University of Wisconsin Medical School

Interdisciplinary Research Complex

Final Environmental Impact Statement

September 2004

Prepared for:
State of Wisconsin
Department of Administration
Division of State Facilities
Project Number: 02G1S

Prepared by:
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This report was prepared to comply with the requirements of the Wisconsin Environmental Policy Act of 1972.

THE UNIVERSITY of WISCONSIN MADISON

HNTB

Final
Environmental Impact Statement

UW-Madison Contact
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Abstract:

This document complies with the requirements of the Wisconsin Environmental Policy Act of 1972 (WEPA) and the Wisconsin Environmental Policy Act implementation guidelines for the UW System (November 1981). WEPA, Section 1.11 Wisconsin Statutes, became effective on April 29, 1972, and is implemented by Executive Order 26. This law requires that state agencies prepare an Environmental Impact Statement (EIS) for new buildings, new facilities, or proposals for legislation and other major actions significantly affecting the quality of the human environment, and that a public hearing be held on those proposals. Both the Draft EIS and the Final EIS are intended to be full-disclosure documents that provide a description of the proposed project, the existing environment, and an objective analysis of the anticipated environmental impacts.

The State of Wisconsin, Division of State Facilities (DSF) proposes to construct a new research facility, called the Interdisciplinary Research Complex (IRC) on the west end of the University of Wisconsin-Madison. As the final component to the HealthStar Initiative, the project is intended to address needed health science research and instructional space in a consolidated location on campus. Depending on funding availability, the IRC is planned to contain up to 1.1 million gross square feet (GSF). Construction for the first phase of the IRC is planned to begin in 2005 and occupancy is expected in 2008. Build out, depending on funding availability, is expected to be completed by 2011.

Public Review and Comment Information:

The Draft Environmental Impact Statement (DEIS) for this project was circulated to agencies with concerns related to the project, and was made available to the public for a 45-day review period from June 4, 2004 to July 22, 2004. One comment letter was received from the Administrator of the Village of Shorewood Hills.

A public meeting on the DEIS was held on June 21, 2004 to hear comments from the public and concerned agencies. Comments received on the DEIS are addressed in the Final Environmental Impact Statement (FEIS).

The FEIS will be circulated to the commenting agencies and the public for a review period from August 23, 2004 to September 22, 2004. A public hearing on the FEIS is scheduled on September 21, 2004 in order to hear the comments and views of the public and concerned agencies. This meeting will be held at 5:15 p.m. at 610 North Walnut Street, Rm. 132 of the WARF Building.

Following the FEIS public hearing and public review period, the University of Wisconsin System will formulate a conclusion on the proposed action and at the time of its final decision, shall prepare a "Record of Decision". This is tentatively scheduled to occur in October 2004. Both the DEIS and the FEIS are intended to be full-disclosure documents that provide a description of the proposed project, the existing environment, and an objective analysis of the anticipated environmental impacts.

Send your written comments to the project consultant at the following address:

Connie White
HNTB Corporation
10 East Doty Street, Suite 615
Madison, WI 53703

Deadline:

Please submit written comments by 5:00 p.m. on September 22, 2004.

Copies of the FEIS are available for public review at the following locations:

City of Madison Public Library (Monroe Street location)
1705 Monroe Street
Madison, WI

Wisconsin Historical Society Library
816 State Street, 2nd Floor
Madison, WI

Shorewood Hills Village Hall
810 Shorewood Boulevard
Madison, WI

UW-Madison Safety Office
30 N. Murray Street
Madison, WI

UW System Division of Capital Planning and Budget
780 Regent Street, Suite 210,
Madison, WI

UW Facilities Planning & Management
9th Floor WARF Building
610 N. Walnut Street
Madison, WI

NOTE TO READERS REGARDING REVISIONS INCORPORATED INTO THE FEIS

The Draft EIS was revised to reflect comments received during the public review period from June 4, 2004 to July 22, 2004. The Village Administrator of the Village of Shorewood Hills submitted the only written comment for this project. The letter supported Village comments made at the public meeting. Minutes of the DEIS public meeting are contained in Appendix H.

Revisions to the DEIS include those made based on errata, updates to the project design and comments received. The following is a summary of the revisions made to the DEIS that are included in the FEIS:

Errata (not based on comments received):

1. Typographical and grammatical errors have been corrected and clarification in sentence structure made as needed throughout the document.

2. The table of contents was revised to correct the list of appendices.

Changes made based on design plan updates or additions to the DEIS:

1. Some tables, exhibits and appendices were renumbered to reflect changes in the document.

2. Exhibit 9, a preliminary landscape plan for phase I of the IRC was added to the document. This exhibit is a drawing that depicts the landscape plan and shows how plantings and other landscape elements will be made to enhance the site.

3. Appendix E was added to show the Leadership in Energy and Environmental Design (LEED) checklist that will be used as a guideline during design based on budget and directive from the UW Facilities Planning and Management, Division of Facilities Development or UW Medical School.

4. Appendix H was added, which is the minutes of the public meeting of June 21, 2004.

5. Appendix I was added, which contains a letter from the Village of Shorewood Hills regarding the DEIS and the response to those comments.

Summary of changes made based on comments received:

1. Text has been added to Chapter 4: Probable Impacts of the Proposed Action on the Environment, under the Noise Impacts section to state that the University and the IRC design team acknowledge that the Village of Shorewood Hills noise ordinance is being drafted and that the University is committed to an overall reduction in noise on the west campus including noise reduction strategies for the IRC and planned modifications to the Waisman Center and Pharmacy buildings.

2. Text has been added to Chapter 4: Probable Impacts of the Proposed Action on the Environment, under the Traffic Impacts section to clarify potential traffic impacts and proposed improvements. Additional information on intersection level of service and proposed roadway improvements was incorporated. Also, a table was added showing projected traffic increases in the residential areas of Shorewood Hills and Regent Heights. Some corrections were made regarding level of service (LOS) standards to reflect the standards set by the City of Madison and the American Association of State Highway and Transportation Officials (AASHTO).

3. Text regarding traffic impacts was added to the Chapter 5: Probable Adverse Impacts that Cannot Be Avoided to demonstrate that it is a known impact and improvements must be completed to maintain acceptable levels of service for local roadways.

4. Text has been added to Chapter 4: Probable Impacts of the Proposed Action on the Environment, under the Light Impacts subsection to clarify how building design elements will reduce lighting impacts.

5. Text has been added to Chapter 4: Probable Impacts of the Proposed Action on the Environment, under the Visual & Aesthetic Impacts section to add additional information on building aesthetics and view sheds.

6. The Hazardous Waste section in Chapter 4: Probable Impacts of the Proposed Action on the Environment was changed to Hazardous Waste and Noxious Odor Impacts. Text was added to this section to acknowledge concerns from the Village of Shorewood Hills regarding odor.

7. Text has been added to Chapter 4: Probable Impacts of the Proposed Action on the Environment, under the Construction Materials section to include a checklist of LEEDS criteria that the design team will use as guidelines during the design of the IRC.

Table of Contents

Exhibits

Appendices

Chapter 1

Summary of Findings and Scoping Process

The State of Wisconsin, Division of State Facilities proposes to construct a new research facility, called the Interdisciplinary Research Complex (IRC) on the west end of the University of Wisconsin-Madison. As the final component to the HealthStar Initiative, the project is intended to address needed health science research and instructional space in a consolidated location on campus. Depending on funding availability, the IRC is planned to contain up to 1.1 million gross square feet (GSF). Construction for the first phase of the IRC is planned to begin in 2005 and occupancy is expected in 2008. Full build out, depending on funding availability, is planned for 2011.

Physical Environment Impacts

Air Quality
The proposed project is exempt from the Wisconsin Department of Natural Resource's requirements for air quality construction, operating or indirect source permits.

Noise
Based on the study completed, the construction noise impacts are expected to be short term, the increase in traffic noise is not significant and potential impacts from ventilation noise will be mitigated during the final design of the IRC. The University acknowledges the Village of Shorewood Hills noise ordinance and remains committed to addressing overall noise levels on the west campus.

Geology/Soils
Based on the results of a preliminary geotechnical evaluation, the soils are suitable for conventional spread footing foundations like those proposed for the IRC building. In a report completed by Giles Engineering Associates it recommends an 8,000 pound per square foot (psf) maximum soil bearing capacity for the foundation design.

Soil Contamination
The preliminary geotechnical evaluation for the building site gave no indications of soil contamination. Soil borings were taken to determine the soil characteristics of the site.

Hazardous Waste
No impacts are expected to occur from hazardous waste. The UW Department of Safety is responsible for managing and disposing of all hazardous waste generated on campus including the IRC. The University will meet with the Village of Shorewood Hills during the continuing design phases to outline specific measures to be taken to avoid noxious odors from the building.

Construction Materials
The IRC will follow some of the guidelines set forth by the Leadership in Energy and Environmental Design (LEED). However, the University will not pursue third party certification for green building design. Appendix E outlines the LEED criteria that will be used as a guideline for the design of the IRC.

Surface Water and Groundwater
The new building and surrounding paved areas are not anticipated to significantly increase impervious area on the project site. The site is currently paved over as a parking lot. Stormwater will be routed to a storage and infiltration area and then to the existing storm sewer system. The UW-Madison is undertaking a study to determine recommendations to meet future demands for stormwater capacity on campus.

Since the project is in an existing urban area, it is not anticipated that the proposed action will result in negative changes in surface water quality.

Transportation
Roadway improvements are required to maintain satisfactory level of service on area roadways. The University will continue to monitor traffic impacts and coordinate with the City of Madison and the Village of Shorewood Hills to implement roadway improvements as necessary. Bicycle amenities will be included in the site design and pedestrian connections will be compatible with the West Campus Plan. The transit stop currently located at the north entrance of the Clinical Science Center will need to be relocated to the north side of the IRC. The surface parking lot currently on the IRC site will be replaced with the construction of the Lot 76 Parking Ramp.

Utilities
Existing utilities will need to be relocated and/or expanded to make new connections to the proposed building. The Co-Generation Plant, which is currently under construction, assures adequate heating and chilling capacity for the IRC and other future campus developments.

Open Space
Since the IRC site is currently a surface parking lot, no impacts to open space are anticipated. The garden terrace areas proposed for the IRC will be impacted by blowing snow and shading in the winter months, however it is unlikely people will use this space during this time. The shading during the spring and summer months will provide a cooler environment during the warmer months of the year.

Biological Environment

Vegetation and Wildlife
The IRC site is located on an existing surface parking lot in an urban setting where the majority of natural vegetation has been eliminated by previous development. Trees that will be eliminated during construction will be replaced with new ones. Impacts to the biological environment are not a concern.

Social and Cultural Environment

Land Use Impacts
The proposed IRC is not expected to change land use in the surrounding area as it is compatible with other land uses in the vicinity and will be sited on a portion of an existing parking lot. Land use types immediately adjacent to the site include institutional, recreational and hospital uses.

The IRC building is consistent with the UW-Madison Campus Plan for future development on the Far West Campus and is a key component to the HealthStar Initiative.

Economic Impacts

No private property will be acquired and the existing tax base will not be affected. Some employment attributed to the proposed building will be temporary and related to construction; however, the IRC at full build out will accommodate 268 principal investigators of which 20% are expected to be new staff members. On average each principal investigator brings in $1.5 to $2.0 million in grant and research funds per year. In addition, each principal investigator employs 6 to 8 students. The hospitality services proposed for the building is expected to employ 20 to 30 full-time employees. Furthermore, the IRC is expected to have spin off economic advantages for the campus, surrounding communities and the state through an increase in conferences, increased demand for hotels and restaurants and spin off bioscience start up businesses.

Visual and Aesthetic Impacts

The building design is compatible with surrounding structures in terms of architecture, color, texture and height. It will impact views to the north from the CSC and the planned American Family Children's Hospital. Views from residential neighborhoods to the west and views from recreational areas to the north are not expected to be impacted substantially. Other buildings and vegetation block views of the building looking south. Measures to mitigate indoor and outdoor lighting impacts on residential neighborhoods are being incorporated into the design of the building. Landscaping plans will be compatible with the West Campus Plan and will be compatible with adjacent sites. Since the existing trees on the site will not be able to survive construction, existing trees will be removed and replaced with new ones.

Public Safety

The City of Madison will provide fire protection. No impacts to services are expected. UW campus police will provide police protection services to the new building and security systems will be compatible with campus standards.

Historic and Archeological Sites

No known historical sites or archeological resources are located on the IRC site. No impacts have been determined by the Wisconsin Historical Society (WHS) for other projects in the immediate vicinity. The University Ridge Mound group is the closest known archeological site, but it is outside the project area.

Cumulative Impacts

In addition to the proposed IRC, the American Family Children's Hospital is in the planning phases and at least one more major facility, the Nursing Sciences Building may be constructed as part of the long term vision for the Far West Campus. Development on the West Campus has had a cumulative impact on parking, traffic, stormwater drainage, heating and chilling capacities, maintenance services and police and security services. If development continues beyond what is listed in campus plans, negative cumulative effects could be seen in the future. These impacts are being monitored and evaluated by the Joint West Campus Area Committee to determine thresholds and to ensure that the thresholds are not exceeded.

Construction will cause temporary impacts to, and diversions of, vehicular, transit, pedestrian, and bike traffic. Temporary lane closures and bus route changes during construction would be coordinated with the UW-Madison Transportation Department, the Village of Shorewood Hills and the City of Madison.

Noise, dirt, and dust can be expected during construction of the project. Any adverse effects related to noise are expected to be localized and temporary. Fugitive dust resulting from earth moving and grading will be minimized with the application of dust control materials.

Standard prevention practices (for example silt fences, bale dikes, seeding, or grading) will be used to minimize any erosion due to stormwater runoff.

Scoping Process

A scoping meeting for the proposed Interdisciplinary Research Complex was held on March 11, 2004. Invitations were mailed to potentially affected parties both on and off campus, including, but not limited to representatives from the Village of Shorewood Hills, City of Madison, the Regent and Dudgeon-Monroe Neighborhood Associations, interested state and federal agencies and representatives of affected University Departments. Meeting minutes and the attendance list are included in Appendix A.

Since there were no attendees from the general public, the IRC project team and UW staff discussed various, but specific issues that should be addressed in the DEIS including:

- Air quality
- Noise attenuation
- Hazardous waste disposal
- Stormwater infiltration
- Traffic circulation
- Bike and pedestrian circulation
- Parking issues
- Utility impacts
- Economic impacts
- Aesthetics issues, including the vent stacks
- Security and safety issues

Public Meeting on the Draft EIS
A public meeting on the draft EIS was held on June 21, 2004. Invitations were mailed to potentially affected parties both on and off campus including, but not limited to representatives from the Village of Shorewood Hills, City of Madison, the Regent and Dudgeon-Monroe Neighborhood Associations, interested state and federal agencies and representatives of affected University Departments. Meeting minutes and the attendance list are included in Appendix G. Comments were received from the Village of Shorewood Hills on a range of concerns. Comment and responses are included in Appendix I.

Public Meeting on the Final EIS
A public meeting will be held on the Final Environmental Impact Statement (FEIS) on September 21, 2004 at 5:15 p.m. at 132 WARF Building, 610 Walnut Street. Comments can be made at the meeting or submitted in writing by September 22, 2004 at 5:00 p.m.

Chapter 2

Description of Proposed Action

Introduction

The State of Wisconsin, Division of State Facilities proposes to construct a new research facility, called the Interdisciplinary Research Complex (IRC). As the final component to the HealthStar Initiative, the project will address needed health science research and instructional space at the University of Wisconsin-Madison. Construction is planned to begin in 2005 and occupancy is expected in 2008. Depending on funding availability, full build out is expected to occur in 2011.

Project Description

The IRC will be located in the Far West Campus planning area within the Highland Avenue loop road (see Exhibit 1 and Exhibit 2). It will be built on an existing surface parking lot north of the Clinical Science Center (CSC) as shown in the photo on Exhibit 3. The facility will join the Health Science Learning Center (HSLC). In addition, the existing CSC module, L3, which contains the current vivarium will be demolished and become part of the IRC master plan. The module will be funded by UW Hospital.

The site plan for the IRC, as shown in Exhibit 4, is comprised of three towers that connect to the UW Hospital and CSC. The towers are joined by an arced, semitransparent space at the south end of the site that allows circulation within the IRC as well as the CSC and UW Hospital. Each tower will contain two base levels at the ground and a third level with mechanical and hospitality spaces. On top of these floors, the east tower will contain five laboratory levels and the central and west towers will contain seven laboratory levels. Depending on funding availability, the IRC may contain up to 1.1 million gross square feet (GSF) for a total estimated project cost of $300 million. This figure is likely to change as the future phases develop greater definition.

The University plans to implement a phased approach to the design and construction of the IRC that will include Phase I, Phase I Enhancements and Phase II. Full program build out will be dependent on funding availability and the ability to accommodate parking, traffic, construction staging and other construction projects.

Phase I

Phase I will cost approximately $136 million and contain approximately 440,000 GSF. It will include the following core program components:

- The **Generic Core Research and Anatomy Instructional Laboratories** will house a major component of the University of Wisconsin Comprehensive Cancer Center (UWCCC), the Molecular Medicine Center and the Gross Anatomy Instructional Lab Complex. The existing morgue and crematorium will remain at the Medical Sciences Center (MSC).

- The **Imaging Center** will house the Imaging and Radiation Sciences Program designed to pursue basic, translational and clinical research for the treatment of various diseases including human cancer.

- The **Vivarium** will function as a common facility supporting the University's medical researchers in the IRC as well as the CSC, the Waisman Center and other West Campus facilities. Laboratory Animal Resources (LAR) will operate the Vivarium and administer a program of animal care that meets all applicable local, state and federal regulations. Also, the Vivarium will be accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) and follow their design guidelines to ensure animal well-being.

- **Hospitality Services** are planned by the Wisconsin Union within the IRC to accommodate the expansion of the West Campus and the anticipated expansion plans of the UW Hospital. The Union will provide much needed service-based support, potentially including food service, meeting and conference support space, and other general services for the West Campus community. Also, it will provide an outdoor gathering area that can serve as a public open space amenity in a densely built environment.

- A **Radiotherapy Treatment Expansion** is planned on the B1 Level of the CSC K4 module to compliment activities in the IRC. The UW Hospital will fund this expansion, which will include renovation of the existing space to modernize existing vaults, streamline patient flow and provide additional new vault space.

- **Building Support Space** will be included in Phase I, which provides maintenance areas and loading and service docks.

Phase I Enhancements

Should funding become available, the Medical School has defined additional **Research Laboratory Space** to compliment the core research program included in Phase I. Phase I Enhancements will add approximately 275,000 GSF.

Phase II

Phase II will contain approximately 395,000 GSF and include the following program components:

- Additional **Generic Core Research Laboratories** will provide space for more medical researchers.

- Additional **Vivarium** facilities will be included and function as a cohesive unit with Phase I vivarium developments.

- Additional **Building Support** space will be required to support Phase II facilities.

Full build out of the IRC will include 19 floors of research laboratory space with an average of 12 principal investigators per floor. Plus, the imaging center could contain an additional 40 principal investigators for a total of 268 investigators on average. It is estimated that 80% of the principal investigators will come from existing locations on campus and the remaining 20% will be new investigators.

Purpose and Need

The proposed IRC project is part the HealthStar Initiative, a partnership between the State of Wisconsin and the University created in 1997. The program is intended to enable Wisconsin to maintain its leadership role in medical research and teaching and position Wisconsin to be a major health care center in the world.

The program addresses a critical need for new consolidated health sciences facilities at the University. It calls for the construction of three new health science facilities, including the Rennebohm School of Pharmacy, the Health Sciences Learning Center and the Interdisciplinary Research Center on the West Campus near the Clinical Science Center (CSC), which houses the UW Hospital and Clinics and the UW Health Science programs. The School of Pharmacy was completed in 2001 and the Health Sciences Learning Center (HSLC) will be complete in 2004. The IRC is the final component.

In order to maintain the University's national leadership role in medical research and teaching, the HealthStar Initiative identified critical problems with current facilities including:

- Medical School facilities are divided between disparate locations, hindering interdisciplinary research among basic and clinical investigators.

- Antiquated medical school facilities do not meet 21st Century technology needs. Many health science facilities on the central campus were built before the electronics age and existing medical research laboratories are inadequate for modern research. The facilities do not support electronic infrastructure needs, hazardous materials or air handling requirements, secure storage needs, and vivarium equipment space.

The lack of adequate medical school space could jeopardize the Medical School's accreditation in the future. In 1996, the Liaison Committee on Medical Education (LCME) identified the current facilities as the UW Medical School's most significant unresolved problem. Although accreditation was granted, the committee required the medical school to submit a plan to remedy its space deficiencies.

Every year Medical Researchers bring in more than $160 million in extramural research dollars. The HealthStar Initiative and the IRC component will help maintain this income as well as attract additional federal and private research funds. Also, it will enable the Medical School to retain and recruit qualified faculty and graduate students.

The IRC project is intended to address these needs by providing a new research complex on the West Campus close to inpatient and outpatient health care services, allowing future occupants to pursue translational and interdisciplinary research using modern technological and human resources.

Project Budget

The construction of the IRC would cost an estimated $300 million, $136 million for Phase I and $164 million for Phase I Enhancement and Phase II. Funding will come primarily through gifts as well as state money from the HealthStar Initiative and grants.

Project Schedule

The proposed schedule for completing the environmental documentation and construction of the IRC is outlined in Table 1 and Table 2 below.

Table 1: Proposed Environmental Documentation Schedule

Phase	Date
Release DEIS	June, 2004
DEIS Public Meeting	June, 2004
DEIS Comment Period Ends	July 22, 2004
Release FEIS	August 23, 2004
FEIS Public Hearing	September 21, 2004
Record of Decision	October, 2004

Table 2: Proposed Construction Schedule

Phase	Construction	Occupancy
Phase I	September, 2005*	April, 2008*
Phase I Enhancements	March, 2006**	2009**
Phase II	Fall, 2008**	2011**

*Construction and occupancy dates are tentative and subject to change.
** Construction and occupancy dates are dependent on funding availability.

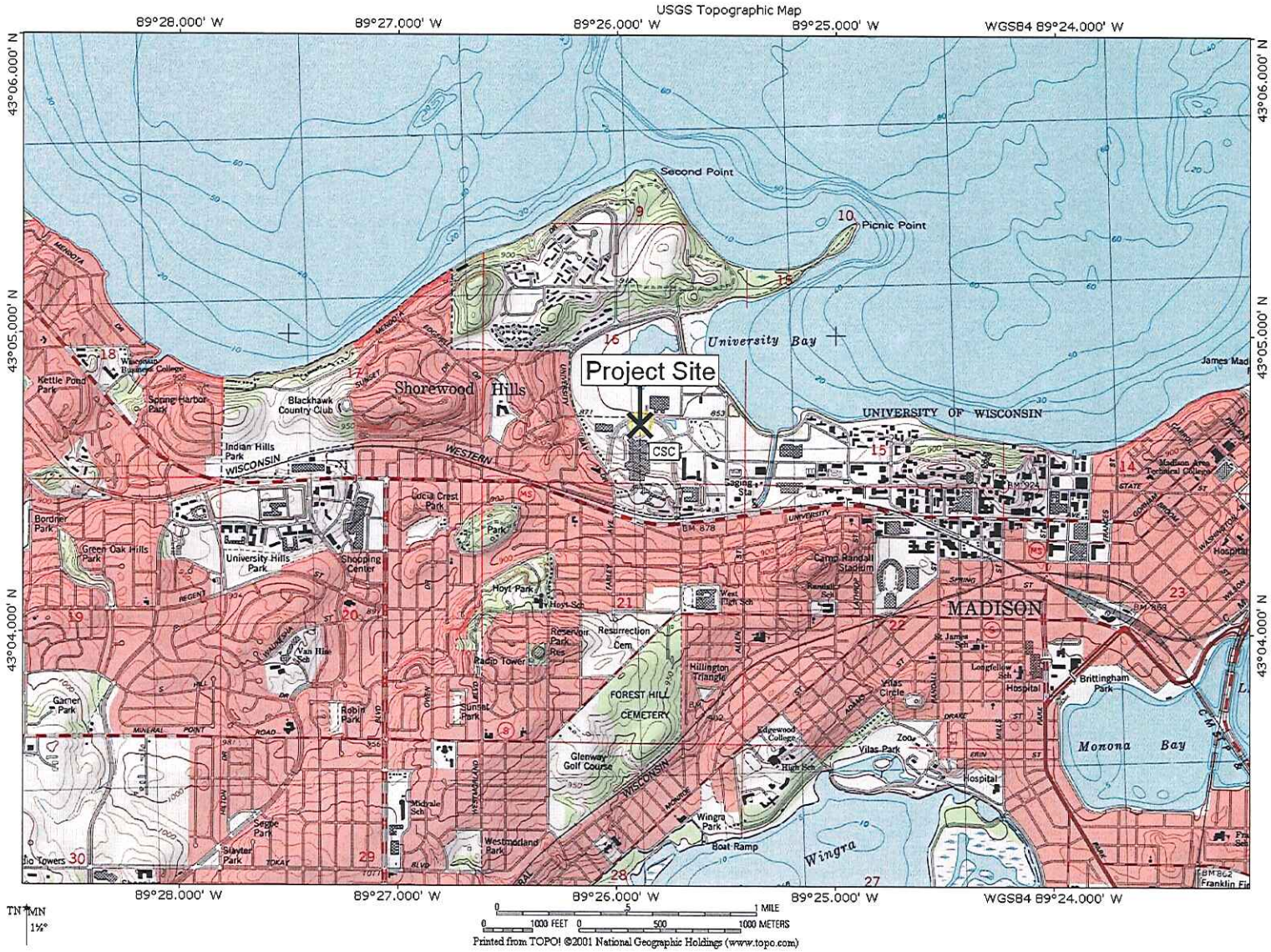

Exhibit 1
USGS Topographic Map
Source: National Geographic TOPO!

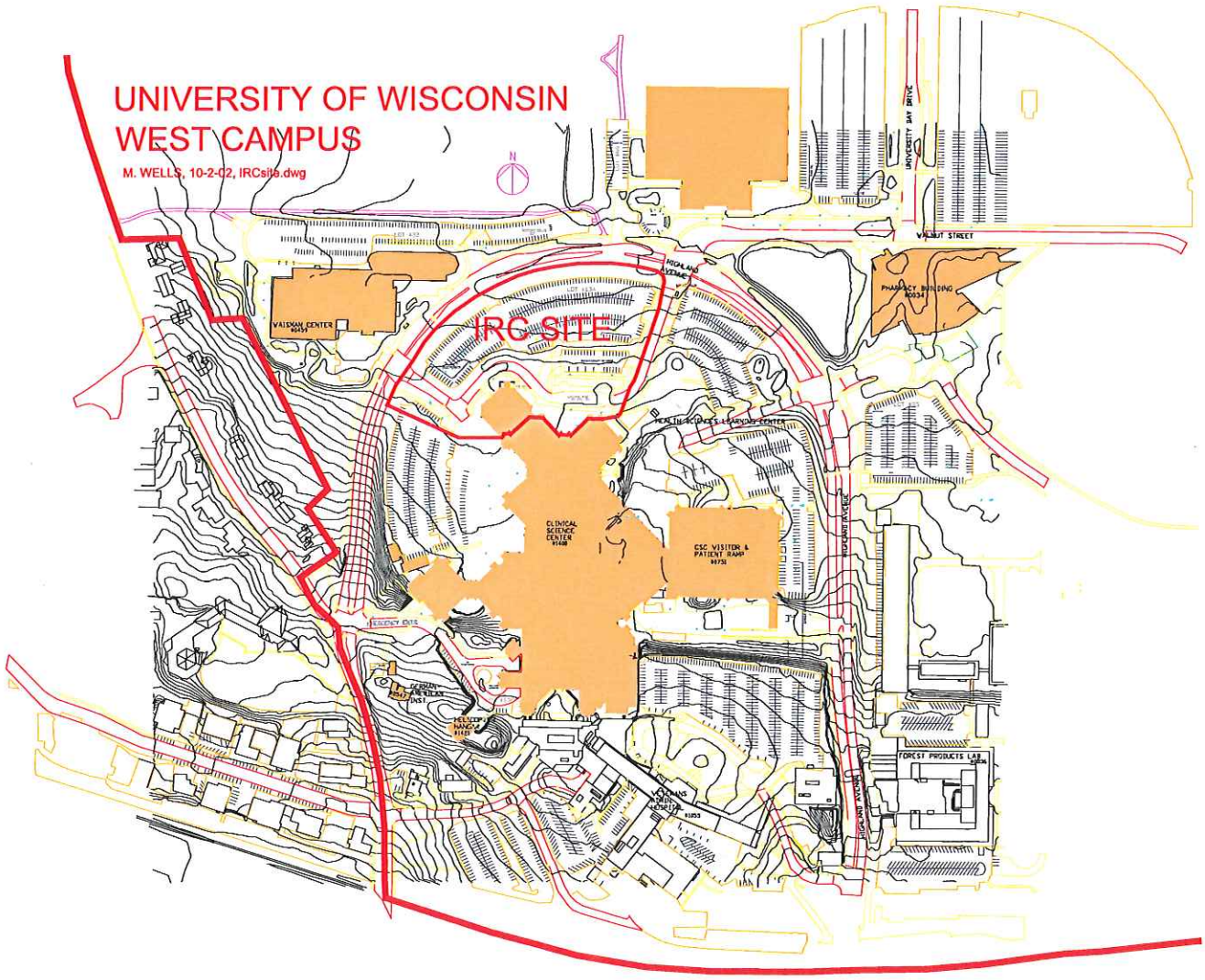

Exhibit 2
Vicinity Map
Source: ZDG/HOK/AEI

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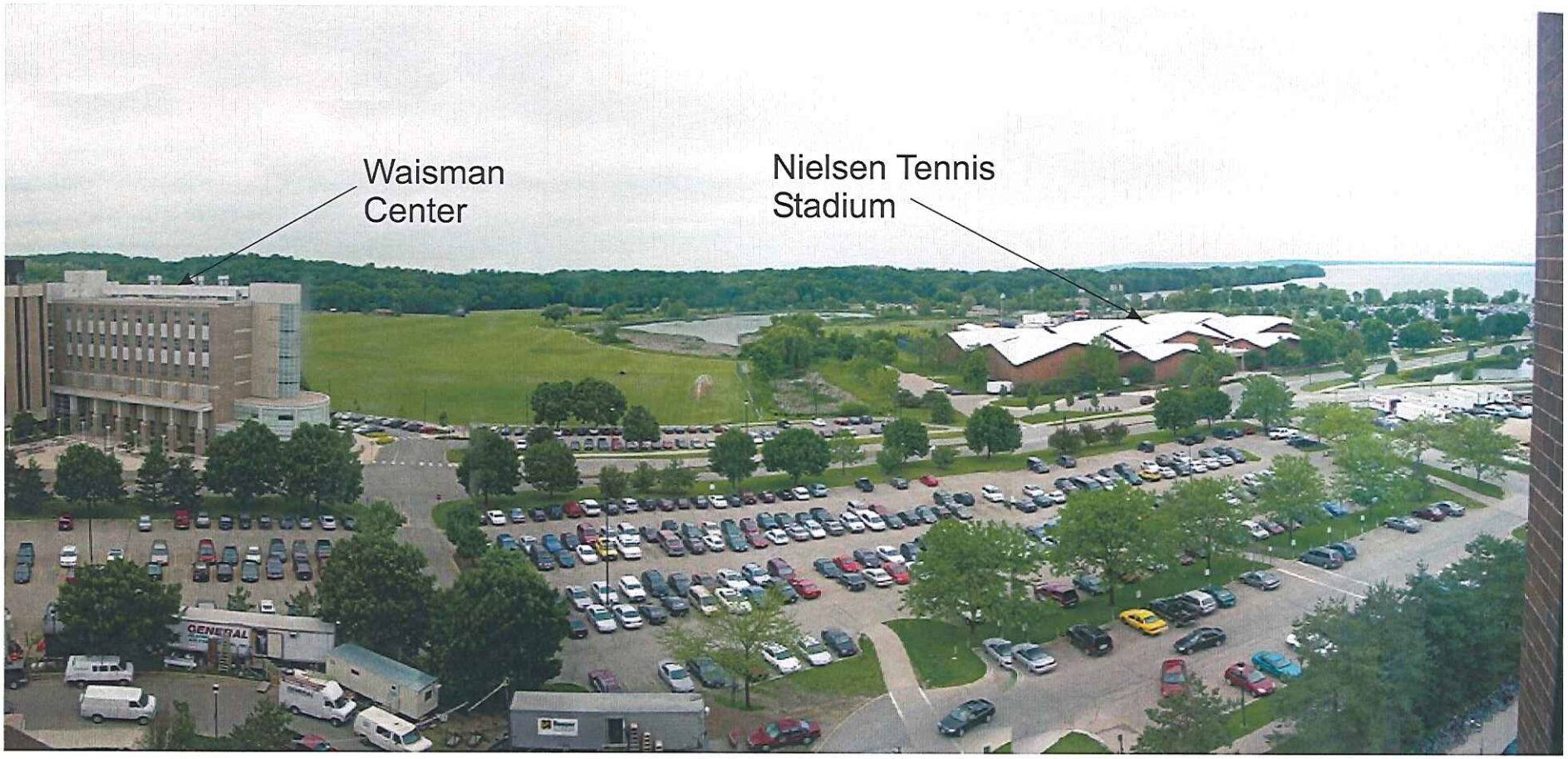

Exhibit 3
Photo of Existing Site
View looking North from Clinical Sciences Center

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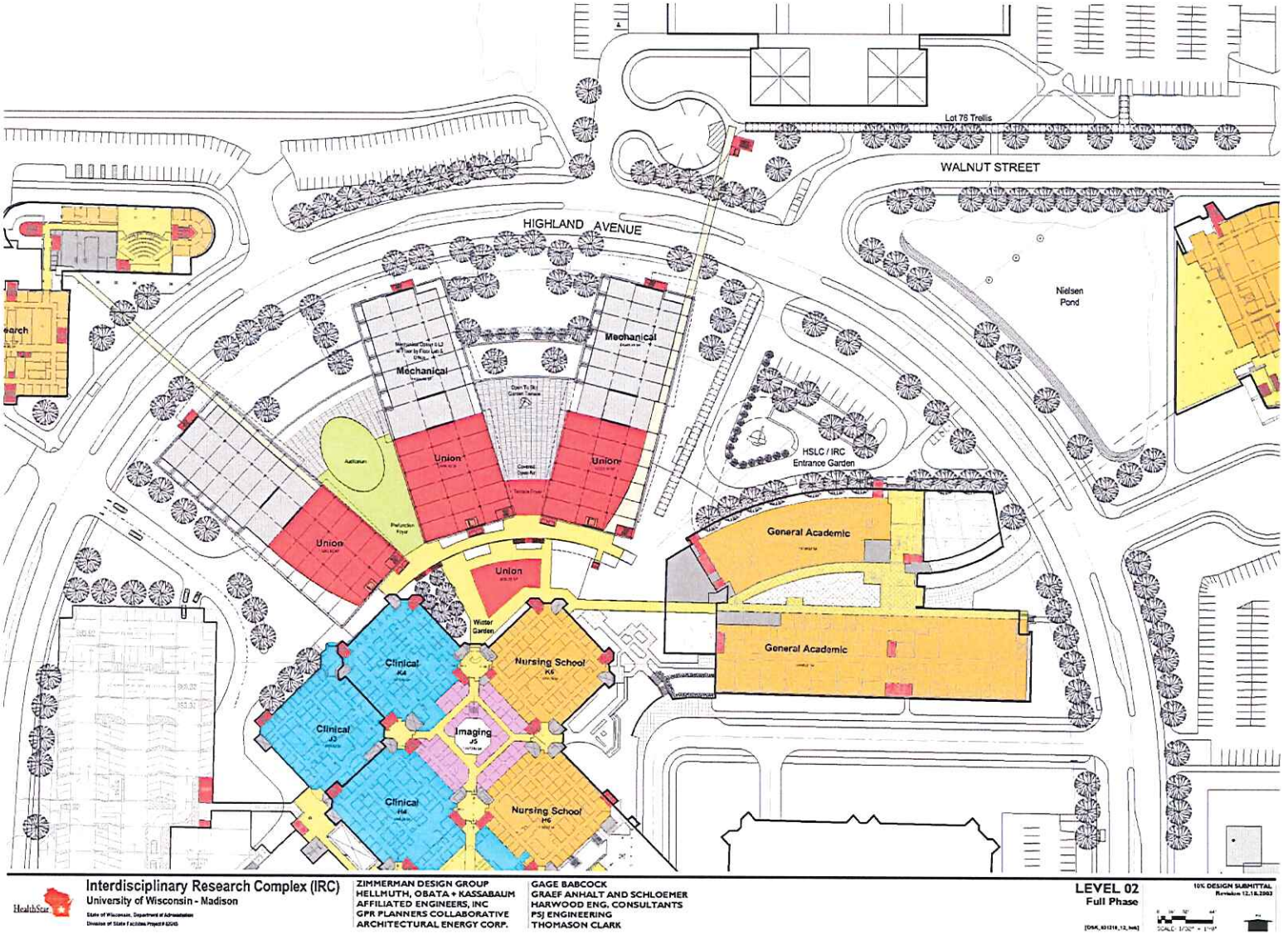

Exhibit 4
Preliminary Site Plan
Source: ZDG/HOK/AEI
2004

Chapter 3

Description of the Affected Environment

Physical Environment

General Description and Existing Uses

The IRC project site and the surrounding area are urbanized. The primary land uses are associated with the UW-Madison campus and are institutional. Open spaces and green spaces are mixed intermittently between the buildings, parking facilities and transportation right-of-ways. The project site is located within walking distance to Lake Mendota and various recreation facilities. See Exhibits 1 and 2 for a project vicinity map. The IRC project site is currently used as a surface parking lot (Lot 63 North).

In the immediate vicinity of the project site, land uses include surface parking lots and institutional and recreational uses of the UW-Madison campus. Facilities in the vicinity are multi-story structures including the Waisman Building, the Clinical Science Center (CSC), the VA Hospital and the Health Sciences Learning Center (currently under construction). Other nearby structures include 901 University Bay Drive, which houses the German American Max Kade Institute, a Unitarian Church and other appurtenant structures. A Class 1918 Marsh is located to the north across Highland Avenue.

Surface parking lots in the vicinity include Lot 63 West, Lot 82 by the Waisman Building, Lot 76 by Nielsen Tennis Stadium, which is soon to become a parking ramp, and the VA Hospital parking lots. Also, the CSC has a Visitor and Patient Ramp used by hospital visitors, employees and patients.

Access to the site is from Highland Avenue, a loop road with connections to Campus Drive and University Bay Drive.

Air Quality

The United States Environmental Protection Agency (USEPA) has identified six air pollutants of nationwide concern (criteria pollutants): CO, NO2, ozone, PM-10, sulfur oxides (SOx, measured as SO2), and lead. The National and Wisconsin Ambient Air Quality Standards are published in the Code of Federal Regulations - 40 CFR 50.4 to 50.12 and the Wisconsin Administrative Code - NR 404.04, respectively as shown in Table 3.