | 4,000        |               |     |
| Future Surge Capacity/International Training Lab | 3,846        |               |     |
| Future Emergency Operations/Conference Area      | 3,400        | <u>11,246</u> |     |
| Total Net Assignable Space                       |              | 70,273        | nsf |
| Anticipated Gross Square Feet                    |              | 112,500       | gsf |
| Anticipated Net-to-Gross Ratio = 62 percent      |              |               |     |

Project Budget

|  |                  |
|--|------------------|
|  | <u>Amount</u>    |
| Design, Inspection, and Administration                     | \$ 4,044,428     |
| Construction, including owner purchased construction items | 31,191,274       |
| Contingency  | <u>2,514,298</u> |
| TOTAL  | \$37,750,000     |
| <u>Source of Funds</u>                                     |                  |
| State Appropriations                                       | \$36,000,000     |
| Federal Grants   | 1,400,000        |
| UHL Earnings   | <u>350,000</u>   |
| TOTAL  | \$37,750,000     |

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**University Hospitals – Autopsy Suite Relocation**

Project Summary

|  | <u>Amount</u> | <u>Date</u> | <u>Board Action</u> |
|--|---------------|-------------|---------------------|
| Initial Review and Consideration of Capital<br>Project Evaluation Criteria |               | Nov. 2005   | Received<br>Report  |
| Permission to Proceed with Project Planning                                |               | Nov. 2005   | Approved            |
| Architectural Agreement (HLM Design; IA City)                              |               | Feb. 2006   | Approved            |
| Program Statement  |               | Aug. 2006   | Not Required        |
| Final Review and Consideration of Capital<br>Project Evaluation Criteria   |               | Sept. 2006  | Requested           |
| Schematic Design   |               | Sept. 2006  | Requested           |
| Project Description and Total Budget                                       | \$ 2,800,000  | Sept. 2006  | Requested           |

The schematic design includes an office, locker rooms, and reception and waiting areas in the northern third of the space, and a receiving area and three autopsy and support rooms in the remainder of the space. The schematic design square footages are identical to those in the approved building program, as follows:

Detailed Building Program

|   |            |     |
|---|------------|-----|
| Receiving Area                                      | 1,051      |     |
| General Autopsy Room                                | 674        |     |
| Isolation Autopsy Room                              | 442        |     |
| Neuropathology Autopsy Room                         | 296        |     |
| Cooler/Specimen Storage/Soiled Utility<br>Ante Room | 541<br>303 |     |
| Staff Offices (2) and Conference Room               | 571        |     |
| Male and Female Staff Lockers                       | 351        |     |
| Reception   | 409        |     |
| Waiting/Consultation Room/Viewing Room              | 181        |     |
| Public Restroom                                     | 43         |     |
| Suite Support Areas                                 | <u>88</u>  |     |
| Total Net Assignable Space                          | 4,950      | nsf |
| Anticipated Gross Square Feet                       | 6,789      | gsf |
| Anticipated Net-to-Gross Ratio = 73 percent         |            |     |
| Garage  | 1,200      | gsf |

Project Budget

|  | Amount         |
|--|----------------|
| Design, Inspection, and Administration | \$ 448,000     |
| Construction                           | 2,152,000      |
| Contingency                            | <u>200,000</u> |
| TOTAL                                  | \$2,800,000    |

**Bowen Science Building – Emergency Power Upgrade**

Project Summary

|                       | <u>Amount</u> | <u>Date</u> | <u>Board Action</u> |
|-----------------------|---------------|-------------|---------------------|
| Permission to Proceed |               | Sept. 2006  | Requested           |

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**West Campus Chilled Water Plant Development/Expansion – Phase 1B**

Project Summary

|  | <u>Amount</u> | <u>Date</u> | <u>Board Action</u> |
|--|---------------|-------------|---------------------|
| Initial Review and Consideration of Capital Project Evaluation Criteria                                  |               | Dec. 2004   | Received Report     |
| Permission to Proceed  |               | Dec. 2004   | Approved            |
| Engineering Agreement—Engineering Services Through Schematic Design (Stanley Consultants, Muscatine, IA) | \$ 210,000    | Dec. 2004   | Approved            |
| Final Review and Consideration of Capital Project Evaluation Criteria                                    |               | June 2005   | Received Report     |
| Schematic Design   |               | June 2005   | Approved            |
| Project Description and Total Budget   | 24,150,000    | June 2005   | Approved            |
| Engineering Agreement—Design Development Through Construction (Stanley Consultants, Muscatine, IA)       | 1,671,575     | June 2005   | Approved            |
| Revised Project Budget   | 29,865,000    | June 2006   | Approved            |
| Construction Contract Award (McComas-Lacina Construction, IA City)                                       | 16,420,000    | Sept. 2006  | Not Required        |
| Revised Project Budget   | 35,838,000    | Sept. 2006  | Requested           |

Project Budget

|                                     | Approved<br>Original<br>Budget<br>(6/05) | Approved<br>Revised<br>Budget <sup>1</sup><br>(6/06) | Proposed<br>Revised<br>Budget <sup>2</sup><br>(9/06) |
|-------------------------------------|--|--|--|
| Design, Inspection & Administration | \$ 3,470,000                             | \$ 4,055,000   | \$ 5,085,000   |
| Construction                        | 18,800,000                               | 23,930,000   | 28,873,000   |
| Contingencies                       | <u>1,880,000</u>                         | <u>1,880,000</u>                                     | <u>1,880,000</u>                                     |
| TOTAL                               | \$24,150,000                             | \$29,865,000   | \$35,838,000   |

<sup>1</sup> Includes 8,000 tons of chilled water capacity

<sup>2</sup> Includes 12,000 tons of chilled water capacity

All of the above project budgets list Utility System Revenue Bonds as the source of funds.

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**Hydrosience and Engineering – Wave Basin Facility  
Evaluation Criteria**

Since the project meets the Board's definition of a major capital project, the University has provided the following information in response to the Board's evaluation criteria.

Institutional Mission/Strategic Plan: This facility will allow IIHR - Hydrosience & Engineering (IIHR) (formerly the Iowa Institute of Hydraulic Research) to maintain and enhance its status as a world leader in hydraulic research. The demand for wave-basin research is increasing with significant grant opportunities becoming available to study hydrodynamics of sea-going vessels. The construction of the wave basin facility will provide a state of the art laboratory to simulate the various changes in oceanic conditions. This facility will also contain a modernized fluid dynamics teaching laboratory which supports undergraduate required core engineering courses. In addition, the project will provide opportunities for undergraduate and graduate students to work on projects that they can use as part of their Honors studies, graduate thesis/dissertations, and projects associated with organized student professional club activities. The project will keep UI faculty members at the forefront in their fields of expertise through both basic and applied research projects.

Other Alternatives Explored: IIHR requires a state of the art wave basin facility if it is to compete in the next emerging phase of hydraulic research – ocean wave studies and ship hydrodynamics. There are no other options available for conducting this research except for the construction of a wave basin.

Impact on Other Facilities and Square Footage: Depending on the size of the facility constructed, there may be the potential to consolidate existing hydraulic research space into the wave basin building. This could result in the elimination of hydraulic research space along the railroad tracks south of Burlington Street. Opportunities in this regard will be evaluated as the planning of the wave basin facility evolves.

Financial Resources for Construction Project: The project will take advantage of immediate funding opportunities with the federal government and United States Navy, advancing an already strong relationship in this field of research.

Financial Resources for Operations and Maintenance: The source of funds to cover the associated operating and maintenance costs will be indirect cost recoveries earned from grant and contract activities taking place within the Wave Basin facility.

External Forces: In order for the IIHR to remain a viable partner in federal government and United States Navy studies, their research facilities must be able to serve the grantor's needs. Extensive hydraulic research is planned in the area of ship hydrodynamics. The University must have adequate facilities if it intends to continue to participate in these federal grant programs.

University Hygienic Laboratory  
Evaluation Criteria

Since the project meets the Board's definition of a major capital project, the University has provided the following information in response to the Board's evaluation criteria.

Institutional Mission/Strategic Plan: In order to perform its statewide mission of investigating the causes of disease and recommending means of prevention, the Hygienic Laboratory requires a facility matched to the excellence of our technical and scientific assets.

Enhancing the Hygienic Laboratory is specifically mentioned as an engagement strategy with a "Goal: to broaden the University's service mission to include stronger partnerships with public constituencies." Moreover the Hygienic Laboratory provides significant direct and indirect support for all five goals.

Other Alternatives Explored: Currently, the UHL is housed in a multi-tenant environment, in an old converted tuberculosis hospital building. Renovation of this building was not considered due to the poor condition of the building and the absolute lack of fit.

A new facility will provide additional space for critical national security functions such as a central accessioning area, surge capacity and a training lab. It was determined that a new Hygienic Lab facility will provide a much safer, secure, and efficient work environment.

Impact on Other Facilities and Square Footage: Oakdale Hall will be vacated by the UHL at the completion of this project. Currently the UHL occupies approximately 62,062 net square feet.

The construction of the UHL building itself will not cause any buildings to be demolished. Bldg #129 Oakdale Animal Quarters (14,419 gsf) would not interfere with the building or the parking.

Financial Resources for Construction Project: UI Hygienic Lab is viewed as a joint state and federal project. The estimated cost is \$37.75 million. Funding of this project is being achieved with \$36 million from state appropriations, a \$1.4 million federal grant and \$350,000 from UHL earnings.

Financial Resources for Operations and Maintenance: The source of funds to cover the associated operating and maintenance costs will be provided by UHL earnings.

External Forces:

1. Opportunities to save lives by mitigating both the threat of an avian influenza pandemic and the continuing threat of emerging infectious diseases
2. Opportunities to accelerate state economic development prospects in bioscience
3. Opportunities to contain spiraling state Medicaid costs by preventive measures

University Hospitals and Clinics - Autopsy Suite Renovation  
Evaluation Criteria

Since the project meets the Board's definition of a major capital project, the University has provided the following information in response to the Board's evaluation criteria.

Institutional Mission/Strategic Plan: This project is an essential element in enabling UIHC to meet all components of its tri-partite mission by providing the necessary space for the Autopsy Service to continue to effectively meet its multiple requirements related to conducting post-mortem examinations and working with families of deceased patients and community morticians; to provide the facilities required to teach and train medical students, residents, and other health science trainees; and, to conduct clinical research. An adequately sized and designed autopsy suite located in relatively close proximity to UIHC's patient care units will foster positive, convenient and safe collaboration with clinicians and medical trainees at all levels. Accurate and timely information from autopsies improves the delivery of medical care. Placing the Autopsy Service in closer proximity to inpatient units will facilitate development of working relationships with clinicians that encourages their attendance at and contributions to the autopsy procedure. The information obtained during autopsy is vital for educational excellence in medicine. This includes initial medical student exposure to the autopsy as a valued medical procedure, prompt reporting of autopsy findings to clinicians for correlation of specific antemortem and postmortem diagnoses, and regular patient care conferences such as Morbidity & Mortality conferences (often not possible without information from well-performed autopsies). Some areas of research utilize biological specimens that can be obtained only from autopsies. These materials are unavailable if few autopsies are performed. Undertaking this project also supports several of UIHC's Strategic Plan goals, most notably by providing a continuously improving, safe environment for all patients and staff and by implementing a facilities plan that supports the projected future needs for the UIHC.

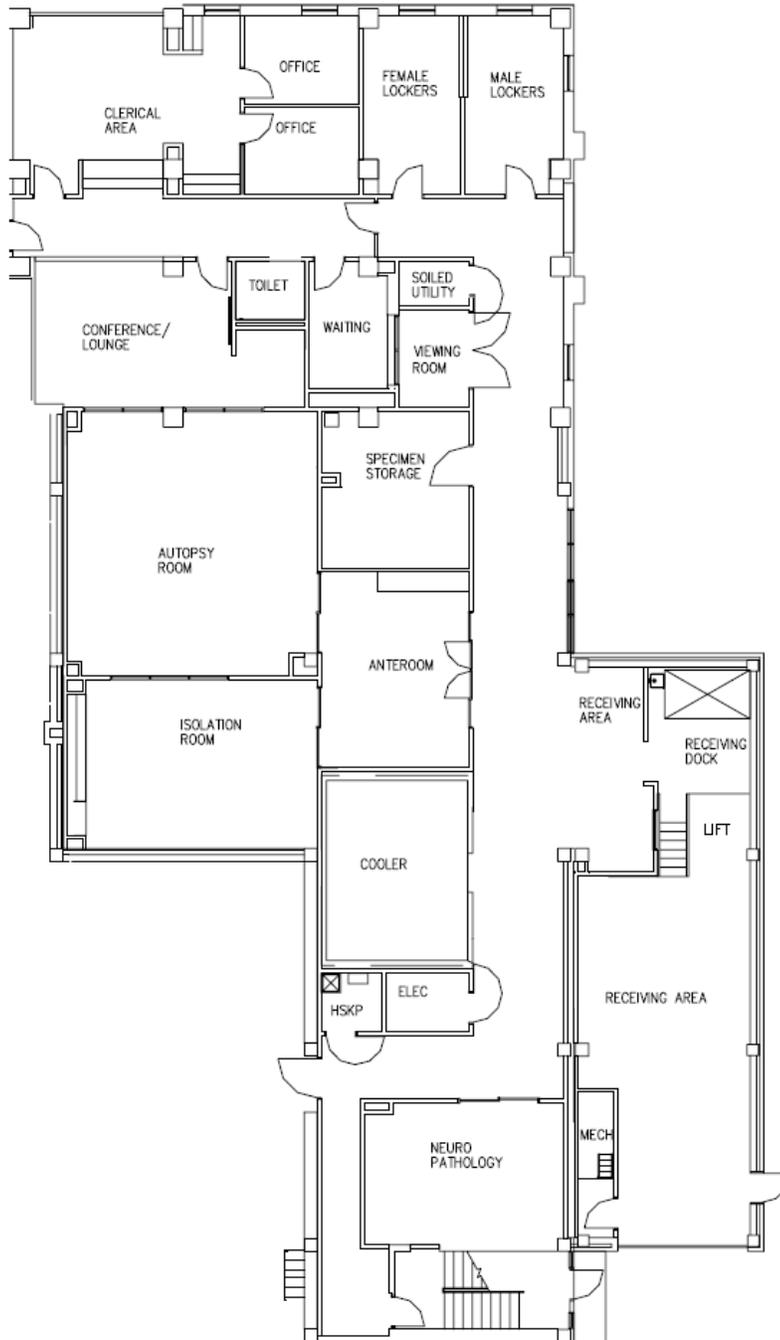
Other Alternatives Explored: The alternative to expand and renovate the existing autopsy suite was considered but due to space limitations and structural constraints it was determined not to be practical. Furthermore, maintaining a location within the Medical Laboratory Building would not resolve present inconveniences associated with the autopsy suite's remote location. A review of possible sites for developing the replacement autopsy suite indicated that there are no other viable alternatives available that will meet the multiple objectives realized by undertaking this project.

Impact on Other Facilities and Square Footage: The General Hospital space to be renovated is now occupied by the offices of UIHC's Department of Finance and Accounting Services. These offices will be relocated prior to initiating this project. On completion of this project, approximately thirty-two hundred gross square feet of space on the lower level of the Carver College of Medicine's Medical Laboratory Building will become available for reassignment to meet other college space needs. Approximately sixty-eight hundred gross square feet of space will be required to accommodate the Autopsy Service's functions.

Financial Resources for Construction Project: The project will be funded through University Hospitals Building Usage Funds acquired from depreciation allowances of third parties underwriting the cost of patient care plus hospital net earnings from paying patients. No state capital appropriated dollars will be involved. The services to be provided as the result of this project are not ones that generate a significant level of revenue although they are essential to UIHC meeting all components of its tri-partite mission. Accordingly, it is not appropriate or meaningful to consider a return on investment for this specific project. The costs associated with the development of this project, as with other similar non-revenue generating services, are supported by all UIHC revenue centers.

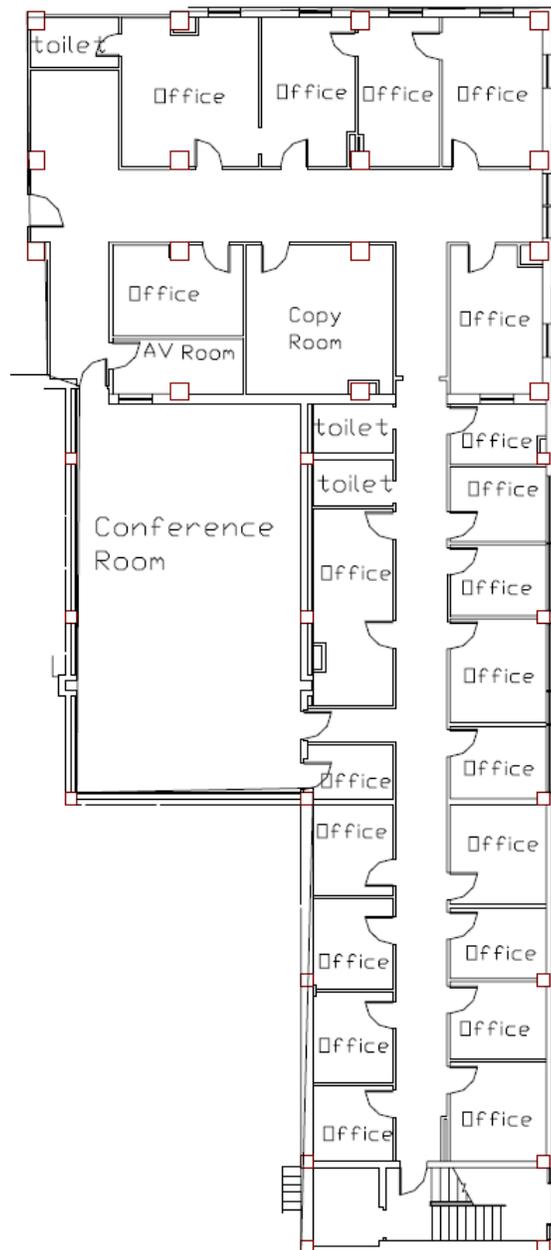
Financial Resources for Operations and Maintenance: The source of funds to cover the associated operating and maintenance costs will be hospital operating revenues derived from providing patient care services.

External Forces: As previously noted, the autopsy suite has been cited by the College of American Pathologists for deficiencies associated with inadequate space, an inconvenient location within the UI healthcare complex, and lack of adequate ventilation. In addition to providing autopsy services for families and clinicians of UIHC patients, the UIHC Autopsy Service provides in-house or consulting autopsy and forensic pathology services for Iowa's three Department of Veterans Affairs Medical Centers, other regional medical centers, the Johnson County Medical Examiner's Office, other county medical examiner offices from throughout southeast Iowa, and the Iowa State Medical Examiner's Office. The facility deficiencies cited above hinder the Autopsy Service from fulfilling its mission and provide compelling justification for undertaking this project.



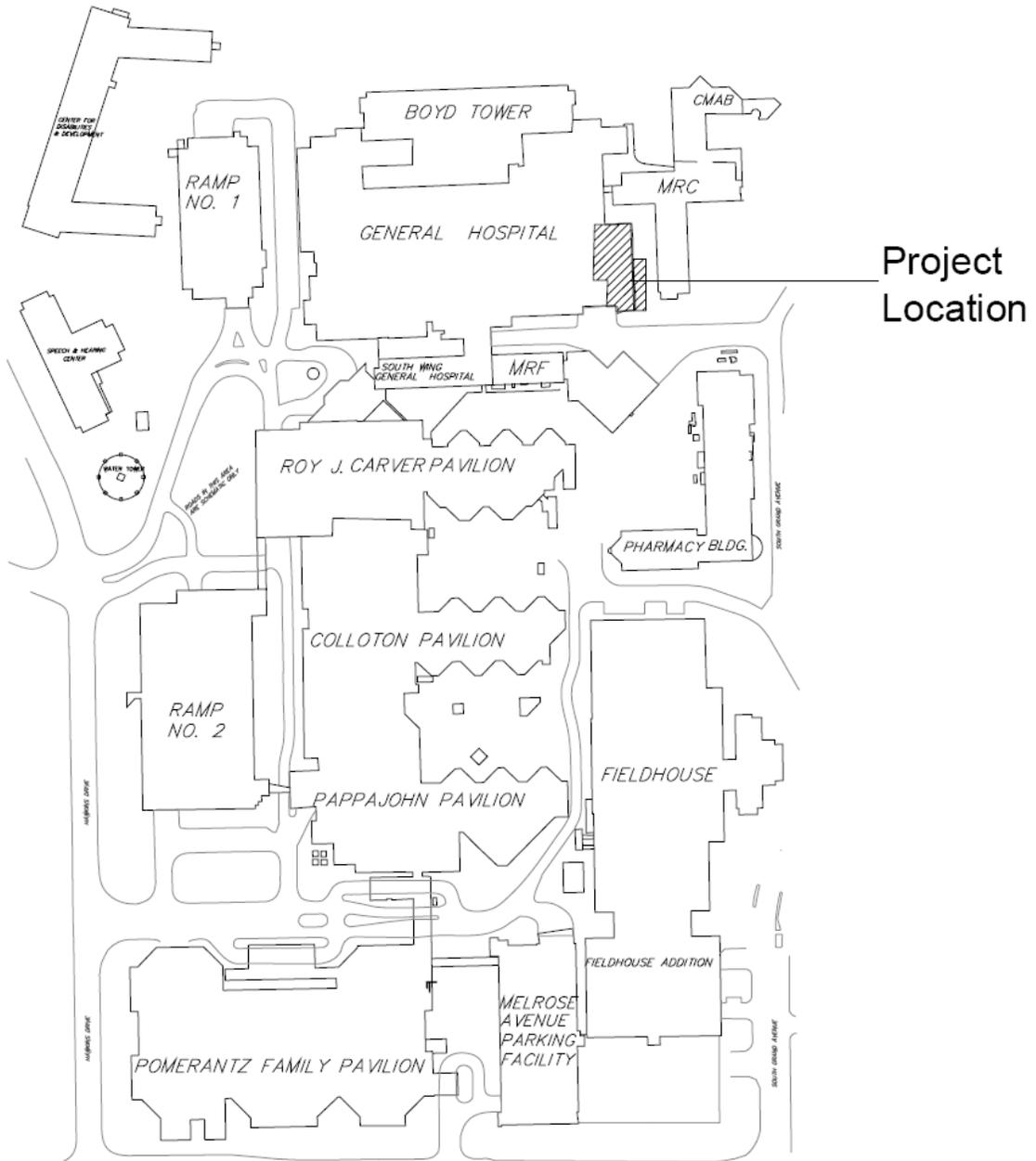
**PROPOSED FLOOR PLAN**  
**Autopsy Suite Relocation**





**EXISTING FLOOR PLAN**  
**Autopsy Suite Relocation**





**SITE PLAN**  
**Autopsy Suite Relocation**

