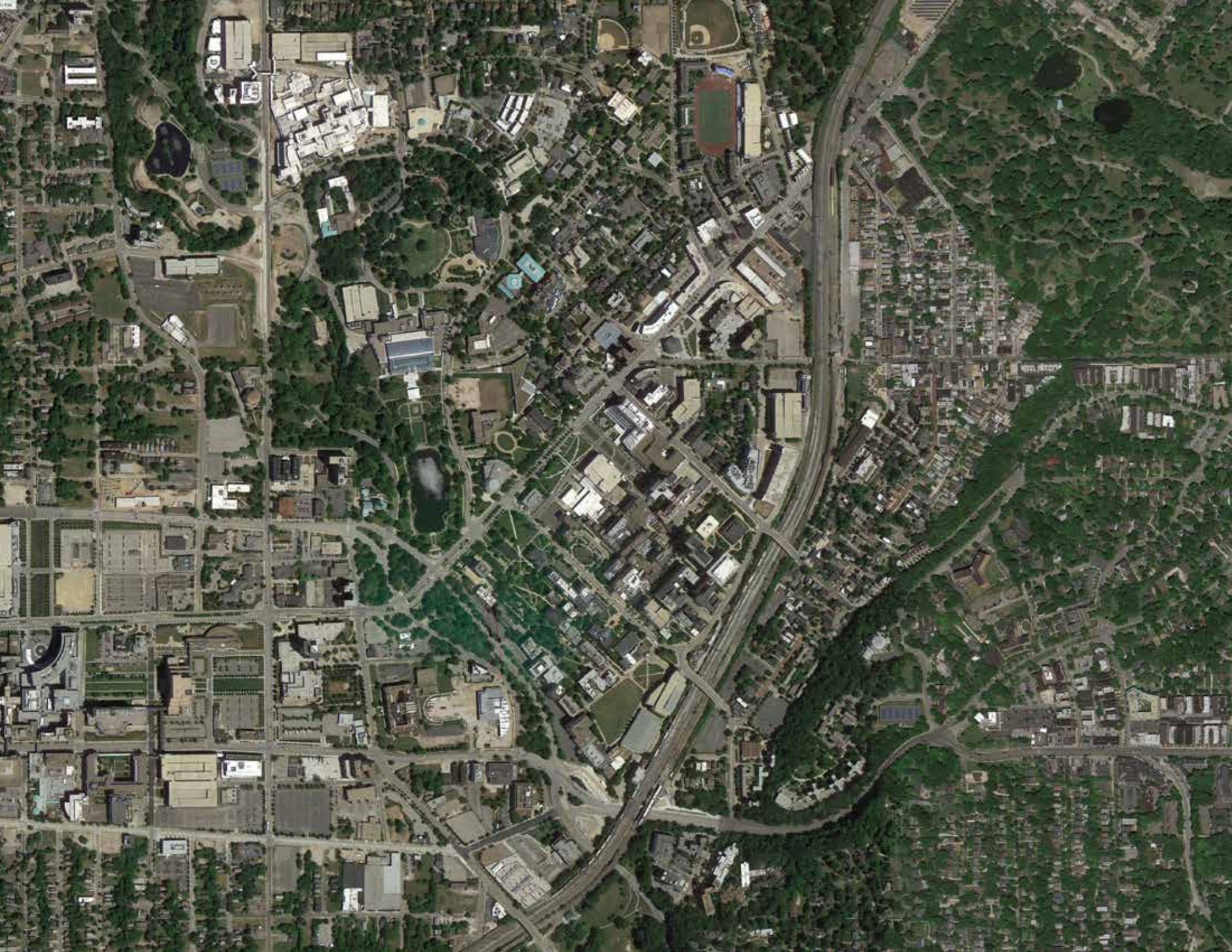
CASE WESTERN RESERVE UNIVERSITY

CAMPUS MASTER PLAN

Fall 2015

Case Western Reserve University
EST. 1826



CASE WESTERN RESERVE UNIVERSITY

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MESSAGE FROM THE PRESIDENT

This Campus Master Plan is the culmination of unwavering dedication, collaboration and creativity by many. Every ten years, Case Western Reserve University reviews its physical space—classroom buildings, laboratories, residence halls, common areas, green spaces, and walkways, among others—to ensure that we meet the needs of the campus community and integrate well with adjacent neighborhoods. This process has brought together faculty, staff, students, administrators, and trustees along with our partners, neighbors and stakeholders.

Our Board of Trustees approved this Campus Master Plan in October 2015, and we are proud of its transformative vision and how it elegantly links to our strategic plan, *Think Beyond the Possible*, through recommendations for high quality spaces to support interdisciplinary efforts in teaching and research, as well as increased innovation in learning. It also provides a guide to make the campus more beautiful, vibrant and memorable, ensuring that each campus district has a strong sense of identity and place, and enhancing connections among each district and nearby neighborhoods. While the plan recommends some new construction, it primarily prioritizes better use of existing space through renovations and repurposing.

I want to thank all who participated in our Campus Master Plan process, and I look forward to highlighting results from this plan in the years to come.

Sincerely,

Barbara R. Snyder
President

TABLE OF CONTENTS

VISION

CONTEXT

Case Western Reserve University is a world-renowned private research university dedicated to bettering individuals, the city of Cleveland and the world by educating students and tackling pressing challenges through research and academics.

Founded in 1826, CWRU educates more than 11,000 students annually and boasts top faculty and staff in each of its 10 academic units:

Case School of Engineering

College of Arts and Sciences

Frances Payne Bolton School of Nursing

Mandel School of Applied Sciences

School of Dental Medicine

School of Law

School of Medicine

Weatherhead School of Management

Office of Undergraduate Studies

School of Graduate Studies

THE CAMPUS MASTER PLAN

It's fashionable to think that campuses don't matter anymore; that digital technology and remote learning have made buildings and commons, residence halls and libraries obsolete. Not true. Though higher education is primarily concerned with the mind and technology has given universities greater reach than ever before, the importance and impact of the physical environment cannot be neglected. Physical features cement a university's identity in the eyes of the public and alumni. Campus buildings, from residence halls to stadiums and labs, and physical features, such as commons, quads and walks, are essential to learning and collaboration and the type of random encounters that make higher education so valuable.

That's why Case Western Reserve University creates a Campus Master Plan every 10 years to guide the use and development of its land and buildings. The design and use of land and buildings are too important to be allowed to develop without careful thought and planning.

CWRU's planning process is collaborative, bringing together all members of the university, as well as the wider community in which it operates.

Though it represents the consensus best thinking about the university's future, needs and goals, the plan is not a blueprint, budget or binding document, but a flexible guide for the university to follow to achieve continued success. Revisions to the plan over the years are necessary and expected.

Previous plans have led to such accomplishments as the Tinkham Veale University Center and Uptown. This latest plan calls for some new construction, but prioritizes better use of existing space and renovations and re-purposing rather than a primary focus on new building.

A CALL TO ACTION

Barbara R. Snyder became president of Case Western Reserve University in 2007 and championed a new strategic plan process to strengthen learning, improve interdisciplinary collaboration and renew outreach. The most recent result is the 2013-18 Strategic Plan.

This Campus Master Plan is distinct from, but integrally linked to the Strategic Plan. It recommends a systems-thinking approach to solving the university's many physical and operational challenges.

As higher education evolves, CWRU must adapt to remain competitive. This adaptation must include long-term sustainable strategies for growth. Industry partnerships such as the collaboration with Cleveland Clinic on the Health Education Campus (HEC) and innovation investments such as Sears think[box] will help shape CWRU's future. This Campus Master Plan builds on the long legacy of campus planning at CWRU and helps frame the continued success of the university.

STRATEGIC PLANNING

Strategic planning drives decisions and reinforces the university's appeal as one of the top research and leaning institutions in the country. The Forward Thinking capital campaign has raised more than one billion dollars for new facilities and student amenities for cultural and educational enrichment. Think Beyond the Possible, the 2013-18 Strategic Plan is a collaborative, university-wide effort to leverage CWRU's successes and plan more sustainably for the future. The ideas and recommendations of the 2013-18 Strategic Plan are the foundation of the Campus Master Plan.

OUTREACH EFFORTS

CWRU is strengthening mutually beneficial relationships with the surrounding community as University Circle revitalizes and contiguous neighborhoods experience challenges related to increasing development. The university anchors those neighborhoods just as those neighborhoods provide the environment and community in which the university thrives. Many of these neighborhoods are disadvantaged and can be helped by greater collaboration with and access to the university and its resources. The university wants to engage with these neighborhoods as a fully committed partner.

ENHANCED LEARNING

Over the last decade, CWRU has enjoyed a surge in popularity and increased quality among applicants. In 2010, the university's acceptance rate was 67%. Just four years later, 38% of applicants were offered admission. Between 2006 and 2015, undergraduate enrollment increased almost 40%; graduate and post-professional programs also are experiencing strong growth.

The university responded to student growth by adding a substantial amount of physical space. It boasts several new facilities for student learning, research and campus life.

Future development should continue to reinforce the pivotal role of the physical campus in the education of the "whole student."

CWRU's campus is distinct for its inspiring setting among world-class cultural institutions. Strong, durable community partnerships enrich the student experience and benefit the university and its neighbors.

INFRASTRUCTURE AND OPERATIONS

New construction adds needed high-quality space, but also increases operational costs and carbon output. The solution is to remove and replace deficient facilities in order to manage the increase of overall net square footage. This strategy of balanced growth is crucial, given the university's carbon reduction goals and the burden of operational costs. Increased costs and aging buildings force difficult choices, often at odds with academic priorities.

The good news is that this Campus Master Plan identifies a way forward. Part of the solution is to improve existing space and renovate vacated space. The lack of room to temporarily relocate occupants during renovations, or "swing space," has stymied plans to undertake comprehensive renovation, but this will soon change with construction of the Health Education Campus project with Cleveland Clinic.

The major issues with physical space at CWRU are quality, underutilization and energy inefficiency. The university has an opportunity to pair investments in new, specialized spaces with moves, renovations and streamlined operations. This holistic approach requires validated and linked data on instruction, space, people and grant activity. Improving and creating these systems is an immediate need and necessary first step toward implementing the Campus Master Plan.

Most space needs can be solved by consolidating and rebalancing within existing buildings. Rather than only erecting new buildings, the university must find varying solutions. Space sharing, co-location of research, reinvented offices and an optimized classroom inventory with higher usage guided by smarter policies and procedures are essential recommendations of this plan.

Most new space built should be specialized high-service space since existing buildings are generally well suited for uses other than high-service research. New facilities must reach beyond LEED targets to minimize energy use and prompt behavior to achieve carbon reduction targets.

TRANSFORMATIVE IMPACT

Case Western Reserve University is renowned for its pioneering discoveries. This legacy of excellence should be evident in its high-quality learning and research environments, open spaces and communal oases. For this reason, the Campus Master Plan identifies profound and resourceful ways to elevate space quality and functionality. Recommendations include a series of catalytic projects, the formation of a design re-view board, policy recommendations and detailed building use strategies. Implementing this plan will strengthen the university and its neighbors alike.

POTENTIAL CRAWFORD TOWER AND
EUCLID GATEWAY FUTURE


GYMRU

PROCESS

The Campus Master Plan was informed by the university's Strategic Plan, as well as by ongoing academic and strategic planning within each academic unit. Through evaluations of facilities and space planning, as well as conversations with stakeholders in the university, planners identified a lack of central space management and long-term facilities phasing planning.

Creating the plan required regular engagement with Case Western Reserve University stakeholders, as well as leaders from allied anchor institutions in University Circle, the City of Cleveland and the surrounding neighborhoods.

This approach allowed big ideas to be honed by multiple rounds of stakeholder engagement. The best ideas from one phase were tested and improved in the next, leading to a series of recommendations to transform the university over the next ten years.

PHASE ONE - INVENTORY AND ASSESSMENT

During the initial phase, the planning team held a series of dialogs with university stakeholders. In addition, university faculty, staff and students responded to two surveys to determine how the campus functions on a daily basis and identify collaborations between and within disciplines. The surveys revealed the challenges, opportunities and threats to the success of CWRU, relative to its physical layout and amenities. Engagement during Phase One of the Campus Master Plan included:

My Campus Survey (more than 1,700 responses)

Faculty Collaboration Survey (381 reported collaborations)

Campus building walk-throughs

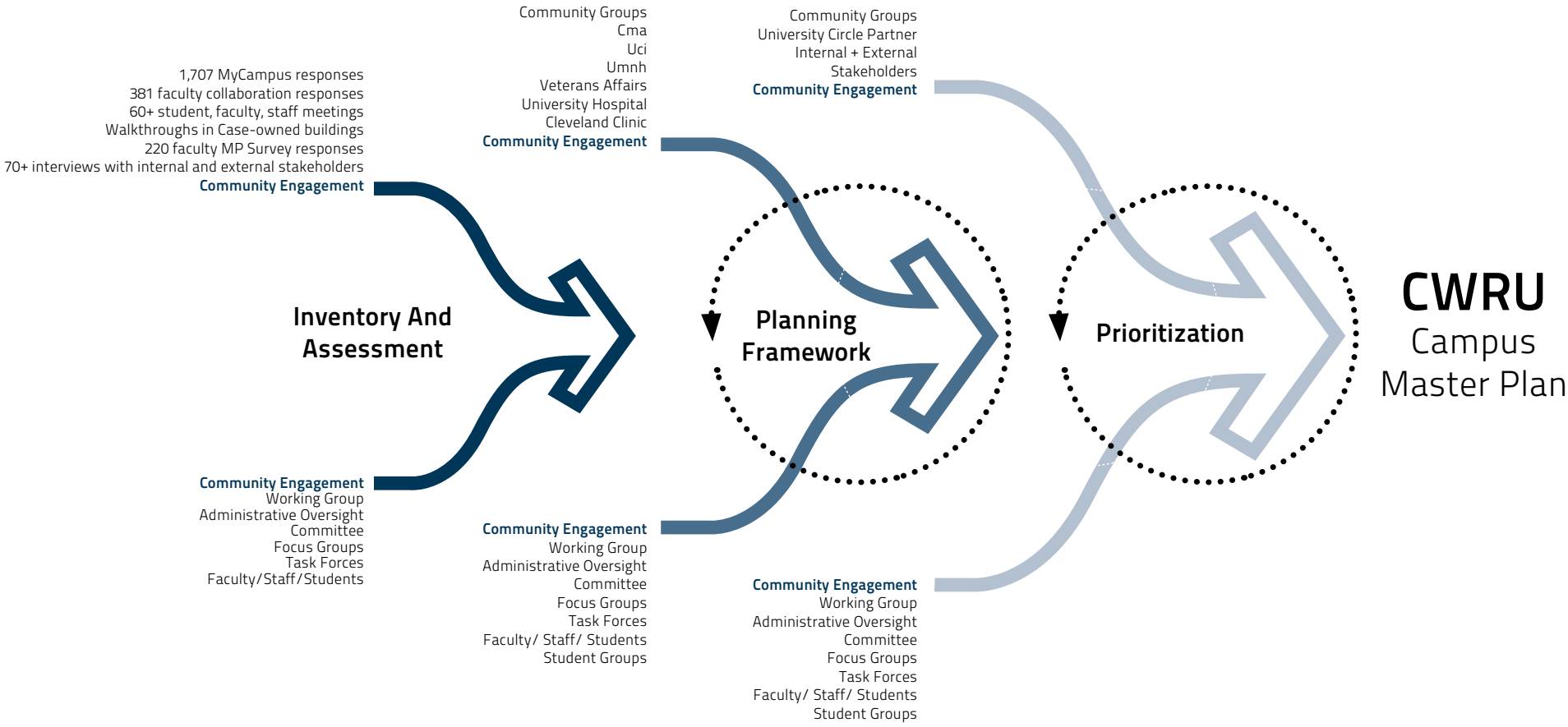
Faculty Surveys (220 responses)

Interviews and meetings with members of the campus community

Meetings with neighboring institutions and communities

Members of the university community spoke frankly and thoughtfully about their affection and hopes for CWRU while leaders from University Circle and surrounding neighborhoods discussed the importance of the institution to the area. Not surprisingly, no one thought the campus and its buildings are perfect as is. Suggestions ranged from the easily accomplished to

DATA AND VISION INFORM THE PLANNING PROCESS



the aspirational to pie-in-the-sky. Planners evaluated and refined the best ideas and incorporated them into this Campus Master Plan.

PHASE TWO - SCENARIO DEVELOPMENT

Phase Two explored alternative ways to implement the proposed facilities program or modify policies and procedures to satisfy Campus Master Plan goals. Each scenario tested a range of campus development options available to meet the university's needs based on Phase One considerations.

The iterative process allowed university knowledge and experience to be incorporated into the plan. As a result, it calls for a series of catalytic projects and procedural changes to accomplish the goals. Engagement during Phase Two of the plan included:

Monthly meetings of the Campus Master Plan working group and administrative oversight committee

Follow-up meetings with the campus community

Meetings with neighboring institutions and communities

PHASE THREE - PHASING AND IMPLEMENTATION

Deficient buildings on campus should be upgraded. That was the conclusion reached after a detailed study of programmatic needs and academic priorities together with a condition and suitability analysis. This ensures that any new capital projects include improvements to the quality of space in existing buildings. No prescriptive path is defined. Rather, a building-by-building commentary and catalogue of potential uses provide tools for resolving and implementing renovations. Likewise, the plan recommends operational improvements to use space more efficiently. Engagement during Phase Three of the plan included:

Monthly meetings of the Campus Master Plan working group and administrative oversight committee

Follow-up meetings with the campus community and external partners

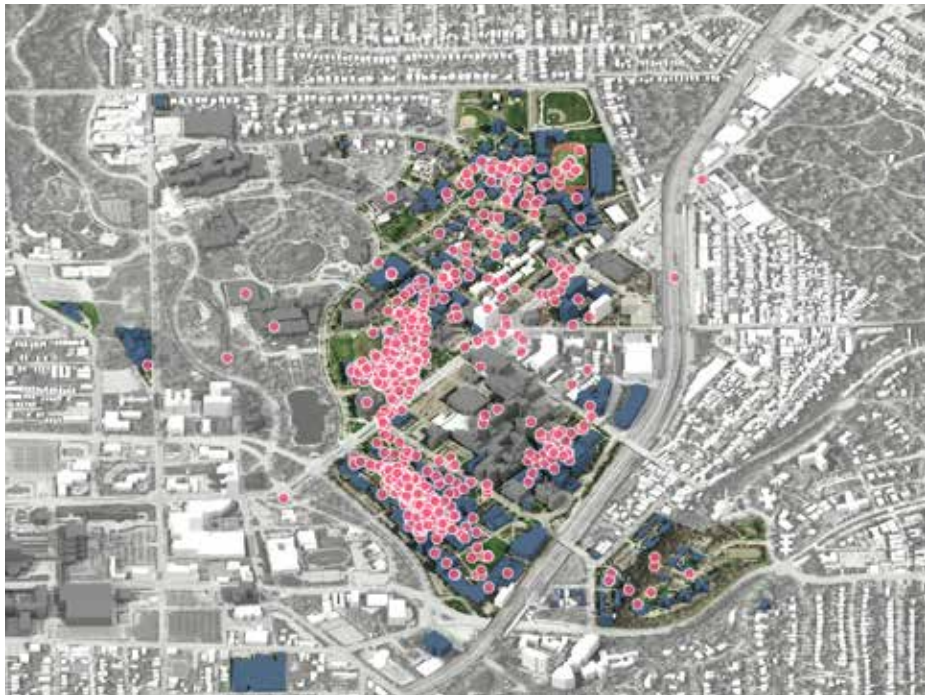
OUTREACH

Campus community outreach was a pivotal part of the planning process. It involved interviews, forums and surveys with members of the CWRU faculty, staff, students, senior administration, broader campus community, city government and neighborhood,

community and business groups in order to understand current and future challenges and opportunities in the wider district. Planners held over 120 meetings with stake-holders in every phase of plan development, from initial data collection to the final Campus Master Plan presentations.

BOARD APPROVAL

The Case Western Reserve University Board of Trustees approved the Campus Master Plan in October 2015.



My Campus survey: Feedback from the campus community for the question regarding CWRU's "campus heart", identified multiple campus centers.

CAMPUS MASTER PLAN PRINCIPLES

CAMPUS MASTER PLAN PRINCIPLES

The plan serves as a framework for development, but is flexible and amendable. However, the following agreed-upon principles should underpin and be considered in all development decisions:

1. Strengthen the unique sense of place in each campus district.

2. Embrace sustainable thinking for infrastructure and organizational processes.

3. Knit campus districts and city neighborhoods into a clear, safe and vibrant environment.

4. Renew and replace deficient facilities with high-quality spaces and learning environments.

5. Locate facilities that catalyze collaboration and discovery at strategic crossroads on campus.

MASTER PLAN PRINCIPLES

Strengthen the unique sense of place in each campus district

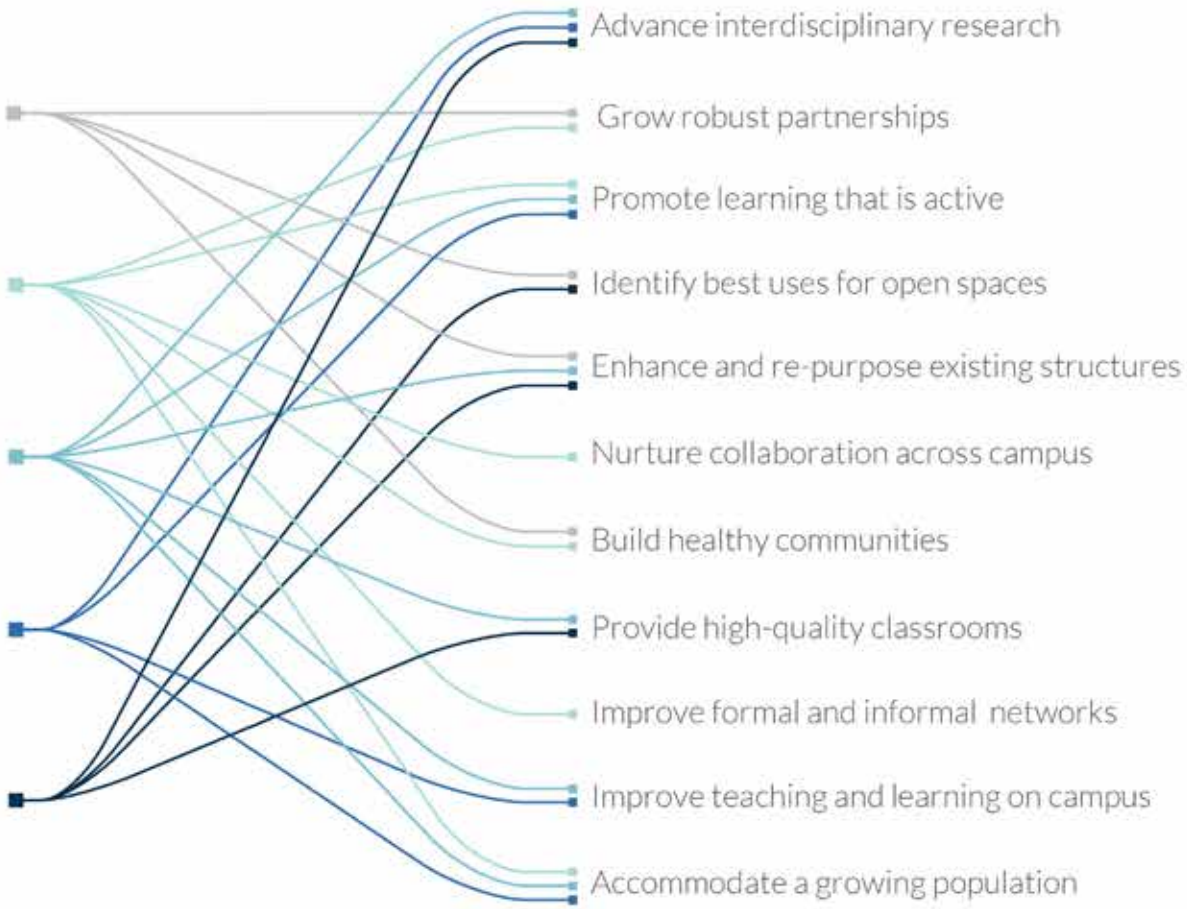
Embrace sustainable systems thinking for Infrastructure and organizational processes

Knit Campus Districts and City Neighborhoods into a clear, safe and vibrant environment

Renew and replace deficient facilities with spaces and learning environments of high quality

Locate facilities that catalyze collaboration and discovery at strategic crossroads

STRATEGIC PLAN GOALS



Advance interdisciplinary research

Grow robust partnerships

Promote learning that is active

Identify best uses for open spaces

Enhance and re-purpose existing structures

Nurture collaboration across campus

Build healthy communities

Provide high-quality classrooms

Improve formal and informal networks

Improve teaching and learning on campus

Accommodate a growing population

1

STRENGTHEN THE UNIQUE SENSE OF PLACE IN EACH CAMPUS DISTRICT

Case Western Reserve University's campus is a tapestry of districts threaded with diverse architecture, historic parks and neighborhoods and world-renowned cultural and medical institutions. Each district needs high-quality, welcoming places that invite interaction.

Inspiring physical settings are an antidote to technological dislocation and are critical for nourishing innovation. This Campus Master Plan calls for a connected series of pedestrian- and bike-friendly routes, greener landscapes and inviting indoor/outdoor gathering places that offer food and drink and stay open late. These memorable places will celebrate the ingenuity of students and faculty and make the campus greener and more open.

Simple, cost-effective investments can make substantial progress toward this goal. An examination of building entries, passages and courtyards reveals untapped potential to create thriving and inspiring spaces. These are essential elements of vibrant academic communities. The Putnam Public Art Committee will recommend flexible, innovative public art installations that will further enhance the campus.

Case Quad

Case Quad is the academic center of campus for engineering, science and technology. It originally was two separate campuses divided by a fence.

The result is fragmented and disconnected architecture and landscapes that should be restructured to create integrated, intimate, useful open spaces connected to adjacent districts and the surrounding community.

The CWRU campus has been walled off from the community, but can be no longer. This Campus Master Plan seeks to erase that impression, particularly along Case Quad's western edge. A revitalized quad with new routes and prominent view corridors will improve campus connections and create new direct links with neighbors.

Mather Quad

Originally the Mather College for Women, Mather Quad is now the academic hub for liberal arts and fine arts programs, along with the Weatherhead School of Management and the School of Law. Historic buildings merit comprehensive renovation and preservation, while new gems provide the backdrop for an expansive new campus green that will strengthen links between the university, the Cleveland Museum of Art (CMA) and Wade Oval.

Bellflower/ North Residential Village (NRV) and Uptown

Single-family homes built in the early 1900s and converted into offices, institutional uses for the Mandel School of Applied Social Sciences (MSASS) and housing compose the Bellflower district.

The North Residential Village (NRV) has mid-rise, first-year residence halls, upper class housing at The Village at 115 and a new mixed-use retail development and off-campus housing at Uptown. The residential scale in this district should contribute to an underclassmen community and connect to Mather Quad and Uptown retail.

Selective improvements to the NRV will renew and replace deficient facilities to provide better amenities for undergraduates, fortify MSASS and, in the long term, add appropriately scaled housing and compatible mixed uses along an improved Lucia Nash Walk-way.

South Residential Village (SRV)

South Residential Village (SRV) serves second-year students and many Greek chapters. SRV is isolated from the core campus and characterized by an escarpment that can be traversed only by the campus' outdoor Elephant Stair.

New replacement housing should be consolidated at lower elevations closer to campus and integrated with the surrounding neighborhood of Little Italy. A new public space will tie together and enhance the housing. The top of the hill should be preserved for long-term development and be used in the near-term for recreation.

Health Sciences and Research Campus

This district links Health Sciences and Research to University Hospital facilities and has a density similar to that of downtown Cleveland.

Instructional programs will move to the new Health Education Campus (HEC) in the fall of 2019. The vacated space in Dental, Nursing and Robbins will allow significant consolidation and renovation across campus in the short term and demolition in the long term.

Faculty and student movement between the HEC and core campus is a major issue being studied concurrently with this Campus Master Plan.

Health Education Campus (HEC)

Case Western Reserve University and Cleveland Clinic have long partnered to trans-form health education and the future of medicine. The two institutions solidified their partnership in 2013 by agreeing to collaborate on a new state-of-the-art medical education building on an 11-acre campus adjacent to the Cleveland Clinic Main Campus. The new facility will house CWRU's School of Medicine, School of Dental Medicine, the Frances Payne Bolton School of Nursing and the Cleveland Clinic Lerner College of Medicine. Landscape design and improved streetscapes will foster walking and biking between HEC and the core campus, but there is a need for fast, reliable transportation between the two. The HEC should be an easily identifiable component of the university.

West Campus

The 14-acre site of the former Mount Sinai Hospital, West Campus was acquired in 2001 and the adjacent 7-acre Temple Tifereth Israel property was annexed in 2013. Until the recent renovation of the Temple-Tifereth Israel into the Maltz Performing Arts Center (MPAC), West Campus consisted of surface and garage parking, along with the Cleveland Center for Structural Biology, a medical research partnership with the Cleve-land Clinic. The new MPAC and the Nord Family Greenway, a new park bridging Wade Park between Tinkham-Veale University Center (TVUC) and MPAC, will enhance the development potential of West Campus.

2

EMBRACE A SUSTAINABLE SYSTEMS THINKING FOR INFRASTRUCTURE AND ORGANIZATIONAL PROCESSES

The Campus Master Plan builds on the university's 2013-18 Strategic Plan by emphasizing critical links between energy use, infrastructure needs and university operations. Holistic and enduring solutions to these issues lie at the intersection of academic, capital, financial and physical space planning. A comprehensive approach informed by reliable data is essential.

In an era of constrained resources, significant operational costs and competing priorities, investing smartly is necessary to insure the university's viability and resilience. Decision makers must use linked data systems to diagnose and holistically solve space issues. Indeed, the viability of the university rests on its ability to solve complex issues in creative ways that restrain operational costs and curb carbon output.

Case Western Reserve University is known for groundbreaking discoveries and should transform its campus into a living laboratory where new kinds of organizational processes, educational models, research teams, transportation methods and energy solutions are deployed and tested.

Holistic and enduring solutions to these issues lie at the intersection of academic, capital, financial and physical space planning.

3

KNIT CAMPUS DISTRICTS AND CITY NEIGHBORHOODS INTO A CLEAR, SAFE, AND VIBRANT ENVIRONMENT

Safe, vibrant, walkable and bikeable connections are vitally important for healthy communities. These attributes, together with thoughtful design elements, can create a cam-pus experience commensurate with the caliber of academic achievement at Case Western Reserve University.

Navigating between districts is part of the campus experience and should be attractive, convenient and enjoyable. This Campus Master Plan envisions a series of walks and routes, all well designed, but varying in character depending on the context. This net-work will improve connections to the world-class institutions in University Circle as the Nord Family Greenway links the Cleveland Museum of Art with the Milton and Tamar Maltz Performing Arts Center (MPAC) and the Tinkham Veale University Center. The network will further reinforce the identity of University Circle as one big campus. The routes must adjust to campus and neighborhood scales and signify where the campus begins and ends. Gateways can be as subtle as a change in pavement, lighting, site furniture and sign-age, but they must be consistent to be effective.

Pedestrians and cyclists need clear and accessible routes to easily navigate among buildings, districts and neighborhoods. Their passage and safety should take priority over non-emergency vehicle traffic. Many streets, Euclid Avenue in particular, are barriers rather than seams between districts and should be transformed into pedestrian-friendly environments through lighting, improved signage, streetscape improvements and street furnishings. Together, these elements lend human scale, simplify navigation and safely accommodate multiple modes of transportation.

The plan improves public safety by thoughtfully designing the public realm, increasing outdoor activity and visibly linking indoor activity to adjacent routes. Security should be integrated prominently within buildings rather than in stand-alone outposts. The campus is an inspiring and beautiful asset, not only to the academic community, but also to its neighbors. Their enjoyment and use of the space enlivens the campus and makes CWRU a safer place. Neighbors from Glenville/Wade Park, East Cleveland, Little Italy, Fairfax, Uptown, Hough and Upper Chester should feel at home on university property.

4

RENEW AND REPLACE DEFICIENT FACILITIES WITH SPACES AND LEARNING ENVIRONMENTS OF HIGH QUALITY

Despite successful new development since 2005 and a robust, competitive enrollment, the university suffers from a lack of investment in existing learning and research space. A lack of capital investment in any one area affects the entire university.

CWRU must make substantial capital investments to existing facilities to meet basic standards of care and keep pace in the competitive higher education marketplace. The operational economics, low utilization and general unsuitability of facilities for research are a serious challenge.

The solution is not more space, but better space.

It requires significant renovation, new construction and major building removals. The university should consider a no "net" new academic space policy over the long term, as other institutions have done. This stimulates creative and strategic investments that avoid unsustainable operational costs.

Solving space and policy issues simultaneously is complex and requires comprehensive and linked data systems for smart decision-making. Grant funding and research space data must be linked. Classroom upgrades should be in response to section sizes and be informed by usage data. Building interiors should be united and consolidated and programs should be repositioned to align with buildings' highest and best use. New construction alone will not raise quality across campus or increase energy efficiency to meet the university's Climate Action Plan. Given the interdisciplinary nature of learning and research, the university should build new, shared research facilities and allow a strategic renewal of academic space across campus.

5

LOCATE FACILITIES THAT CATALYZE COLLABORATION AND DISCOVERY AT STRATEGIC CROSSROADS

Each new development should achieve the multiple goals of improving existing uses, fostering partnerships and collaboration in shared spaces and creating hubs of activity where CWRU's creativity is on display. This Campus Master Plan will maximize the potential of existing facilities to meet future needs and is precise about the location and type of work necessary to transform each district.

This surgical approach is impactful and efficient, visionary and pragmatic.

The university needs adaptable, robust buildings to support perpetually changing re-search teams and collaborations. New space must be interchangeable and shared between colleges and disciplines, changing as needs and funding fluctuate.

Similarly, the campus needs social places in each district that bring people together and provide a diversity of work and social environments. This plan creates a more productive and enjoyable campus experience through a series of catalytic projects. The university can act immediately upon short-term wins and prioritize more visionary investments relative to the Strategic Plan, academic need and institutional impact.

INSTITUTIONAL FRAMEWORK

INSTITUTIONAL FRAMEWORK

The design of the physical campus influences learning and research across the university and fundamentally impacts each academic unit's ability to deliver on its strategic plan. The university's institutional framework addresses the policies and processes that make physical space work. The physical and institutional frameworks must be in alignment and support each other to achieve the maximum benefit. The Campus Master Plan therefore treats the university holistically by considering the campus and operational components as part of one system. The objective is not only essential gains in operational efficiency, but also improved collaboration, instruction and resource distribution. These goals capture themes from hundreds of stakeholder conversations, CWRU's Strategic Plan and national trends in higher education.

INSTITUTIONAL FRAMEWORK GOALS

Improve curricula and transform coursework with modern, technically advanced learning environments available to an increasing number of undergraduates.

Grow and strengthen research and creative enterprises, as well as graduate education through increased intercollegiate and multidisciplinary collaboration.

Reinforce a sense of community among faculty, staff and students through more dynamic, modern study areas and workspaces.

Inform decision making and allow financial sustainability planning with accurate and complete data systems that link space, personnel and grant funding.

Manage the size and quality of academic space and its energy consumption to re-duce operational costs. Invest in carbon-reducing, resilient energy systems.

INSTITUTIONAL FRAMEWORK STRATEGIES

RIGHT-SIZE AND REALIGN

Use existing space more efficiently through the reallocation of space and moves to improve adjacencies. Offset new construction by reusing older buildings for less demanding uses or removing them.

Enhance Quality and Utilization

Renovate and build to improve facility condition and meet modern space needs in learning, office, research and living environments.

Model Sustainability

Create a more sustainable campus and reduce carbon output through changes to large-scale physical infrastructure, building scale efficiency measures, improved operations and maintenance, and individual action.

As space becomes fragmented, it impairs productivity and collaboration limiting learning, innovation and discovery. This Campus Master Plan emphasizes the importance of using space more efficiently and rationalizing space needs.

Departments with too much or insufficient space should have their needs met first, if possible, through reprogramming, renovation or relocation. Departments that are not in suitable spaces should be improved through moves or construction. While the plan acknowledges and accommodates the need for new construction, the university should offset additions by removing

The institutional framework identifies research spaces across campus in need of major reinvestment.

RESIZE AND REALIGN

or renovating existing buildings. This will reduce operating costs, energy consumption and greenhouse gas emissions.

This plan proposes that historic or architecturally significant buildings be maintained; existing buildings be renovated to address deferred maintenance and functional use issues; new buildings be provided to support unique uses; and buildings that are no longer fit for continued investment be demolished.

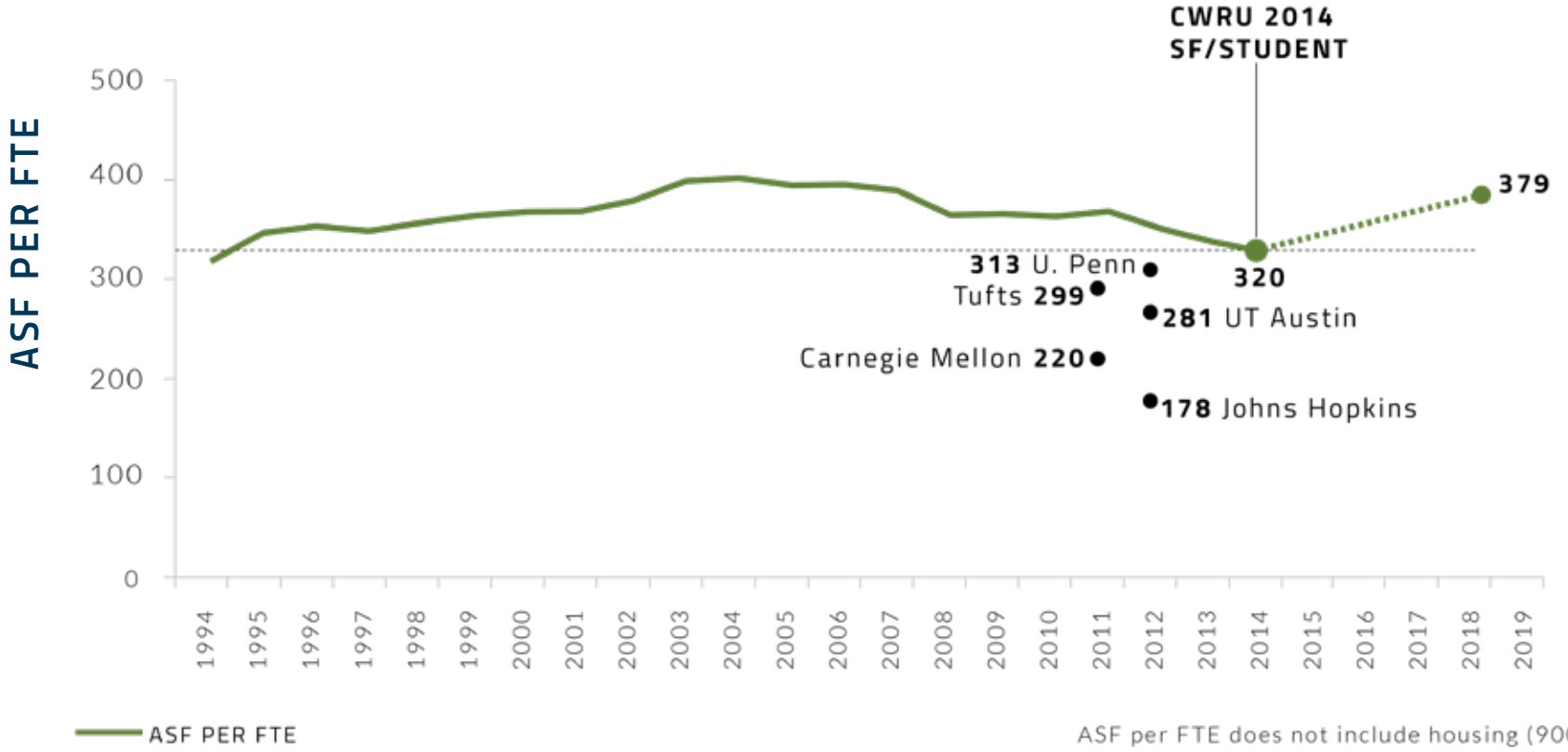
No "Net" New Academic Space

CWRU has more space per student than peer institutions, particularly those with similar academic profiles. CWRU has 320 assignable square feet (ASF) of space per full-time equivalent (FTE) student, more than the University of Pennsylvania and John Hopkins University in just two examples. With the upcoming additions of the Health Education Campus (HEC) and the Milton and Tamar Maltz Performing Arts Center (MPAC), this metric will rise to 377 ASF/FTE.

These benchmarks indicate that the university does not suffer from an overall lack of space. This information, along with a leveling enrollment of 5,000 undergraduates, leads the Campus Master Plan to assert that the university should avoid adding "net" new academic space. As new space is added, dysfunctional space should be removed. This will slow the incremental increase in operational costs and re-focus improvements on the urgent need to upgrade existing space.

Recommendation: Consider a no "net" new academic space policy.

ASSIGNABLE SQUARE FEET PER FTE STUDENT(1994-2015)



BUILDING CONDITION A SUITABILITY TO PURPOSE

This analysis guides capital investment to facilities that can support their intended use in the long term while downcycling those that cannot. Buildings that do not or cannot be made to support their intended use should be downcycled, demolished or divested.

This plan evaluated each academic building for its suitability to purpose. While this analysis takes condition into consideration, the university needs an updated comprehensive facility condition assessment to guide renewal projects.

While most buildings are adaptable for administrative and general academic use, the need for that type of space is limited. Investment in classrooms and research space is recommended in buildings that are adaptable and suitable in terms of structure and systems, and where conditions present no serious risks. Buildings that are in poor condition and unsuitable for adaptive reuse should be demolished. These recommendations are the result of consultation with university facility staff and informed by an algorithm that compares inputs gathered during building tours against structural, mechanical and constructibility traits.

Specific assessments of suitability and recommendations of space reallocation can be found in the appendix of this document.

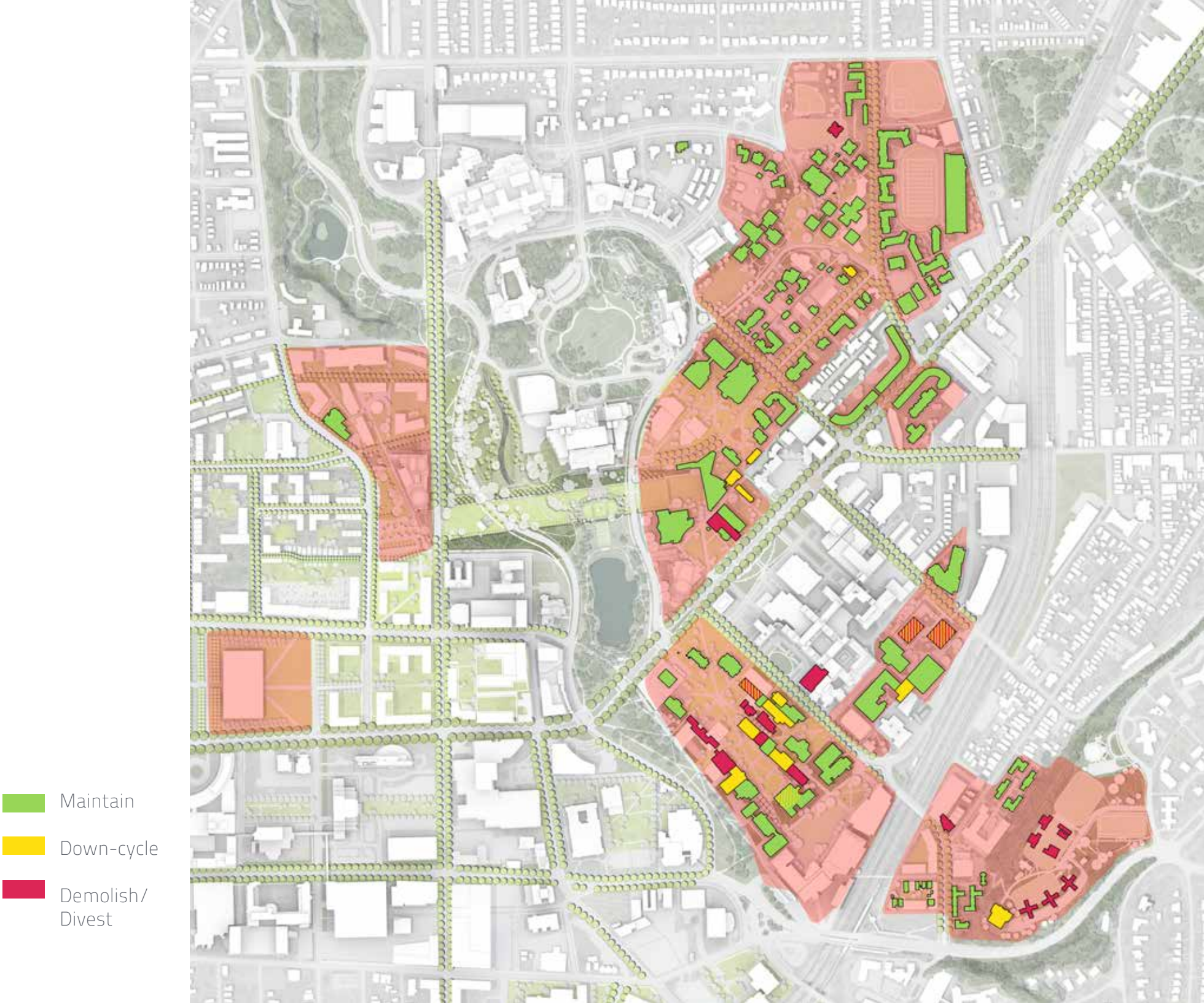
Recommendations:

Conduct facility condition assessments.

Renovate and move spaces to consolidate functional units and improve adjacencies.

Use vacated space in Dental, Nursing and CIA buildings as swing space to allow renovations, removals and space moves.

CWRU must improve the quality of its physical space to continue attracting the highest quality students and faculty. In many


Maintain
Down-cycle
Demolish/
Divest

ENHANCE QUALITY AND UTILIZATION

cases, high achievement in learning and research happens in spite of poor facilities and departmental locations. There are many low-cost solutions, for instance, to create new social gathering collaboration spaces, informal learning hubs or central equipment areas to unburden labs. These, in the aggregate, are as important as larger, more ambitious capital projects. These ideas cannot be effective, however, without diagnostic tools to guide investment.

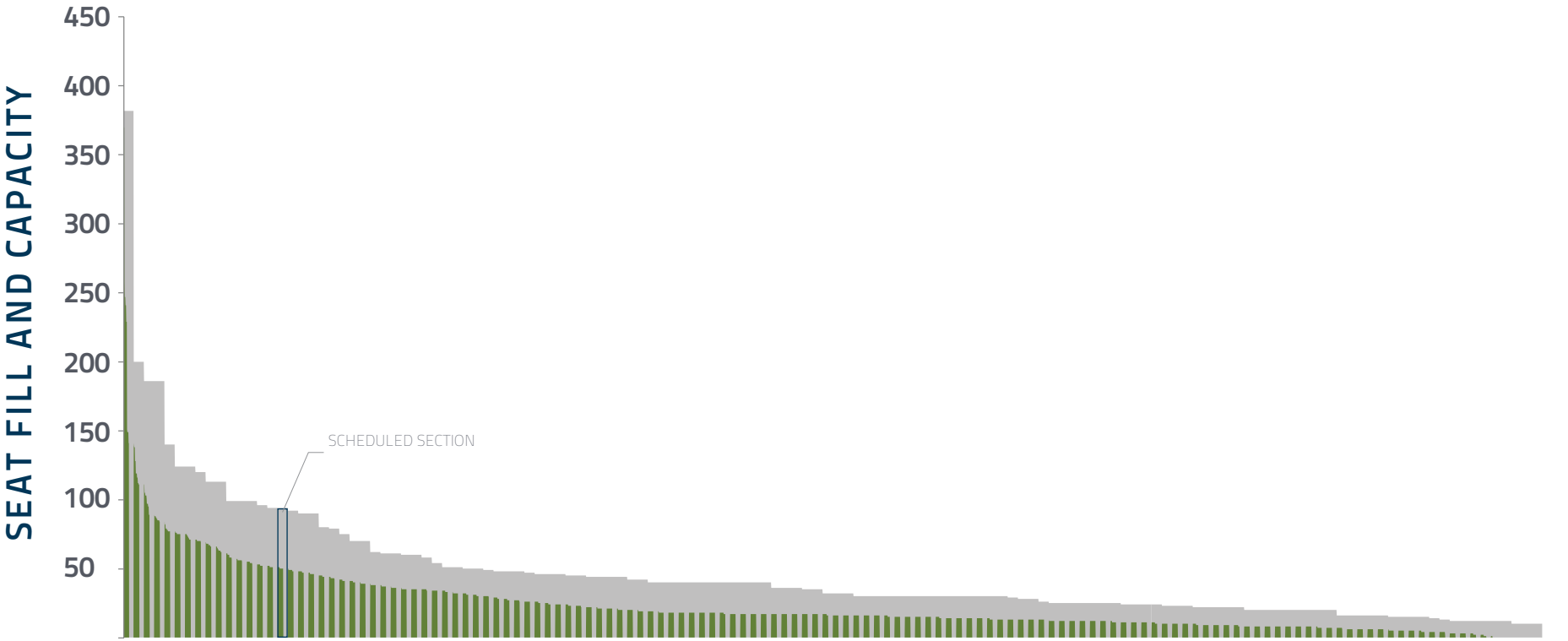
Learning Environments

CWRU has sufficient classroom space. Despite the limited data available, it is clear that better use of existing space, both in terms of hours used per week and seats filled, is possible by aligning section sizes with classroom sizes.

CWRU schedules classes using a block system, which, in theory, reduces overlap be-tween classes and helps students by reducing scheduling conflicts. The block system should be a required

Space renewal across campus will create a need to consider renovation and removals. A.W. Smith is an example of a facility that has a mix of useful and dysfunctional spaces.

REGISTRAR CONTROLLED CLASSROOM UTILIZATION



This graph illustrates the amount of unused seats and time that go unused based on the regisrar's course schedule during the busiest week of the semester. Each vertical green bar represents an individual room. The height indicates how many seats are filled relative to the room's capacity and the width indicates the number of hours that room is used during a 40-hour week. The takeaway is that there is a large amount of excess capacity in the existing classroom inventory. By scheduling rooms relative to the best fit between section size and room capacity, CWRU will maximize the utilization of classrooms and can avoid building 'net' new classroom space.

guideline. In addition, the university should consider a requirement to schedule 50% of classes outside of the 10 a.m. – 2 p.m. window to increase use of classrooms outside of peak hours.

Most classroom layouts at CWRU are traditional, with tablet-arm seating for each student, consuming an average of 20 square feet per seat. Flexible learning spaces, such as those in the Mandel Center or Mather Memorial, require an average 30-35 square feet per seat and enable interactive, discussion-based instruction. Notably, the Peter B. Lewis building offers diverse classroom types and is a resource for instructional experimentation. CWRU should use its excess classroom stock to resize and transform class-rooms to support interactive and active learning.

Many teaching labs are undersized, have poor proportions and sight lines, and lack flexibility. Biology labs average 30 square feet per student and chemistry labs average 34 square feet per student.

Best practices for higher education are almost double that size, at 50-55 square feet per student. CWRU should renovate and construct new teaching labs that can be used by allied disciplines. Co-location of teaching labs across the College of Arts and Sciences and the College of Engineering will allow hybrid instruction models to flourish.

Libraries can be transformed as the circulation of bound volumes decreases. This plan supports the consolidation and centralization of materials, paired with new staffing models to help students with research and coursework. Freed-up space can be converted into a variety of uses, including learning hubs, where students and faculty interact.

Recommendations:

Study campus learning environments conditions and utilization using a validat-ed, complete data set of registrar and department-controlled classrooms and class labs.

Adopt and enforce the block schedule.

Acquire new technology and furniture and renovate classrooms to allow active and interactive teaching methods.

Typical lecture classroom on campus.

Active learning classroom in Nord Hall.

RESEARCH SPACE

High-quality research space is critical to the mission of the university. The poor quality of existing buildings supporting research presents a significant challenge and threatens research productivity, particularly in the College of Arts and Sciences. The Campus Master Plan found an acute lack of community and collaboration space for researchers on Case Quad.

The average age of CWRU research buildings is 56 years old, an age at which renovations are driven by necessity more than vision. Today's reactive approach to building upgrades wastes opportunities to create the best possible physical campus and to logically phase investment. Deficiencies include lack of energy efficiency and insufficient exhaust capacity, emergency power, power redundancy and building controls, which puts much of the portfolio and research work at risk.

The lack of temporary space is soon to be eased by the construction of the HEC. The Dental and Nursing buildings, along with portions of Robbins, will be vacated, providing swing space to make larger campus-wide strategic moves possible.

CWRU can maximize the value of expensive research space through active management. Space management is informed by research expenditure data to influence re-search space quantity. Each principal investigator should be equipped with a balance sheet that collects costs and grants in one place.

As space needs ebb and flow, so should space assignments. That said, research is, by definition, divergent and open-ended. Financial tracking should guide a discussion between leadership and researchers to increase awareness of the operating cost and energy footprint of research space.

Recommendations:

Create shared research facilities on Case Quad that co-locate departments from the College of Arts and Sciences with collaborative units from the Case School of Engineering.

Simultaneously renovate and reorganize departments in Case Quad to align infrastructure needs with building suitability.

Use data to manage research space.

PERSONNEL OFFICE AND RESEARCH LOCATIONS

There is no data set available that tracks personnel locations on campus. This data would improve accuracy for departmental space allocation or relocation and reveals unintentional departmental fragmentation. Accurate information will reduce indirect costs and help allocate research space more effectively.

Recommendation: Link the human resources database to the space inventory. For research space, link the space inventory

Charles William Bingham Mechanical Engineering Building lab space.

SPACE PORTIONING GOALS

18% LEARNING

RIGHT-SIZE AND REFRESH...

DIVERSIFY + OPTIMIZE SCHEDULE

33% RESEARCH

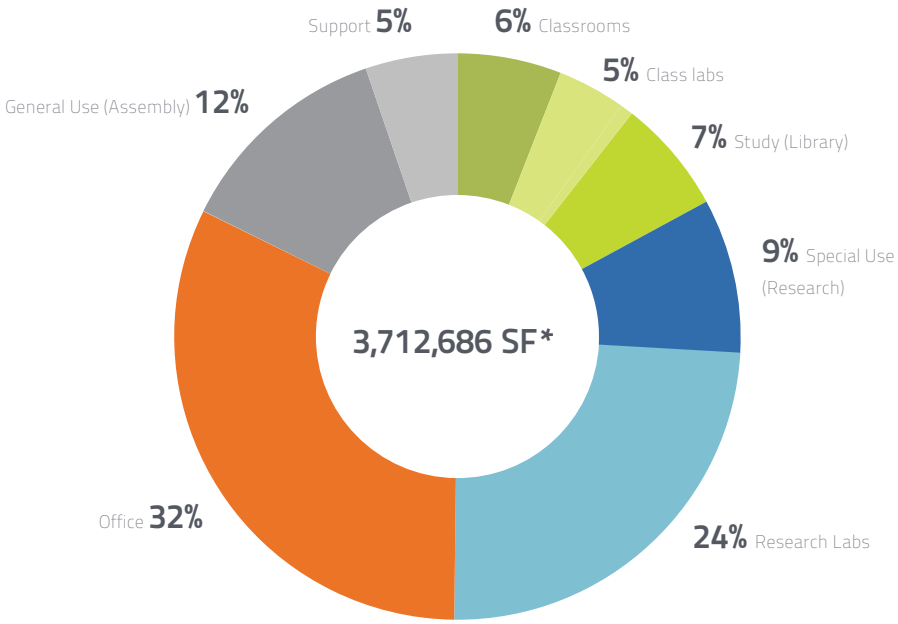
IMPROVE QUALITY...

DOWN-CYCLE AND REPLACE UNSUITABLE BUILDINGS

32% OFFICE SPACE

MODERNIZE...

CONSOLIDATE + REFURBISH



*CWRU-Owned assignable square footage not including parking, residential or farm areas
Fall 2014 Space Only - Does not include Thinkbox, HEC or Maltz PAC

EXISTING UNIVERSITY SPACE ALLOCATION
AND OVERALL RECOMMENDATIONS

to the principal investigator through a database of grant expenditures.

OFFICE SPACE

Changing demographics and trends in higher education will transform office environments over the coming decade to a more open and collaborative model. CWRU should shift from a preponderance of private offices to a more collaborative, flexible, open-office model. This will make office space more efficient and productive further enhancing interaction.

Faculty and staff need more meeting space, common workspace and quiet places to have private conversations with students. Rather than occurring in private offices, these functions are more flexibly accommodated in a new mixture of office space types. The current CWRU station ratio of 1.18 stations to people suggests there is room for reallocation. Faculty engagement is essential to the success of such initiatives.

Currently, the average office size at CWRU is 151 square feet. The prevalence of individual offices along exterior walls privatizes light and diminishes the quality of office environments. The HEC will have new office environments and could be the starting point for university office policy revisions.

Recommendations:

Rethink office space to create a more mobile and interactive faculty. Renovations should begin with groups willing to experiment with new office set-tings and designing those environments should begin with input from users interested in creating new kinds of collaborative spaces.

Conference rooms, social spaces and support rooms should be shared among departments within buildings.

The Mandel Center has abundant daylight and views, good acoustics and an attractive, efficient open work environment.

SPACE STANDARDS

Standards are essential for implementing and managing physical space policy at any institution. The university must create standards that promote the sharing of resources and space, as well as ensuring that social and interactive components are required components for all space types.

Recommendations:

Classroom standards should include innovative furniture and technology considerations.

Research standards should establish footprints for broad categories of investigators, including metrics for open bench and lab support spaces.

Office standards are an opportunity to model the transformation of the 21st century academic workplace.

DATA SYSTEMS

Effective space management depends entirely on accurate data. The university's missing and incomplete data sets greatly limit potential analysis and value to be gained from it.

An accurate inventory of space is the foundation for nearly all building-related analyses. Though a full space inventory was available to the Campus Master Plan team, it has not been sufficiently updated over the past ten years. The plan makes broad assertions about space with relative confidence; however, this surety decreases when questions about individual programs and spaces become more specific.

Recommendations:

Conduct a comprehensive audit of the space inventory. Link the space inventory to building plans and to the Human Resources database.

Consider implementing a system whereby the space inventory can be validated by faculty and staff; this builds community around the issue of space and increases transparency.

Course Schedule

Course schedule data is incomplete. Of 212 classrooms on campus, only 141 are centrally scheduled by the university Registrar and could be analyzed as part of the Campus Master Plan. Of 127 rooms coded as teaching labs, only 30 were available in the

course schedule for analysis. Based on preliminary analysis, total classroom space could be significantly reduced and still accommodate total instructional time.

Centrally controlled rooms are typically more effectively used and all classroom scheduling should be coordinated with the Registrar. Departmental control should be limited to specialized instructional spaces and class labs, and scheduling of these rooms should be reported to the registrar.

Recommendations:

Require all scheduling, including that of department-controlled space, to be managed by the Registrar.

Conduct a learning spaces assessment based on the complete data set to optimize classroom inventory.

Require that only specialized space be dedicated to and managed by specific departments.

Facility Condition Assessments

Condition assessments are limited to information provided by the facilities staff. This type of mostly anecdotal information, dispersed across staff, makes it virtually impossible to establish an accurate total liability for each building. Lack of a single database with this information limits the ability to make space moves that align with necessary upgrades and renovations.

Prioritization and renewal planning is a fundamental task for facilities departments, but is severely hindered without a continually updated and accurate facility condition assessment.

Recommendations:

Conduct a comprehensive building conditions survey to quantify the deferred maintenance costs in each building. Such costs should be categorized by CSI division.

Conditions assessments should be undertaken for learning and office spaces, and also for residential life, athletics and dining facilities.

SUSTAINABILITY

Sustainability is central to the planning and design recommendations throughout this Campus Master Plan. CWRU should adopt a coordinated, strategic approach to improve the systems that serve its campus and community. While the following section addresses the approach to large-scale physical infrastructure, these are elements of a broader campaign to reduce resource consumption, a campaign which includes building scale efficiency measures, improved operations and maintenance and individual action.

As part of the 2011 Climate Action Plan, CWRU developed targets for reducing energy use and emissions. The push for carbon neutrality includes a variety of strategies to reduce consumption and emissions. Replacement of campus utilities and generation facilities are important near-term priorities, especially the coal-to-gas conversion at the Medical Center Company, the district utility. Ongoing initiatives include strategic energy decision-making on renovation and new construction projects, as well as opportunities to deploy renewable energy sources like geoexchange. Achieving these targets will also require behavioral shifts, transportation adjustments and, eventually, innovative infrastructure.

The overall square footage of campus facilities is fundamentally linked to the amount of energy consumed, whether these spaces are occupied or not. All space consumes energy at varying levels, depending on the uses, the intensity of activity, the number of people involved and the hours of operation. This plan recommends that the overall quantity of space be rationalized to take into consideration the energy profile of the space.

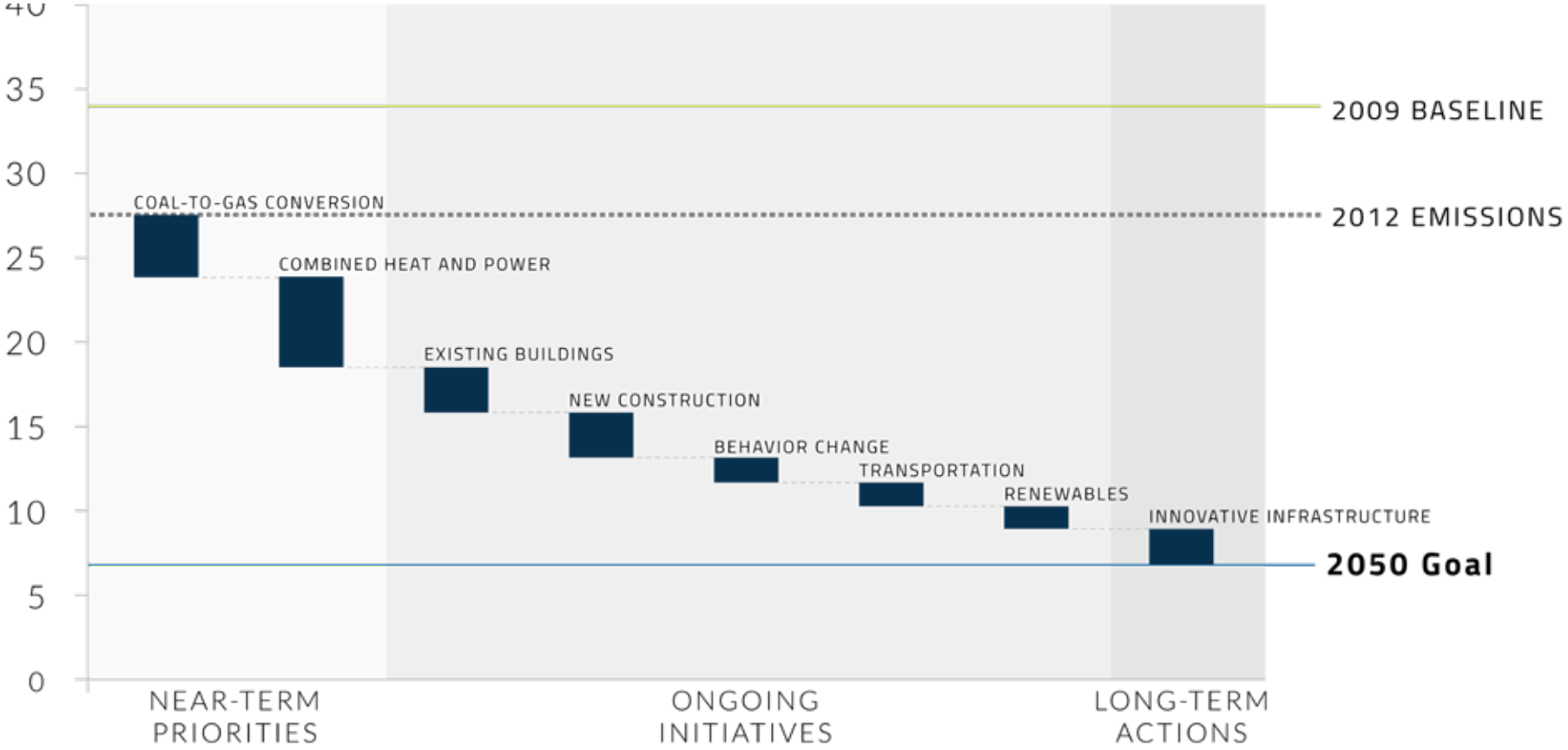
As mentioned in the previous section, under performing buildings should be up-graded or demolished.

The campus should act as a living laboratory for sustainability with active access to data and a push for technological and policy innovation to incentivize an ever-more environmentally conscious campus. Education and awareness will help engineer a cultural shift toward better use of resources at all scales.

The university should strive to not only achieve the goals it has already set, but to surpass them and work toward more aggressive targets yet to be determined. A green and sustainable campus should constantly improve.

MCCO - AN INTRODUCTION TO DISTRICT ENERGY

The non-profit Medical Center Company (MCCo), principally co-owned by CWRU and University Hospitals, is a district energy system, created in 1932 to provide energy for some of the most historic institutions in the University Circle area. A district energy system is a centralized, energy-efficient method of heating and cooling buildings. Steam, hot water and/or chilled water are produced at a nearby plant and then distributed for heating, hot water and/or air conditioning. District energy systems are common in the U.S. and are often used on college campuses. The proximity of the plant to the customers makes the systems efficient and reliable.


40
35
30
25
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15
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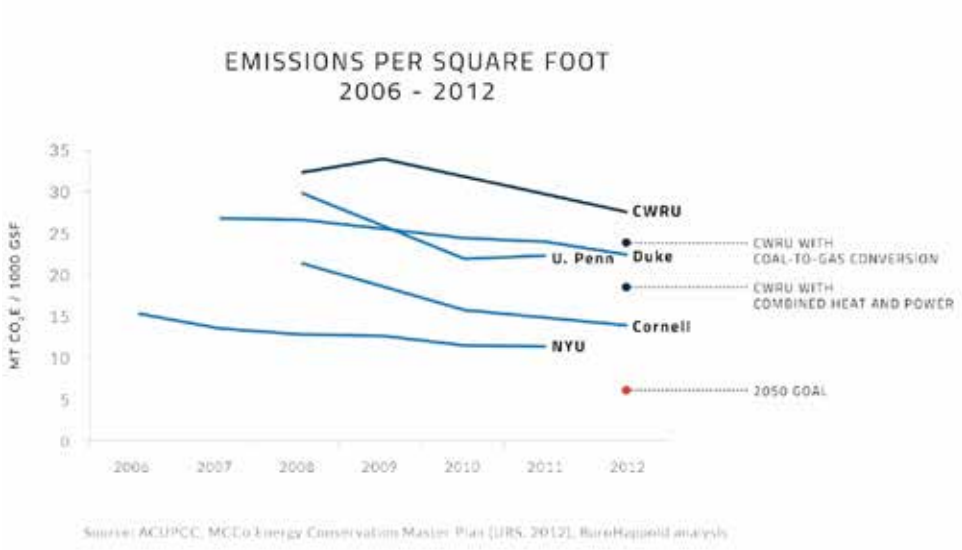
5
0
2009 BASELINE
2012 EMISSIONS
2050 Goal
COAL-TO-GAS CONVERSION
COMBINED HEAT AND POWER
EXISTING BUILDINGS
NEW CONSTRUCTION
BEHAVIOR CHANGE
TRANSPORTATION
RENEWABLES
INNOVATIVE INFRASTRUCTURE
NEAR-TERM PRIORITIES
ONGOING INITIATIVES
LONG-TERM ACTIONS

ENERGY PROFILES

Just as each campus district has its own sense of place, each district has an energy profile that can be matched with an overarching energy strategy reinforcing the physical framework while optimizing resource consumption and reliability. These energy strategies are conceived as follows:

Case Quad and Health Sciences | High Intensity

This district has the highest energy demands on campus, particularly with regards to laboratory buildings and animal resource centers. These research facilities have particular needs, including the provision of steam to sterilize equipment. MCCo's existing steam network is well suited to meet these needs, with recurring retro-commissioning to ensure it operates effectively and efficiently. This district is also well suited for co-generation, as 24-hour research facilities provide a continuous energy "baseline" that enhances the operational efficiency and economic viability of such systems. A high degree of redundancy must be maintained to ensure a reliable energy supply for research activity.



Source: ACUPCC, MCCo Energy Conservation Master Plan (URS, 2012), BuroHappold analysis

Mather Quad | Moderate Intensity

Less intensive than the Case Quad & Health Sciences district, Mather Quad offers an opportunity to consider a long-term conversion from steam to heating hot water to meet space heating and hot water needs. Heating hot water systems are better suited to meet variable demands, are more energy efficient, and easier to maintain than steam systems. Converting to a heating hot water system would be a major undertaking, requiring a new distribution network, but could be coordinated with the looped infrastructure strategy described below. A second co-generation plant, located perhaps as part of a development plan for the former CIA site on East Boulevard, could serve this new hot water network to further improve efficiency.

West Campus | Moderate Intensity

The vision for the West Campus includes a mixture of building types and uses to be developed in a coordinated manner, adjacent to the Hough neighborhood. This creates the optimal condition for a community microgrid – a local energy network that can operate independently from the larger electrical grid. In addition to providing a sustainable energy infrastructure, the microgrid will power buildings that could host crucial public services and

gathering spaces during extreme weather events or emergencies. An MPAC microgrid, for example, could be powered by clean energy resources, which could include solar photovoltaics, geoexchange (ground source heat pumps) and/or co-generation. The Maltz Microgrid will be powered by clean energy resources, which could include solar photovoltaics, geoexchange, and/or co-generation.

Bellflower / NRV | Low Intensity

As a largely residential district, Bellflower/NRV has relatively low energy demands. The strategy for these buildings, as well as the district at large, is to use passive design strategies to further drive down energy demands and the need for active systems. The university should consider high performance certification frameworks such as Passive House and the Living Building Challenge to drive the design of new buildings. Because this district includes MCCo's district steam and district chilled water networks, these centralized energy resources will be used wherever possible to maximize the economic, environmental and operational benefits.

SRV: Low Intensity | Passive

Similar to Bellflower/NRV, the SRV district will use passive strategies to minimize ener-gy demands; some residential buildings may not even need active cooling systems, de-pending upon the need for year-round space. Unlike Bellflower/NRV, this district is not connected to MCCo's district steam and chilled water networks. Before extending these networks to the SRV, the university will explore alternative schemes to condition the buildings within the district, including geoexchange, which require very low energy in-puts. It is believed that the SRV is more conducive to geoexchange than other parts of the campus, although testing is needed to confirm its viability.

LOOPED INFRASTRUCTURE

Much of the district energy infrastructure on campus resembles a "tree" configuration, where distribution pipes and power lines extend from the MCCo power plant and terminate at the farthest buildings. As the campus develops and infrastructure is upgraded, all reasonable accommodations will be made to move away from the tree model to a series of interconnected infrastructure "loops," which provide redundant pathways for energy service to each building. This model will enhance the flexibility and resilience of the district energy networks; buildings can be back fed during network failures or routine maintenance. Each loop will be matched with the appropriate power, heating, and cooling generation assets to maximize efficiency, enhance campus-wide resilience and support the energy identities listed above.

The university and MCCo will develop a detailed rational district energy plan, which will evaluate system options for each loop, weighing the associated costs and benefits of new centralized systems. The plan will assess potential sources of excess heat that can be captured and transformed into useful energy, as well as the potential to integrate renewable energy and to create community microgrids that can provide continuous power during outages and emergencies.

Utility Network

- Existing Steam
- Utility Loop Expansion
- Chilled Water
- District Solar Hot Water

PROPOSED ENERGY STRATEGIES AND LOOPED INFRASTRUCTURE

Recognizing that there cannot be a "one size fits all" strategy, the district energy plan will provide a framework for deciding which structures (existing and new) are better suited as stand-alone buildings unconnected to centralized infrastructure. These can include buildings that are far from existing district energy infrastructure and that can pursue low- and net-zero energy strategies by using tactics such as passive design and geo-exchange.

The university will work closely with MCCo to develop a detailed district energy plan, which will evaluate system options for each loop, weighing the associated costs and benefits for implementing new centralized systems. The plan will assess potential sources of excess heat that can be captured and transformed into useful energy, as well as the potential to integrate renewable energy to create community microgrids that can provide continuous power during outages and enhance resilience in the event of emergencies. Recognizing that there cannot be a "one size fits all" strategy, the district energy Campus Master Plan will also provide a framework for deciding which buildings (both existing and new) are better suited as standalone buildings that are not connected to centralized infrastructure.

These can include buildings that are far from existing district energy infrastructure and can pursue low- and net-zero energy strategies by leveraging tactics such as passive design and geo-exchange.

ENERGY MONITORING BY BUILDINGS

Monitoring energy use on campus is crucial for managing energy resources efficiently and achieving operational excellence. Existing utility metering systems are adequate for master planning, but a fully sub-metered campus is important for determining long-term system capacity or incorporating energy use into capital improvement decisions.

INFORMATION TECHNOLOGY AS AN ASSET

CWRU is nationally recognized among information technology engineers as one of the most progressive institutions in the nation. Similarly, the nonprofit organization DigitalC has paved the way for affordable access to high-speed broadband throughout University Circle and Northeast Ohio. This will help the university use data analytics and automated technologies to optimize building and plant operation, design and planning.

STORMWATER MANAGEMENT AND GREEN INFRASTRUCTURE

A framework for open space is addressed in more detail in the Physical Framework section; however, it is important to note the key role that green infrastructure plays in stormwater management. Creating and preserving green infrastructure is especially important in an urban environment like CWRU's campus and the surrounding communities. Additional stormwater retention capacity on campus reduces and filters runoff that makes its way into the Northeast Ohio Regional Sewer District system.

PHYSICAL FRAMEWORK

CREATING A PHYSICAL FRAMEWORK

The present physical character of the campus reflects the university's unique development history and growth. CWRU was originally three campuses, then two and now one. An urban institution embedded within the city fabric, the campus is divided by a series of major and minor roads that make campus gateways and connections across roadways an important part of its identity.

The strategies recommended in the physical framework section of this Campus Master Plan seek to achieve one primary goal: a strengthened community. Within that goal there are three major recommenvdations: to reinforce a unique sense of identity for each existing and emerging campus district; to foster a sense of connectivity among districts; and to knit together the university and the surrounding neighborhoods and communities. The physical framework principles are as follows:

IDENTITY

Create a cohesive campus with a strong sense of place.

CONNECTIVITY, ACCESSIBILITY, AND SAFETY

Create a safe, universally accessible campus and district that is oriented to pedestrians and integrates new development on campus.

PERMEABILITY AND GATEWAYS

Create permeable open spaces with distinctive and welcoming gateways at campus edges and clear connections through and between districts.

COMMUNITY ENGAGEMENT

Seek every opportunity to engage with and support the wider community and adjacent neighborhoods to strengthen relationships and partnerships, especially in regard to access to healthcare, jobs and education.

PROPOSED EUCLID AVENUE GATEWAY
WITH RENOVATED CRAWFORD TOWER
GROUND LEVEL


GYMRU

MOBILITY

Optimize road layouts, walks and crossings to enable better pedestrian and bike movement around campus without causing undue traffic congestion. This includes consideration of traffic patterns, roadway geometries, road widths and traffic volumes.

OPEN SPACE AND PLACE

Using landscaping as an affordable tool to unify and give identity to the campus is central to the Campus Master Plan. Use landscaping to create inspiring and useful gathering spaces in each district for both the campus and wider communities to enjoy. These "outdoor living rooms" should be memorable places that spur renovations of existing buildings to directly connect interior/exterior activities. In both new and renovated buildings, active ground floors and adjacent outside spaces should complement and support each other.

DENSITY AND STRATEGIC INFILL

Develop within the current extents of the campus and preserve current densities in each district within the university goals for growth and the need to responsibly manage the inventory of conditioned space. Density can be shifted within some districts, notably the North Residential Village (NRV) and South Residential Village (SRV) to make room for green space.

AN EXPANDED MATHER QUAD CREATED BY REMOVING A SECTION OF BELLFLOWER ROAD

IDENTITY

Establishing a strong, positive identity – both to the campus community and the world beyond – is a challenge for campuses embedded in the fabric of cities. Clarifying, defining and promoting campus identity is important to creating a strong sense of place. The CWRU campus consists of a series of de facto "neighborhoods" – areas that are either geographically circumscribed or that self-identify around strong academic bonds (e.g. Health Sciences and Research) or an earlier era of growth and development. A cornerstone of the framework is the creation of localized, unique "hearts" for each major campus district to complement the recently completed "campus heart" – the Tinkham Veale University Center (TVUC).

Strong campus gateways welcome visitors to the academic realm, underscore the special nature of the zone and provide orientation.

Landscaping — the structuring and character of outdoor space – is important for cam-pus identity. Landscape cohesion is not a drive for uniformity, but rather the establishment of elegant "threads" that bind the campus together. Signage, wayfinding, street and site furniture, lighting and the improvement of the overall structuring of outdoor spaces will contribute greatly to campus-wide and localized identity.

An outcome of the 2005 Campus Master Plan, the TVUC is a center of gravity for activity and social life. However, it is not open during hours conducive to campus life synergies and lacks essential campus programming available in other areas of campus. In addition, parts of the campus are not strongly anchored by any local nuclei. Localized nuclei of activity and community benefit from social and academic interaction, and sup-port an enhanced sense of identity. These nuclei can include dining facilities, commons or collaboration space, but must be visible and accessible to the university at large. Furthermore, emerging districts like the West Campus and the Health Education Campus (HEC) will require strong anchors to be perceived as cohesive parts of campus and not distant satellites.

Recommendations:

Create and foster campus anchors in each district, as follows:

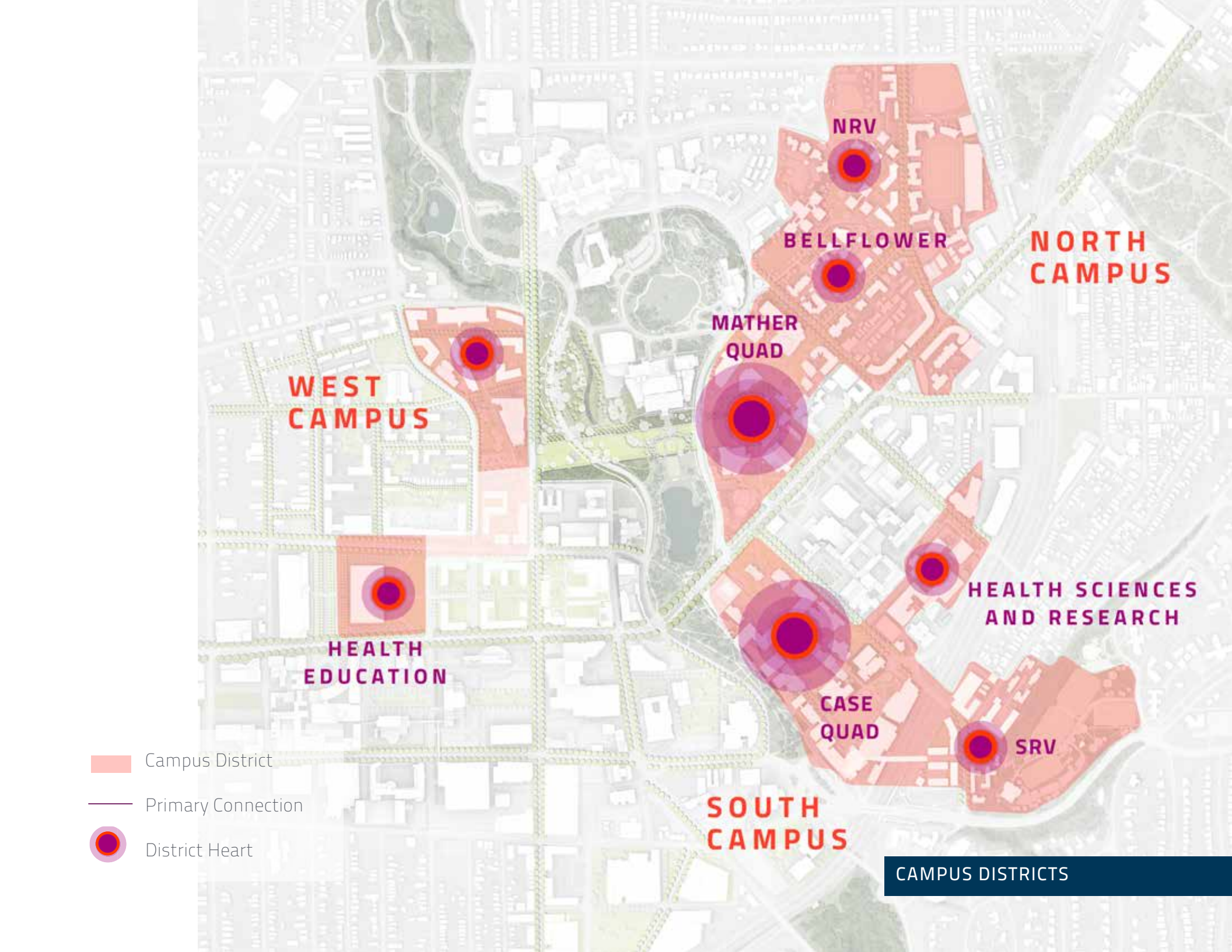
Case Quad: Establish a commons with 24-hour dining options.

West Campus: Supplement Maltz Performing Arts Center (MPAC) as a district anchor with food and beverage operations and gathering spaces.

SRV: Concentrate residential life around a refurbished Fribley Commons, modeled after NRV's successful Leutner Commons.

Structure outdoor landscapes to build cohesion in each campus district.

Create a primary campus gateway at the base of Crawford Tower on Euclid Avenue.



CAMPUS DISTRICTS

CONNECTIVITY

Connectivity fosters the exchange of academic ideas, and the creation of social community. Many of the physical goals of the Campus Master Plan center around the removal of obstacles to achieving connectivity for members of the campus community, in a literal sense. The ultimate goal is a more welcoming and walkable campus.

The plan identifies buildings that likely should be replaced within the ten year time frame, and sees these removals as important opportunities replace buildings at the end of heir useful lives with new space and also open up views and create connections between districts. New buildings should offer space for collaboration and socializing, and help foster campus openness and transparency.

Similarly, restructuring existing and new outdoor spaces facilitate connections between each of the campus districts and the external community as identified in the goals of the campus physical framework. The creation of important new components of the university west of Rockefeller Park makes connectivity back to the main campus essential. The Rockefeller Park Connector project seeks to create a direct, line-of-sight and walkable connection between TVUC and Maltz PAC. The Connector will be a crucial physical link from the campus to a valuable public open space asset; it will also be a symbol of the outward facing attitude of the university towards the surrounding community.

Connectivity is also improved by mobility improvements on either side of Rockefeller Park, along the campus's entire park-facing edge. Streetscape improvements along Chester and Euclid Avenues will enhance pedestrian comfort and safety.

The distance from Case Quad to the site of the future HEC is not geographically far, but the hostile walking environment creates a perception of distance. Reducing and improving the number of pedestrian crossings, improving safety (particularly at night, through lighting), and offer ease of using several modes of transport (dedicated shuttles, bicycle lanes), will contribute greatly to achieving these goals.

Recommendations:

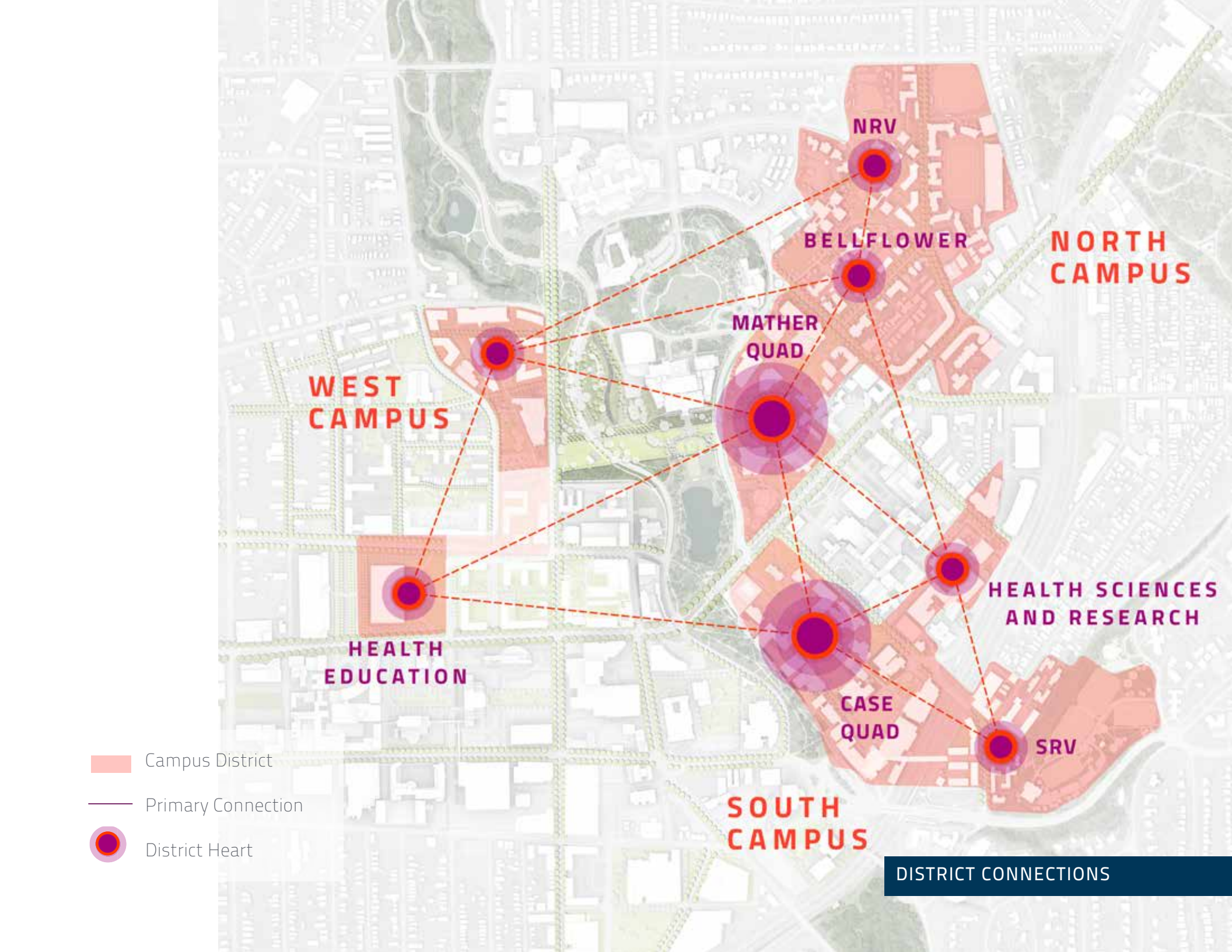
Strategically remove buildings in poor condition including Chemistry, Yost, and portions of A.W. Smith, Millis, and Eldred

Renovate and build buildings that encourage collaboration and the exchange of ideas

Enhance and create new landscapes that link the campus, including Rockefeller Park Connector Project and Bellflower Court

Traffic mitigation strategies on either side of Rockefeller Park

Implement the Mobility Study recommendations for connections between Maltz PAC, the HEC and the core campus



DISTRICT CONNECTIONS

ACCESSIBILITY AND SAFETY

The strength and quality of pedestrian routes across the campus east of Rockefeller Park varies. The campus' most important existing pedestrian spine, the diagonal path leading from Case Quad to NRV, is generally well-defined and heavily used. A weak point in that route, however, is the Euclid-Adelbert pedestrian crossing which is a safety concern. Since the last Campus Master Plan, the university constructed the Binary Walk to clarify the pedestrian connection between Mather and Case Quads, but has yet to make the street crossing at Euclid Avenue safer.

The proposed plan will strengthen existing routes by supporting the natural lines of pedestrian traffic within and between districts. Greater access will improve safety. Many campus access points are narrow and difficult to locate. More natural and obvious way-finding systems will consolidate and organize traffic flow and create opportunities for chance encounters, as well as a better sense of safety.

Universal accessibility to outdoor spaces and buildings is an important goal of the Campus Master Plan.

Access and safety across Rockefeller Park must be an essential feature of campus life in the near future. The recent completion of the MPAC adds urgency to this issue, as does advance planning of the HEC. The Nord Family Greenway will greatly improve safe access, but other crossings of the park, such as at Euclid and Chester Avenues, require attention.

The university should address these issues holistically to prevent ad hoc solutions that diminish other plan goals to improve campus cohesiveness through comprehensive and integrated signage, wayfinding, lighting and landscape.

Recommendations:

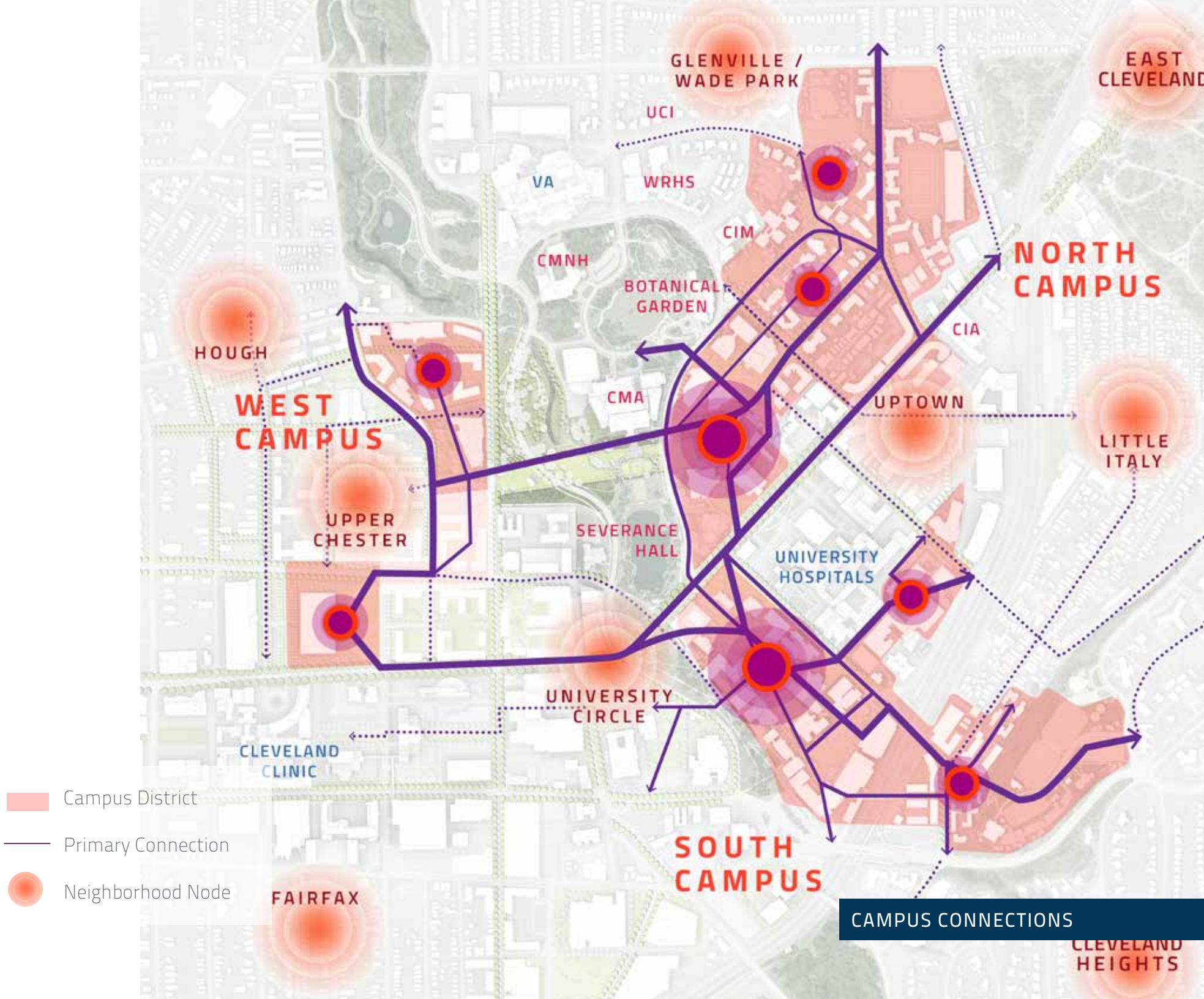
Make Euclid- Adelbert crossing improvements.

Create a policy for universal accessibility on campus.

Bring older buildings to current accessibility standards in ways that respect existing architecture.

Improve wayfinding systems across campus, especially at gateways.

Add safety measures across Rockefeller Park, including signage, wayfinding systems, lighting and landscaping.



CAMPUS CONNECTIONS

PERMEABILITY + GATEWAYS

The university must extend the goals of connectivity and identity beyond campus. The remnants of past campus development patterns inhibit university accessibility and create confusing intersections between campus and city.

Historically, the CWRU campus has faced inward, a result of the time in which it was built and the attitude toward urban areas during that time. The architecture and outdoor spaces reinforce a sense of apartness. Fortunately, throughout the planning process, the campus community saw the need for connectivity beyond the campus. Uptown is an example of the university's shift towards increasing its presence in the community and creating amenities that benefit both the campus community and surrounding neighborhoods.

Permeability is addressed at multiple scales within the plan, including subtle shifts in thinking about outdoor space and developing strong gateways to open the edges of campus.

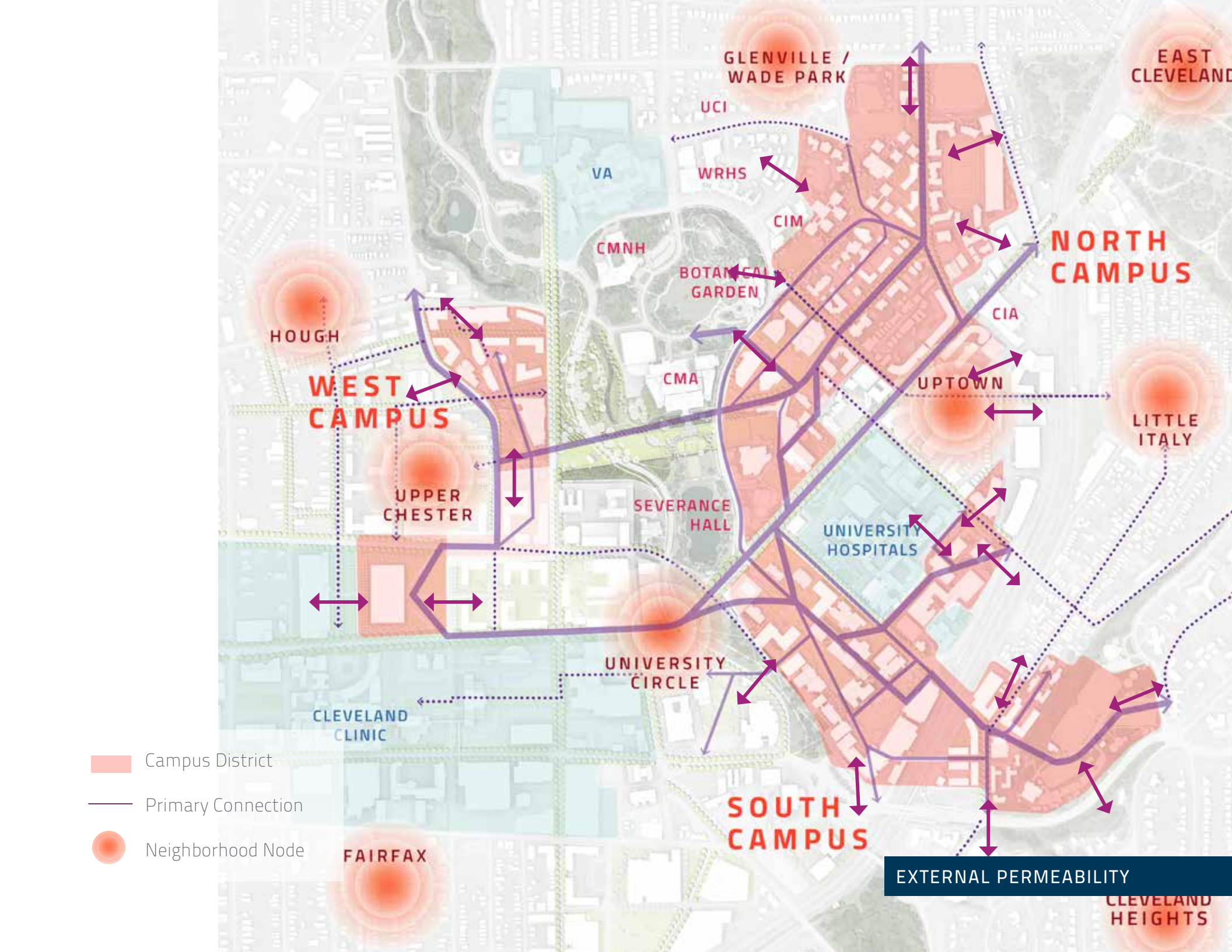
Recommendations:

Make Mather Quad friendly for pedestrians and improve the connective landscape structure along the edges of campus.

Renovate Case Quad buildings along Martin Luther King Boulevard to open up the campus to Rockefeller Park.

Renovate and expand the base of Crawford Tower and create clear and consistent gateways.

Renovate Veale Athletic Center/Sears think[box] entry plaza to encourage southeast entry to and through the campus.



EXTERNAL PERMEABILITY

COMMUNITY ENGAGEMENT

Case Western Reserve University is a major anchor institution of the city of Cleveland and the region and makes a positive impact through economic development, neighbor-hood revitalization and local capacity building. This plan, which was developed in consideration of, and with the help of, CWRU's neighbors, is a renewal of the university's commitment to the Cleveland community and surrounding neighborhoods.

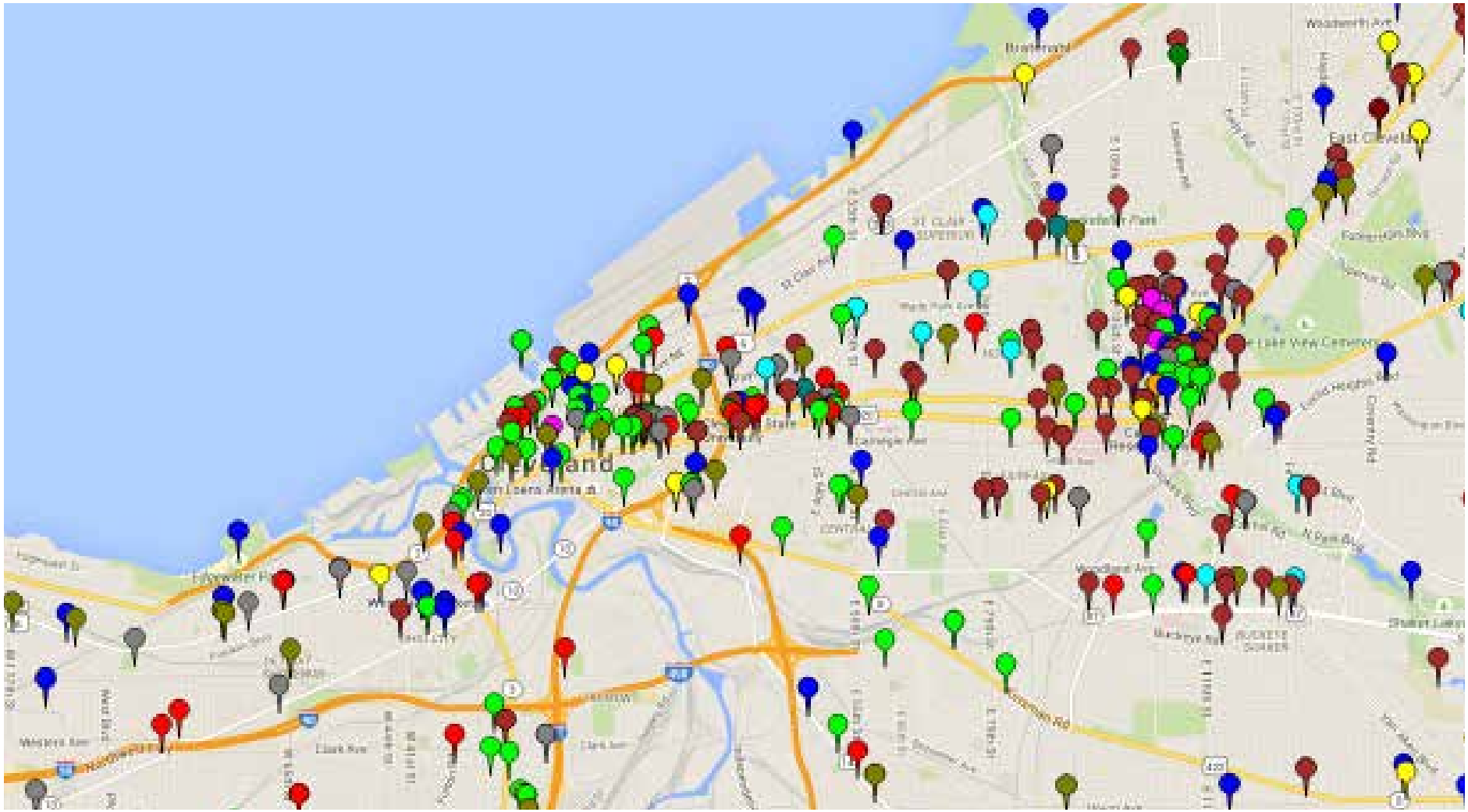
The plan does not call for expansion of the campus or land acquisition; rather, CWRU will strategically infill and develop on land it already owns. CWRU does not propose significant expansions into adjacent neighborhoods; neither north of Wade Park Avenue, west into the Hough neighborhood or east into Little Italy, other than a few targeted properties already surrounded by CWRU holdings.

More importantly, the university will continue to engage the community, not just on "bricks and mortar" and land use matters, but also on efforts to strengthen and build up-on existing relationships and partnerships. In particular, the university will seek to break down the invisible divide between adjacent disadvantaged neighborhoods and the campus through engagement on pressing urban problems.

EDUCATION

CWRU is a primary community partner to the Cleveland Metropolitan School District. Several schools within the university work with area schools to tutor students and provide volunteers for summer camps focused on university immersion like the National Youth Sports Program summer partnership anatomy camp. The Frances Payne Bolton School of Nursing (FPBSN) provides blood pressure screening for children in middle school.

This required experience gives nursing students clinical experience while helping Cleveland public schools.



INSTITUTIONAL OUTREACH MAP
THE OFFICE OF GOVERNMENT
AND FOUNDATION RELATIONS

Community Network

Community Partner

ECONOMIC INCLUSION

CWRU has been nationally recognized for its commitment to diversity and inclusion. A great example of this commitment is demonstrated by the university's Supplier Diversity Council, established in 2002. The program awards CWRU business opportunities to local businesses owned by minorities and women; more than $100 million has been awarded since 2002 and $8 million was awarded in 2014. The university has also partnered with public officials and a variety of civic organizations to host two job fairs for the local community.

The university pioneered an employee housing assistance program to encourage employees to live nearby, programs that have since been adopted by other anchor institutions in University Circle.

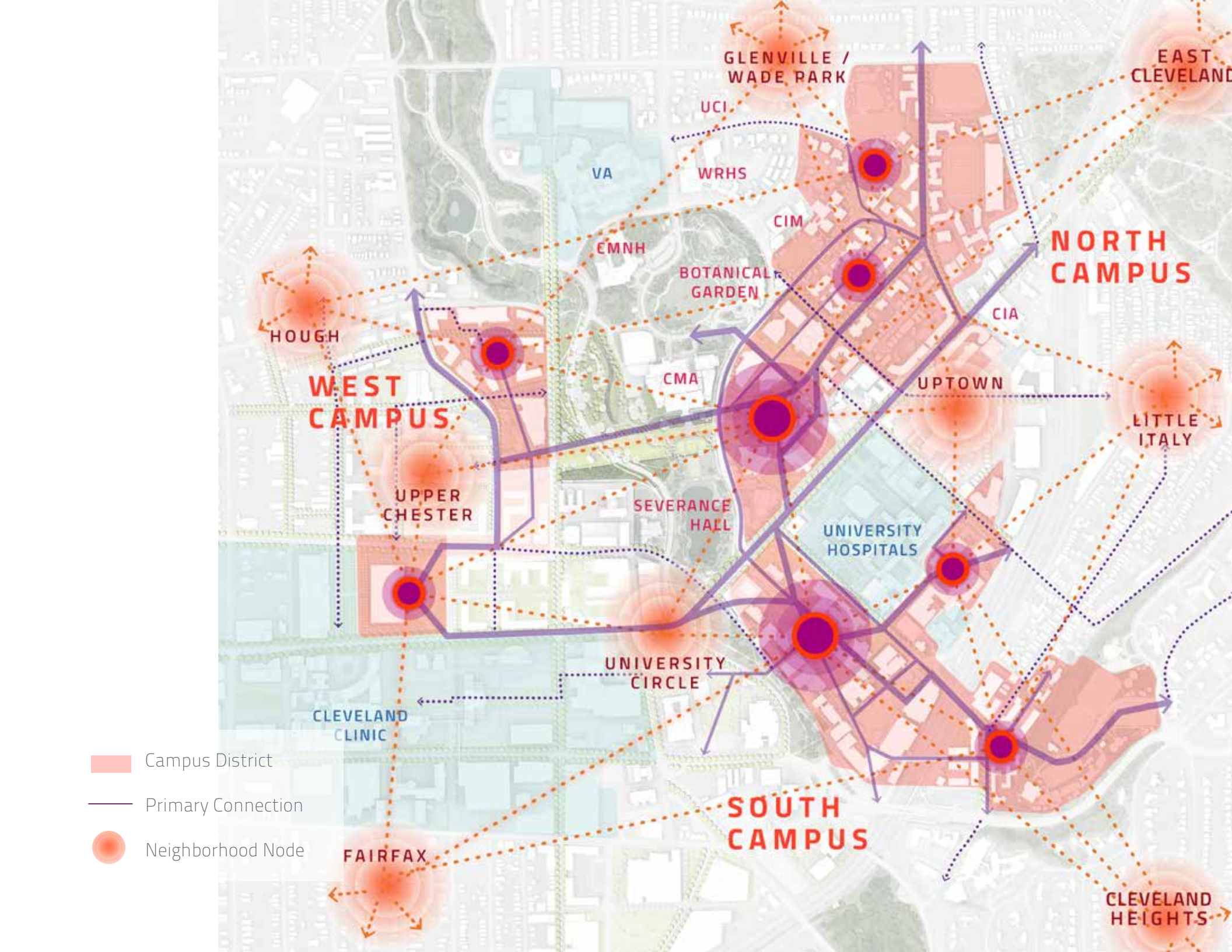
Recommendations:

Continue to grow community relationships and outreach efforts.

Encourage programming on campus for neighboring communities.

Plan campus development sensitive to adjacent communities and land uses with input from the communities.

Plan future campus development sensitive to existing communities and land uses


GLENVILLE / WADE PARK
EAST CLEVELAND
UCI
VA
WRHS
CIM
EMNH
BOTANICAL GARDEN
NORTH CAMPUS
CIA
HOUGH
WEST CAMPUS
CMA
UPTOWN
LITTLE ITALY
UPPER CHESTER
SEVERANCE HALL
UNIVERSITY HOSPITALS
UNIVERSITY CIRCLE
CLEVELAND CLINIC
SOUTH CAMPUS
FAIRFAX
CLEVELAND HEIGHTS
Campus District
Primary Connection
Neighborhood Node

MOBILITY

Moving around the campus easily, comfortably and safely is critical to the well-being of the campus community. Safe, efficient mobility helps ensure a vibrant academic setting, where connectivity and community transcend traditional disciplinary boundaries.

OPEN SPACE AND SREETSCAPES ENABLE MOBILITY

Streetscapes, such as Euclid Avenue, form essential seams among various parts of campus and among the campus and surrounding neighborhoods. Improving streetscapes from an amenity and safety point of view is a natural "win-win," but it will require close consultation and coordination with the city and community entities that manage roadways and streetscapes. Improved landscaping, lighting, bicycle lanes, sidewalks and crossings will contribute tremendously to campus cohesion and to the role of the campus as a crossroads for surrounding neighborhoods.

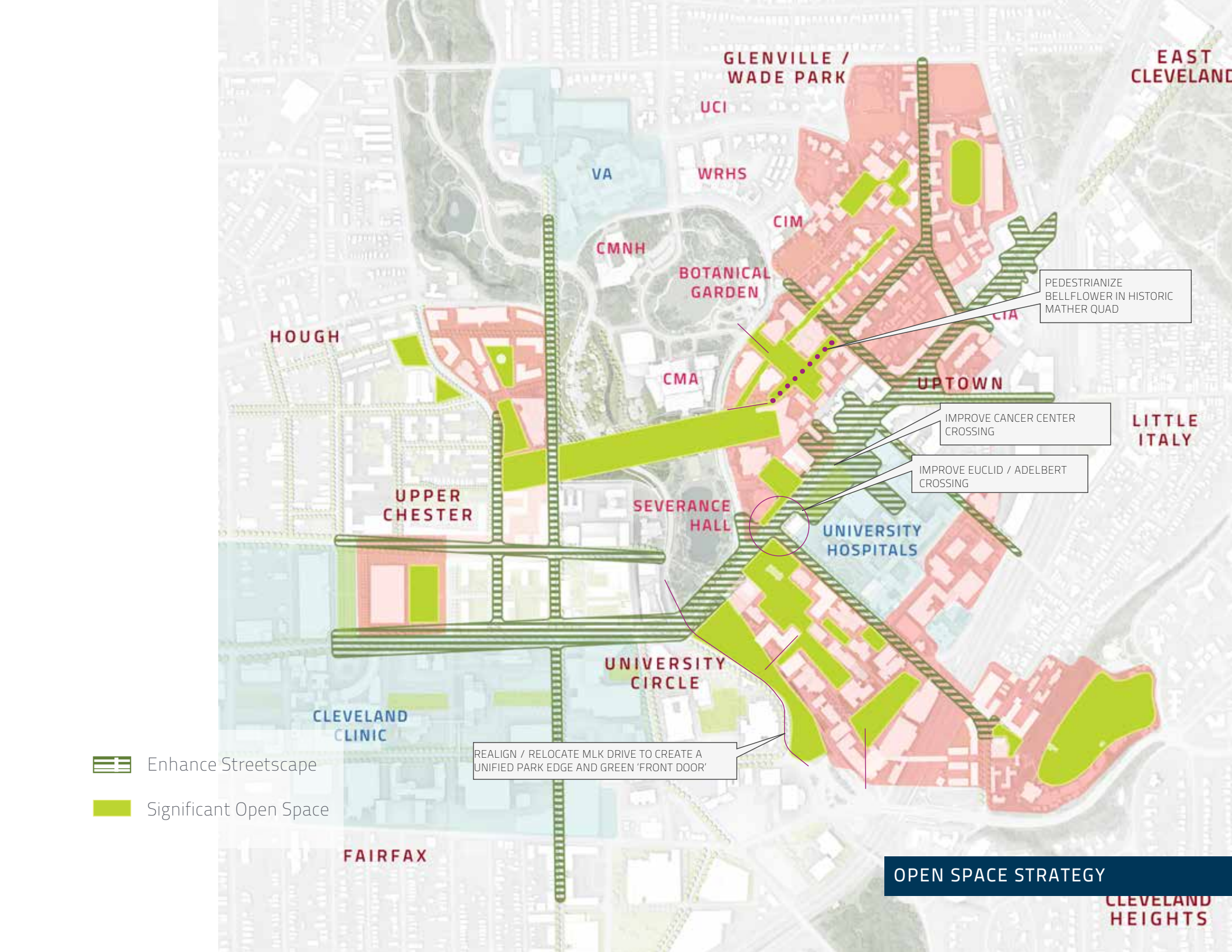
The adjacent diagram specifically highlights the proposed new pedestrian gateway to Case Quad at the Veale Center and Sears think[box]; a connection in the middle of Case Quad across from the Cleveland School of the Arts; potential realignment of MLK Drive and the consequent binding of the David Davis Sculpture Garden to Case Quad; a safer Euclid-Adelbert crossing; the remaking of Bellflower Drive at Mather Quad, a strong connection to Wade Oval from Mather Quad; and the improvement of numerous roadway crossings.

These projects will radically transform what it means to be a pedestrian at and around CWRU.

The university has a number of distinct campus districts. Historical institutional divisions have been overcome, but physical barriers make movement between districts difficult and sometimes dangerous. Euclid Avenue is the most obvious separator, but there are other challenges to access and mobility. The mostly impenetrable facades of Case Quad buildings turn their backs on Rockefeller Park and the Cedar-University Circle transit station, closing off campus. The Rapid tracks isolate the SRV and Murray Hill Avenue.

The condition of pedestrian corridors between North Campus and Mather Quad limits mobility. The distances to the HEC and MPAC must be overcome through mobility logistics and infrastructure improvements and strategies.

A polycentric campus needs clear, convenient, safe and orderly connections. The following mobility strategies result from identifying natural pedestrian paths between cam-pus districts, the most effective modes of transportation, and the most important facilitators of those movements. The strategies, consistent with the guiding principles of the Campus Master Plan, connect the campus while respecting and enhancing its diverse and special places.



OPEN SPACE STRATEGY

PUBLIC TRANSPORTATION

Cleveland's robust public transportation system includes rapid transit and bus services. The Greater Cleveland Regional Transit Authority (RTA) lets the university community minimize transportation costs with a U-Pass and a Commuter Advantage Program that lets riders purchase transit passes with pretax dollars.

Transit service will need to be improved to provide access to the HEC and MPAC. A study is underway of multi-modal mobility strategies to better connect these new facilities to the core campus. Recommendations for providing students and faculty coming from Case Quad better access to the renovated Red Line stations is outlined later in this section.

Recommendations:

Implement strategies recommended in multi-modal mobility study.

Enhance access to the Cedar-University Circle Rapid station from Case Quad.

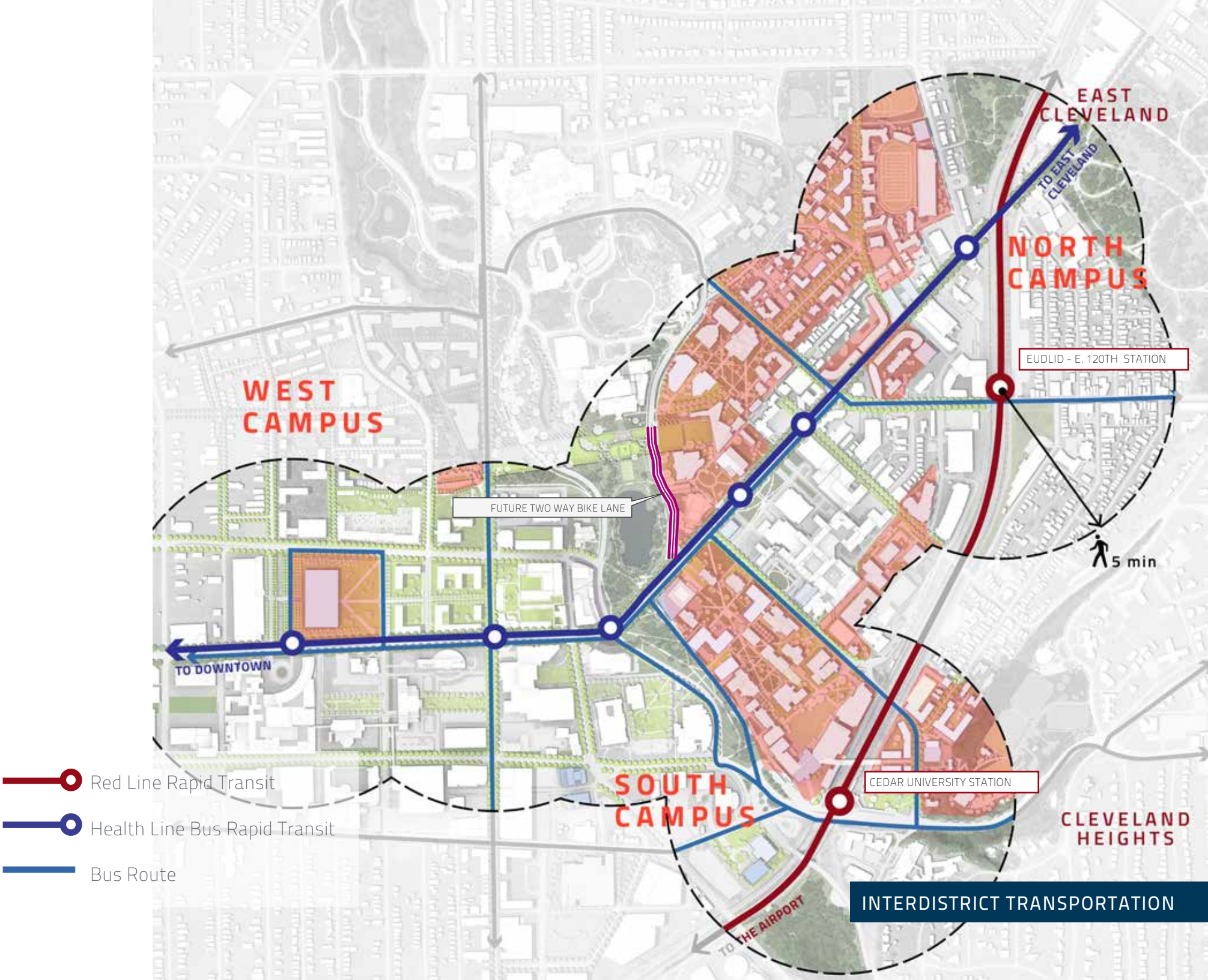
BICYCLES

Increasing bicycle travel to and around campus will reduce traffic congestion, lower parking demand and the need for new parking spaces, encourage healthy lifestyles, save money on healthcare and reduce pollution caused by motor vehicles. Making biking around campus safer with bike lanes and other bicycle infrastructure will encourage cycling. The university should continue to improve campus bike infrastructure, incorporating these improvements into larger capital projects and development efforts.

East Boulevard is a key connection between Mather and Case quads. The attractive landscaping and separation of the sidewalk from the road creates a welcoming pedestrian environment, but bikes share the road with vehicle traffic. The width of the street and pedestrian right of ways makes this location ideal for a two-way bike lane.

Recommendation:

Install a two-way bike lane on the east side of East Blvd. between Euclid Ave. and Bellflower Road.



INTERDISTRICT TRANSPORTATION

PEDESTRIAN SAFETY AT THE EUCLID AVENUE AND ADELBERT ROAD INTERSECTION

The intersection of Euclid Avenue and Adelbert Road is the most used pedestrian connection between Case and Mather quads. Each day, in the midst of regular heavy vehicular traffic, the intersection accommodates thousands of campus pedestrians. Conditions are chaotic and unsafe; there is regular conflict between pedestrian movements and vehicle traffic.

Crowding of pedestrians at the fringes of the intersection has forced the university to make expensive changes on CWRU land at the southeast corner and to deploy a cam-pus police officer as a crossing guard. The dysfunction of this intersection is more than a traffic issue; it enforces a division of the campus that the rest of this plan works to overcome. A safe, efficient and comfortable way to cross Euclid would be a highly visible symbol of the campus' integrity and the character of University Circle.

A number of options were considered, including managing pedestrian behavior, redesigning the intersection and capacity allocation, and/or making the crossing guard more effective. The recommended option, considering capital outlay and desired impacts, is to modify signal timing to allow pedestrians to cross in all directions, including diagonally, during the "Walk" phase. This adjustment would significantly change the relationship between pedestrians and automobiles and transform the intersection from a dangerous bottleneck to an intra-campus gateway.

Further discussion can be found within the Mather Quad District section of this report.

Recommendation:

Change signaling and crosswalk striping at the Euclid/Adelbert intersection to allow pedestrians to cross in all directions, including diagonally, during the "Walk" phase.

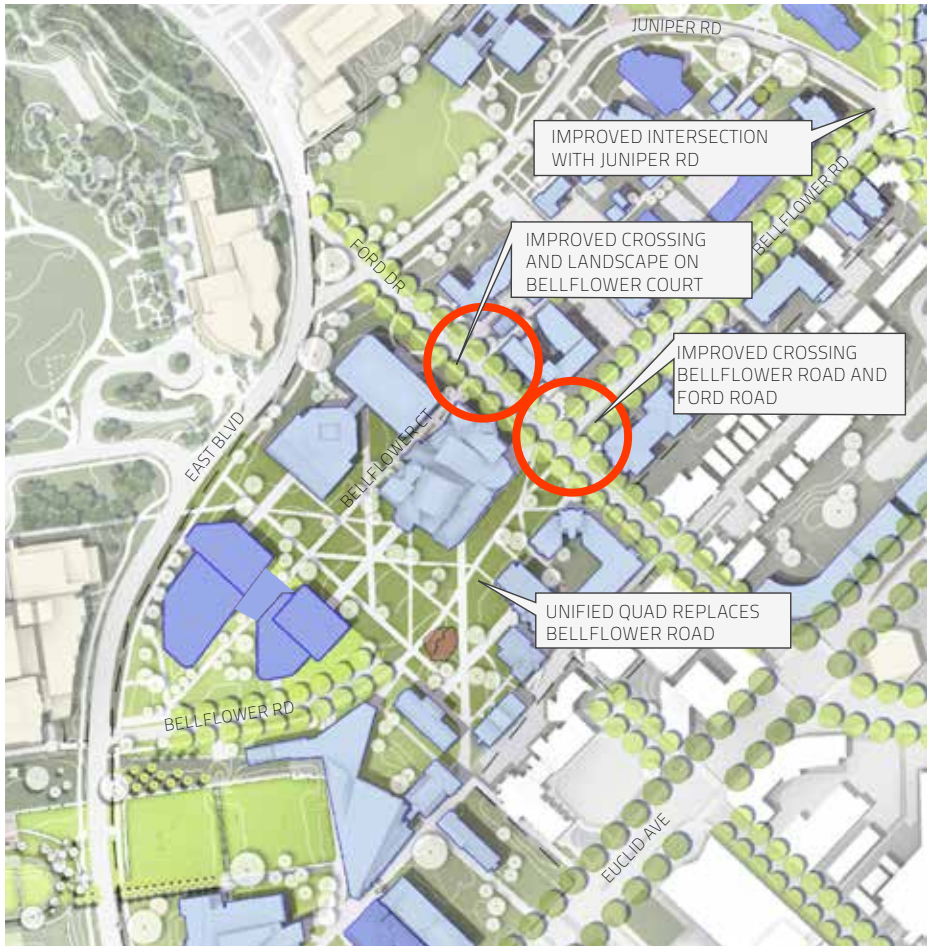
Case Quad

The Case Quad's enclosure separates it from Rockefeller Park and the Cedar-University Circle bus and Rapid stations. A welcoming gateway should be created at the quad's southwest corner. The existing access point, a door at the rear (west side) of the Veale Center is a lower-level entrance that provides stairway access up to the quad level. At a minimum, the door (controlled by card reader if necessary) could be opened and made more visible, providing direct access to the bus and Rapid stations.

The recent modifications to the Adelbert Rd./Circle Dr. intersection have left pedestrian paths indistinct. Modest pedestrian improvements could be made within the timeframe of new development on Case Quad and tied to project construction budgets for all academic renovation or construction projects.

Uptown

Euclid Avenue bisects not just the campus, but also the Uptown Arts and Retail District. Connections between the University Hospitals Cleveland Medical Center, the Church of the Covenant and Uptown's commercial village can be improved with upgrades to the crosswalks at Ford/Mayfield and Cornell. At both intersections, curb radii measure approximately 25 feet, encouraging higher vehicular speeds. Reducing the radii to 15 feet or less would shorten cross-walks, increase pedestrian space and improve safety at the intersections.



IMPROVE MARTIN LUTHER KING DRIVE SOUTH OF EUCLID

MLK Drive runs north and south through Rockefeller Park. The drive is a serious detriment to the quality of Rockefeller Park, the western edge of Case Quad and to University Circle as a whole. Four lanes of high-speed traffic are a barrier to pedestrians and provide no value or visibility to the university, aside from parking lot access.

The Campus Master Plan, building on previous area-wide planning studies, proposes to convert MLK Drive between Euclid and Carnegie avenues to pedestrian and bike-only traffic. The result would be a grand new amenity for the campus: a long and direct interface between Case Quad and the large open space of the park, with improved pedestrian access to and from the west toward Cleveland Clinic and the HEC. This also would encourage use of the city-owned sculpture park. It should be noted that other elements of this plan are not dependent on this change occurring.

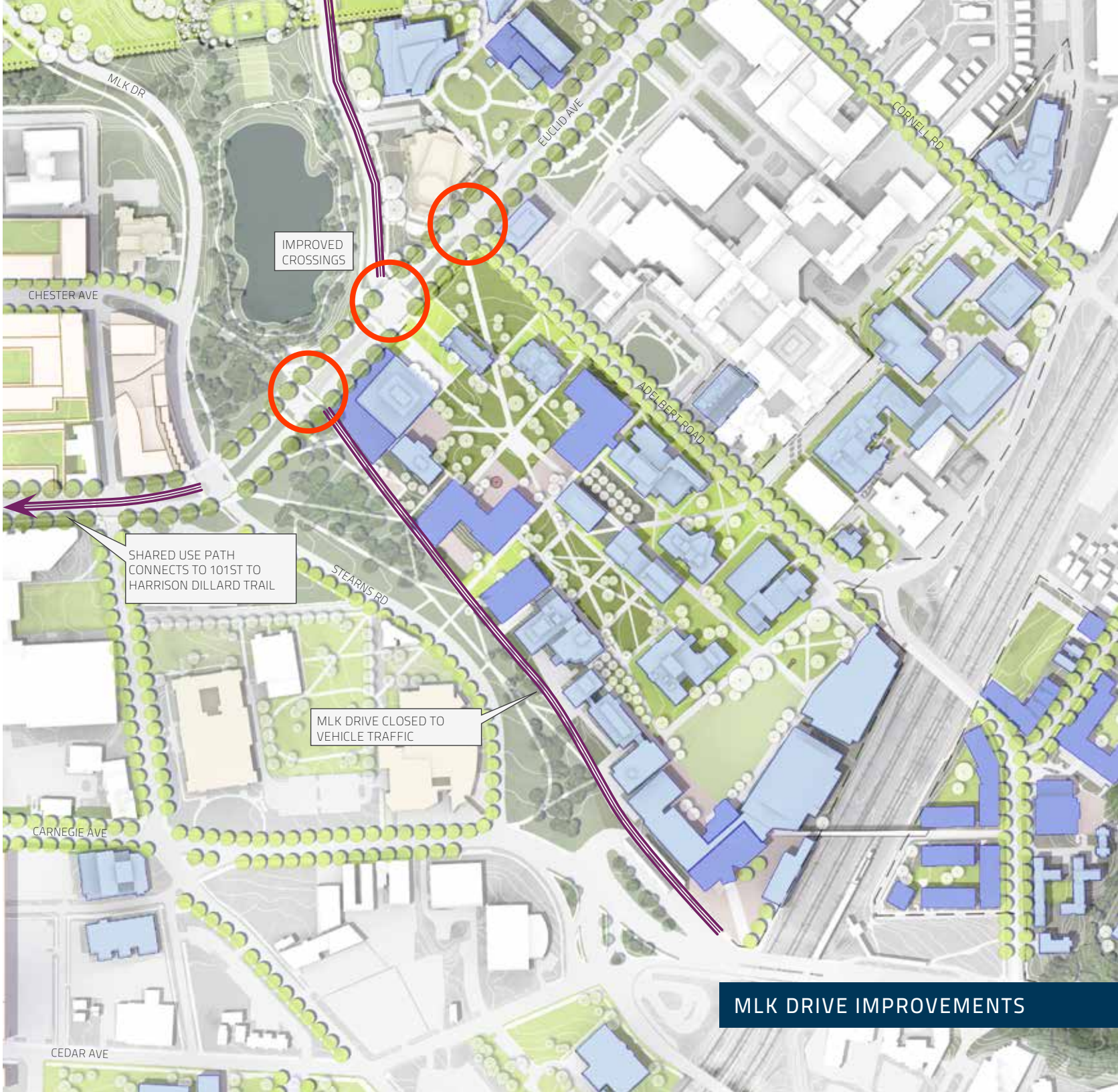
Traffic Capacity Analysis

To replace MLK's northbound lanes, Stearns Road should be reversed, providing the same access to Chester Avenue that MLK does today. Since Stearns connects to the northern portion of MLK, the section of MLK between Euclid and Chester/Stokes should also be closed.

In total, there are nine southbound and six northbound lanes of traffic crossing Euclid along a quarter-mile stretch. Regional data shows excess capacity, particularly in the southbound direction, even after the effects of the Opportunity Corridor project are taken into account. Pending further study at the municipal level, the Campus Master Plan concludes that there are at least three more southbound travel lanes than necessary.

Recommendation for enhancements along MLK Drive:

Add traffic calming/bicycle accommodations on MLK Drive

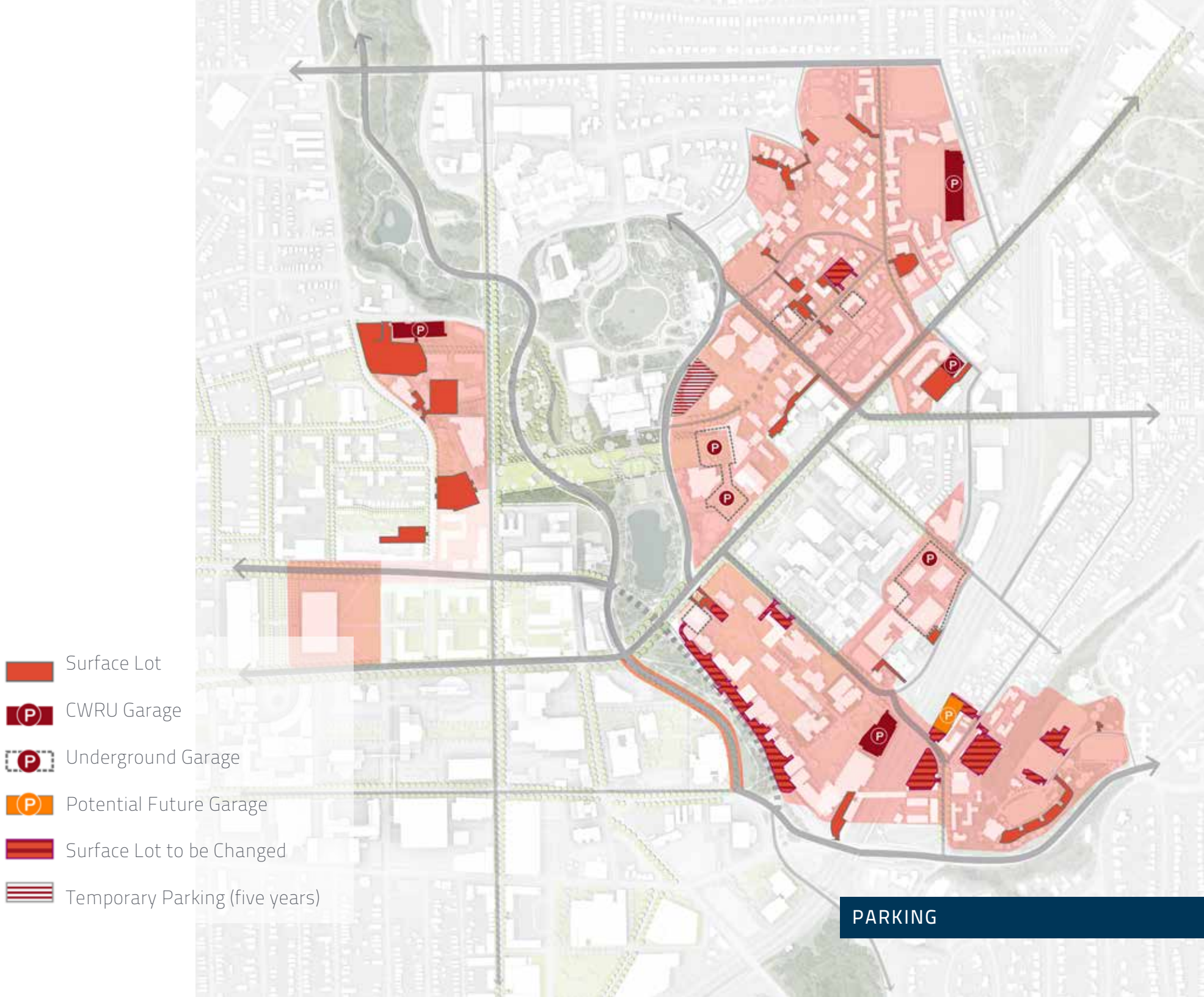


MLK DRIVE IMPROVEMENTS

PARKING

New open spaces and connections across campus will eliminate some parking along the edges of campus and require new buildings to incorporate parking into their design. The plan accommodates most removed parking in peripheral areas of campus, including West Campus north of MPAC and in SRV. Transportation demand management will further reduce the need for parking on campus.

The accompanying parking map shows the proposed removal of 725 spaces and addition of 740 parking spaces closer to campus edges, away from activity hubs. The HEC will shift parking demand away from garages in the existing Health Sciences campus.


Surface Lot
CWRU Garage
Underground Garage
Potential Future Garage
Surface Lot to be Changed
Temporary Parking (five years)

PARKING

OPEN SPACE AND PLACE

Transforming and enlarging Mather Quad and Case Quad will reinforce campus identity. This plan enlarges Mather by removing and transforming the stretch of Bellflower Drive that passes alongside the quad. As the following diagram shows, this will allow the northern and southern parts of campus to each be anchored by a large "outdoor living room" and a major outdoor social space. Mather is supported and activated by pedestrian traffic through TVUC. Case Quad and the proposed social space attached to the proposed Arts and Sciences/Engineering building will form a center of gravity for the southern part of campus. Together, these two quads represent dual campus hearts, centers for interaction and robust university life.

Beyond the intended central role of Case and Mather quads, the plan envisions a series of outdoor spaces anchoring most campus neighborhoods.

Outdoor space is also an important opportunity to increase stormwater retention on site, thus reducing the amount of and filtering water entering the Northeast Ohio Regional Sewer District system.

OPEN SPACE STRATEGY

OPEN SPACE AND PLAY

Campus recreation makes the educational experience richer. Students value quality recreational facilities and programs. Participation in recreation during college life improves attitudes towards health and wellness throughout their lives.

The Campus Master Plan proposes creating or improving recreational space near residential villages. In the case of NRV, this means augmenting existing amenities, ideally with the creation of new playing fields behind the new residence hall adjacent to Wade Park Avenue, between Mistletoe Drive and E. 115th Street. This will both create a recreational amenity for the campus community, as well as provide a potential benefit and green front door for the Glenville/Wade Park community.

At SRV, the relocation of all residences off the top of the hill to its base, clustered around a renovated Fribley Commons, creates room for recreational space at the hilltop. These fields, courts, and fieldhouse (a renovated Carleton Commons) would benefit university athletics, the campus community and the adjacent Cleveland Heights community.

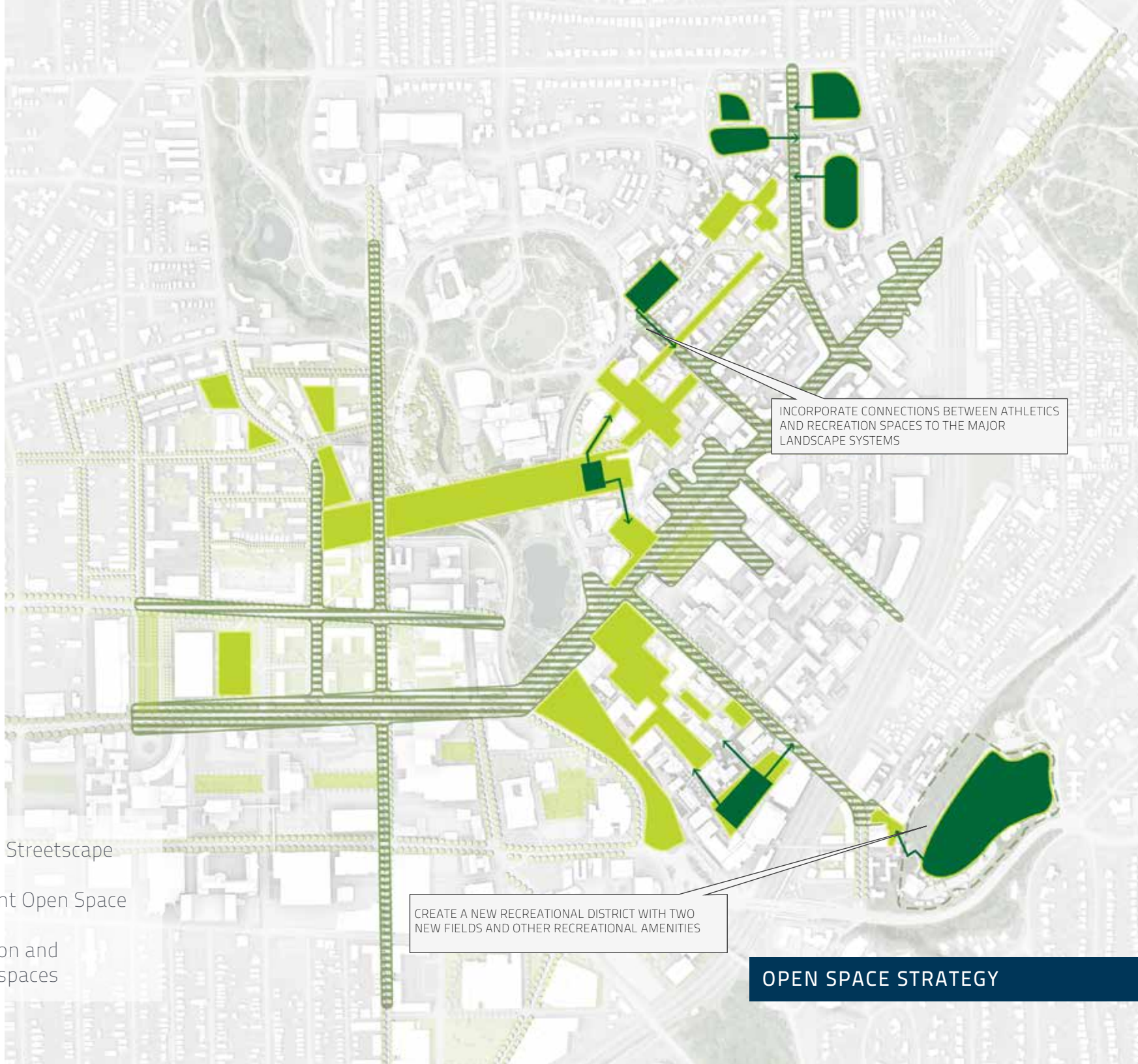
An enhanced Freiberger Field is envisioned as part of the Nord Family Greenway, directly in front of the TVUC, at East Boulevard. This field would continue campus athletics close to the heart of the campus.

Recommendations:

Improve recreational space near residential villages.

Add new playing fields adjacent to Wade Park Avenue at NRV.

Add hilltop recreation, fields, courts, and field house at SRV.



OPEN SPACE STRATEGY

PRESERVATION OF CURRENT DENSITY

Decisions to expand the campus and facilities to include the MPAC and the HEC were made prior to the start of the current Campus Master Plan, adding substantial land and indoor conditioned space to the campus inventory. Further expansion of the campus was identified by stakeholders and campus leadership groups as not necessary or desirable, and that an approach of rebuilding and reshaping "in place" should be pursued instead.

The strategy capitalizes on the existing richness of the campus, creating a place that builds numerous "layers" over decades, adding interest, vitality, and features. The university's Strategic Plan does not envision sustained growth in enrollment, suggesting that the campus will achieve equilibrium consistent with current densities over the next decade. However, the Campus Master Plan recommends shifting densities within NRV and SRV to create green space.

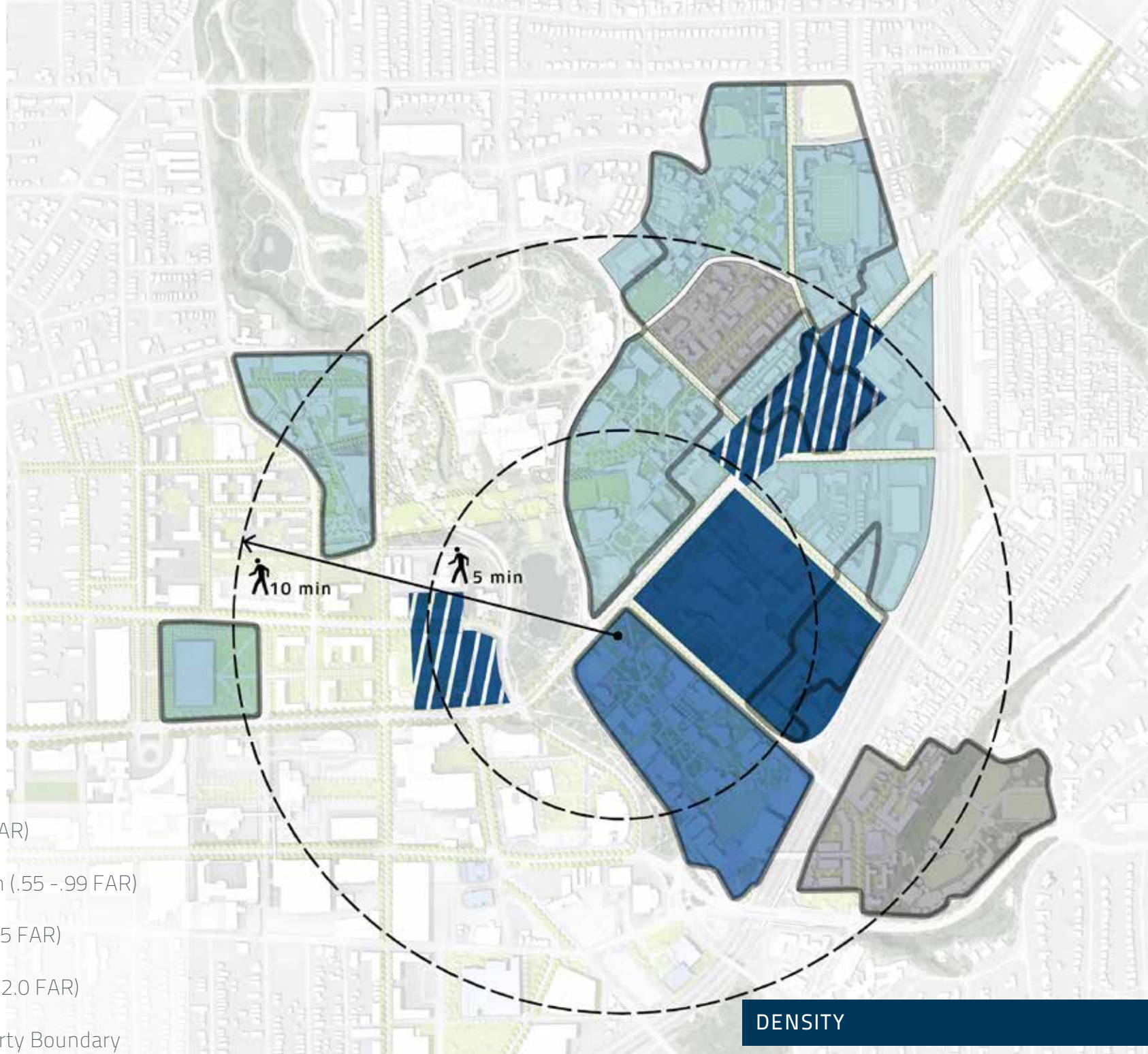
The plan anticipates that the private development market will create a mixed-use node along Euclid Avenue near E107th and Stearns Boulevard – the location of the original University Circle (i.e. the actual historic traffic circle that gives the area its name) – directly west of Rockefeller Park. The development of housing and a food and beverage and retail node at that location will greatly support the future vitality of the MPAC, HEC and West Campus.

The plan supports the burgeoning Uptown District. Uptown is an excellent example of how targeted development density can dramatically improve the physical and social fabric of the university and its surroundings. The plan proposes maintaining the current campus density and supporting the ongoing success of Uptown with the following strategies:

Recommendations:

In general, preserve current densities on campus, with possible shifts of density within NRV and SRV.

Uptown - Add development density strategically at the edges of the district on individual sites.


10 min
5 min
Low (0-.51 FAR)
Medium High (.55 -.99 FAR)
High (1.05-1.5 FAR)
Highest (1.5-2.0 FAR)
CWRU Property Boundary

DENSITY

STRATEGIC INFILL

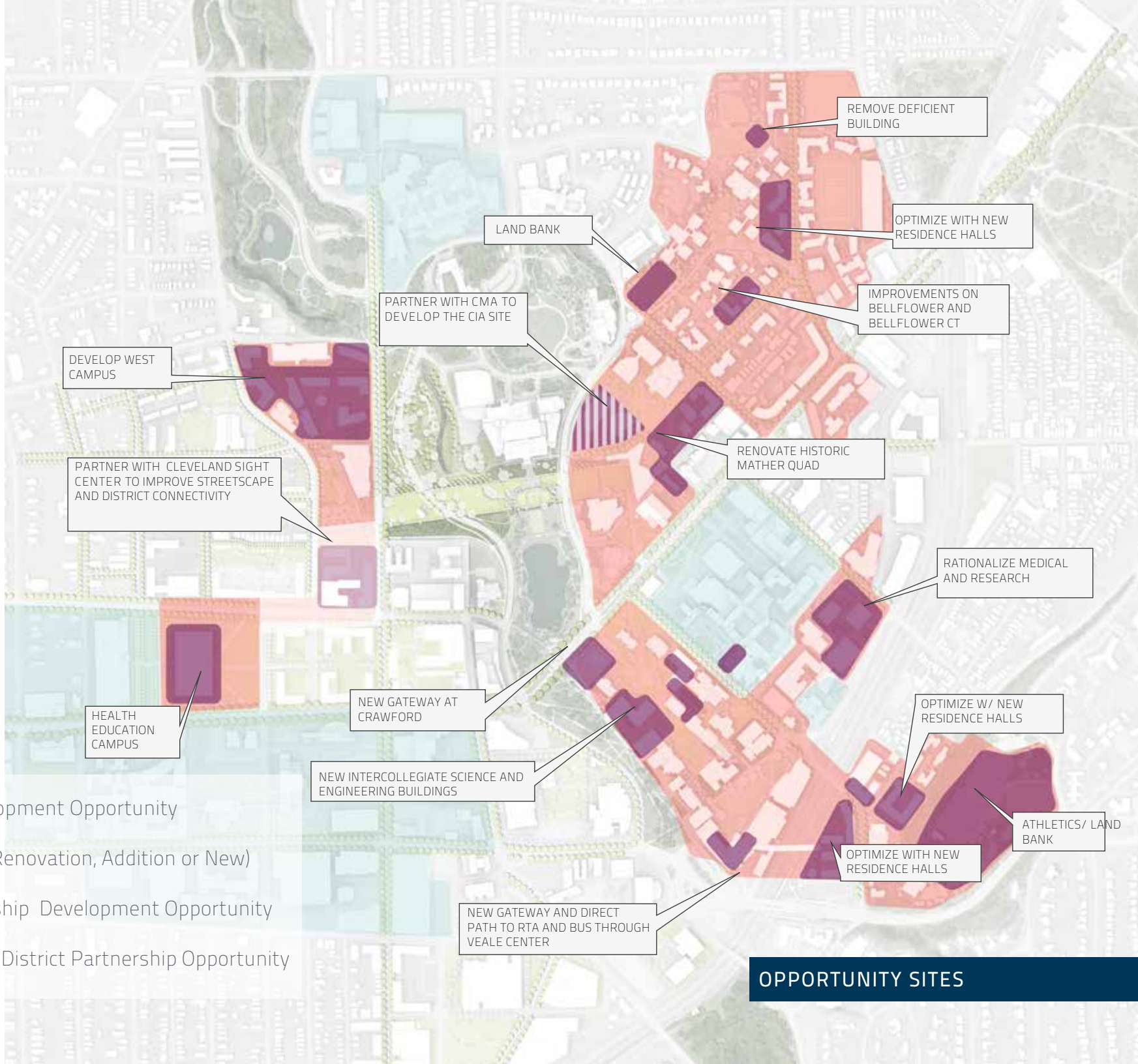
This approach is a major divergence between the 2015 Campus Master Plan and its 2005 predecessor. That prior plan envisioned the broad re-master planning of large swaths of the campus, particularly in the residential districts. While the current plan does envision some bold moves at the SRV, the approach elsewhere is largely limited to precise "surgical" moves, such as replacing existing structures to achieve other goals of the plan.

New buildings should be constructed only on sites where existing structures are poorly used and where there are opportunities to make broader connections. Strategic infill is the university's best investment strategy. Building on infill sites leverages campus investments and adds value and energy to buildings near the center of gravity of the campus, instead of to distant campus areas.

Major opportunities within this cornerstone of the Campus Master Plan are the future development of the former Cleveland Institute of Art (CIA) site on East Boulevard, in partnership with the Cleveland Museum of Art, and as-yet unframed opportunities to partner with the Cleveland Sight Center adjacent to West Campus.

In the case of the CIA site, aside from any specific building program considerations, there will be numerous opportunities to carefully frame outdoor space most notably the enlarged Mather Quad and the extension of Lucia Nash Walkway to meet the Nord Family Greenway. In the case of the Sight Center, a strategic partnership in this location would give CWRU a shared address on Chester Avenue. Aside from having this address for West Campus, the most important benefit would be to physically and perceptually shorten the gap between West Campus and the HEC, thus allowing these two new initiatives of CWRU to function as a single district. The value of a connection between West Campus and the HEC cannot be overstated.

Strategic infill will allow CWRU to calibrate many aspects of the campus and is fundamental to the success of the plan.



OPPORTUNITY SITES

CAMPUS DISTRICTS + CATALYTIC IDEAS

CAMPUS DISTRICTS

Case Western Reserve University is a campus of districts, based on historical development and growth, academic programs and geographical proximities. These districts are representative of their specific uses and, in each case, their unique physical character. The long-term vision for campus districts follows to the principles of the overall Campus Master Plan closely. New buildings are surgically and strategically inserted to coexist with and enhance their existing neighbors. Landscape and open space is given close attention campus-wide, to reinforce the notion that it is a key and efficient way to enhance identity, cohesion and connectivity. The campus districts are as follows:

Case Quad + Health Sciences and Research District

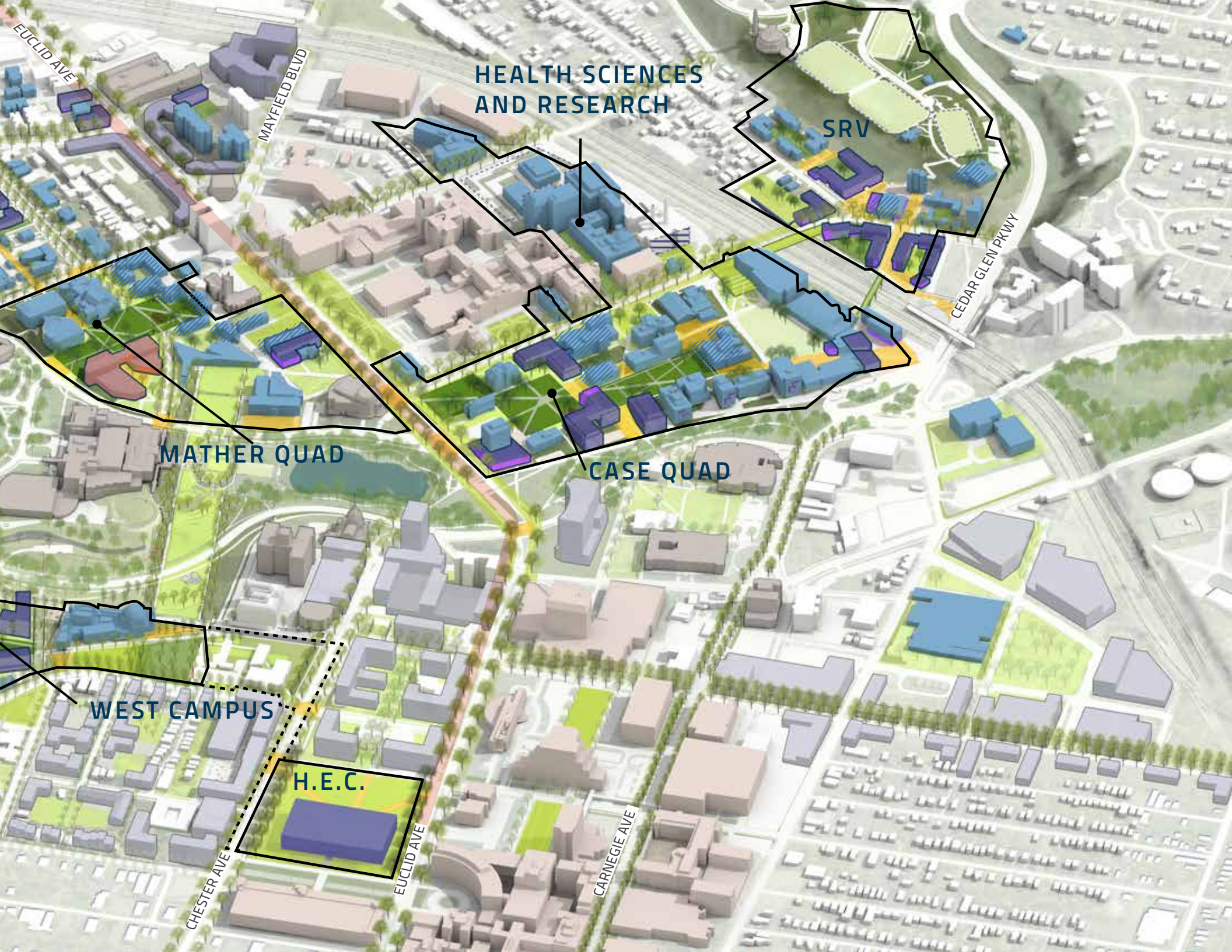
Mather Quad District

Bellflower/North Residential Village and Uptown

South Residential District

West Campus + Health Education Campus

The plan also identifies important connections between districts that will enhance the campus experience and reinforce the physical framework. The Cedar-University Circle RTA station near the South Residential Village (SRV) is linked via a continuous and greatly improved pedestrian path all the way to the heart of the North Residential Village (NRV), and beyond to Glenville/Wade Park. Key improvements along this route are the proposed pedestrian-only stretch of Bellflower Drive at Mather Quad and a safer Euclid-Adelbert pedestrian crossing. Similarly, Lucia Nash Walkway, the improved pedestrian lane, will eventually extended all the way to East Boulevard and the new Nord Family Greenway, thus providing a major pedestrian connection from NRV to West Campus and the Health Education Campus (HEC).


EUCLID AVE
MAYFIELD BLVD
HEALTH SCIENCES
AND RESEARCH
SRV
CEDAR GLEN PKWY
MATHER QUAD
CASE QUAD
WEST CAMPUS
H.E.C.
CHESTER AVE
EUCLID AVE
CARNEGIE AVE

CASE QUAD AND HEALTH SCIENCES AND RESEARCH DISTRICT

The vision for the Case Quad district is to open view corridors and enhance pedestrian access into the Quad while improving the structure and hierarchy of the outdoor spaces. Case Quad is one of several front doors to the university along Euclid Avenue. The Campus Master Plan envisions strengthening the sense of arrival through bold renovations to the base of Crawford Tower. Strengthening the quality of routes from all directions, whether from the RTA station, or from the Health Sciences and Research District will change the general feel of Case Quad – particularly after-hours – in significant ways.

Specific recommendations and items for further study at Case Quad and the Health Sciences District are as follows:

Outdoor Spaces and Walkways:

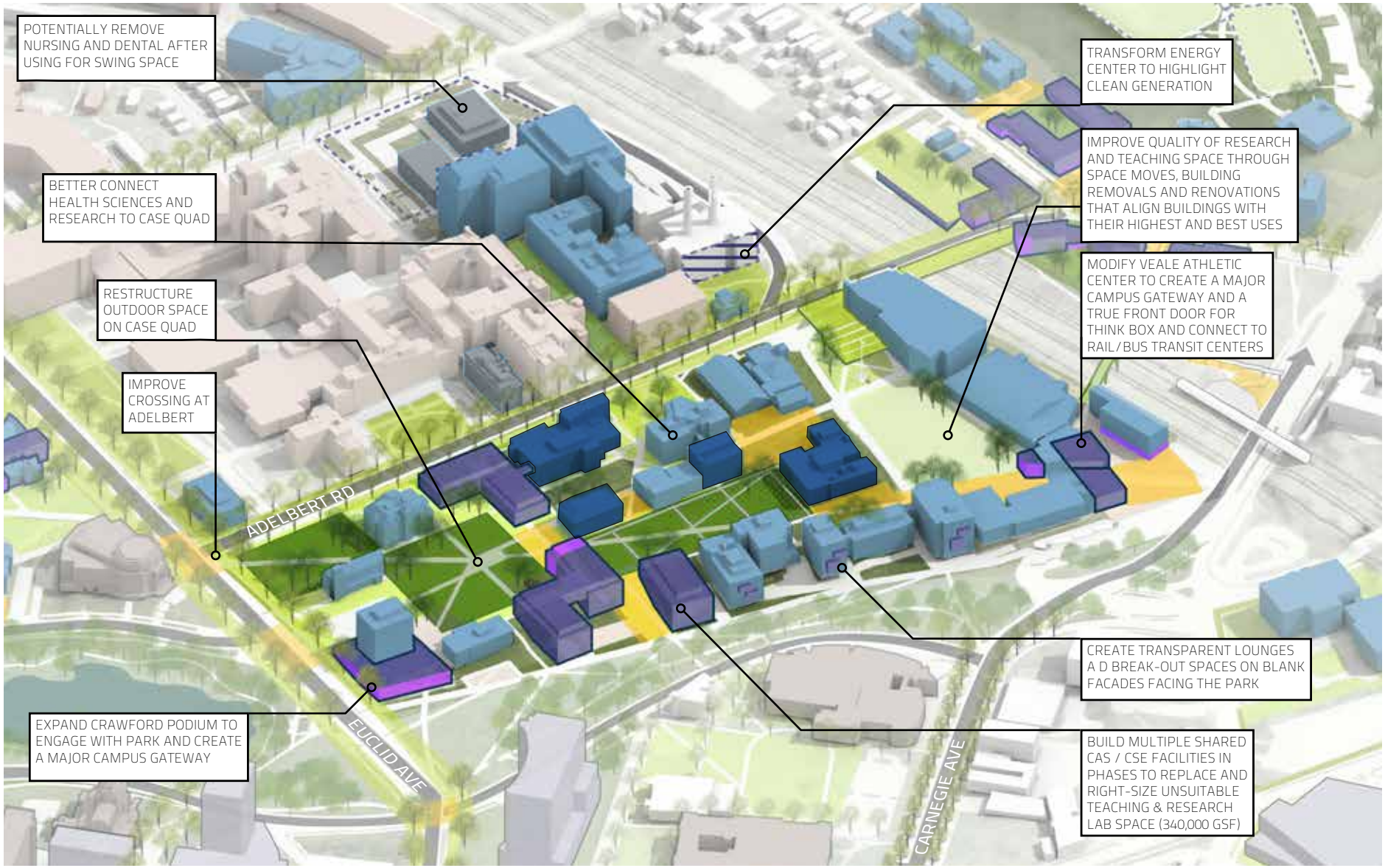
Divide open spaces in the Quad into smaller, more structured, and more diverse open spaces, which range from small, hardscape courtyards to large, grassy quads. A diagonal walkway from Euclid-Adelbert crossing to the Veale Center will connect the Binary Walkway in a clear line to the Veale Center.

Existing Nursing and Dental:

The Dental and Nursing School buildings rest on a garage podium. The Campus Master Plan acknowledges a range of options for future use of the Frances Payne Bolton School of Nursing building and the Dental School building. These buildings can serve as swing space for eventual renovations to Robbins or BRB or, more immediately, renovations to buildings on Case Quad.

Buildings requiring further study:

The Campus Master Plan recommends conducting a feasibility study to determine whether renovating Eldred for student services or other supportive uses and Millis for research or partial demolition creates better value in the long term. Also, the lack of central cooling and overall poor condition of the 1956 addition to A.W. Smith may result in premium renovation cost relative to new construction.



PROPOSED CASE QUAD AND HEALTH SCIENCES AND RESEARCH DISTRICT

CREATE SHARED RESEARCH FACILITIES AND VIBRANT SOCIAL HUBS

Existing view of Case Quad from the east entry to Crawford Tower.

Shared CAS / CSE Facilities and Social Space: Invest in new research and teaching labs to serve collaborative pursuits that enhance interdisciplinary teaching and research. The age and unsuitable nature of many existing research facilities demands replacement lab space. The Campus Master Plan includes recommendations from the School of Engineering's 2011 planning study that include strategic demolition and renovation of lab spaces in the quad.

Three major new research and teaching buildings are planned, which allow a series of internal renovations and space moves that result in the appropriate pairing of space programs to the highest and best use of each building. These new buildings are imagined as both social and academic hubs that will activate the quad in the evenings, improving the vitality and safety of the space.

POTENTIAL CASE QUAD
FUTURE

TRANSFORM CRAWFORD TOWER INTO A WELCOMING GATEWAY

Existing view of Crawford Tower along Euclid Avenue.

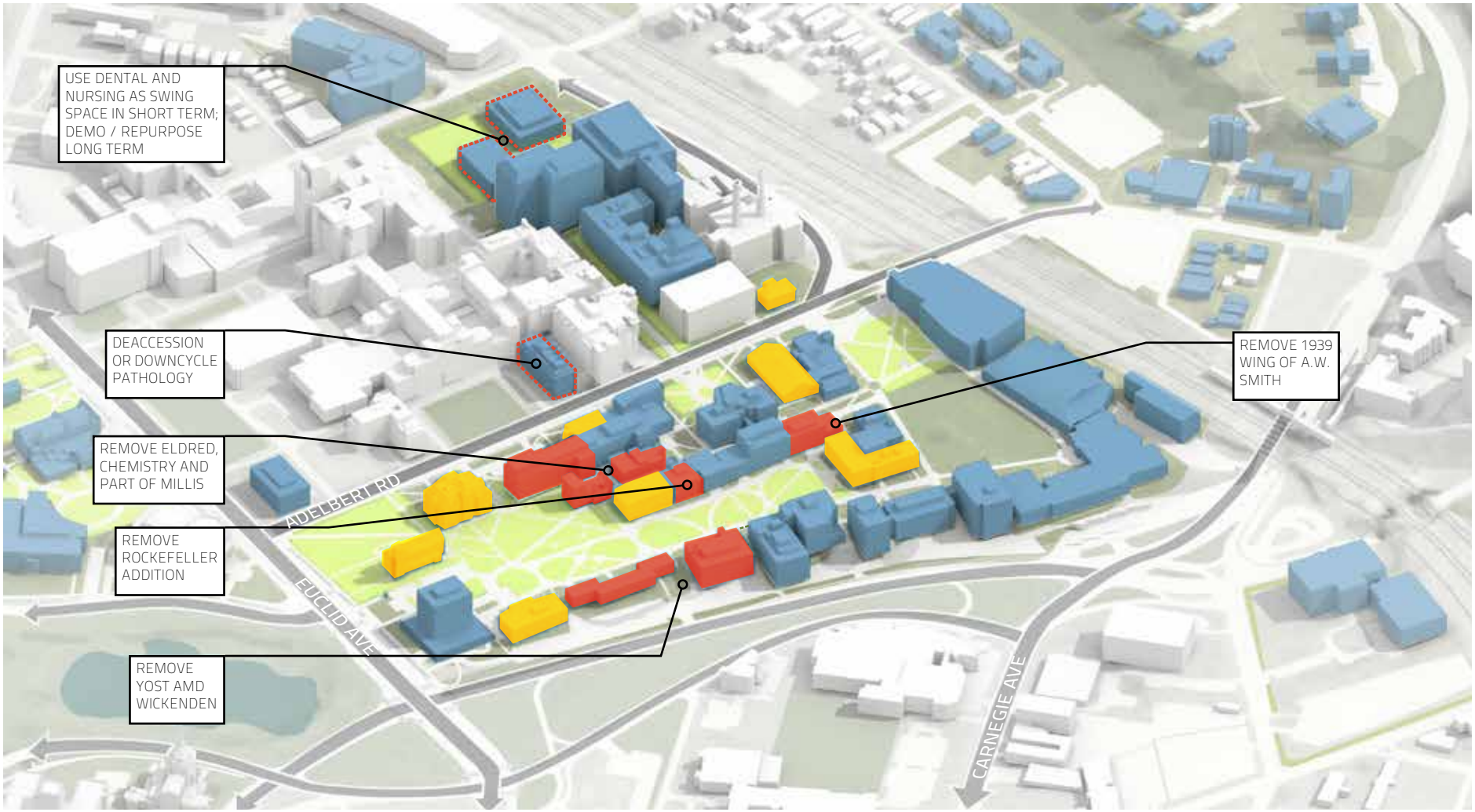
Crawford Tower: Expand the base of Crawford Tower to engage Euclid Avenue and invite visitors into the university. The plan imagines a bold, transparent design that re-veals activity and showcases research and discovery. Visitor and student services, innovative visual learning experiences and study areas linked by a walkway to Case Quad are possible program elements. This addition will add eyes on the street and improve security for pedestrians crossing Rockefeller Park in the evenings.

Realignment of MLK Drive and Parking: Realignment of existing roadways creates opportunities for improving CWRU's "front door" to Rockefeller Park. It improves pedestrian crossings, and allows for greater and safer access to and from Cleveland Clinic and the HEC, Cleveland School of the Arts and the Fairfax district in general.

Building garage parking beneath the proposed new lab buildings on the quad will compensate for the removal of surface parking facing MLK Drive.

POTENTIAL CRAWFORD TOWER AND EUCLID GATEWAY FUTURE


GYMRU



PRIMARY ANCHORS AND/OR HISTORIC VALUE

REMOVAL

EXISTING CASE QUAD AND HEALTH SCIENCES AND RESEARCH DISTRICT

Lounge spaces facing MLK Drive: Several "glass box" lounges (similar to the one added at Robbins) should be added to the large blank facades of the Engineering buildings lining the southwestern edge of the Case Quad. This will provide greater transparency, visual interest and illumination to this line of buildings, as well as add breakout lounges and meeting spaces. This is a fairly economical way of achieving many of the goals of the Campus Master Plan for Case Quad (improved front door, greater security through eyes on the park, etc.).

Parking lot between Crawford and Amasa Stone Chapel: This lot should remain to provide the chapel and Adelbert Hall with convenient parking. However, it should be reduced and restructured to be less visible and allow the creation of a more significant pedestrian and bicycle path linking Case Quad with Euclid Avenue and beyond.

Veale Athletic Center Modifications: The Veale Athletic Center creates a virtual dead-end to pedestrian traffic between the RTA bus station, the Cedar-University Circle Rapid station and the Case Quad. With alterations and additions, the Veale Athletic Center can continue to function as a secure athletic facility at the Case Quad level and above, with an outdoor staircase bringing pedestrians under a bridge to the Case Quad. This transformation creates a major campus gateway and welcoming front door at Sears think[box].

Veale Parking Garage: The design of this building's ground level, as well as the high volume of vehicle movements around its base, obstruct and endanger pedestrian traffic between SRV and Case Quad/Van Horn Field. Possible improvements are limited, but important. Improving the tenuous links to the SRV would more strongly bind it to the rest of campus. The plan proposes a land-bridge structure wrapped around the base of the garage, providing a safer pedestrian zone isolated from vehicular traffic. This and other possible solutions need to be studied in greater detail. The drop-off circle adjacent to the garage and One To One Fitness should also be studied for ways to improve pedestrian safety and offer refuge and shelter to people waiting for pick up by vehicles. This point is a campus gateway, and should be treated as such.

MATHER QUAD DISTRICT

The Campus Master Plan's vision for Mather Quad includes restructuring and enlarging its outdoor space to make it a strong counterpart to Case Quad, in terms of character, dimension and utility. The academic vision for Mather Quad is to place more public social and learning spaces at the ground level of each adjacent building with offices and smaller classrooms on upper floors. This idea is intertwined with that of a re-imagined landscape. Mather Quad is an important crossroads on the major pathway from Case Quad to NRV.

The proposed changes are made possible by the potential for incorporating development of the former Cleveland Institute of Art (CIA) site on East Boulevard into the life of the campus, in conjunction with the Cleveland Museum of Art (CMA), co-owner of the former CIA property. The portion of Bellflower Drive that passes alongside Mather Quad should be removed or substantially altered. This will allow greater pedestrian flow to and from Wade Oval, an important potential connection.

Specific recommendations and items for further study at Mather Quad are as follows:

Restructuring Thwing:

The recent construction of the Tinkham Veale University Center (TVUC) notwithstanding, Thwing has an important role to play, as it provides a dif-ferent type of student life (more casual and off the beaten track). The east end of the building, in particular, could be transformed into an important classroom building for the disciplines centered on Mather Quad. The Campus Master Plan suggests that Thwing atrium is rebuilt in-place, with greater emphasis on a strong physical presence on Euclid Avenue. Extending the atrium closer to the sidewalk and providing transparent lounge space there would improve the university's presence on Euclid Avenue and provide a welcoming gateway at this location. Public study space should be a core concept of Thwing.

NEW CONSTRUCTION / EXPANSION

RENOVATION/REFURBISHMENT

LANDSCAPE / STREETSCAPE IMPROVEMENTS

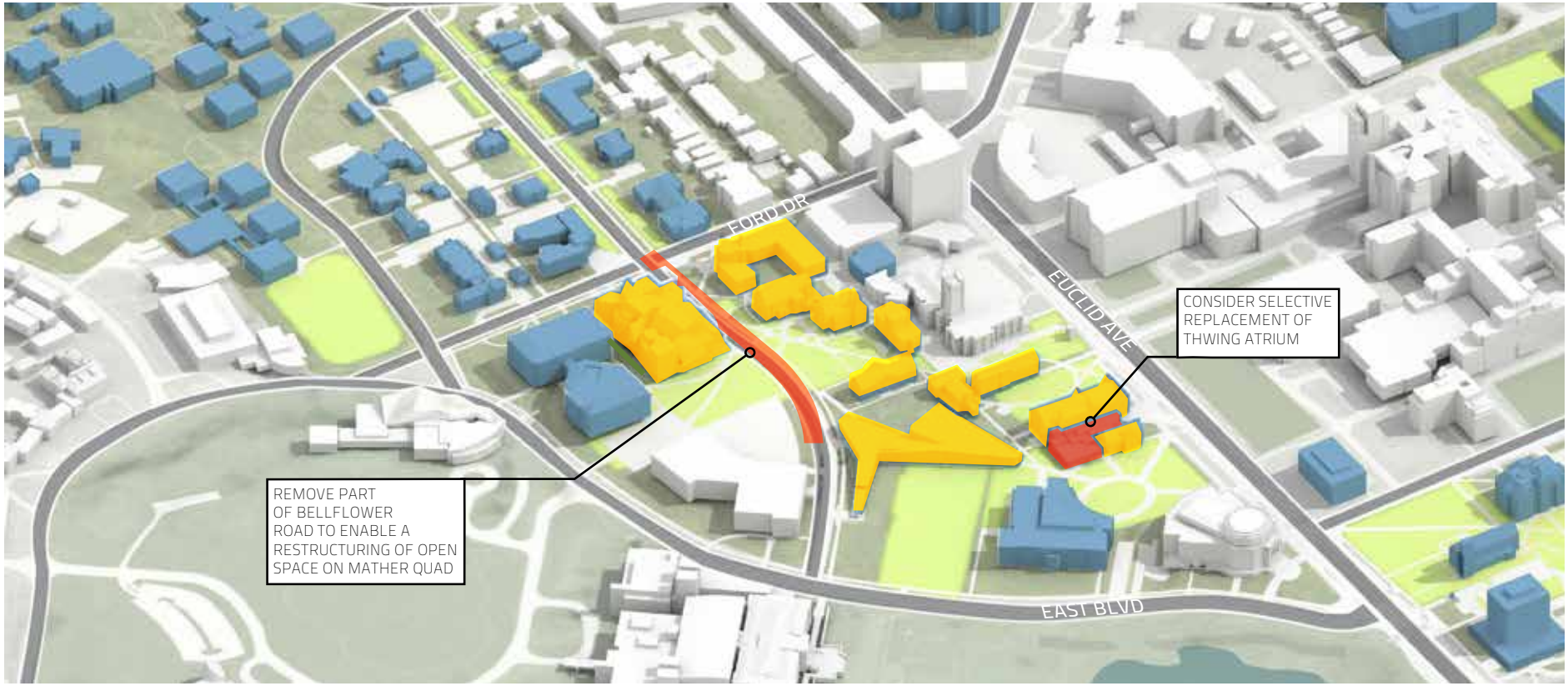
PROPOSED MATHER QUAD DISTRICT

Development of the CIA site:

Development of the former CIA site on east Boulevard should, as indicated by the physical framework, allow for the extension of Lucia Nash Walkway as an outdoor pedestrian way to East Boulevard and the Nord Family Green-way. The building(s) developed on the site should house programs important to CWRU and the CMA, as well as, perhaps, conference and lecture functions. This is an ideal location for the campus and wider community to convene, and these functions would provide additional classroom space for Mather Quad disciplines. In the near-term, the existing building should be used as swing space to enable space moves and renovations in Mather Quad.

The Nord Family Greenway:

The Greenway was an existing project before the current Campus Master Plan began, and it is has been folded into the thinking for Mather Quad and West Campus districts. The Greenway should create a strong connection between TVUC, the CMA, MPAC, and West Campus.



PRIMARY ANCHORS AND/OR HISTORIC VALUE

REMOVAL

EXISTING MATHER QUAD DISTRICT

ENLARGE MATHER QUAD

Existing view of Mather Quad with Bellflower Road cutting thorugh the middle of the open space.

Restoration of historic buildings:

The plan views the ensemble of historic buildings at Mather Quad to be an essential part of the history and character of the campus. As a result, all of these buildings should be re-purposed and restored, so that they meet con-temporary accessibility and energy goals while retaining their historic character. This will not be easy to achieve for all buildings (e.g. Mather House), but we believe it can be done. It is essential that these buildings be vacated and renovated comprehensively to achieve the best designs and shortest, most economical construction phasing. The former CIA building can be used immediately for swing space to enable these renovations. In addition, the completion of Phase 2 of MPAC may allow Haydn to be partially or fully vacated while renovated in part or in total.

Creating universally accessible spaces in a strategic and elegant manner must be considered. Accessibility in historic buildings needs to be studied further.

Improvement and Extension of Lucia Nash Walkway:

The former Bellflower Court should be improved along its entire length (including, importantly, between the Law School and Weatherhead School). Any improvements should improve features and safety while enhancing the charming aspects of the walkway.

RESOLVE ADELBERT CROSSING

Existing view of the Euclid-Adelbert Crossing looking down Binary Walk to the Case Quad.

Adelbert Crossing:

The Euclid-Adelbert Crossing is a major diagonal route traversing the entire campus, and crosses through Euclid Avenue, an important traffic artery, and competing needs must be addressed at this location in a balanced manner. The crossing is dangerous for pedestrians, as well as inconvenient for them, due to the heavy traffic on Euclid Ave. The Campus Master Plan suggests the creation of a dedicated pedestrian phase in the traffic signal, which would allow direct diagonal crossing of the intersection by pedestrians to and from Mather Quad and Binary Walkway.

POTENTIAL ADELBERT CROSSING FUTURE

BELLFLOWER, NORTH RESIDENTIAL VILLAGE, AND UPTOWN

The Campus Master Plan's recommendations for this area of campus augment existing, successful functions and relationships. No large-scale redevelopment is imagined. Proposed new construction is limited, and existing residential buildings of good quality should be fully updated and renovated. The plan builds on recent successes, such as the refurbishment of Leutner Commons and the construction of Uptown. The latter is a major new addition to Euclid Avenue and improves its surroundings. The former is a limited-scope project that makes use of an existing structure of quality while benefiting its users and context.

Specific items for inclusion, attention, and further study at Bellflower, NRV and Uptown are as follows:

New NRV residential buildings:

Wade Commons and Raymond House, two buildings with substantial deferred maintenance, should be removed to allow better connection through NRV. New multi-story residential halls should be built on this site at an in-creased density, with a plan shape that reconciles the geometry of newer residential halls east of E. 115th St. with the urban design of those west of E. 115th. These new residence halls should have highly active ground floors, to improve the experience for residents and also to function as illuminated beacons in the evening, increasing security on E. 115th and creating a strong visual connection with Uptown.

Bellflower Drive infill:

Undeveloped sites along Bellflower Drive should be infilled with Greek and/or graduate housing of an appropriate scale and density (not higher than three stories), with highly active ground floors and with lounges and entries (possibly secondary entries) fronting onto Lucia Nash Walkway to improve safety along that walkway. Balancing the parking needs of the businesses along the walkway with the goals of infilling along Bellflower Drive must be taken into consideration.

Strategic infill at Uptown:

Vacant lots at the corner of E. 115th Street and nearby are ideal opportunities for the university to increase its presence along Euclid Avenue and improve activity overall in Uptown. Securing single ground-floor occupants to augment Uptown retail with upper-level graduate housing above will activate the street and further enhance the retail experience in Uptown.

PROPOSED BELLFLOWER, NRV AND UPTOWN DISTRICT

REVITALIZE LUCIA NASH WALKWAY

Existing view along Bellflower Court looking north to the North Residential Village.

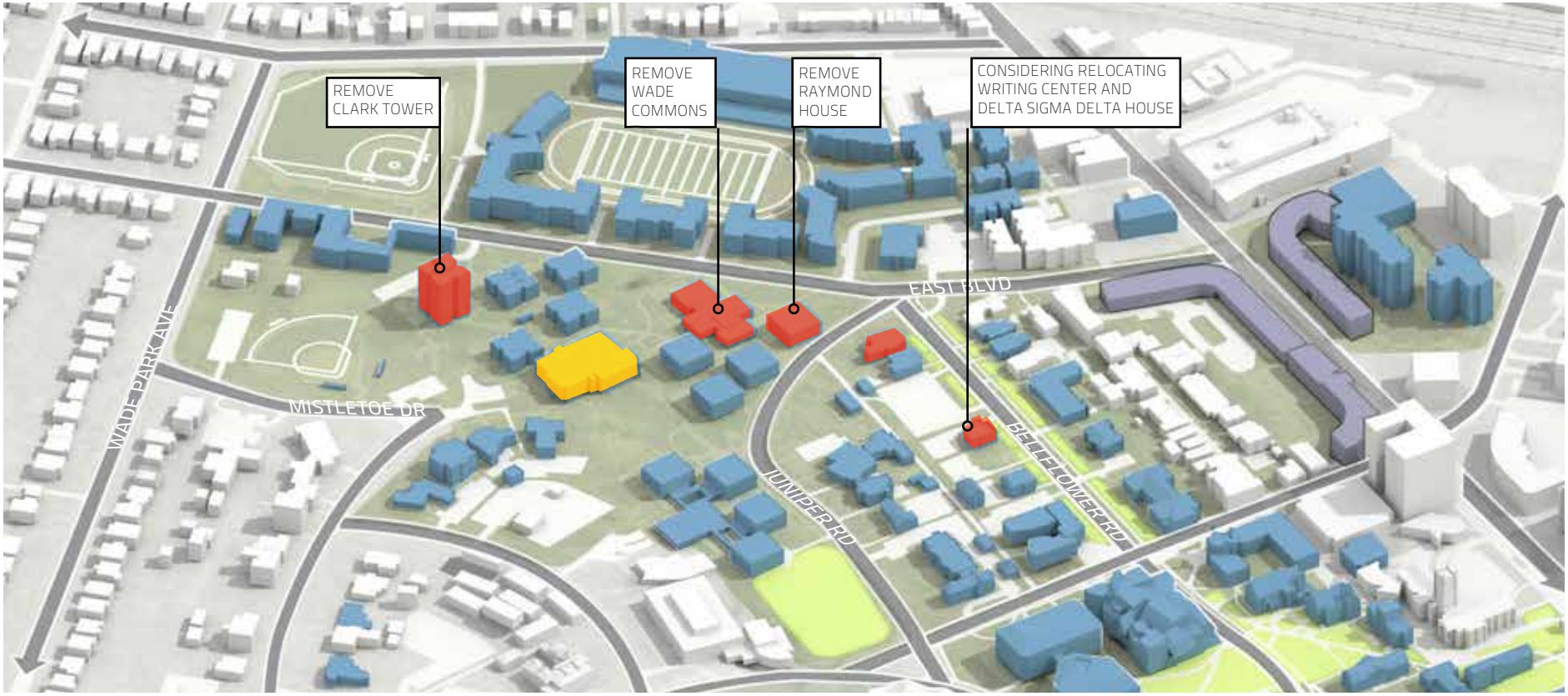
Marching band relocation:

The marching band is housed in Lucia Nash Walkway: The walkway should be upgraded along its entire length (See notes for Mather Quad). Eating and drinking establishments along the walkway are campus institutions in their own right and should be carefully incorporated.

Pedestrian crossings at Ford Drive:

These are heavily used crossings at a busy street. As such, careful consideration as to how to improve pedestrian safety at crossings of Ford Drive at Lucia Nash Walkway and Bellflower Drive is essential.

POTENTIAL BELLFLOWER COURT FUTURE



PRIMARY ANCHORS AND/OR HISTORIC VALUE

REMOVAL

Improved pedestrian connectivity to Wade Park Ave:

There is a strong natural route past Leutner Commons to Mistletoe Drive and the neighborhoods beyond, but this route passes the back-of-house functions of Leutner. Landscaping or other means is required to screen these Leutner functions, and to improve pedestrian experience and safety at this important gateway.

EXISTING BELLFLOWER, NRV AND UPTOWN DISTRICT

PRIMARY ANCHORS AND/OR HISTORIC VALUE

Bellflower Road at Ford Drive.

Uptown, looking southwest.

Bellflower Road, Juniper Avenue and E. 115th intersection.

MOCA and Triangle Apartments.

SOUTH RESIDENTIAL VILLAGE

One of the largest proposed changes in the Campus Master Plan is the remaking of SRV to relocate residence halls from the hilltop to lower land, closer to Case Quad. By clustering SRV around a refurbished and possibly enlarged Fribley Commons, the SRV community will be closer to Case Quad, will be in more of a village atmosphere, and will have a strong connection to the adjacent RTA station and Little Italy neighborhood.

Buildings currently on the hillside are at or past their useful lifespan and require substantial re-investment. Additionally, a major charge of the plan is to form direct connections among distinct areas of the campus. SRV is an outlier due to its detached location across railway tracks, and the steep slope that has to be traversed to get back and forth from the top-of-the-hill section to Case Quad.

Part of the broader strategy in relocating housing to the lower slopes of the hill is the ability to set aside the open space on the top of the hill for development or partnerships with private developers to create graduate student housing or other future program needs. In the near term the top of the hill should be open recreation area.

Specific items for inclusion, attention, and further study at SRV are as follows:

Connection to the RTA station:

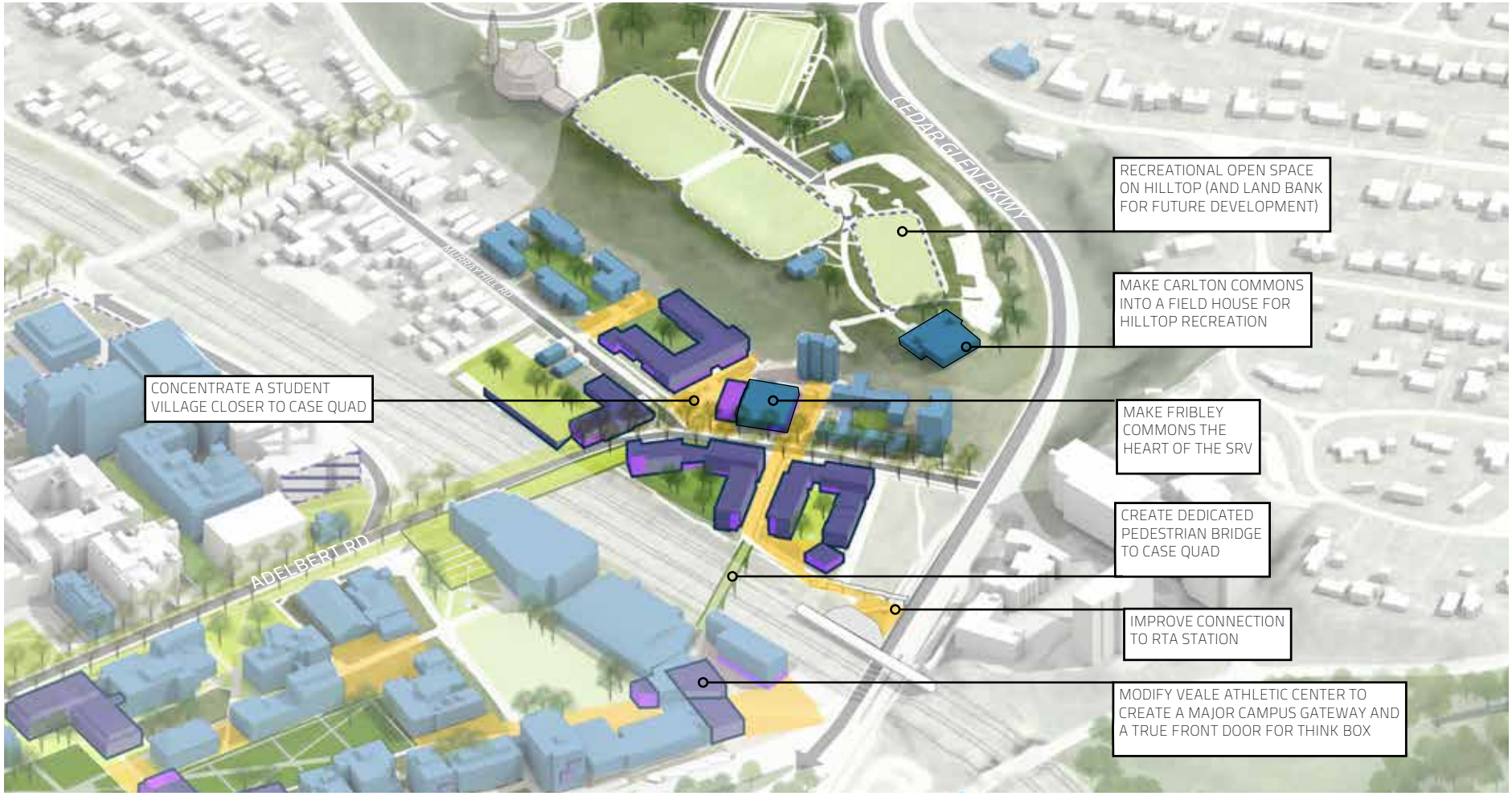
The Cedar-University Circle RTA station is a short distance from the heart of the proposed new SRV. This connection should be accentuated for better access to transit and to establish the future Veale Athletic Center gate-way at Sears think[box].

Potential impacts of the railway line:

As development concentrates new SRV buildings around Fribley Commons, care must be taken to study and address any potential impacts of the nearby railway line. A considerable amount of freight is moved along this line, and siting and design of the new buildings must take into account potential vibration and noise.

Parking replacement:

Parking displaced by the construction of new residences is addressed in the parking plan overall. Locally, the use of partially buried parking decks (similar to that used at Uptown) on land adjacent to the railway right of way (i.e. behind the new residential buildings) should be explored.



RENOVATION/REFURBISHMENT

NEW CONSTRUCTION

ENHANCED CIRCULATION / LANDSCAPE

PROPOSED SRV DISTRICT

Pedestrian/bicycle bridge to Case Quad:

The plan proposes a pedestrian and bicycle bridge from the center of the new SRV to Van Horn Field/Case Quad. Further study of this element is required. Its path could run between the current Veale Athletic Center and the Veale Parking Garage, where there is an open slot of land, or it could run be-hind Sears think[box] to the restructured Veale Athletic Center. This will require lengthy coordination with the City and railroad and, despite the long-term nature of the project, discussions should be initiated as soon as possible.

Improved connection on Adelbert Road bridge:

The camber of this bridge and its termination on the Case Quad side at the Veale Parking Garage with extensive vehicle movements contribute to the sense that SRV is not well linked to the rest of campus.

Elephant Stairs:

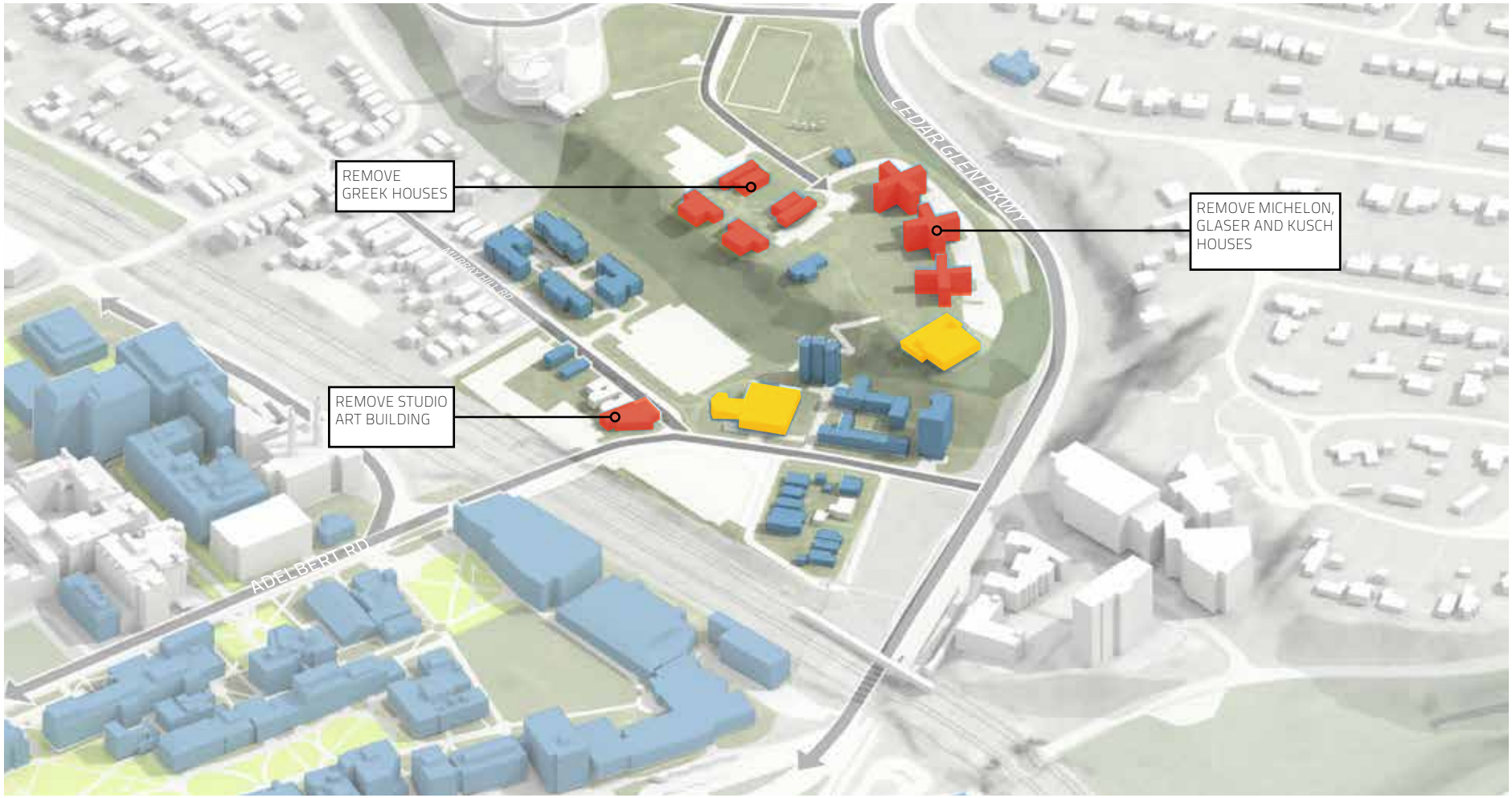
The long run of steps connecting the upper and lower areas of SRV require substantial investment in the short- to medium-term to address deferred maintenance. With the proposed changes to SRV, it must be decided whether the steps should be repaired or rebuilt as-is, or whether they should be replaced with a simpler structure or site ramps that will simply provide access to and from the playing fields and Cleveland Heights.

Playing fields:

A refurbished Carlton Commons could function as a field house with changing rooms for users of the upper level recreation facilities.

Upper level parking:

The existing parking lot associated with Michelson, Glaser and Kusch should be kept for use by recreation field users.



PRIMARY ANCHORS AND/OR HISTORIC VALUE

REMOVAL

EXISTING SRV DISTRICT

VEALE/SEARS THINK[BOX] SOUTHERN GATEWAY

Existing view of the Sears think[box] and Veale Center along Martin Luther King Drive.

Connection to the RTA station:

The Cedar-University Circle RTA station is a short distance from the heart of the proposed new SRV. This connection should be accentuated for improved connection to transit, but also because the pedestrian link beyond the RTA station to the future Veale Athletic Center gateway, Larry Sears and Sally Zlotnick Sears think[box] and RTA bus station is important.

POTENTIAL VEALE SOUTHERN GATEWAY FUTURE


think
BEYOND

WEST CAMPUS + HEALTH EDUCATION CAMPUS

West Campus and the HEC sites are part of the same district. Their proximity allows a coherent design resulting in a distinct sense of place. Infrastructure improvements made in partnership with the Hough neighborhood, UCI institutions and the City can transform the streetscapes to invite pedestrian use and reduce traffic.

The future of West Campus is largely speculative and is depicted as a mixed-use zone of 750,000 – 1,000,000 square feet that could house either a medical village, office space for partner institutions or both. During the course of the Campus Master Plan process, successful zones, such as University Park at MIT, were cited as examples of this possible vision. Beyond the completion of Phase 2 of the MPAC, no future academic buildings are currently identified for the West Campus district.

The MPAC and the HEC are important initiatives in a neighborhood that has seen decades of stagnation and decline. They arrive at a moment when developer interest in the Hough neighborhood is growing, and several projects are being considered and executed. This has tremendous potential to change this district. Specific items for inclusion, attention, and further study are as follows:

Strategic partnership with the Cleveland Sight Center:

Partnering with the CSC would enable CWRU to create meaningful continuity between West Campus and the HEC, as well as gain a shared presence along Chester Ave. Both of these goals are significant and warrant further study.

The university should continue engaging with the CSC to arrive at a mutually beneficial approach.

Pedestrian link through West Campus:

This continuous link should connect the heart of the future West Campus, the MPAC and the HEC together with the Nord Family Greenway. The public route should have a consistent, high-quality design and navigate the district both internally and on city sidewalks.

The Nord Family Greenway:

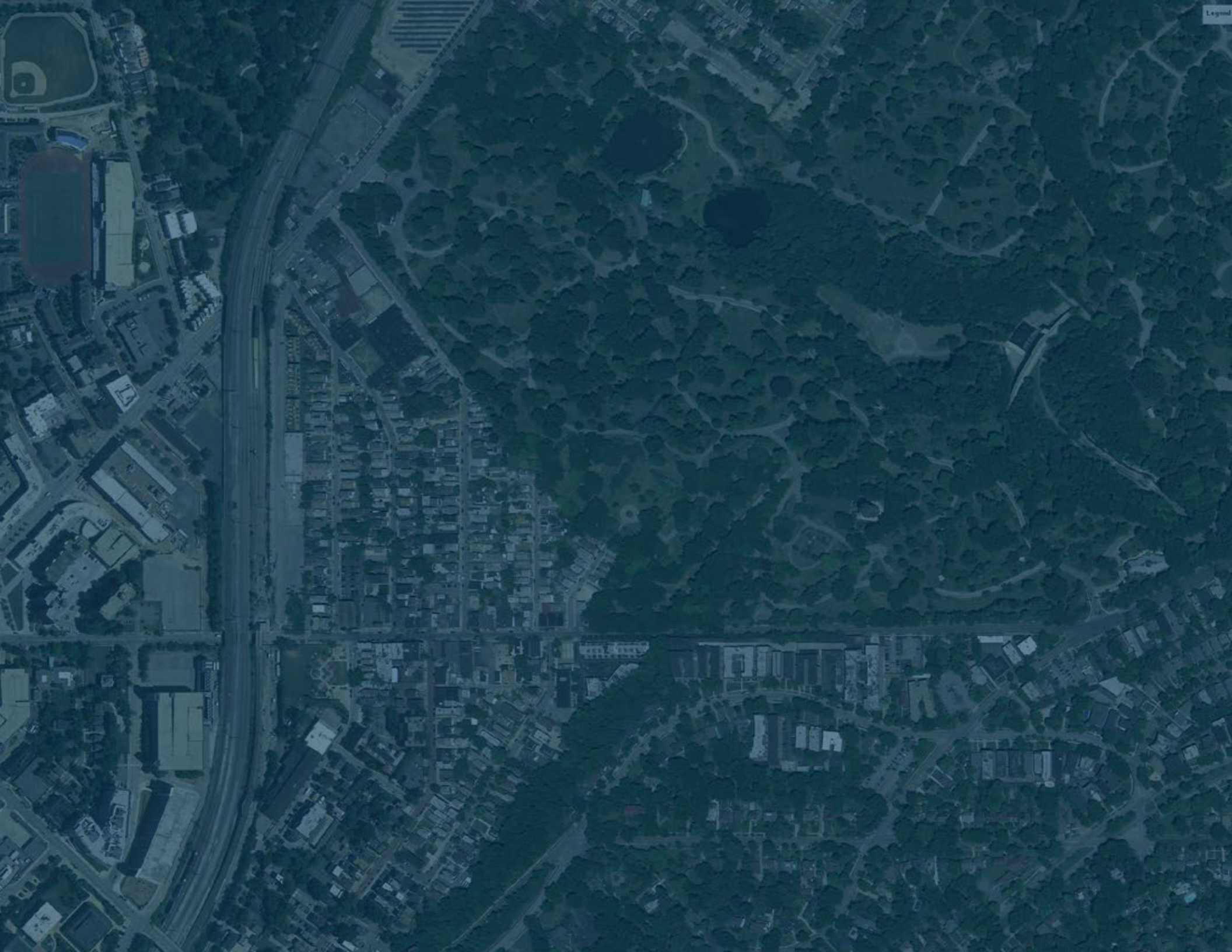
The western terminus of the Nord Family Greenway at the MPAC offers tremendous benefit by linking West Campus and the Hough neighborhood to the main campus. As a result, landscape and pathway design at this terminus should maximize connectivity.

Parking:

The existing parking garage on the West Campus site should be kept (with possible re-cladding). In addition, improved surface parking should be added at the terminus of the Greenway, for MPAC use and for public use on weekends to access the Greenway.

PROPOSED WEST CAMPUS AND HEC DISTRICT

COMMUNITY INPUT



COMMUNITY INPUT

The number of people, governments and organizations that contributed to this Campus Master Plan — and the thought and passion with which they spoke — is testament to the importance of Case Western Reserve University to the greater community.

Planners sought the opinions and knowledge of, not only our institutional neighbors, but of the surrounding communities as well. This plan is a guide to the university's continued prosperity, something it cannot achieve on its own. All possible stakeholders were included because CWRU's future is tied inextricably to the well-being of the greater community and collaboration will lead to the greatest possible results.

Planning began in spring 2014 with walk-throughs of campus buildings, surveys of faculty, staff and students and interviews and meetings within the campus community. Opinions were offered on everything from the availability of late-night snacks to the shortage of adequate lab space and traffic problems.

Planning continued through meetings and forums with neighboring institutions and communities. Proposals were evaluated against each other and in light of university goals and resources. They were then further narrowed down and refined. Additional meetings were held with university stakeholders and external collaborators, more than 120 over the entire process, before this document was finalized.

The result is this call to action, a detailed and innovative plan to frame the continued success of the university and the communities in which it functions.

THE CONNECTOR AT ROCKEFELLER PARK

IMPLEMENTATION

IMPLEMENTATION

Without action, a plan is merely words on paper. As detailed at the beginning of this document, the Campus Master Plan is not a blueprint, but a flexible guideline for improvements that will benefit the university for the next decade and beyond. It was written to reflect existing priorities, conditions and resources. As those factors change, so should the plan.

However, it would be a mistake to let future uncertainties delay action on the many important and timely recommendations in this plan. This section deals with the next steps to be taken.

FIRST STEPS AND EARLY WINS

Successful implementation of this plan depends on new ways of thinking that consider the holistic impact that space and place have on learning and research. The Campus Master Plan calls for significant capital investments in the near term with an awareness of the long-term impacts on operational costs, energy consumption and carbon output.

Prioritizing initiatives and aligning development goals with real needs requires clarity of purpose and shared vision, which this plan seeks to achieve. This Campus Master Plan supports completion of the following ongoing projects:

Milton and Tamar Maltz Performing Arts Center

Larry Sears and Sally Zlotnick Sears think[box]

Health Education Campus (HEC) and HEC Mobility Study

Nord Family Greenway

Beyond the ongoing projects, the Campus Master Plan recommends the following first steps, which will have broad, institutional impacts and address critical needs

INSTITUTIONAL FRAMEWORK RECOMMENDATIONS

Formation of a Design Review Board

Convene an oversight committee tasked with managing space and capital projects in coordination with operations, finance and data systems. This committee will find operational efficiencies to achieve better space utilization, in lieu of new construction. This group will also be charged with education and outreach.

The ultimate goal of this committee is to improve the physical and aesthetic quality of space without increasing the quantity of academic space on campus and to consider a "no net new" academic space policy. This committee will simultaneously guide a united strategy of new construction, backfill renovations, demolitions and space moves as a comprehensive approach to managing space.

Membership should be diverse in expertise and viewpoint including, for example, individuals with financial, art and design, analytical and engineering expertise.

Learning Environments Study

The quality of learning environments at CWRU varies widely and generally does not support pedagogical innovation and technological change. The university must right-size rooms to section sizes, improve utilization, make consistent furniture and technology upgrades, and consider ways to coordinate or centralize class scheduling. This institutional issue requires campus-wide cooperation.

Implement Space Management Data Systems

Leadership must be equipped with diagnostic tools in order to make strategic decisions. CWRU should create and validate linked data systems to maximize space utilization. Data systems include a comprehensive space inventory, course scheduling system, HR, grant funding and utility consumption databases. Additionally, CWRU should commission a complete facility condition assessment and link this information with space management systems. Quarterly reports to university leadership and the board will institutionalize the use of data to inform decisions.

Improve the Quality of Research Space and Invest in a Multidisciplinary CAS / CSE Teaching and Research Building

Begin a comprehensive realignment of the building portfolio with suitable program uses. Much of CWRU's research space in the arts and sciences is in poor condition and located in buildings that are not conducive to research.

CWRU should build a multi-disciplinary CAS/CSE teaching and

research building to allow significant amounts of research space to be moved from Millis and Wickenden, and those facilities should be downcycled and demolished per recommendations in the appendix. This vital project is the first in a series of new buildings on Case Quad that replace deficient and unsuitable research facilities. The site will support a five-story, 175,000-GSF building that could be built in phases.

This initiative will catalyze a series of moves designed to remove unsuitable buildings and restructure space across Case Quad. It should also spur landscape and mobility improvements to the Quad.

Create Energy Infrastructure Planning and Design Standards

Meeting aggressive carbon reduction goals requires innovative and consistent investment in more efficient and resilient utility systems. A critical first step is to convert the MCCo from coal to a gas-fired plant. Next steps include requiring higher performance (e.g. net zero energy building) standards to reduce energy demand and consumption. LEED targets, while helpful, do not go far enough toward achieving the goals in CWRU's Climate Action Plan. CWRU should treat the campus itself as a lab for experimenting and deploying new technology.

PHYSICAL FRAMEWORK RECOMMENDATIONS

Resolve Eucid-Adelbert Pedestrian Crossing

Pedestrian safety and campus connections can be improved by creating all pedestrian signal phases along Euclid Avenue, and at the intersection of Euclid Avenue and Adelbert Road in particular.

Upgrade Lucia Nash Walkway

Enhance the former Bellflower Court with paving, landscaping, lighting, wayfinding, artwork and furnishings to improve safety and reinforce a unique sense of place. This path should become part of a campus pedestrian network that stretches from North Residential Village (NRV) to South Residential Village (SRV) and HEC.

Mather Quad Building and Landscape Renovations

These buildings are long overdue for renovations and must be completely vacated, one by one or in small groups, in order to perform comprehensive and lasting upgrades. The newly acquired and jointly owned former Cleveland Institute of Art building on East Boulevard provides ideal temporary swing space to begin renovations as soon as funding is available. Enlarging Mather Quad to create a seamless pedestrian environment will establish a memorable sense of place and a counterpart to Case Quad

Euclid Avenue Gateway at Crawford Tower

Expanding the base of Crawford Tower not only makes a bold impression at a major campus gateway, but also creates space for student services that will be displaced when Yost is demolished to make way for the Multidisciplinary Research Buildings.

Strategic Real Estate

CWRU should support the burgeoning retail and growth in Uptown. The Campus Master Plan recommends creating a strategic plan for acquiring properties such as those in the SRV. No major acquisitions are recommended.

METRICS, PLANNING AND COMMUNICATIONS

The university should establish clear metrics to measure success in implementing the Campus Master Plan and report its progress to, not only the CWRU community, but to all stakeholders who played a part in creating the plan. They, too, are vested in the university's success and are now partners in achieving the plan goals.

The Campus Master Plan does not stand alone, but reflects and supports many other plans, both internal and external. University plans include studies of parking and traffic, housing demand and outdoor sculpture, as well as overarching strategic, academic and capital programs. External studies include the planned Opportunity Corridor, Northeast Ohio Regional Sewer District improvements and various private developments.

It's unrealistic to expect every goal in this plan to be met or to remain unchanged. As circumstances, resources and priorities change, so should the plan. Periodic reviews and assessments are the best way to ensure that the plan is in alignment with the current best interests of the university. In addition, planners must remain current on trends and innovations in higher education in order to consider anything that might aid CWRU.

Many of the improvements set forth in this plan — demolishing an old building, improving an intersection, adding lighting — can, in and of themselves, seem isolated and unique, a single action taken to address a specific need. Its individual facets can overshadow the overall strategy. It's important that this not be allowed to happen. It must be made clear to everyone that each improvement called for in this document is part of a larger, integrated plan to ensure the university's success. This should be communicated through updates to the campus community, neighbors, other stakeholders and the public at large.

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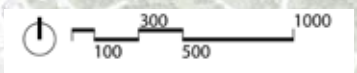

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	Associate Professor, School of Dental Medicine
Sorin Teich	Associate Professor, Accountancy
Tim Whittingham	
Ben Schechter	
Greg Jonas	

APPENDIX

BUILDING-BY-BUILDING FINDINGS AND RECOMMENDATIONS

MAINTAIN:

Crawford Tower

Built 1968 / 8 stories / 78,258 GSF
Use: General academic and administration
Occupants: A&S Dean's Office, Cognitive Science Department, A&S IT / Development, university HR, university IT, Parking Services

Recommendations:

- Renovate base levels to create a welcoming gateway fronting Euclid and MLK – a major catalytic project that should contain significant program elements, such as the interactive commons and classrooms.
- Clarify routes and improve access to Case Quad.
- Expand furnishings and programming (food trucks) at the base of tower to create a place for the CWRU community to gather outside, particularly on the south side of the tower where the plaza is not only a northern terminus to Case Quad, but also a common path for those headed to Tomlinson for food.
- Renovate upper floors into open office work environments.
- Planned maintenance projects should proceed as the building has good long-term potential.
- A potential location for the Interactive Commons.
- Consider consolidating student services from Yost.
- Connect the expanded base at lower levels to the dining area in Tomlinson. This would improve access and strengthen the asset in Tomlinson.

Transforming Crawford Tower into a welcoming and inspiring front door is a major recommendation of the plan. The prominence of the site and easy accessibility make it ideal for a welcome center and signature programs like the Interactive Commons. The renovation also offers the opportunity to create flexible classrooms and a one-stop shop for student services now housed in Yost. Tvhe value of parking at this location should be evaluated against the potential to create more academic and classroom space.

Amasa Stone Chapel

Built 1909 / 3 Stories / 6,861 GSF
Use: Ecclesiastical / Historic assembly

Recommendations:

This signature building could be better used as a venue for the arts, or as a gathering place to boost school spirit, wellness or spirituality. It houses the only operable organ on campus.

Clapp Hall

Built 2000 / 4 Stories / 30,422 GSF
Use: General academic
Occupants: Chemistry, Biology

Agnar Pytte Science Center comprises three buildings (Clapp, DeGrace, and Millis), as well as the Hovorka Atrium and Schmitt Auditorium. DeGrace was built in 1897, followed by Millis in 1962, then Hovorka and Clapp in 2000. Hovorka Atrium embraces Adelbert, and it is a popular casual space for students, as well as special events booked through A&S. Schmitt Auditorium is one of the largest in A&S, but it has been poorly maintained.

Recommendations:

Add coffee cart and additional furniture to Hovorka Atrium. The space can support much more seating. Add furniture such as benches to the hallways and/or lobby space. If paper exams are likely to continue for a few years, install mailboxes or tables where they can be returned. Currently, they are stacked in windowsills.

As spaces move, the scattered Biology and Chemistry offices should be consolidated. Clapp feels a bit like an overflow area and is dislocated from other offices in these departments.

Department chairs are assigned two offices in Clapp, which is inefficient. Major maintenance projects for HVAC and facade repairs are planned and should be carried out.

Strosacker

Built 1958 / 2 Stories / 20,539 GSF
Use: Assembly
Occupants: Registrar controlled

Recommendations:

As one of the university's only large assembly spaces, Strosacker fills a key role.

Strosacker is a large auditorium located between Rockefeller and AW Smith, and is directly connected to both buildings. The main entrance opens directly to the Case Quad with a small patio/ entrance area. It was built alongside the Rockefeller addition in 1958. There is a narrow, utilitarian tunnel beneath Strosacker (between Rockefeller and Strosacker) that students use heavily for east-west connectivity from the Agnar Pytte Science Center to the Case Quad and beyond. The auditorium has not been well-maintained. There is a balcony and a concessions area on the first floor.

Mather Memorial

Built 1913, Addition 1929/ 2 Stories, Basement / 61,013 GSF
Use: Offices, Classrooms
Occupants: Anthropology, Psychology, and Sociology

Recommendations:

This building is best used for classrooms with 25 or fewer students, offices and seminar spaces.

Invest in comprehensive renovations over time; the extent of this work should not require the occupants to fully vacate the building.

Office configurations result in overly large rooms that monopolize the light - recommend a more efficient use of office space as well as better furnishings in public areas.

Harkness Chapel

Built 1902, Addition 1929/ 1 Story, Basement / 17,346 GSF
Use: Classroom, Recording studio, Performance
Occupants: Music / general assembly / weddings

Recommendations:

Perform maintenance, especially on gutters and downspouts as these leak and cause ice dams, which can cause extensive damage over time.

Reinforce the stage to support the piano.

HVAC upgrades would result in a quieter cooling system, thereby allowing the building to be used for performances year round.

Clark

Built 1892 / 4 stories / 19,299 GSF
Use: Classroom, Office, Assembly / Dance Studio, Library
Occupants: Philosophy, Theater, Baker-Nord Center for the Humanities

Recommendations:

Maintain classroom/seminar space on first floor. Prioritize student use of first floor spaces with furnishings that support small meetings and study space.

Complete exterior masonry restoration underway at time of writing.

The large second-floor space, originally a library, would make a wonderful study space.

Maintain for various general academic uses as the building was intended.

Guilford

Built 1892 / 4 Stories, Basement / 29,499 GSF
Use: Office uses, Classrooms
Occupants: English, Languages, Literature

Recommendations:

Maintain classroom, meeting and student-oriented spaces on the first floor. Maintain office uses and seminar spaces on upper floors.

Guilford is in better condition than other buildings on Mather Quad, but requires interior updates, which can be accomplished without relocating occupants.

Kent Hale Smith

Built 1994 / 6 Stories, Basement / 101,957 GSF
Use: Research lab and Office uses
Occupants: Macromolecular Science and Engineering, Center for Layered Polymeric Systems

Recommendations:

Maintain for intensive research; the building can support a wide range of wet or dry research uses.

Add a freight elevator to to allow better material delivery and flow to the building. This is essential for research-intensive buildings.

Glennan

Built 1968 / 8 Stories, Penthouse / 116,161 GSF
Use: Research labs, Office uses, Classrooms, Teaching labs
Occupants: Mechanical and Aerospace Engineering, Electrical Engineering, Material Science and Engineering

Recommendations:

Maintain for research; moderate wet labs can be accommodated, although the building is best suited to dry research.

Interior circulation spaces are grim and lack communal spaces for collaboration and a display space for student projects. Create meeting space for users and improve the appearance facing MLK. The third floor is a good example of how the building can be transformed to be more social through transparency and openness.

Once Sears think[box] vacates the 2nd floor, consider using this area as swing space to enable renovations throughout the building.

White Metallurgical Building

Built 1961 / 7 Stories, Penthouse / 75,290 GSF
Use: Research labs, Office uses, Foundry
Occupants: Mechanical Engineering, Material Science, Foundry

Recommendations:

Maintain for research; dry labs and limited wet labs can be accommodated.

Renovate interiors to create collaborative meeting space facing MLK. The building's blank facade contributes to an austere presence of the university along MLK, which the plan seeks to improve through new gateways and landscape solutions.

Olin

Built 1962 / 8 Stories, Penthouse / 55,299 GSF
Use: Research labs, office uses, limited teaching spaces
Occupants: Computational & Electrical Engineering

Recommendations:

Maintain for dry research use.

Invest in social spaces and consider renovations that improve the exterior facing MLK.

Tomlinson

Built 1948 / 3 Stories, Basement
Use: Classroom, Dining, Office uses
Occupants: Religious studies, university Dining, Graduate Studies

Recommendations:

Maintain and connect lower floor to Crawford Tower renovation to strengthen the dining facility and make it even more accessible

Relocate religious studies to Mather Quad or location proximate to collaborators

Consider as potential location for centralized student services now at Yost

Gund Hall

Built 1971 / 1 and 4 Stories, Two Wings / 124,755 GSF
Use: Classroom, Office uses, Library
Occupants: Law

Recommendations:

Asbestos presents a major challenge for any renovation

Classrooms are mixed in their functionality and require renovations; the tiered structure limits possibilities. Consider major classroom renovation and shared investment and scheduling with Business.

Continuing transforming library stack space into study space.

Parking could be alleviated with underground parking at the CIA site or agreements with institutions in Wade Oval which have lots of parking.

Mandel School of Social and Applied Sciences

Built 1990 / 3 Stories, Basement / 62, 913 GSF
Use: Classroom, Office uses, Library
Occupants: MSASS

Recommendations

Complete the funded renovation

Make courtyard entry accessible from Lucia Nash Walkway and program the courtyard for outdoor gathering spaces

Mandel Center

Built 2007 / 2 Stories, Basement / 25,516 GSF
Use: Classrooms, Office uses, Event spaceOccupants: MSASS

Recommendations:

Maintain for current programming

Consider renovating and converting offices to more flexible, shared office space.

Peter B. Lewis

Built 2002 / 5 Stories, Mezzanine, Basement / 212,139 GSF
Use: Classrooms, Office uses, Event space
Occupants: Weatherhead School of Management

Recommendations:

Consider converting offices to a more flexible, open environment to accommodate growth.

Classrooms are successful and varied, offering a menu of prototypes to guide renovations across campus.

George S. Dively Building

Built 1994 / 2 Stories
Use: Classrooms, Conference, Events, Office Uses
Occupants: Weatherhead School of Management

Recommendations:

Improve administrative areas with better open-office design to include common work space and meeting space.

Nord Hall

Built: 1988 / 6 Stories / 68,262 GSF
Use: Classrooms, Office uses
Occupants: School of Engineering Dean's office, Astronomy

Recommendations:

Maintain for classroom space - remove classrooms from basement locations.

Former Weatherhead School of Management building is suitable for some dry / computational research but not wet research.

Biomedical Research Building

Built 1992 / 12 Stories, Basement / 265,533 GSF
Use: Classrooms, Research labs, Office uses, Cafeteria, Specialized research
Occupants: School of Medicine

Recommendations:

Invest for research in the long term; the eventual need to renovate in phases will require swing space.

Convert office areas into more flexible/collaborative layouts to achieve higher density and better workspace.

Robbins Building

Built 1967 / 8 Stories, Basement / 388,085 GSF
Use: Classrooms, Class labs, Research labs, Library, Office uses
Occupants: School of Medicine

Recommendations:

Invest for long-term research use.

Convert floors 3 and 4 to research use after the HEC opens.

Retain one floor for use as swing space to allow phased building renovations.

Investigate renovating tiered classrooms into other uses.

Consolidate and remove library; replace with study commons and small group meeting areas.

Sears Research Tower

Built 2003 / 8 Stories, Basement / 49,744 GSF
Use: Offices
Occupants: School of Medicine

Recommendations:

Maintain for office and administrative uses.

Wood Research Building

Built 1924 / 4 Stories, Penthouse, Basement, Sub-basement / 213,760 GSF
Use: Research labs, Office uses
Occupants: School of Medicine

Recommendations:

Perform deferred maintenance on building facades.

The building is likely worth investing in for research in the long term; however it will need a major phased renovation.

Wolstein Research Building

Built 2003 / 6 Stories, Basement, Sub-basement / 320,000 GSF
Use: Research labs, Offices, Specialized research, Classroom
Occupants: School of Medicine

Recommendations

Continue to use for research in the long term.

CHANGE:

DeGrace Hall

Built 1897 / 3 Stories / 20,738 GSF
Use: Wet Research and General Academic
Occupants: Biology

Recommendations:

Downcycle and convert to dry or non-lab use – relocate program to a new, shared research facility between A&S and Engineering.

The layout inhibits the resource sharing that makes research funding more efficient and viable. Of all the sciences, biology is perhaps best suited since it tends to use fewer chemicals. If labs must remain, they should be computational or dry. Water issues should be addressed soon to avoid long- term problems.

Potential new occupants include Art, Statistics or Math, all of which are in buildings that could be demolished. If Art, then the need for water and the durability requirements of studios need to be evaluated. Millis is adjacent and would be ideal for wet and vaporous art activities.

Renovate the interior for new occupants, especially in the auditorium on the third floor.

Millis

Built 1962 / 4 Stories, Basement, Mezzanine, Penthouse / 183,766 GSF
Use: General academic, teaching, research
Occupants: Chemistry, Biology

Recommendations:

- Move tenants in north portion of building to new quarters and demolish that portion of the building OR demolish / reconfigure corridors at north end to create large open labs. The former is preferred since the result will be higher quality space (see note).

- Downcycle the south end of the building and convert it to labs without significant ventilation requirements or general academic uses, such as classrooms and offices. Opening up the corridors with glass is a vital part of any renovation. With Chemistry and the addition to Rockefeller demolished, a renovation could open up views between the Hovorka Atrium and Case Quad (see note).

- Teaching labs may lack proper ratios of equipment to students – only 3 or 4 hoods for up to 40 students. This should be part of a comprehensive learning environments study.

Recommendations are different for the north and south parts of the building since the north side is served by a mechanical penthouse, which allows for future lab use while the south part of the building does not.

Note: Millis represents a significant portion of the research portfolio of the College of Arts and Sciences. It has undergone a number of renovations without any transformation of the bleak interiors, awkward entries and poor site relationships. Research labs are crowded and small. Teaching labs are vast and not well designed. That said, it is a workhorse and any renovations or demolition will require significant swing space or new space. The above recommendations are made with the caveat that a feasibility study is needed to weigh the cost and quality of a comprehensive renovation against replacement.

Rockefeller Historic

Built 1905 / 4 Stories / 35,421 GSF
Use: Offices, labs
Occupant: Physics

Recommendations:

Renovate and reuse for office and dry computational lab use.

Demolish addition (see demolition list); build new stair/bathroom core; renovate landscape between Rockefeller and Strosacker.

This building is a signature structure and its prominent location and heroic character befit a use or department that is a central collaborator at the university, such as Math or Statistics. The building is not suitable for wet laboratories.

AW Smith North

Built 1939 and 1956 / 5 Stories, Basement / 85,297 GSF
Use: Offices, Classrooms and Labs
Occupants: Geology, Physics Departments, North Side / Chemical Engineering - South Side1956

AW Smith North Recommendations:

Downcycle and discontinue research.

Conversion to flexible classroom space is supported by structural grid.

Needs a complete renovation with new bathroom/stair core enabled by swing space.

Retain bridge to Kent Hale Smith.

1939 AW Smith South Recommendations:

Demolish. Its poor structural integrity and small floor area make it a poor choice for renovation. Removal strengthens Case Quad connection to Medical Research across Adelbert Road.

The university cannot decide what to do with AW Smith. Lack of swing space prevents its demolition or renewal. Earlier studies considered a new building on this site, which would also be supported by this Campus Master Plan, assuming the new occupants would be researchers in need of service-intensive space from the College of Engineering or College of Arts and Sciences.

Bellflower

Built: Historic House, Renovated in 1988 / 3 Stories, Basement / 5,693 GSF
Use: Offices, Student Initiatives
Occupants: Writing center

Recommendations:

Maintain the writing center.

Convert to use for student life activities.

Convert to residential use for visiting faculty.

The writing center is far from the South Residential Village (SRV) and should be more aligned with other academic support initiatives. That said, if this location is a big success, relocating the writing center might not be advised. At the time of this report, the writing center is new in this location.

Haydn Hall

Built: 1902 / 4 Stories, Basement / 24,277 GSF
Use: Offices, Music practice rooms, Music library
Occupants: Music

Recommendations:

Haydn Hall needs immediate renovation and repairs. Repairs that can be made while the building is occupied should begin as soon as possible.

The building also needs a comprehensive renovation with new MEP/FP systems, major accessibility upgrades, interior finish restoration and replacement, exterior waterproofing, window and roof repairs. Occupants must vacate the building to realistically permit such a comprehensive renovation. The music department is expected to move to the Maltz Performing Arts Center (MPAC), which would be the ideal time to begin renovations. Otherwise, ithe CIA building be used as swing space.

The plan envisions the building as a mix of office and seminar space on the upper floors with classroom and student study space on the first floor. Some degree of Music space will likely remain, given the distance between Mather Quad and the MPAC. If the music library does not move to the MPAC, it should be shrunken and combined with other library space on campus.

Mather Dance

Built 1907 / 2 Stories, Basement / 14,733 GSF
Use: Dance studios and office uses
Occupants: Department of Dance

Recommendations:

Convert former gymnasium to multipurpose space once Dance relocates to MPAC. New uses to consider include flexible assembly/group learning spaces, social and event space.

Aside from contributing architectural character to Mather Quad, this building is valuable for its column-free space and any renovation should strengthen this space.

Mather Dance requires comprehensive renovation, including building systems, exterior improvements to fix leaks below grade and through the windows. A renovation that invests primarily in the gymnasium could avoid the need to add an elevator, which could prove difficult to integrate into the historic building.

Mather House

Built 1913 / 4 Stories, Basement / 22,549 GSF
Use: Office uses, small classroom and seminar rooms
Occupants: Classics, History, Art History

Recommendations:

Mather House is in serious need of immediate renovation and repairs. The only viable way to comprehensively renovate the building is to relocate its occupants temporarily. The plan recommends using swing space at the CIA building.

The building needs a comprehensive renovation with new MEP/FP systems, major accessibility upgrades including a new elevator and restrooms, interior finish restoration, abatement of likely hazardous materials, exterior facade and roof repairs.

The highest and best use of this building is to capitalize on its prime location to locate learning environments on the first floor and office uses on the upper floors.

Bingham

Built: 1927 / 3 Stories, Basement / 113,018 GSF
Use: Research lab, Office uses, Classrooms
Occupants: Civil Engineering, Mechanical Engineering, Center for Micro and Nano Processing

Recommendations:

Downcycle original portions of the building to dry and non-service intensive uses; newer portions can support dry research and limited wet research functions.

Maintain additions and high-bay structures lab for research.

Use shop areas vacated by occupants moving to Sears think[box] for swing space to enable renovations.

Consider relocating the FES biomedical center to a new combined science and engineering facility to better align with collaborative units.

Internal renovations could unite departments within the building. Such renovations should centralize common, shared amenities like meeting rooms, kitchen and faculty lounge areas.

Dental School

Built 1967 / 4 Stories, Basement, Parking below / 143,459 GSF
Use: Classroom, Class lab, Research lab, Office Use, Dental clinic
Occupants: School of Dental Medicine

Recommendations:

HEC will cause the building to be vacated, after which time there are a number of options:

Research swing space for Case Quad renovations (upper floors are suitable for wet lab research space).

Classroom and office swing space for Case Quad renovations.

Consolidate Pathology program here.

Use for swing space to renovate BRB, Robbins, Sears.

Demolish and reserve the site for future research facility.

Nursing

Built 1967 / 4 Stories, Parking, Basement / 87,126 GSF
Use: Classrooms, Office uses, Class labs
Occupants: School of Nursing

Recommendations:

Consolidate all of Nursing at the HEC.

At time of walk-throughs, it was understood that when HEC is complete, approximately 20% of the second floor and +/- 50% of the third floor will be relocated there.

Demolish and reserve site for future research facility.

Use as swing space for office/classroom renovations on Case Quad/Mather Quad.

Not suitable for research labs without major investment.

Building lacks a sprinkler system.

Building lacks a penthouse and lab plumbing.

Sears Library

Built 1960 / 6 Stories, Parking below / 91,579 GSF
Use: Research, wet and dry, Office uses, Classrooms, Library
Occupants: Astronomy, School of Engineering

Recommendations:

Consider removing or consolidating the Astronomy library and converting to study/group work and meeting space for students and faculty.

Downcycle for dry research purposes only; remove wet labs to new multidisciplinary CAS/CSE research buildings.

Candidate for eventual demolition in 10+ years.

DEMOLISH:

Morley Chemistry Laboratory

Empty

Recommendation:

Demolish and transform the site into a vibrant crossroads to enable movement from Adelbert Road to Case Quad.

Eldred

Built: 1897 / 2 Stories / 20,492 GSF
Use: Theaters – 197 Seat Main Stage, Black Box Basement
Occupants: Theater

Recommendations:

Demolish and reuse the site for new anchor buildings on Case Quad

With the construction of the MPAC, the need to maintain theater facilities at Eldred must be evaluated. The building has lost almost all architectural merit with the unfortunate renovations made to address accessibility, which still remains an issue, particularly for the black box theater. Theater spaces are compromised by the lack of decent storage and set construction areas. There are no deed or historic restrictions preventing the demolition of Eldred. If the building must remain, an appropriate use could be a coffee and food venue or pub. An ideal transformation would simplify the building by removing recent additions and creating a single signature space that engages the landscape, thereby activating Case Quad

Rockefeller addition

Built 1958 / 4 STORIES / 28,190 GSF
Use: Offices and laboratories
Occupants: Physics

Rockefeller has an unfortunate addition, which abuts but does not connect internally to Strosacker. The addition dramatically separates Case Quad from views and paths toward Adelbert Road and University Hospitals. There is a tunnel that runs between Rockefeller and Strosacker that students use extensively for east-west access, but this tunnel is narrow and utilitarian; it was never designed for circulation use. The older part of the building is in better shape than this addition. Demolishing the addition would require a new air handling unit for Strosacker since that building is served by systems on the roof of Rockefeller.

In addition to problems of wayfinding and visual connection, the addition is not well suited to laboratory use in the long term and there are better candidates for office and classroom space.

Art studio

Renovated in 2000 / 2 STORIES, BASEMENT / 14,243 GSF
Use: Gallery, Art Studios, Classrooms, Offices
Occupants: Visual Arts

Recommendations:

Relocate art to Case / Mather Quad

Demolish building and reuse site for more strategic purposes related to the district

The Art building is a former restaurant repurposed for academic use. Its distance from campus and poor condition are reasons to limit further investment at this site.

Yost

Built 1951 / 4 Stories, Basement / 56,739 GSF
Use: Classroom, Office uses, Administration, Student Services
Occupants: Math, Registrar, Bursar, Greek Life, Housing

Recommendations:

Demolish to allow better use of strategic building site.

Remove occupants to alternate locations.

Student services could be consolidated at the base of a renovated Crawford Tower or to Tomlinson.

Math could be relocated to space now occupied by tenants of new science/engineering building (Millis, DeGrace, etc.).

Wickenden

Built 1955 / 6 Stories, Penthouse / 78,939 GSF
Use: Research wet lab, dry lab, Office uses
Occupants: Biomedical Engineering

Recommendations:

Demolish and build a shared research facility.

Wickenden has poor floor-to-floor height and was originally designed for art programs. In addition, there is limited flexibility regarding chemical use in the building. The Engineering study is overly optimistic about the reuse of this building.

Fully renovating the building would require swing space for researchers and not result in high-quality research space worth long-term investment.

Building systems are fragmented and inefficient.

Overall building dimensions and small floor-plate is poorly suited to research.

Wickenden is suitable for offices, yet there are no shortage of other suitable buildings.

Institute of Pathology

Built 1929 / 5 Stories, Basement, Sub-basement / 62,348 GSF
Use: Research labs, Office uses
Occupants: School of Medicine / Leased to University Hospitals

Recommendations:

Research uses should be moved to other locations on campus as soon as possible.

Divest/lease building to University Hospitals.


CASE WESTERN RESERVE UNIVERSITY