

S A S A K I

PURDUE UNIVERSITY CALUMET

Master Plan Report ■ March 2008





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* This report was done in collaboration with Scholer Corporation

The main challenges the plan seeks to address are:

- A disconnected campus with academic activity concentrated in the north and residential life in the south
- Significant existing space deficits, primarily in student life, laboratory, and library space
- The impression of a “drive-through” campus whose physical experience is dominated by largely uninterrupted parking lots
- Supporting the additional needs of a growing residential and full-time student population

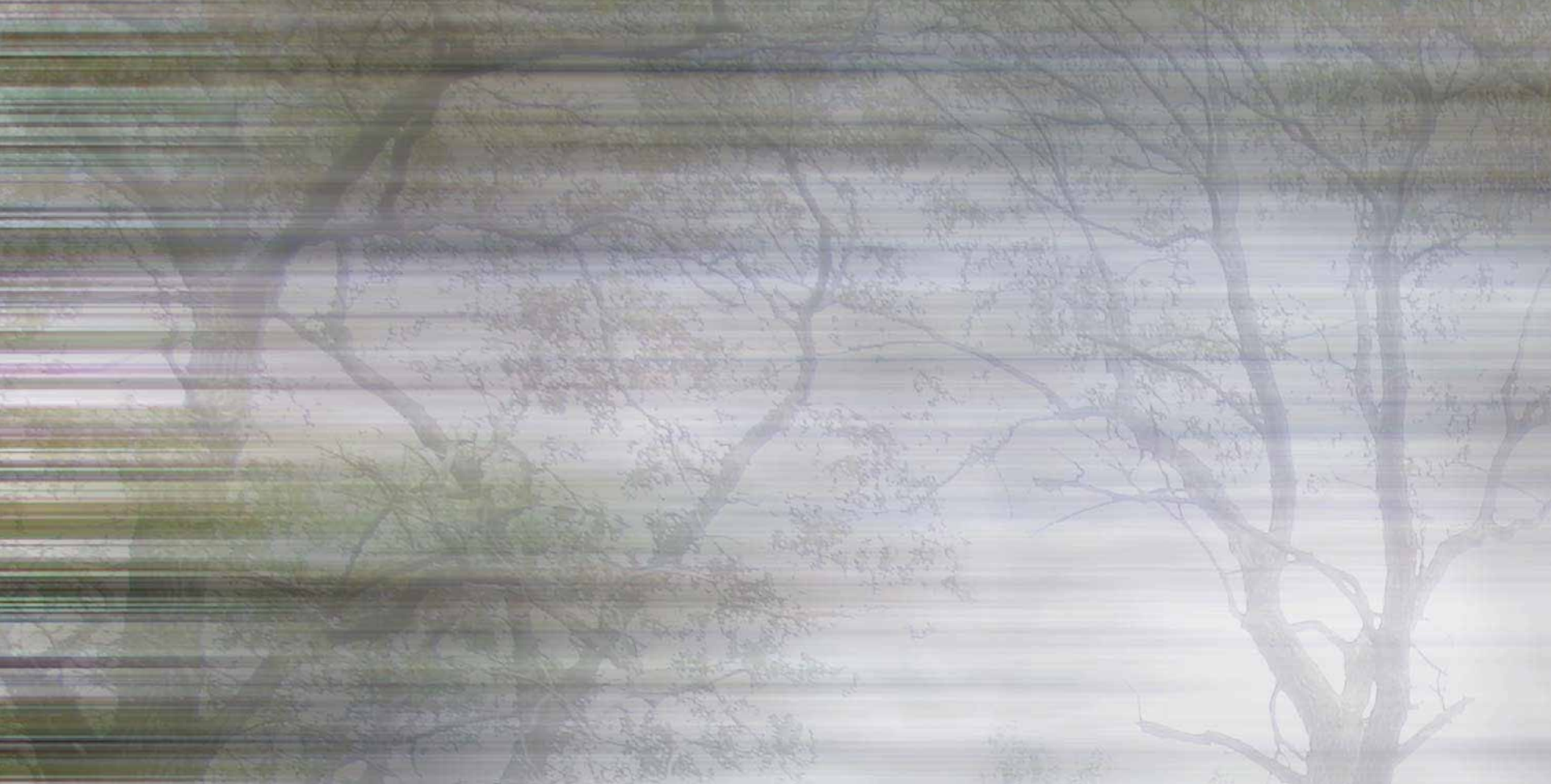
The key elements of the plan are:

- The creation of a linear green linking the campus north to south and providing a transitional zone between parking lots and active uses
- The development of east-west groves of native trees which break the parking lots into more manageable parking rooms and perform important ecological functions
- The definition of a sacred green quadrangle in the geographic center of the campus framed by a tall new iconic transparent addition to the library, which will provide an instantly recognizable image for the campus
- An emphasis on first constructing new buildings in the central area of the campus to help shift the gravity of activity southward in support of important north-south connections
- The formation of a vibrant residential district in the south with playing fields and additional recreation facilities including a glass-fronted fitness and exercise facility with a strong street presence
- An alliance with the City of Hammond and private developers to create a mixed-use campus town along the 173rd street corridor which will provide both additional residential beds and needed retail services like restaurants, coffee shops, and potentially the university bookstore

The final plan respects the long, narrow nature of the University’s land holdings, and is inspired in many ways by the existing Peregrine Path. This “corridor of buildings” is continued through the central region of the campus, and a complimentary new corridor is created to frame the east side of the green spine. Detailed phasing is specified for this development. Arrival sequences are simplified, with a major new entry point through the proposed campus town. The pedestrian experience crossing 173rd street is improved.

The critical mid-to long-term decision facing the University will be how to address parking requirements as enrollment grows and as existing surface lots are used for building sites. The plan identifies locations for potential future garages, but the cost of these garages is likely to be significantly greater than the cost of acquiring additional property for surface parking. These greater costs will have to be balanced against the impact of incursion into neighborhoods.

The master plan represents a transformative vision for Purdue Calumet, and aims to guide its physical growth over the next twenty years. It builds on the campus’ many strengths, and through place-making, hopes to create connections and community, and provide the resources the University needs to fulfill its mission.





ANALYSIS





EXISTING CAMPUS

0 200' 400'
SCALE: 1" = 200'





CAMPUS 1950'S



CAMPUS 1990'S



CAMPUS TODAY

HISTORY

Purdue University Calumet is a regional campus in the Purdue University system. Located in the City of Hammond, Purdue University Calumet (PUC) is twenty five miles from downtown Chicago, and plays a major role in the educational and economic life of northwest Indiana. PUC is a regional commuter campus serving working adults and traditional students alike. The University has recently added a residential program.

Over 38,000 associate, bachelor, and masters-level degrees have been granted at Calumet throughout its 40-year history. The current campus land was used for training during World War II. Around 1946, after the conclusion of the war, technical classes were offered to local production workers and former soldiers at the Purdue Extension Centers in Hammond and Merrillville; classes were not offered

on the current campus until 1951. These regional centers offered technical instruction to students who could not travel to the West Lafayette campus. The first commencement on campus was held in 1967. The campus grew rapidly during the 1950s, '60s and '70s, and PUC was granted academic autonomy by the Trustees of Purdue University for its undergraduate program in 1974. PUC is now a large university, situated on 167 acres, with 16 buildings, and over 9,600 students.

This growth has been supported by several planning and building siting studies. The previous study was completed in 1996 and created a framework for the campus which remains today. The northern part of campus was designated as the academic core, the administration and services were located in the central part of campus, and the part of campus south of 173rd street was labeled an auxiliary area for the recreation center and conference center, and as a location for

future residential and possible relocation of the facilities buildings. To date, the first phase of residential housing has been completed, and the University is planning phase two.

PUC is an institution in transformation. The University's new residential program is attracting a growing international population. While the University remains strongly committed to its role in expanding access to education, it is also strengthening and enlarging its academic programs which have a growing research component, and wishes to attract more full-time students. PUC is committed to generating economic growth in Northwest Indiana. As the University's strategic plan summarizes, Purdue University Calumet is "a changing institution that is molded in the land-grant tradition." This master plan articulates a vision for this change, and the facilities it will require, over the next twenty years.





DESIGN CHARRETTE MODEL - CORRIDOR SCHEME



THE MASTER PLANNING COMMITTEE TESTING DIFFERENT SCHEMES

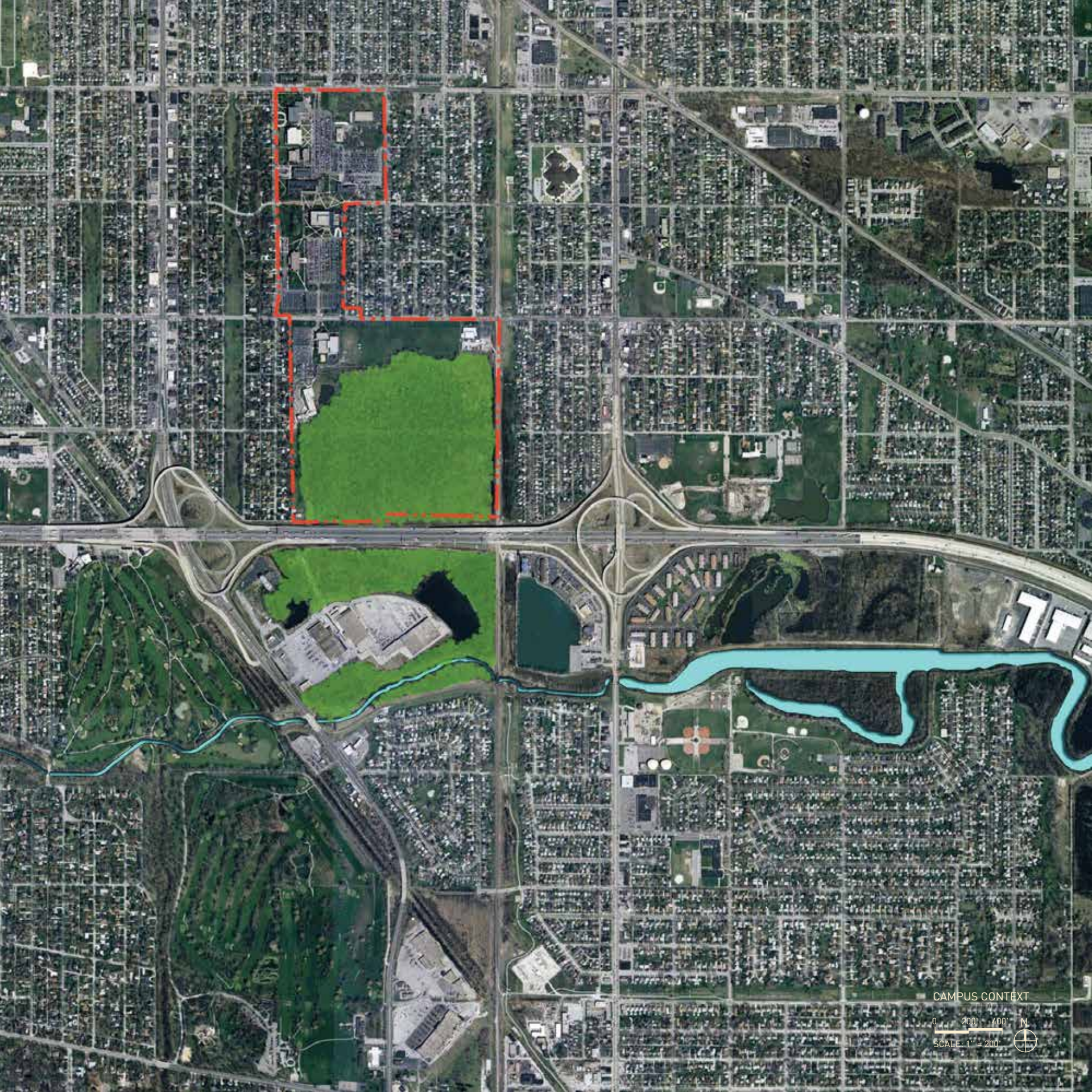
PROCESS

Sasaki began working with PUC on a new Master Plan in the Fall of 2006. The master planning process was highly inclusive, with all members of the Calumet community asked to contribute. The process included several phases of work.

First, the Sasaki team embarked on a massive data gathering phase, which included extended site visits, facility tours, and interviews with key stakeholders. The second phase of work involved the analysis and synthesis of this data. The analysis defined and quantified PUC's changing institutional profile and related facility needs. It included academic, environmental, and student life components, and studied PUC's relationships with its neighboring communities. Equipped with

these findings, the Sasaki team worked with the master planning committee to define two broad alternative frameworks for future growth. These alternatives were explored in detail in an onsite design charrette using physical models to arrange alternate building schemes for campus development, examine where program components might be accommodated, and define University priorities through various phasing schemes. The over-arching goals of the model exercise were to develop an integrated campus which efficiently used available space, and to detail a roadmap for development. The two alternatives were then synthesized into a preferred direction for the master plan. This preferred direction incorporated key elements from both alternative schemes. Finally, this preferred direction was investigated in depth. Utility requirements and cost projections were calculated. The final plan

which emerged was an organic response both to the physical configuration of the campus site, the mission of the University, and its role as a citizen of Hammond. The plan is the work of the extended campus community, and of the Purdue University system, and equips the University with a clear direction for future growth.



CAMPUS CONTEXT

0 200' 400' N
SCALE: 1" = 200'





CAMPUS LANDSCAPE AT GYTE BUILDING

ANALYSIS

Sasaki's analysis of PUC was dominated by two broad themes: transformation and connections. Calumet has traditionally been a commuter campus, but has recently started a residential program. In addition, the University has long since played an important role for workforce development within Northwest Indiana. Although PUC will always retain this function, the breadth and depth of its academic programs are expanding. This change is taking place in the context of a disconnected campus: the academic north core is separated from residential and recreational life. The campus

is located in a dense residential neighborhood, and its relationships, both with its immediate neighbors, and more generally with the City of Hammond, are important factors for successful planning.

To develop these themes, the Sasaki Team carefully studied the campus and its environment. The analysis was composed of four main topics:

- Life on Campus—the role of student life, including residential and recreational life
- Capacity for Growth—the possibilities for future development
- Campus Image—the physical organization of the campus
- Strengthening the Learning Environment—the academic function of the campus



EXISTING LANDSCAPE FRAMEWORK AND ICONIC SPACES

Campus Image

Calumet's campus is framed by a grove of Oak trees to the north, the lawns along Woodmar Avenue to the west, a residential neighborhood to the east, landscaped right-of-ways along 173rd Street, and a large wetland to the south.

The primary entrance to campus is from the north along 169th Street, which is a designated truck route and supports a high volume of traffic. The University has a second entrance on 173rd street. This entrance is currently a four-way controlled intersection, allowing access both to the residential and recreational facilities in the south, and to the academic northern section of the campus. Both the 169th and 173rd street entrances feed directly to large, mostly uninterrupted parking lots. These parking lots dominate a first-time visitor's visual impression of the campus. Significant improvements would result if these parking lots were divided into parking

rooms by east-west bands of vegetation and trees, which would also direct pedestrians from their cars to nearby buildings, and serve important ecological functions in terms of bio-filtration and storm water management.

The campus already has several important east-west landscape features in the northern Oak grove and Founder's Plaza. The Plaza fronts the student center and contains native grasses which have been cultivated. Other important outdoor spaces on campus include the beautiful lawns along Woodmar Avenue, and the large wetland holdings to the south. In general, all these spaces are close—in fact the entire campus is within a ten minute walking circle—but they are disconnected and underutilized. PUC needs to link these areas via a network of north-south and east-west landscape improvements.

These kinds of connections are already valued on campus. The Peregrine Path effectively

links all of the North Academic Core as it runs indoors from the Anderson Building down to the Gyte Building, and then outdoors from Gyte down to Lawshe Hall. This popular pedestrian corridor is an essential north-south connector, and an analogous tree-lined outdoor corridor could become the pedestrian spine of the campus linking the academic north core with residential and recreation activity in the south.

Existing landscape configurations also have important habitat and hydrology impacts. The Oak grove reduces heat island effects and, along with Founder's Plaza, provides a home to various native insect, bird and mammal populations.

Storm water runoff is a key issue for PUC because of its proximity to important wetlands. The campus currently has large areas of impervious surfaces (primarily building roofs and parking lots). North campus is approximately 48% impervious



ARRIVAL PARKING AND IMPERVIOUS SURFACES

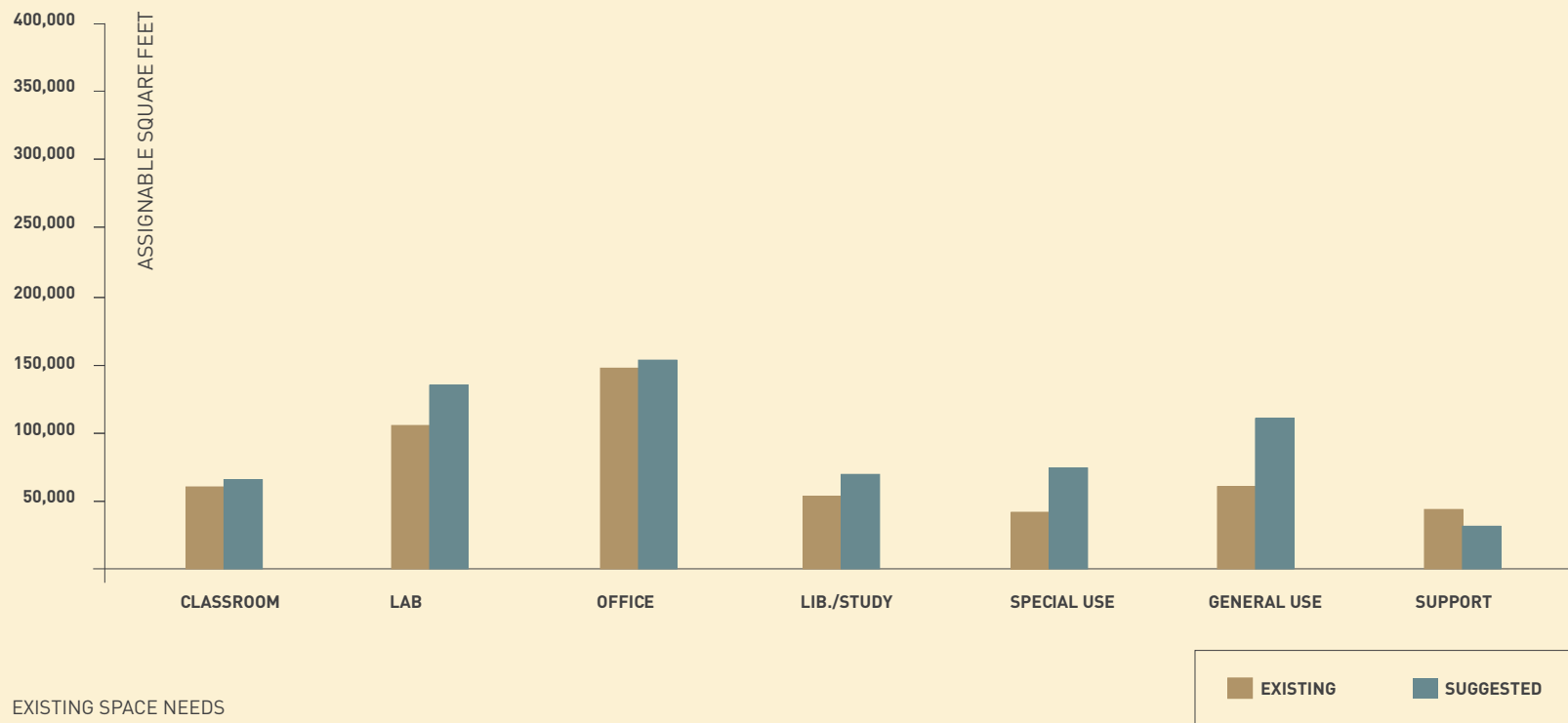
and generates nearly 34 million gallons of storm water runoff annually. New landscape initiatives should seek to increase stormwater infiltration and filtering prior to leaving campus via the existing culvert system.

The 94 acre wetland in the southern part of campus is an important landscape asset because it serves as a biological filter for the Little Calumet River, and assists in flood mitigation along the river corridor. It is also a habitat for numerous plant and animal species. These functions are important for the ecological well-being of the PUC campus, and for the regional watershed. The wetland falls under the jurisdiction of the Army Corps of Engineers and the Indiana Department of Environmental Management, and no alterations to the wetlands are allowed without permit approval from these two organizations. The built campus (including the grassed fields) is essentially on the northern edge of the wetland, which means that the campus

cannot extend further south. Reducing runoff from campus and engineering connective corridors of open space from the oak groves in the north to the wetlands in the south will benefit the biodiversity of the campus and have a positive impact on the wetland. It also offers a potential area for experiential learning about watersheds and storm water filtration, and is a possible research or demonstration area for the Water Institute.

Campus image goes far beyond aesthetics. The physical experience of the campus is a vital component of place-making. As PUC integrates its commuter and residential characteristics, the grounds and facilities must welcome students, staff, faculty, and visitors, and encourage them to linger on campus. A ceremonial entrance should combine the campus' natural beauty with a clear arrival sequence. The landscape framework must create strong connections between the various campus zones while mitigating ecological

impacts. Iconic spaces must create a physical, easily recognizable identity for the campus. This will have a marked impact on the University's reputation, ability to fundraise and attract strong students, faculty and staff, and capacity to meet its ambitious growth agenda.



Strengthening the Learning Environment

To understand the academic function of the University, the Sasaki Team examined enrollment projections, current and future space needs, schedule information and peak-usage periods, and desired departmental adjacencies.

The analysis also included the broader themes of flexibility and transparency. Given limited resources, it is important that the University should have a flexible framework for growth. This flexibility should extend to future buildings, allowing for adaptability in the face of ever-changing pedagogies and programs. The learning environment should be transparent, promoting collaboration and allowing easy access to activities, rather than sequestering them away from the larger community.

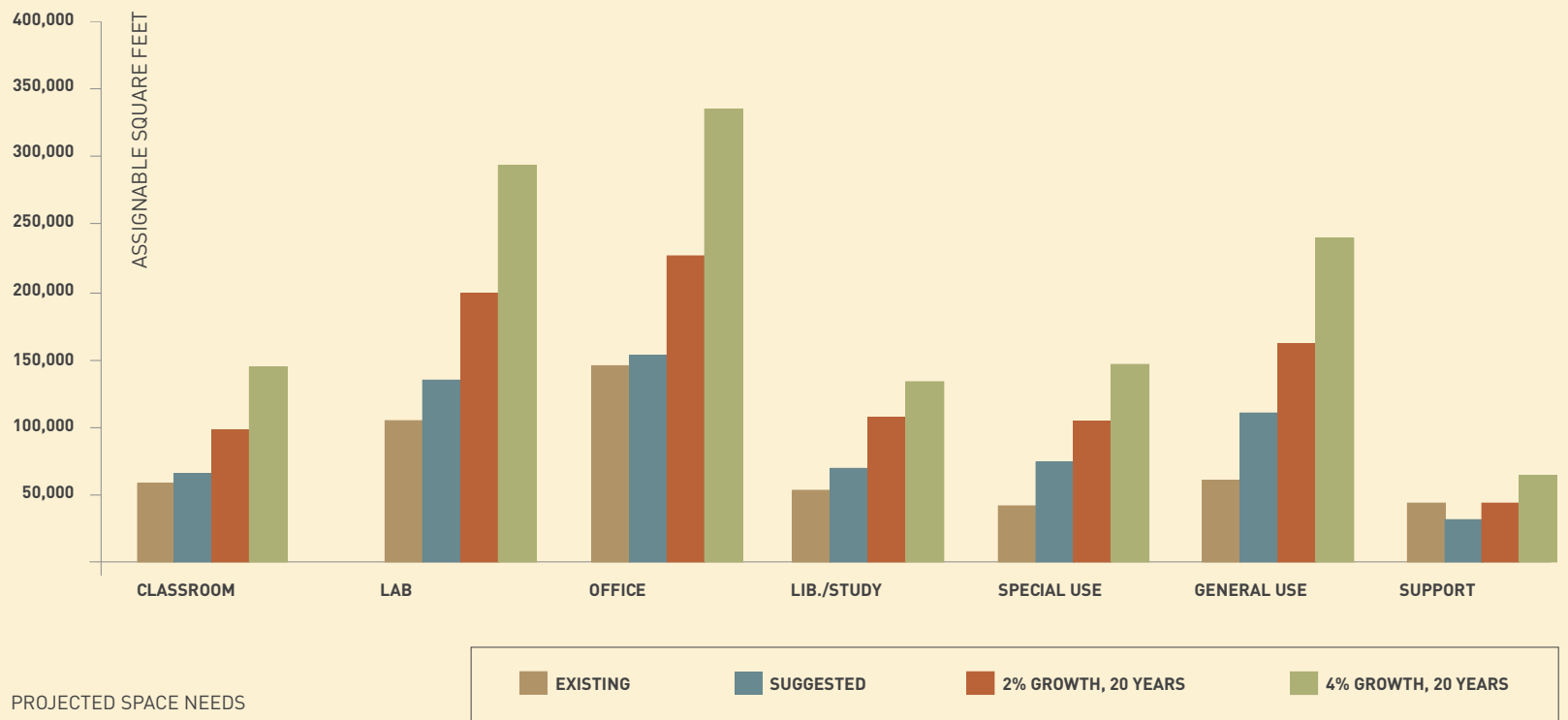
To compute space requirements, the design team used both national and regional standards, primarily the Council for Educational Facility Planners (CEFP) and Pennsylvania guidelines. Space recommendations were made in each of the major category codes for room inventory in the Higher Education General Information Survey (HEGIS), including classroom, laboratory, library and study space, recreation and special use, and general use (or student life) space. PUC currently has significant space deficits totaling approximately 143,000 assignable square feet of program (excluding residential and recreational space needs). While only minor shortages exist in classroom and office space, there is significant need for student life spaces, laboratory and demonstration space, and library space. Student life represents the largest need, about 35% of the total deficit. Currently, almost no lab space is designated for research, and laboratories make up approximately 20% of the deficit. Library and study space constitutes 10%

of the deficit. Recreation and special use space, such as media labs and demonstration space make up nearly 25% of the space deficit (note that demonstration space is often closely linked to laboratory space).

PUC has seen annual growth rates of about 2% over the last decade and the University hopes to continue this trend. This will magnify existing space shortages. PUC must address its existing space deficiencies as quickly as possible.

Although the University currently has sufficient classroom space, conditions vary widely. Furnishings range from tablet armchairs to office chairs. It is important to note that all space requirement computations are based solely on quantity, and do not take quality issues into account. This is particularly relevant when considering the future of the Gyte Annex.

Increasingly, more and more learning is taking place outside the classroom. The University



has recently created more informal lounge spaces, and we strongly recommend the continuation of this trend. In particular, the linkages between buildings on the Peregrine Path offer prime opportunities to create “hot spots” promoting interaction. Technology also plays a key role, and the University has begun a renovation process to improve the quality of its computer spaces. These improvements have been enormously successful, and typify the kinds of place-making necessary to ensure PUC’s successful transformation.

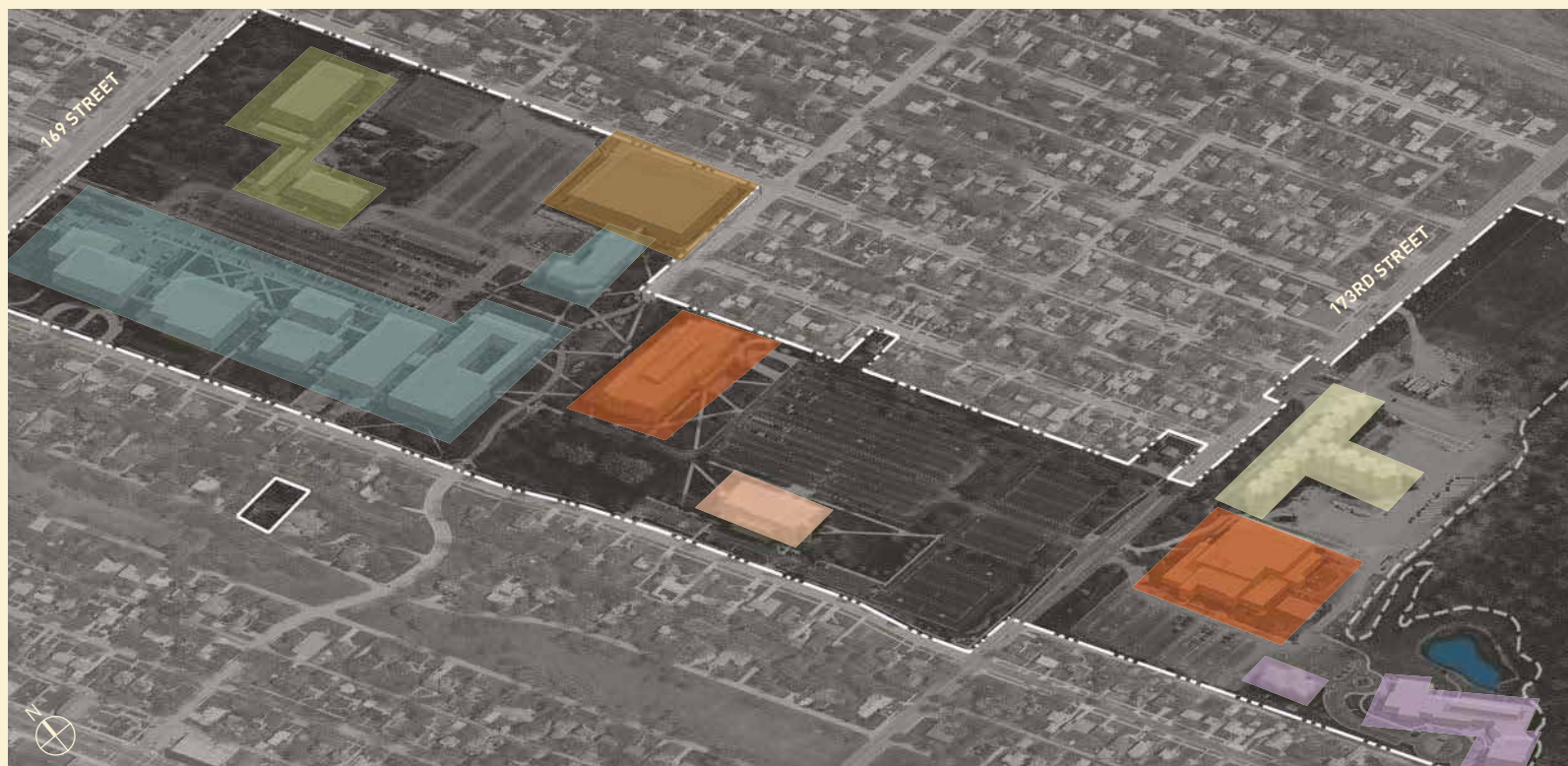
In addition to examining quantities of space, Sasaki investigated scheduling data to see how efficiently space is used. Despite having many evening classes, peak-usage at PUC still occurs during the traditional 11 AM class period. Scheduled activities are heavily focused in the Classroom Office Building and in Gyte, with relatively little scheduled activity in the buildings directly between them. There is almost no scheduled activity on Fridays or weekends.

We analyzed the results of a series of departmental questionnaires to identify desired adjacencies. Broadly speaking, these desired adjacencies fall along school lines. Biological Sciences, Chemistry & Physics, and Engineering desired to be co-located, as did Communications & Creative Arts, English & Philosophy and Foreign Languages & Literature. Similarly, the various Technology departments wanted to be together. On the whole, the professionally-oriented programs like Management, Nursing and Behavioral Science were comfortable operating autonomously. These desired adjacencies are not currently being met. This is particularly evident in the Schools of Liberal Arts, Engineering & Science, and Technology, each of whom is broadly distributed across at least five buildings.

Building design plays a strong role in collaboration between departments and in student engagement. Existing academic and student life-related buildings on campus

are generally not open and transparent to passersby. The addition of glass doors, windows, and open arcades would improve access and promote collaboration. New classrooms and any modifications to existing spaces should also emphasize flexibility of use, for example, choosing moveable furniture (as opposed to tablet-arm chairs) and ensuring wireless coverage of classrooms and hallways.

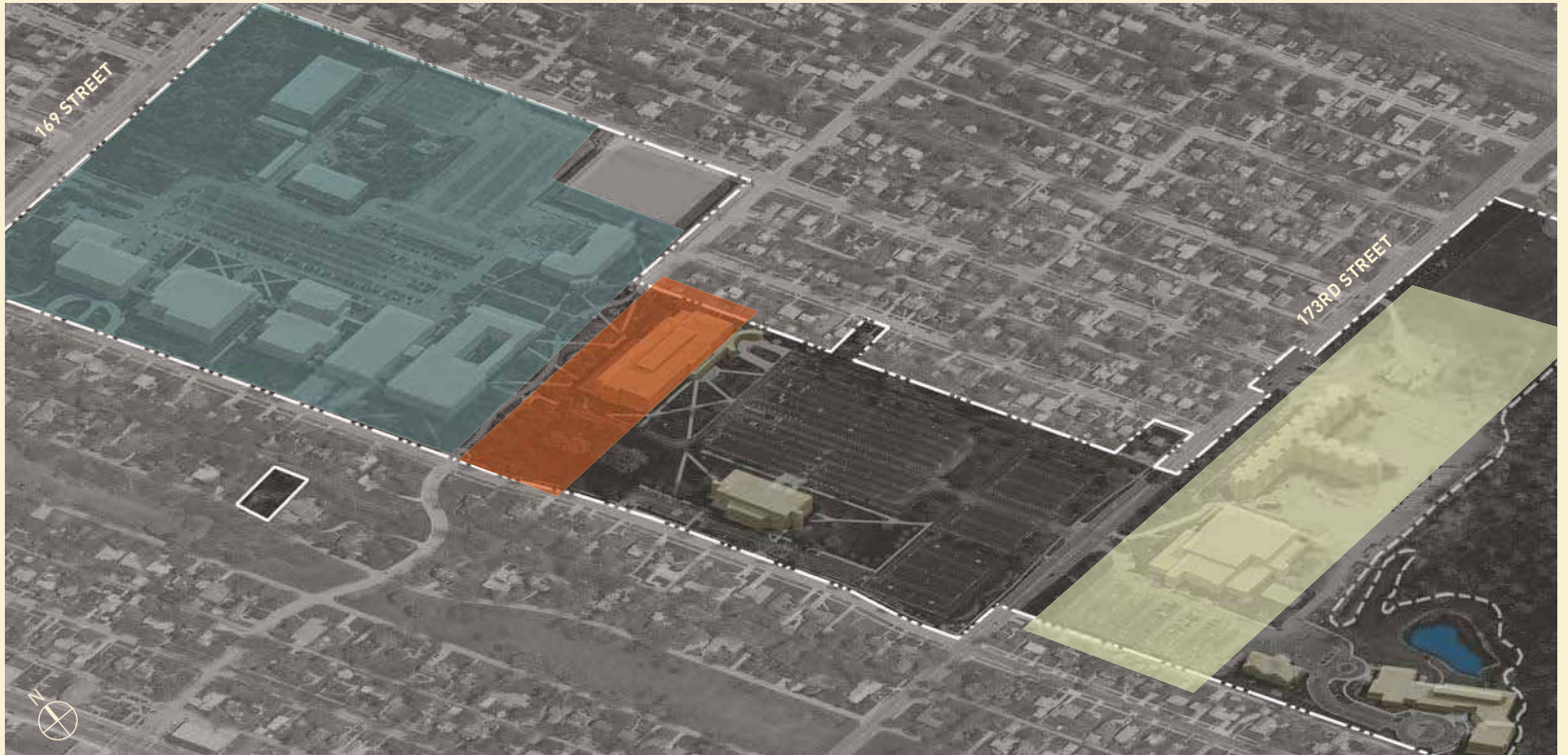
PUC currently operates several off-site facilities. These facilities make a valuable contribution to the University, and should not be reduced. That said, it is critical to develop a mass of activity on the main campus, and so it is the main campus which should be the critical focus of development.



EXISTING CAMPUS LAND-USE DISTRIBUTION

- Support Facilities
- Residential
- Administrative
- Student life/Recreation
- Academic
- Conference Center/Day care
- Structured Parking

Academic activity is focused in the north core. Administrative and student life functions are isolated in the central area of the campus. Residential and recreational life are located south of 173rd street.



THE CENTRAL PROBLEM : INTEGRATION

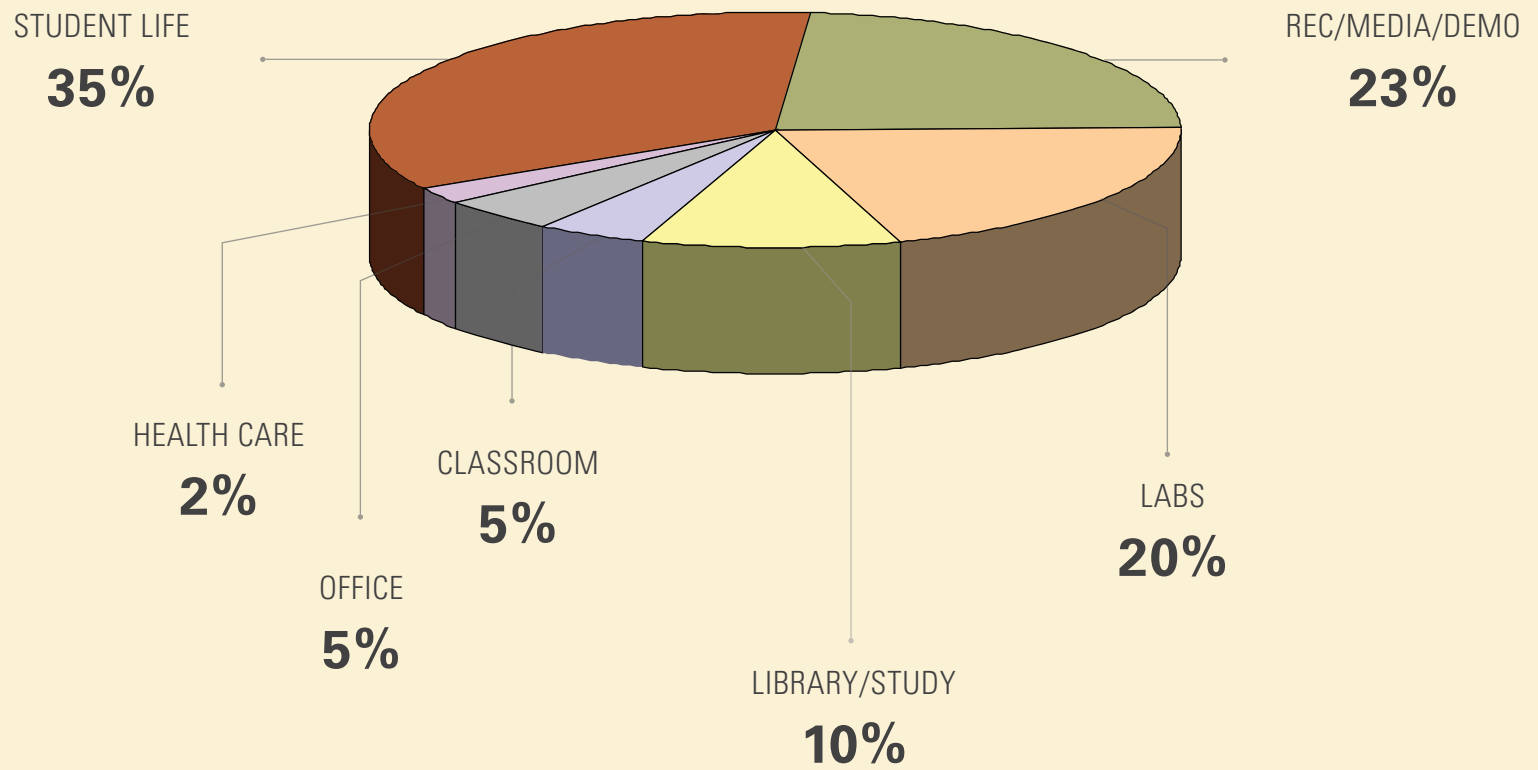
- Residential
- Student life/Recreation
- Academic

The central design challenge for Calumet is connecting the academic core in the north with residential life in the south.



New technology renovations merge learning and social spaces.

BREAKDOWN OF CURRENT SPACE NEEDS



The predominant current need is for student life and laboratory/demonstration spaces.

Adjacency matrix

- NA
- Desired Adjacencies
- Independent
- Potential Conflicts

	EDUCATION	BIOLOGY & SCIENCE	CHEMISTRY & PHYSICS	ENGINEERING	MATHEMATICS, COMPUTER SCIENCE & STATISTICS	BEHAVIORAL SCIENCES	COMMUNICATION & CREATIVE ARTS	ENGLISH & PHILOSOPHY	FOREIGN LANGUAGE & LITERATURE	HISTORY & POLITICAL SCIENCE	MANAGEMENT	NURSING	COMPUTER INFORMATION TECHNOLOGY	CONSTRUCTION MANAGEMENT & ENGINEERING TECHNOLOGIES	ELECTRICAL & COMPUTER ENGINEERING TECHNOLOGIES	MANUFACTURING ENGINEERING TECHNOLOGIES & SUPERVISION
EDUCATION	NA															
BIOLOGY & SCIENCE		NA	Desired Adjacencies	Desired Adjacencies												
CHEMISTRY & PHYSICS		Desired Adjacencies	NA	Desired Adjacencies	Desired Adjacencies											
ENGINEERING		Desired Adjacencies	Desired Adjacencies	NA	Desired Adjacencies											
MATHEMATICS, COMPUTER SCIENCE & STATISTICS	Desired Adjacencies				NA											
BEHAVIORAL SCIENCES						Independent										
COMMUNICATION & CREATIVE ARTS							NA	Desired Adjacencies								
ENGLISH & PHILOSOPHY							Desired Adjacencies	NA	Desired Adjacencies	Desired Adjacencies						
FOREIGN LANGUAGE & LITERATURE								Desired Adjacencies	NA	Desired Adjacencies						
HISTORY & POLITICAL SCIENCE										NA						
MANAGEMENT											Independent					
NURSING												Independent				
COMPUTER INFORMATION TECHNOLOGY		Desired Adjacencies			Desired Adjacencies		Desired Adjacencies						NA			
CONSTRUCTION MANAGEMENT & ENGINEERING TECHNOLOGIES														NA		Desired Adjacencies
ELECTRICAL & COMPUTER ENGINEERING TECHNOLOGIES				Potential Conflicts	Desired Adjacencies								Desired Adjacencies		NA	Desired Adjacencies
MANUFACTURING ENGINEERING TECHNOLOGIES & SUPERVISION				Desired Adjacencies									Desired Adjacencies	Desired Adjacencies	Desired Adjacencies	NA



LIBERAL ARTS



ENGINEERING AND SCIENCE



NURSING



TECHNOLOGY

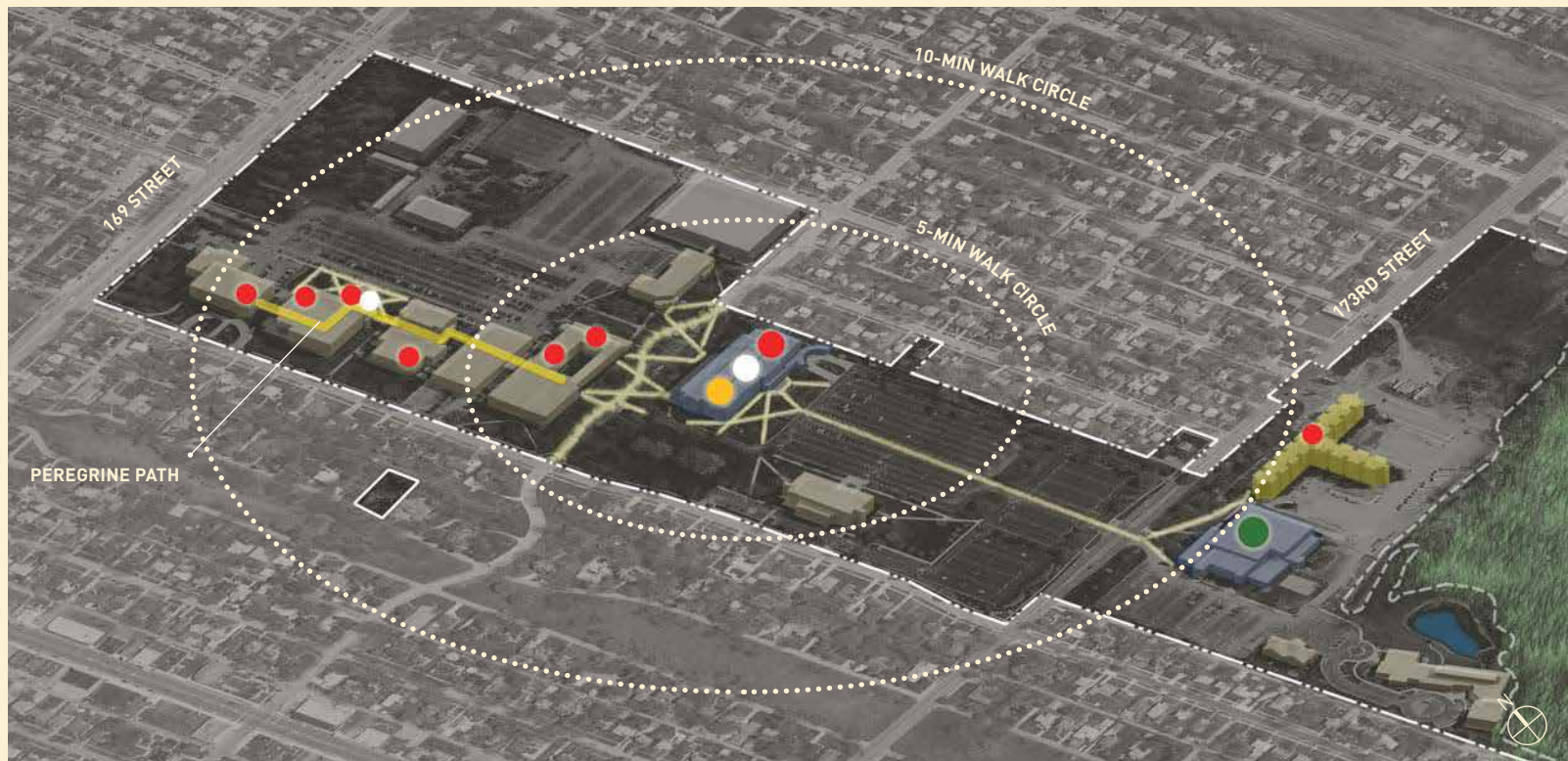


EDUCATION



MANAGEMENT

Current distribution by school



ON CAMPUS ATTRACTIONS

■ Library
 ■ Lounges/study areas
 ■ Dining/food
 ■ Recreation

Life on Campus

As PUC continues to enlarge its residential student population and attract more full-time students, campus life issues will become increasingly important. A lively and active campus attracts good students, faculty, staff, and visitors, and helps retain and energize the current population, fostering a sense of community and continued growth. As PUC transitions from an all-commuter campus to include a significant residential component, it will generate additional need for facilities particularly in recreation and student life spaces like cafes, lounges, meeting and study rooms, and entertainment venues. These spaces make a critical contribution to community.

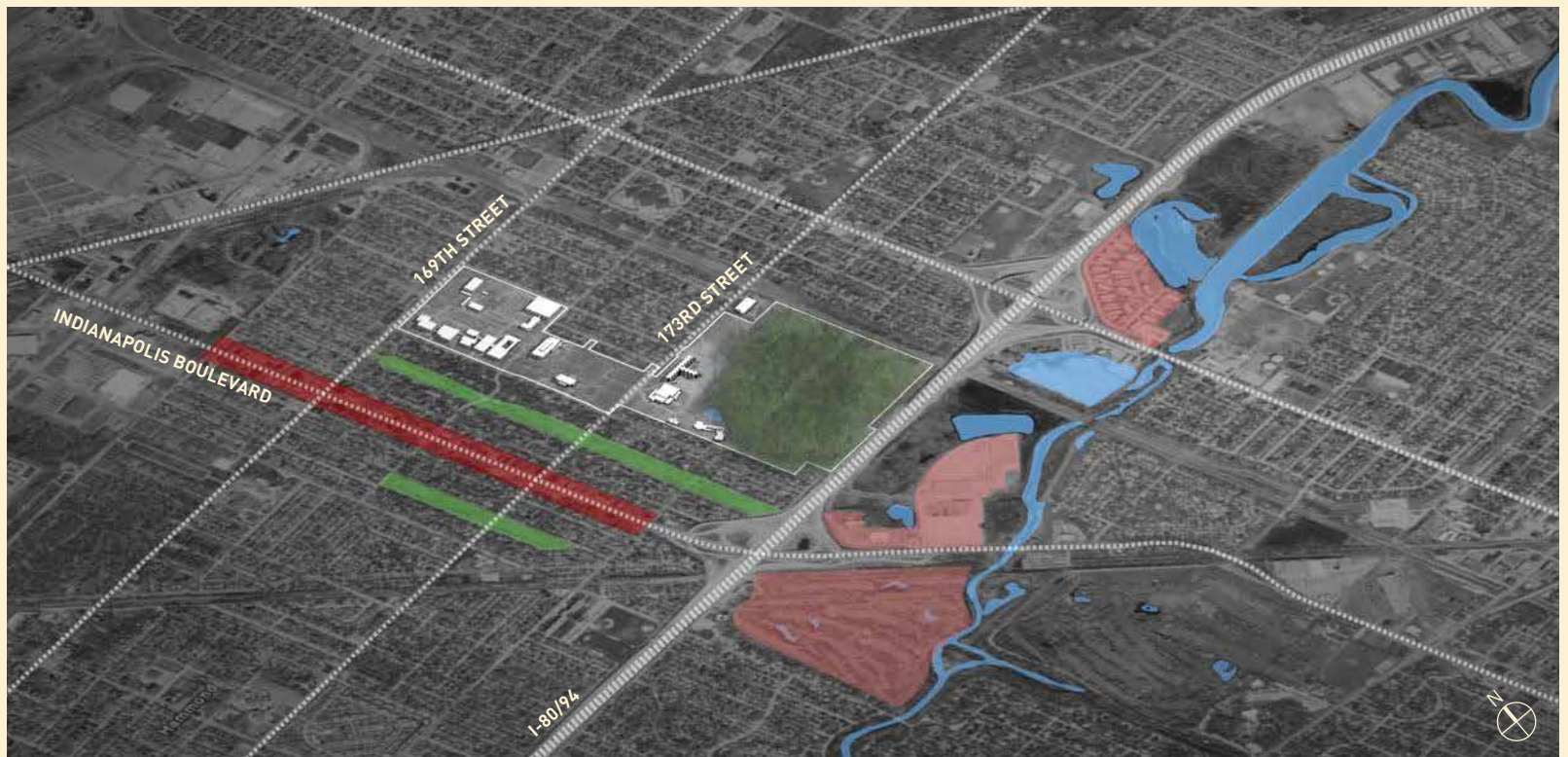
The current Calumet campus is extremely disconnected, with on-campus attractions located to the north and south, and no strong linkages between them. Student lounges

and study areas are located in the academic core to the north and the recreation center and student housing are located at the southern edge of campus, south of 173rd Street, with no strong pedestrian crossing. This lack of connection and quality of the pedestrian experience across 173rd Street contributes to the sense of isolation of the southern campus from the academic core, even though all campus facilities are located within a 10-minute walk.

While the University has considered placing a pedestrian bridge over 173rd Street to improve the safety of the crossing, this has proved difficult to finance. In any case, pedestrian bridges are typically only successful when connecting buildings on either side of the street. Sasaki does not recommend pursuing a bridge. Instead, the team believes traffic-calming measures, additional signage, and landscape improvements along 173rd Street will create a better crossing environment.

Furthermore, enhancing the pedestrian experience through the parking lots, leading students from the residence hall to the academic core, will unify the campus.

The space analysis showed a large deficit in all student life space. Addressing this shortage must be an immediate priority for the campus. Renovations and additions to satisfy student life needs should not be confined to one building, however. Potential exists to create “hot spots” along important intersections or edges of buildings, and the Peregrine Path runs through several such spaces which could become valuable interaction and relaxation areas. Informal learning and important interactions between students, faculty, and staff often occur in these public places where people are encouraged to collaborate and socialize. PUC’s recent introduction of wireless internet service in the student lounges has made them popular hot spots; future development should continue



REGIONAL ATTRACTIONS

■ Little Calumet River
 ■ Retail Corridor
 ■ Linear Parks
 ■ Proposed Big Box Retail

this trend and extend wireless service to dining areas like the student center cafeteria. This cafeteria is the only formal dining area on campus. As the university attracts more international and full-time students it will need to improve its dining opportunities.

The existing recreation center needs to be expanded, particularly given the growing residential population. The current facility lacks visibility and presents a blank façade to 173rd street. Adding a glass-fronted fitness area along 173rd would create a strong street presence, and an inviting lobby and café would create an important congregation place for the southern campus. No playing fields are currently available on campus.

Some off-campus attractions are accessible by car, such as the retail corridor west of campus along Indianapolis Boulevard, but there is a marked lack of facilities normally associated with a campus town, such as bookstores,

restaurants, and coffee shops. These kinds of facilities will become increasingly important as the campus population changes and grows. Neither the current retail nor the Cabela store south of the I80/94 highway are within walking distance of campus. Both are difficult to reach on foot. An ideal solution would be to encourage growth of a nearby college town mixed-use development in alliance with the City of Hammond. This alliance could provide additional housing and commercial developments such as restaurants and small stores that would enliven the area, and make it a hub of activity. The 173rd Street corridor is the most attractive option for development of a campus town. We also examined the potential for alliances north of 169th Street, but this street is designated as a major truck route by the State, and the traffic volume is higher than 173rd Street, so crossing it is more difficult.

Additional opportunities for housing are important, because the on-campus residential population of PUC must remain below 10% of the student population by agreement with the Indiana Commission for Higher Education. The first two phases of on-campus housing do not exceed this limit, but in order to have a critical mass of activity, PUC should aim to house 30% of its students in close proximity to the existing and planned residences. This could be accomplished by both proposing an increase in the 10% cap to the State, and pursuing alliances with the City and with private developers. Currently, 9,000 students live off campus, only 500 of whom live within a mile radius. All faculty and staff live off campus and only a handful of them live within a mile radius.



LOCATION OF CURRENT PUC STUDENTS

PUC draws widely throughout north-west Indiana. Concentrating a significant student population on or near campus will create vibrancy and community.



STUDENTS AND FACULTY LIVING NEAR CAMPUS

- Faculty
- Students

“There’s no there there”—the plan needs to create a density of population on or near the campus.



PARKING OCCUPANCY

Greater than 80% 30%-80% Less than 30%

Capacity for Growth

To analyze whether or not sufficient land is available to support future program needs, Sasaki calculated land areas, building areas, parking lot sizes and usage, and the Floor-Area Ratio (FAR) of current buildings and predicted new construction. The total land area of the existing campus is 177 acres:

- North of 173rd street: 59 acres, 17 acres of which are parking
- South of 173rd street (excluding wetlands): 35 acres, 5 acres of which are parking
- Wetlands: 83 acres

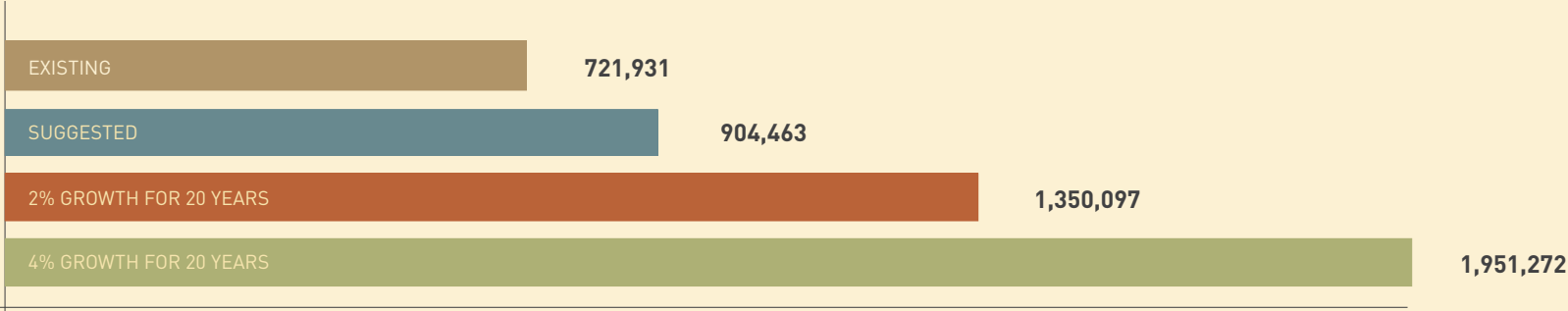
The academic core north of 173rd Street is the densest area of campus. Program needs here must be balanced with the sanctity of open space; sacred spaces such as the Oak Grove and Founder's Plaza should not be considered for development. The current FAR of the campus above 173rd

Street is 0.31, which suggests there are development opportunities. The great centers of American campuses typically have FAR values in the 0.8 to 1.2 range. While this range may be slightly higher than is desirable for PUC given its neighborhood location and narrow land holding, accommodating all program growth for the next 20 years (assuming 2% annual enrollment growth), would only increase the FAR to 0.56.

To create the necessary density of activity, the southern campus below 173rd Street should remain dedicated to residential and recreational activity. This area has sufficient space to house 10% of the projected population in twenty years—the current maximum allowed for the University. Note that no development can occur in the wetlands.

Parking is the only limiting factor in the growth scenario. Currently, there is surplus parking: north campus lots, particularly above Lawshe

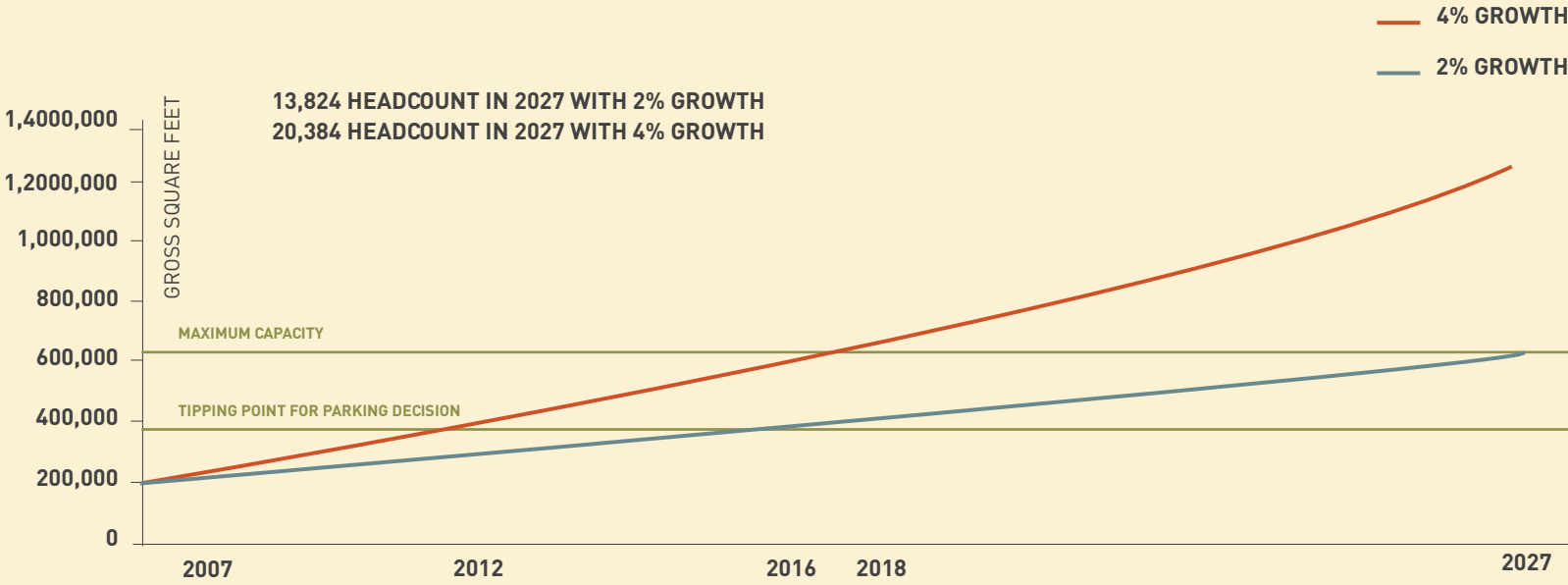
Hall are typically at or above 80% capacity at the busiest time of day, but the majority of lots in central and south campus are below 40% capacity. There is also significant room in the parking garage. This surplus suggests there will be no short term need for additional parking facilities, but as enrollment grows and existing parking lots are used as building sites, the University must decide between acquiring additional land holdings for surface parking and constructing additional parking garages. The significant additional cost of parking structures will have to be weighed against the difficulty of intruding into neighborhoods.



BUILDING DEMAND: GSF EXCLUDING RESIDENTIAL AND RECREATIONAL

	CAPACITY	11:10 AM OCCUPANCY	% FULL	EFFECTIVE CAPACITY	SURPLUS
CAMPUS TOTAL	3579	2531	70.7%	3221	690

CURRENT PARKING OCCUPANCY

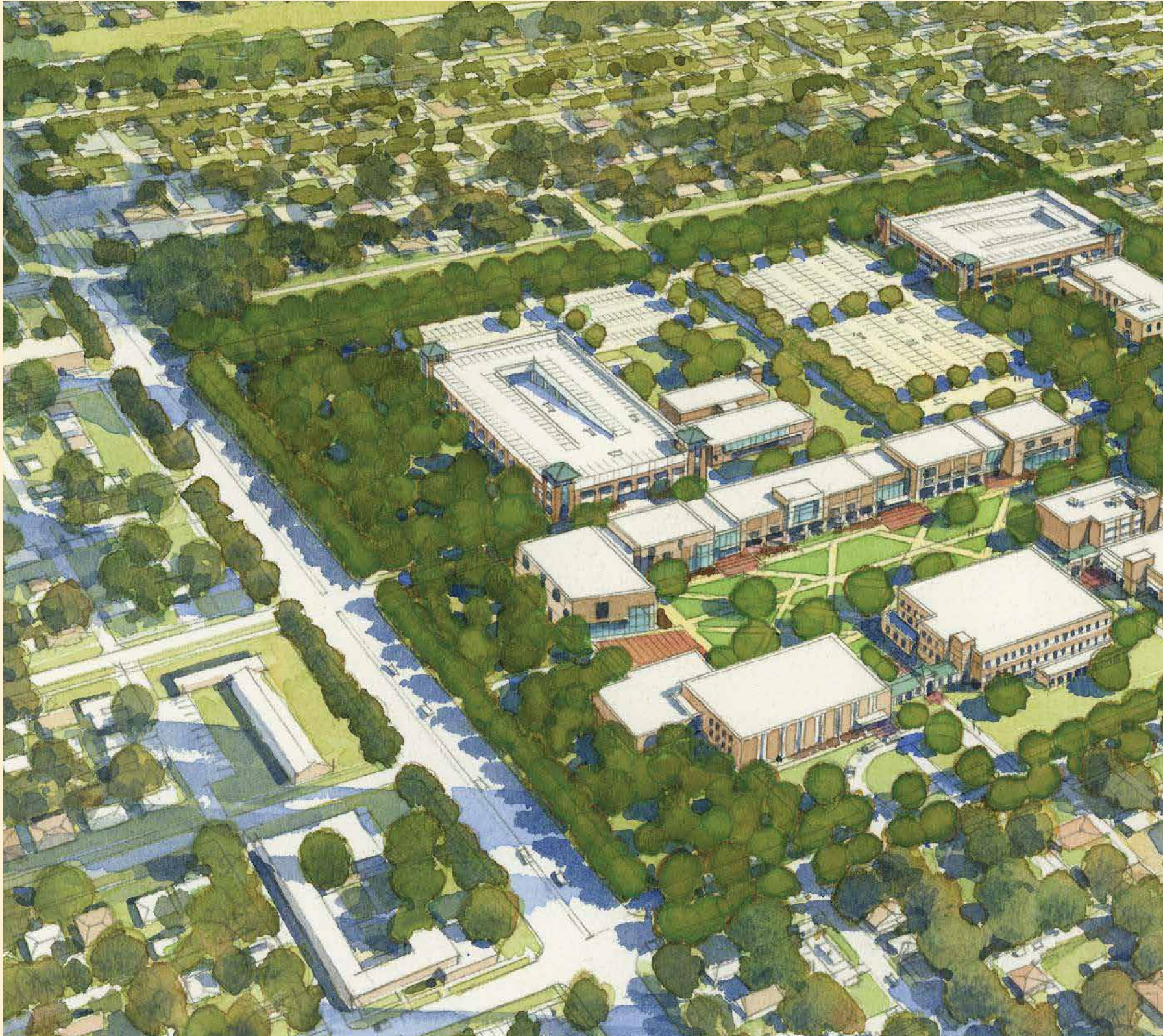


BUILDING INVENTORY PROJECTIONS



CAMPUS MASTER PLAN



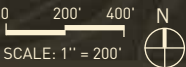


MASTER PLAN WATERCOLOR





FRAMEWORK PLAN



FRAMEWORK

Landscape is a powerful tool for organizing campus development. It can create strong linkages between the academic north core and the housing and recreation district to the south. Key landscape features will enhance the pedestrian experience, create a sense of place, and insulate the campus from parking areas, while also breaking existing lots into manageable parking rooms.

Sasaki and the PUC master planning committee explored two landscape framework alternatives in developing the master plan. Both options maximized current and future land opportunities. The corridors concept emphasized linear connections along the north-south axis of the campus. This placed immediate priority on the relatively undeveloped central part of campus. The quadrangles concept was more introspective and focused on existing strengths by creating rectangular green spaces framed by buildings in the north academic core.

The direction that emerged from these two alternatives was based primarily on the corridors scheme with some elements borrowed from quads, where appropriate. The final build-out of the two schemes was similar, but the emphasis placed on connections in the corridors framework was the deciding factor. PUC is currently a disconnected campus. Bridging the gap between the academic world and the growing residential population—and doing so in a way that supports the University's transformation agenda—is one of the plan's primary goals. For this reason, the central part of campus bounded by the student union to the north and 173rd Street to the south, plays a critical role in the early phases of the master plan. This area is the geographic center of the campus.

The transformation of the University requires the creation of iconic, memorable spaces on campus. The existing tree-covered lawn bounded by Lawshe Hall to the south, the student center to the east, the Gyte Building

to the north, and Woodmar Avenue to the west is a beautiful area with tremendous potential for distinctive place-making. It could be further enhanced with improved framing and edge definition. The area is ideal for a new iconic campus heart that links with Founder's Plaza and acts as a transitional space from the existing academic core to proposed development further south. In this transformed space at the center of campus, pedestrians could gather and flow between classrooms, student and recreation centers and residence halls.

In order to pull the center of campus southward and create a strong connection with residential and recreational areas, the framework relies on a north-south corridor partially inspired by the linear green park spaces to the west of campus. This north-south corridor will become the campus spine, acting as an outdoor metaphor for the Peregrine Path. The corridor will contain filtered canopy trees that form a permeable green screen on its eastern edge. It will require the removal of only a single bay of parking and will form a buffer zone for pedestrians walking between parking rooms and campus buildings. At the southern terminus of the axis, the wetland will be preserved and continue to act as a filter for the Little Calumet River as well as assist with flood mitigation along the river corridor.

East-west groves of trees will branch off the north-south spine. New bands will complement existing east-west spaces like the Oak grove on 169th Street, Founder's Plaza, and the existing wooded break in the parking lot directly north of 173rd Street. These bands will organize existing parking lots, breaking them into more manageable parking rooms. The rooms will improve the University's ability to control where people park if the need should arise. The improved parking configuration will help regulate traffic and better define potential spaces for new buildings. The bands will consist primarily of grasses with trees and other vegetation as appropriate. They will also serve an important ecological function by receiving and initially filtering

stormwater runoff from the parking surfaces. This process will remove hydrocarbons and other pollutants from the runoff, before it enters the stormwater culvert system. Infiltration and recharge will also be increased during this process, benefiting the southern wetland. In addition, the vegetated bands will help mitigate the large heat island currently caused by the expansive parking surfaces.

Ultimately, the transformed landscape will contribute to a more distinctive, welcoming campus character with appealing green spaces, strong connections, and better opportunities to reflect the University's values.

PHASING

The master plan consists of three phases. The initial phase has several "first moves" specified for immediate impact. The first moves must accomplish two goals: mitigate existing program deficits so that the University does not fall further behind in meeting its facility needs, and immediately strengthen connections between the academic core in the north and the residential and recreational facilities in the south by locating buildings in the central area of campus and developing a north-south green. The original intent of Phase I was to ensure the removal of all facility deficits, but if the Gyte Annex is demolished, this will not be possible.

Phase I contains all major landscape moves which frame future building sites, establish important connections, and partition the existing parking lots into rooms. The key features of Phase II are the development of a second building corridor along the eastern flank of the north core, and the construction of a gateway building to anchor the important 173rd Street corridor. Phase III represents the full-build out of the campus with an established residential village in the south, and a completed eastern building corridor running the full north-south length of the campus.

The campus town, to be developed in alliance with the city and private developers,



- 1 North-South Landscape Corridor
- 2 Library Addition
- 3 Student Center Addition
- 4 Technology Building
- 5 Student Housing Second Phase
- 6 Demolition of Gyte Annex

FIRST MOVES

0 200' 400'

SCALE: 1" = 200'

N

is a crucial ingredient of the plan. It is shown in Phase III, but should happen as soon as suitable allies can be found.

The master plan accommodates 2% enrollment growth for the next twenty years. The phasing reflects these needs, as well as the realities of funding constraints.

First Moves

Proposed first moves capitalize on existing planning for a new Technology Building, and for a second phase of student housing. The driving concept is that limited targeted investment can have a synergistic and transformative effect. The goals are to address existing space deficits and strengthen connections between various campus zones. Landscape improvements and new construction in the central areas of campus are the primary strategies.

A proposed north-south landscape corridor will link previously isolated campus districts and define the framework for future development around a new campus heart. This corridor will form a new campus spine. An informal allée of canopy trees will create a transitional buffer zone between surface parking and the campus buildings.

Maximizing construction at the geographic center of campus, the master plan proposes a five to six story transparent addition to the library with large atrium spaces. This will alleviate pressure on student life space by enabling the back-filling of the existing library in the student center. More space could potentially become available if the bookstore were to move to the campus town. The library addition will provide a focal point for the campus and create a marketable iconic image which easily identifies Purdue Calumet. An addition on the north face of the student center will provide additional student life space, and anchor the primary entrance off 169th street, which will be relocated to the east.

The Technology Building will begin to meet the University's academic space needs, primarily in lab and demonstration space. The building should be placed on the north side of Lawshe

Hall, where it will also contribute to the definition of the proposed new campus heart, framed by the library tower to the East and the Gyte Building to the north. PUC generated a program estimate for the Technology Building of 58,195 assignable square feet. The needs which this identified program will meet are genuine, and it is difficult to see where cuts can be made if funding levels will not support this level of program. Sasaki investigated the possibility of moving the centers and institutes currently included in this program into the potential new library addition, but this may create several political challenges, and would only provide marginal space savings. The request currently before the Legislature stands at \$26.5 million; the University estimates that approximately 30,000 assignable square feet can be constructed with this amount. Sasaki's internal estimates suggest this level of funding would provide slightly more space (approximately 39,000 assignable square feet), but still significantly less than the program estimate. These differences are attributable to differing requirements in laboratory investment, and since the Calumet estimates are based on an actual program, they are probably more realistic. The master plan shows the Technology Building at 39,000 assignable square feet (60,000 gross square feet).

The second phase of student housing is included in the first moves. The new facility will double the current number of residential beds, with significant contributions to desired vibrancy and sense of community.

Although the most urgent goal of the first phase is to address the University's space needs, one alternate priority identified by the University's academic community is the demolition of the Gyte Annex. The building's occupants face many difficulties, and the University has correctly assessed that the Annex cannot be used long term without extensive and costly renovations. The return on this investment is unlikely to match the cost. Because of this, the plan anticipates that the Annex will be demolished shortly after the Technology Building becomes operational.

No exact date for this removal is specified in the plan; the condition of the Annex will be reviewed on a year-by-year basis. That said, the Annex's removal will have significant consequences for the plan's attempts to address the University's existing space deficit. If funding for the Technology Building is not increased, there will be essentially no space gains when the new building is constructed and the Annex is demolished. Even if additional funding can be secured, it will not be possible to address all identified space deficiencies in Phase I of the proposed master plan. Sasaki therefore believes that the provision of temporary space, either via trailers or rental, may become necessary. The master plan recommends that the site of the Annex remain open until the very long term (the end of Phase III), when a new building is constructed.



- 1 East-West Groves
- 2 Academic Building
- 3 Demolish Facilities Building
- 4 Recreation Center Addition
- 5 Recreation Fields
- 6 Improved 173rd Crossing
- 7 Plant Extension

PHASE I

0 200' 400' N

SCALE: 1" = 200'

Phase I

The main purpose of the first phase is to address existing space deficits and strengthen connections between various campus zones. The first moves begin to address these concerns, creating landscape connections, and concentrating building development around a new campus heart.

All major landscape moves should be completed in Phase I. This requires the construction of east-west green groves in the northern and central part of campus which divide existing surface parking into parking rooms. In the long term, this may help with parking management, should it become necessary to control access to specific areas on campus. The new bands compliment existing campus strengths: the Oak grove to the north and Founder's Plaza in front of the student center. They also perform important ecological functions like bio-filtration and storm water management.

To further meet academic needs, a second new academic building on the south side of Lawshe Hall is recommended. Specific departmental occupants for this building have not been identified, although the University has begun conversations in this regard. The new building will consist of 60,000 gross square feet. The ground floor should include uses for general student life.

The current facilities building at the north end of campus should be demolished towards the end of Phase I to increase opportunities for needed surface parking, and allow for the creation of the east-west green bands in the northern academic core. The building's functions can easily be moved off-campus if necessary. Current plant capacity can only support approximately 50,000 additional gross square feet of new building, so either a move or expansion will be necessary. See the following Utilities section for more detail.

The increased residential population will mandate the construction of an addition to the recreation center at the southern end of campus. This will include a transparent

exercise facility located on 173rd Street with a major street presence. This will also act as the southern terminus of the north-south green corridor. Two practice fields which, combined, form one full championship size soccer playing field at the south east corner of campus will provide needed opportunities for outdoor recreation activity. Improved pedestrian access along the green corridor, and better opportunities for crossing 173rd street will facilitate access to the recreation venues, and help connect residential life with the academic function of the northern and central campus.

Construction in Phase I is not intended to accommodate increases in enrollment (this is particularly true if the Gyte Annex is removed). Instead, the construction in this phase is aimed at addressing the existing space shortages. At the completion of Phase I, the campus will have approximately 1.2 million gross square feet (excluding parking structures) and 754 residential beds.



- 1 Academic Row
- 2 Gateway Building
- 3 Parking Garage

PHASE II

0 200' 400' N

SCALE: 1" = 200'

Phase II

The key elements of Phase II include the construction of a new academic building row in the north core. The linear shape of the buildings form a corridor that frames the eastern edge of the north-south green spine. Existing surface parking lots will be used for building sites. Student life uses should be distributed along the ground floors of these new buildings. On the southern end of the central campus, on the corner of Woodmar Avenue and 173rd street, an important gateway building will anchor the mixed-use development along the 173rd street corridor, which will house the proposed campus town on its northern side and student housing, the recreation center and the practice fields on its southern side.

The campus town will require alliances with the City of Hammond and with private developers. This additional housing will compliment the University's own residential population which is currently limited to 10% of enrollment by agreement with the Indiana Commission for Higher Education. Comfortable student housing, in proximity to food, with sufficient vibrancy, activity, entertainment and basic services, is vital to transforming a commuter school into a residential campus. This campus town is detailed in Phase III, but should happen as soon as possible.

The loss of surface parking necessitated by building construction and the resulting increases in enrollment will require the University to decide between building additional parking structures or acquiring near-by property for surface parking. Building parking garages is likely to be much more expensive than property acquisition, but weighing this additional cost against the impact of the University's intrusion into near-by neighborhoods will be a difficult calculation that the University will need to make in conjunction with interested stakeholders.

The anticipated enrollment PUC could support at the end of Phase II is about 11,000 with approximately 1.5 million gross square feet of buildings (excluding parking structures).



- 1 North-South Building Corridor
- 2 Mixed-Use Building
- 3 Academic Building
- 4 Residential Village
- 5 Parking Garage
- 6 Campus Town

PHASE III

0 200' 400' N

SCALE: 1" = 200'

Phase III

The third phase represents the full build-out of the campus. The second north-south building corridor along the eastern edge of the green spine is completed in the central portion of the campus, and ends with an important mixed use building on 173rd Street. This building could potentially house student-life and retail uses, or if the residential cap increases above 10%, additional student housing. The Gyte Annex is finally replaced with a new academic building, constructed around an open court.

The residential village south of 173rd Street is completed with a third phase of housing. This requires the reconfiguration of surface parking in the southern campus, with the existing residential parking transformed into enclosed quads where students can relax and congregate, and the long-term relocation of the day-care facility, so that it is not surrounded by a sea of cars. A new day care facility could either be located just north of the existing pond, or could be incorporated into the third phase of student housing.

Parking requirements in the north and central portions of campus will also increase. If the University opts for property acquisition and surface parking in Phase II, then the second garage should now be constructed in the central region of campus. If the garage was constructed in Phase II, a third garage will be needed in the far north of the campus.

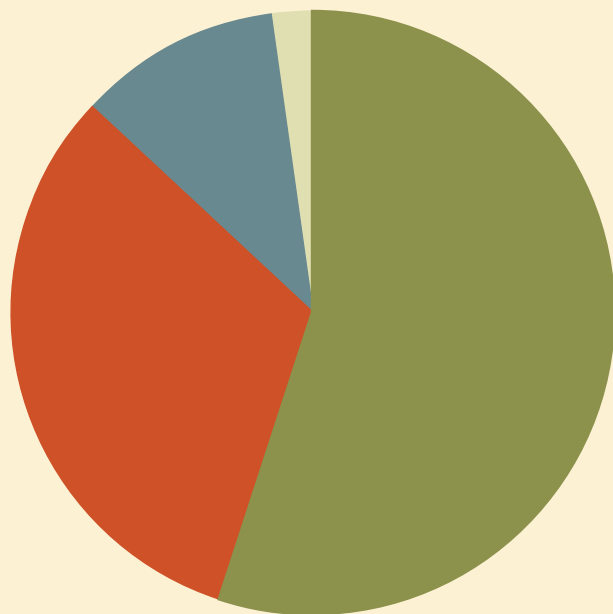
At full-buildout, the campus will support an enrollment of about 13,800 with approximately 1.9 million gross square feet (excluding parking structures). The number of residential beds will be 1,131.

Campus Town

A Campus Town close to student housing and residential neighborhoods should be constructed as soon as appropriate private developers can be identified. This mixed-use development will help meet student needs to find more housing within walking distance of the campus. Developers could rent apartments to students, whose presence would contribute to the density and vibrancy necessary for generating a sense of place. The ground floor of this development should be devoted to retail. This would give commuter students reasons to linger on campus to share meals, participate in group activities, and potentially decrease their use of vehicles, and would provide resident students with the facilities they require. The campus town, consisting of residential and ground-floor retail outlets like the campus bookstore, coffee shops and restaurants, would become an important destination in its own right, and thus contribute greatly to the overall life of the University.

CAPACITY FOR GROWTH

EXISTING LAND USE:

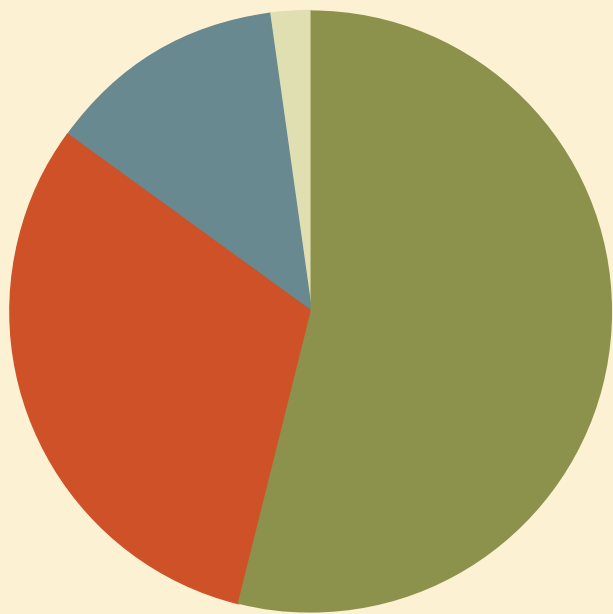


FAR: 0.24

- Open Space*
- Building
- Structured Parking
- Surface Parking and Roads

PARKING: 76% SURFACE, 24% STRUCTURED*
SURFACE AREA: 55% PERVIOUS, 45% IMPERVIOUS
EXISTING GSF: 947,000*

PHASE ONE:



FAR: 0.32

- Open Space*
- Building
- Structured Parking
- Surface Parking and Roads

PARKING: 79% SURFACE, 21% STRUCTURED*
SURFACE AREA: 54% PERVIOUS, 46% IMPERVIOUS
EXISTING GSF: 310,000*

* NOTE: GROSS SQUARE FOOT CALCULATIONS DO NOT INCLUDE RELOCATED FACILITIES BUILDING & GARAGES. OPEN SPACE CALCULATIONS DO NOT INCLUDE THE WETLAND.

PHASE TWO:



FAR: 0.39

- Open Space*
- Building
- Structured Parking
- Surface Parking and Roads

PARKING: 54% SURFACE, 46% STRUCTURED*
SURFACE AREA: 53% PERVIOUS, 47% IMPERVIOUS
EXISTING GSF: 570,000*

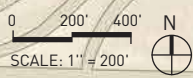
PHASE THREE:



FAR: 0.49

- Open Space*
- Building
- Structured Parking
- Surface Parking and Roads

PARKING: 41% SURFACE, 59% STRUCTURED*
SURFACE AREA: 55% PERVIOUS, 45% IMPERVIOUS
EXISTING GSF: 959,000*



OFF-CAMPUS OPPORTUNITIES

The University should re-acquire use of the Armory either when the ninety-nine year lease expires, or at any earlier possible date. It would be ideal for additional recreational facilities.

The University is currently seeking to acquire the Woodmar Clinic property. If the connecting property between the Clinic and the existing campus holdings could also be acquired, this would allow for the further cultivation of the northern Oak groves, and establish an extended northern presence for the University along 169th Street.

The master plan identifies two areas of key strategic importance to the University and the City of Hammond.

The first area contains the first two parcels to the north of 173rd Street, bounded by Ontario Avenue to the west and the mid-block before Schneider Avenue to the east. This area contains the new campus town. The University should work with the City to establish street guidelines and a zoning overlay. The new zoning should allow for mixed-use development, higher density residential populations, height variances up to 45 feet, and appropriate parking ratios.

The second area is bounded by 171st Street to the north, 173rd Street to the south, Ontario Avenue to the west, and Wicker Avenue to the east (excluding the parcels in the campus town). This area has undergone dramatic change. Traditionally a single family neighborhood, it has been inundated by student demand for housing, leading to absentee landlords and code violations. PUC should work with the city to allow density bonuses and appropriate parking, so the private sector can meet the demand for housing. This is necessary to preserve the remaining single family neighborhoods to the east. A number of

parcels within this area once belonged to the University, and the area as a whole has obvious geographical strategic importance. The University should monitor it closely.



- Signalized Intersection
- ➔ Primary Vehicular Entrance
- Parking Garage
- Surface Parking
- Proposed Building
- Existing Building

TRANSPORTATION

0 200' 400' N

SCALE: 1" = 200'

TRANSPORTATION

The master plan simplifies arrival sequences. The entry to the north lot on 169th Street will shift east in order to make room for landscape features that strengthen the north-south spine of the campus, and to help regularize traffic patterns between northern lots in the future.

On the south end of campus, the east-west corridor on 173rd Street will become a major entryway. Working with the City of Hammond, the University will need to devise new traffic configurations to accommodate and regulate both pedestrians and cars. The north-south campus spine will continue across 173rd Street and connect the southern residential and recreation district with the rest of the campus via a raised pedestrian crossing.

The current four-way intersection across from the recreation center on 173rd Street will be eliminated to enhance the pedestrian experience. Instead, traffic signals will be added to 173rd Street’s intersections with Woodmar Avenue and Ontario Avenue. 173rd Street will have three lanes of traffic with the middle lane designated for turns only. The main entryway to the academic campus will be at the intersection of 173rd Street and Ontario. Entry to the southern residential portion of campus will be via the existing alleyway on the west side. Where possible, 173rd Street should allow contiguous parallel parking at curbside, except where space is required the turning lanes.

The broad central crosswalk should have signal call-buttons to accommodate pedestrians moving between the northern and southern districts. The call-buttons should coordinate with the proposed signals at Woodmar and Ontario. The section of 173rd Street between these two avenues should be clearly differentiated through the use of signage, landscaping, and pavement treatments to clearly mark this area as a campus zone.

PARKING SPACES						
PHASE	TOTAL SUPPLY	DEMAND	SHORTFALL/SURPLUS	HEAD COUNT	SURFACE	STRUCTURE
Existing	3578	2880	698	9600	2708	871
First Moves	3626	2880	746	9600	2755	871
Phase One	4077	2880	1197	9600	3206	871
Phase Two	4417	3420	997	11400	2394	2023
Phase Three	4939	4147.2	791.8	13824	2027	2912
PERCENT OF TOTAL PARKING						
PHASE	SURFACE	STRUCTURE				
Existing	77%	23%				
First Moves	76%	24%				
Phase One	79%	21%				
Phase Two	54%	46%				
Phase Three	41%	59%				



- Chilled Water Return
- Chilled Water Supply
- Electric
- Gas
- Potable Water
- Steam/Condensation Return
- Storm
- Telephone
- Proposed Building
- Existing Building

UTILITIES

0 200' 400' N

SCALE: 1" = 200'

UTILITIES

Sasaki recommends keeping new building construction out of primary existing utility corridors. The goal is to impact the least number of utilities within the master plan's framework, and to establish consolidated utility corridors throughout the campus. The Mechanical/Electrical systems will require some upgrades:

- **Steam:** New gas fired low pressure steam boilers and stack should be added to the existing Central Energy Plant. New dual conduit underground steam and condensate piping will be required to connect the plant to new buildings.
- **Chilled Water:** The existing central chilled water plant should be expanded to provide energy efficient chilled water to new academic buildings. A pair of new corrosion resistant underground supply and return pipes should distribute chilled water to the buildings. A new 500 ton chiller and new cooling towers will be required for Phase I. Distribution should be via a variable speed pumping system.
- **Fire Protection:** A new campus fire protection loop should be installed to centralize the fire pump and eliminate the need for pumps in each building. This would require space in the CEP with a 1,000 GPM fire pump on standby power and an underground 8" loop to feed new and existing buildings.
- **Electrical:** Campus growth should be fed from the 34KV service which would be stepped down to 12.5KV via a new transformer, with underground distribution run to all new buildings. The new 12.5 KV distribution system could be expanded to replace and/or supplement the existing 12.5 KV utility service, increasing the reliability of the electric services served by the existing 12.5 KV lines. Each new building should be served by a pad-mounted transformer.

ESTIMATED COSTS

Order-of-magnitude building and landscape cost estimates are intended to give a broad idea of the resources needed for each phase of the master plan.

Building costs are based on an estimate of construction cost by program and Sasaki's project experience. In the absence of a finalized program, Sasaki made assumptions about program breakdown for each building. A key idea was to distribute student life across the campus on the ground floor of new buildings. Escalation costs are not included in the cost estimate. Experience suggests these are likely to be between 5% and 8% annually. Additional markups added to the construction costs are divided into three categories. The first is site preparation, infrastructure, and utilities at 10% (excluding major additions like a new chiller). The second is a general soft cost category at 20% for buildings, including planning, programming, design, construction administration, testing, surveys, and equipment. Soft costs of 25% are added for site improvements including landscaping, plazas, courtyards, trees, and lighting. The third category is a 10% contingency.

The order-of-magnitude costs by phase* are:

First Moves: \$81 million to \$82 million
Phase I: \$62 million to \$66 million
Phase II: \$102 million to \$117 million
Phase III: approximately \$144 million

At full build-out, the campus needs two additional parking structures to meet demand. An alternative would be to build one structure and acquire land for additional surface parking. The cost of the second structure is estimated at \$20 million. If the University acquires land, it would need to purchase approximately twenty-nine homes at an average of \$150,000 each. These would be demolished and replaced by surface parking. Although this would cost less than building a parking structure, the total estimated cost would still be \$6.6 million, and the social and political implications must be considered.

* A detailed breakdown of the cost estimates is available in the Appendix



A painting of a landscape. In the foreground, there is a wide, calm river with a greenish-brown hue. The middle ground is filled with dense, dark green trees and foliage. In the background, a large, light-colored rock formation or cliff rises from the riverbank. The overall style is impressionistic, with visible brushstrokes and a muted color palette.

CAMPUS DISTRICT STUDIES





CAMPUS DISTRICTS

The unifying vision for Purdue Calumet is a campus transformed into three interconnected districts, each with its own distinctive features and function. Buildings and sidewalks will be well-lit at night. Greens and plazas will allow students and faculty to sit and linger in conversation or study.



0 200' 400' N
SCALE: 1" = 200'



SECTION A - A' NORTH-SOUTH CORRIDOR

The corridor forms the major north-south pedestrian connection uniting the academic and residential zones. Lighting and plantings will make this a safe, inviting walking experience.



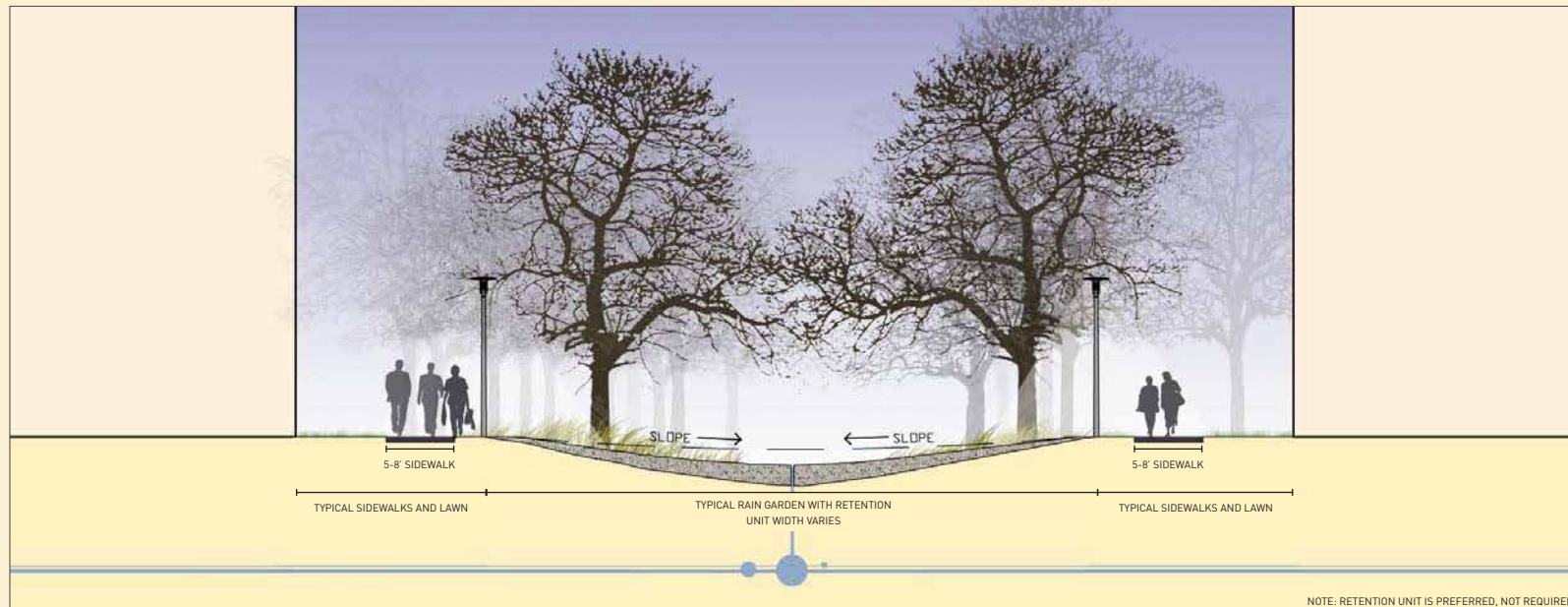
SECTION B-B' NORTH SOUTH CORRIDOR

In the central part of campus, the corridor widens. The northern end will be anchored by the glass-fronted library addition, and the connector will run all the way down across 173rd Street. The corridor also acts as a transitional zone: an allee of trees buffers the campus from surface parking.



SECTION C-C' PUBLIC PLAZAS

In front of public buildings like Lawshe and potentially the new Library expansion, well-appointed plaza treatments will provide outdoor rooms with seating where students, faculty, staff, and visitors can congregate.



SECTION D-D' EAST-WEST BANDS

The east-west bands will house sidewalks and lawns drawing people from the parking lots into the campus. The bands will play an important role in storm-water mitigation, either retaining water in place, or piping it down to the wetlands.



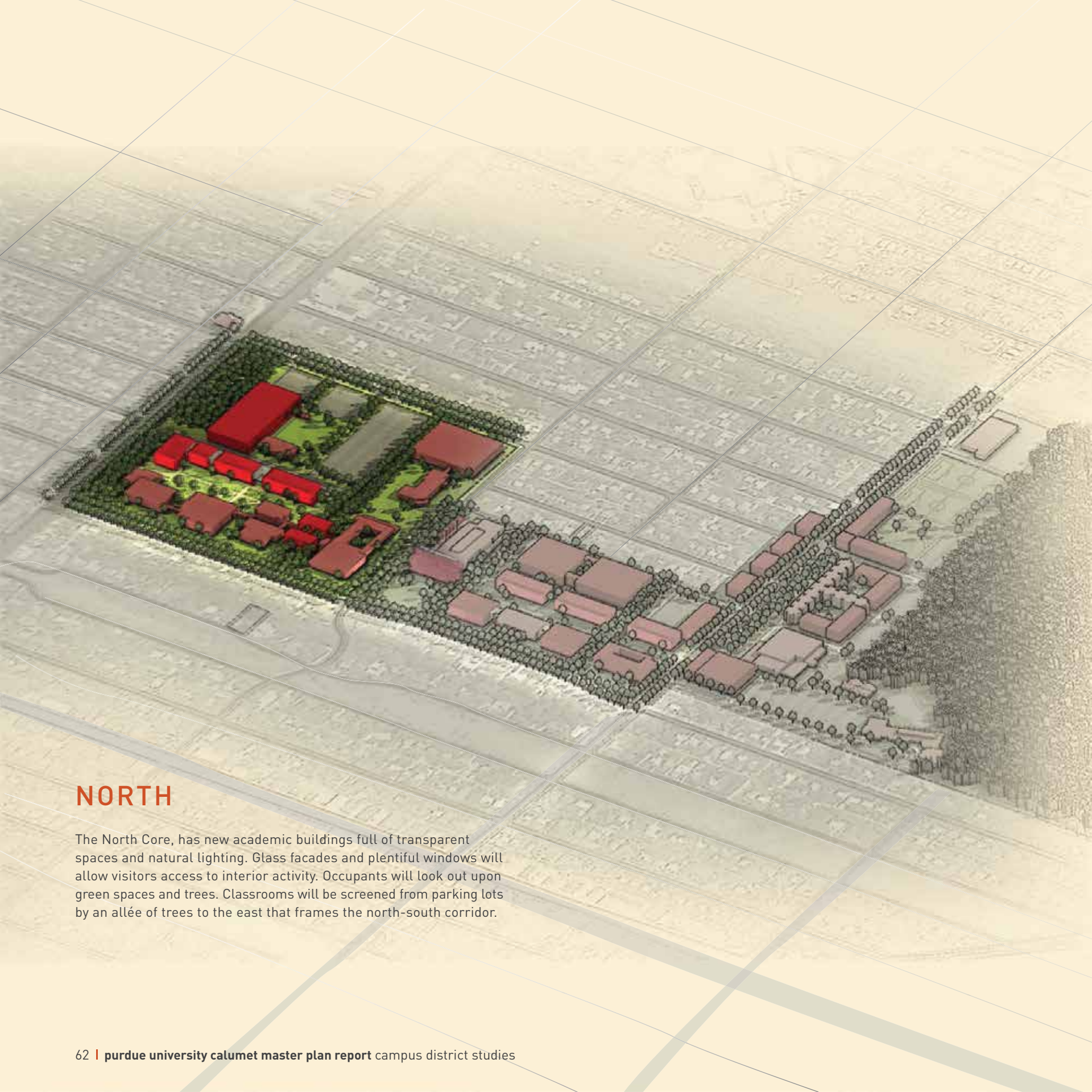
SECTION E-E' 173RD STREETSCAPE

Landscape and signage will indicate that motorists are entering a campus zone. Where needed, 173rd Street will have a turning lane to facilitate access to both the north and south sections of campus. Parallel parking on both sides of the street (except where the turning lane exists, in which case parking will be restricted to one side) will also contribute as a traffic calming measure.



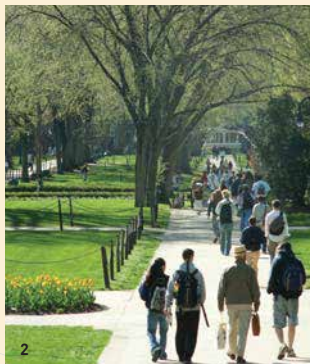
SECTION F-F' COURTYARDS

When all phases of residential housing are completed, beautiful private interior courtyards will be available to residents. Plantings and lighting will make these attractive spaces for relaxation, gathering, and communal activity.



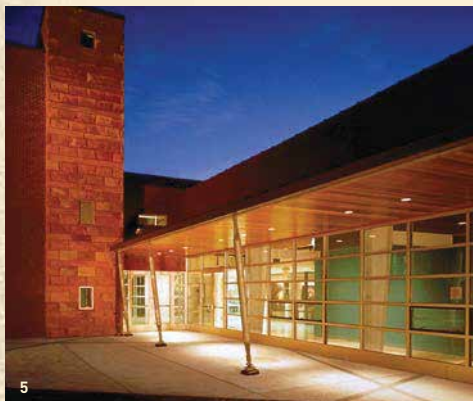
NORTH

The North Core, has new academic buildings full of transparent spaces and natural lighting. Glass facades and plentiful windows will allow visitors access to interior activity. Occupants will look out upon green spaces and trees. Classrooms will be screened from parking lots by an allée of trees to the east that frames the north-south corridor.



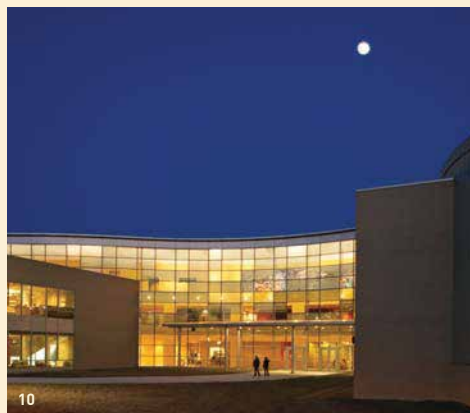
Uniting Green

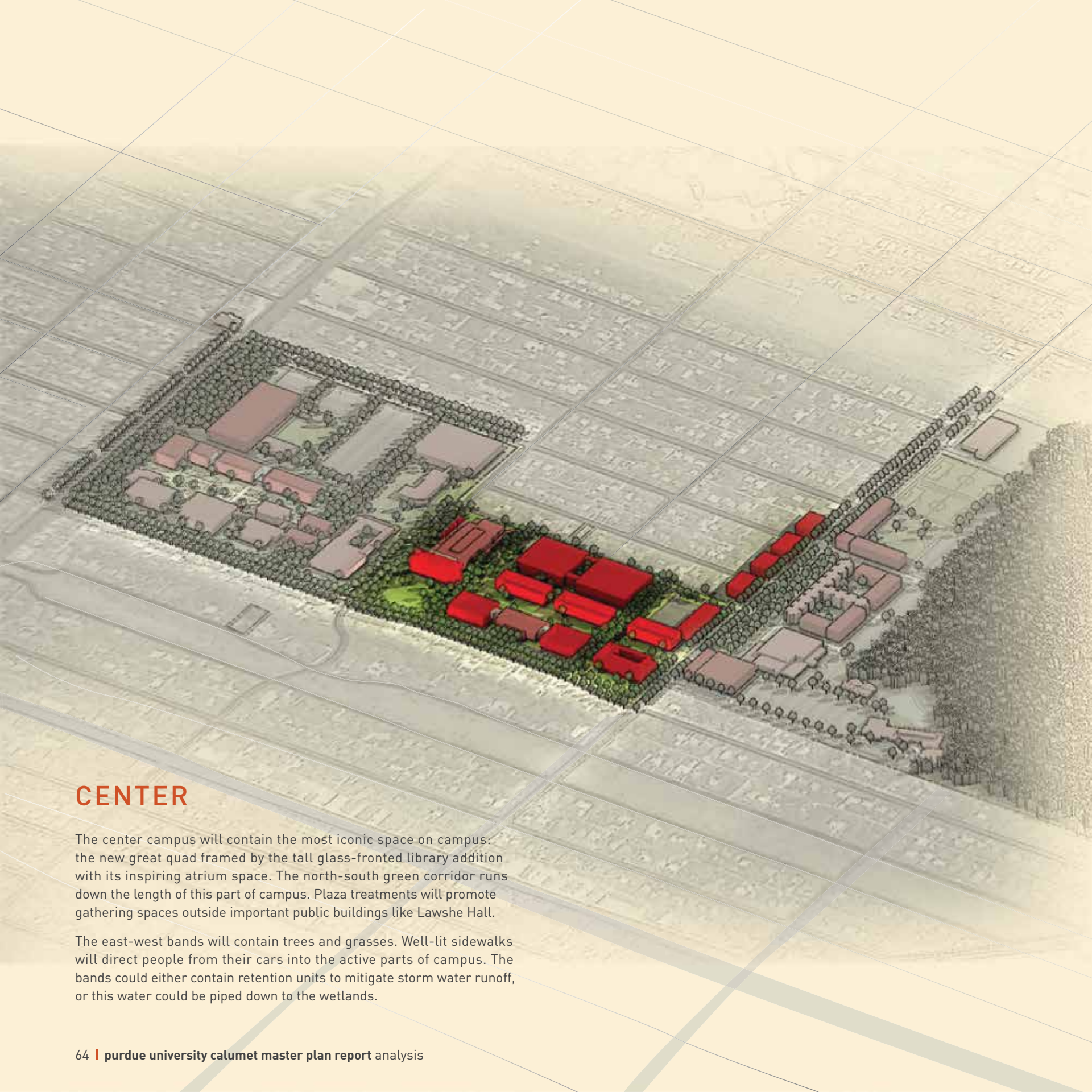
1. Pennsylvania State University Mall: State College, Pennsylvania
2. Pennsylvania State University Mall: State College, Pennsylvania
3. Pennsylvania State University Mall: State College, Pennsylvania
4. Watercolor Rendering of Purdue Calumet: Hammond, Indiana



Transparency, Light, and Activity

5. Saint George's School: Drury Grosvenor Center for the Arts: Middletown, Rhode Island
6. Saint George's School Drury: Grosvenor Center for the Arts: Middletown, Rhode Island
7. Saint Olaf College Buntrock Commons: Northfield, Minnesota
8. University of California Santa Barbara Student Resource Building: Santa Barbara, California
9. Saint Olaf College Buntrock Commons: Northfield, Minnesota
10. Morgan State University Student Center: Baltimore City, Maryland





CENTER

The center campus will contain the most iconic space on campus: the new great quad framed by the tall glass-fronted library addition with its inspiring atrium space. The north-south green corridor runs down the length of this part of campus. Plaza treatments will promote gathering spaces outside important public buildings like Lawshe Hall.

The east-west bands will contain trees and grasses. Well-lit sidewalks will direct people from their cars into the active parts of campus. The bands could either contain retention units to mitigate storm water runoff, or this water could be piped down to the wetlands.



Uniting Green

1. Pennsylvania State University Mall: State College, Pennsylvania
2. Northwestern University Oak Grove: Evanston, Illinois



Iconic Campus Quad

3. Harvard Yard: Cambridge, Massachusetts
4. The Ohio State University Oval: Columbus, Ohio



Library Addition

5. University of Pennsylvania Levine Hall: Philadelphia, Pennsylvania
6. Watercolor Rendering of Purdue Calumet: Hammond, Indiana



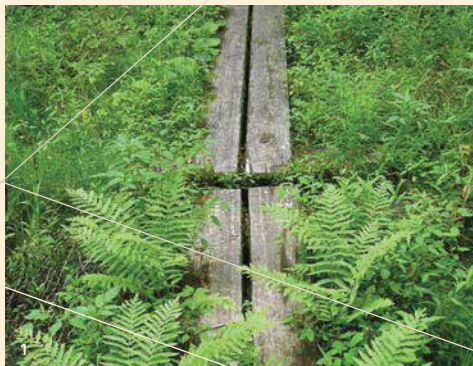
Transparency, Light, and Activity

7. Saint George's School Drury Grosvenor Center for the Arts: Middletown, Rhode Island
8. Saint Olaf College Buntrock Commons: Northfield, Minnesota



SOUTH

The southern end of campus is the residential and recreation zone. This area is intersected by 173rd Street and will be well-lit and pedestrian-friendly. New student housing will open into private sunlit courtyards with paved central open spaces. Students will easily walk to nearby recreation centers and fields or to the campus village for dining, shopping and entertainment.



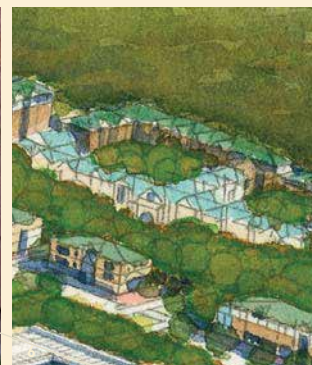
Wetland Trails

1. Jacob's Pillow Trail System: Becket Massachusetts
2. Jacob's Pillow Trail System: Becket Massachusetts



Campus Town

3. Storefront Artist Project: Pittsfield, Massachusetts
4. University of North Carolina, Franklin Street: Chapel Hill, North Carolina



Residential Quads

5. University of Scranton Mulberry Street Housing: Scranton, Pennsylvania
6. Watercolor Rendering of Purdue Calumet: Hammond, Indiana



GYM ADDITION

7. Cleveland State University Recreation Center: Cleveland, Ohio
8. Watercolor Rendering of Purdue Calumet: Hammond, Indiana
9. Harvard University Hemenway Gym: Cambridge, Massachusetts
10. Harvard University Hemenway Gym: Cambridge, Massachusetts



APPENDIX





CONSTRUCTION COSTS MARKUPS			
Category	Site Prep, Utilities, Infrastructure	Soft Cost	Contingency
Buildings	10%	20%	10%
Site Improvements		25%	10%
SQUARE FOOTAGE COST BY PROGRAM TYPE			
Program Type	HEGIS Code	Construction Cost	
Classroom	100	250	
Laboratory	200	350	
Office	300	180	
Library/Student Life	400	250	
Special Use	500 W/O REC	250	
General Use	600	225	
Storage	700	180	
Health	800	200	
Recreation	REC	250	
Housing	900	115	
Demolition	DEMO	7.5	

Building costs are based on an estimate of construction cost by program and Sasaki’s project experience. In the absence of a finalized program, Sasaki made assumptions about program breakdown for each building. See page 51, Estimated Costs for a detailed explanation. Housing cost is derived from the PUC Phase Two budget.

ASSUMED PERCENTAGE PROGRAM MIX BY BUILDING*											
KEY	PHASE	CLASSROOM	LAB	OFFICE	LIBRARY/ STUDY	SPECIAL W/O REC	GENERAL USE	SUPPORT	HEALTH	REC	RESIDENTIAL
FIRST MOVES											
0A	Phase 2 Housing										100
0B	Technology Building	10	50	10			30				
0C	Library Addition Tower				100						
0D	Student Center Addition						100				
PHASE 1											
1A	Academic II w/ Student Life on first	10	20	10		30	30				
1B	Recreation							9	11	80	
PHASE 2											
2A	Building One (Academic/Offices)	10	20	50		20					
2B	Building Two (Academic w/Student Life on first)	20		30		20	30				
2C	Building Three (Academic w/ Student Life on first)	10	30	20			40				
PHASE 3											
3A	Building One (Academic)	10	55	20			15				
3B	Building Two (Academic)	10	65	25							
3C	Building Three (Student Life/Library)	10		5	30		55				
3D	Building Four (Academic/Annex replacement)	8	45	43		4					
3E	Phase 3 Housing										100

* This program mix is intended as a rough guide for determining construction cost. It is not meant to be prescriptive, although it does meet the estimated program need.

FIRST MOVES: ORDER OF MAGNITUDE COSTING								
CATEGORY	AREA	UNIT	CONSTRUCTION COST	SITE PREP, UTILITIES, INFRASTRUCTURE COST	SOFT COST	CONTINGENCY COST	TOTAL UNIT COST	TOTAL COST
BUILDING PROGRAM								
[0A] Phase 2 Housing	127,600	gsf	115	12	23	15	164	21,000,000
[0B] Technology Building	60,000	gsf	309	31	62	40	442	26,500,000
[0C] Library Addition-Tower	54,000	gsf	250	25	50	33	358	19,305,000
[0D] Student Center Addition	15,300	gsf	225	23	45	29	322	4,923,000
Annex Demolition	44,273	gsf	8	-	2	1	10	438,000
LANDSCAPE IMPROVEMENTS								
Proposed Rain Gardens	80,788							
Option 1: Rain Gardens	80,788	sf	18		5	2	24	1,963,000
Option 2: Rain Gardens w/ Storm Water Retention Unit	80,788	sf	28		7	3	38	3,054,000
Existing Landscapes and Courtyards (Renovated)		sf	7		2	1	9	-
Proposed Collegiate Landscape	147,052	sf	20		5	2	27	3,970,000
Housing Courtyards		sf	24		6	2	32	-
Proposed Plazas	35,312	sf	47		12	5	63	2,241,000
Proposed Recreation Fields								
Option 1: Field Only		sf	8		2	1	11	-
Option 2: Field w/ Amenities		sf	30		8	3	41	-
Entrances	4,995	sf	47		12	5	63	317,000
Streetscape - with 20' setback	7,539	lf	45		11	5	61	458,000
Streetscape - with 10' setback		lf	122		31	12	165	-
ACQUIRING NEW LAND AREA								
								-
TOTALS						Minimum cost		\$ 81,000,000
						Maximum cost		\$ 82,000,000

Note: gsf= gross square foot sf= square foot lf=linear foot

PHASE ONE: ORDER OF MAGNITUDE COSTING								
CATEGORY	AREA	UNIT	CONSTRUCTION COST	SITE PREP, UTILITIES, INFRASTRUCTURE COST	SOFT COST	CONTINGENCY	TOTAL UNIT COST	TOTAL COST
BUILDING PROGRAM								
[1A] Academic II w/ Student Life on first	59,100	gsf	256	26	51	33	365	21,593,000
[1B] Recreation	55,200	gsf	238	24	48	31	341	18,803,000
[1D] Facilities Plant Expansion	12,000	gsf	180			18	198	2,376,000
Chiller Segment One	2,000	gsf					1,600	3,200,000
Steam Boilers		gsf						1,000,000
Services Demolition	29,000	gsf	8	-	2	1	10	287,000
Services Relocation	29,000	gsf	180	18	36	23	257	7,465,000
PROPOSED PARKING								
Surface	451	space					2,500	1,127,500
LANDSCAPE IMPROVEMENTS								
Proposed Rain Gardens	39,818							
Option 1: Rain Gardens	39,818	sf	18		5	2	24	968,000
Option 2: Rain Gardens w/ Storm Water Retention Unit	39,818	sf	28		7	3	38	1,505,000
Existing Landscapes and Courtyards (Renovated)		sf	7		2	1	9	-
Proposed Collegiate Landscape		sf	20		5	2	27	-
Housing Courtyards		sf	24		6	2	32	-
Proposed Plazas	12,246	sf	47		12	5	63	777,000
Proposed Recreation Fields								
[1C] Option 1: Field Only		sf	8		2	1	11	1,497,000
[1C] Option 2: Field w/ Amenities		sf	30		8	3	41	5,613,000
Entrances	647	sf	47		12	5	63	41,000
Streetscape - with 20' setback	7,293	lf	45		11	5	61	443,000
Streetscape - with 10' setback	12,517	lf	122		31	12	165	2,062,000
ACQUIRING NEW LAND AREA								
								-
TOTALS							Minimum cost	\$ 62,000,000
							Maximum cost	\$ 66,000,000

PHASE TWO: ORDER OF MAGNITUDE COSTING								
CATEGORY	AREA	UNIT	CONSTRUCTION COST	SITE PREP, UTILITIES, INFRASTRUCTURE COST	SOFT COST	CONTINGENCY	TOTAL UNIT COST	TOTAL COST
BUILDING PROGRAM								
[2A] Academic III with Offices		gsf	235	24	47	31	336	38,411,000
[2B] Academic IV w/Student Life on first floor	63,000	gsf	222	22	44	29	317	19,955,000
[2C] Gateway Building (Academic and Student Life)	82,800	gsf	256	26	51	33	366	30,311,000
Chiller Segment Two	2,000						2,085	4,170,000
PROPOSED PARKING								
[2D] Option 1: Structured	1,152	space	12,600			1,638	18,018	20,757,000
Option 2: Surface	808	space					2,500	2,020,000
LANDSCAPE IMPROVEMENTS								
Proposed Rain Gardens	16,429							
Option 1: Rain Gardens	16,429	sf	18		5	2	24	399,000
Option 2: Rain Gardens w/ Storm Water Retention Unit	16,429	sf	28		7	3	38	621,000
Existing Landscapes and Courtyards (Renovated)		sf	7		2	1	9	-
Proposed Collegiate Landscape	93,655	sf	20		5	2	27	2,529,000
Housing Courtyards		sf	24		6	2	32	-
Proposed Plazas		sf	47		12	5	63	-
Proposed Recreation Fields								
Option 1: Field Only		sf	10		3	1	14	-
Option 2: Field w/ Amenities		sf	32		8	3	43	-
Entrances		sf	47		12	5	63	-
Streetscape - with 20' setback	4,426	lf	45		11	5	61	269,00
Streetscape - with 10' setback		lf	122		31	12	165	-
ACQUIRING NEW LAND AREA (SURFACE OPTION)								
Land for Parking (in addition to Surface Option above)	29	per lot					158,000	4,582,000
TOTALS						minimum cost		\$ 102,646,000
						maximum cost		\$ 117,023,000

PHASE THREE: ORDER OF MAGNITUDE COSTING								
CATEGORY	AREA	UNIT	CONSTRUCTION COST	SITE PREP, UTILITIES, INFRASTRUCTURE COST	SOFT COST	CONTINGENCY	TOTAL UNIT COST	TOTAL COST
BUILDING PROGRAM								
[3A] Building One (Academic)	51,600	gsf	287	29	57	37	411	21,196,000
[3B] Building Two (Academic)	56,400	gsf	298	30	60	39	425	23,994,000
[3C] Mixed-Use Building (Student Life/Library)	90,600	gsf	233	23	47	30	333	30,155,000
[3D] Academic V (Annex replacement)	43,500	gsf	265	26	53	34	379	16,478,000
[3E] Phase 3 Housing	147,148	gsf	115	12	23	15	164	24,198,000
PROPOSED PARKING								
[3F] Option 1: Structured	889	space	12,600			1,638	18,018	16,011,000
Surface	99	space					2,500	248,000
LANDSCAPE IMPROVEMENTS								
Proposed Rain Gardens								
Rain Gardens		sf	18		5	2	24	-
Rain Gardens w/ Storm Water Retention Unit		sf	28		7	3	38	-
Existing Landscapes and Courtyards (Renovated)	623,269	sf	7		2	1	9	5,890,000
Proposed Collegiate Landscape	122,191	sf	20		5	2	27	3,299,000
Housing Courtyards	72,142	sf	24		6	2	32	2,337,000
Proposed Plazas		sf	47		12	5	63	-
Proposed Recreation Fields								
Option 1: Field Only		sf	8		2	1	11	-
Option 2: Field w/ Amenities		sf	30		8	3	41	-
Entrances		sf	47		12	5	63	-
Streetscape - with 20' setback	8,922	lf	45		11	5	61	542,000
Streetscape - with 10' setback		lf	122		31	12	165	-
ACQUIRING NEW LAND AREA								
								-
TOTALS						minimum cost		\$ 144,000,000
						maximum cost		N/A

ACKNOWLEDGEMENTS

Senior Leadership Team:

Howard Cohen, Chancellor
Peggy Gerard, Interim Vice Chancellor for Academic Affairs
Nabil Ibrahim, former Vice Chancellor for Academic Affairs
Ken Johnston, Vice Chancellor for Administrative Services
Melinda Dalgarn, Vice Chancellor for Student Affairs
Judith Kaufmann, Vice Chancellor for Advancement
Regina Biddings-Muro, Executive Assistant to the Chancellor

Campus Master Planning Steering Committee:

Ken Johnston, Co-Chair
Peggy Gerard, Co-Chair
Kathryn Carpenter, Library Director
Frank Colucci, Assistant Professor/Political Science
Terence Dougherty,
Special Assistant/School of Engineering, Math & Science
Roy Hamilton, McNair Achievement Program Director
Roy Evans,
Associate Professor/Construction Management Engineering Technology
Michael Henson, Department Head, Professor/Biology
Dennis Korchek,
Professor/Construction Management Engineering Technology
Paul McGrath, Department Head, Professor/Finance & Economics
Ed Pierson, Professor/Engineering
Robert Rivers, Dean, Professor/School of Education

Purdue University Calumet Staff:

Michael Kull, Assistant Vice Chancellor for Administrative Services
Hal Lusk, Facilities Services Director
Bruce Smith, Assistant Vice Chancellor for Resource Management
Michelle Grant, Academic Facility Management Director
John Bachmann, Grounds Supervisor
Rich Trznadel, Assistant Director Facilities Systems & Utilities
Joe Morales, Technical Services Director
Laura Luna, Assistant to Vice Chancellor for Administrative Services

Purdue University West Lafayette:

Larry Fusaro, University Architect
John Collier, Director of Campus Planning

City of Hammond

Thomas McDermott Jr., Mayor
Marty Wielgos, Chief of Staff

Scholer Corporation

Steve Ford

BR+A

Allan E. Ames, P.E.
Jean-Pierre G. Marjollet



Sasaki Associates, Inc.

Ricardo Dumont

Neil Dean

Linda Eastley

Nayla Naufal

Tyler Patrick

Gregory Janks

Andy McClurg

Mark Reaves

Anna Reaves

Bret Davis

Elizabeth Hixson

Neda Movaghar

Steve Wilson

Alex Koumoutsous

Ken Goulding

Philip Bruso

