GIANT LEAPS MASTER PLAN

2018 PURDUE UNIVERSITY
WEST LAFAYETTE CAMPUS

THE 2018 GIANT LEAPS MASTER PLAN PROVIDES A 50-YEAR VISION THAT INFORMS NEAR-TERM DECISIONS AND ACTIONS

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October 2018

INTRODUCTION

A RICH HISTORY OF PLANNING

The 2018 Giant Leaps Master Plan provides a 50-year vision that informs near-term decisions and actions related to open space, circulation, connectivity, renovations, and new construction for Purdue University's West Lafayette campus.

The goal of a master plan is to align the physical campus with the mission and programmatic goals and initiatives of the university. It does not set the strategic direction of the university nor does it provide a funding mechanism for projects. If a project has a physical component, however, the master plan sets the framework for locating and phasing the project. Together with the strategic vision and capital plan, the master plan provides a shared vision that guides development and implementation.

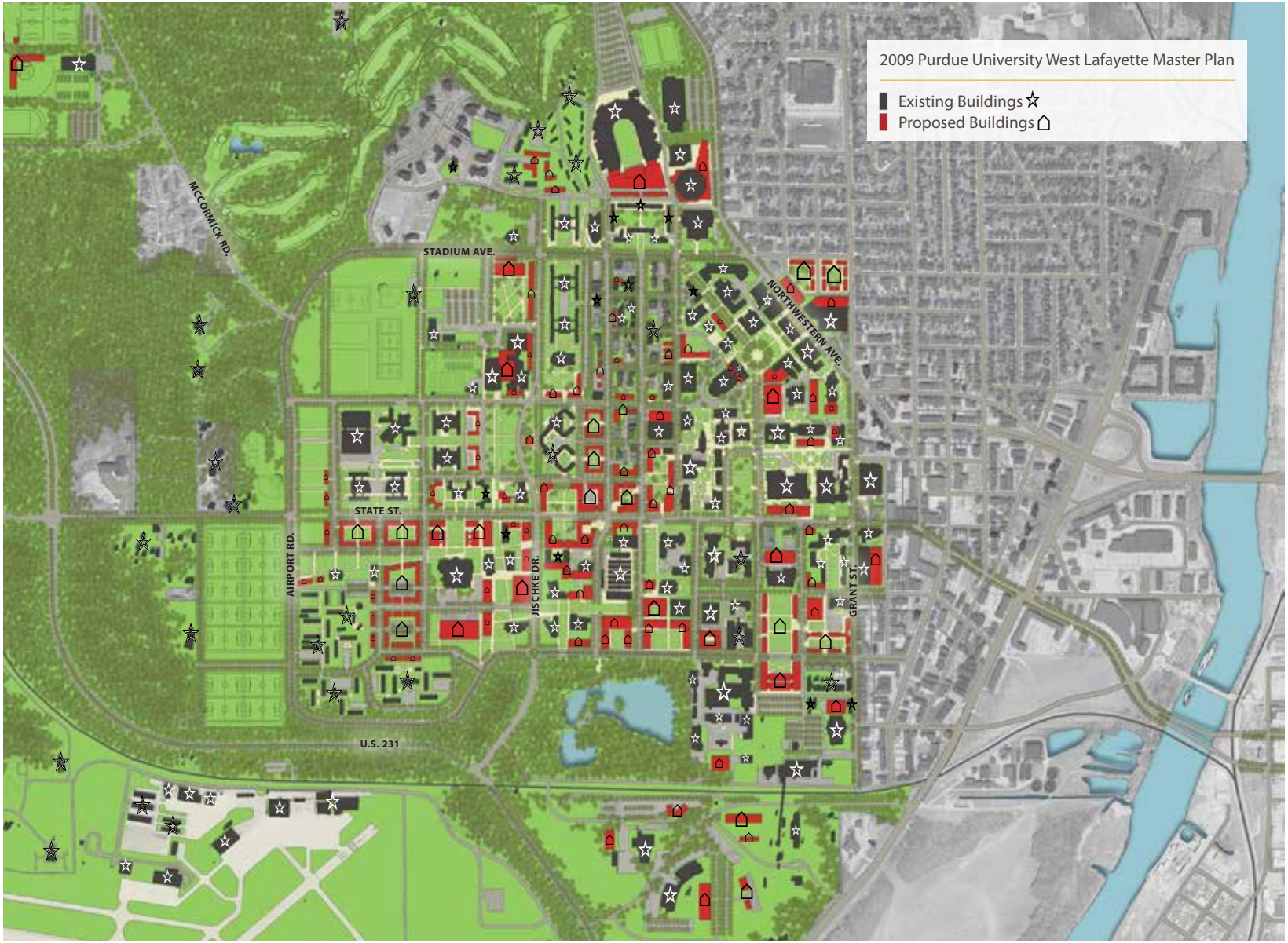
This Master Plan benefits from Purdue's rich 150-year history, ambitious strategic direction, and historic tradition of planning, setting a vision for future development and capacity of the campus. This 150-year legacy is a springboard for renewed commitment to innovation, achievement, and growth.

1924 Scholer Master Plan

Purdue University has a long history, rich in traditions and achievement. Founded in 1869 as Indiana's land-grant institution, Purdue continues to have significant impact on the state, nation, and world. For 150 years, Purdue's strong planning ethos has responded to the University's evolving academic mission and physical growth. The 1924 Master Plan developed by Walter Scholer provided a framework for development of the campus core that is still evident today. The 1924 Master Plan established the framework for Memorial Mall and future development for a compact academic core where Purdue Mall and Stadium Mall are today. The strong north-south connection from Stadium Avenue to what is now Harrison Street is clearly defined along Marsteller Street. The fragmentation of campus by State Street and the Island between University Street and Russell Street that occurred as campus grew west and south can be seen in these early plans.

The most recent master planning effort, the 2009 Master Plan, served the University well through a period of significant institutional growth. Purdue has implemented the majority of recommended projects in fewer than 10 years and the core principles around compact growth and simplified circulation still resonate today.

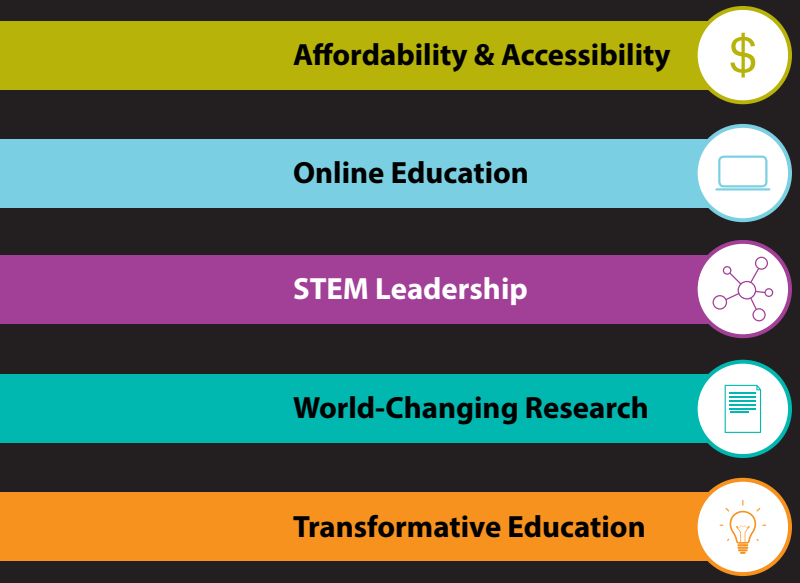
The 2009 Master Plan guided significant physical change across campus and served as a catalyst for additional planning. The 2009 plan anticipated the US 231 bypass and the State Street transformation. The plans and studies completed since 2009 provided a foundation for the 2018 Master Plan. The master planning process provided the opportunity to fold relevant planning efforts and completed ongoing projects into an overall vision and plan for the physical campus.



2009 Master Plan developed by Sasaki

PURDUE MOVES:

HIGHER EDUCATION AT THE HIGHEST PROVEN VALUE



PURDUE MOVES

In 2013, President Mitchell E. Daniels, Jr. outlined an ambitious agenda to place Purdue among the great academic institutions of the world: Purdue Moves. Updated over the course of the last five years, the current five measures of Purdue Moves—affordability and accessibility, online education, STEM leadership, world-changing research, and transformative education—leverage Purdue's historic strengths and promote investment in new ideas, guiding the University in its mission to deliver higher education at the highest proven value. Alignment of the physical campus with the Purdue Moves agenda is critical.

Purdue Moves calls for accelerated growth in three areas that are key to the national economy and support Purdue's strengths: engineering, technology, and computer science. Research emphasis is on drug discovery, plant and life sciences, and data science research, as well as the commercialization of new ideas. Bridging the gap between the living and learning environments and providing ample on-campus living opportunities are also important for student success. To advance these initiatives, the University needs facilities that support the work and attract top talent. To ensure affordability, investment in existing facilities should be prioritized in order to maximize efficiency and capital investment.

The 2018 Giant Leaps Master Plan was developed on the eve of Purdue's sesquicentennial. The 150th anniversary is a time to celebrate the footprints Boilermakers have left across the country, around the world, and even in outer space, exemplified by Neil Armstrong's historic "giant leap for mankind" 50 years ago. It is time for Purdue to look ahead at the giant leaps needed to solve the world's most pressing challenges in the future. This Master Plan provides a framework for the physical campus to support Purdue Moves and the giant leaps the University will undertake in the next 50 years.

PLANNING PROCESS

With new strategic direction, the 150th anniversary milestone, and growing enrollment, it is the ideal time to update Purdue's West Lafayette campus master plan. Purdue University engaged Ayers Saint Gross and MKSK (Planning Team) to develop a campus master plan that will meet current and future needs by informing physical investments and supporting future growth. Building off the 2009 Master Plan, the 2018 Master Plan tested previous planning assumptions against new and updated directions and included a program-driven approach to address near-term development challenges and inform future capacity. This master plan process was guided by several committees and ongoing stakeholder engagement to ensure an inclusive and iterative process.

The Working Group worked closely with the Planning Team throughout the planning process to review materials, coordinate meetings, and advise the overall process.

The Advisory Committee served as a sounding board during the master planning process with membership representing a broad cross-section of the University community. The Advisory Committee interfaced with the Planning Team during each on-campus workshop to discuss the direction of the plan and obtain feedback on specific strategies and key concepts.

The Executive Committee was comprised of the University's executive leadership to ensure that the master plan and its concepts reflect the mission and strategic goals of Purdue. The Executive Committee provided oversight and high-level direction for the master plan and was engaged at the beginning of the project and at key milestones throughout.

The Board of Trustees oversaw and endorsed the master plan. The Board's Physical Facilities Committee reviewed progress and provided input throughout the planning process. Three presentations were delivered to the full Board of Trustees.

Stakeholder Groups representing 30 distinct units and groups, were engaged throughout the planning process. These groups provided background that informed the initial analysis, opportunities, and challenges on campus. There were also open forums that allowed the larger campus community and surrounding neighborhoods to provide feedback.

STAKEHOLDER GROUPS INCLUDED

- Board of Trustees
- President and Executive Committee
- Office of the Provost
- Athletics
- Auxiliary Services
- City of West Lafayette
- College Deans
- Cultural Centers and Student Organizations
- Office of Development
- Discovery Park
- Enrollment Management
- Ethics and Compliance
- Executive Vice President for Research and Partnerships
- Faculty, Staff, and Students
- Housing and Dining
- Physical Facilities
- Purdue Research Foundation (PRF)
- Purdue University Airport
- Vice Provost for Student Life

Open House

The committees and groups engaged throughout the planning processes were critical to the successful development of each phase of the master plan. The 24-month planning process consisted of three phases of work: Analysis, Idea Generation, and Final Plan.

Analysis

The analysis phase assessed opportunities and challenges. During this phase, the Planning Team and Working Group reviewed the strategic vision and previous studies, interviewed stakeholders to understand the major strengths and weaknesses of campus, and analyzed the campus' physical attributes including open space, circulation networks, and land use distribution. An open house was held during this phase to garner feedback about the campus from a large cross-section of students, faculty, staff, and the broader Lafayette and West Lafayette communities. The analysis phase also included a Space Needs and Adequacy Assessment that examined how Purdue can better utilize existing space to support a growing student population and policy and space optimization strategies to reduce the need for more space.

Idea Generation

The idea generation phase included the development of Planning Principles and a Planning Concept that illustrated the big ideas and guided planning decisions. A series of open space strategies and development scenarios for campus were tested using three geographic precincts (south, central, and north). For each precinct, a Steering Committee (made up of members from the Advisory Committee) was formed to provide additional feedback and direction. Together, the Planning Team and Steering Committees evaluated concepts and alternatives for new and existing buildings; campus land use; gateways to campus; student housing; recreation and athletic facilities; and improvements to the open space network, circulation, parking, and service.

Final Plan

The final plan phase synthesizes the work developed during the previous phases. Before the plan was finalized, a draft plan was reviewed with the Master Plan Committees and presented to the campus community during an open forum for feedback. The Planning Team worked with the Working Group, Advisory Committee, Executive Committee, and Board of Trustees to prioritize the proposed campus improvements and determine appropriate implementation and phasing. The final plan and report provides a roadmap for the University that will help guide near- and long-term decision making.

Precinct Workshop Sketches

CURRENT CHALLENGES AND OPPORTUNITIES

The analysis phase included interviews with stakeholders, campus tours and documentation of the physical campus, and quantitative analysis of space. Through this process, thematic challenges and opportunities emerged to inform the master plan principles, concepts, and final recommendations. In general, there was consensus that Purdue has strong academic programs and clear strategic direction that guides decision making and priorities. There is significant pride in both the traditions and the place. While the physical campus has improved in recent decades, opportunities remain to have the buildings and grounds reflect the caliber of the institution. The following themes provide the greatest opportunities and serve as the foundation for the master plan recommendations.

Enrollment Trends

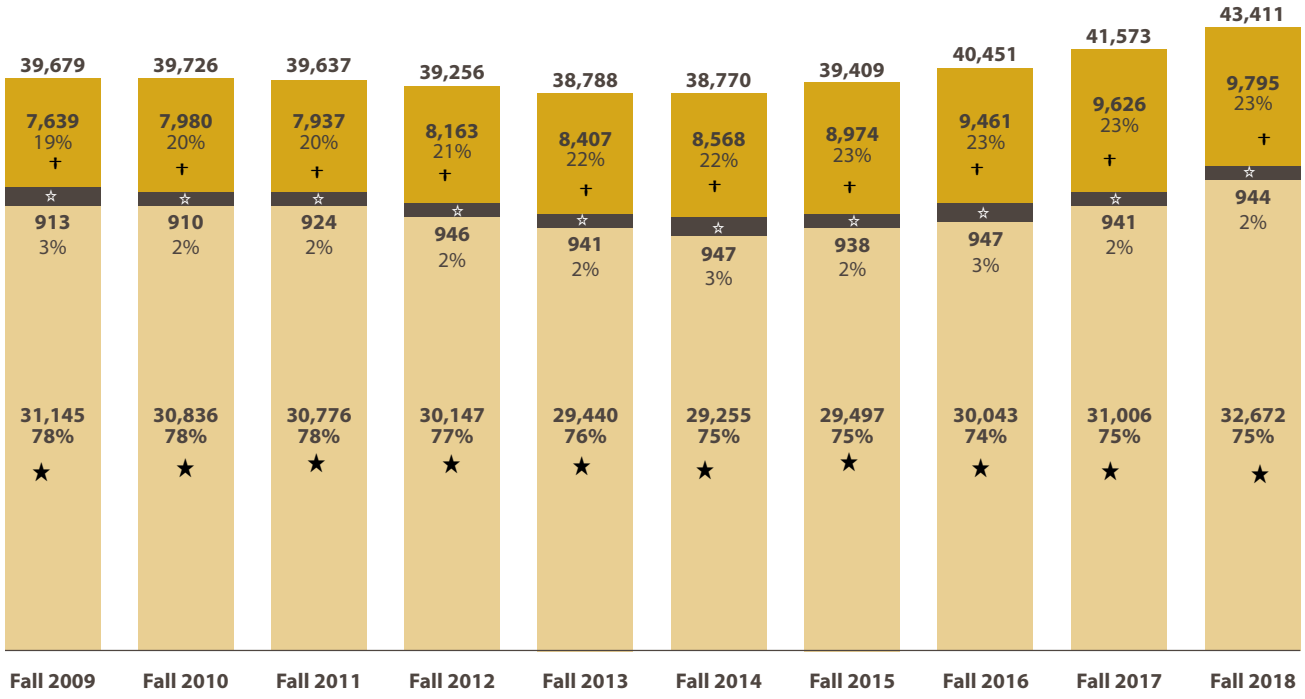
The Master Plan recognizes the recent increase in enrollment and accounts for potential future growth. Planning assumptions in the plan included two growth scenarios: 7,500 new beginners and 7,800 new beginners. A class size of 7,800 new beginners yields an enrollment of 46,252 in 2025 (33,200 undergraduates, 12,017 graduates, and 945 professionals), a 14.3 percent increase in total enrollment from Fall 2016. Fall 2018 enrollment exceeded planning assumptions with 8,313 new beginners.

Challenges

- Student enrollment growth often results in an increased number of faculty and staff. At a research-intensive institution like Purdue, additional faculty require labs to conduct research.
- More people on campus (students, faculty, and staff) places more pressure on existing facilities and the potential need for additional space.

Opportunities

- Leverage people and talent to advance the strategic goals for growth in STEM and research.
- Provide greater opportunity for collaboration and vibrancy on campus.



Enrollment Trends

† Graduates
☆ Professionals
★ Undergraduates

Top: The Purdue Memorial Union represents the historic architectural character of campus

Bottom: Students studying in the John W. Hicks Undergraduate Library

Architecture and Existing Space

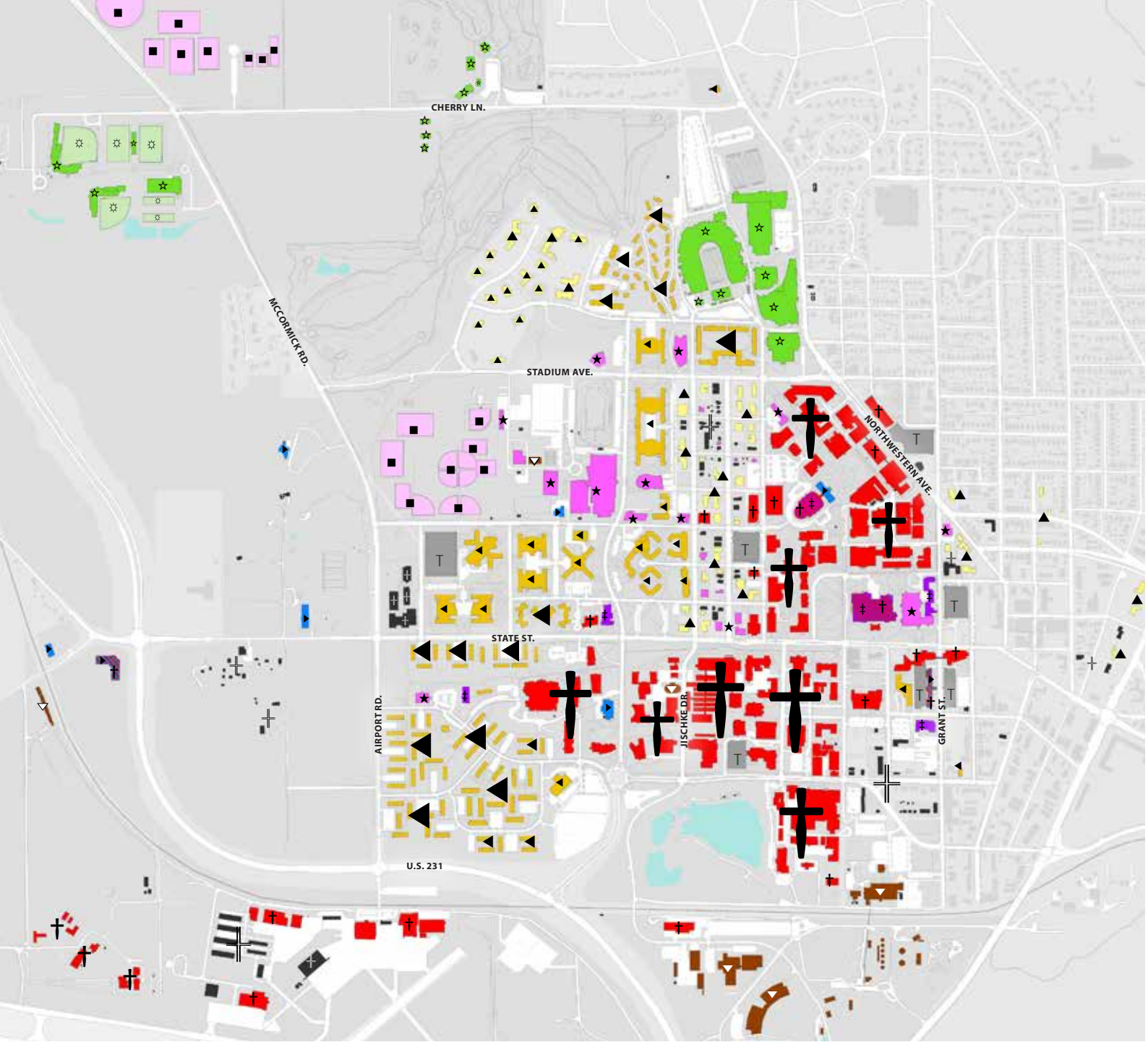
The quality of space and architecture varies on campus. The campus would benefit from additional study and collaboration space in addition to further integration between academia and student life.

Challenges

- The architectural character on campus is consistent but lacks a sense of hierarchy.
- The campus is dominated by singular land use clustering rather than a mix of uses.
- Older residence halls lack community and study space.
- There is limited study and collaboration space in the academic cores, particularly south of State Street; Krach Leadership Center and Wilmeth Active Learning Center have improved the north core.
- Dining halls are near capacity, with dinner being the most popular meal time.

Opportunities

- Develop and refine design guidelines for all areas of campus.
- Provide greater connection between indoor and outdoor spaces.
- Ensure the highest and best use of land and resources.
- Increase density on campus where appropriate.
- 'Academicize' existing housing on campus by adding collaborative and study spaces.
- Create indoor and outdoor hubs of activity on campus that provide collaboration space, food options, and study areas.



Existing Building Use

- Academic/research
- Administration
- Housing
- Greek housing
- Support
- Recreation fields
- Student life
- Public use
- Athletics
- Athletics fields
- Other
- Structured parking

Top: Martin C. Jischke Hall of Biomedical Engineering houses modern teaching and research spaces

Bottom: Herbert C. Brown Laboratory of Chemistry houses outdated teaching labs

During the planning process, a building-by-building adequacy assessment of the West Lafayette space inventory was completed. This exercise diagnosed functional adequacy of interior spaces such as classrooms, teaching labs, offices, research labs, and collaboration spaces. The functional adequacy considered the configuration, flexibility, and suitability of space as it relates to meeting the mission of the University and the unit. The understanding of functional quality paired with the facility condition information can inform priorities for capital investment and more fully develop space needs for the University.

Facility Condition

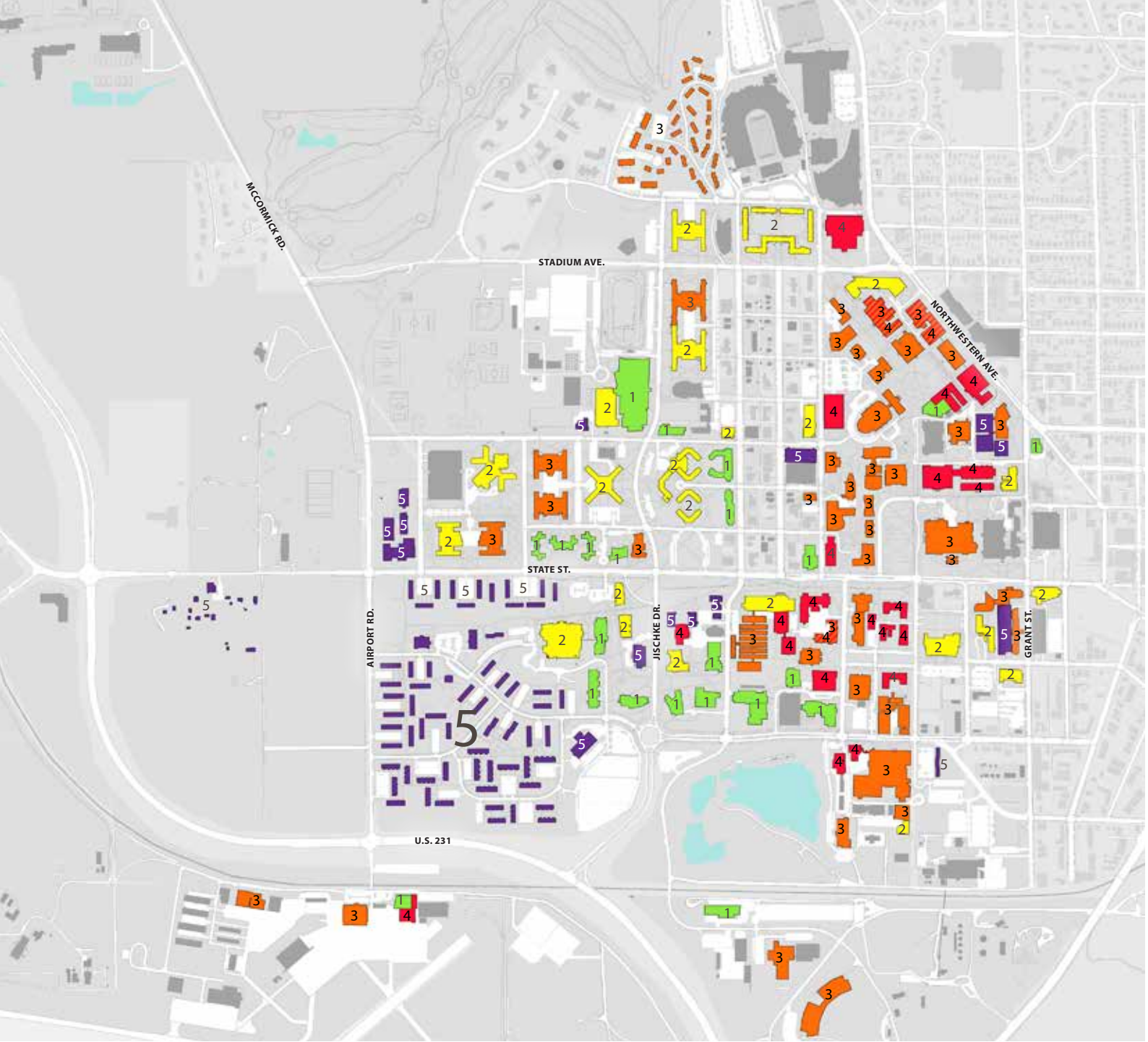
There is a discrepancy in the quality of space across campus between newer and aging facilities. The adequacy assessment of the non-residential space on campus concludes that 35 percent of existing buildings are below average or poor, 23 percent are average, and 42 percent are above average or good. Additionally, 29 buildings are rated as poor (4 on the APPA scale) based on facility condition.

Challenges

- Colleges are fragmented across the campus which reduces efficacy of faculty discourse, challenges students to find cohesion within their academic cohorts, and increases costs through duplication of materials and supplies. It also affects the overall image of the institution and wayfinding.
- Undergraduate teaching labs are outdated, and some compare unfavorably to high school facilities. Research labs are also antiquated, limited by space, technology, and adequate HVAC services.

Opportunities

- Improve the condition, adequacy, and utilization of space across campus.
- Maximize shared spaces and core facilities.
- Ensure reasonable comparability of space among buildings and units across campus, including a more consistent quality of space, furnishings, and equipment.
- Default to the renovation of poor condition facilities over new construction when appropriate.
- Use selective demolition to address facility condition, renewal and replacement (R&R) cost, and the highest and best use of the site.



Facility Condition—APPA Rating

- 1—Good
- 2—Above average
- 3—Below average
- 4—Poor
- 5—Proposed demolition

Facility condition, a rating provided by the University, was viewed at the scale of the building with focus on the age and performance of building systems and envelope. The University used a 1-5 scale developed by APPA: Leadership in Educational Facilities (APPA), a national organization for educational facilities professionals.

University Housing provided an equivalent Facility Condition Index (FCI) number that aligns with the APPA rating. FCI is a standard facility management benchmark used to assess the current and projected condition of a building asset. It is calculated by dividing the total estimated cost to complete deferred maintenance projects for the building by its estimated replacement value.

The University has not yet assessed some non-academic buildings (gray buildings on the map).

Top: Splayed walk along State Street

Bottom: Founders Park in the north academic core

Landscape and Open Space

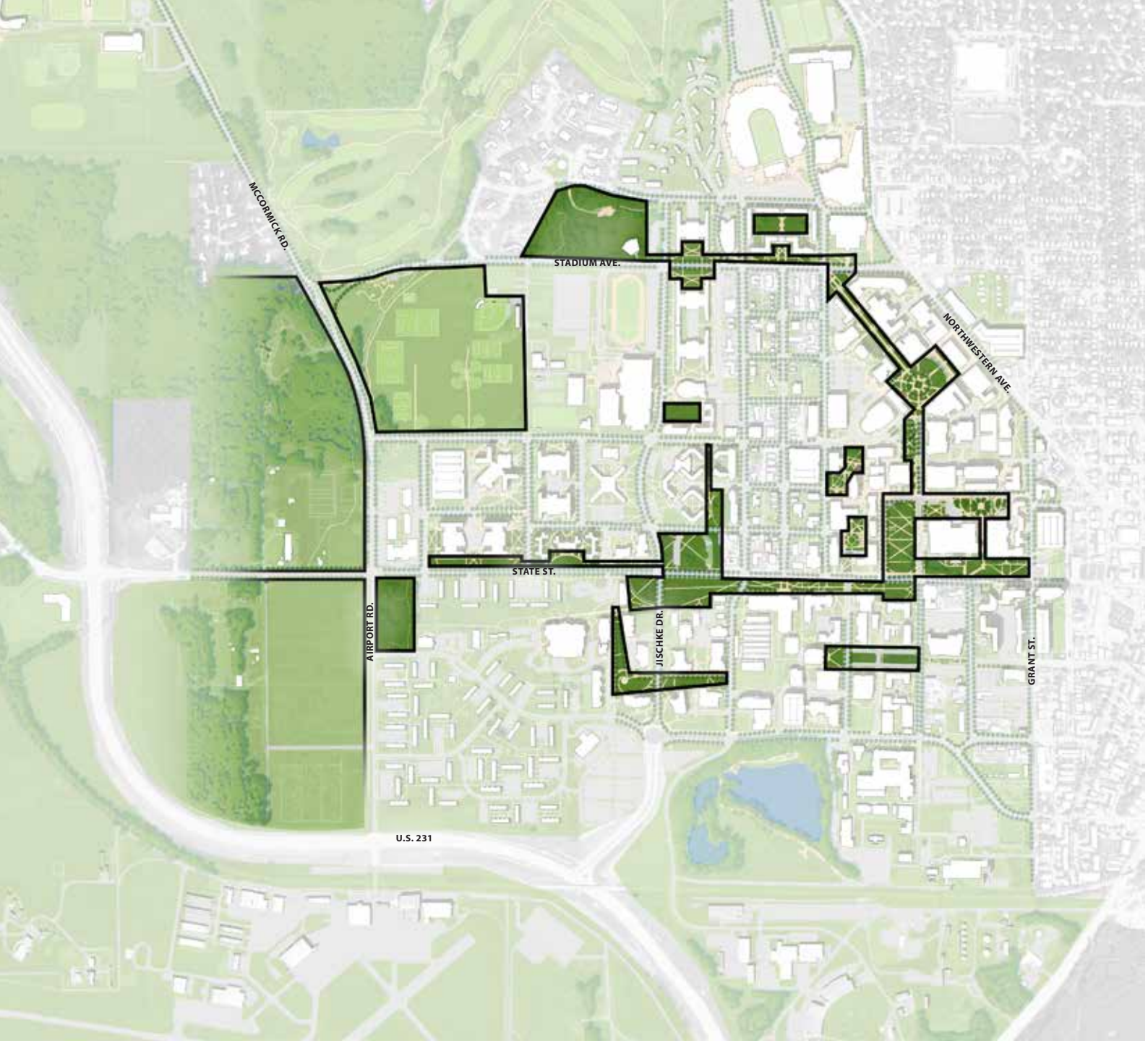
Over the last decade, the landscape and physical appearance of campus has significantly improved. However, there is a need for greater connectivity between open spaces and consistent quality in all areas of campus, not just the north academic core.

Challenges

- The open space network lacks connectivity.
- While the landscape has improved, certain areas are starting to age and need to be refreshed.
- Open spaces in the north academic core (Purdue Mall and Memorial Mall) are better quality than open spaces south of State Street (Agricultural Mall). There is a lack of consistency across campus open spaces.
- Many of the formal quads feel like separate destinations on campus.
- Many outdoor spaces have little activity or relationship to the surrounding buildings.

Opportunities

- Use open space to enhance connectivity throughout campus.
- Consider incorporating a more natural landscape with greater biodiversity and tree canopy to provide variety in open space character and formality of campus.
- Activate outdoor spaces, including the creation of places for instruction, eating, gathering, and collaborating.
- Incorporate more outdoor art throughout campus.
- Integrate green infrastructure where appropriate; use the landscape as a part of the learning environment.
- Celebrate beloved places on campus such as Memorial Mall, Purdue Mall, and the Bell Tower.



Existing Open Space Network

Top: Pedestrian and bike-oriented environment along Centennial Mall

Bottom: Car-oriented environment along Agricultural Mall

Circulation, Parking, and Transportation

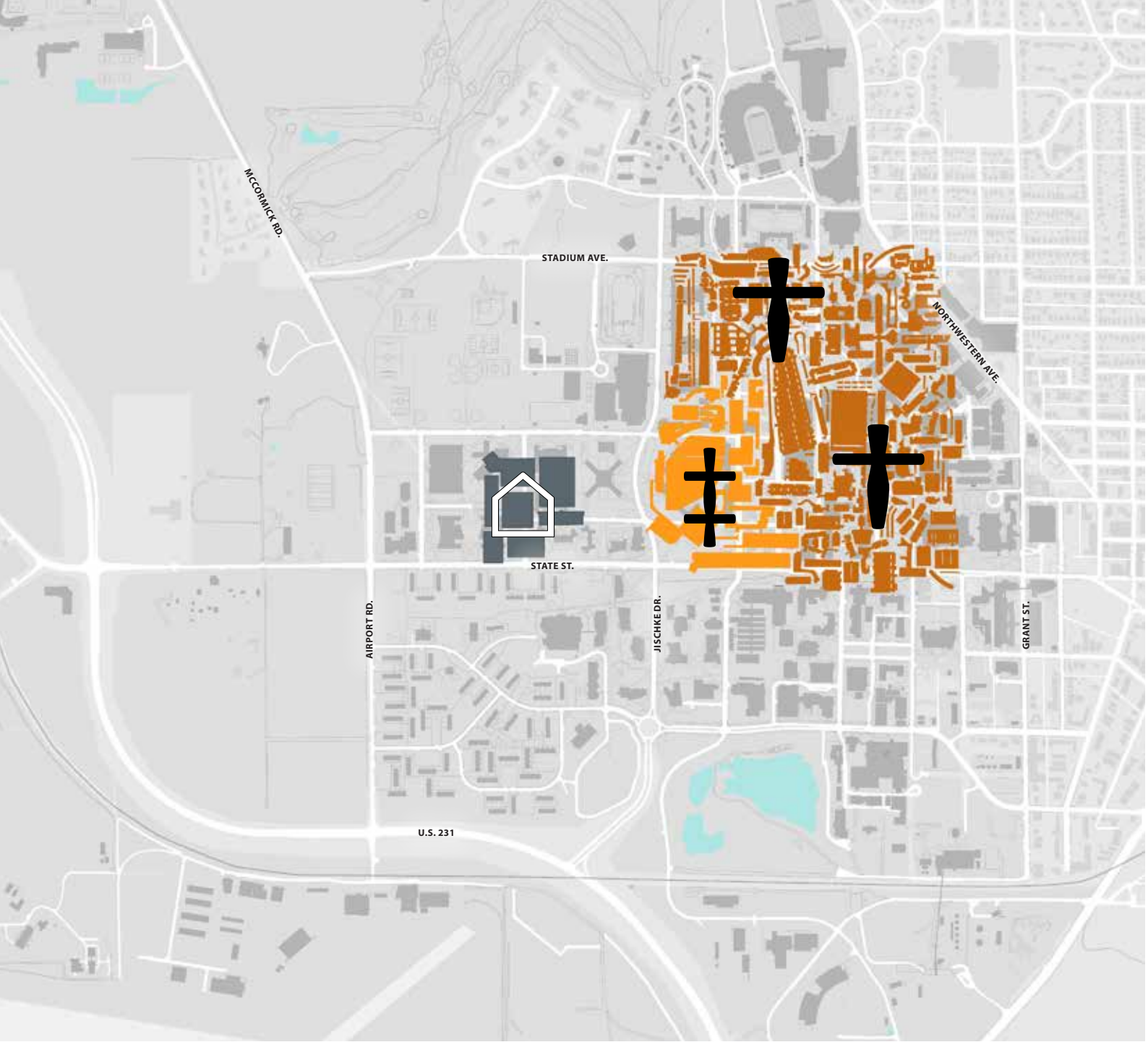
The campus core provides a dense, connected, pedestrian friendly environment, while other areas of campus are less connected and prioritize the personal vehicle over pedestrians and cyclists.

Challenges

- Parking consumes 109 acres of land on campus.
- The Island, State Street, and Stadium Avenue limit connectivity across campus, but recent State Street and Stadium Avenue improvements have greatly reduced the north-south barrier.
- Circulation conflicts are prevalent in certain areas of campus, especially west of the campus core.
- The Third Street and Martin Jischke Drive intersection is a major conflict zone between cars, pedestrians, service vehicles, and bikes.
- Loading dock areas are distributed across campus and can cause conflicts with pedestrians.
- Purdue has a 'move your car culture' in which people prefer to move their cars between destinations on campus rather than walk.

Opportunities

- Consider a robust internal circulation system with parking and major vehicular circulation on the perimeter.
- Continue implementing dedicated bike lanes and routes to reduce conflicts between pedestrians and bikes and to a lesser extent cars and bikes. Implement recommendations from the *Integrated Bicycle and Pedestrian Infrastructure Plan*.
- Look for opportunities to consolidate service and loading to reduce conflicts and traffic in the campus core and simplify delivery routes.
- Consider highest and best use of land resources—surface parking lots may be more appropriate as future building sites or open space.
- Evaluate parking garage and lot locations on campus to ensure all areas are served.
- Evaluate opportunities with CityBus and the City of West Lafayette to optimize the bus system.



Existing Parking Amalgamated

- Surface parking (paved)
- Surface parking (unpaved)
- Structured parking

Parking consumes 109 acres of Purdue's campus, the majority of which is surface parking. This diagram overlays all of the existing parking on campus over the campus core to show how much land area is consumed by parking.

Top: Strong pedestrian gateway into Stadium Mall

Bottom: Existing vehicular gateway at Grant and State Street

Arrival and Gateways

The campus lacks a sense of arrival, clear gateways, and overall signage and wayfinding.

Challenges

- There are a number of routes to get to campus with varying degrees of wayfinding.
- There is little to no signage or branding as one approaches campus.
- Gateways are inconsistent in scale, design, and aesthetics.
- The wayfinding system is incomplete.
- The first-time visitor experience navigating to the Admissions Office is convoluted.

Opportunities

- Celebrate the arrival experience with gateways, markers, and messaging at key arrival points.
- Identify primary, secondary, and pedestrian/bike gateway locations.
- Develop a kit of parts for primary and secondary gateways to campus.
- Improve wayfinding throughout campus.
- Consider alternate locations for a Welcome Center and Admissions Office that is closer to parking and easier for a first-time visitor to find.

Existing Campus Gateways

SUMMARY

The greatest challenges facing campus are enrollment growth accommodations, aging facilities, overall connectivity, and consistent quality of indoor and outdoor space. These challenges are supported by opportunities to renovate existing facilities, leverage recent project successes, improve open spaces, and capitalize on available infill sites that can meet program needs and provide greater density on campus.

PLANNING PRINCIPLES AND MASTER PLAN GOALS

PLANNING PRINCIPLES

The 2018 Planning Principles respond to the challenges and priorities facing the University. The master plan seeks to align the physical campus with the mission of the University by creating a more connected, vibrant, sustainable, and collaborative campus with robust utilization of existing buildings and grounds and improved campus identity.

Planning principles serve as guideposts for future development. They are an important standard by which the master plan and its implementation can be assessed. The purpose of establishing planning principles is as follows:

- Tie the mission, vision, and values of the University with the physical plan;
- Test ideas against values;
- Guide problem-solving and decisions; and
- Provide continuity across generations of planning and leadership.

PLANNING PRINCIPLES

The Master Plan is guided by the following principles:

PRINCIPLE ONE

STRENGTHEN IDENTITY

Strengthen campus gateways and edges.

Improve signage for buildings and grounds to make the campus more navigable.

Maintain the strength of the academic core while enriching and investing in the whole campus.

Continue to promote a culture and physical environment that is authentically Purdue while incorporating more contemporary architecture and landscapes.

PRINCIPLE TWO

ENHANCE CONNECTIVITY

Strengthen physical and programmatic connections across campus.

Clarify circulation to ensure campus is accessible for all modes of transportation.

Reinforce perimeter parking strategies supported by a robust transit system to safeguard the highest and best use of land.

Optimize multi-modal transportation network.

PRINCIPLE THREE

PROMOTE VIBRANCY

Integrate living and learning spaces on campus.

Utilize natural systems and landscapes as academicized centers of collaboration to activate campus, enhance connections, and reinforce campus character.

Provide mixed-use buildings with active ground floors to enliven all areas of campus, foster scholarly discourse, and enhance safety by increasing visibility.

PRINCIPLE FOUR

FOSTER COLLABORATION

Maximize shared spaces and core facilities to increase utilization and promote interdisciplinary work.

Reduce fragmentation by providing geographically proximate indoor and outdoor spaces throughout campus that bring departments and disciplines together.

Provide a diverse and flexible portfolio of spaces that supports innovation and interdisciplinary research.

PRINCIPLE FIVE

NURTURE SUSTAINABILITY

Promote alternative transportation on campus by increasing pedestrian and bike infrastructure and reducing vehicular traffic and parking in the campus core.

Develop and implement comprehensive stormwater management strategies to improve water quality and runoff quantity.

Create healthy, energy-efficient, and beautifully designed buildings, ensuring that their interior gathering places, classrooms, and research spaces are as environmentally responsible as they are functional.

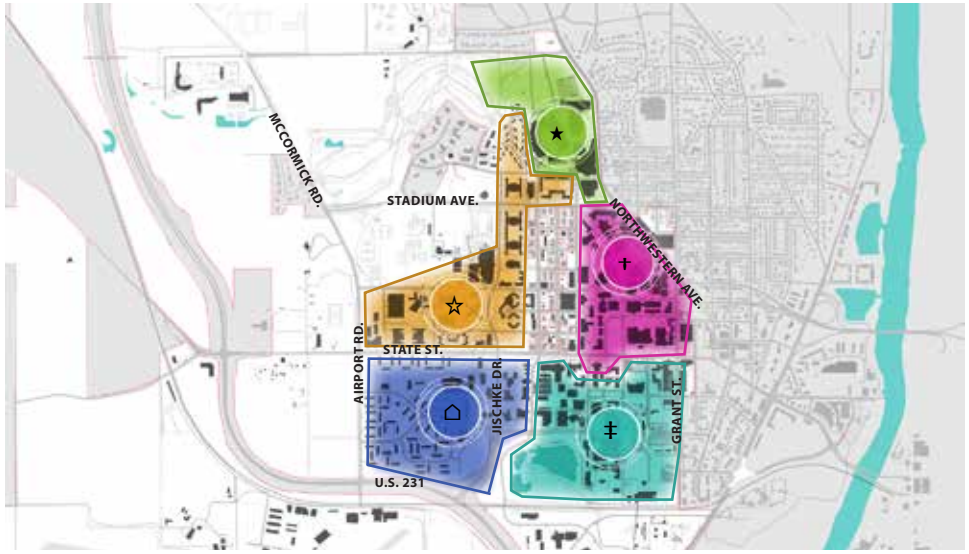
PRINCIPLE SIX

INCREASE UTILIZATION & FLEXIBILITY

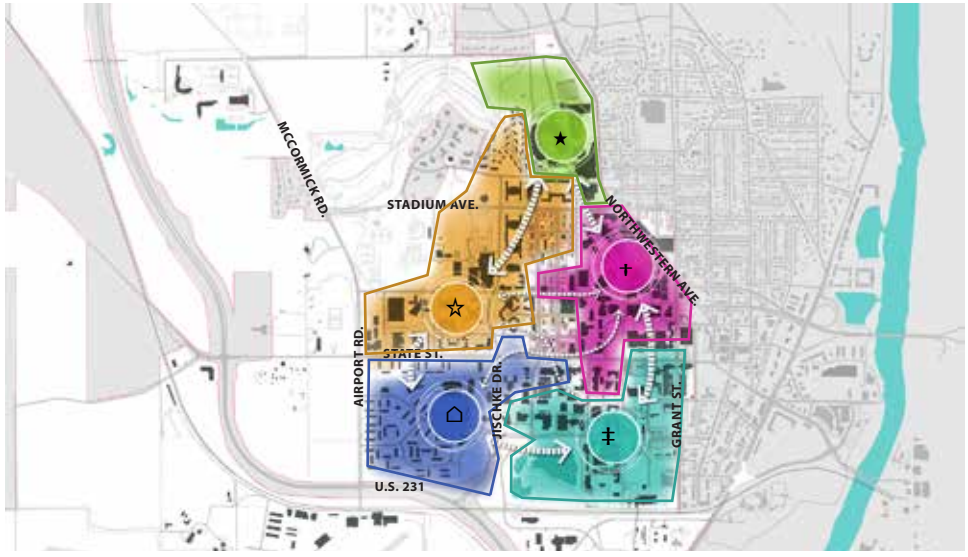
Provide flexible learning spaces that support modern teaching and learning approaches.

Improve the condition, adequacy, and utilization of space across campus.

Prioritize renovation over new construction when appropriate.



Existing Campus Zones



Planning Concept for a Connected Campus

PLANNING CONCEPT

Over time, the campus has evolved into five distinct zones with State Street and the Island as major dividers. Each zone has its own development and open space character with limited connections tying them together.

+ EAST CAMPUS	Mature and collegiate
‡ SOUTH CAMPUS EAST	Collegiate and suburban
⌂ SOUTH CAMPUS WEST	Research and suburban residential
☆ WEST CAMPUS	Suburban style residential
★ NORTH CAMPUS	Athletics and residential

The planning concept provides the framework and big ideas for the Master Plan. The overarching goal of the Master Plan is to create a more connected campus. Rather than creating concentrated, mixed-use districts, this plan builds off the inherent strengths of campus and works to connect the zones through mixed-use and interdisciplinary buildings. Instead of creating four housing quadrants, housing investments are focused and expanded around existing resources. Academicized residence halls turn the Island into a bridge connecting the academic and residential programs and zones on campus.

Teaching, research, and innovative programs are integrated, bringing fragmented departments and different colleges together to support the strategic goals of the University. A connected open space network that prioritizes pedestrians and bikes and creates areas for collaboration ties each part of campus together. Utilizing land efficiently is crucial to creating the desired critical mass of human activity, interaction, and vibrancy on campus. This is not to suggest that every site should be built to maximize density, but that development should be an appropriate scale and density for the context. The concept for the Master Plan is to move from five zones to one campus by bridging the Island, developing sites for their highest and best use, and creating a connected network of open spaces.

MASTER PLAN GOALS

The Master Plan establishes a 50-year vision that is a framework for open space, circulation, and connectivity. Near-term decisions and actions are informed by identifying possible sites for future capacity to ensure development aligns with the long-term vision for a connected campus.

The physical campus informs first impressions, shapes student success, and attracts high-quality faculty and students. It is important that Purdue provide the facilities and resources needed for students and faculty to achieve their academic and research goals. Tying these facilities together through a network of vibrant open spaces and pedestrian corridors creates a unified campus that reflects the caliber of Purdue. Transforming open spaces and streetscapes to create a robust, consistent, high-quality pedestrian realm across campus has a major impact on first impressions. Better pedestrian connectivity across campus also encourages collaboration and enhances program synergies.

Master plan goals serve as the framework and priorities for development. Near- and long-term decisions related to the physical campus should reinforce the planning principles and these goals. The recommendations for this Master Plan are organized by these goals in the following chapters.

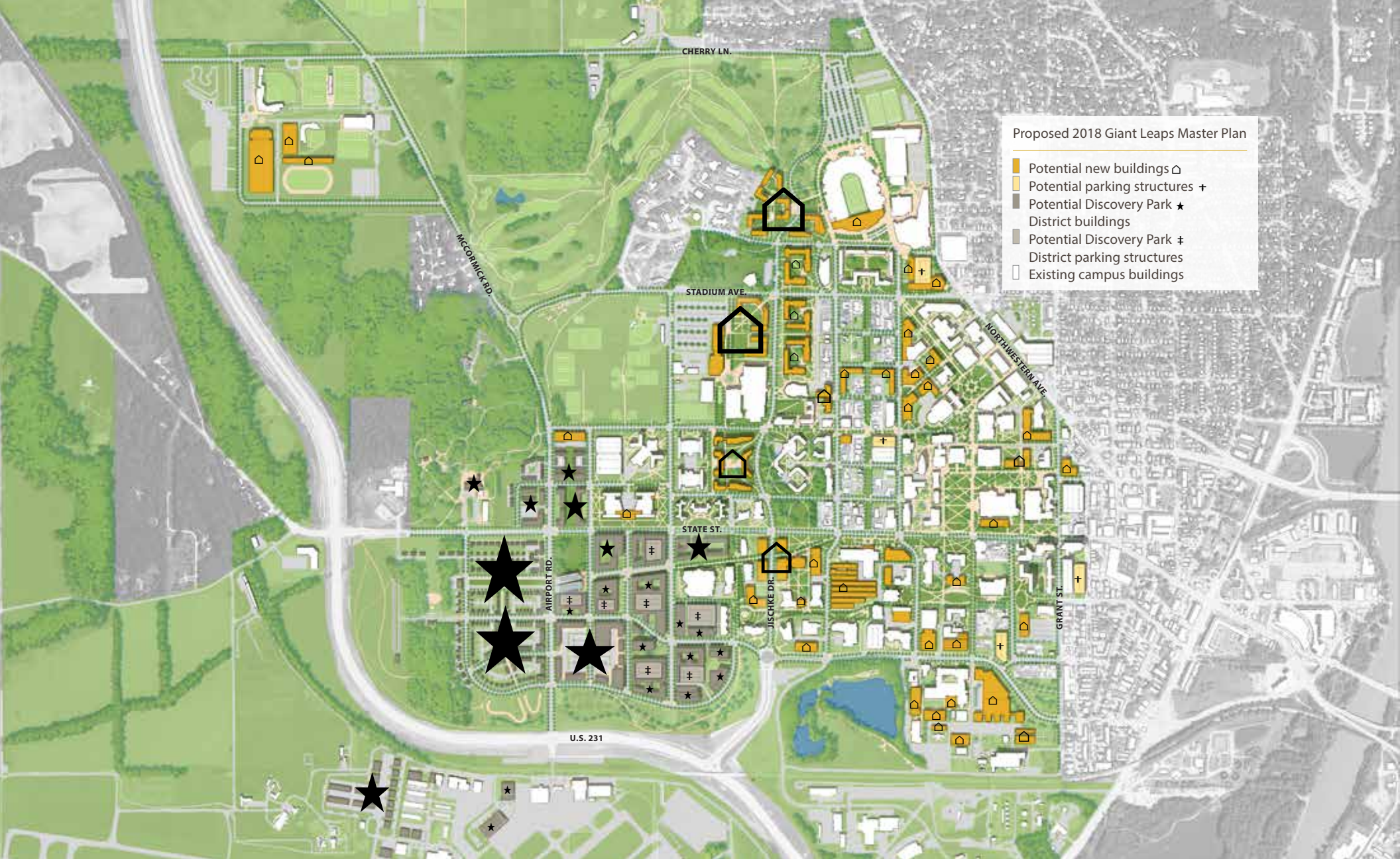
GOAL 1 Invest in teaching, research, and collaborative spaces

GOAL 2 Prioritize strategic renovations

GOAL 3 Focus housing and dining investments

GOAL 4 Enhance open space connectivity and campus circulation

GOAL 5 Strengthen campus identity and gateways


Proposed 2018 Giant Leaps Master Plan
Potential new buildings
Potential parking structures
Potential Discovery Park ★ District buildings
Potential Discovery Park ‡ District parking structures
Existing campus buildings
CHERRY LN.
MCCORMICK RD.
STADIUM AVE.
NORTHWESTERN AVE.
STATE ST.
AIRPORT RD.
JISCHKE DR.
GRANT ST.
U.S. 231

THE MASTER PLAN

OVERVIEW

The 2018 Giant Leaps Master Plan establishes a framework for the physical campus. While some projects have been identified today, the Master Plan is meant to serve as a road-map for future projects and decision making.

The Master Plan addresses the physical aspects of campus to ensure it changes and grows responsibly in the future. To that end, establishing appropriate development sites and land use for the campus is critical. Potential sites identified for future capacity ensure development aligns with the long-term vision for a connected campus. Based on the physical analysis, some sites are better suited to certain programmatic uses due to location, site capacity, and infrastructure. The Master Plan provides a land use strategy for the following:

- Academic and Research
- Student Life
- Housing
- Recreation
- Athletics
- Partnership and Innovation
- Administration
- Public Use
- Campus Support

As projects and programmatic needs arise, the Master Plan will help the University determine the appropriate sites to accommodate needs that are aligned with this land use strategy.

Academic and Research

Purdue's unique land use structure has a robust and clear academic and research zone. This zone extends across the eastern and southern portions of campus. Covering nearly 200 acres, the academic and research area of campus is vast, but vastness can pose challenges to creating vibrancy and synergy. As a result, the Master Plan proposes densifying this zone by focusing new academic and research footprints there. Over the next 50 years, the plan promotes infilling vacant lots and maximizing underutilized sites to increase density and build vibrancy across campus.

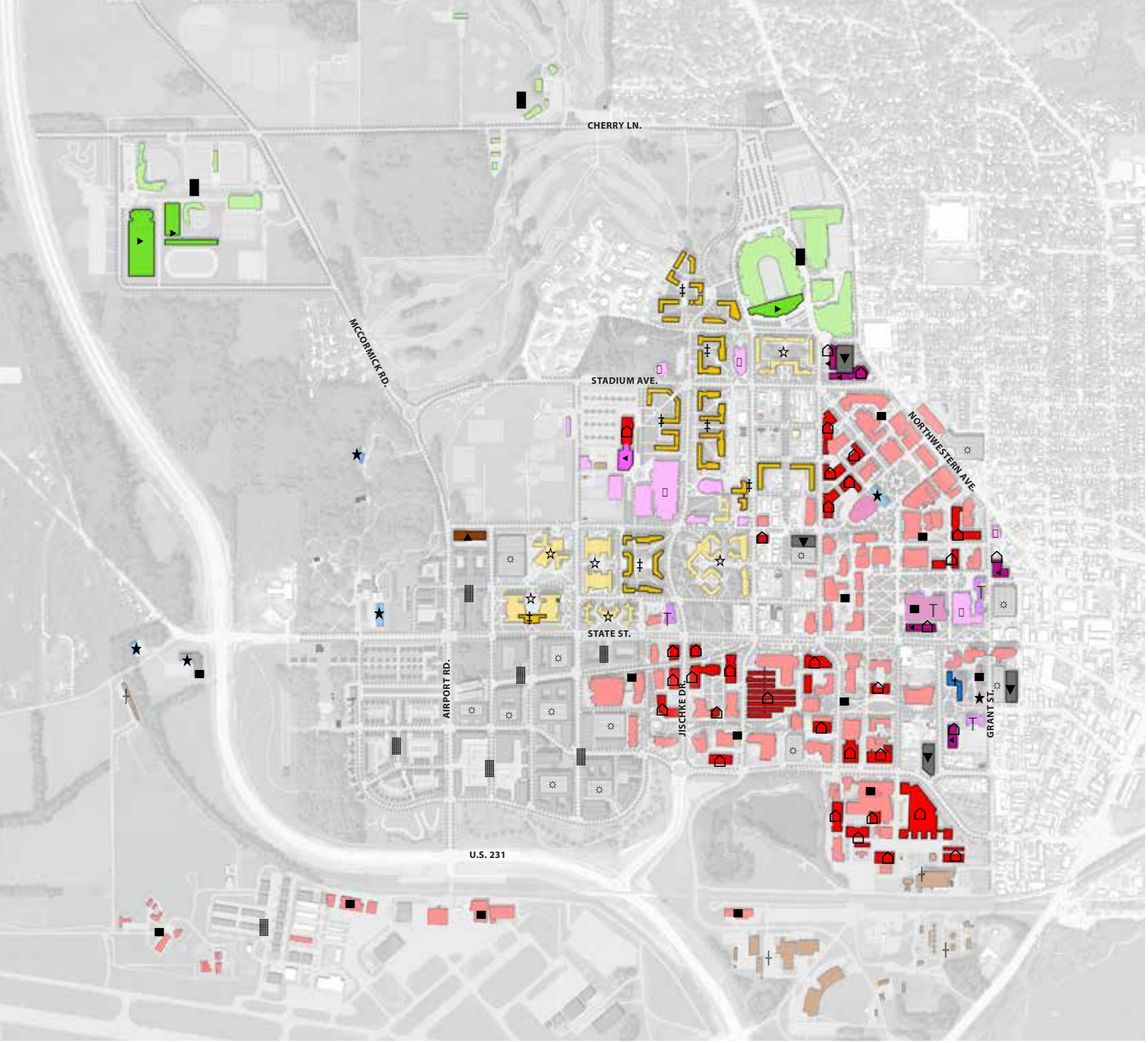
The Master Plan also proposes the strategic integration of collaborative hubs where appropriate to activate space in the academic and research zone. These hubs informally foster the growth and success of academics and research on campus by providing spaces for people to meet, study, and collaborate. The Wilmeth Active Learning Center (WALC) and Grissom Hall are two recent examples of successful collaborative hubs constructed on campus.

New research facilities like Flex Lab and the Hall for Discovery and Learning provide modern and flexible lab spaces on campus. To meet the Purdue Moves goals focused on research, interdisciplinary facilities should be considered as well as policies related to retaining and occupying research space to ensure high utilization of space. Investing in core research facilities can also help reduce the duplication of spaces and equipment across campus.

Student Life, Housing, and Recreation

Providing quality student housing that blends the living and learning aspects of campus is increasingly more important as Purdue grows its student population. The Master Plan primarily focuses housing investments between State Street and Stadium Avenue and recommends including academic space in the ground floor of housing projects where appropriate. Indoor and outdoor recreation space generally meets campus demands. The new recreation and club sport fields along Cherry Lane provide quality facilities and the outdoor fields by the Córdova Recreational Sports Center (CREC) are in an ideal location for students. With a growing student population, the demand for student space, recreation space, and housing will increase. Purdue should continue to monitor demand, particularly during peak hours, and look for alternative ways to meet the needs if required. New buildings like WALC provide much needed collaboration and study space for students. New buildings and renovations should incorporate this type of space as appropriate.

Purdue is in the process of evaluating a retail dining strategy that will support its population across all zones of campus. Areas south of State Street in particular lack food and collaboration spaces. The location of Purdue University Student Health Center (PUSH) and Center for Healthy Living (CHL) are also being studied. The goal is to provide a more comprehensive wellness center for students, faculty, and staff on campus.



Land Use Diagram

Proposed

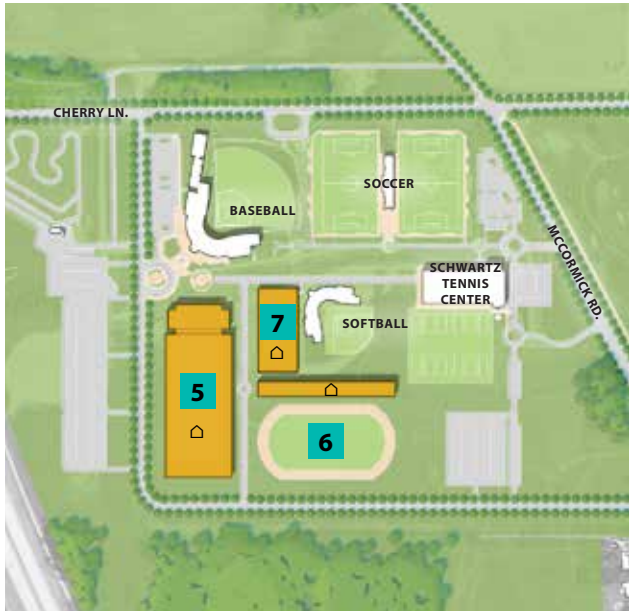
- Academics & research
- Administration
- Housing
- Student life
- Athletics
- Public use
- Support
- Parking

Existing

- Academics & research
- Administration
- Housing
- Student life
- Athletics
- Public use
- Support
- Parking
- Other

Top: Ross-Ade Stadium and Mackey Arena Area

1 South End Zone addition
2 New plazas
3 Parking garage
4 Residence hall with Training Table



Right: Northwest Athletic Complex

5 Indoor track
6 Outdoor track
7 Satellite field house

Potential new buildings
Potential parking structures
Existing campus buildings

Athletics

The Purdue Athletics department completed master plans in 2007 and 2012 and has been implementing the recommendations to support its 18 teams. The 2018 Giant Leaps Master Plan includes recommendations to meet the long-term needs for Athletics. The new Football Performance Complex was completed in the fall of 2017. The Football Master Plan also outlines seating, sound, and technology upgrades for Ross-Ade Stadium that are incorporated into this Master Plan.

These plans envision a more integrated Athletics complex and the following projects are proposed to achieve this goal. An addition to the south end zone will include more seating, locker rooms, offices, and event and gallery space. The fan and game-day experience will be enhanced by two new outdoor plaza areas. A large plaza is included on the south end of the stadium with connections to Mackey Arena and a new parking garage on the existing Lambert Field House site. The parking will support the campus and events at Mackey and Ross-Ade. The second plaza is to the west of the stadium, created by the re-alignment of Steven Beering Drive and Martin Jischke Drive. These relatively minor investments will make this athletic area of campus feel like an integrated complex rather than just a collection of buildings. An athletic-focused residence hall is also envisioned to the west of the stadium with a training table.

On the Northwest Athletic Complex, a new indoor and outdoor track and field house are planned. The current indoor track, located in Lambert Field House, is an outdated facility that limits Purdue's ability to host NCAA competitions. The new indoor and outdoor track facilities should be planned and constructed together to maximize practice time; having the two facilities in close proximity provides greater flexibility for practice during inclement weather. The satellite field house will support the sports and events located at the Northwest Athletic Complex and provide much needed storage space for the department.

Partnerships and Innovation

Immediately before this planning process began, the Discovery Park District Master Plan was completed by the Purdue Research Foundation, providing a new framework for the southwest part of campus. The land holdings west of campus and north of the airport present a major opportunity to create a unique, mixed-use district that supports the University's mission, expands the area's knowledge-based economy, and enhances the quality of life in the greater Lafayette area. Discovery Park District seeks to maximize the symbiotic relationship between Purdue and West Lafayette by helping the University and region participate in the global competition for human capital, investment dollars, and environmental stewardship. Thus, the Discovery Park District master plan vision calls for the area to become a dense, well-connected, mixed-use place that leverages proximity to the University, encourages creative interactions, accommodates a wide range of activities and uses, and elevates the overall quality of life in the area.

The vision for a robust Discovery Park District provides a rare and powerful opportunity to integrate the University's research and faculty with private industry and a startup ecosystem in a new and significant way. The district will create a world-class environment of innovation that celebrates, amplifies, and accelerates the strengths of the University. It will put Purdue at the forefront of responding to local, regional, and global problems and establish it as a leader for other institutions to emulate. Because of this opportunity and the thoughtful process that informed the 2018 Giant Leaps Master Plan, the Discovery Park District Master Plan was considered an existing condition for the west part of campus ensuring that it was well connected to the rest of campus.

Discovery Park District Master Plan showing green space connections to campus

Administration

Purdue has very few buildings that solely house administrative units and functions. Most buildings include a mix of academic and administrative functions. The University currently has some administrative units, like Physical Facilities, in leased space. The University is evaluating whether to continue leasing space or providing office space on campus. The Master Plan evaluates the conversion of spaces that are no longer suited for student life purposes into faculty and administrative space.

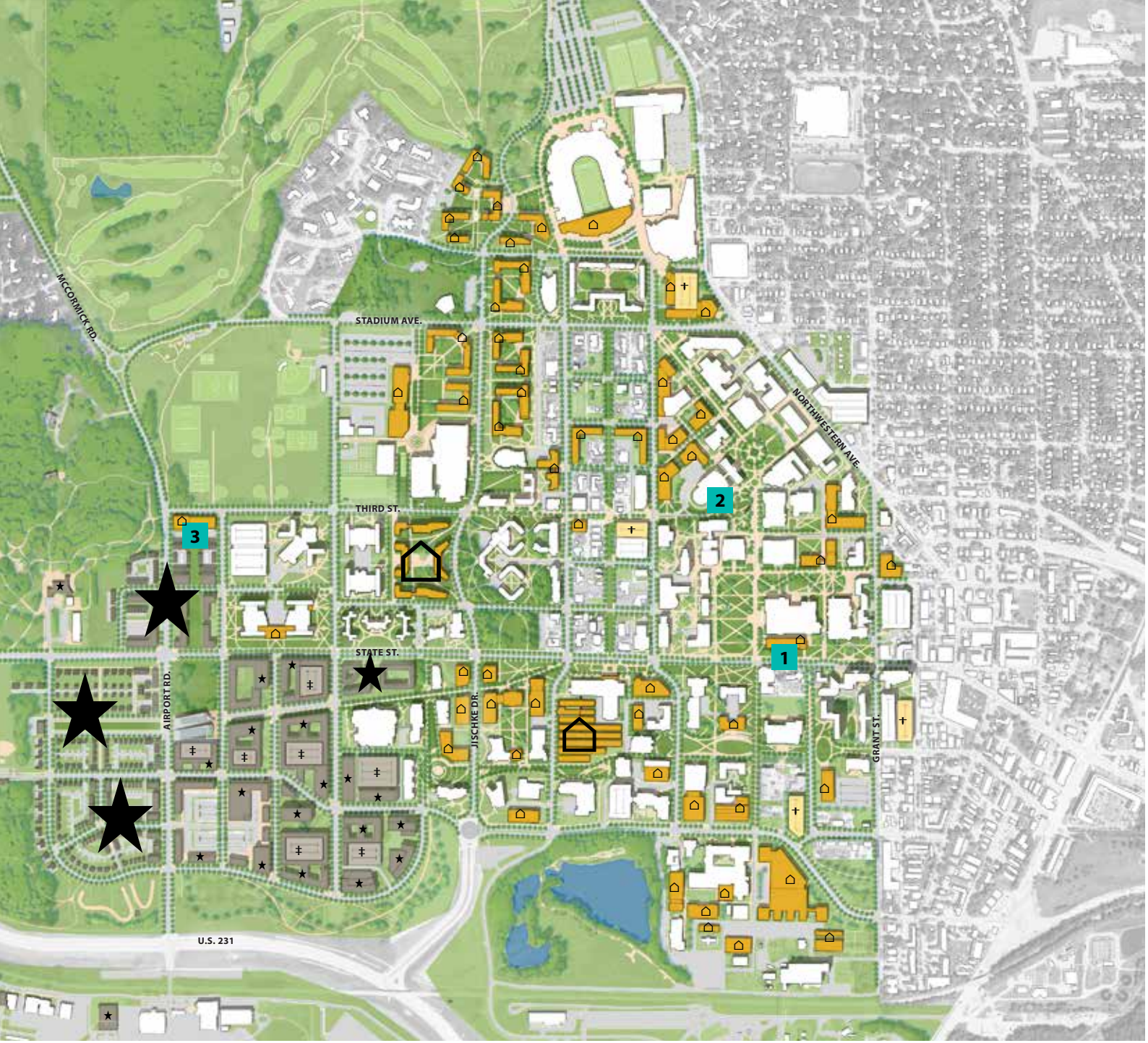
Public Use

In addition to faculty, staff, and students, the University welcomes visitors and the community to campus for a variety of events: performances, lectures, continuing education, sporting events, clinics, child care, etc. Most buildings on campus serve multiple functions and are not exclusively public facilities. To the extent possible, facilities on campus that welcome the public should be easy to access and proximate to public parking. Currently the Undergraduate Admissions office is in Schleman Hall which is in the heart of campus but is not proximate to public parking, complicating the first-time experience for prospective students and their families. The Master Plan recommends relocating the Admissions office in a Welcome Center that is easy to locate, proximate to public parking, and central to key campus tour destinations. One option for a new Welcome Center location is along State Street above Hicks Library (1 on the Master Plan). Another potential location is a renovated Haas Hall if the existing programs are relocated to a new academic building. A new Welcome Center should not only house the Admissions office but provide an opportunity to include gallery space highlighting Purdue's history and achievements. This type of space is lacking on campus, and the Welcome Center is a good opportunity to celebrate and showcase Purdue's history and legacy.

The Elliott Hall of Music (2 on the Master Plan) is used for academic and student functions but also hosts performances that bring large crowds to campus. To adequately serve as a performance venue, the facility needs a major renovation. During the stakeholder interviews, the desire for more cultural, art, and performance experiences on campus to serve the University and West Lafayette community was consistently noted. The Elliott Hall of Music is the primary venue on campus addressing this need.

Campus Support

Campus Support facilities are critical to the operation of the University. They include the physical plant, maintenance and storage buildings, and auxiliary services like police and fire protection. Overall the University benefits from efficient operations and appropriately placed support facilities. The police station, however, is located on an ideal research site along the Life and Health Sciences Mall. The fire department has outgrown its building on Third Street although it is in a good location to serve the campus and the airport. The Master Plan recommends consolidating police and fire operations and potentially other auxiliary services into a single location on the corner of Third Street and McCormick Road (3 on the Master Plan). This location is ideal for both units to respond to emergencies on campus and within the distance required for the fire department to quickly respond to the airport.



Proposed Public Use and Campus Support Projects

1 Welcome center
2 Elliot Hall of Music
3 Auxiliary building

- Potential new buildings
- Potential parking structures
- Potential Discovery Park District buildings
- Potential Discovery Park District parking structures
- Existing campus buildings

The Master Plan goals are the guiding force of this plan. They serve as a framework for both near- and long-term decisions related to the physical campus supporting Purdue's mission. The goals are used to organize and strategically focus the Master Plan recommendations.

GOAL 1

INVEST IN TEACHING, RESEARCH, AND COLLABORATIVE SPACES

SUMMARY OF SPACE NEEDS

Investing in teaching, research, and collaborative spaces is key for student success. Maintaining and creating high-quality facilities is the most fundamental way the physical campus can support the mission of the University.

To support decision-making and planning, a space needs assessment was conducted to identify current space distributions, instructional space utilization, and areas of need across campus. The main goal was to determine how Purdue can better utilize existing, non-residential space and quantify if additional space is needed as the student population grows. The data used in the assessment was provided by the University as a snapshot in time using Fall 2016 enrollment statistics, existing space data, and documented program needs. The metrics used to generate the analysis are based upon Purdue's space metrics and normative metrics applicable to institutions similar to Purdue. They also draw from the experience of the Planning Team.

The space needs assessment is quantitative, although the existing quality of space also plays a role in the overall demand and is an important factor when analyzing an institution's needs. The space needs analysis process included a space adequacy assessment of approximately 145 academic and administrative buildings. The space adequacy assessment diagnoses the functional adequacy of space on campus and paired with the needs assessment, provides a holistic space needs narrative for the University.

Conceptual rendering of new STEM Teaching Lab Building (courtesy of Ennead/Jacobs)

As of Fall 2016, Purdue has a total of 12.5 million assignable square feet (ASF), of which 7.1 million ASF (57%) is addressed in the space needs assessment. Residential space, parking garages, animal health care space, airport, farm space, and inactive/conversion spaces are excluded from the analysis.

Through the space needs assessment, it was determined that Purdue has enough overall space to meet its existing (2016) needs after completion of current projects underway. However, there are instances where overages in some space types, such as office space, are masking needs in other space types, such as classrooms and teaching labs.

The following are critical space need demand drivers for Purdue's existing and future space needs:

- Growing enrollment with a corresponding increase in faculty and staff
- Existing quality of space and aging buildings
- Utilizing existing space for modern pedagogies
- Implementing Purdue Move goals for STEM Leadership and Transformational Education

Even though Purdue has a sufficient quantity of space for the 2016 snapshot in time, there are three major space need challenges moving forward. The first is building condition. Twenty-nine (29) of the 160 buildings on campus are rated as "poor" on the APPA scale (ratings provided by the University). The second challenge is space adequacy. The adequacy assessment determined that 35 percent of space on campus is not meeting users' needs (poor or below average). The final challenge is enrollment trends, which are exceeding projections. For planning purposes, the expected 14.3 percent increase in total number of students was used to understand the impact of enrollment growth on the physical campus. The space assessment anticipates an 8 percent increase in space on campus to accommodate the assumed growth. An 8 percent increase in space equates to roughly 600,000 ASF. To address this need, Purdue must renovate existing space on campus and build new facilities. The Master Plan anticipates that approximately 100,000 ASF of the 600,000 ASF need can be met through renovating existing facilities. Renovations will address adequacy and building condition challenges and increase space efficiency and utilization. This assumption is based on gaining an average of 10 percent efficiency from each renovation to meet additional space needs. Approximately one million ASF of existing space needs to be renovated to meet this target. In conjunction with renovations, Purdue should also consider changes or modifications to office policies, right sizing, and better incorporating technology in classrooms and labs to help with efficiency and utilization of space.

The remaining 500,000 ASF need can be accommodated via new construction. New construction allows the University to provide dynamic environments for teaching, research, and recreation, as well as the flexibility to adapt to evolving needs. Since the 2016 snapshot, the following projects have been approved by the Board of Trustees and will begin to address this need (total of approximately 160,000 ASF):

- Hampton Hall Renovation
- Pharmacy Library Renovation
- STEM Teaching Labs
- Jischke Hall Addition
- Agricultural and Biological Engineering Building Renovation and Addition
- Veterinary Medicine Teaching Hospital

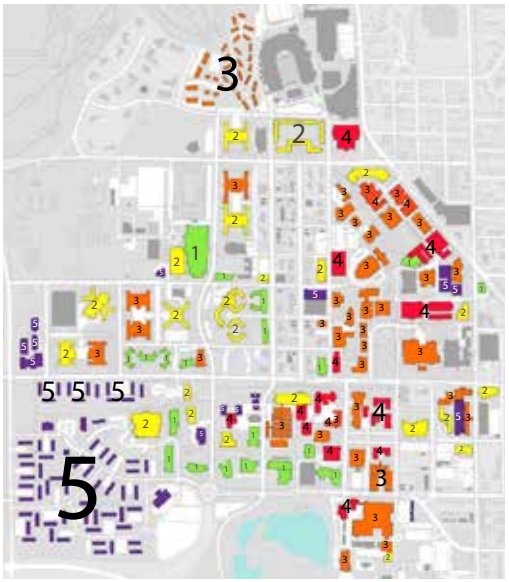
Strategies to Meet Space Needs

While the goal is not to meet every identified need on campus, priority needs will be met over time through infill and renewal, redevelopment, and long-term new development. Key strategies to achieving this goal and ensuring the investment in teaching, research, and collaborative spaces include the following:

- Build teaching labs, which also directly supports the STEM goals
- Increase the number of interdisciplinary and shared facilities to increase adjacency, collaboration, and efficiency of resources
- Ensure the correct distribution of instructional spaces throughout campus, especially larger classrooms
- Leverage opportunities in the Discovery Park District for research, commercialization, and partnerships
- Create indoor and outdoor spaces that support learning outside the classroom and innovation

Building Condition

Exterior skin, mechanical systems, structure, etc.



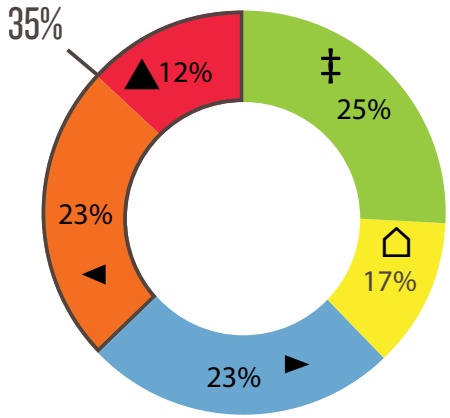
29 of 160 buildings (18%) rated as "poor" (4 on APPA scale)

(18% excludes reduced life buildings proposed for demolition)

- 1—Good
- 2—Above average
- 3—Below average
- 4—Poor
- Proposed demolition

Space Adequacy

Usability and functionality of non-residential spaces

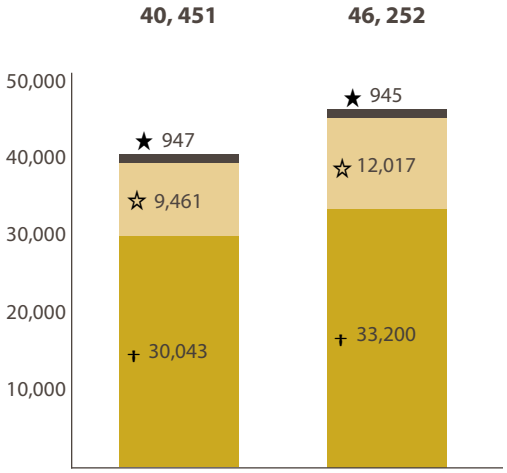


35% of space is not meeting the users' current needs

(80% of all non-residential space on campus was assessed)

- ‡ Good
- ⌂ Above average
- ► Average
- ◄ Below average
- ▲ Poor
- Not assessed

Enrollment Growth Assumption



14.3% increase (+5,800) in the number of students

- + Undergraduates
- ☆ Graduates
- ★ Professionals

Academic and Research Sites Identified

The Master Plan identifies development sites that are suitable for new academic and research facilities. These sites leverage existing adjacencies, replace buildings that are at the end of their useful lives, and reinforce the open space network and circulation corridors. Some sites will be needed to meet immediate and near-term needs while others are placeholders for future development as needed.

1. Site is suited for programs that can take advantage of the proximity to the CoRec, student housing, athletics, and parking. Potential programs identified during the Master Plan process include Health and Kinesiology, Physical Therapy, PUSH, and the Center for Healthy Living.
2. Sites are ideal for programs that can take advantage of proximity to engineering, science, and athletics and serve many undergraduate students. Potential programs identified during the Master Plan process include the STEM building, Data Science, Health and Kinesiology, Engineering expansion, and Pharmacy/Nursing renovation and expansion. The buildings at the intersection of Fourth Street and University Street frame a new pedestrian corridor and open space that connects Stadium Mall to the CoRec. This important corridor connects the campus and blends the existing campus zones so the ground floor uses should be activated with student study areas, retail food, and dynamic programs to increase vibrancy and movement.
3. Sites are suited for Engineering, Purdue Polytechnic Institute (PPI), and programs that benefit from adjacency to those colleges. The new sites address building condition and adequacy issues in Brown Hall, Heavilon Hall, Michael Golden Engineering Laboratories and Shops, and the Nuclear Engineering Building while creating a new pedestrian gateway into campus.
4. Site is along the Third Street corridor and can accommodate academic or student life programs. Ideal programs would blend the two and provide an active ground floor to leverage the high volume of pedestrian traffic.
5. Sites are ideal for programs that can take advantage of the proximity to existing research facilities (life and health sciences, cancer, engineering), Discovery Park District, and easy access from U.S. 231. Potential programs identified during the master plan process include Nursing; Pharmacy; PUSH; Center for Health Living and other clinics; HHS expansion/relocation; animal facilities; and interdisciplinary research.
6. Site is planned for new greenhouses for life sciences with adequate growth chambers to address space deficiency, condition, and adequacy.
7. Sites are ideal for programs that can take advantage of the proximity to the Colleges of Agriculture and Veterinary Medicine and existing research facilities. Potential programs identified during the master plan process include Agricultural and Biological Engineering renovation and expansion, forestry, food science expansion, entomology, horticulture greenhouses, HHS expansion/relocation, and interdisciplinary research.
8. Site is along Agriculture Mall, near Pao Hall of Visual and Performing Art, adjacent to the Dauch Alumni Center and parking, making it suitable to meet administrative or academic needs. The site is easily accessible with proximate parking so the programmatic use should take advantage of those conveniences.
9. Sites are planned for Veterinary Medicine expansion. Identified program priorities include equine, small animal, and farm animal hospitals.

Academic and Research Site Locations

- Potential new academic and research buildings
- Potential new non-academic and research buildings
- Potential Discovery Park District buildings
- Potential Discovery Park District parking structures
- Existing buildings

GOAL 2

PRIORITIZE STRATEGIC RENOVATIONS

SUMMARY OF FACILITY CONDITION AND SPACE ADEQUACY

Purdue hosts top-ranking academic and research programs in a range of disciplines, including engineering, agriculture, business, and pharmacy. In many cases, the existing facilities do not reflect the caliber of the University. Creating spaces that support the highest standards of academic excellence is a priority. This urgency includes renewal of existing facilities. Renovations of existing buildings can help optimize space utilization and modernize outdated facilities. Improving the condition, adequacy, and utilization of space across campus is an important goal and where appropriate, renovations should be considered over new construction to capitalize on infrastructure investment.

Renovation of Grissom Hall

As previously described, 29 buildings are rated in 'poor' condition (4 on the APPA scale) and 35 percent of Purdue's space is classified as below average or poor from a space adequacy perspective. By percentage of space assessed, classrooms, class labs, research labs, and vivaria had 40 percent or more space rated below average or poor. Key drivers are the lack of design and furniture flexibility, inappropriately sized spaces, and insufficient formal and informal collaboration space. The following units have more than half of their inventory in below average or poor space related to adequacy:

- College of Health and Human Sciences
- College of Pharmacy
- College of Science
- Krannert School of Management

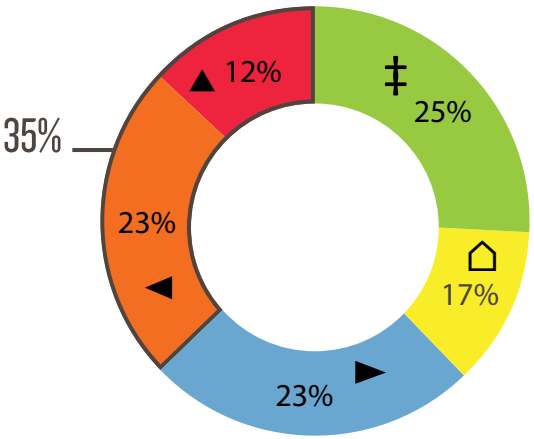
Combined, these academic units account for almost half of the University's student credit hours. Building age is also a factor in that almost 70 percent of buildings constructed before 1942 are rated below average or poor.

Focusing renovations on these buildings and spaces can create new opportunities to meet current building, academic, and research standards; however, not all space types lend themselves to renovation. For example, some lab spaces housed in older buildings lack the building systems to support modern equipment, particularly in the campus core. Teaching and research labs require higher floor-to-floor heights than offices and many classrooms, greater floor loading capacity, and increased mechanical system demands such as air change capacity and ventilation; therefore renovating older buildings can be challenging. For these programmatic uses, consider selective modernization projects or constructing new facilities to meet current and future demands while allowing older facilities to be renovated in support of less intensive functions.

Similarly, as learning environments become more collaborative, classrooms require more space per student. Purdue's average ASF per seat is 18, which limits pedagogical flexibility and active learning where multiple fronts of room and additional learning aides are important. Based on national trends and the Planning Team's experience, modern instructional spaces typically have 25 ASF per seat as a minimum. Large-capacity rooms will not achieve this ASF, which is to be expected. The utilization rate indicates there might be opportunities to increase the number of sections taught or some rooms can be rightsized to allow more active learning. The increase in space per student and shift toward active learning classrooms means that fewer students can fit in a given classroom. This limitation can sometimes create an imbalance between classroom sizes and demand. While Purdue has enough square footage to meet its existing classroom need, there is a surplus of smaller classrooms and a shortage of classrooms in the 60-80 seat range. The ability to renovate existing space to meet these needs must be further evaluated.

The quality of recreation and student-centered space is generally above average. Selective renovations and ongoing maintenance will ensure that these facilities stay in good condition. Recent renovation and construction projects have leveraged open office spaces to improve space efficiencies, enhance natural lighting, and encourage collaboration. When feasible, Purdue should consider renovating older buildings to modernize office environments across campus. The quality and capacity of these spaces should be evaluated if enrollment trends exceed the projected targets.

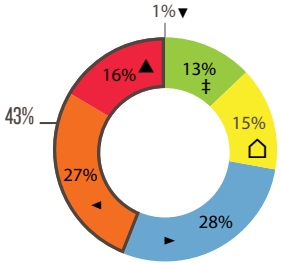
Total



35% of all spaces assessed rate as poor or below average for space adequacy

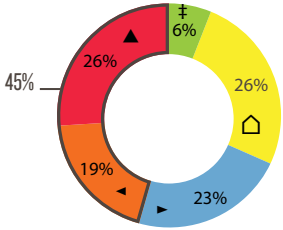
Space Adequacy Breakdown

- ‡ Good
- ⌂ Above average
- ► Average
- ◄ Below average
- ▲ Poor
- ▼ Not assessed



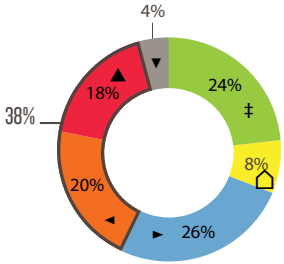
Classrooms

Classrooms: 43% below average or poor



Class Laboratories

Teaching Labs: 45% below average or poor



Research Laboratories

Research Labs: 38% below average or poor

Renovation Priorities and Strategies

The Master Plan proposes transformative renovations to more than 1.3 million square feet of existing academic, residential, and administrative space. These renovations address critical deferred maintenance and programmatic needs and in some cases reposition the primary space use of the building. Repurposed space should address space adequacy and increase flexibility where possible. Through renovations, the University can maximize shared spaces and shared facilities to increase utilization and reduce duplication of spaces across campus. Renovations should be prioritized for historic campus buildings as appropriate.

Some projects will require holistic renovations, while others are more targeted and only address a portion of a building. Swing space is critical to enable renovation projects, so determining an approach to accommodate swing space is an important consideration for project phasing and cost.

The Master Plan includes buildings recommended for renovation either in part or holistically based on condition and adequacy. A feasibility study should be conducted for each of these buildings to determine if a renovation can meet the desired program and if a renovation is cost effective and delivers value. The existing and intended building use, infrastructure, structural integrity, and swing space costs will all impact the renovation decision. Potential renovation opportunities include the following:

- Agricultural and Biological Engineering Building Renovation and Addition
- Electrical Engineering Building Renovation
- Elliott Hall Renovation
- Hampton Hall of Civil Engineering Partial Renovation for Nursing
- Hampton Hall of Civil Engineering Renovation
- Hawkins Hall Renovation/Conversion
- Hicks Library Renovation (below grade)
- Krannert Building Renovation
- Lilly Hall of Life Sciences Renovation
- Lynn Hall of Veterinary Medicine Renovation
- Materials and Electrical Engineering Building Renovation
- Mechanical Engineering Building Renovation
- Pharmacy Renovations
- Potter Engineering Center Renovation
- Rawls Hall Renovation
- Ross-Ade Stadium Renovation
- Stone Hall Renovation
- Union Club Hotel Renovation
- Wetherill Laboratory of Chemistry Renovation

Candidates for Renovation

- Potential renovation opportunities
- Potential new buildings
- Potential Discovery Park District buildings
- Existing buildings

In some cases, renovation is not a cost-effective option for aging facilities and selective demolition may prove to be a better solution. There are other times where buildings have outlived their useful lives or a higher and better use is identified for a given site. The Master Plan proposes strategic demolition of aging facilities to address repair and rehabilitation (R&R), modernize building stock, and improve the open space network. Additional selective demolition is recommended to free up key sites that are needed for higher and better uses. Most buildings identified for demolition over the life of the Master Plan are those that have been identified on the APPA scale with a score of four or as reduced life buildings. In most cases the renovation cost of these buildings will exceed the replacement cost of the building. Potential demolition opportunities include the following:

- Agricultural and Biological Engineering (partial)
- Brown Laboratory of Chemistry
- Doyle Laboratory
- Entomology Environmental Laboratory
- Equine Health Science Building
- Forestry Building
- Heavilon Hall
- Herrick Acoustics
- Horticultural Greenhouse (partial)
- Johnson Hall of Nursing
- Lambert Fieldhouse and Gymnasium
- Life Science Animal Building
- Life Science Ranges
- Michael Golden Engineering Laboratories
- Nuclear Engineering Building
- Purdue University Student Health Center
- Poultry Building, Poultry Annex, Animal Science Teaching Lab, Grounds Service Building
- Smith Hall
- Stadium—South Endzone Buildings
- Terry House
- University Church
- Veterinary Animal Isolation Buildings (1&2)
- Veterinary Laboratory Animal Building
- Hilltop Apartments
- Meredith Residence Hall
- Owen Residence Hall
- Purdue Village
- Tarkington Residence Hall
- Wiley Residence Hall
- Smalley Center for Housing and Food Services Administration
- University Street Garage (partial)
- Grad House Garage

Candidates for Demolition

- Potential demolition
- Existing buildings

GOAL 3

FOCUS HOUSING AND DINING INVESTMENTS

HOUSING GOALS AND DEMAND

The link between on-campus living and academic achievement is an important aspect of student success. As stated in Purdue Moves, "research continues to demonstrate that students who live on campus achieve greater academic success and graduation rates than do their off-campus peers."

Purdue's data indicates that those who live on campus have a retention rate that averaged 7.2 percentage points higher over a one-year period than their off-campus peers and a 10-year average GPA that is 0.15 points higher. Therefore, increasing the quantity and quality of student housing and dining options on campus is a key focus of the Master Plan. Providing quality student housing that blends the living and learning aspects of campus becomes increasingly more important as the student population grows.

The Master Plan included a detailed look at Purdue's housing and dining facilities. A more detailed Housing Master Plan was completed in tandem with the 2018 Giants Leaps Master Plan and serves as a supplemental document. The housing master planning process included an inventory of existing student housing facilities and stakeholder meetings with students, student life leaders, and staff to determine the needs and goals for housing on campus.

Conceptual rendering of new Third Street North Residence Hall (courtesy of MSKTD & Associates)

The existing inventory of housing and dining facilities are utilized year-round—by students throughout the school year and by conference groups, camps, and orientation through the summer months. The quality and character of housing facilities varies widely. As of Fall 2017, Purdue had 13,027 beds, of which, 64 percent are traditional style units, 21 percent are semi-suite or pod style, 2 percent are suites, and 13 percent are apartments. Unit types are distributed across campus with apartment-style units focused in the Purdue Village and Hilltop Apartments.

To determine the demand for housing on campus, the Planning Team along with MGT Consulting Group conducted a market study. The study revealed that Purdue has an immediate housing need of roughly 1,000 beds. This need is temporarily being met by housing freshmen in leased, off-campus facilities and in former graduate student housing, but this is not a desired long-term solution. With recent off-campus developments underway, the number of apartment units available off-campus will increase significantly over the next couple years. Given these changes in the local market, Purdue will continue to evaluate housing need based on new off-campus housing and student demand.

To meet the existing need for 1,000 beds (see pages 58 and 59 for Phase1) and establish a roadmap for future growth, the Master Plan identified four strategies:

Accommodate unmet demand for on-campus student housing by building on available sites. Purdue currently has more students requesting housing than they can accommodate in on-campus housing facilities. During Fall 2018, Purdue leased 602 beds off campus for student housing and had an additional 300 freshmen and transfer students on the housing waitlist. By building on open sites, Purdue will increase the overall bed count without disrupting the existing residence halls.

Replace Meredith Hall. From the student surveys conducted during the planning process, students indicated that Meredith Hall was the worst residence hall to live in. That information, coupled with the fact that the existing site is underutilized and the building will soon need upgrades and investment, makes Meredith Hall a priority candidate for replacement.

Build enough new housing to accommodate inventory reduction at Purdue Village, Hawkins Hall, and Hilltop Apartments. Purdue's aging housing stock at Purdue Village and Hilltop Apartments is nearing the end of its useful life. Demolition has already begun for parts of Purdue Village and is expected to continue, but new housing must be built before these units can come offline. Similarly, the location of Hawkins Hall is not ideal for undergraduate student housing because it is not proximate to University dining or any other housing. Ultimately Hawkins should be evaluated for conversion into another use, but additional housing needs to be built first.

Appropriately academicize existing residence halls that will remain. Older buildings that are predominately traditional units often lack the proper amount of outside-the-unit space to encourage collaboration and provide study space. Outside-the-unit space includes programmed common spaces like floor and building lounges, laundry areas, study spaces, kitchens, classrooms, staff offices, and storage areas. The amount of space devoted to community development outside of individual units in Purdue's existing traditional, semi-suite, suite, and apartment-style residence halls falls short of national averages. In the long term, the Master Plan proposes 'academicizing' existing traditional halls to provide adequate outside-the-unit space by renovating building floors to convert one or two double rooms per wing into a study area. If this adjustment was done over time in all traditional residence halls, it would result in a loss of 220 beds. These beds would need to be accommodated in new facilities before the beds come offline.

Existing Housing Distribution

TOTAL: 13,027

† **TRADITIONAL**
Cary—766
Earhart—807
Harrison—803
Hawkins—856
McCutcheon—737
Meredith—624
Owen—728
Shreve—873
Tarkington—728
Wiley—768
Windsor—706
TOTAL: 8,396

‡ **POD STYLE**
Honors—857
TOTAL: 857

‡ **SEMI-SUITE**
Cary—449
First Street Towers—539
Hillenbrand—830
Third Street Suites—112
TOTAL: 1,930

⌂ **SUITE**
Third Street Suites—201
TOTAL: 201

▸ **APARTMENTS**
Hilltop—811
Purdue Village—832
TOTAL: 1,643

Housing Priorities and Implementation

The Master Plan identifies sites that are ideal for housing. The campus has capacity to meet the immediate need of 1,000 beds, renovate or replace aging facilities, and accommodate future demand. This plan provides a flexible roadmap with multiple implementation scenarios to accommodate changes in demand or priorities. The Master Plan includes enough capacity to account for the following in both the near- and long-term:

- Existing wait list and initial 1,000 beds
- Replacement of Meredith Hall
- Loss of beds in Purdue Village, Hawkins Hall, and Hilltop Apartments over time
- Renovations to existing halls (academicizing)
- Enrollment growth
- Future increased demand based on off-campus housing market

Phase 1:

In the near-term, Purdue must accommodate a minimum of 1,000 net new beds on campus. Two projects are proposed to meet this need in the immediate future:

1. Third Street North: 570 beds
2. Meredith South: 730 beds

Phase 1 Housing Sites

- Potential new housing
- Existing housing
- Existing buildings

Later Phases:

In the long term, the Master Plan recommends several sites for future housing capacity. Depending on future priorities and changing housing demand, these projects can be implemented in the order that best suits the needs of Purdue. These projects are:

1. Hilltop East: 670 beds (net new)
2. Meredith Site (Phase 2): 1,100 beds (net new)
3. The Island: 1,000 beds
4. Track Site
5. Owen, Tarkington, and Wiley Residence Hall replacements
6. Hilltop West (flexible long-term option)
7. McCutcheon and Harrison Hall Connection

The Hilltop East site is ideal for an athletic themed residence hall with a training table incorporated. Of the existing residence halls to remain, the Master Plan recommends selective insertions of common areas on the residential floors of McCutcheon, Harrison, Earhart, and Shreve Halls to strengthen the sense of community. Owen, Tarkington, and Wiley could benefit similarly; however, the Master Plan recommends redeveloping these three sites in the long term given their proximity to the academic core and relatively low density use of land. The Master Plan also proposes addressing the actual and perceived distance of McCutcheon Hall by connecting it to Harrison Hall and creating a shared entry and plaza to the east of Harrison Hall.

Future Housing Opportunities

- Potential new housing
- Existing housing
- Potential new non-housing buildings
- Potential Discovery Park District buildings
- Existing buildings

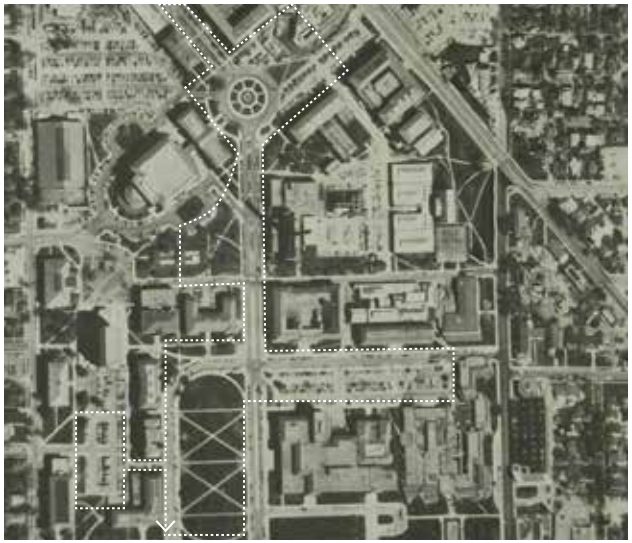
GOAL 4

ENHANCE OPEN SPACE CONNECTIVITY AND CAMPUS CIRCULATION

OVERALL OPEN SPACE NETWORK

The open space network is a framework for knitting together a campus of distinct zones. This network is envisioned as a combination of active, passive, and unique spaces connected through links and corridors that create vibrancy, foster collaboration, and give identity to Purdue.

Beginning with the establishment of Memorial Mall in 1869, the University has embraced the importance of campus open space. Over the past 50 years, the University has steadily built upon this starting point by replacing streets, service alleys, and surface parking lots with memorable malls and quads, notably Purdue Mall, Founders Park, Memorial Mall, and the newly-redeveloped Centennial Mall. These spaces now create welcoming environments for gathering and outdoor learning, give the sense of an open space network, and establish a benchmark for quality.



Purdue's campus core in 1968 (top) compared to today (bottom) outlined in a white dashed line

The campus open space network includes spaces of differing purpose, size, and location. This variation responds to context and scale, lends interest, builds upon natural features where they exist, and acknowledges that campus zones can have varying levels of activity. Most of this network currently exists in the core of campus, between Northwestern Avenue, Grant Street, State Street, University Street, and Stadium Avenue. Outside of these bounds, historic patterns of campus streets and parking lots persist.

To further transform and connect campus, the remaining vehicular-dominated spaces need to be converted into high-quality, pedestrian-oriented spaces, extending the open space network across campus. The overall vision for a connected campus starts with a connected open space network. Using open space and streetscapes to tie different parts of campus together, the following benefits result:

- Improved first impressions of campus and overall identity
- Greater consistency in overall open space quality
- Reduction in perceived distances between different areas of campus
- Greater number of areas for collaboration, outdoor learning, and displaying art
- Improved stormwater management and ecological sustainability

Existing (top) and Proposed (bottom) Open Space Network










PASSIVE OPEN SPACE

Large all-campus spaces, typically defined by strong edges, simple path systems, turf grass, and canopy trees. Examples include:

- Memorial Mall
- Life and Health Sciences Mall
- Krach Center Lawn
- Duhme Woods
- Slayter Hill

ACTIVE OPEN SPACE

Large all-campus spaces, typically defined by strong edges, path systems, plazas, gathering areas, special features (such as fountains), ornamental plantings, turf grass, and canopy trees. Examples include:

- Purdue Mall
- Academy Park
- Founders Park
- Agricultural Mall
- Pao Mall
- Cary Quad

UNIQUE OPEN SPACE

Large and small all-campus spaces, typically defined by a unique theme or special focus. Examples include:

- Horticulture Park
- Intramural Fields
- Jules Janick Horticulture Garden
- Bell Tower Garden
- Pickett Park

LINKS AND CORRIDORS

Linear spaces typically defined by strong edges which serve as key campus connectors and active meeting places, reinforced through robust multi-modal path systems, small gathering areas, special features, ornamental plantings, turf grass, and canopy trees. Examples include:

- Stadium Mall
- Centennial Mall

ATHLETICS AND RECREATION

Campus space which is reserved for intercollegiate athletics and/or recreational sports purposes. Examples include:

- Ross-Ade Stadium
- Intramural Fields
- Ackerman-Allen Golf Course
- Kampen Golf Course
- Northwest Athletic Complex
- Football Practice Fields

OPEN SPACE FOCUS AREAS

Over the next 50 years, the campus open space network is envisioned to reach outward from the core to the north towards the Athletics area, south beyond State Street, southwest towards Discovery Park District, and west across the Island towards residential areas. This expanded network better connects and unifies the campus, but complete implementation will take time. Thus the plan identifies emerging priority areas for open space transformation that include the following:

1. Third Street Student Success Corridor
2. Memorial Mall/Oval Drive and Academy Park
3. Marsteller Street Connection
4. Agriculture Mall/Pao Mall
5. Life and Health Sciences Mall
6. Horticulture Park

Priority Open Space Improvements

- Priority open space improvements
- Potential new buildings
- Potential Discovery Park District buildings
- Existing buildings

Existing Third Street corridor looking east to the Bell Tower

Third Street Student Success Corridor: Bridging the Island

This street-to-pedestrian space conversion is the first link from the campus core westward toward recent development, including the France A. Cordova Recreational Sports Center, Krach Leadership Center, Bechtel Innovation Design Center, Honors College and Residences, and Third Street Suites. The Third Street Student Success Corridor is anchored by the Bell Tower on the east and Horticulture Park on the west. In acknowledgment of heavy pedestrian volumes and popular destinations, the proposed corridor improvements include numerous gathering areas of differing scales. While access to building service areas and for emergency vehicles is required, car-oriented traffic and parking can be removed in favor of new pedestrian paths, bicycle routes, and green space. Specific recommendations include the following:

- Convert Third Street, from the Bell Tower to Martin Jischke Drive, to a pedestrian- and bicycle-oriented route, while accommodating service and emergency vehicles.
- Extend the signature bike route west of Centennial Mall to Martin Jischke Drive.
- Widen green space to either side of the converted route to replace roadway paving.
- Accommodate service and loading areas from adjoining alleys and streets.
- Preserve vehicular through-movement along Martin Jischke Drive, Russell Street, and University Street by integrating speed tables at these intersections.
- Close the Waldron Street intersection to vehicular traffic.
- Extend Student Success Corridor to Grant Street south of the Wilmeth Active Learning Center.

Proposed Third Street corridor looking east to the Bell Tower

Proposed Third Street conversion from Martin Jischke Drive to the Bell Tower Park


UNIVERSITY ST.
LAWSON COMPUTER SCIENCE BUILDING
ELLIOTT HALL OF MUSIC
WILMETH ACTIVE LEARNING CENTER

Memorial Mall and Academy Park: Strengthening a Memorable Open Space

Today, vehicles encircle the historic mall and adjacent Academy Park. While access to building service areas and for emergency vehicles is required, much of the current car-oriented traffic and parking can be removed in favor of new pedestrian paths, bicycle routes, and green space. Specific recommendations include the following:

- Convert Oval Drive and Memorial Mall Drive to a pedestrian- and bicycle-oriented route, while accommodating service and emergency vehicles.
- Extend the Centennial Mall signature bike route south to State Street.
- Extend the non-signature bike route that exists south of Wetherill Laboratory and Grissom Hall westward toward Class of 1950 Lecture Hall.
- Widen Memorial Mall eastward to replace roadway paving.
- Reorganize Academy Park to create a pathway network that functionally and cohesively connects to Memorial Mall.
- Accommodate service/loading areas and vehicle turning movements as appropriate.

Top and Bottom: Before and after of Memorial Mall Drive looking north to the Bell Tower

Proposed Memorial Mall/Oval Drive and Academy Park improvements

Marsteller Street Connection: Spanning State Street and South Campus

At one time, Marsteller Street was part of a road system that connected from Harrison Street to Stadium Avenue. Over time, the northern leg of that connection has been converted into Stadium Mall, Purdue Mall, and Centennial Mall. The conversion of Marsteller Street, as well as Oval Drive, would represent the first pedestrian transformation spanning State Street and connecting Veterinary Medicine to North Campus. While access to building service areas and for emergency vehicles is required, much of the current car-oriented traffic and parking can be removed in favor of new pedestrian paths, bicycle routes, and green space. Specific recommendations include the following:

- Convert Marsteller Street to a pedestrian- and bicycle-oriented route, while accommodating service and emergency vehicles.
- Extend the existing signature bike route north of State Street south to Harrison Street.
- Widen green space to either side of the converted route to replace roadway paving.
- Accommodate service and loading areas and vehicle turning movements north of Pao Hall and between Agricultural Administration and Forestry.

Proposed Marsteller Street conversion

Existing Agricultural Mall looking east

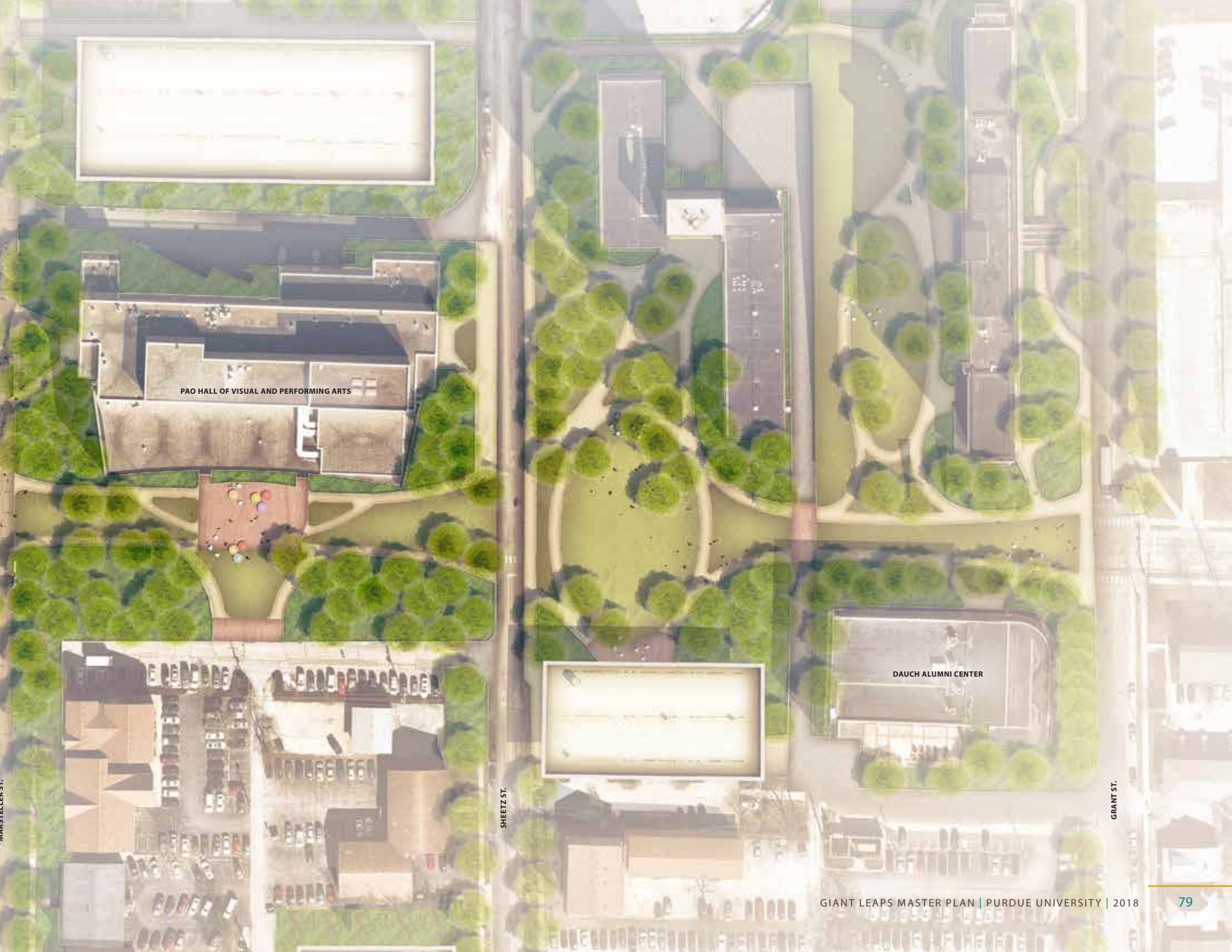
Agricultural Mall: Extending Campus Character and Quality

Agricultural Mall is a top priority for creating a high-quality open space network south of State Street. Already framed by buildings at its edges, the space has a defined perimeter within which new paths, green space, and gathering areas can be inserted to add vibrancy. While access to building service areas and emergency vehicles is required, much of the current car-oriented traffic and parking can be removed. Specific recommendations include the following:

- Convert Agricultural Mall to a pedestrian- and bicycle-oriented space, while accommodating service and emergency vehicles.
- Extend the Life and Health Sciences Mall non-signature bike route to and through Agricultural Mall to Marsteller Street and Grant Street.
- Remove the vestiges of a roadway network in favor of a pathway system with signature character that responds to pedestrian desire lines.
- Accommodate service and loading areas behind buildings; use Horticulture Drive from Harrison Street to gain access to Horticulture Building and Nelson Hall. Use the alley north of Pao Hall to gain access to Pao Hall, the Forestry Building, and Whistler Hall by extending this access east of Marsteller between the Agricultural Administration and Forestry Buildings.

Proposed Agricultural Mall looking east

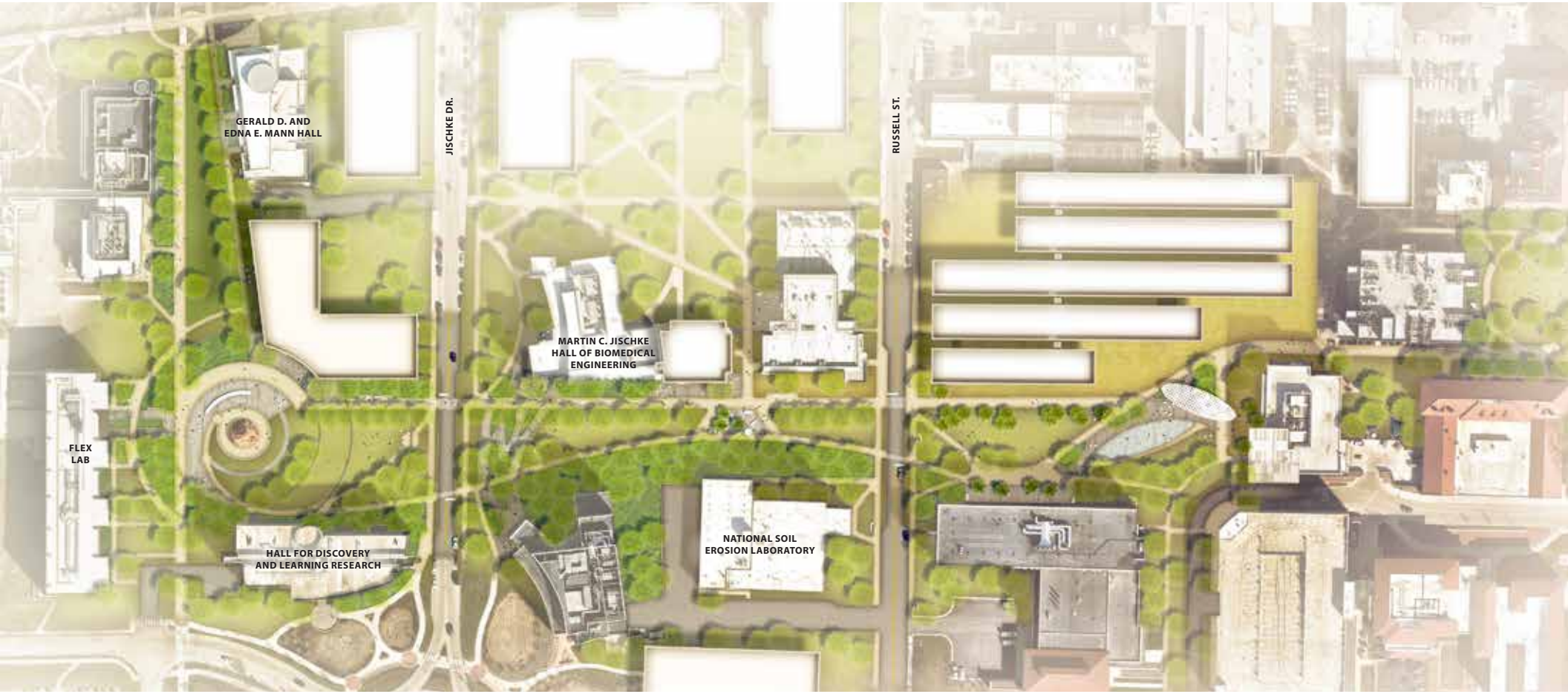
Proposed Agricultural Mall improvements from Hansen Life Sciences Research Building on the west to Grant Street on the east


PAO HALL OF VISUAL AND PERFORMING ARTS
DAUCH ALUMNI CENTER
SHEETZ ST.
GRANT ST.

Life and Health Sciences Mall

Life and Health Sciences Mall: Creating a New Center of Vibrancy and Biodiversity

Currently situated at the southwest corner of campus, Life and Health Sciences Mall is the hinge between campus and the Discovery Park District. Over time, new buildings continue to better define its edges. Its landscape, currently dominated by turf grass, evolves into a blend of manicured space and natural ecologies with variations in flat and mounded topography. Teaching-rich and biodiverse environments emerge on the mall's west end where stormwater is visibly managed though landscape, at its center where it mimics Indiana's native upland forest, and on its east end where a new Indiana prairie transitions to traditional campus landscape. Active gathering spaces and site features outside buildings foster collaboration and extend learning opportunities.



Proposed Life and Health Sciences Mall improvements

Proposed rendering of Todd's Creek through Horticulture Park (courtesy of Purdue Research Foundation)

Horticulture Park: Celebrating the Rebirth of a University Gem

Since the early 20th century, Purdue Horticulture Park has held a special place in the hearts of students, faculty, alumni, and community residents as a place of exploration, recreation, and respite. Although much of this character remains today and will remain in the future, the park will transform into a state-of-the-art learning environment that serves multiple colleges, the greater West Lafayette community, and the region. Much like Central Park, Purdue's Horticulture Park plays an important role, not simply as a place of fresh air and recreation. The park will provide opportunities for people to engage with nature in a way that is unlike any other on campus, improving quality of life and making people happier and healthier.

As the campus continues to grow, Horticulture Park's location becomes more prominent. This teaching space, once at the edge of campus, now orients toward a new State Street, the growing Discovery Park District, and a relocated Todd's Creek. Horticulture Park is positioned as the primary green space to support these new developments and infrastructure improvements.

2016 Horticulture Park Master Plan developed by MKSK

OVERALL CIRCULATION NETWORK

Over time, the campus has grown north, south, and west beyond its core into a grid of existing streets. As a result, a great deal of circulation throughout campus occurs within the right of way, where conflicts between vehicles, pedestrians, and bicyclists prevail. Great strides are being made, such as improvements to State Street and Stadium Avenue, to more safely integrate all modes of transportation within rights of way.

The overall circulation network recommendations are a framework for further clarifying the hierarchy of vehicles, pedestrians, and bicyclists throughout campus corridors. The Master Plan proposes enhancements to the circulation network to create a more walkable and bikeable campus, supported by key vehicular routes and parking structures.

The recent State Street Redevelopment Project has dramatically altered vehicular circulation patterns throughout campus and West Lafayette. Perhaps most fundamental in these changes is the importance of Stadium Avenue, Harrison Street, and McCormick Road in distributing vehicular traffic from State Street. These three corridors now more directly connect on-campus parking structures to regional circulation routes and reduce traffic volumes on streets more internal to campus. To advance this concept, the vehicular circulation network defines the hierarchy of streets as regional routes, primary routes, secondary routes, balanced routes, and converted routes.

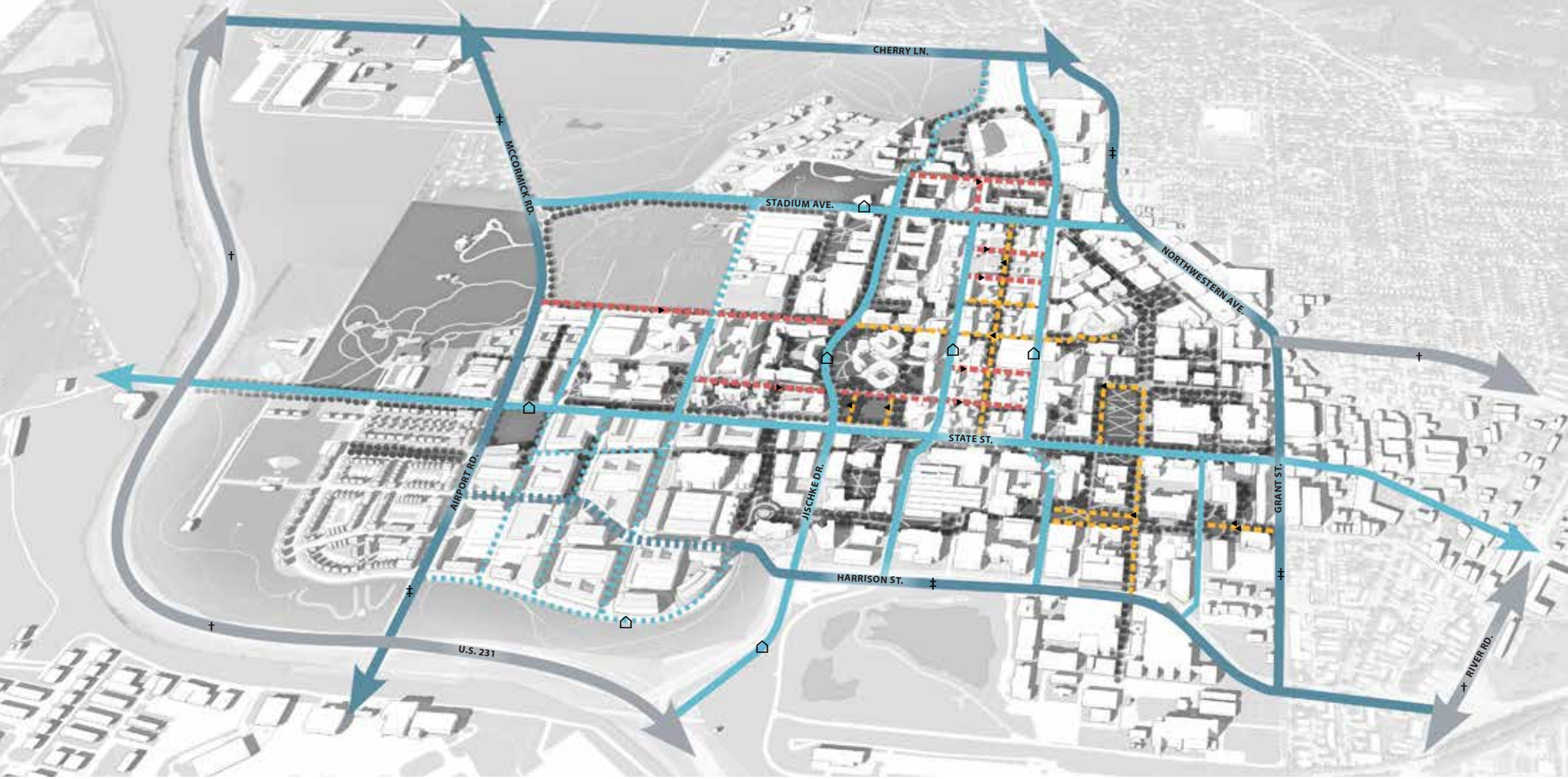
Regional Routes: Located beyond campus edges, these existing routes carry regionally generated traffic and are often used by campus staff, commuters, and visitors. Routes accommodate all vehicle types, as well as bicycle and pedestrian facilities.

Primary Routes: Located against campus edges and at times within campus, these existing routes connect to regional routes and the West Lafayette street network. Routes accommodate passenger, emergency, and service vehicles. Compared to regional routes, these routes may carry less traffic volume, would generally be designed for slower vehicular speeds, and include bicycle and pedestrian facilities.

Secondary Routes: Mostly located within campus, these routes connect to regional and primary routes. Routes accommodate passenger, emergency, and service vehicles. Compared to primary routes, these routes may carry less traffic volume, would generally be designed for slower vehicular speeds, and include robust bicycle and pedestrian facilities.

Balanced Routes: Located within campus, these routes connect to primary routes. Routes accommodate passenger, emergency, and service vehicles, but do so in a manner that is much more balanced with pedestrians and bicyclists. Generally, these routes currently include vehicular traffic, parallel parking, on-street bicycle facilities, tree lawns, and sidewalks.

Converted Streets to Pedestrian Routes: Located within campus, these routes convert select streets into pedestrian- and bicycle-only corridors. These routes accommodate appropriate emergency and service vehicle access as necessary, but prohibit personal vehicle access in order to prioritize pedestrian and bicycle circulation. Generally, these routes currently include sidewalks, open space, tree lawns, and off-street bicycle facilities.



Proposed Multi-Modal Circulation

- † Regional connectors
- ‡ Primary roads
- ⌂ Secondary roads
- ▸ Balanced pedestrian/bike route
- ◂ Streets converted to pedestrian routes
- Existing
- Proposed

The Master Plan recommendations focus on improving pedestrian and bicycle circulation and clarifying vehicular circulation across campus. The plan proposes changes to some secondary routes to better connect the street grid. The plan also proposes adapting several streets to be more pedestrian friendly. These balanced routes are critical to better connecting pedestrians across campus and improving safety.

Primary/Secondary Route Recommendations:

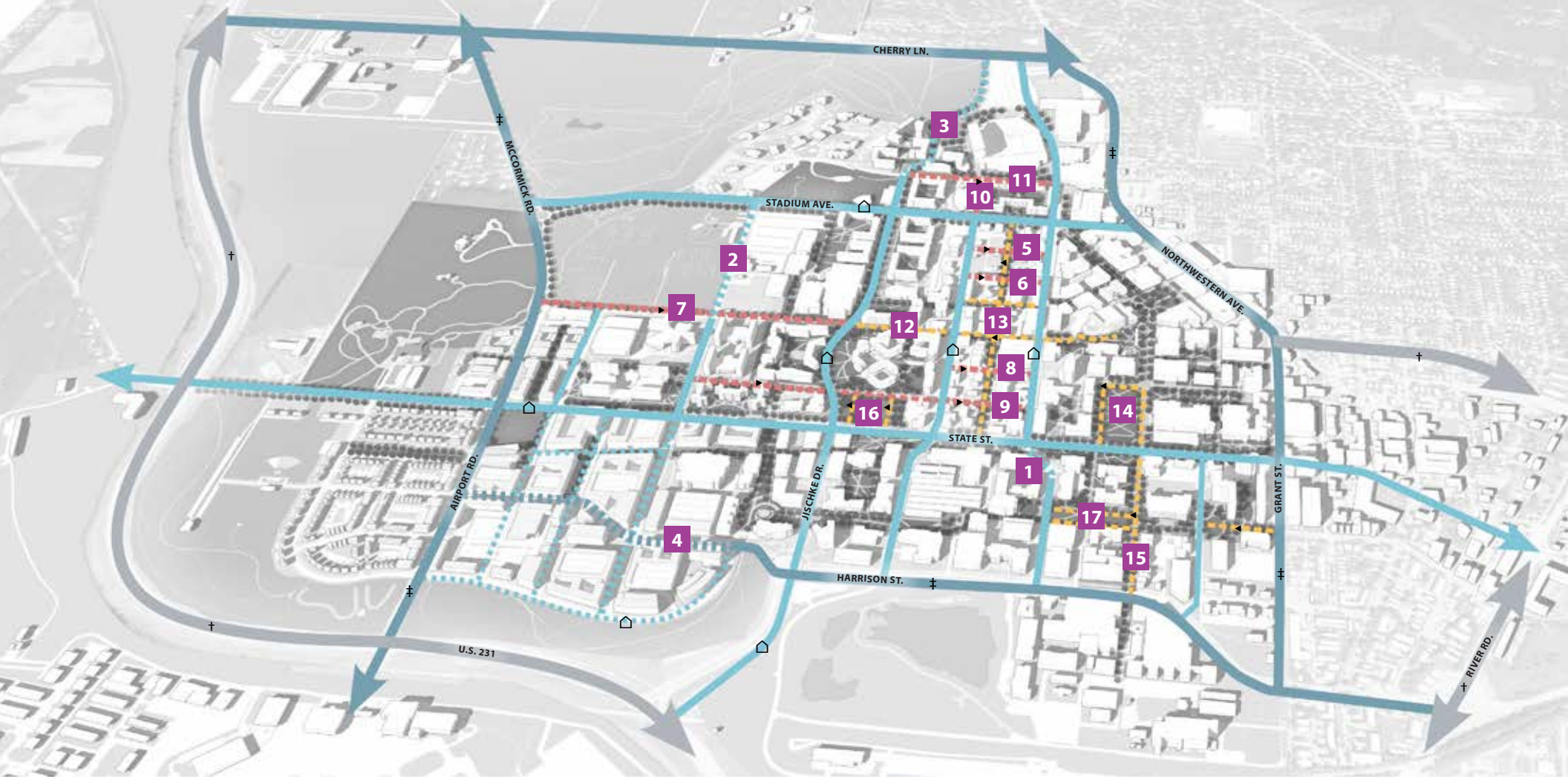
1. University Street, south of State Street: Curve the section of University Street that is closest to State Street so that it connects with University Street to the north of State Street.
2. MacArthur Drive, between Third Street and Stadium Avenue: Extend MacArthur Drive north to Stadium Avenue to provide another connection from Stadium Avenue to Harrison Street.
3. Martin Jischke Drive, between Tower Drive and Cherry Lane: Extend Martin Jischke Drive north to Cherry Lane to provide a continuous connection between Cherry Lane and U.S. 231 and reduce traffic on Russell Street.
4. Harrison Street, between Martin Jischke Drive and Airport Road: Extend Harrison Street through Discovery Park District to Airport Road.

Balanced Route Recommendations:

5. Sixth Street: Reallocate space between curbs to include one vehicular travel lane and a separated, on-street, eastbound bicycle route. In places, a loss of parallel parking results.
6. Fifth Street: Reallocate space between curbs to include one vehicular travel lane and a separated, on-street, westbound bicycle route. In places, a loss of parallel parking results.
7. Third Street, between McCormick Road and Jischke Drive: Add separated bicycle path on the north side of the street.
8. Second Street: Add separated bicycle path on the north side of the street.
9. First Street: Reallocate space between curbs to include two vehicular travel lanes and a separated, on-street, two-way bicycle route. In places, a loss of parallel parking results.
10. Steven Beering Drive, between Stadium Avenue and Tower Drive: Reallocate space between curbs to include two vehicular travel lanes and a separated, on-street, two-way bicycle route. In places, a loss of parallel parking results.
11. Tower Drive, between Martin Jischke Drive and John Wooden Drive: Reallocate space between curbs to include one vehicular travel lane, one lane of on-street parking, and a separated, on-street, two-way bicycle route. In places, a loss of parallel parking results.

Converted Streets Recommendations:

12. Third Street, between Jischke Drive and University Street: Convert to a pedestrian- and bicycle-oriented route, while accommodating service and emergency vehicles.
13. Waldron Street: Work with the City of West Lafayette to relocate on-street parking and convert Waldron Street into a corridor of pedestrian- and bike-only open spaces.
14. Oval Drive and Memorial Mall Drive: Convert to a pedestrian- and bicycle-oriented route, while accommodating service and emergency vehicles (see pages 72-73).
15. Marsteller Street: Convert to a pedestrian- and bicycle-oriented route, while accommodating service and emergency vehicles (see pages 74-75).
16. Duhme Drive: Close drive, relocated parking, and convert into open space.
17. Agriculture Mall Drive and Wood Street: Close drives and convert to open space with pedestrian- and bike-only access.



Proposed Multi-Modal Circulation

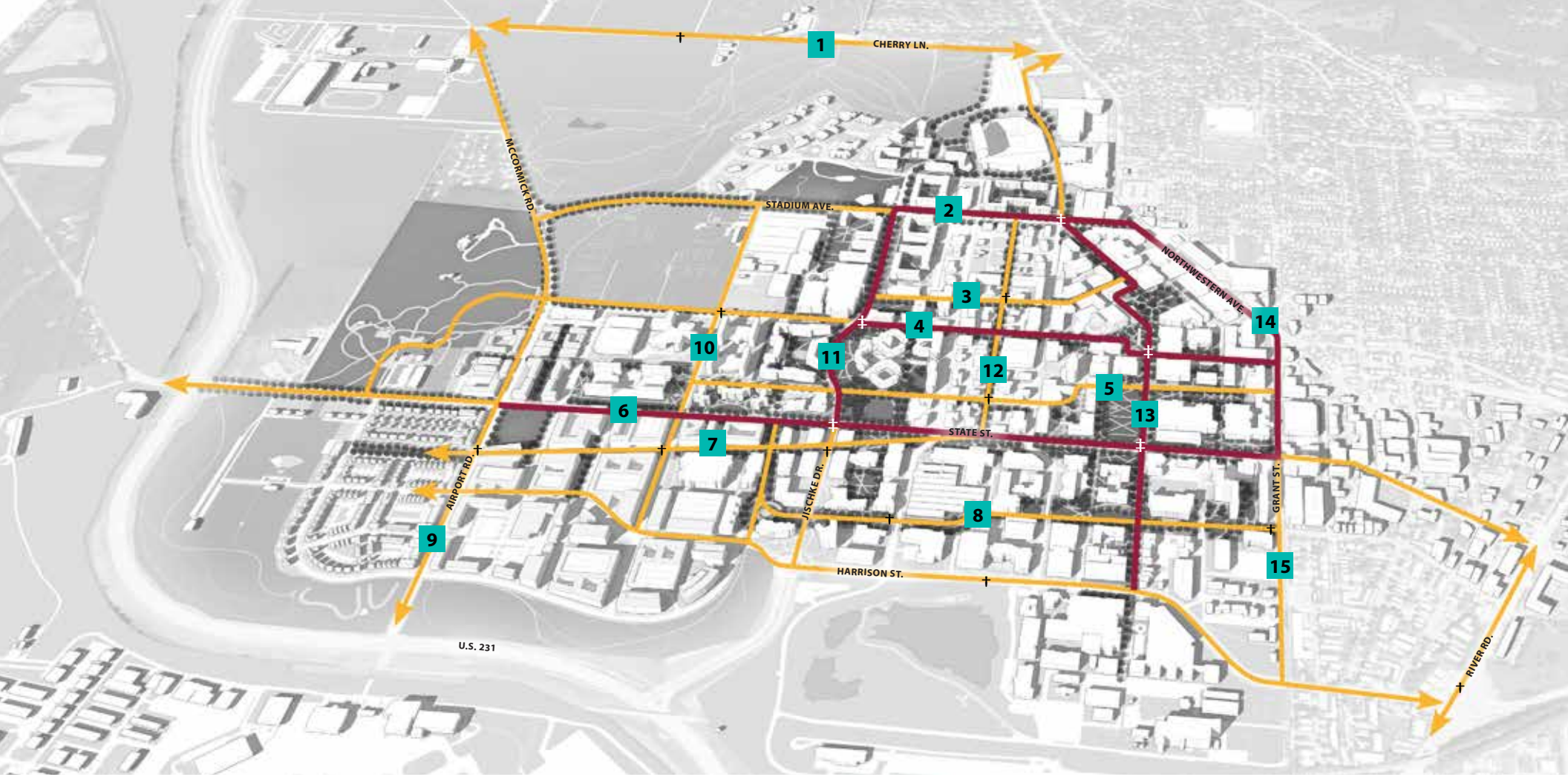
- † Regional connectors
- ‡ Primary roads
- ⌂ Secondary roads
- ▸ Balanced pedestrian/bike route
- ◂ Streets converted to pedestrian routes
- Existing
- Proposed

Bicycle

Each year, the University adds more facilities for the growing bicyclist population. This plan embraces that trend and complements the recommendations made in *The Integrated Bicycle and Pedestrian Infrastructure Plan*. Rather than reimagine those recommendations, a degree of clarity was given to major, off-street bicycle routes. These routes serve larger volumes of riders and connect residential areas, academic areas, and regional trail systems. The resulting network provides convenient perimeter and interior routes that are considered safer for a broader range of riders.

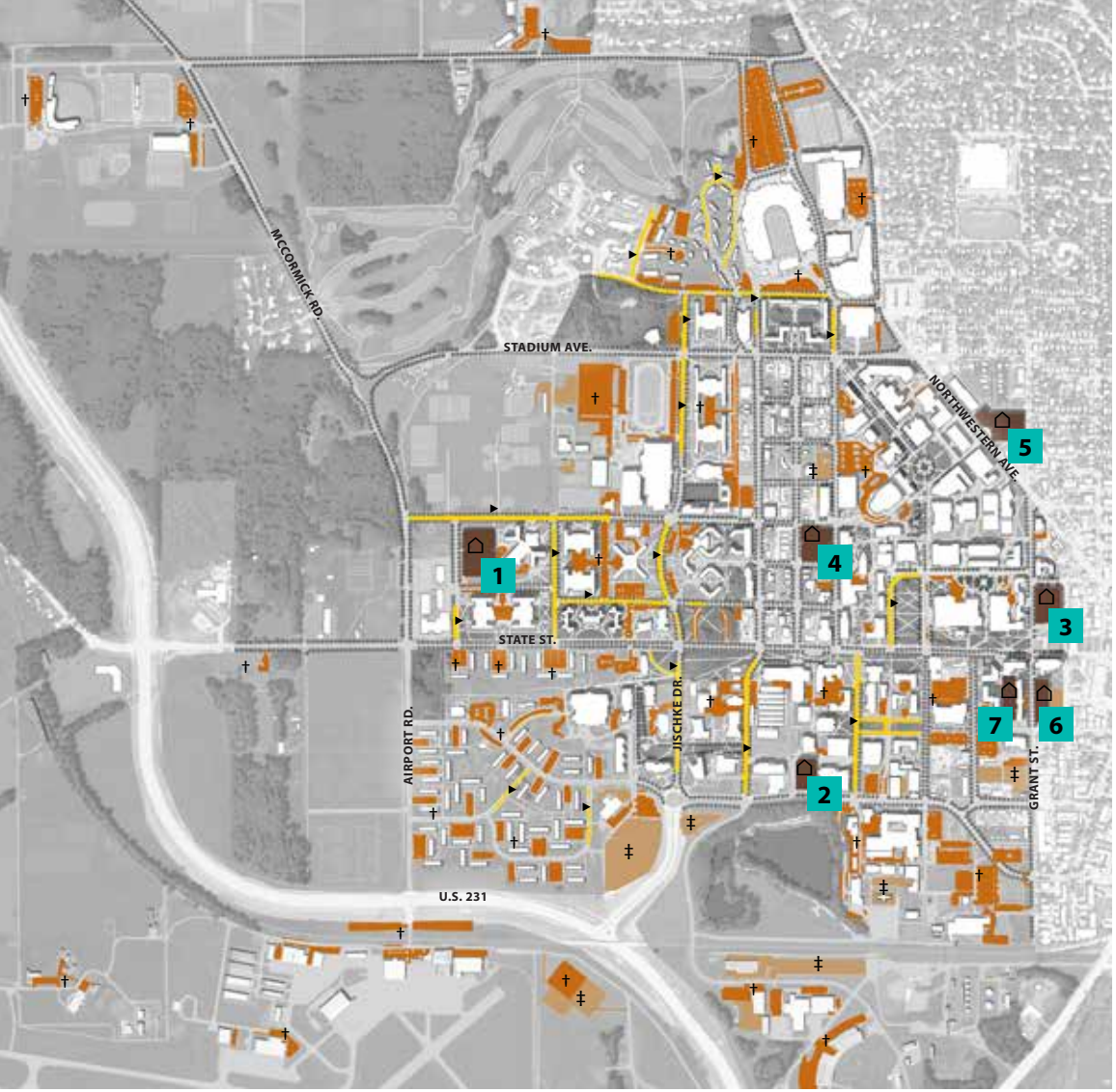
Though the Master Plan includes many street conversions, the specific recommendations within this section relate to clarity and location of major, off-street bicycle routes along the following corridors. This list articulates proposed bicycle infrastructure improvements and notes where a signature bicycle route comprised of special pavement is recommended.

1. Cherry Lane from McCormick Road to Northwestern Avenue
2. Stadium Avenue from University Street to Northwestern Avenue (signature bicycle route)
3. Fourth Street from Martin Jischke Drive to Stadium Mall (segment between Martin Jischke Drive and University Street to integrate into open spaces adjacent to the street in the long-term)
4. Third Street from McCormick Road to Martin Jischke Drive and Third Street from Martin Jischke Drive to Centennial Mall (signature bicycle route)
5. First Street into Founders Park, Memorial Mall, Academy Park, and connection to Grant Street
6. State Street from McCutcheon Drive to McCormick Road (signature bicycle route)
7. A diagonal route linking State Street to the Discovery Park District
8. South east/west route from Grant Street to Discovery Park, through Agriculture Mall and Health and Life Sciences Mall then north to the diagonal route and State Street
9. Airport Road from State Street to US 231
10. MacArthur Drive from Harrison Street to Stadium Avenue
11. Martin Jischke Drive from Harrison Street to State Street and Martin Jischke Drive from State Street to Stadium Avenue (signature bicycle route)
12. Waldron Street from State Street to Stadium Avenue
13. Oval Drive/Marsteller Street from Centennial Mall to Harrison Street
14. Grant Street/Northwestern Avenue from State Street to Stadium Avenue (signature bicycle route; segment in front of MSEE already constructed)
15. Grant Street from State Street to Harrison Street



Existing and Proposed Bike Routes

† Major non-signature bike routes
‡ Signature bike routes



Existing Campus Parking

- Surface parking (paved)
- Surface parking (unpaved)
- Structured parking
- On-street parking

CAMPUS PARKING

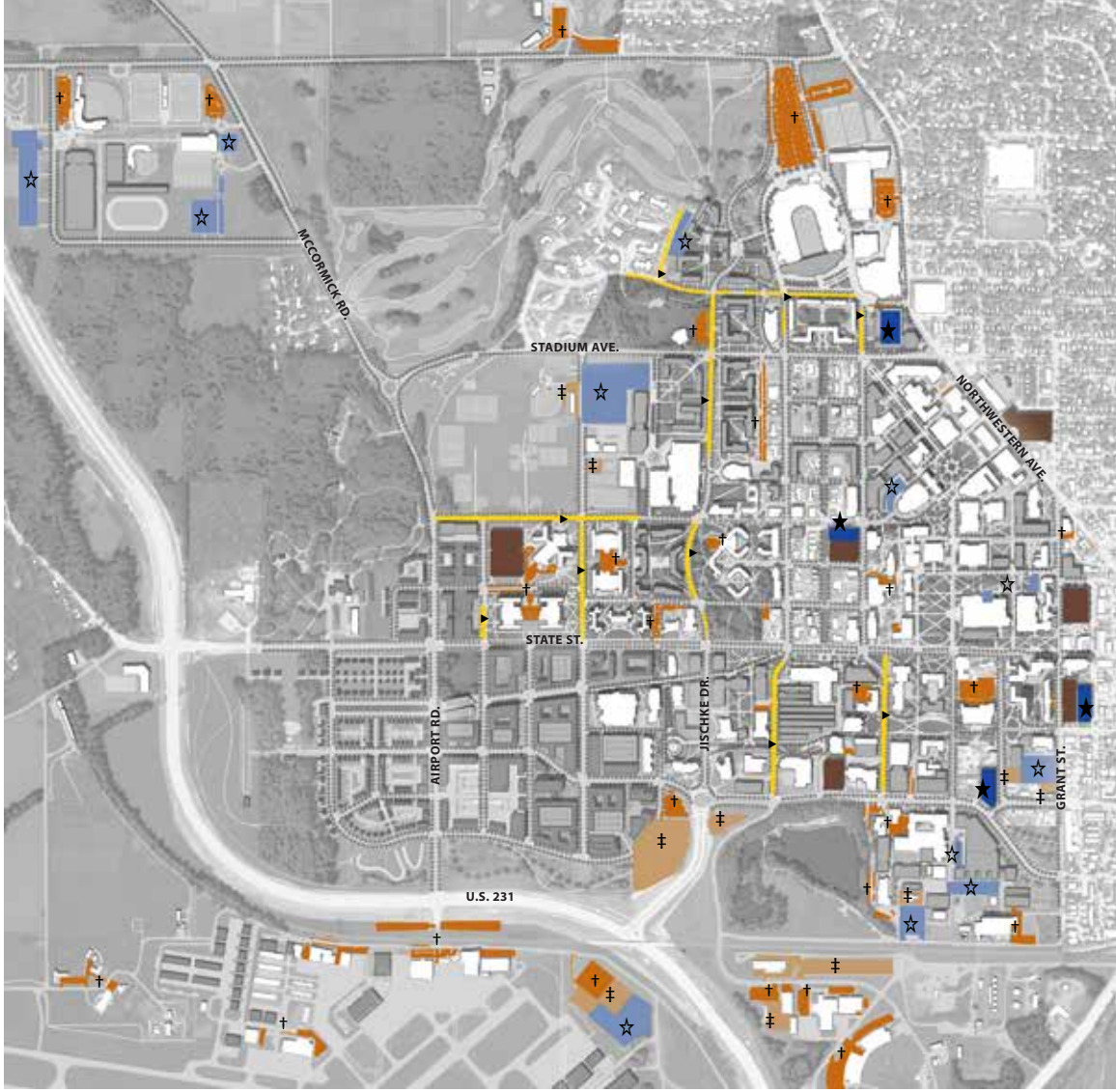
Over time, Purdue has successfully displaced a significant amount of parking from the historic core of campus. This change has led to the development of iconic green spaces that define Purdue's image today. While the historic core has transformed with the removal of parking, there are many other areas of campus that would greatly benefit from this displacement strategy.

Purdue currently has 19,804 parking spaces under its purview occupying nearly 109 acres of land. Of this total, 12,258 spaces are surface, which consumes approximately 98 acres. The remaining 7,546 spaces are in structured parking on 11 acres. Structured parking represents 38 percent of Purdue's parking inventory, but only accounts for 11 percent of the surface area making them a more efficient utilization of land area than surface parking.

2016 Parking Utilization (Garages)	
1 **McCutheon**	45% utilized | 872 spaces available
2 **Harrison Street**	57% utilized | 373 spaces available
3 **Grant Street**	62% utilized | 503 spaces available
4 **University Street**	74% utilized | 313 spaces available
5 **Northwestern**	76% utilized | 315 spaces available
6 **Wood Street**	83% utilized | 166 spaces available
7 **Grad House**	86% utilized | 39 spaces available
2,581 spaces available	

Roughly 50 percent of all the surface parking on campus is south of State Street. This configuration creates an automobile-dominated environment and suppresses the pedestrian realm. As previously mentioned, improving the open space and pedestrian connectivity in all parts of campus is a major goal of the Master Plan. To achieve this, the Master Plan proposes a series of strategically located parking facilities at the edges of campus to accommodate parking displaced by proposed new buildings and/or open space improvements.

Of the proposed parking, more than 37 percent of new spaces are accommodated in parking garages. Acknowledging impending changes in driving technologies including autonomous vehicles and ride sharing, the Master Plan does not recommend building multiple garages in the near term. Based on Purdue's 2016 parking utilization study, there is significant capacity in existing parking garages to accommodate demand. This capacity can be unlocked by assessing the parking permit strategy and moving towards a model where lots are assigned. Additionally, expanding the contractor lot near the airport can create extra remote parking capacity.



Proposed Campus Parking

† Surface parking (paved) to remain
‡ Surface parking (unpaved) to remain
⌂ Structured parking to remain
▸ On-street parking to remain
☆ Proposed surface parking
★ Proposed structured parking

GOAL 5

STRENGTHEN CAMPUS IDENTITY AND GATEWAYS

OVERVIEW OF GATEWAYS AND SIGNAGE

As a land grant intuition, Purdue University has grown over the past 150 years in concert with the surrounding West Lafayette neighborhood. While the University has a distinguished presence that responds well to its existing context, there are many instances where the edges of campus are ambiguous and unclear. Purdue's historic core has a mature identity, whereas other parts of campus, namely south of State Street and west of the Island, lack the same character. It is important that the University continues to promote and extend a robust physical environment that is authentically Purdue to strengthen campus identity.

Purdue's Iconic Bell Tower

State Street

In addition to building a consistent character across campus, bolstering key gateways in and around campus is another critical component to strengthening campus identity. Currently, many approaches to campus lack proper signage and clear arrival sequences. It is often unclear when you have arrived on campus. Recent improvements to State Street transformed the environment for pedestrians and bicyclists, slowing down vehicular traffic and creating a consistent, high-quality streetscape. However, State Street still lacks defining elements to signify when visitors have arrived on campus and presents many opportunities for such interventions. Purdue needs to enhance and celebrate the arrival experience with gateways, markers, and messaging at key threshold points.

Consistent signage and wayfinding are important aspects of the campus environment. Currently, Purdue's signage and gateway elements are inconsistent in both placement and aesthetics. Implementation of a cohesive system of visual elements is critical to welcoming and guiding people towards and through the campus. These visual elements include gateways, signage, landscape, pathways, and architectural elements such as building entrances, rooftops, and towers that work together to provide intuitive navigation of the built environment.

Existing Gateways and Signage

Top: Grant and State Street
Bottom Left: Honors College
Bottom Right: Freedom Square by the Armory

Stadium Mall Gateway to the Future Arch

CAMPUS GATEWAYS

In an effort to strengthen campus identity and gateways, the 2018 Giant Leaps Master Plan proposes the construction of new gateway elements at key arrival points approaching campus. These gateways should have a consistent look and feel, but also respond sensitively to their respective site contexts. The Master Plan places these gateways into three major categories:

- Outer/Regional Gateways: Transitions from major vehicular routes onto the perimeter of campus (e.g. U.S. 231 and Martin Jischke Drive)
- Vehicular/Campus Gateways: Vehicular entries to campus that create an arrival for vehicles and a threshold for pedestrians (e.g. State and Grant Street intersection)
- Pedestrian Gateways: Portals or thresholds on campus scaled to pedestrians (e.g. Stadium Mall)

Through the Master Plan, the Planning Team developed a conceptual kit of parts that establishes a palette for the University to implement gateways in the future that are authentically Purdue.

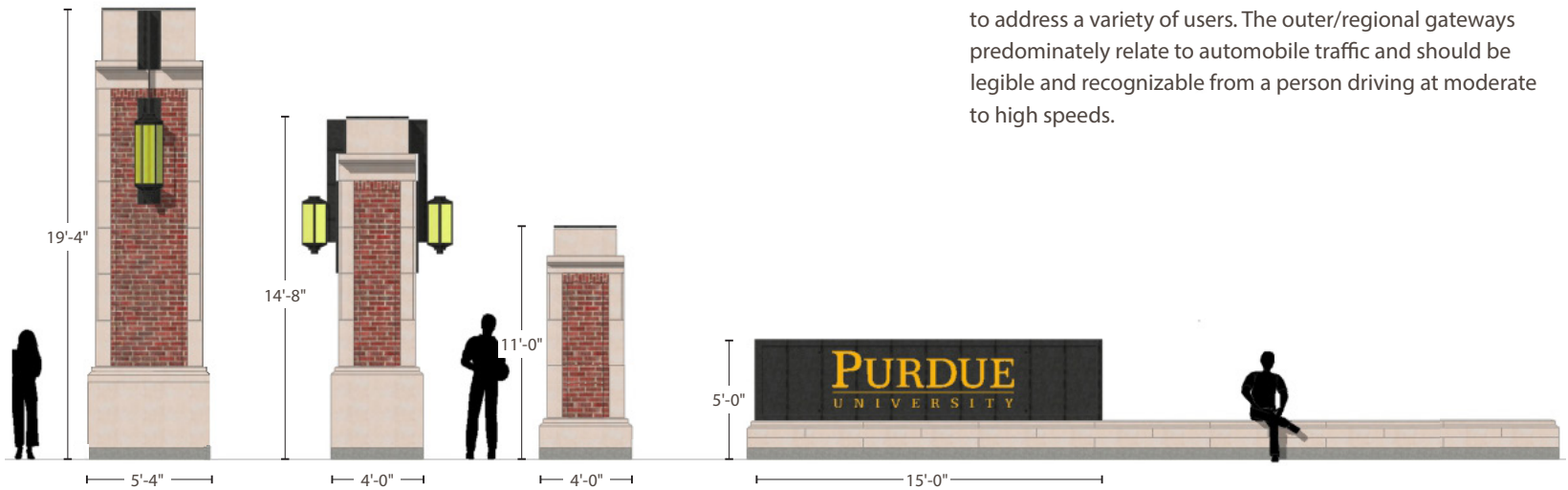
Proposed Campus Gateway Locations

† Outer/regional gateways
‡ Vehicular/campus gateways
⌂ Pedestrian gateways

Boiler aesthetic is authentically Purdue

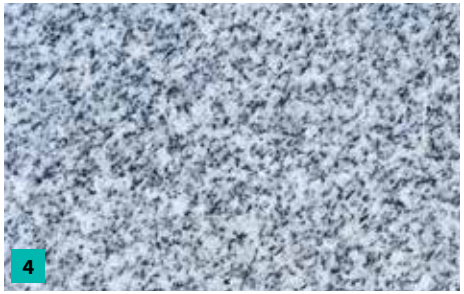
The planning process included early exploration of the gateway aesthetic. The goal is to establish a language and family of different scales of gates that can be applied to each site from pedestrian gateways to vehicular/campus gateways to outer/regional gateways. The gateway kit of parts needed to incorporate traditional campus materials and have a unique aesthetic that was authentic to Purdue's history and ethos. As a result, the Planning Team researched boilers and boilermakers, taking note of the hefty machinery, distinguished bolts and rivets, and overall staunch appearance that resembles a locomotive. Strategic integration of this metal-heavy aesthetic with brick and limestone resulted in a design suite that relates to the existing campus context and integrates the rugged boilermaker tradition.

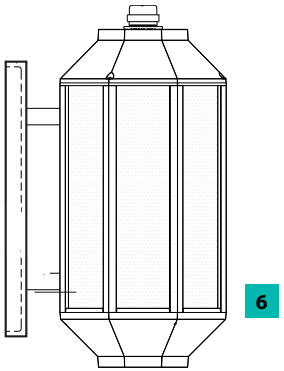
The kit of parts proposes design options for gates that apply to a variety of scales. Pedestrian gateways should be scaled to address a person walking by or through. Vehicular/campus gateways should have elements that are legible by a car driving at a lower speed, but also need to relate to the pedestrian as well. These often signify a transition onto the campus proper and thus, they should be carefully designed to address a variety of users. The outer/regional gateways predominately relate to automobile traffic and should be legible and recognizable from a person driving at moderate to high speeds.



Consistent use of materials is an important part of strengthening campus identity and gateways. Building off of the Boilermaker tradition and character, the gates include welded steel elements and exposed bolts, integrated with robust limestone and brick masonry piers and walls. While the gateways continue to develop, key elements are as follows:

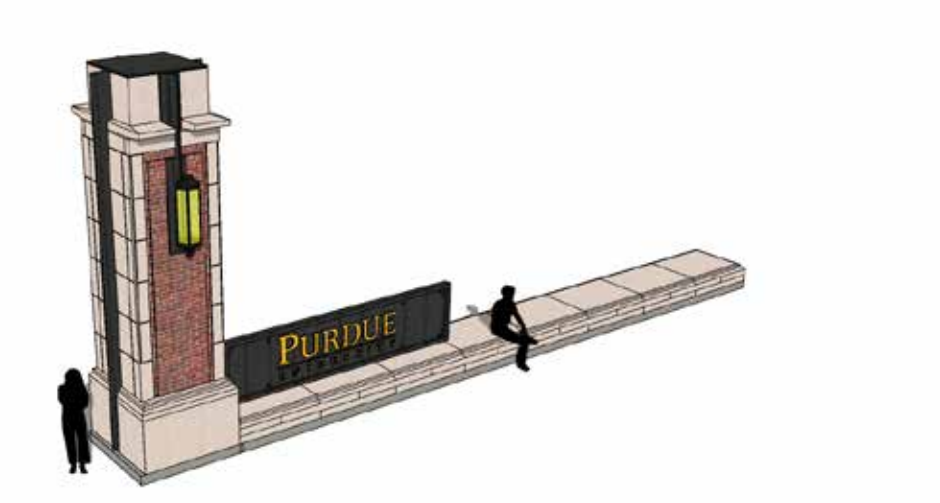
- Brick and limestone piers with limestone and steel cap
- Black steel plates and fins as accent elements
- Black steel with the recessed Purdue University logo in gold, with optional concealed lighting
- Exposed bolts connect black steel to masonry
- Limestone base and seat wall where applicable
- Gray granite recessed base at pavement for both aesthetic and practical reasons—it is denser than limestone and therefore prevents water absorption and "rising damp"
- Purdue standard medium and large octagonal lantern fixture (black metal)
- Concealed uplight in limestone base of brick pier
- Black steel arched beam with cutout letters (Purdue University) and concealed lighting in bottom flange

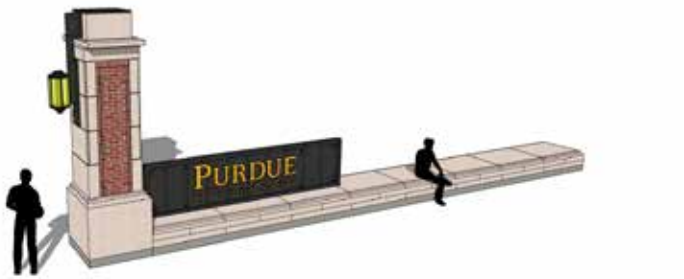


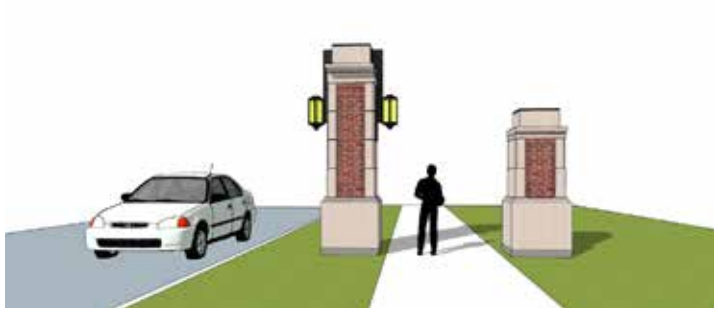


Materials and Lighting

1 Black steel
2 Red brick (Purdue standard): Flemish bond field
Brick and limestone mortar: matching limestone color
3 Limestone: Indiana Limestone, variegated
4 Gray granite: Georgia Grey, honed finish
5 Medium standard lantern fixture: Purdue LED luminaire wall mount
6 Large standard lantern fixture: Purdue LED luminaire wall mount







Outer/Regional Gateways

Outer/regional gateways transition from major vehicular routes to the perimeter of campus (e.g., U.S. 231 and Martin Jischke Drive). Site factors will dictate scale, but proportions and design language should remain consistent. Tall, iconic features can be adapted contextually when site appropriate. Characteristics include the following:

- Low, limestone seat wall bench
- Granite base
- Tall brick and limestone piers (roughly 20 ft in height)
- Projecting limestone cornice on top of pier
- Mounted lantern (large fixture)
- Vertical black steel element with black steel pier cap
- Option to include a horizontal black steel Purdue University plate on limestone seat wall
- Option to illuminate text
- Option to include plate metal arches on appropriate sites

Vehicular/Campus Gateways

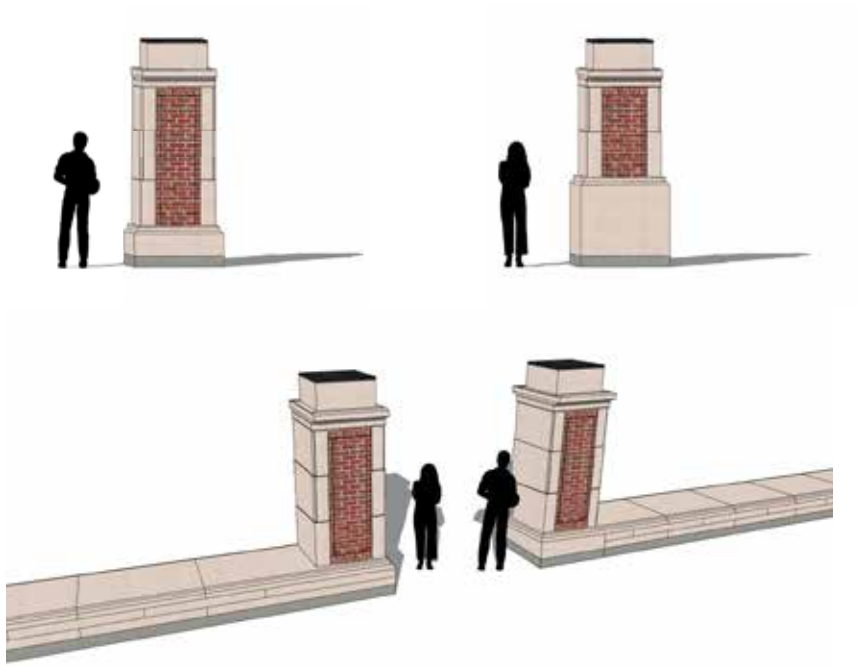
Vehicular/campus gateways are entries to campus that create an arrival for the vehicle and a threshold for the pedestrian. Tall piers paired across the street can create a vehicular portal. Characteristics include the following:

- Low, limestone seat wall bench
- Granite base
- Brick and limestone piers roughly 15 ft in height
- Projecting limestone cornice on top of pier
- Mounted lantern (medium fixture)
- Optional vertical black steel element with black steel pier cap
- Option to include a horizontal black steel Purdue University plate on limestone seat wall
- Option to illuminate text
- Option to include plate metal arches on appropriate sites

Pedestrian Gateways

Pedestrian gateways are portals or thresholds on campus that are scaled to the pedestrian (e.g., Stadium Mall). Characteristics include the following:

- Low pier element; standalone or in pairs to create a threshold
- Granite and limestone base
- Brick and limestone piers roughly 11 ft in height
- Option to include a low, limestone seat wall bench
- Option for a smaller limestone base that is the height of the seat wall (preferred)



Proposed State Street and Grant Street gateway

Gateway Priorities

While it is important for Purdue to address all the gateways identified on campus, there are three locations that the Master Plan identifies as priorities for immediate further study and implementation. These three locations are major thresholds onto campus and constructing gateway elements here will have the largest near-term impact. The three locations are as follows:

1. State Street and Grant Street
2. Cherry Lane and Northwestern Avenue
3. State Street and U.S. 231

Each location has unique parameters, but they all maintain a common aesthetic and look with the gateway elements. All the priority gateways identified are major outer/regional and vehicular/campus gateways so the scale of these should address major vehicular travel as well as pedestrian and bike thresholds.

Proposed Campus Gateway Locations

- † Outer/Regional gateways
- ‡ Vehicular/campus gateways
- ⌂ Pedestrian gateways
- ◌ Priority gateways

Proposed gateway at State Street and Grant Street


PURDUE UNIVERSITY

Aerial rendering looking northeast

NEXT STEPS AND ADDITIONAL RECOMMENDATIONS

APPROVED PROJECTS

The 2018 Giant Leaps Master Plan ensures that near-term decisions support the long-term vision for the campus. The planning principles and long-term plan should be used as a foundational starting point and later a lens to guide the execution of each individual project on the campus. The Master Plan balances visionary goals with what can realistically be achieved, funded, and implemented.

The Master Plan will serve as a guide for locating and developing new projects and inform decisions related to renovations and implementation. The following projects are approved and will be the first phase of implementation for the Master Plan:

- Hampton Hall Renovation
- Pharmacy Library Renovation
- STEM Teaching Lab Building
- Jischke Hall Addition
- Agricultural and Biological Engineering Building Renovation and Addition
- Veterinary Medicine Teaching Hospital Phase I
- Third Street North Housing
- Meredith South Housing
- Purdue Memorial Union Club Hotel Renovation
- Priority Gateway at State and Grant Streets

POLICY AND OPERATIONS

The essence of any campus plan is to align the physical campus with the mission, programs, and strategic initiatives of the institution. Creating interdisciplinary facilities will enhance collaboration, improve adjacencies, and allow for more shared resources on campus. While reinvestment and new development are critical tools, often policy and operational changes are required to support implementation of the vision for the campus. Some of these changes may include developing a mechanism for funding open space and infrastructure improvements to ensure the that those critical components of the campus are implemented. Purdue should also continue to evaluate ways to increase the utilization of space. Strategies related to space optimization and efficiency include the following:

- Reducing the number of teaching labs required as a part of the general education curriculum. By reducing the number of lab-based courses or moving some to a virtual environment, the demand on class labs can be reduced. For example, non-science majors might not need to take a science course requiring a wet lab component.
- Reviewing policy and practice as to the number of offices allocated to a single individual.
- Reviewing existing office space planning guidelines to ensure application consistency during renovation and/or construction.
- Reviewing policy and practice related to retaining research lab space if there is a loss of grant revenue. Some institutions require principal investigators to find new funding within two years or the space is reallocated to another funded principal investigator.
- Investing in core research facilities to reduce duplication of spaces and equipment.
- Increasing the number of sections taught in a classroom to meet utilization targets and maximize the classroom inventory.
- Optimizing section enrollments to classroom capacities to achieve better seat fill rates and meet the percentage of seats filled utilization target.
- Looking for opportunities to remove chairs from crowded classrooms to create better learning environments. This change will increase the percentage of seats filled utilization target.
- Evaluating increasing the time between classes to allow for extended walk times across campus.

Bioscience Research Lab

CONSIDERATIONS FOR FUTURE STUDIES

The 2018 Giant Leaps Master Plan establishes a planning model for Purdue University, creates a long-term vision for the campus, and specifies principles on which future development and decisions should be based. It also provides initial concepts and strategies for important aspects of the physical plan. The University's Capital Plan includes priority next steps while the Master Plan serves as a guide for locating and developing those projects. Some key next steps related to planning that the University should consider include the following:

Update Signage and Wayfinding Guidelines

Currently Purdue's wayfinding system is incomplete. There is little to no signage or branding as you approach campus. On-campus building markers and signage are limited, making navigation difficult. The *2015 Exterior Wayfinding and Signage Plan* should be updated and the recommendations should be implemented to improve on-campus wayfinding.

Parking and Transportation Planning

The 2018 Giant Leaps Master Plan does not include a detailed parking or transportation analysis. When parking is disturbed by new development, replacement spaces are identified. Future demand for parking remains uncertain. As new projects become a reality, parking will need to be considered with more detail. Similarly, as the campus evolves and development grows south of State Street, robust and timely transit is needed to move faculty and staff around campus.

Retail and Dining Study

As the campus community grows, dining facilities can be strained. A retail and dining services study should be conducted to determine the amount, type, and location for new and existing dining and retail amenities on campus.

Infrastructure Planning

Like facilities, infrastructure continuously needs to be maintained and monitored. As infrastructure improvement plans are developed, they should account for future development and additional system demands.

College/Unit-Level Master Plans

College/unit-level plans provide a deeper understanding of colleges' needs and a clearer roadmap for projects and implementation. College/unit-level plan recommendations should reinforce the Master Plan goals but provide a more detailed analysis of space needs and project priorities. Most colleges at Purdue have or are in the process of developing master plans. Remaining colleges/units should consider initiating studies to inform future projects and the capital planning process.

Classroom Master Plan

To support a world-class educational environment, a detailed classroom master plan is recommended to align physical and technological inventories with current and future pedagogies. Instructional delivery is evolving; however, face-to-face interaction is a hallmark of the West Lafayette campus. The plan should include analysis of current courses and pedagogies supported with the latest knowledge of successful learning environments. For example, a process to identify and enhance informal learning spaces for collaboration and individual scholarly work should be included. The outcome will be a path forward to improve the overall quality and consistency of general-purpose classrooms and a plan to provide faculty and students with the infrastructure support needed to achieve academic goals.

Feasibility Studies for Priority Projects

The purpose of a feasibility study is to determine the program, scope, fee, and schedule for a project. During this feasibility study, site locations and massing strategies are explored, enabling projects and swing space requirements are identified, and cost modeling is performed. The Master Plan includes recommendations for new construction and building renovations. These recommendations are based on condition and adequacy, either in part or holistically. A feasibility study should be conducted for each of these buildings to determine if it can meet the desired program and if a renovation is cost effective.

Wilmeth Active Learning Center

APPENDIX

ACKNOWLEDGMENTS

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Consultant Teams

Ayers Saint Gross
MKSK Studios

SUPPORTING DOCUMENTS

- 1924 Scholer Master Plan
- 2007 Athletic Facilities Master Plan Update
- 2012 Football Master Plan
- 2009 Purdue University West Lafayette Master Plan
- 2014 Integrated Bicycle and Pedestrian Infrastructure Plan
- 2015 Exterior Wayfinding and Signage Project
- 2016 Discovery Park District Master Plan
- 2016 Horticulture Park Master Plan
- 2016 Life and Health Sciences Mall Concept Plan
- 2016 Parking Utilization Study
- 2018 Housing Master Plan (developed in conjunction with the Giant Leaps Master Plan)
- 2018 Housing Demand Study (developed in conjunction with the Giant Leaps Master Plan)
- 2018 Purdue University Space Adequacy Assessment Report (developed in conjunction with the Giant Leaps Master Plan)
- 2018 Purdue University Space Needs Assessment Report (developed in conjunction with the Giant Leaps Master Plan)

A VISION FOR THE NEXT 50 YEARS OF GIANT LEAPS

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