DUQUESNE UNIVERSITY

Fulfilling the Spiritan Legacy for a New Era

2021-2031 INSTITUTIONAL MASTER PLAN

March 11, 2025

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DUQUESNE UNIVERSITY

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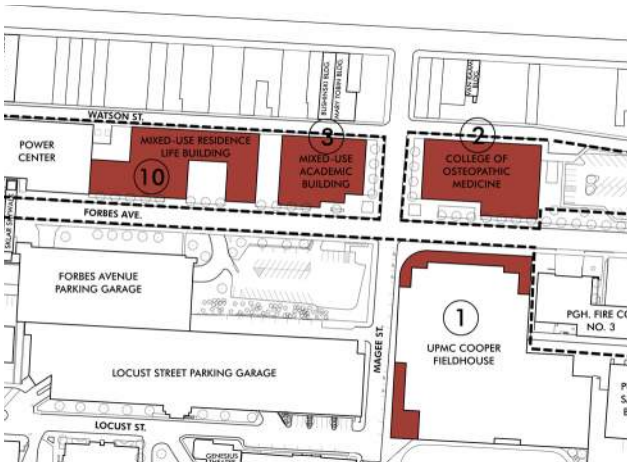
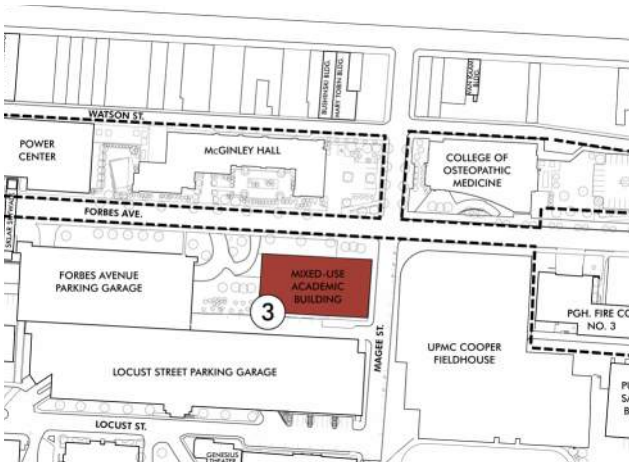


2022 Proposed Ten-Year Development Plan



2025 Proposed Ten-Year Development Plan

Duquesne University's Institutional Master Plan (IMP) was approved in January 2022. Since that time, the University has completed a few key projects: UPMC Cooper Fieldhouse, College of Osteopathic Medicine and Mixed-Use Residence Life Building (McGinley Hall). The placement of McGinley Hall on its parcel deviated slightly from the Proposed Ten-Year Development Plan, which reduced the available area for the Mixed-Use Academic Building on that same block. This results in the University's need to relocate the Mixed-Use Academic Building to a more suitable site.

This IMP Amendment is for the relocation of the **Mixed-Use Academic Building** across the street to the southwest corner of Forbes Avenue and Magee Street. The University has determine that this proposed building shall be the **New Rangos School of Health Sciences**. It will support the growing demands of a modern healthcare education. With advances in medical technology and healthcare practices, our existing facilities are outdated and insufficient to accommodate new learning methods and research needs. Spatial constraints don't allow for increased enrollment or departmental growth. A new state-of-the-art building would provide students with access to cutting-edge labs, simulation centers, and collaborative spaces that mirror real-world healthcare environments. This would not only enhance their learning experiences, but also better prepare them for their future careers. By investing in a new building, the University can attract top-tier faculty and students, further strengthening its reputation in the health sciences field.

Additionally, the new facility can serve as a hub for interdisciplinary collaboration. Health sciences education benefits immensely from integration with other schools within the University. A modern facility designed with flexible spaces can foster innovation and teamwork among students and faculty from diverse disciplines, driving groundbreaking research and solutions to pressing healthcare challenges. It can provide the community with resources for health education, outreach programs, and partnerships with local healthcare providers. It can reinforce the University's commitment to improving public health and well-being. Investing in this project is a strategic move that will pay dividends in terms of educational excellence, research advancements, and community impact.

This IMP Amendment addresses the institution's existing conditions, aspirations, and proposed development plan. Described herein are the guiding values and pivotal projects, which will ensure the University continues to be agile, competitive, and forward-thinking. In meeting its needs and goals, the University stays committed to providing a high-quality education and fostering a supportive atmosphere for students, faculty, and staff.

MISSION & OBJECTIVES 1.1

Duquesne faculty and staff by the Academic Walk fountain

Duquesne University is one of the nation's top Catholic universities, founded 140 years ago by the Congregation of the Holy Spirit. As the only Spiritan institution of higher education in the United States, Duquesne is deeply committed to:

- Educational excellence
- Moral and spiritual values
- An ecumenical atmosphere open to diversity
- Service to the Church, the community, the nation and the world

The Spiritan identity encompasses the core concepts of the Institution:

"The identity of Duquesne University is a modern expression of the Spiritan tradition that the Fathers of the Holy Spirit began here in 1878. Generations of students, faculty and staff continually reshape the face of the school, but our true identity remains unchanged. Duquesne University is a community of scholars who live the Spiritan-led commitment of service to all and who share God's wisdom and academia's knowledge with those who seek it.

Our students, faculty and staff are taught how to use all aspects of the distinctly Duquesne experience to go from our small corner of Pittsburgh out into the larger world where they can serve all peoples in their professional and personal lives."

The Rev. Raymond French, C.S.Sp.
Senior Vice President for Mission and Identity

The Mission of Duquesne University

Duquesne University of the Holy Spirit is a Catholic University, founded by members of the Congregation of the Holy Spirit, the Spiritans, and sustained through a partnership of laity and religious.

Duquesne serves God by serving students through:

- *Commitment to excellence in liberal and professional education*
- *Profound concern for moral and spiritual values*
- *Maintaining an ecumenical atmosphere open to diversity*
- *Service to the Church, the community, the nation and the world*

Since its humble beginnings in 1878 as a school for the children of Pittsburgh's poor immigrants, Duquesne University has sat atop the Bluff between Downtown Pittsburgh, the Uptown corridor and historic Hill District. Since then, it has grown into a thriving, educational and economic powerhouse on approximately 48 acres. Its peaceful setting is nestled by a beautiful, safe, self-contained campus with lots of green spaces and a distinctive view of the city skyline and nearby attractions like Southside Works and Station Square. Today, it boasts nine schools of study offering degree programs at the baccalaureate, professional, masters and doctoral levels.

In keeping with the Catholic-Spiritan vision, the University Core Curriculum emphasizes undergraduate students' intellectual and ethical development through the liberal arts. Using the modes of inquiry particular to the humanities and the social and natural sciences, students expand their self-understanding and their knowledge of the world.

The Catholic commitment to "the integrity of creation," is a profound respect for and fundamental attitude of reverence toward the natural world and its interdependent realms of plant, animal and human life. At Duquesne, we work each day to find new ways to reduce our consumption of natural resources and to promote sustainable living. Achieving these goals—whether through green operations, construction projects, research, academic coursework or community engagement initiatives—is one of the principal ways that we have been able to transform respect for the integrity of creation into action, and honor our Catholic founding in the Spiritan tradition.

Duquesne students collaborating

RE-IMAGINING DUQUESNE'S SPIRITAN LEGACY FOR A NEW ERA

In 2017, Duquesne adopted a strategic plan that came to life as a result of significant involvement of the entire campus community: faculty, staff, students, and administrators. That plan stated that the University would "consider the best interests of our students as the polestar of all decision making."

Any strategic plan's success derives from how it inspires people to make progress. That commitment remains firmly in place. Since adoption of the plan, the University has made progress on each of the five strategic imperatives on which the plan was built.

The plan's title, "Re-Imagining Duquesne's Spiritan Legacy for a New Era," made a bold statement that members of the University community would innovate and challenge one another while building on the founding values that have served the people of Duquesne and our region so well for so long:

Strategic Plan 2018-2023 (dated October 20, 2017)
One hundred forty years ago a small band of visionary priests traveled from Europe to Pittsburgh on a mission—to found a small Catholic college to educate the families of recent immigrants working in the steel mills. Holding classes in rented space above a bakery on Wylie Avenue, the six Holy Ghost priests believed that a rigorous values-based education would provide otherwise unobtainable opportunities for their first group of 40 students. Over time, the priests built a world-class institution of higher education that grew in size and stature to become Duquesne University, educating the healthcare professionals, teachers, judges, financiers, journalists and other professionals who contributed to the rich tapestry of life in the Pittsburgh area and beyond.

We remain in awe of the Founders' commitment and perseverance. In recalling those modest beginnings, we need to consider what those Spiritan Founders would think of the institution to which they gave birth.
Ken Gormley, Duquesne's new president, poses this question: In what ways can Duquesne's strategic priorities reflect the spirit (and the Spirit) that animated founder Fr. Joseph Strub and his colleagues for a new era?

In this document, we set forth five strategic imperatives that align squarely with our heritage yet embrace the challenges of our ever-evolving world. In pursuing these strategic imperatives, Duquesne will advance for an exciting new era its historic mission of providing an education for the mind, the heart and the spirit.

Five Strategic Imperatives:

1. Re-Imagine the Student Experience for 21st Century Success
2. Become Flagship for Community Engagement
3. Transcend Traditional Academic Boundaries
4. Create a Vibrant Campus Community
5. Encourage Entrepreneurial Spirit

1. Re-Imagine the Student Experience for 21st Century Success

Strategic Planning Objectives:

1.1 Consider the best interest of students as the polestar of all decision-making.

1.2 Provide individualized services before, during and after graduation.

1.3 Focus on development and well-being of the whole student.

1.4 Provide a safe, comfortable, interactive living environment that fosters growth of students.

1.5 Incorporate civil discourse and explore positive and negative impacts of new technology.

1.6 Integrate practical applications and experiences into academic offerings.

1.7 Provide first-rate internships and meaningful job/career opportunities.

1.8 Re-imagine career development to address ever-changing job markets.

1.9 Re-engage alumni for internships and job opportunities.

1.10 Create a vibrant campus by supporting the University's athletic programs.

1.11 Recruit and retain students, including students with limited resources.

1.12 Provide a great value in education.

Master Plan Initiatives:

1A. Renovate the UPMC Cooper Fieldhouse (formerly the A.J. Palumbo Center) to include a new front addition and renovation of the existing interior spaces. The enhancements will improve the game day experience and provide the required support spaces for strength and conditioning and academic spaces.

1B. Construct visitor locker rooms at the west end of Arthur J. Rooney Field with support space and roof-top viewing deck.

1C. Construct new Arthur J. Rooney Field Press Box.

1D. Add new perimeter wall and landscaping around north side of Arthur J. Rooney Field and stands with gates.

1E. Add new athletic offices to the southwest corner of the Duquesne Towers.

Duquesne students studying in a residence hall lounge (left) and a student and advisor collaborating (right)

2. Become Flagship for Community Engagement

Strategic Planning Objectives:

2.1 Refashion and broaden its community engagement initiatives, developing mutually beneficial alliances focusing on the Hill District, Uptown, the Mon Valley and other underserved areas.

2.2 Enhance community engagement initiatives to promote civic awareness.

2.3 Play a central role in the Uptown EcoInnovation District.

2.4 Collaborate with the Diocese of Pittsburgh to assist its lay associates.

2.5 Develop creative programs for students in diocesan and public schools and educational programming for senior citizens.

2.6 Expand global engagement by solidifying relationships in Africa and explore new connections in areas where Spiritans are present or needed.

2.7 Expose students to languages, cultures and religions that differ from their own.

2.8 Ensure opportunities for international and intercultural experiences.

Master Plan Initiatives:

2A. Develop a community engagement plan to implement long-range vision and strategies for vacant properties along the Fifth Avenue commercial corridor between Boyd and Stevenson Streets.

2B. Demolition of an existing structure to create a green space/plaza to promote a gateway to the Uptown communities.

2C. Create a new mass-transit street-side station on the south side of Forbes Avenue, west of Chatham Square, in conjunction with the new BRT (Bus Rapid Transit) system.

2D. Foster continued partnerships with the Green Building Alliance, the Uptown EcoInnovation District (EID) and other members of the Uptown Task Force.

3. Transcend Traditional Academic Boundaries

Strategic Planning Objectives:

3.1 Create an innovative center for interprofessional education in health-related fields.

3.2 Expand existing health sciences programs.

3.3 Explore building a "DU Simulation Hospital."

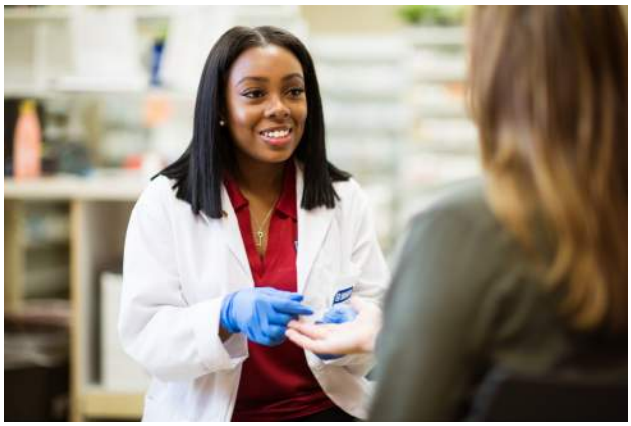
3.4 Explore developing interdisciplinary programs including information technology, informatics, data analytics, sustainability and other areas.

3.5 Explore creating a "Center for Artificial Intelligence, Technology and Ethics."

3.6 Create other interdisciplinary programs across traditional academic boundaries.

Master Plan Initiatives:

3A. Construct new College of Osteopathic Medicine for classrooms, laboratories, medical, offices and auxiliary uses for health sciences and interdisciplinary academic uses.



Forbes Avenue is where Duquesne's campus engages the surrounding community (left), a student works in a public outreach health program (top right) and students collaborate with their professor (bottom right)

4. Create a Vibrant Campus Community

Strategic Planning Objectives:

4.1 Recruit, hire and retain a talented, diverse, productive and dedicated community of teachers and staff.

4.2 Cultivate a culture of diversity and inclusion in recruitment, hiring and programming across campus.

4.3 Refocus support for teaching excellence and pedagogical originality.

4.4 Redefine the Office of Research.

4.5 Make available to faculty and staff opportunities for personal and professional growth.

4.5 Create a new Staff Advisory Council (task completed).

Photovoltaic panels on the roof of Des Places Residence Hall

Master Plan Initiatives:

4A. Construct and/or renovate new state-of-the-art academic and athletic facilities to recruit, hire and retain a talented community of teachers and staff.

4B. Foster diversity by creating opportunities that promote personal and professional growth.

5. Encourage Entrepreneurial Spirit

Strategic Planning Objectives:

5.1 Grow by expanding innovative curricular offerings.

5.2 Remain on the cutting edge of higher education and establish a niche as a regional, national and international leader.

5.3 Become nationally known for outstanding enrollment management services.

5.4 Engage all University stakeholders to pursue sustained endowment growth.

5.5 Develop, manage, maintain, use and/or liquidate University assets for institutional growth.

5.6 Maintain, enhance and beautify the physical plant for present and future generations.

5.7 Monitor emergent technologies and adapt accordingly.

5.8 Broaden public appreciation for Duquesne as a leading Catholic, Spiritan university in marketing and communications.

5.9 Explore regional learning alliances and educational partnerships beyond the campus.

5.10 Engage in outcomes assessment in all areas of the University's operation to achieve continuous improvement.

5.11 Place a high value on sustainability.

5.12 Annually assess and revise the current Strategic Plan, evaluating its outcomes as a measure of success in its implementation.

Master Plan Initiatives:

5A. Continue implementing sustainable practices and develop new procedures for future initiatives.

5B. Continue to explore other possibilities for Public-Private Partnerships on campus.

5C. Duquesne University supports the Uptown EcoInnovation Plan and has used it as one of our many guiding principles for our IMP in addition to the EMI Zone requirements

6. Uphold High Environmental Standards

Strategic Planning Objectives:

6.1 Transportation strategies that encourage community connectivity and decrease car dependency

6.2 Optimization of energy consumption

6.3 Sustainability and resiliency

6.4 Stormwater management that supports the city efforts to control the impacts of increasing rainfall events.

6.5 Support local economy

6.6 Translate the University's national reputation into regional prosperity

Master Plan Initiatives:

6A. Implementation of a multi-faceted approach to increase multi-modal transportation options for students, faculty and staff on campus while reducing the use of single occupant vehicles

6B. Encourage partnerships with district energy providers to ensure optimal use of energy infrastructure.

6C. Incorporate passive design strategies to building developments to decrease energy consumption.

6D. Incentivize building construction, maintenance and operations to follow sustainable practices based on established rating systems such as LEED.

6E. Further develop the operational response plans to address to the shocks and stresses that affect the University's infrastructure and support the neighboring communities.

6F. Strengthen the University's long term goals of increased capture and treatment of storm runoff volumes.

6G. Encourage MBE & WBE inclusion and align practices with EcoInnovation goals.

6H. Prioritize use of local task force.

6I. Promote community engagement through mutually beneficial partnerships that advance the city, the region and the world.

1.2 REQUIREMENTS

Per Chapter 905: Special Purpose Districts, subsection 905.03 - EMI, Educational/Medical Institution District, the land within Duquesne University's EMI District *"shall be developed in accordance with an approved Institutional Master Plan which shall contain a detailed description of the site development standards and the design standards applicable within the subject EMI District."*

As requested by the City of Pittsburgh, the scope and extent of the *"development standards and design standards"* required by the City of Pittsburgh, Pennsylvania Code of Ordinances as defined by the Pittsburgh Zoning Code has been adjusted and expanded based on recommendations outlined in the document titled *"Pittsburgh Department of City Planning IMP Best Practices Guide: Medium and Large Academic Institutions."*

Duquesne University is the first school to complete an Institutional Master Plan that conforms to this new document. The University has worked closely with the City to review, understand and implement the directives of the new Guide. While the precise extent of the IMP Best Practices Guide may not have been reached due to limited information, resources or other such influences, the planning process has met the intent of the Guide to *"increase understanding of the Institutional Master Plan (IMP) requirements in the zoning code and how best to meet them through land use, mobility, energy, and environmental planning."*

Duquesne University supports the Uptown EcoInnovation Plan and has used it as one of our many guiding principles for our IMP in addition to the EMI Zone requirements.

Duquesne University has also participated in the City of Pittsburgh's IMP Performance Targeting process. This collaborative process consisted of three meetings including the City, the University and the University's consultants in order to develop aspirational targets regarding energy, green infrastructure and landscape, mobility and neighborhood enhancement. These meetings were conducted at the Department of City Planning on:

- November 28, 2018 @ 11:00am
- January 4, 2019 @ 10:00am, and
- November 22, 2019 @ 11:00am

Separate coordination meetings were held with various agencies per the City's request. A complete list of meetings is included in Section 1.4.

This report has also been organized as outlined by the IMP Best Practices Guide, and the following chart drawn from the Guide's Appendices *"identifies each IMP requirement in the Zoning Code and which section of the IMP is intended to fulfill that requirement."*

Please see the Table of Contents for a complete list of sections included in this document.

IMP Best Practices Guide Table 1: How Zoning Code Requirements are Satisfied by the IMP Best Practices Guide

Zoning Code Requirement	IMP Best Practices Guide Section
Planning Horizon	None
Mission and Objectives	1.1 Mission and Objectives 4. Long-Term Vision and Growth 8. Neighborhood Enhancement Strategy
Existing Property and Uses	2.2 Existing Property and Uses
Needs of the Institution	3.2 Current and Future Needs for Facilities
Ten-Year Development Envelope	5.1 Proposed Development
Twenty-five Year Development Sites	4.1 Twenty-Five Year Development Sites
Transportation Management Plan	6. Mobility Plan
Environmental Protection Plan	7.2 Environmental Protection
Open Space and Pedestrian Circulation Plan	7.7 Open Spaces and Pedestrian Circulation
Urban Design Guidelines	5.3 Urban Design Guidelines
Neighborhood Protection Strategy	8. Neighborhood Enhancement Strategy

PLANNING CONTEXT 1.3

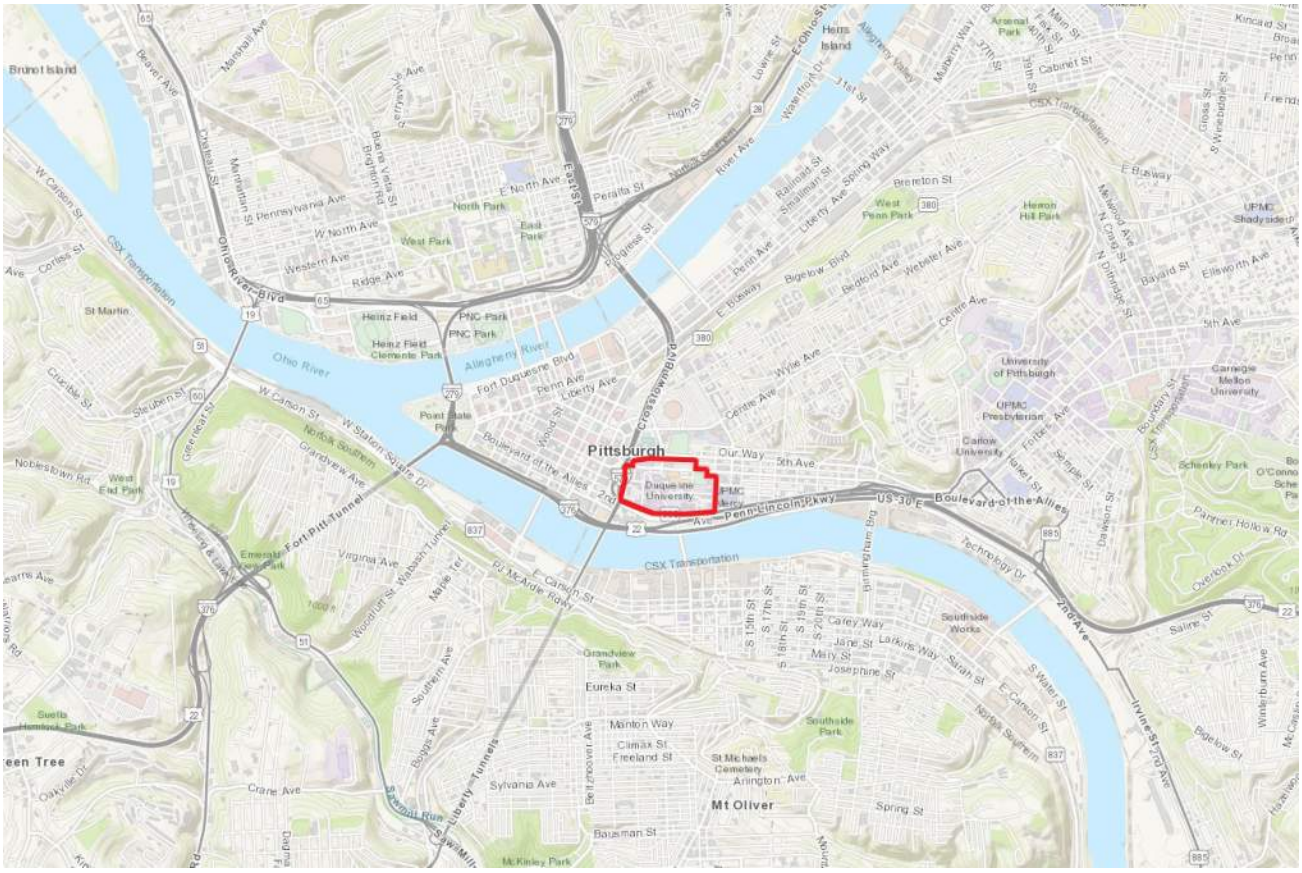


Figure 1.1: Pittsburgh Area

CAMPUS CONTEXT

Duquesne University's setting and natural beauty are key features with regard to student recruitment and retention. The campus sits mostly on an elevated plateau (the "Bluff") on the east side of downtown Pittsburgh. This location provides numerous views of downtown Pittsburgh to the west and north, as well as a sweeping vista over the Monongahela River Valley and the Southside neighborhoods to the south.

In the map above, the red line outlines the City of Pittsburgh's zoned EMI District that encompasses Duquesne University.

The campus is bounded on two sides by major highways. I-579, to the west, separates campus from Downtown Pittsburgh. The Boulevard of the Allies and I-376 separate campus from the Monongahela River, to the south. Approximately 180 feet of elevation change also separate the southern edge of campus from the river's edge.

The location of Duquesne University's campus provides easy access to numerous local amenities and to the regional network of highways. The proximity to downtown Pittsburgh and to PPG Paints Arena can result in heavy traffic surrounding the campus.

Duquesne University's location along Fifth and Forbes Avenues also provides a connection to other institutions of higher education, including Carlow University, the University of Pittsburgh and Carnegie Mellon University.

Large scale and small scale structures surround the campus. The Allegheny County Jail sits southwest of campus, by the river. PPG Paints Arena, home of the Pittsburgh Penguins, sits just north of campus. These facilities are contrasted by the narrow, two- to six-story structures that still make up much of the Fifth Avenue street front.

1.3.1 DUQUESNE UNIVERSITY HISTORY

Duquesne University was founded in 1878 by a group of Catholic missionaries known as the Spiritans. From humble beginnings as a school for the children of Pittsburgh's poor immigrants, Duquesne today is an educational and economic powerhouse comprising nine schools of study that serve nearly 9,300 students. Some of the University's historic milestones* include:

- Duquesne was founded on October 1, 1878, as Pittsburgh Catholic College by the Rev. Joseph Strub and the Congregation of the Holy Ghost. The College's 40 students and six faculty members held classes in rented space above a bakery on Wylie Avenue, in Pittsburgh's Hill District.
- Duquesne's original "Old Main" building was constructed in 1885, as a result of the University's growth. This five-story red brick landmark was, for years, the highest point on the Pittsburgh skyline. It is still actively used as the administrative building on campus.
- On May 27, 1911, the name was changed to Duquesne University of the Holy Ghost. The University's first professional school, the School of Law, was also established this year.
- Over the next three decades, Duquesne established five additional schools: Business, Pharmacy, Music, Education and Nursing.
- Assumption Hall opened in 1950 as the first student dormitory.
- Between 1950 and 1980, the University underwent a period of development as College Hall, Mellon Hall, Rockwell Hall, the School of Music, the library and the Student Union were constructed. Additionally, four more dormitories were built to accommodate the influx of new students to the University.
- During the 1980s the School of Law was expanded and construction began on the UPMC Cooper Fieldhouse (formerly the A.J. Palumbo Center).
- Between 1990 and 2001, the University opened its first new schools in 50 years: the John G. Rangos Sr. School of Health Sciences, the Bayer School of Natural and Environmental Sciences and the School of Leadership and Professional Advancement. New spaces for classrooms, offices and residence halls, parking garages and the Arthur J. Rooney Athletic Field were also developed.
- On June 18, 2002, the name was changed to Duquesne University of the Holy Spirit.
- In January 2008, Duquesne expanded its footprint onto Forbes Avenue with the dedication of the Power Center. This new five-story building, named for Duquesne's first president, Spiritan Fr. William Patrick Power, includes an 80,000 square-foot fitness center, banquet facilities, retail shops, a restaurant and a Barnes & Noble bookstore.
- In 2010, Duquesne began construction on a new 12-story Des Places Residence Hall for junior, senior, graduate and law students. The University also purchased an eight-story academic building at 600 Fifth Avenue and dedicated it as Libermann Hall. The purchase of Libermann Hall doubled the size of the University's classroom space.
- Students moved into Des Places Residence Hall in the fall of 2012.
- The Genesius Theater was dedicated in August 2015 to be used by Duquesne University's Red Masquers, Spotlight Musical Theater Company and Mary Pappert School of Music ensembles for performances, as well as a space for production classes.
- Recent efforts to improve University operations and financial stability include the sale of Brottier Hall, the Energy Center and St. Martin Hall.
- Duquesne again expanded its footprint along Forbes Avenue in May 2020 with the purchase of the former Life's Work of Western PA property.

**Compiled, in part, from "The Spirit That Gives Life: The History of Duquesne University," 1878-1996, by Joseph F. Rishel.*

Duquesne University students

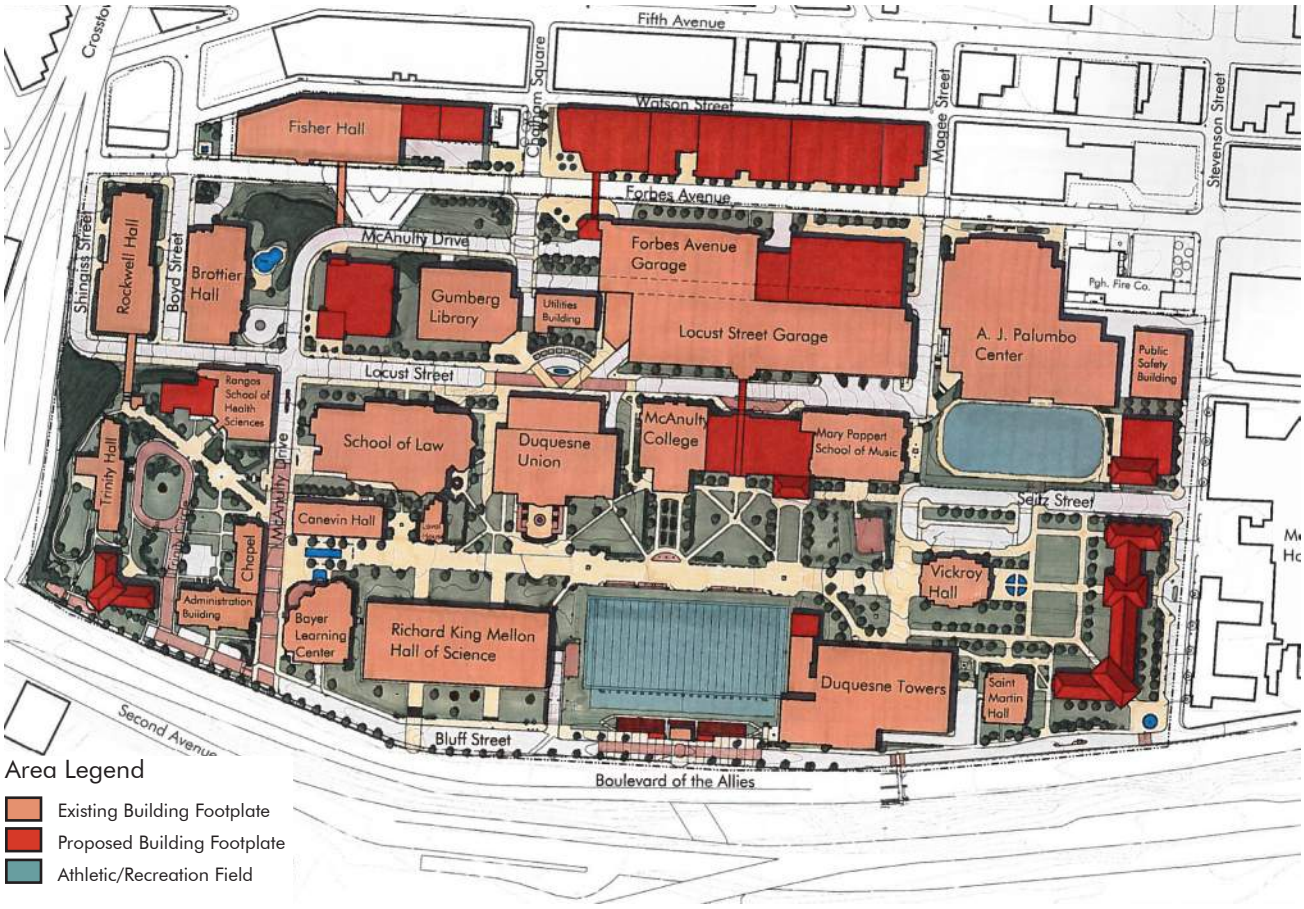


Figure 1.2: 2005 Duquesne University Institutional Master Plan

1.3.2 PREVIOUS IMP

Duquesne University's previous master plan was issued in February 2004, with an effective date of June 2005. It was amended in March 2010.

The previous plan set out to meet the needs of a growing campus population (projected to increase from 9,600 to 10,500 students), enhance the quality of the campus and implement initiatives that would fulfill Duquesne's Strategic Plan Goals.

Many of the proposed projects, outlined further in the following section "Recently Implemented Projects," have already been completed.

Plans for several other projects have been abandoned, including the addition to the Rangos School of Health Sciences. Vertical expansions to Bayer Hall and Rockwell Hall will no longer be pursued due to complicated construction and phasing logistics, though the Vickroy Hall vertical expansion remains as a potential project.

The plan to replace St. Ann and Assumption Residence Halls with a new South Residence Hall on the same site and the plan for a new residence hall along Forbes Avenue have both been abandoned.

No plans currently exist to expand Fisher Hall, and the Forbes Avenue Garage expansion has also been abandoned. The proposed Multi-Purpose Building on the Trinity Green and the College Hall expansion will also no longer be pursued.

Planning of a mixed-use academic facility on Forbes Avenue (now identified as the College of Osteopathic Medicine), have been carried into this new IMP.

Projects that were implemented have been very successful, though the Des Places Residence Hall did require an amendment (2010) to the IMP for additional height.

The biggest obstacle to implementation of the previous plan was the lack of student population growth, now approximately 9,300 students. This is expected to continue, and as a result, current planning is more conservative.

CHANGES TO THE INSTITUTION

In addition to the last Institutional Master Plan and the recently implemented projects, several changes to the University have also occurred. These changes reflect the University's investment in several mission-specific and market-responsive initiatives, strategies to reduce duplication and response to economic challenges.

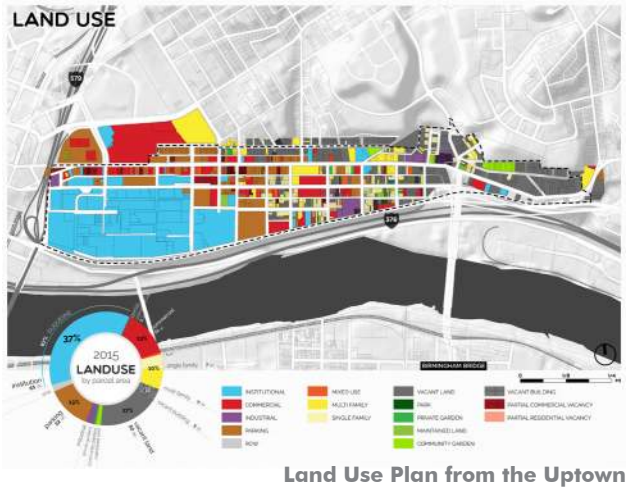
- In 2010, the University realigned investment in athletic programs to comply with Title IX requirements.
- In 2011, the University sold WDUQ radio station to a joint venture partnership composed of a Pittsburgh independent radio station and a national nonprofit aimed at building public media services.
- In the fall of 2014, Duquesne University launched a new Biomedical Engineering (BME) bachelor's degree program. The BME program has expanded to include the first BS in Biomedical Engineering and BS in Nursing in the country as well as a graduate program.
- In August 2015, the School of Leadership and Professional Advancement closed, and its degrees and other programs were absorbed into other schools. From that, the establishment of a campus-wide e-learning initiative strengthened existing programs and broadened online offerings, creating accessible online platforms for both traditional and non-traditional undergraduate and graduate students.
- In 2015, because of the many ways Duquesne engages with its broader communities through teaching, research, student volunteerism, economic development involvement and public-serving centers and institutes, the University was again selected as one of the nation's few institutions to receive the Carnegie Foundation for the Advancement of Teaching's Community Engagement Classification. At that time Duquesne was the only institution in western Pennsylvania to receive that designation.
- In 2016, the Tamburitzans separated from Duquesne University to become an independent nonprofit, allowing the group to expand its recruitment efforts beyond the University.
- In 2016, Duquesne's president, Charles Dougherty, retired after a 15-year tenure.
- In July 2016, Ken Gormley, J.D. became the University's 13th president.
- In September 2017, the University announced its new strategic plan for 2018-2023.
- In 2017, the University entered into a partnership with the City of Pittsburgh to serve as the convener of the Uptown Task Force.
- On September 1, 2017 the University created a Vice President for Community Engagement position and hired William Generett Jr., J.D.
- On July 1, 2018 Dr. David Dausey assumed the role of Provost.
- In 2018, Duquesne University entered into its first public-private partnership (P3) with Radnor Property Group and Harrison Street, selling Brottier Hall.
- In February 2018, the University announced the creation of the Office of Community Engagement.
- In 2018, the University began exploring an agreement with Cordia to promote operational efficiency and align with the Uptown/West Oakland EcoInnovation District goals.
- In 2019, the University sold its energy center to Cordia and entered into a long-term Energy Service Agreement. Cordia is responsible for managing the facility and plans to interconnect the Uptown plant to maximize efficiency and to monetize the excess steam capacity at Duquesne University.
- In May 2020, Duquesne University entered into another P3 with Radnor Property Group and Harrison Street, selling St. Martin Hall.
- In May 2020, the University purchased the former Life's Work of Western PA property bound by Magee Street, Forbes Avenue, Stevenson Street and Watson Street.
- In November 2020, the University completed renovations to the UPMC Cooper Fieldhouse.
- In December 2023, the University completed construction of the new College of Osteopathic Medicine, located on the corner of Forbes and Magee Streets.
- In August 2024, McGinley Hall opened for students under the P3 partnership with HSRE and RPG.

1.3.3 OTHER PLANNING EFFORTS

Building upon the strengths of the previous administration, the University's new president, Ken Gormley, initiated a new Strategic Plan for 2018-2023, affirming the University's mission as a Catholic, Spiritan University through five strategic imperatives:

1. Duquesne will identify bold pathways to offer students the knowledge and skills they will need for productive and fulfilling lives and careers in the 21st century
2. Duquesne will become the region's flagship institution for community engagement through mutually beneficial partnerships that advance the city, the region and the world
3. Duquesne's academic programs will transcend traditional boundaries, positioning it as a leader in interdisciplinary and interprofessional programs
4. Duquesne will create a vibrant campus community that fosters the achievements of its talented students, faculty and staff
5. Duquesne will encourage an entrepreneurial spirit that will allow it to creatively steward University assets, adapt to changing environments and enhance its financial vitality to fulfill its mission for a new era

Aligning with Strategic Imperative #2, the University joined with the City of Pittsburgh and business, neighborhood and nonprofit groups to help develop Pittsburgh's first EcoInnovation District along the Forbes and Fifth Avenue corridors. The groundbreaking initiative will create a new model for urban growth that is inclusive, innovative and environmentally sound in Pittsburgh's Uptown and West Oakland neighborhoods.



Land Use Plan from the Uptown EcoInnovation District Plan

At the request of City Planning, Duquesne is also the convener of the Uptown Task Force, which includes representatives from Uptown organizations and other groups that will play a key role in implementing the Uptown EcoInnovation District plan. The goal of the Task Force is to represent the community's diverse interests, including those of residents, institutions, nonprofits, service providers, businesses, entertainment venues, large landowners and energy providers.

In addition, the University has met with the Hill CDC, the registered community organization for the Hill District of Pittsburgh, to discuss ideas between the University's Master Plan projects and the Hill CDC's vision to support collaborative economic development activity in the neighborhood.

Sustainability is intrinsic to Duquesne University's mission – a charge that encompasses what our Spiritan sponsors call the "integrity of creation," a profound respect for God's gift to the world. Duquesne's progressive efforts to achieve, maintain and advance high environmental standards began decades ago, and we remain committed to the continual implementation of sustainable principles in the management and development of our campus.

Some of our sustainability group memberships include:

- Green Building Alliance (GBA)
- International District Energy Association (IDEA)
- Association of Physical Plant Administrators (APPA)
- Higher Education Climate Consortium (HECC)
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- Building Owners and Managers Association (BOMA)
- International Facility Management Association (IFMA)
- Construction Owners Association of America (COAA)

Partnering with The Pittsburgh 2030 District was a natural fit for wrapping into the University's mission of serving as a responsible steward of natural resources, aiming for 50% reductions in energy use, water use and transportation emissions by the year 2030.

These initiatives and planning engagements established the University's intent for this Institutional Master Plan and enable vast opportunities that will positively transform the campus and its surrounding communities.

1.4 PROCESS

View from atop the Locust Street Parking Garage

Duquesne University had begun an integrated campus planning process several years in advance of preparing this Institutional Master Plan for the City of Pittsburgh. Completing its Strategic Plan "Re-Imagining Duquesne's Spiritan Legacy For a New Era: Strategic Plan 2018-2023" in late 2017, much forethought and consideration regarding the University's overall direction and need had already been established. Beginning in the early spring of 2018, Duquesne kicked off a formal three-phase campus planning project in order to translate the Strategic Plan mission and objectives into an Institutional Master Plan to be submitted to the City of Pittsburgh for approval.

Along with the Mayor's Office, councilpersons and City Planning Department, Duquesne will continue to engage both neighborhood groups such as the Hill CDC, Uptown Partners Board, and the Uptown Task Force and neighboring institutions such as UPMC Mercy, Life's Work of Western PA and the Pittsburgh Penguins. All relevant constituents and stakeholders will be notified of the need for any changes upon the University's determination that a formal amendment to the IMP will be necessary. As with this IMP process, focus groups and open forums will be conducted to ensure proper outreach and engagement, and all meeting minutes will be included in the amendment report.

Phase 1: The Documentation phase of work began this process with an updated assessment of existing conditions, including changes to the physical campus since the previous IMP; academic, athletic and student life programmatic needs; and outside influences from City zoning to neighborhood partnerships and outreach. All ongoing and active planning efforts were assessed together to establish an overarching framework of need, along with a preliminary understanding of University priorities.

Phase 2: During the Recommendations phase of work, all proposed projects were consolidated into a single, unified vision and adjusted within that context. Less defined, long-range options were explored and developed based upon the University's updated visioning. Further in-depth analysis and assessment of infrastructure, landscape, mobility, campus design and public art were translated into guidelines and recommendations to be applied to all future implementation. A detailed review

of the Uptown EcoInnovation District plan, preliminary community outreach and early phases of coordination with the City of Pittsburgh were conducted in order to ensure that the University's planning was in line with its mission of community engagement and support.

Phase 3: Beyond translating all of the data gathering and recommendations into a finalized graphic and narrative report, the Final Report phase included extensive internal review, community outreach and dialogue with local officials in order to confirm, amend and finalize all aspects of the Duquesne University Institutional Master Plan. This extensive review process revisited key issues such as Performance Targets with the City of Pittsburgh and established the proposed Fifth Avenue Commercial Corridor Community Development Plan initiative with the Uptown Stakeholders. This phase culminated with the official City review and approval process that led to the acceptance of this 2019 Institutional Master Plan for Duquesne University.

Team

The Institutional Master Plan was a result of a collaboration between Duquesne University internal staff, Facilities Management, Finance and Business and professional consultants. WTW Architects led the planning process with contribution from Trans Associates, Gateway Engineers and UpStudio Landscapes.

Amendment Process

Should the Institutional Master Plan need to be amended during the ten-year planning window, Duquesne University would work with the City of Pittsburgh to conduct all necessary reviews and approvals. As with the original planning process, Duquesne would include all internal constituents, local partners and City officials in order to garner feedback and understand the impacts of the needed changes.

PROCESS SCHEDULE & MEETINGS

PHASE I: DOCUMENTATION	**4/10/18**
Pre-City Planning Kick-Off*	4/10/18
City Planning Kick-Off*	4/11/18
Campus Tours	5/16/18
Findings with Core Committee	5/23/18
PHASE II: RECOMMENDATIONS	**6/6/18**
Conference Call: Recommendations Overview	7/3/18
City Planning Review	9/21/18
Core Committee Progress	9/24/18
President's Cabinet Update	9/26/18
Core Committee Progress	10/12/18
University Deans - IMP Meeting	10/12/18
City Council President Bruce Kraus - IMP Review	10/16/18
Mayor's Chief of Staff Dan Gilman - IMP Review	10/25/18
City Planning Review	10/26/18
PPG Paints Arena & Pittsburgh Penguins - IMP Presentation	10/30/18
Uptown Task Force - IMP Presentation	11/1/18
Uptown Partners Board - IMP Presentation	11/5/18
Faculty Senate - IMP Meeting	11/6/18
Councilperson Corey O'Connor - IMP Review	11/7/18
Business Management Council Group - IMP Meeting	11/8/18
Community Meeting - Kickoff	11/12/18
PPG Paints Arena & Pittsburgh Penguins - IMP Presentation	11/12/18
Councilperson Anthony Coghill - IMP Review	11/20/18
Councilperson Deb Gross - IMP Review	11/26/18
City Planning - IMP Performance Target Meeting #1	11/28/18
Councilperson Erika Strassburger - IMP Review	11/28/18
UPMC Mercy - IMP Presentation	11/29/18
PPG Paints Arena & Pittsburgh Penguins - IMP Presentation	12/5/18
Councilperson Daniel Lavelle - IMP Review	12/7/18
Faculty Senate Executive Committee - IMP Meeting	12/10/18
City Planning - Stormwater	12/11/18
Budget Committee - IMP Meeting	12/13/18
Community Meeting - Kickoff	12/17/18
City Planning - Energy	12/17/18
City Planning - IMP Performance Target Meeting #2	1/4/19
City Planning - Gateway Park	1/15/19
Enrollment Management Group - IMP Meeting	2/15/19
City Planning - Public Art	3/11/19
University Cabinet - IMP Meeting	3/27/19
TDM Visioning Workshop by the SW Pennsylvania Comm.	4/5/19
Pittsburgh Downtown Partnership - IMP Meeting	4/9/19
Uptown Partners Board - IMP Revisions Meeting	7/1/19
Summer Uptown Community Meeting - IMP Revisions Meeting	8/12/19
City Planning - IMP Performance Target Meeting #3	11/22/19
DOMI and Port Authority - Mobility Meeting	1/13/20
Uptown Partners Meeting - IMP Meeting	2/10/20
GBA and City Plannining - Energy Meeting	2/19/20
PWSA and City Planning - Stormwater / Landscaping Mtg.	3/11/20
PHASE III: DRAFT SUBMITTED	**4/17/20**
DRAFT SUBMITTED	**6/26/20**
DRAFT SUBMITTED	**4/1/21**
IMP Approved	**1/12/22**
Pre-Application Meeting for Amendments	**5/24/22**

PUBLIC ENGAGEMENT SUMMARY

Throughout the process, the University was committed to transparency within the institution and met with community stakeholders to gather insight and foster healthy relationships. The University met with internal faculty and staff, City of Pittsburgh's Department of City Planning, City of Pittsburgh Council and community stakeholders to present their master plan initiatives.

Department of City Planning Meetings:

- Duquesne University Institutional Master Plan Discussion – September 21, 2018
- Duquesne University Institutional Master Plan Discussion – October 26, 2018
- Institutional Master Plan Performance Targets Meeting #1 – November 28, 2018
- Institutional Master Plan Best Practices Stormwater Follow-Up Meeting – December 11, 2018
- Institutional Master Plan Best Practices Energy Follow-Up Meeting – December 17, 2018
- Institutional Master Plan Performance Targets Meeting #2 – January 4, 2019
- Institutional Master Plan Performance Targets Gateway Park Follow-Up Meeting – January 15, 2019
- Duquesne University Best Practices Public Art Meeting – March 11, 2019
- Institutional Master Plan Performance Targets Meeting #3 – November 22, 2019
- Institutional Master Plan Best Practices Mobility Follow-Up Meeting with DOMI and Port Authority – January 13, 2020
- Institutional Master Plan Best Practices Energy Follow-Up Meeting with Green Building Alliance and Department of City Planning – February 19, 2020
- Institutional Master Plan Best Practices Stormwater/Landscaping Meeting with PWSA and Department of City Planning – March 11, 2020
- Institutional Master Plan TIS Scoping Meeting with DOMI - September 29, 2022

Public Meetings:

- Institutional Master Plan Kick-Off Community Meeting – November 12, 2018
- Institutional Master Plan Kick-Off Community Meeting – December 17, 2018
- TDM Visioning Workshop by the Southwestern Pennsylvania Commission – April 5, 2019
- Institutional Master Plan Meeting with Pittsburgh Downtown Partnership – April 9, 2019
- Institutional Master Plan Summer Uptown Community Meeting – August 12, 2019
- Institutional Master Plan Uptown Partners Meeting – February 10, 2020

City and Community Partner Meetings:

- Institutional Master Plan Presentation with PPG Paints Arena and Pittsburgh Penguins – October 30, 2018
- Institutional Master Plan Presentation to the Uptown Task Force – November 1, 2018
- Institutional Master Plan Presentation to the Uptown Partners Board – November 5, 2018
- Institutional Master Plan Presentation with PPG Paints Arena and Pittsburgh Penguins – November 12, 2018
- Institutional Master Plan Presentation with UPMC Mercy – November 29, 2018
- Institutional Master Plan Presentation with Life's Work of Western PA – December 5, 2018
- Institutional Master Plan Revisions Meeting with Uptown Partners Board – July 1, 2019
- Institutional Master Plan Presentation Meeting with Hill CDC - July 20, 2020
- Institutional Master Plan Presentation Meeting with Hill CDC - August 11, 2020
- Institutional Master Plan Development Activities Meeting (DAM) - August 24, 2020
- Institutional Master Plan Presentation Meeting with Uptown Partners - September 3, 2020
- Institutional Master Plan Meeting with Port Authority - February 16, 2021
- Institutional Master Plan Community Meeting with Uptown Partners - March 31, 2021
- Institutional Master Plan Presentation Meeting with Hill CDC - 5/23/2022
- Institutional Master Plan Development Activities Meeting (DAM) - September 19, 2022

Additional City Council and Mayor's Office Meetings:

- Institutional Master Plan Review with Council President Bruce Kraus – October 16, 2018
- Institutional Master Plan Review with Mayor's Chief of Staff Dan Gilman – October 25, 2018

(continued on next page)

- Institutional Master Plan Review with Councilman Corey O'Connor – November 7, 2018
- Institutional Master Plan Review with Councilman Anthony Coghill – November 20, 2018
- Institutional Master Plan Review with Councilwoman Deb Gross – November 26, 2018
- Institutional Master Plan Review with Councilperson Erika Strassburger – November 28, 2018
- Institutional Master Plan Review with Councilman Daniel Lavelle – December 7, 2018

Internal Meetings:

- Meeting with University Deans – October 12, 2018
- Meeting with Faculty Senate – November 6, 2018
- Meeting with Business Management Council Group – November 8, 2018
- Meeting with Faculty Senate Executive Committee – December 10, 2018
- Meeting with Budget Committee – December 13, 2018
- Meeting with Enrollment Management Group – February 15, 2019
- Meeting with University Cabinet – March 27, 2019

2.1 IMP BOUNDARY

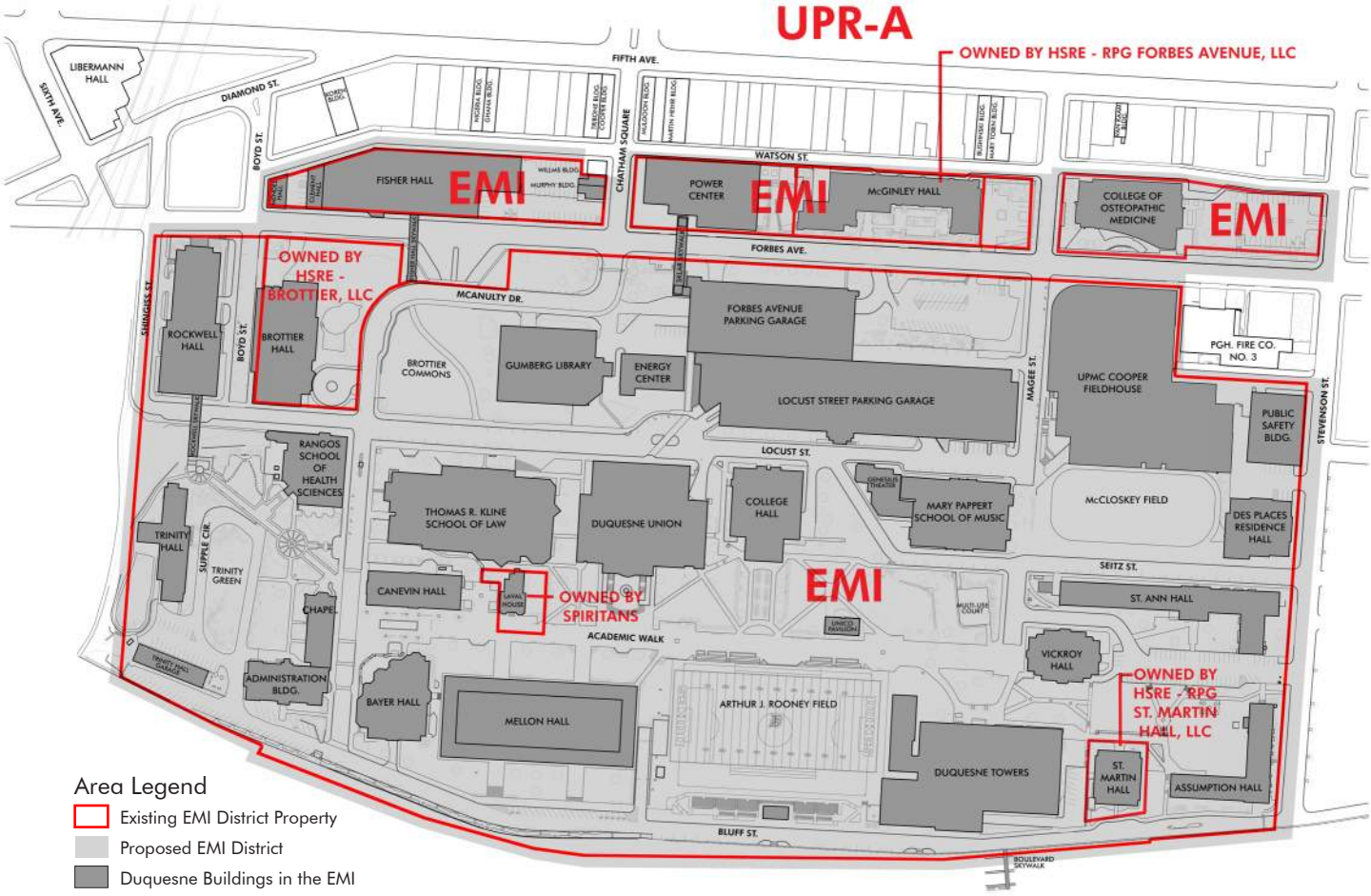


Figure 2.1: Duquesne University Properties

DUQUESNE UNIVERSITY PROPERTIES

In the above diagram, Duquesne University owned and operated properties are outlined in red. Duquesne's Educational/Medical Institutional (EMI) District is comprised of all of the properties owned by the University located south of Watson Street, and includes three properties operated but not owned by the school.

Since the University's last Institutional Master Plan (IMP), Brottier Hall, located on the west side of campus between Forbes Avenue and Locust Street, was sold to the Radnor Property Group. This is the only significant change to the EMI district since the previous IMP. It is still occupied entirely by Duquesne students, is staffed by a University residence life director and assistants, and is operated by Capstone On-Campus Management (COCM).

In April 2020, Duquesne purchased the former Life's Work of Western PA property (parcel number 2-L-42) bound by Forbes Avenue, Magee Street, Watson Street and Stevenson Street. This property was rezoned from Uptown Public Realm District A (UPR-A) and is now included in the EMI District.

In December 2022, after holding a long-term lease, Duquesne purchased the land occupied by the Gumberg Library from the Urban Redevelopment Authority of Pittsburgh.

The Laval House is owned by the Spiritans, the Founders of the University. The Spiritans utilize it for University mission related and community outreach purposes.

The properties along Fifth Avenue have also been purchased since the completion of the last IMP, but will not be located within the EMI District. Most are occupied and utilized as integral parts of University functions. Future planning for the currently unoccupied buildings is included within this IMP as part of the proposed Fifth Avenue Commercial Corridor Community Development Plan, which will be conducted separately from the IMP planning process.

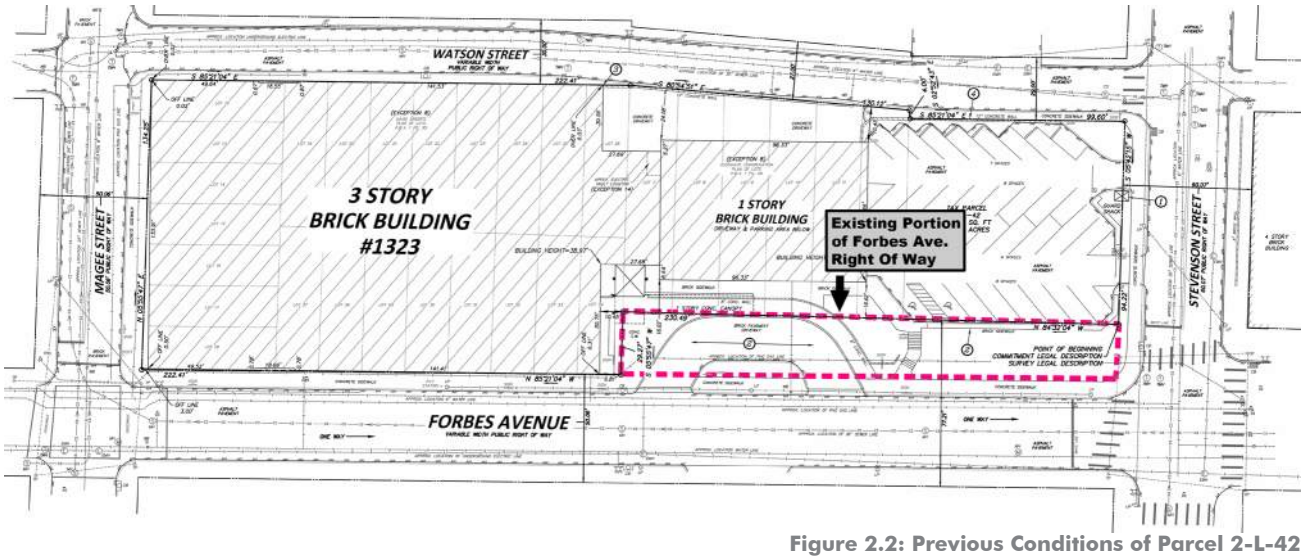


Figure 2.2: Previous Conditions of Parcel 2-L-42

September 2019 Google Street View images of the site from the southwest (left) and the northeast

RECENT ZONING CHANGE

City of Pittsburgh parcel number 2-L-42, formerly owned by Life's Work of Western PA, was purchased, rezoned and added to Duquesne's EMI District. Containing 6,368 square feet (0.1462 acres) and described in Figure 2.2, the site included an existing red brick and concrete building, surface parking, and a Public Right of Way.

The property boundaries are described as: Beginning at a point on the westerly line of Stevenson Street a 60.07 foot Public Right of Way, said point being the northerly line of Forbes Avenue a variable width Public Right of Way; Thence along said Forbes Avenue the following two courses and distances; First - North 84° 32′ 04″ West, 230.49 feet; Second - South 05° 55′ 47″ West, 29.27 feet to a point on the northerly line of said Forbes Avenue; Thence through said Forbes Avenue right of way South 84° 32′ 04″ East, 230.64 feet to a point on the to a point on the westerly line of Stevenson Street extended North 05° 42′ 15″ East, 25.98 feet to the point of beginning.

The main three-story portion of the building (measured from Forbes Avenue) occupied the entire western side of the site, with at-grade access to a lower service level from Watson Street, due to a topography change between the two roads. There was a one-story extension of the building toward the middle of the site, with at-grade parking below it. The building uses previously included office spaces, training and workshop spaces, and temporary living quarters.

Duquesne did not utilize the vacant structure before it was demolished.The property was redeveloped with the new College of Osteopathic Medicine.

2.2 EXISTING PROPERTY & USES

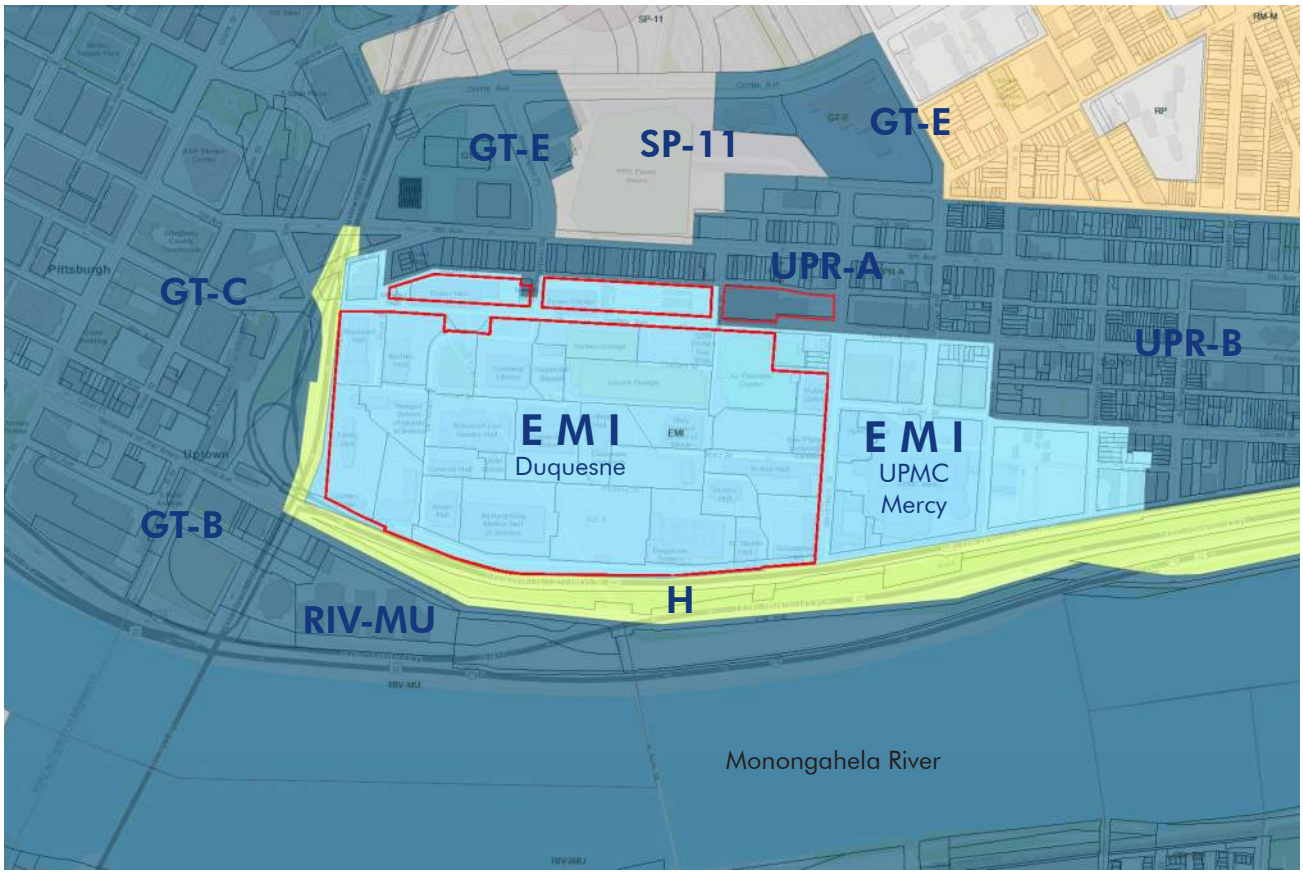


Figure 2.3: Local Zoning Designations

ZONING

The above diagram is taken from the Pittsburgh Zoning interactive mapping website with the extents of the Duquesne University EMI District outlined in red and labels added to identify neighboring zoning categories. The former Life's Work building (parcel number 2 L 42) was rezoned and added to Duquesne University's EMI District.

Duquesne's EMI District is adjacent to another EMI District for UPMC Mercy to the east. Immediately to the west and south of Duquesne's EMI District is a Hillside (H) District. Per the zoning code, Hillside Districts *"are not suitable for intensive development because of the presence of environmental or scenic resources and because of the difficulty of providing essential public facilities and services in an efficient and cost-effective manner."* This district is occupied mostly by roadways.

To the north, the Uptown Public Realm District (UPR-A and UPR-B) *"was created to provide regulations for the development and growth of Uptown as Pittsburgh's first EcoInnovation District. A special emphasis is placed on sustainability and economic development in the district. The regulations preserve the mixed-use nature of the community and encourage investment to increase the residential population and commercial activity."*

The adjacent Golden Triangle Districts (GT-B, GT-C and GT-E) are intended to:

1. *Maintain and enhance the Golden Triangle as the economic and symbolic core of the region;*
2. *Support and develop commercial, office and cultural uses; and*
3. *Develop an attractive, pedestrian-oriented physical environment with a design quality that recognizes the Golden Triangle's regional significance.*

The Lower Hill Planned Development District (SP-11) is a Specially Planned District. *"Specially Planned District regulations are intended to provide a framework for alternative forms of development for very large sites."*

A newly created Riverfront District (RIV-MU) sits adjacent to the Monongahela River. These districts *"limit potentially detrimental impacts near the riverfronts while allowing for high-quality, sustainable development and preservation of the diverse character of the City's riverfronts."*

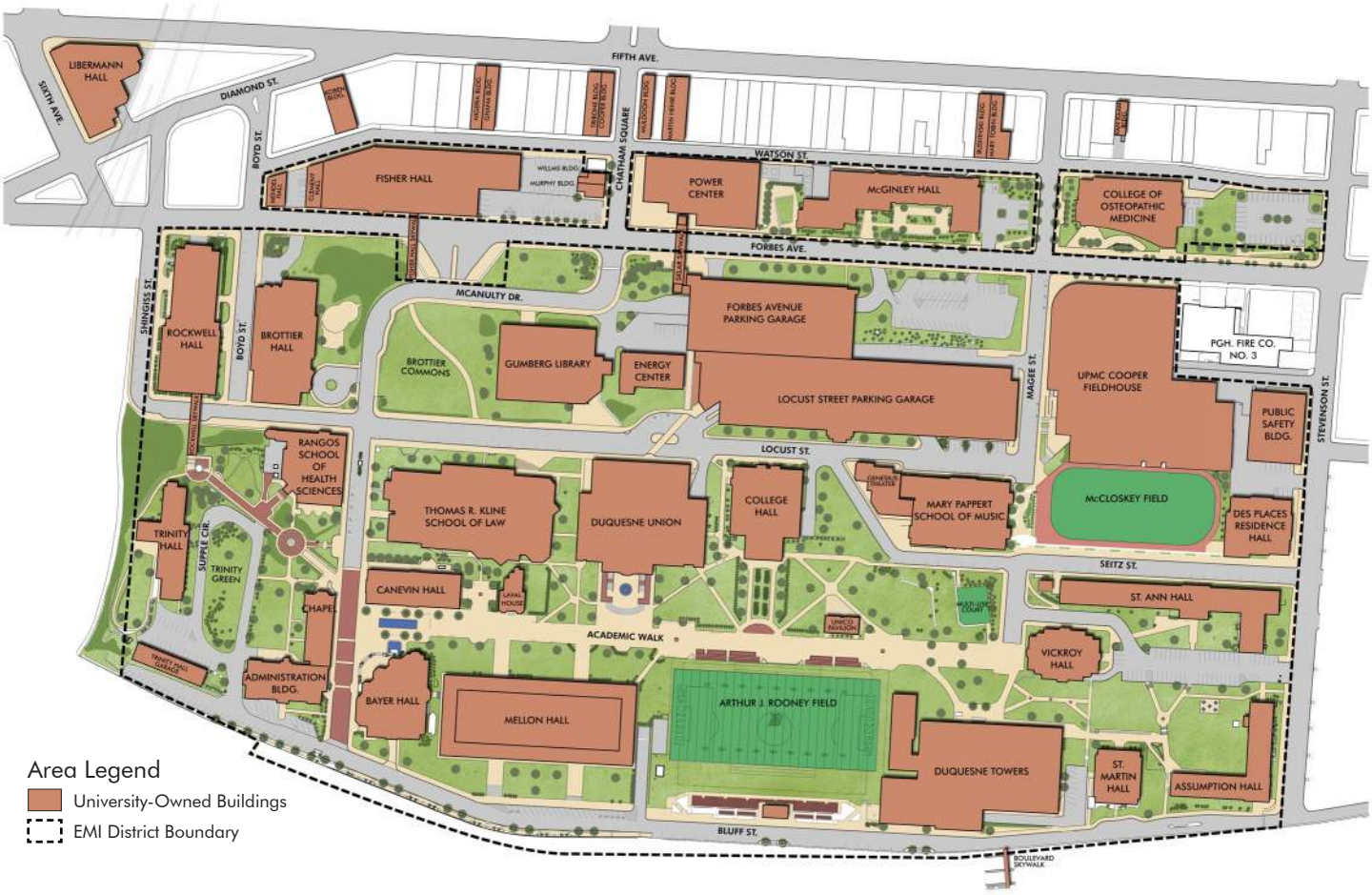


Figure 2.4: Existing Campus Site Plan

SITE PLAN

This plan illustrates the Duquesne University campus as it exists today. The overall campus is organized around four main east-west axes that parallel the campus topography. Forbes Avenue is the front door to campus. Vehicular traffic flows one-way, from west to east. The main vehicular entrance to campus is at the intersection of Forbes Avenue and McAnulty Street, though many visitors enter directly into the Forbes Avenue Parking Garage and use the elevators to go up to campus. Recent construction, including the Sklar Skywalk and the Power Center, have increased the University's presence on Forbes Avenue, giving it more of a collegiate feel and the University more visual presence within the city.

Locust Street is the primary vehicular corridor through campus and provides access to the Locust Street Parking Garage. The pedestrian exits from all of the parking garages, and access from the Sklar Skywalk, converge at a vehicular turn around on Locust Street in front of the Duquesne Union, making this the main arrival point on campus.

The Academic Walk is the primary pedestrian spine through campus, linking student resident housing on the east side of campus to the academic heart of campus and the Trinity Green on the west side of campus. Most of the open green spaces on campus are located along this corridor.

Bluff Street is largely used as an access road. It runs along the southern edge of campus which has sweeping views over the Monongahela River, making it an important part of the Duquesne University experience and a great place to walk or just take in the scenery.

TABLE 2.1: EXISTING BUILDING LIST

Year Built/ Acquired	Building	Building Data				
		Type	Gross Square Feet	# Stories	Height (in feet)	Fall 2018 Average Daily Users
1885	Administration Building "Old Main"	Admin	58,934	5	116	203
2008	A.J. Rooney Grandstand	Athletics	2,657	1	11	N/A
1954	Assumption Hall	Residence	62,483	3	37	234
1995	Bayer Learning Center	Academic	61,215	3	56	1,096
1995	Beard Press Box	Athletic	1,915	3	48	N/A
2004	Brottier Hall[1]	Res./Gar.	314,034	24	251	N/A
2010	Bushinski Building (1204 Fifth)[2]	Admin	6,773	3	42	20
1922	Canevin Hall	Academic	50,030	4	65	747
1894	Chapel	Religious	14,155	1	65	64
2009	Clement Hall (709 Forbes)	Admin	5,246	2	35	12
1918	College Hall	Academic	102,476	6	100	2,569
2024	College of Osteopathic Medicine	Academic	80,000	6	73	N/A
2010	Cooper Building (916 Fifth)[2]	Admin	17,000	7	90	35[3]
2011	Des Places Residence Hall	Residence	131,621	12	156	425
1970	Duquesne Towers	Residence	319,179	17	180	1,113
1967	Duquesne Union	Service	164,256	6	73	N/A
1967	Energy Center - Utilities Building	Service	33,090	2	30	7
1996	Fisher Hall	Academic	211,400	7	84	2,686
1998	Fisher Hall Pedestrian Bridge	Bridge	1,525	1	58	N/A
1987	Forbes Avenue Parking Garage	Garage	200,000	6	85	724
2015	Genesius Theater	Academic	12,232	2	54	18
2014	Ghana Building (824 Fifth)[2]	Vacant	11,578	4	68	0
1978	Gumberg Library[1]	Library	116,350	5	81	2,111
2008	Koren Building (718 Fifth)[2]	Admin	18,823	4	60	50
1929	Laval House[1]	Service	10,153	3	30	6
2010	Libermann Hall (600 Fifth)[2]	Academic	111,374	8	78	306
1992	Locust Street Parking Garage	Garage	207,000	11	100	1,674
1993	Locust Street Parking Garage Ext.	Garage	147,000	11	100	(Incl. in above)
1995	Locust Street Parking Garage Ext.	Garage	165,953	11	100	(Incl. in above)
2014	Martin Hehir Building (1004-6 Fifth)[2]	Vacant	17,033	3	46	0
1928	Mary Pappert School of Music	Academic	61,333	3	50	389
2014	Mary Tobin Building (1206 Fifth)[2]	Admin	12,013	3	42	0
2024	McGinley Hall[1]	Residence	218,083	12	120	N/A
1995	Mendel Hall	Athletic	7,918	4	52	35
2007	Muldoon Building (1000 Fifth)[2]	Admin	9,518	3	48	2
2007	Murphy Building (20 Chatham)	Admin	3,812	3	32	10
2011	Nigeria Building (822 Fifth)[2]	Vacant	11,565	4	68	0
2007	Power Center	Recreation	136,685	6	94	1,107[3]
1920	Public Safety Building	Service	23,166	2	40	15
1922	Rangos School of Health Sciences	Academic	50,807	4	50	231
1968	Richard King Mellon Hall of Science	Academic	193,014	4	58	1,209
1957	Rockwell Hall	Academic	163,676	10	134	2,373
1992	Rockwell Hall Pedestrian Bridge	Bridge	1,418	1	54	N/A
1963	St. Ann Hall	Residence	115,259	6	67	520
1962	St. Martin Hall[1]	Residence	109,751	15	150	536
2006	Sklar Skyway & Duquesne Square	Bridge	2,965	8	152	N/A
1922	Thomas R. Kline School of Law	Academic	110,599	4	38	577
2011	Tribone Building (912-4 Fifth)[2]	Clinic	7,455	2	40	25
1956	Trinity Hall	Residence	31,795	3	25	24
1956	Trinity Hall Garage	Garage	3,900	1	14	13
1988	UPMC Cooper Fieldhouse	Athletic	137,641	2	90	200
2006	Van Kaam Building (1308 Fifth)[2]	Admin	4,069	3	48	5
1997	Vickroy Hall	Residence	81,506	8	96	283
2007	Willms Building (18 Chatham)	Admin	2,673	3	32	10
	Duquesne University Campus		4,156,106			

[1] These facilities are operated for Duquesne University students but not owned by Duquesne University
[2] These facilities are located outside of the Duquesne University EMI District
[3] Average Daily Users includes Power Center floors 2-5 only and does not include the PNC Bank in the Cooper Building

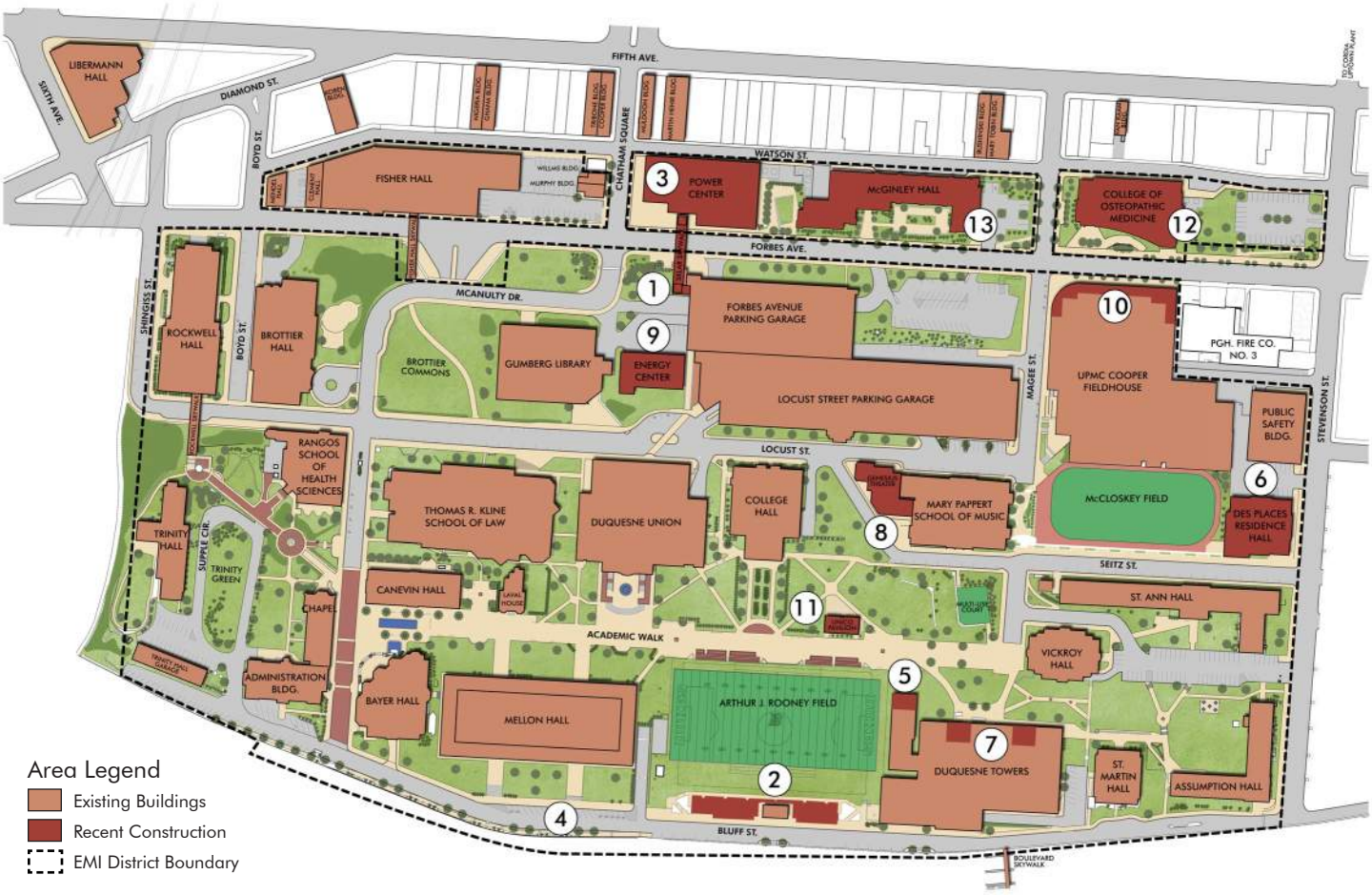


Figure 2.5: Recently Implemented Projects

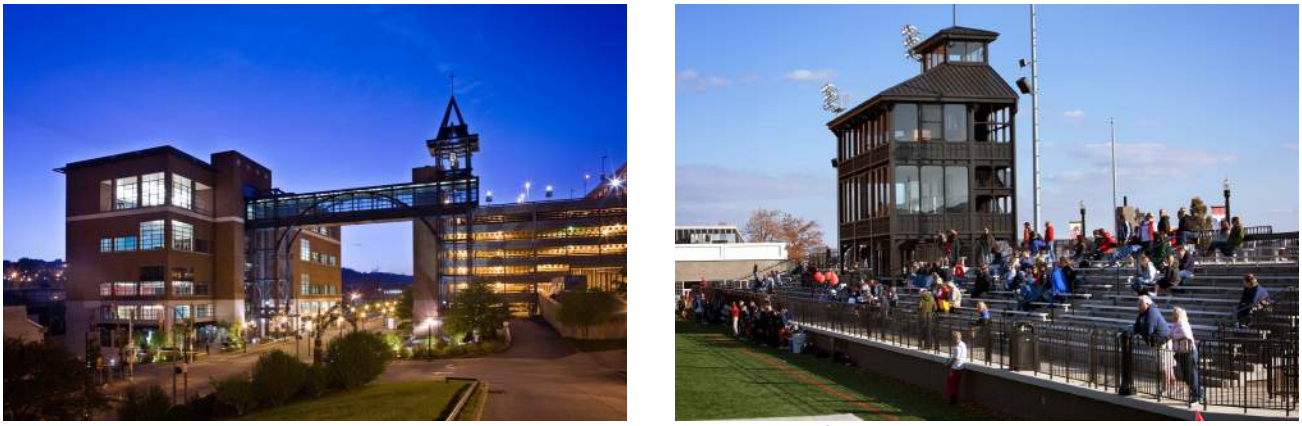
RECENTLY IMPLEMENTED PROJECTS

The following major renovations and new construction projects have been completed since the completion of the 2004 Institutional Master Plan:

1. Sklar Skywalk (2006) - Pedestrian bridge over Forbes Avenue connecting the fifth floor of the Power Center to the top floor of the Forbes Garage and upper campus.

2. Rooney Field Grandstands (2007) - Permanent grandstand for 1,100-1,500 bleacher seats, concession stand and public restrooms.

3. Power Center (2008) - Athletic and recreation facility with academic support, first floor retail and top floor conference center.



Power Center, Sklar Skywalk and Forbes Avenue Parking Garage (left) and the Rooney Field Grandstands (right)

4. Bluff Street Walkway and Plaza (2010) - Landscaped walkway with seating, lighted bollards and planters from McAnulty Drive to the Mellon Hall loading dock.

5. Locker Room Addition (2010) - Additional lockers for men's and women's sports along with renovation of existing facilities within the Duquesne Towers.

6. Des Places Residence Hall (2012) - Twelve-story, suite-style residence hall with approximately 425 beds. Des Places is a living learning community and was certified LEED Gold for sustainable design and construction.

7. Duquesne Towers Infill (2012/2013) - Two-story infill additions that include offices, conference and assembly space for Campus Ministry, Campus Market convenience store and private dining room.

8. Genesius Theater (2015) - 10,500 square-foot, black-box-style theater.

9. Steam Plant Expansion (2016) - Replacement of the existing boilers with three new natural gas fired packaged steel water tube boilers and ancillary equipment.

10. UPMC Cooper Fieldhouse (2020) - Renovation and addition to the north side of the existing facility (formerly known as A.J. Palumbo Center), including athletics support, training space and modified arena seating with suites.

11. Unico Family Pavilion (2023) - Outdoor gathering space featuring a dramatic gas fireplace.

12. College of Osteopathic Medicine (2024) - Six-story academic facility featuring innovative learning spaces, simulation labs, offices and collaborative study areas.

13. McGinley Hall (2024) - Eleven-story, apartment-style residence hall with approximately 556 beds developed under a P3 partnership with HSRE and RPG.

Additionally, numerous streetscape improvements, signage, public art work and site features have been added throughout campus to enhance wayfinding, atmosphere and University identity.

McGinley Hall (left), College of Osteopathic Medicine (top right) and new banners and pedestrian scale lighting along Forbes Avenue (bottom right)

Figure 2.6: Existing Building Use

EXISTING BUILDING USE

Duquesne University is a well organized campus. The large consolidated parking garages, which serve a majority of visitors to campus, are located with easy access from Forbes Avenue. Pedestrians exit the parking garages between the two main student life facilities: The Student Union and the Gumberg Library. This is the primary arrival point on campus.

On the south side of the Union, the Academic Walk is a vehicular free zone that connects most of the academic buildings with the largest residential neighborhood to the east and the primary administrative functions to the west. The Arthur J. Rooney Field, which is open for general recreational use when not serving as the main competition field for Duquesne teams, helps to create a spacious open green center of a very dense campus.

Indoor athletics and events are held in the UPMC Cooper Fieldhouse, which is conveniently located next to the parking garages with a public-facing façade on Forbes Avenue. The Power Center, which has a prominent location on the north side of Forbes Avenue, serves the campus and the surrounding community as a recreation center with retail on the first floor. It is connected to the parking garages and the main campus via a pedestrian bridge over Forbes.

Two outlier academic facilities are also connected to the main campus via pedestrian bridges: Fisher Hall and Rockwell Hall. The only academic facility that does not have a strong link to the core of campus is Libermann Hall, located about a block northeast of campus.

Brottier Hall provides upper-class and graduate apartments and is the only student housing building not located in the main residential neighborhood. Trinity Hall provides housing for the Spiritan fathers and not students.

Most of the smaller buildings located north of Forbes Avenue are utilized for secondary administrative uses.

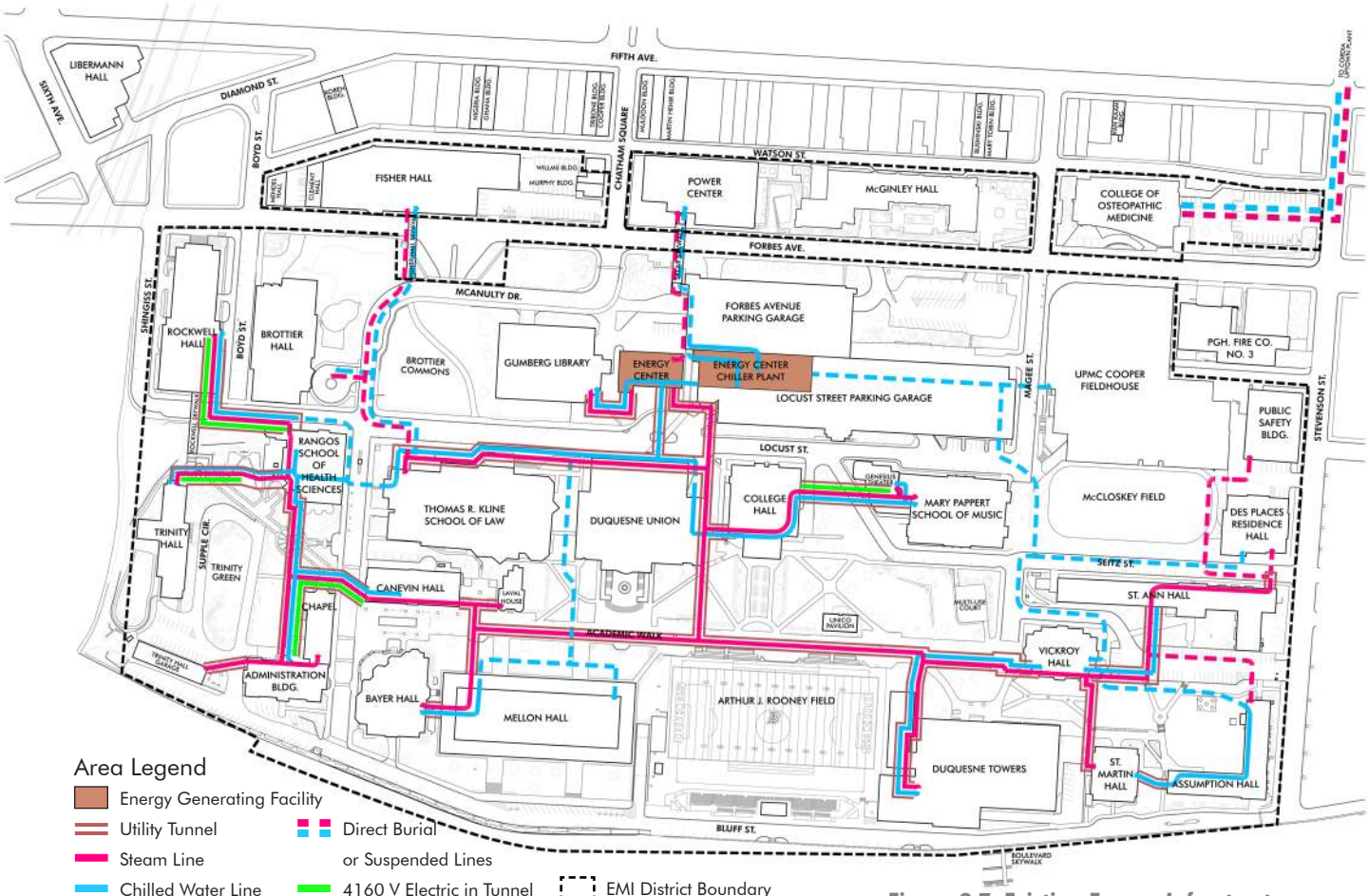


Figure 2.7: Existing Energy Infrastructure

ENERGY

The Duquesne University Energy Center, known as a Combined Heat and Power Plant (CHP) or Cogeneration facility, was installed in 1997 as a bold and progressive move by the University and is still the City's leader in this area. This facility, owned and operated by Cordia Inc. as part of a 40-year public-private partnership agreement, generates electricity, steam and chilled water for campus electric distribution, heating and cooling. The facility includes a 5.6 MW generator, fueled by a gas turbine burning natural gas. The electric generated is at 4,160 volts, with the output feeding the campus electrical interconnection bus and distribution system. From this distribution system, connected buildings are fed electricity at 4,160 volts where the voltage is then stepped down to 480, 208 and 277 volts, as required, through installed transformers at the building levels. The electric is distributed through 2.2 miles of underground electrical cabling to each building.

Note that Duquesne also employs a comprehensive electrical distribution maintenance plan that includes testing and maintenance of all electrical distribution system components.

The local utility, Duquesne Light Company (DLCO), feeds electric as needed for backup and supplemental electrical requirements above the generator capacity and when the generator is shut down for maintenance twice per year. DLCO feeds power to the Energy Center at 23,000 volts, where it is transformed to 4,160 volts, and fed to the campus electrical distribution system, interconnected and running in parallel with the generator. Duquesne University has two utility feeds from Duquesne Light so that, with one feed out for repair and maintenance, the University still has the ability to operate on the remaining utility feed. The generator is capable of losing both DLCO utility feeds, isolated from the utility grid and operating in "island mode."

Buildings not connected to the Energy Center electrical distribution output, with direct connections from the utility, include Libermann Hall, Fisher Hall, Power Center, UPMC Cooper Fieldhouse, Des Places, Bushinski Building, Clement Hall, College of Medicine, Cooper Building, Ghana Building, Koren Building, Martin Hehir Building, Muldoon Building, Murphy Building, Nigeria Building, Tobin Building, Tribone Building, Van Kamm

Building and Wilms Building.

The University also employs a Solar PV system on the roof of Des Places Residence Hall, rated at 10KVA, that trickles a small of amount of kwh to supplement the power primarily supplied by the local utility.

Steam is produced at the Energy Center as a result of the CHP system recovering exhaust waste heat from the gas turbine to produce steam. Also, the Energy Center employs three auxiliary package boilers, with one of these boilers being dual fuel capable-burning diesel fuel in the event of a loss of natural gas supply. Steam is produced at 120 PSIG, distributed to campus through an underground utility piping and distribution system. Whereas the Power Center and Gumberg Library are supplied 120 PSIG steam, the remaining supplied buildings receive 60 PSIG through a pressure reducing station and 2.2 miles of underground piping and distribution systems. At each building, the steam is further reduced in pressure as applicable for equipment utilization.

Below, Table 2.2 summarizes the major equipment located on Duquesne University's campus, sizes and uses.

On the following page, Table 2.3 contains the existing energy use of Duquesne University with calculated energy use intensity (EUI). EUI is defined as annual energy use (in units of kBtu) divided by the gross square feet of energy-using space. This metric is benchmarked by the Energy Star program for various types of buildings and normalized for climate differences. The Pittsburgh 2030 District has adopted this metric to measure participants' progress in reducing energy consumption from an initial baseline. Duquesne University had an overall EUI of 126 in 2018 compared to the Pittsburgh 2030 District baseline of 132, a reduction of 4.46%. The goal is a reduction of 50% below baseline by 2030. When evaluating participants' progress toward this goal, an additional 10% reduction from energy use will be included for purchases of renewable energy. Duquesne buys 100% national wind power for all electricity not generated at the energy center, allowing for the additional credit.

Duquesne works each day to find new ways to reduce the consumption of natural resources and to promote sustainable living. Achieving the goals of sustainability - whether through green operations, construction projects, research, academic coursework or community engagement initiatives - is one of the principal ways that the University has been able to transform respect for the integrity of creation in action and honor their Catholic founding in the Spiritan tradition.

Duquesne is already meeting 2030 reduction goals for the campus's separately metered buildings and is continuing to work on reducing the baseline EUI of campus buildings served by the energy center. Examples of the projects Duquesne is considering to further reduce energy usage across campus can be found in Section 7.3.

TABLE 2.2: MAJOR EQUIPMENT

Equipment	Capacity	Primary Purpose
1 natural gas turbine	5,000 KW	Generate 85% of the University's electric load
1 heat recovery steam generator (HRSG)	25,000 lbs/hr steam	Produce steam load to meet campus heating and hot water needs
1 fuel gas boost compressor	500 HP	Create necessary pressure (225psi) of natural gas for the turbine
4 electric centrifugal chillers	7,000 tons collectively	Provide cooling
3 natural gas auxiliary boilers	159,000 lbs/hr total	Provide additional/backup steam
28 Calmac ice storage tanks	6,000 ton/hrs	Provide additional and backup cooling as required during electric peak times
1 cooling tower with 4 cells	9,000 tons	Provide cooling

TABLE 2.3: EXISTING ENERGY USAGE

Property Name	Primary Property Type - Portfolio Manager-Calculated	Property GFA - Calculated (Buildings and Parking) (ft²)	GBA Baseline	GBA Baseline (kBtu)	Duquesne EUI	Duquesne (kBtu)	Difference
Duquesne University Campus							
"Old Main" Administration Building	Office	58,898	99	5,830,902			
UPMC Cooper Fieldhouse	Indoor Arena	117,080	147	17,210,760			
A.J. Rooney Grandstand	Stadium (Open)	2,657	57	151,449			
Assumption Hall	Residence Hall/Dormitory	62,483	122	7,622,926			
Bayer Learning Center	College/University	61,215	227	13,895,805			
Beard Press Box	Stadium (Open)	1,915	57	109,155			
Brottier Hall	Residence Hall/Dormitory	314,034	123	38,626,182	90.08	28,289,610	(32.92)
Canevin Hall	College/University	50,030	166	8,304,980			
Chapel	Worship Facility	14,006	58	812,348			
College Hall (McAnulty College & Graduate School of Liberal Arts)	College/University	102,476	166	17,011,016			
Des Places Residence Hall	Residence Hall/Dormitory	131,621	120	15,794,520			
Duquesne Towers	Residence Hall/Dormitory	319,096	132	42,120,672			
Duquesne Union	College/University	164,256	199	32,686,944			
Fisher Hall	College/University	211,400	169	35,726,600			
Genesius Theater	Movie Theatre	12,232	57	697,224			
Gumberg Library	Library	116,350	157	18,266,950			
Laval House	College/University	10,153	44	446,732			
Mary Pappert School of Music	College/University	61,333	166	10,181,278			
Power Center	Fitness Center/Health Club/Gym	136,877	103	14,098,331			
Public Safety	Police Station	23,166	62	1,436,292			
Rangos School of Health Sciences	College/University	50,807	177	8,992,839			
Richard King Mellon Hall of Science	Laboratory	193,014	383	73,924,362			
Rockwell Hall **	College/University	166,415	172	28,623,380	Building now submetered, not 12 months of data for analysis. **Sqft includes building & skywalk		
St. Ann Hall	Residence Hall/Dormitory	115,259	124	14,292,116			
St. Martin Hall	Residence Hall/Dormitory	109,751	127	13,938,377			
School of Law	College/University	110,319	177	19,526,463			
Trinity Hall **	Residence Hall/Dormitory	35,695	137	4,890,215	**Sqft includes building & garage		
Vickroy Hall	Residence Hall/Dormitory	81,506	120	9,780,720			
Total		**2,834,044**	**162.83**	**461,464,716**	**160.3**	**454,276,831**	**(2.53)**
Parking Garages							
Forbes Ave. Parking Garage	Parking	200,000	8.98	1,796,000	9.1	1,820,000	0.12
Locust St. Garage	Parking	519,953	8.98	4,669,178	3.9	2,027,817	(5.08)
Total		**719,953**	**8.98**	**6,465,178**	**5.34**	**3,847,817**	**(3.64)**
Separately metered buildings							
Bushinski Building	Office	6,773	**70**	**474,110**	59.1	407,057.3	(10.90)
Clement Hall	Office	5,246	**67**	**351,482**	**59.0**	**291,677.6**	(8.00)
Cooper Building	Office	17,000	**81**	**1,377,000**	100.1	1,598,000.0	19.10
Koren Building	Office	18,823	**82**	**1,543,486**	44.4	813,153.6	(37.60)
Libermann Hall	College/University	111,374	**173**	**19,267,702**	74.7	8,141,439.4	(98.30)
Mendel Hall	Office	7,918	**72**	**570,096**	71.2	566,928.8	(0.80)
Muldoon Building	Medical Office	9,518	**68**	**647,224**	50.9	577,742.6	(17.10)
Murphy Building	Office	3,812	**62**	**236,344**	35.6	212,709.6	(26.40)
Tribone Building	Office	7,455	**72**	**536,760**	52.2	218,431.5	(19.80)
Van Kaam Building	Office	4,069	**63**	**256,347**	84.4	286,457.6	21.40
Wilms Building	Office	2,673	**57**	**152,361**	42.1	83,130.3	(14.90)
Total		**194,661**	**130.55**	**25,412,912**	**67.79**	**13,196,728**	**(62.76)**
Total All Duquesne Properties		**3,748,658**	**131.61**	**493,342,806**	**125.73**	**471,321,376**	**(5.87)**
						Percent Reduction	**-4.46%**

	Duquesne EUI With 10% Reduction	Duquesne (kBtu) With 10% Reduction	Difference With 10% Reduction
10% reduction part of 2030 guidelines on renewable energy purchases.	113.16	424,189,238	**(18.45)**
		Percent Reduction	**-14.02%**

Vacant Buildings -- Not included in EUI calculations			
Ghana Building	Vacant	11,578	
Martin Hehir Building	Vacant	17,033	

[1]Mary Tobin prior to 2019 was a vacant building. Not included as part of EUI since energy use will not be representative of current use.

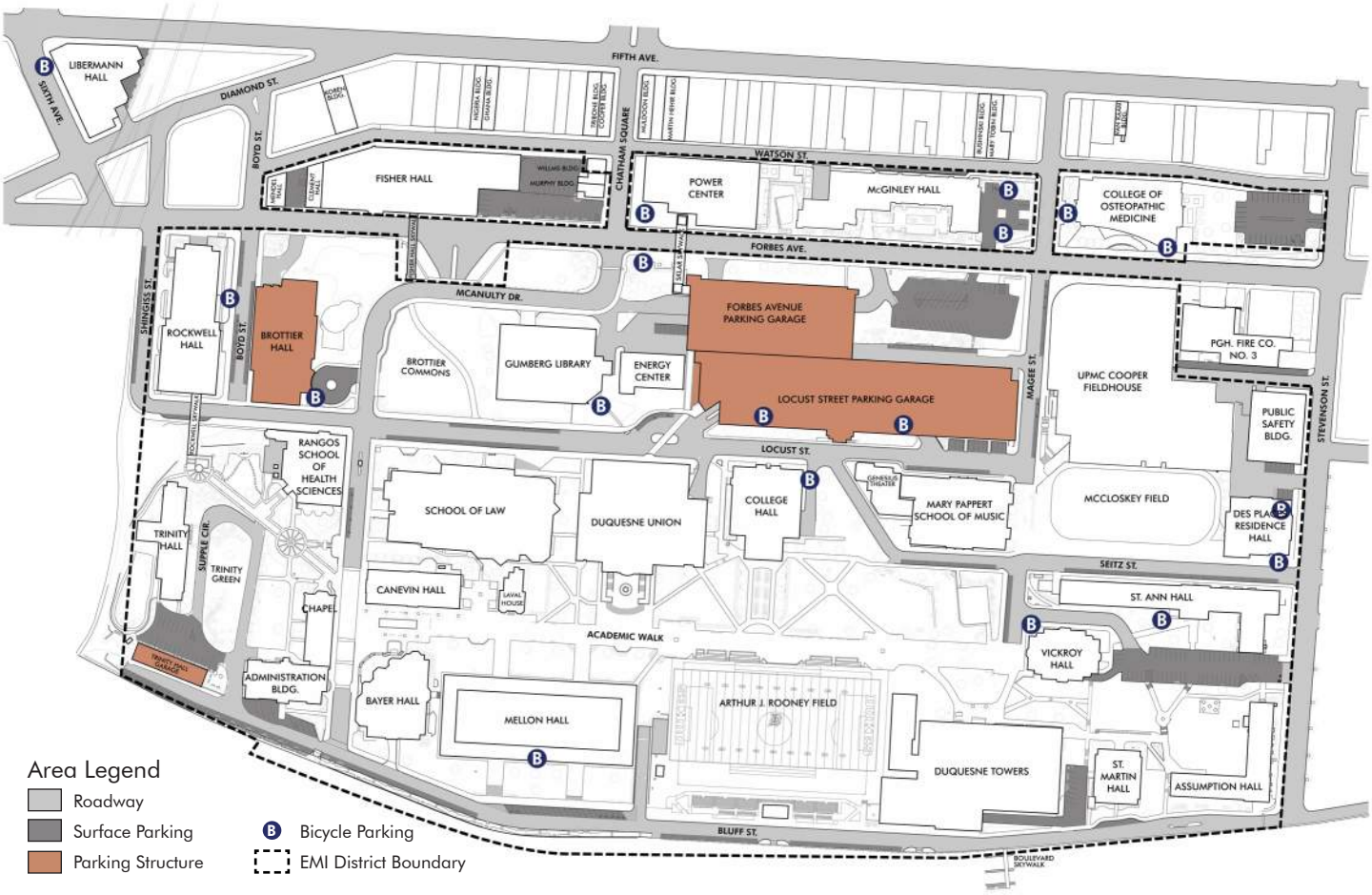


Figure 2.8: Existing Parking Inventory

PARKING FACILITIES

Figure 2.8 shows all the on-campus parking facilities. This includes parking lots, parking garages, and on-street parking. There are a total of 3,059 spaces on the campus. There are also a total of 403 permits issued to students and staff at the nearby Chatham Garage for a total of 3,462 parking spaces available.

Table 2.4 – Parking Facilities (following pages)

The number of parking spaces, the location of parking spaces, and the type of spaces are indicated on Table 2.4. This table also details the bicycle parking areas and capacity.

Reserved spaces are typically used for campus maintenance vehicles, campus police, and parking for important staff members (i.e. University President, coaches).

Existing Parking Summary

On-Campus Parking Garages:	2,479 Spaces
On-Campus Parking Lots:	350 Spaces
On-Campus, On-Street Parking:	230 Spaces
Subtotal:	3,059 Spaces
Off-Campus Parking:	403 Spaces
Total Parking:	3,462 Spaces

TABLE 2.4: PARKING FACILITIES AND BICYCLE PARKING AREAS

Parking Facility	Number of Parking Spaces							
	Standard	Permit	ADA	Reserved	Van Pool	Hybrid	Loading	TOTAL
Parking Garages								
Forbes Avenue Garage	668	25	15	9	4	3	--	724
Locust Street Garage	--	1,641	21	12	--	--	--	1,674
Brottier Hall Garage	--	81		--	--	--		81
Subtotal, Parking Garages	**668**	**1,747**	**36**	**21**	**4**	**3**	**0**	**2,479**
Parking Lots								
Lot 1	--	44	2	--	--	--	--	46
Under Locust Garage - Gibbon Street Near Magee Street	--	57	--	4	--	--	--	61
Under Locust Garage - Middle of Gibbon Street	--	10	--	--	--	--	--	10
Upper Fisher Lot	--	12	2	5	--	--	--	19
Lower Fisher Lot	--	18	--	1	--	--	--	19
Stevenson Street/Des Place	--	10	--	--	--	--	2	12
Stevenson Street/Public Safety Building	--	10	--	--	--	--	1	11
Vickroy Street (St. Ann Hall)	--	38	--	9	--	--	--	47
Duquesne Towers	--	7	--	--	--	--	--	7
Bluff Street Lot	--	32	2	6	--	--	--	40
Trinity Hall	--	22	--	--	--	--	--	22
COM Lot	--	48	--	--	--	--	--	48
McGinley Hall Lot	--	--	2	6	--	--	--	8
Subtotal, Parking Lots	**0**	**308**	**8**	**31**	**0**	**0**	**3**	**350**
On-Street Parking								
Gibbon Street								
Near Magee Street	--	14	--	--	--	--	--	14
Near McAnulty Street	--	--	--	17	--	--	--	17
Subtotal, Gibbon Street	**0**	**14**	**0**	**17**	**0**	**0**	**0**	**31**
Magee Street (Locust Street to Forbes Avenue)	**0**	**7**	**5**	**0**	**0**	**0**	**0**	**12**
Seitz Street								
Locust Street to Upper Magee Street	--	13	--	--	--	--	--	13
Upper Magee Street to Stevenson Street	--	17	--	--	--	--	--	17
Subtotal, Seitz Street	**0**	**30**	**0**	**0**	**0**	**0**	**0**	**30**
Upper Magee Street	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**4**

(Continued on next page)

TABLE 2.4 (CONT.): PARKING FACILITIES AND BICYCLE PARKING AREAS

Parking Facility	Number of Parking Spaces							
	Standard	Permit	ADA	Reserved	Van Pool	Hybrid	Loading	TOTAL
Bluff Street								
St. Martin Hall	--	6	--	--	--	--	--	6
Arthur J. Rooney Field	--	9	--	10	--	--	--	19
Richard King Mellon Hall of Science	--	10	6	3	--	--	--	19
Bayer Learning Center	--	10	--	--	--	--	--	10
Subtotal, Bluff Street	**0**	**35**	**6**	**13**	**0**	**0**	**0**	**54**
McAnulty Drive	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**4**
Boyd Street								
Eastside	--	9	--	--	--	--	--	9
Westside	--	4	4	2	--	--	--	10
Subtotal, Boyd Street	**0**	**13**	**4**	**2**	**0**	**0**	**0**	**19**
Shingiss Street								
Eastside	--	--	1	2	--	--	--	3
Westside	--	9	--	3	--	--	--	12
Subtotal, Shingiss Street	**0**	**9**	**1**	**5**	**0**	**0**	**0**	**15**
Locust Street								
Shingiss Street to Boyd Street	--	--	3	--	--	--	--	3
McAnulty Drive to Locust Street Garage, Northside	--	14	2	1	--	--	--	17
McAnulty Drive to Locust Street Garage, Southside	--	12	--	3	--	--	--	15
Seitz Street to Magee Street, Northside	--	10	--	--	--	--	--	10
Seitz Street to Magee Street, Southside	--	8	--	--	--	--	--	8
Subtotal, Locust Street	**0**	**44**	**5**	**4**	**0**	**0**	**0**	**53**
Brottier Hall Circle	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**8**
Subtotal, On-Street	**8**	**156**	**25**	**41**	**0**	**0**	**0**	**230**
Total - On-Campus Parking	**676**	**2,211**	**69**	**93**	**4**	**3**	**3**	**3,059**
Off-Campus Parking								
Chatham Garage (permits for staff and students)	403	--	--	--	--	--	--	403
TOTAL – All Parking Facilities	**1,079**	**2,211**	**69**	**93**	**4**	**3**	**3**	**3,462**

Bicycle Rack Location	Number of Bicycle Spaces
Libermann Hall	4
Rockwell Hall	6
Brottier Hall	18
Gumberg Library	2
Mellon Hall of Science	8
Duquesne Square	12
Power Center	3
College Hall	4
Duquesne Lot	4
Locust Garage	9
Academic Walk	5
Vickroy Hall	12
Des Place Hall (Bike Room)	28
Des Place Hall	12
TOTAL - Bicycle Spaces	**127**

Source: Verified by Trans Associates during April 2018

3.1 EXPECTATIONS FOR GROWTH AND CHANGE

Higher education continues to face enrollment challenges with high school population declines, a large number of universities in the Northeast, lower demand for some graduate and professional programs, consumer price sensitivity, declining job opportunities in select disciplines and other forces.

Duquesne is not immune to these challenges but proactively and strategically manages them, while maintaining focus on our mission to serve students from all socioeconomic backgrounds. This continued success can be seen in Duquesne's strong ratings by Moody's and S&P, ranking as 16th by US News & World Report among national Catholic universities, and Doctoral Universities High Research Activity Carnegie Classification.

Duquesne's urban location has risen to one of the top reasons freshmen indicate that they chose to attend Duquesne. The City of Pittsburgh's rankings and growing accolades for livability, downtown, job markets and technology – which translate to experiential learning opportunities – continue to be a key selling point for the University.

Headcount enrollment at Duquesne University has been stable and climbing slightly over the past three years. Total enrollment for the fall 2024 term stood at 8,282 students, with 6.77% in entirely online programs. This figure breaks down as:

- 7,954 full-time students
- 328 part-time students
- 5,414 undergraduate students
- 2,868 graduate students
- 561 students who take courses entirely online
- 3,672 on-campus resident students (with affiliated housing included). On-campus housing is at full capacity.

The current enrollment projections for undergraduate and graduate programs anticipate steadiness over the next three years. Enrollment projections are impacted by a wide variety of factors, including national trends, economic conditions and new academic program introductions.

Full-time faculty counts have declined slightly over the past five years and we expect some steadiness to continue to the next five years contingent upon enrollment. Part-time faculty counts stayed roughly steady from fall 2019 to fall 2023. We anticipate this trend to remain steady in the next few years. Faculty who teach in entirely online programs often also teach in campus-based programs.

Staff counts (full-time and part-time combined) have remained steady from fall 2019 to fall 2023. We expect that this trend may continue over the next five years.

Duquesne University offers more than 200 degree programs and 30 certificate and credential programs in ten schools: Liberal Arts, Business, Education, Health Sciences, Music, Natural & Environmental Sciences, Nursing, Pharmacy, Law and Osteopathic Medicine. With the exception of Medicine and Law, all schools offer undergraduate and graduate programs.

Duquesne University will be building a new School of Health Sciences to meet the growing demands of modern healthcare education. With advances in medical technology and healthcare practices, the existing facilities are outdated and insufficient to accommodate new learning methods and research needs. A new state-of-the-art building would provide students with access to cutting-edge labs, simulation centers, and collaborative spaces that mirror real-world healthcare environments. This would not only enhance their learning experiences but also better prepare them for their future careers. By investing in a new building, the university can attract top-tier faculty and students, further strengthening its reputation in the health sciences field.

Moreover, a new School of Health Sciences building can serve as a hub for interdisciplinary collaboration. Health sciences education benefits immensely from integration with fields such as engineering, computer science, and social sciences. A modern facility designed with flexible spaces can foster innovation and teamwork among students and faculty from diverse disciplines, driving groundbreaking research and solutions to pressing healthcare challenges. Additionally, such a building can provide the community with resources for health education, outreach programs, and partnerships with local healthcare providers, reinforcing the university's commitment to improving public health and well-being. Investing in this project is a strategic move that will pay dividends in terms of educational excellence, research advancements, and community impact.

Duquesne students sitting in Brottier Commons

CURRENT AND FUTURE NEEDS FOR FACILITIES 3.2

View of the Chapel from Academic Walk

Section 1.1 outlines the goals of the University for the next 10 years. Our Strategic Plan and Master Plan Initiatives provide a roadmap for the University's future needs.

As Duquesne University plans for the next 10 years, a list of needs has emerged. They are listed as follows:

1. Refocus on emerging trends in higher education to face enrollment challenges over the next 10 years and provide improved student experiences.

2. Align with the heritage of Duquesne's Spiritan beginnings and embrace the challenges of the future with our Founders' goals in mind.

3. Create a vibrant campus with a renewed sense of institutional spirit by supporting and expanding the University's athletic facilities.

4. Play a central role in the Uptown EcoInnovation District by broadening and enhancing community engagement initiatives.

5. Develop interdisciplinary programs and create an interprofessional center for education in health-related fields.

6. Engage in outcomes assessment in all areas of the University's operations to achieve continuous fiscal improvement while facing a declining pool of prospective students.

7. Enhance campus green space to provide a gateway to the Uptown neighborhood.

8. Create an Uptown community commercial corridor development plan for future use of existing vacant buildings on Fifth Avenue as well as plan for the corridor in general.

9. Connect Duquesne with neighboring Uptown and Downtown communities by adding a BRT station on Forbes Avenue.

10. Cultivate a campus community of inclusion and diversity for students, faculty and staff.

11. As one of the region's largest anchor institutions, play a central role in the development and sustainability of the Uptown EcoInnovation District along Forbes and Fifth Avenues and neighborhoods adjoining the Duquesne campus.

Despite the following factors, the University anticipates stable enrollment during the next five years. The tri-state area (Pennsylvania, New York and Ohio) has the largest concentration of colleges and universities in the US, with 69 colleges and universities in the Pittsburgh region. Approximately 80% of our students come from the tri-state area, which is seeing declining birth rates, and therefore produce fewer college age students to pull from. Pennsylvania, New York and Ohio were among the top 10 states with the largest enrollment declines. Research shows that the Northeast will lose 15% of all its college students from 2025-2028.

In order to mitigate these regional issues, the University will focus on the following strengths and challenges:

Key Strengths:

- Nationally ranked tier one university
- Ranked 11th among Catholic universities
- Strong regional reputation
- Renowned faculty
- Enviable location in growing city
- Carnegie Classification-Doctoral Universities High Research Activity
- Focus on Spiritan roots
- Students and alumni
- Strong recent endowment growth
- Strong Moody's and S&P credit ratings

Key Challenges:

- Continued demographic shift
- Dependency on tri-state area
- Reductions in head count
- Increased competition
- Flat tuition and fee revenue
- Increases in discount rate
- Decreases in margin
- Total endowment behind peers

The Ten-Year development plan in Section 5 aligns with the institution's strengths and challenges. The proposals focus on interdisciplinary programs in high-demand health care programs, student housing, wellness, community engagement and athletics.

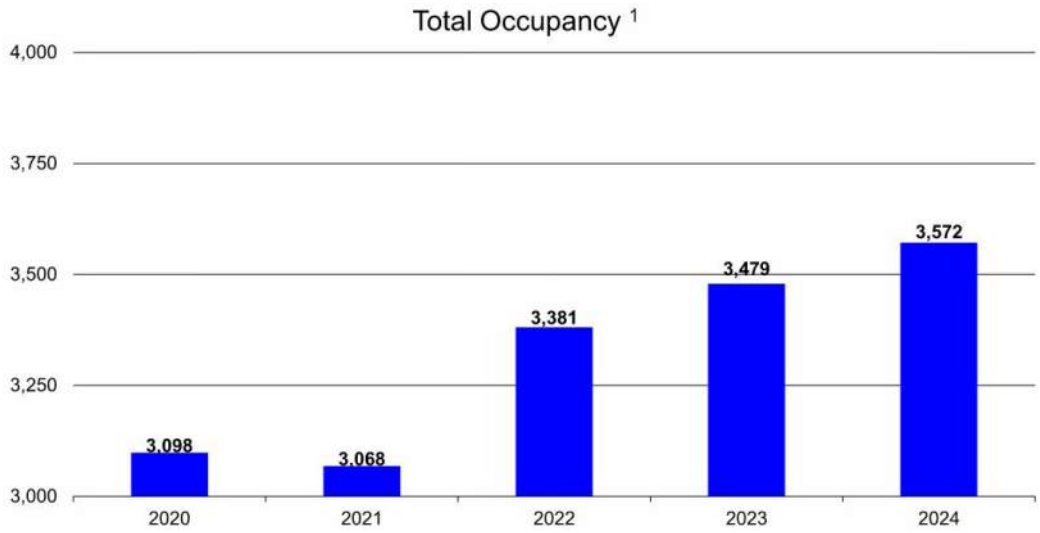
Duquesne University is moving forward with the establishment of a College of Osteopathic Medicine, targeted to open and admit its first class in fall semester 2023. It will become the second medical school in Pittsburgh and the first Catholic osteopathic medical school in Pennsylvania.

With the intent to prepare students to take the exams to acquire both M.D. and D.O. degrees, the College of Osteopathic Medicine will include the following courses of study:

- Clinical Care Management
- Family Medicine
- Gerontology
- Internal Medicine
- Medical Education
- Orthopedics
- Pediatrics
- Rural Medicine
- MSBS Master's Degree (1 year program)
- Cardiology
- Dermatology
- Emergency Medicine
- Endocrinology
- Genitourinary
- Nephrology
- OB/GYN
- Otolaryngology
- Pharmacology
- Psychology
- Public Health
- Radiology
- Surgery & Surgery Subspecialties
- Urology

CURRENT AND FUTURE NEEDS FOR HOUSING 3.3

Table 3.1: Duquesne University Five Year Student Housing History
from the Office of Residence Life; Office of Institutional Research and Planning



[1] Affiliated Housing

Duquesne University currently has a total enrollment of approximately 9,260 students. With seven residence halls (living learning centers), Duquesne can accommodate approximately 3,779 students in on-campus housing. Freshmen and sophomores attending Duquesne University are required to either live on campus or with their parents or guardians. Most upper-class students choose to live in off-campus housing, many of them residing in the South Side.

Throughout the years, in order to accommodate the number of freshman and sophomore students living on campus, Duquesne has needed to modify some of the existing housing by converting student lounges into dorm rooms or having three students live in modified double rooms. In the Fall of 2018, 140 freshmen were placed into such accommodations.

In 2013, Duquesne employed Anderson Strickler, LLC to provide a Student Housing Market Analysis. The findings showed that there is an additional need of approximately 500 beds beyond the existing housing stock.

In order to stay competitive in today's market, the University needs to address student desire for modern amenities within their residence halls, including student programming spaces and en-suite bathrooms and kitchenettes.

Because residence halls are an important tool in recruitment and because student retention is directly related to the freshman experience, improvements to the University's residential holdings are underway. The addition of the new 550-bed, apartment-style residence hall on Forbes Avenue will help the University to meet existing demand and provide an attractive alternative to upperclassmen who may otherwise seek to live off campus. The addition of this new building will also allow the University to de-densify existing housing stock and provide the needed amenities to improve student retention and stay competitive for future recruitment.

In addition, increasing on-campus living capacity will have the added benefits of reducing the need for commuter parking and decreasing traffic congestion. This new residence hall brings a vibrant energy to this segment of Forbes Avenue with attractive outdoor space and visibility into active first floor recreational and programming spaces. The added housing will bring more students into the Uptown/Downtown corridors, aligning with EcoInnovation goals by supporting the growth of new community retail services. The future implementation of the Bus Rapid Transit system adjacent to this new development will allow students to access new BRT stops on Forbes and Fifth, easily navigating between Duquesne, downtown, and Oakland for their retail shopping and entertainment needs.

Table 3.2: Duquesne University Student Housing Statistics-September 12, 2024
from the Duquesne University: Miscellaneous Data 2023-2024 Fact Book

		Assumption	Brottier [1]	Des Places	McGinley [1]	Saint Ann	Saint Martin	Towers	Vickroy	Total
Standard Capacity	**Total**	**234**	**639**	**429**	**359**	**523**	**320**	**1,113**	**283**	**3,900**
Beds Occupied by Type	**Studio**	0	160	0	37	0	0	0	0	197
	1 Bdrm	0	160	0	0	0	0	0	0	160
	Single	22	0	7	0	26	208	37	14	314
	2 Bdrm	0	238	0	85	0	0	0	0	323
	Double	197	0	359	0	429	96	911	203	2,195
	Triple	3	0	0	0	15	0	79	46	143
	Quad	4	0	0	0	0	0	0	0	4
	4 Bdrm	0	0	0	236	0	0	0	0	236
	Total	**226**	**558**	**366**	**358**	**470**	**304**	**1,027**	**263**	**3,572**
Occupancy Rates		**97%**	**87%**	**85%**	**100%**	**90%**	**95%**	**92%**	**93%**	**92%**
Occupancy by Class										
Freshman		191	0	3	0	454	1	648	0	1,297
Sophomore		22	0	300	0	8	280	323	193	1,126
Junior		9	232	31	213	5	14	25	50	579
Senior		3	244	28	109	3	8	9	15	419
5th year		1	21	1	10	0	0	0	1	34
6th year		0	0	0	0	0	0	1	0	1
Graduate		0	46	2	14	0	1	2	1	66
Law		0	13	0	9	0	0	0	0	22
College of Medicine		0	2	1	3	0	0	2	0	
Other		0	0	0	0	0	0	17	3	20
	Total [2]	**226**	**558**	**366**	**358**	**470**	**304**	**1,027**	**263**	**3,572**

[1] Affiliated Housing
[2] Headcount by classification is from students' self-reported, signed Verified Floor Rosters. This may not be consistent with headcount by classification based on earned credit reported in other sections of the University Fact Book.

* Some double rooms are being used as medically approved singles and therefore will affect the number of available beds and will therefore lower the standard capacity from what is listed above.

TWENTY-FIVE YEAR DEVELOPMENT SITES 4.1

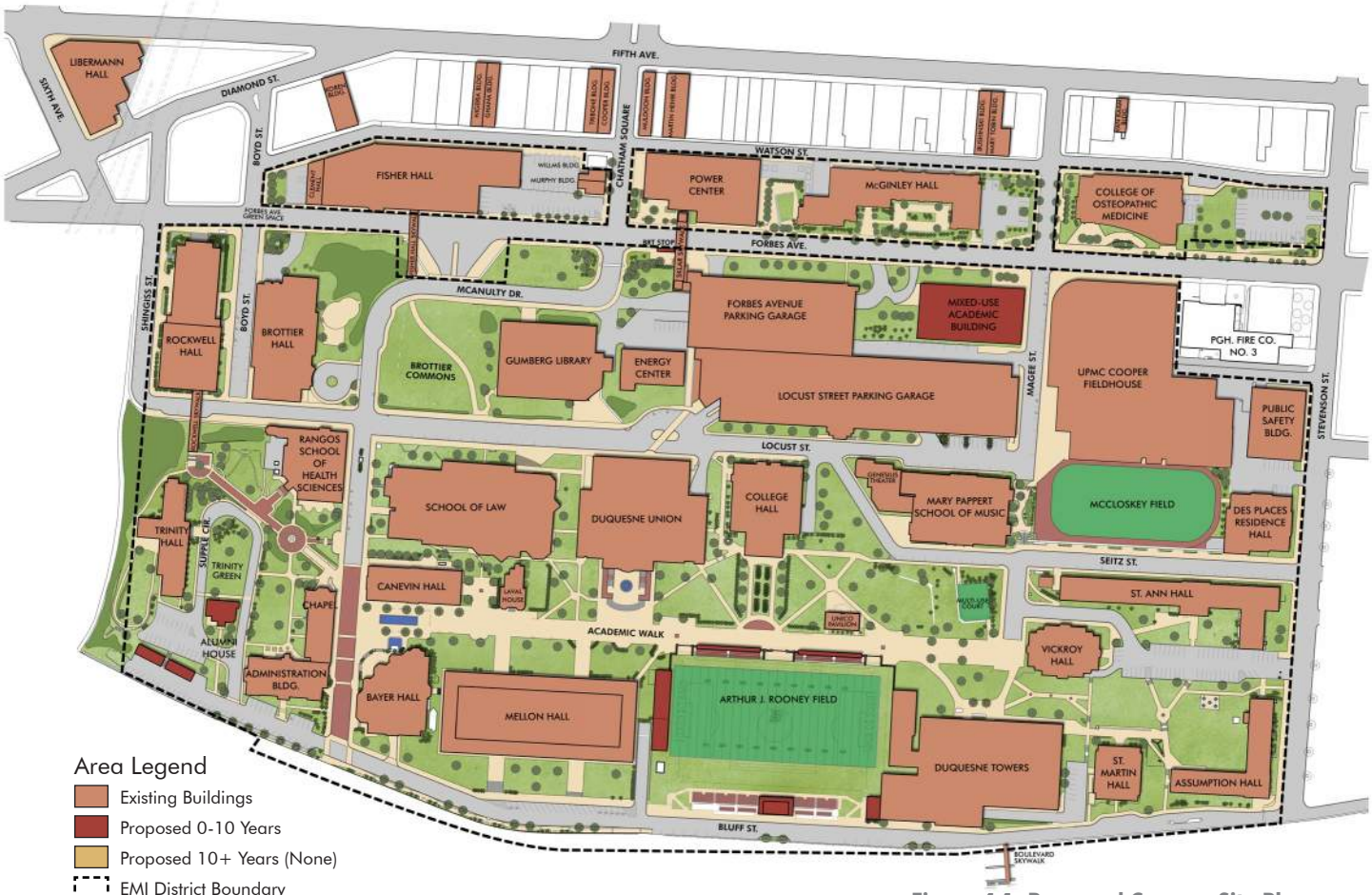


Figure 4.1: Proposed Campus Site Plan

There are currently no projects identified beyond the first ten-year development window.

5.1 PROPOSED TEN-YEAR DEVELOPMENT

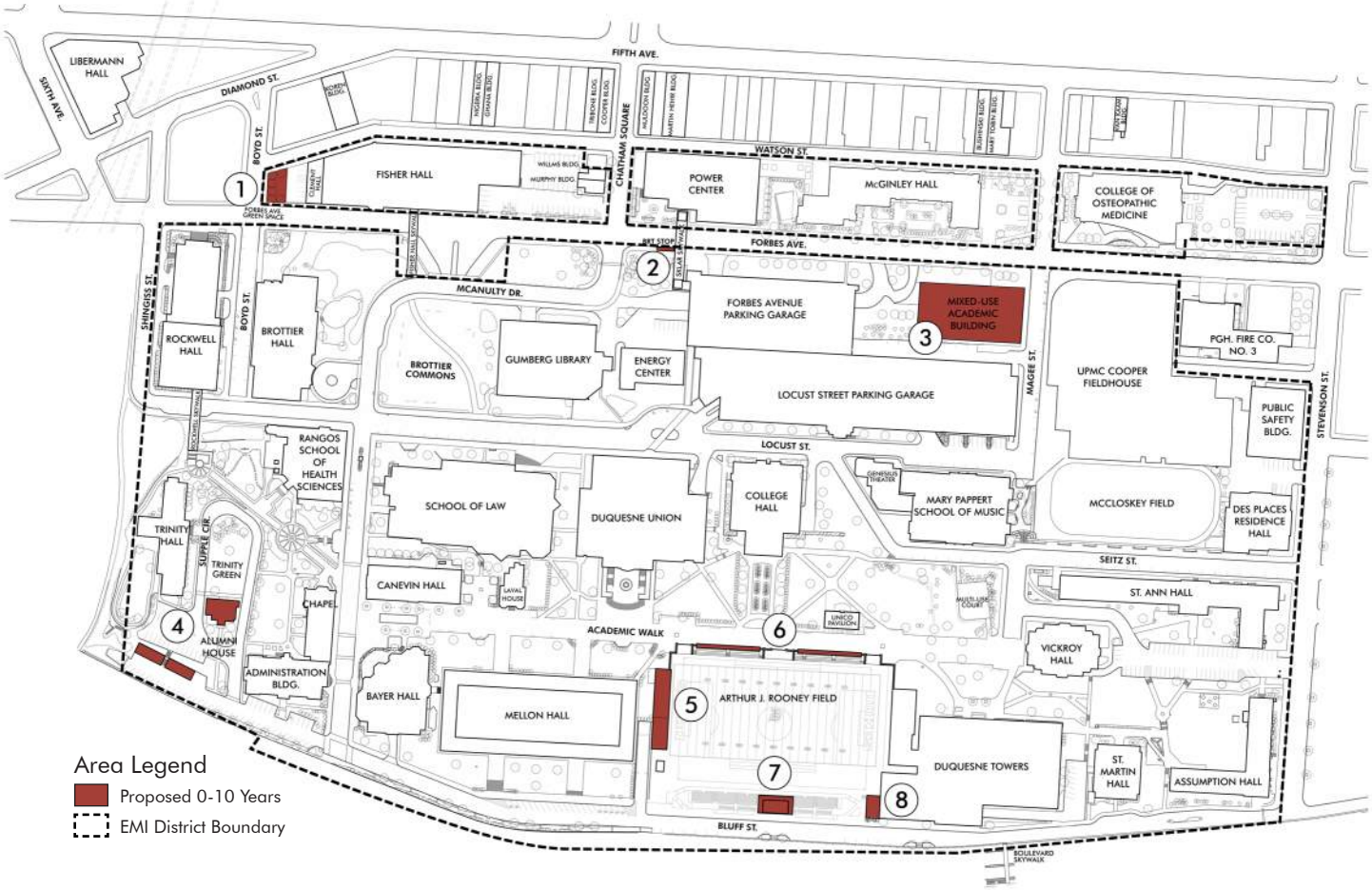


Figure 5.1: Proposed Ten-Year Development Plan

The following list of master planning projects is organized in no particular order. All identified projects fall within the Ten-Year Development envelope. There are currently no projects projected for the 10+ year time frame. The phasing and development of these projects are subject to factors such as current University need and available funding resources. University Strategic Planning Goals (see Section 1.1) that are addressed by each project are listed under "Strategic Goals Addressed." Additional goals for each project, such as alignment with the Uptown EcoInnovation District, are described further in Sections 6, 7 and 8. The University will take into account the UPR-A standards into development along Forbes Avenue. This will include building height limitation in feet and stories, 10' sidewalks and stepbacks. Projects in UPR-A district will integrate the bonus system identified in the Zoning Code Bonus Goals and Points for UPR district to prioritize a more compact development and reinforce the sustainability and environmental goals established in section 7.1. Developments will also follow the landscaping and screening requirements included in Zoning Code Section 918.

1. Forbes Avenue Green Space

Location:	Between Forbes Avenue and Watson Street, west of Fisher Hall
Description:	Demolition of Mendel Hall to create a campus green space. The site's steep topography will incorporate small trees and a variety of plantings. The green space will be framed by brick perimeter walls and decorative fencing. Refer to Section 5.3 for Open Space Guidelines.
Phase:	0-10 years

Strategic Goals Addressed: 2.1, 2.2, 2.3 and 5.11

Rendering of the New Rangos School of Health Sciences from Magee Street

2. BRT Station

Location:	South side of Forbes Avenue, east of McAnulty Drive
Description:	Duquesne University is currently working with Pittsburgh Regional Transit (PRT) on the final design and location of the BRT station. PRT goals for the BRT include: • Improved travel times and better on-time performance • More reliable service and less bus bunching • Operating cost savings
Phase:	0-10 years
Maximum Footprint:	800 GSF
Maximum Floor Area:	800 GSF
Maximum Height:	One story (20')
Strategic Goals Addressed:	2.1, 2.2 and 2.3

3. New Rangos School of Health Sciences (Mixed-Use Academic Building)

Location:	Southwest corner of Forbes Avenue and Magee Street intersection
Description:	Academic facility for classrooms, labs, offices and auxiliary uses. A new plaza is planned which incorporates trees and seating. Refer to Section 5.3 for Open Space Guidelines. The sustainable attributes of the project include the building envelope which will be designed to allow for passive use energy reduction; mechanical and electrical systems will be specified to reduce energy consumption; integration the District Energy plan; fenestration that maximizes access to daylight to occupied spaces and use of materials with recycled content and regional materials.
Phase:	0-10 years
Footprint (Range):	10,000 to 30,000 GSF
Floor Area (Range):	80,000 GSF to 100,000 GSF
Height (Range):	Three stories (30') to six stories plus a mechanical penthouse (90') from Forbes Avenue
Setback Requirements:	Forbes Avenue - 30', Magee Street - 20', Gibbon Street - 20', and Interior Lot Line - 0'
Strategic Goals Addressed:	2.3, 3.1, 3.2, 3.3, 3.4, 3.6, 5.5 and 5.11

4. Alumni House

Location:	South lawn of the Trinity Green
Description:	Small residential-style building with guest bedrooms and entertainment spaces. This project adds a canopy over parking spaces.
Phase:	0-10 years
Maximum Footprint:	1,500 GSF
Maximum Floor Area:	3,000 GSF
Maximum Height:	Two stories plus a basement (40′)
Strategic Goals Addressed:	4.1 and 4.2

5. Arthur J. Rooney Field Visitors' Locker Room

Location:	West end of existing Arthur J. Rooney Field
Description:	New at-grade locker room and roof-top viewing deck and canopy.
Phase:	0-10 years
Maximum Footprint:	5,000 GSF
Maximum Floor Area:	6,000 GSF + roof deck
Maximum Height:	Two stories (40′)
Setback Requirements:	N/A - not adjacent to a public right of way
Strategic Goals Addressed:	1.3 and 1.10

6. Arthur J. Rooney Field Perimeter Wall

Location:	North side of existing Arthur J. Rooney Field stands
Description:	New perimeter wall and landscaping around the north side of the field and stands with gates and controlled access points (may include modifications to existing stands).
Phase:	0-10 years
Maximum Height:	Wall height - 15′; design features at entrance - 20′
Strategic Goals Addressed:	1.3 and 1.10

7. Arthur J. Rooney Field New Press Box

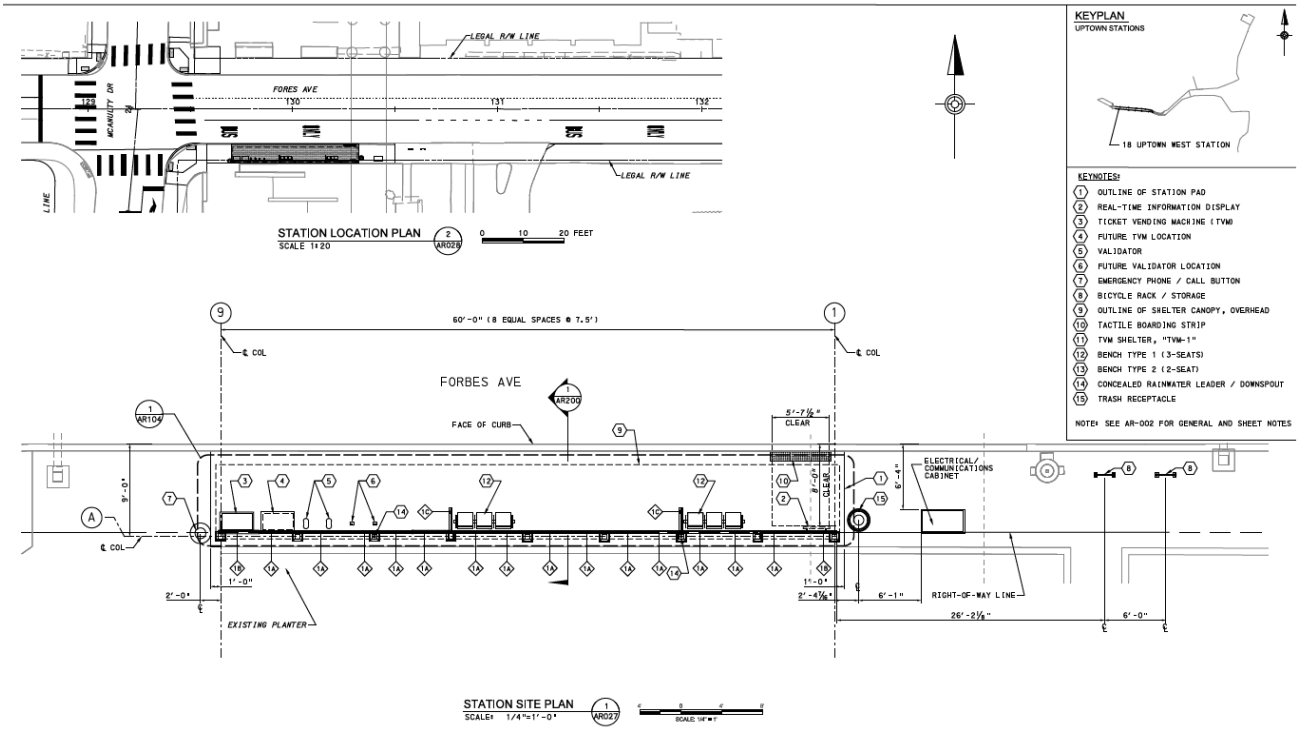
Location:	Site of existing Arthur J. Rooney Field press box
Description:	New press box to replace the existing outdated press box.
Phase:	0-10 years
Maximum Footprint:	2,000 GSF
Maximum Floor Area:	7,000 GSF
Maximum Height:	Four stories plus a mechanical penthouse (80′)
Setback Requirements:	10′ from Bluff Street curb

Strategic Goals Addressed: 1.3 and 1.10

8. New Athletics Offices

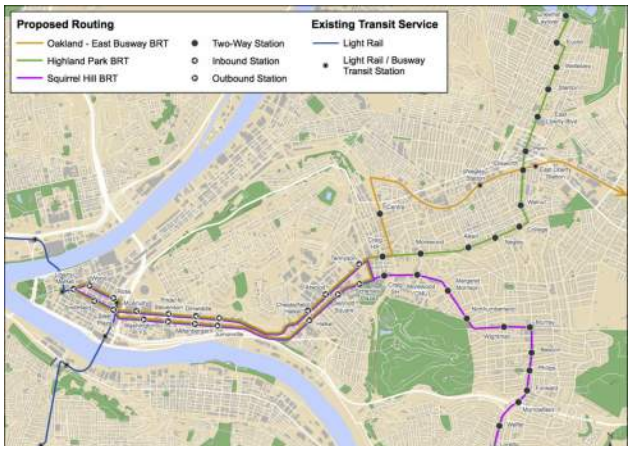
Location:	Southwest corner of the Duquesne Towers
Description:	First Floor Addition to provide Athletics offices and additional support spaces.
Phase:	0-10 years
Maximum Footprint:	1,200 GSF
Maximum Floor Area:	1,200 GSF
Maximum Height:	One story (20′)
Setback Requirements:	Same as existing Duquesne Towers
Strategic Goals Addressed:	1.3 and 1.10

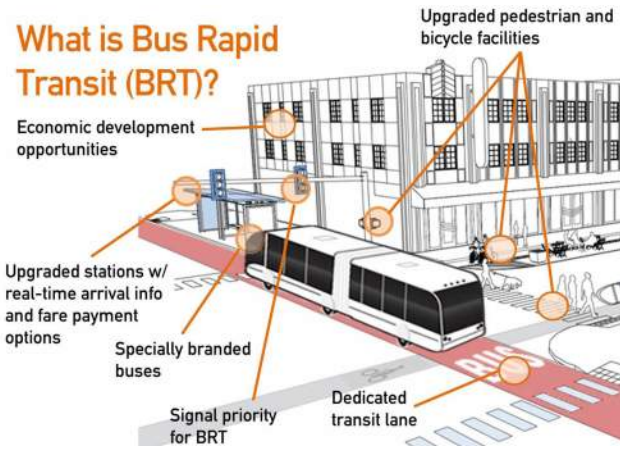
Proposed BRT station at corner of Forbes Avenue and McAnulty



Proposed BRT Location Plan and Layout

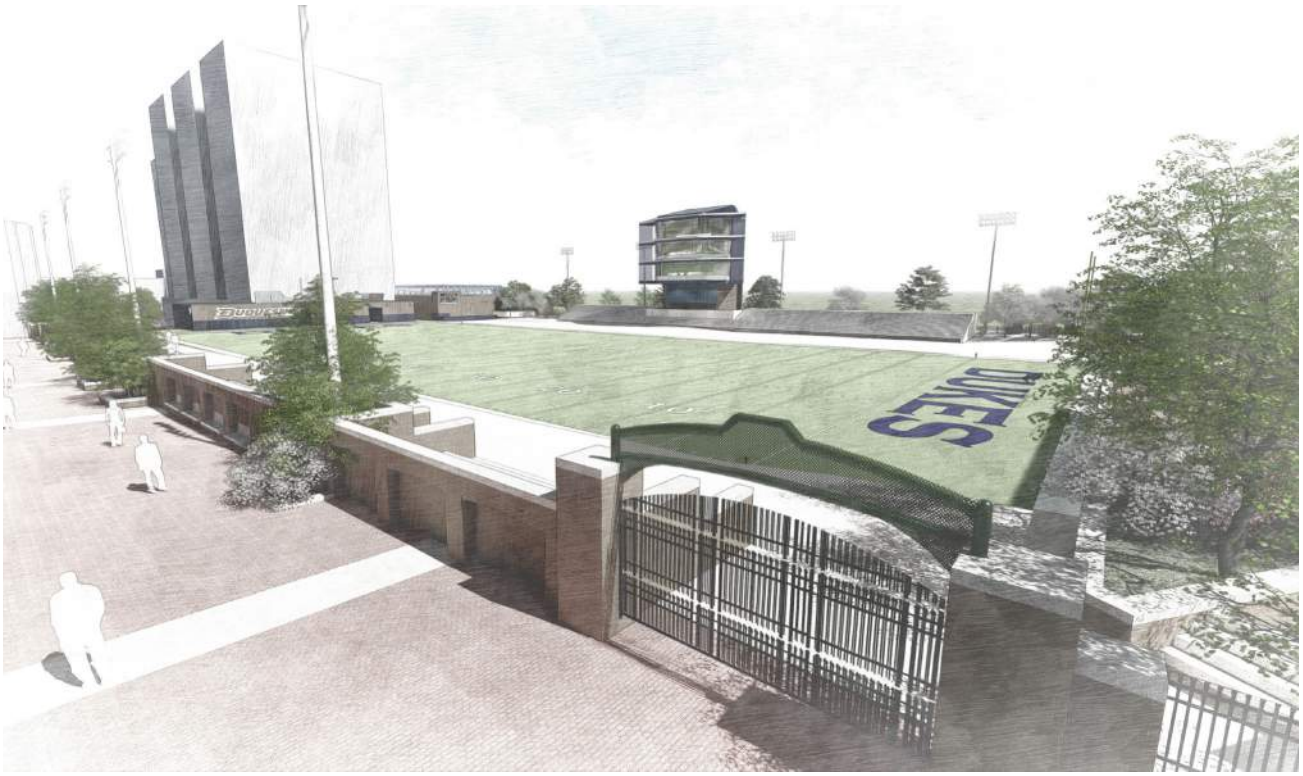
Rendered site plan of the proposed Forbes Avenue Green Space





Proposed routing of the BRT – from URA (upper left), diagram of some elements of the BRT – from Pittsbugh Regional Transit (PRT) (upper right), and rendering of similar BRT station – from PRT (bottom)

Clockwise from top: Renderings of the proposed Visitors' Locker Room (Project #5) with viewing deck aerial view from Academic Walk, ground view from the field, ground view from south



Rendering of the proposed Arthur J. Rooney Field perimeter wall and gateways (Project #6) along Academic Walk with the proposed new press box (Project #7) across the field

5.2 IMPLEMENTATION PLAN

All major projects at Duquesne start with the establishment of an internal team to review the needs of the institution with regards to planning, programming, design and finances. As the University steps through each process, student needs are the primary driving force for all projects, as well as how they align with the University's Mission and Strategic Plan. The University also works closely with the Department of City Planning and other community-led partnerships such as the Uptown EcoInnovation District and Pittsburgh 2030 District for all major renovations and new buildings on campus, ensuring mutually beneficial collaborations between the institution and the surrounding community.

The Fifth Avenue Commercial Corridor Community Development Plan will be driven by the collaboration of the University and the community stakeholders with Uptown. It will be led by Duquesne's Office of Community Engagement to help guide the successful development and preservation of the Uptown's Fifth Avenue business corridor, separately from this Institutional Master Plan.

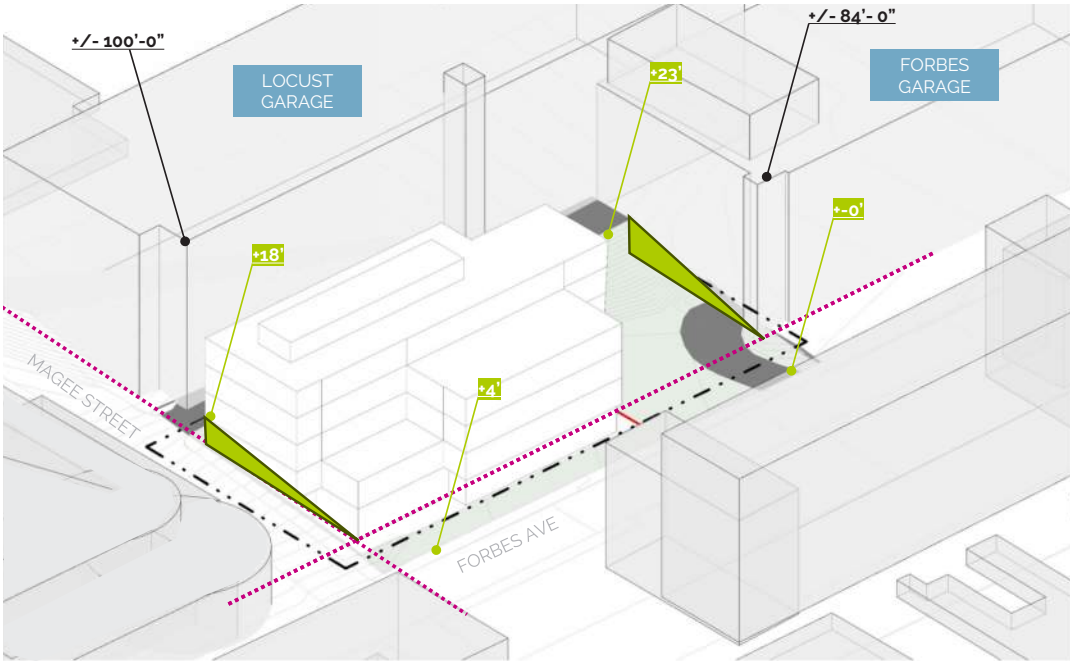
The University's first priority was the UPMC Cooper Fieldhouse, an exciting expansion of Duquesne's existing athletic facilities. Internal committees worked with an architectural team and senior administration to establish conceptual designs for the new space. Concepts were approved by the Board of Directors and fundraised by the Athletic Director. Once funding was secured and the plans were finalized, they were sent out to several construction firms for bidding process. Renovation started in April 2019.

Other items on this master plan will be fundraised by Duquesne's Athletic Director, including numbers 5, 6, 7 and 8 on the Ten-Year Proposed Development Plan.

The Forbes Avenue Green Space (#1) will focus on implementing Sustainable SITES standards, Uptown EcoInnovation District measures, stormwater management and possibly public art.

The new residence hall on Forbes Avenue, McGinley Hall, was part of the long-range plan for Duquesne's campus, and is a public-private partnership (P3) collaboration between the University and a developer. Internal committees were established involving the senior administration and developer to determine design goals and standards for the new housing units.

Lastly, the New Rangos School of Health Sciences (#3) will be located on the southwest corner of Forbes Avenue and Magee Street. With advances in medical technology and healthcare practices, the existing facilities are outdated and insufficient to accommodate new learning methods and research needs. A new state-of-the-art building would provide students with access to cutting-edge labs, simulation centers, and collaborative spaces that mirror real-world healthcare environments. This would not only enhance their learning experiences but also better prepare them for their future careers. By investing in a new building, the university can attract top-tier faculty and students, further strengthening its reputation in the health sciences field.



Massing diagram of the new Rangos School of Health Sciences

URBAN DESIGN GUIDELINES 5.3

View of Canevin Hall and the Laval House along Academic Walk

EXISTING CAMPUS

Duquesne University moved to its current location on the Bluff in 1885. The Administration Building (1885), also known as "Old Main," was the first new building constructed on the new campus and was, at the time, the highest structure in Pittsburgh's skyline. Along with the attached Chapel (1894), the building is red brick with a dark gray shingle hip roof, designed in the Italian Gothic style. As the campus has grown through both new construction and acquisition, red brick has remained the predominant building material, but architectural styles and material palettes vary greatly across campus.

While the red brick varies in color across campus, it is the predominant building material for the Administration Building, Chapel, Public Safety Building (1920), Laval House (1929), Assumption Hall (1954), Trinity Hall (1956), St. Ann Hall (1963), Duquesne Towers (1970), Gumberg Library (1978), Vickroy Hall (1997) and the Power Center (2007). Stone, cast-stone or precast concrete is a common secondary building material for these buildings. St. Martin Hall's (1962) precast concrete window panels are the primary building material with red brick as the secondary material.

A slightly darker brown brick is the dominant building material of several buildings centered around McAnulty Drive, including the Rangos School of Health Sciences (1922), the School of Law (1922), Canevin Hall (1922) and Bayer Hall (1995). While the School of Law features a very flat, unadorned modernist style, the Rangos School of Health Sciences and Canevin Hall share a collegiate gothic style with low pointed arches and dense horizontal stone banding. The much newer Bayer Hall mimics this stone banding and adds a lighter red accent banding on the upper floors. The only other buildings on campus that feature horizontal banding are Administration Building and Vickroy Hall, with banding at floor levels, though the newer Power Center and Des Places Residence Hall (2011) do feature some accent banding.

The brick buildings along Forbes Avenue have a broader palette of colors and styles. Brottier Hall (1969) features two medium brown brick colors. Mendel Hall's (construction date N/A) brick has been painted maroon. Clement Hall's (construction date N/A) beaux-arts revival styling is primarily tan brick, while the combination of buildings that make up Fisher Hall (1906 to 1951) are composed of tan, brown and red brick.

The two newest buildings on campus, Des Places Residence Hall and the Genesius Theater (2015), feature a blend of brick colors. Des Places has a combination of two brick colors that relate to the red and brown common around campus, with a precast concrete base. The Genesius Theater has a mixture of red and pale orange brick and tan concrete block.

Three of the older buildings on campus, College Hall (1918), the Mary Pappert School of Music (1928) and Rockwell Hall (1957), feature façades that are predominantly square limestone panels. All three also feature vertical bands of gray metal panels and windows. The Richard King Mellon Hall of Science (1968) was designed by Ludwig Mies van der Rohe. This structure is typical of his modernist style, with a repetitive skin of plate glass and black steel panels and vertical mullions. Two other structures that were constructed much more recently, the Beard Press Box (1995) and the Sklar Skywalk (2006), were designed with a similar material palette but also feature some additional ornamentation and pitched roofs.

The Duquesne Union (1967) stands alone on campus with its brutalist style. Designed by Paul Schweiker, a graduate of Carnegie Tech, the Union features strong horizontal forms and slender vertical elements of cast in place concrete with floor to ceiling glass between. Brown brick, similar to the adjacent School of Law, is used as an accent for low perimeter walls and the upper penthouse.

Des Places Residence Hall (top left), Richard King Mellon Hall of Science (top right), College Hall (bottom left) and Duquesne Union (bottom right)

The Forbes Avenue (1987) and Locust Street (1992/1993) Parking Garages have precast concrete panels around the ramps. The Forbes Avenue Parking Garage entrances and stair towers are made of red brick, while those of the Locust Street Parking Garage are constructed from a rough-hewn gray concrete masonry block with red brick accents. The UPMC Cooper Fieldhouse (1988) façade is also constructed with rough-hewn concrete masonry block in a mixture or gray and red.

Other than Administration Building and the Chapel, the UPMC Cooper Fieldhouse is one of the few campus buildings with anything other than a flat roof within the EMI District. The main arena space and one of the entrances are capped with a red standing seam metal pyramid hip roof. Sloped red standing seam metal screen walls also surround portions of the flat roof, shielding the view of roof-mounted equipment. Similar screen walls are utilized on Vickroy Hall and Bayer Hall: both are black. The Public Safety Building has a low gabled roof.

The first floor of Administration Building also features a light-colored rough-hewn stone base on its south-facing façade. This light-colored base element is echoed on a few other buildings around campus, including the Duquesne Towers (1-2 stories), Fisher Hall (1-2 stories), the Power Center (2 stories) and Des Places Residence Hall (1 story).

Duquesne University also has a long tradition of improving the public realm with works of art and site features. Murals and sculptures located throughout campus and along Forbes Avenue both enrich the environment and reinforce the University's Spiritan identity. Site features, such as campus gateways and fountains, help to define and enhance the campus. One example, the Academic Walk Fountain, is the center of numerous campus events and traditions.

Fountains along Academic Walk (left and top right) and University signage and the Gateway Arch at McAnulty Street (bottom right)

Monuments and public art located around Duquesne's campus

Monuments and public art located around Duquesne's campus

Flags along Academic Walk (top) and in front of the Student Union (bottom)

GENERAL RECOMMENDATIONS

Due to the dramatically different style and material palettes on Duquesne's campus, there is not a single consistent architectural style or material palette to which future design must adhere. While construction in the '90s tended to be contextual and traditional, more recent construction has been a blend of familiar material palettes utilized in more contemporary design vocabularies. Increasing density, dramatically varied local contexts, changing educational paradigms and evolving materials and sustainability strategies are all valid reasons to not prescribe a singular, overly defined set of design guidelines. The following guidelines outline a general set of recommendations for good practice in design that will maintain the high quality of buildings on campus.

- All new structures on campus shall be sympathetic and reflective of the University standards, their immediate context and their unique functional use through architectural means.
- All new construction shall continue the recent trend of utilizing familiar materials and color palettes in a contemporary design style.
- All new construction will accommodate users of all types to achieve universal design.
- All new development along Forbes Avenue will maintain a 10' public sidewalk.
- All new development along Forbes Avenue shall meet a transparency target of 60% for ground level, street-facing facades.
- Building entrances shall be well-defined and articulated in order to achieve prominence and assist with wayfinding.
- Ground floor of new facilities and renovations with public frontage, particularly along Forbes Ave., shall enhance the public realm and activate pedestrian connectivity with complementary architectural design, transparency, and visibility at street level.
- All facilities shall be highly accessible. They shall also assist pedestrians with overcoming the campus' natural topography through interior and exterior circulation whenever possible.
- Service and support for all new facilities shall be separated from primary public circulation paths and shielded/screened when required.
- Building upon the University's history of beautifying and enhancing the public realm, all future projects may include public art installations that embrace the history, heritage and aspirations of both the school and the surrounding neighborhood/city.

Setbacks

Due to the urban nature of the campus, minimal or no setback from the public right-of-way is required. This plan has set out to create safer, more comfortable, pedestrian-friendly environments both inside and outside campus buildings.

- In all cases, sufficient space shall be provided between roadway and building to allow for safe pedestrian circulation, necessary lighting and street amenities, including ten-foot (minimum) sidewalks along Forbes Avenue.
- Along the perimeter of campus and particularly along Forbes Avenue and north of Forbes Avenue, all future construction shall maintain a strong urban edge in relation to the street network.
- Building setbacks at street level shall be limited and used to define entrances, open community gathering spaces or other defined functional uses.
- Buildings interior to campus shall draw from the surrounding context and pedestrian circulation routes to develop each particular setback.
- Important view corridors shall be maintained to preserve views and assist in wayfinding.
- Due to the limited open space on campus, buildings shall be designed to maximize usable outdoor space and minimize wasted, unusable space.

Height

The Duquesne University campus has a variety of building heights, from the modest 3-story Trinity Hall to the 17-story Duquesne Towers. The steep topography of the campus also has an effect on an observer's perception of building height. What appears to be a one- or two-story building from one location may actually be a five- or six-story building from another.

- Construction shall increase density in order to preserve open space and limited land available for future development. All additions shall complement existing buildings.

- The height of additions to existing facilities shall complement the existing facility.

- Maximum height of new projects and additions will be 160' measured from the average finished grade on primary frontage.

- Sun and shadow studies shall be conducted to assess the impact of any future construction on the surrounding outdoor gathering, recreation and athletics spaces around campus.

Bulk and Massing

Buildings shall be designed to meet the needs of their intended use. Because of Duquesne's unique topography and urban density, it is essential that the bulk and massing of new construction consider existing buildings, the limited open space around campus, and the effect of natural elements on both building interior and surrounding exterior spaces.

- All new buildings shall strive to provide maximum natural daylight, views to the exterior and natural ventilation when possible.

- All new structures shall have a comfortable pedestrian-oriented scale.

- Larger structures shall be visually broken down into several smaller scaled units to avoid the monolithic presence that the parking garages currently present.

- Upper level setbacks may be utilized to maintain contextual relationships with smaller existing structures or to increase daylighting to lower levels.

- Buildings shall be designed with flat roofs unless contextually or functionally appropriate.

- New and existing rooftop or ground equipment shall be enclosed in a penthouse structure or blocked from view with screen walls.
- Upper story setbacks shall follow zoning code requirements. Mechanical equipment shall be screened from view.

Building Materials

Duquesne University occupies and maintains buildings that are approaching a century and a half in age. It is essential that new construction at Duquesne University make the most of available resources and is designed to last for the extended lifetime expected of academic facilities. Because of the varied nature of the building materials represented across campus, it is essential that material selection suits the intended building use, the immediate context of the building site and the collective image and identity of Duquesne University.

- All building materials shall aim to be high-quality, low-maintenance, enduring and sustainable.

- Red/brown modular brick will continue to be the primary basis of design.

- Stone/cast-stone/precast concrete is the most common secondary material and shall be used for trim, sills, lintels, distinct building bases, entrances and other feature elements.

- Metal is commonly used for elements including window mullions, canopies, sunshades, screens and other details such as railings. Use of metal for wall panels or roofing shall be more limited to special structures such as the Sklar Skywalk or elements like the Beard Press Box which has a strong contextual relationship with the Richard King Mellon Hall of Science.

- The use of materials such as EIFS and vinyl siding shall be prohibited. Fiber cement shall only be used as secondary cladding.

- High-performance, energy-efficient window systems that maximize daylighting and views shall be selected.

- Specific material color selection shall be based on the existing material palette found on campus, the immediate context of the site and/or special colors relating to University image and identity.

Open Space Guidelines:

The open space of the Duquesne University's campus is shaped by its urban context and significant topographic grade change that spans the breadth of the campus. The open spaces of Duquesne University's campus should reflect the University's Catholic-Spiritan vision, mission, and values.

In addition to the general recommendations in the section above, the following guidelines outline a general set of recommendations for high quality, high performance campus landscapes. Refer also to section 7.2 Sustainable Landscape Design Principles and Sustainable Landscape Design Guidelines. The Overall Open Space Guidelines are comprised of seven (7) key areas:

1. Siting New Projects

- Building siting shall be informed by topography and existing environmental conditions.
- New projects shall enhance environmental and human health and respond to the site context.
- New projects shall reinforce the campus landscape identity, pedestrian connections and contribute to the campus connectivity.
- Buildings shall be located to create useable and meaningful open spaces that connect and activate the adjacent public realm (if applicable) and overall campus.
- Site new projects to maintain important campus views.
- Locate new buildings to link interior and exterior spaces with entry points, adjacent common areas and views to the outdoors.
- Set building finished floor elevations to create simplified building access and minimize ramps and stairs.
- Extend building project limits of work to create meaningful pedestrian linkages to the greater campus network.
- New projects shall align with the goals of the Uptown EcoInnovaton District.

2. Campus Spaces

- Campus spaces shall integrate campus and sustainability planning, create a cohesive campus landscape, and celebrate Duquesne University's unique identity.
- Open spaces shall contribute to the framework of campus spaces supporting multitude of needs including physical activity, mental restoration, event programming, and socialization. (Note: All uses, and needs do not need to occur in the planning of a singular campus space).
- Campus spaces shall aim to integrate The Center of Universal Design's "Principles of Universal Design." Spaces shall strive to create a unified and accessible experience (or equivalent when necessary) for all users and avoid segregating users, incorporate clear design cues to increase comfort and safety, provide choice and flexibility in use and create spaces that are safe and inclusive.
- Create spaces that are flexible and can support informal gatherings. Provide spaces to accommodate gatherings of various sizes from small groups to larger campus-wide gatherings throughout the campus.
- Campus spaces shall protect and maintain campus objects or landscapes significant to the University's heritage.
- Maintain open campus lawns and pedestrian malls to provide welcoming places of gathering that accommodate flexible programming and uses.
- Campus spaces shall provide optimum site accessibility, safety, and wayfinding, including campus lighting for safety and comfort.
- Design to maximize the use of campus spaces throughout the year and incorporate elements that address site specific conditions including sun, wind, and shade.
- New projects on Forbes Ave. shall incorporate vegetated and open public spaces accessible to the community at the pedestrian level. Open spaces shall comprise 20% of the property area and be located along the Forbes Ave.

3. Connectivity

- Create a network of campus spaces that prioritize pedestrian circulation and pedestrian comfort.
- Consider the addition of new campus spaces in relation to how they benefit and contribute to the overall campus open space system and pedestrian connections.
- Accommodate routes for campus move-in/move-out events without compromising the campus connections and spaces for the remainder of the year.
- Utilize the Duquesne University standard exposed aggregate concrete for main pedestrian pathways to create a visually uniform network.
- Provide adequate and consistent level of pedestrian scale lighting for comfort and safety across the campus.
- Refer to the Universal Design Principles under the "Campus Spaces" section above.
- Minimize the visual impacts of parking lots and parking structures using grading, planting, and screening per City of Pittsburgh Zoning Ordinance Chapter 918.
- Minimize the use and impact of vehicles on campus.
- Where possible minimize street widths and incorporate bump-outs.
- Create visually prominent crosswalks to provide increase pedestrian safety and visibility. Where possible, raised pedestrian crossings and the use of specialty paving materials may also be employed.
- Design parking areas for pedestrian safety. Create clear pedestrian circulation routes, use lighting, and avoid creating blind spots.
- Provide bike racks near building entrances where possible.
- Provide opportunities for alternative transportation and facilitate connections to existing public transit.

4. Streetscapes

- Projects adjacent to the public realm shall engage and activate these spaces.
- Street trees (including species, spacing, and tree pits) shall comply with City of Pittsburgh Zoning Ordinance Chapter 918. Tree species shall be from the approved Street Tree Species list prepared by the Pittsburgh Shade Tree Commission. https://pittsburghpa.gov/dpw/removal-planting
- Create streetscapes that are welcoming and attractive to support their use as vital pedestrian corridors.
- Utilize hardscape materials, furnishings, and lighting that reflect this pedestrian scale.
- Create visually prominent crosswalks to provide for pedestrian safety and increase pedestrian visibility. Where possible, raised pedestrian crossings and the use of specialty paving materials may also be employed.
- Utilize perimeter streets as an opportunity identify the campus identity using the campus landscape and materials palettes, signage, and light pole banners.

5. Landscape Planting

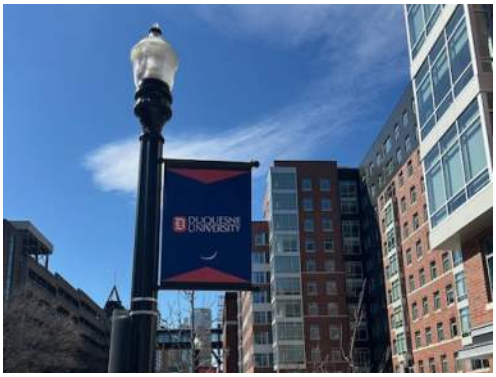
- Design with plantings to create a cohesive campus aesthetic.
- Use the landscape to frame key views and screen less-desirable ones.
- Select plants for seasonal interest, designing for maximum effect when classes are in session.
- Design the landscape using native and appropriate plant species.
- Protect sensitive environmental features including the campus collection of mature trees per City of Pittsburgh Zoning Ordinance Chapter 915.
- Consider the scale of the space when selecting plant species. Large trees and simplified plant palettes are beneficial in larger, open areas. While smaller gathering spaces require appropriate scaled plants, which can be viewed at a more intimate scale.
- Use trees, both new and existing to shape and define campus spaces and address thermal, wind and micro-climate conditions.
- Utilize plantings in a manner which supports natural site surveillance allowing visibility throughout the campus space.
- Landscape shall comply with the City of Pittsburgh Zoning Ordinance Chapters 915 and 918.
- Landscape design shall minimize impervious surfaces and employ best management practices for stormwater management.

6. Landscape Materials:

- The landscape materials shall strive to be high-quality, low maintenance, sustainable and resilient.
- Select materials that are in keeping with the campus aesthetic.
- Utilize campus standards for pedestrian elements in the greater campus context including but not limited to pedestrian light fixtures, site furnishings, bollards, railings, exposed aggregate concrete and brick paving to achieve consistency across campus spaces.
- Specialty site furnishings and materials shall be in keeping with the campus aesthetic and shall be used only in site specific applications.

7. Sustainability:

- New building and landscape projects shall implement sustainable practices and principles.
- These projects shall enhance the performance of the campus landscape and support the development of campus and green infrastructure projects providing these layered benefits to the University students, faculty, and community.
- Campus projects shall utilize natural systems as an amenity and tool for the improvement and/or creation of high-functioning ecosystems.
- Section 7.2 Sustainable Landscape Design Guidelines is referenced herein to expand upon the University's landscape guidelines pertaining to:
    - Water
    - Planting and Soils
    - Materials
    - Human Health and Well-Being



Samples of landscape standards on Duquesne University campus

6.1 EXISTING CONDITIONS

View of Forbes Avenue passing through campus

Existing Transportation Network Map(s)

The area of influence surrounding Duquesne University is shown in Figures 6.1 through 6.4. Figure 6.1 includes public arterials, public and private collector streets and local streets, and the figure indicates the study intersection control types that were included in the 2020 IMP. Figure 6.2 details pedestrian paths. Figure 6.3 shows public bicycle routes, POGOH stations and on-campus bicycle racks. Bus routes and bus stops providing access to the site are shown in Figure 6.4.

Travel Inventory

Parking spaces available for lease and daily (hourly) parking according to 2025 conditions are shown in Table 6.1. The 2020 IMP included 3,051 parking spaces on Duquesne University campus. In the 2025 IMP Amendment projects, the 46 space Lot 1 will be removed. The new McGinley Hall constructed under the 2020 IMP added 8 parking spaces. Since the approval of the 2020 IMP, 403 off-site parking permits are available at the Chatham Garage. The net change of parking spaces from the 2020 IMP to the 2025 IMP Amendment is an increase of 365 parking spaces. The 2035 Future Parking Inventory is shown in Figure 6.5.

Table 6.2 shows the existing supply/demand comparisons during maximum demand conditions for the 2025 existing parking demand. At 100% efficiency, there is a surplus of 4 spaces. At 90% efficiency, there is a deficit of 342 spaces. To manage this deficit at peak times, the Locust Street garage is valet parked.

Consistency with Transportation Plans, Policies and Procedures

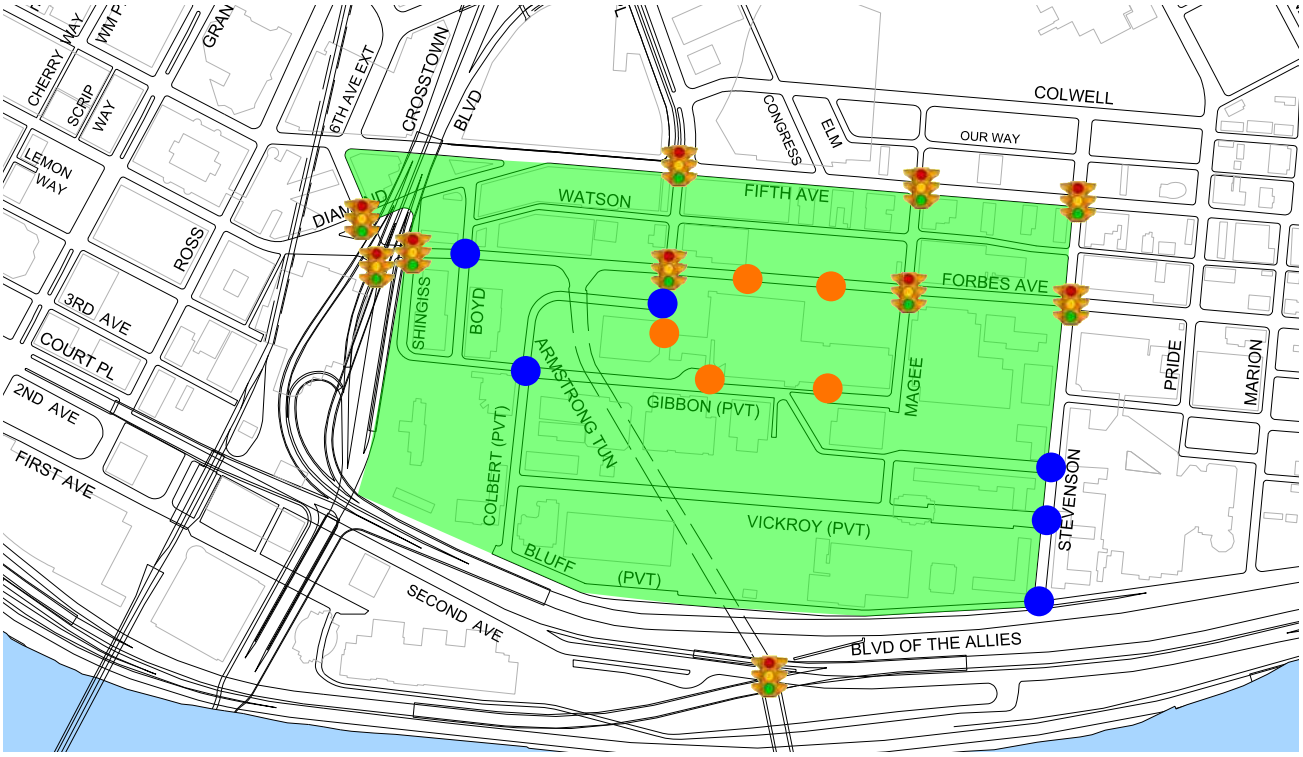
This project is consistent with the Uptown EcoInnovation District project report (in which Duquesne University participated) and the report produced by Pittsburgh City Planning and the Pittsburgh Rapid Transit (PRT)-proposed BRT project.

Ongoing Projects

The Bus Rapid Transit (BRT) system is expected to be in place by the end of 2027 on Fifth and Forbes Avenues. The BRT plan adds exclusive BRT lanes, bike lanes in some locations, and reduces travel lanes for general traffic.

Transportation Systems and Services

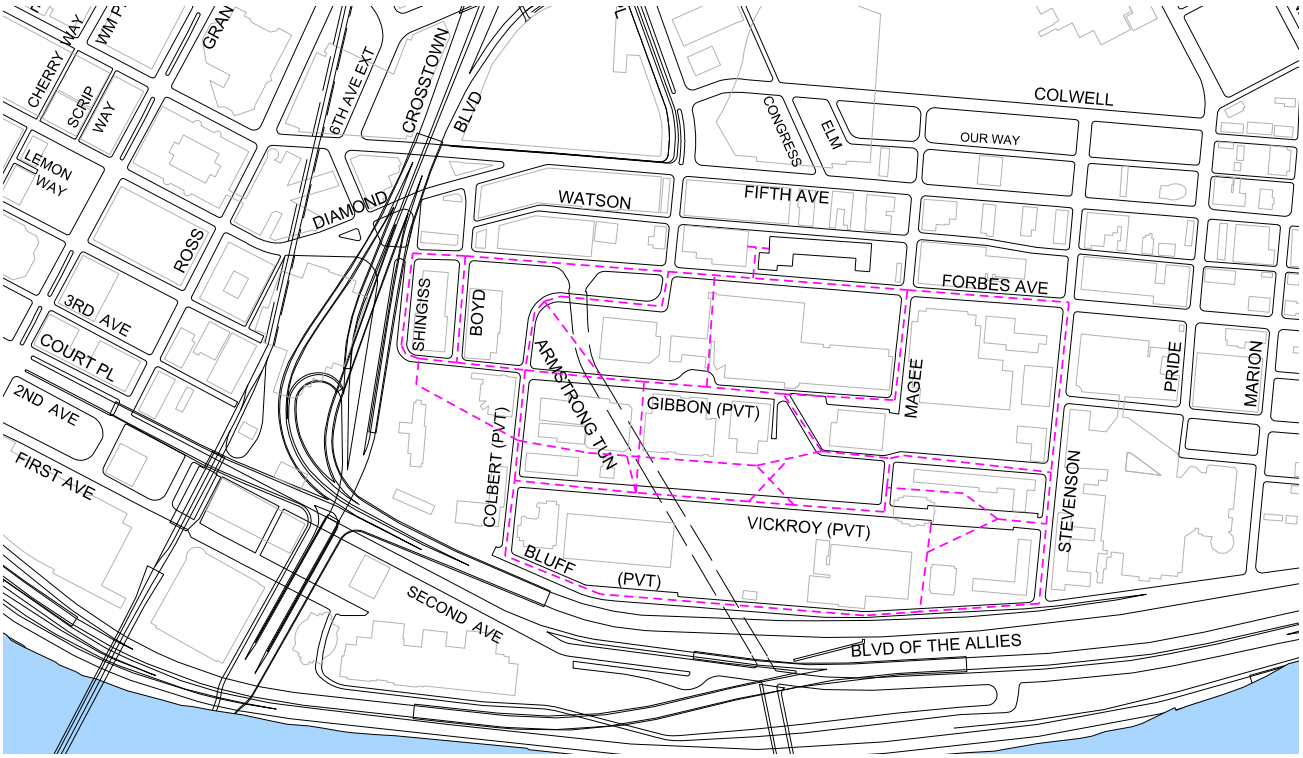
Duquesne University offers shuttle service between campus and South Side for students, faculty and staff. The shuttle operates Monday through Friday from 7:00 AM until 10:00 PM following the academic calendar. This service is currently free for all Duquesne University students.



Area Legend

- Signalized Study Intersection
- Unsignalized Study Intersection
- Garage Driveway
- EMI Boundary

Figure 6.1: Study Intersections



Area Legend

- Pedestrian Paths

Figure 6.2: Pedestrian Access Paths

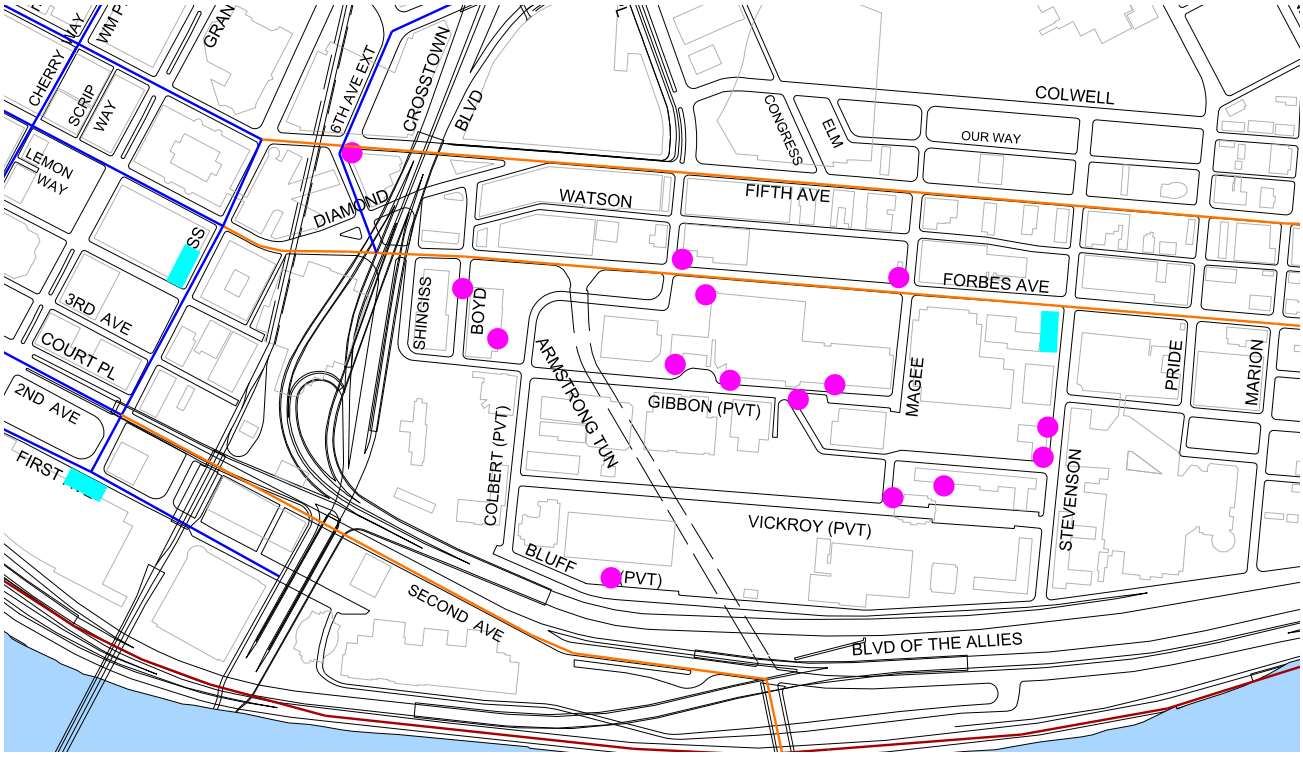


Figure 6.3: Bicycle Paths

Area Legend

- Cautionary Bike Route
- On-Street Bike Route
- Healthy Ride Station
- On-Campus Bike Rack

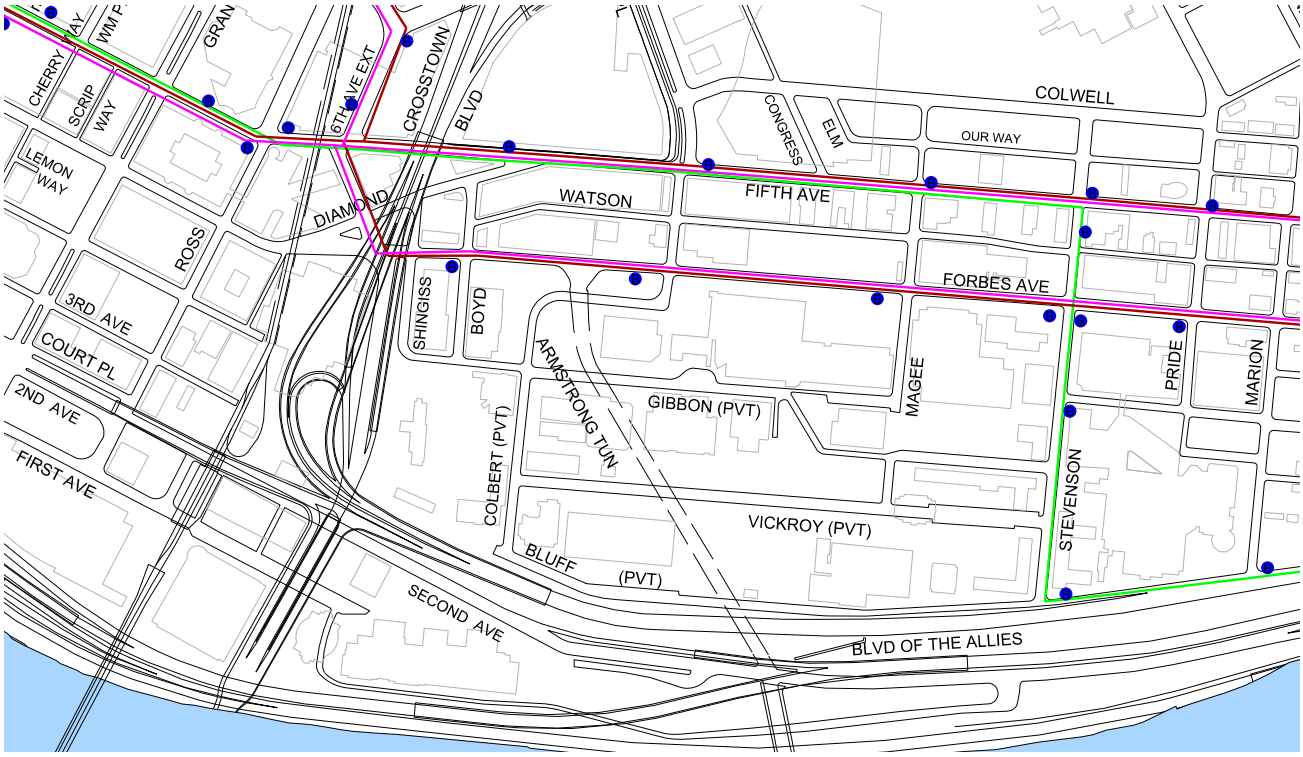


Figure 6.4: Pittsburgh Regional Transit Bus Routes

Area Legend

- PRT Bus Stop
- PRT Route 61A
- PRT Route 65
- PRT Route 71A

TABLE 6.1: EXISTING PARKING USES

Parking Facility	Number of Parking Spaces		
	Hourly	Lease	TOTAL
Parking Garages			
Forbes Avenue Garage	699	25	724
Locust Street Garage	33	1,641	1,674
Brottier Hall Garage	0	81	81
Subtotal, Parking Garages	**732**	**1,747**	**2,479**
Parking Lots			
Lot 1	2	44	46
Under Locust Garage - Gibbon Street Near Magee Street	4	57	61
Under Locust Garage - Middle of Gibbon Street	0	10	10
Upper Fisher Lot	7	12	19
Lower Fisher Lot	1	18	19
Stevenson Street/Des Place	2	10	12
Stevenson Street/Public Safety Building	1	10	11
Vickroy Street (St. Ann Hall)	9	38	47
Duquesne Towers	0	7	7
Bluff Street Lot	8	32	40
Trinity Hall	0	22	22
COM Lot	0	48	48
McGinley Hall Lot	8	0	8
Subtotal, Parking Lots	**42**	**308**	**350**
On-Street Parking			
Gibbon Street			
Near Magee Street	0	14	14
Near McAnulty Street	17	--	17
Subtotal, Gibbon Street	**17**	**14**	**31**
Magee Street (Locust Street to Forbes Avenue)	**5**	**7**	**12**
Seitz Street			
Locust Street to Upper Magee Street	0	13	13
Upper Magee Street to Stevenson Street	0	17	17
Subtotal, Seitz Street	**0**	**30**	**30**
Upper Magee Street	**0**	**4**	**4**

(1) Field Verified by Trans Associated during April 2018.

TABLE 6.1 (CONT.): EXISTING PARKING USES

Parking Facility	Number of Parking Spaces		
	Hourly	Permit	TOTAL
Bluff Street			
St. Martin Hall	0	6	6
Arthur J. Rooney Field	10	9	19
Richard King Mellon Hall of Science	9	10	19
Bayer Learning Center	0	10	10
Subtotal, Bluff Street	**19**	**35**	**54**
McAnulty Drive	**4**	**0**	**4**
Boyd Street			
Eastside	0	9	9
Westside	6	4	10
Subtotal, Boyd Street	**6**	**13**	**19**
Shingiss Street			
Eastside	3	--	3
Westside	3	9	12
Subtotal, Shingiss Street	**6**	**9**	**15**
Locust Street			
Shingiss Street to Boyd Street	3	--	3
McAnulty Drive to Locust Street Garage, Northside	3	14	17
McAnulty Drive to Locust Street Garage, Southside	3	12	15
Seitz Street to Magee Street, Northside	0	10	10
Seitz Street to Magee Street, Southside	0	8	8
Subtotal, Locust Street	**9**	**44**	**53**
Brottier Hall Circle	**8**	**0**	**8**
Subtotal, On-Street	**74**	**156**	**230**
Total - On-Campus Parking	**848**	**2,211**	**3,059**
Off-Campus Parking			
Chatham Garage (permits for staff and students)	--	403	403
TOTAL – All Parking Facilities	**848**	**2,614**	**3,462**

(1) Field Verified by Trans Associated during April 2018.

TABLE 6.2: SUPPLY/DEMAND COMPARISONS

Parking Supply	Number of Parking Spaces[(1)]	Maximum Parking Demand	Parking Surplus or (Deficit)
100% Efficiency	3,462	3,458	4
90% Efficiency	3,116	3,458	(342)

(1) From Table 2.4.

Source Analysis by Trans Associates

TABLE 6.3: EMPLOYEE SURVEY RESULTS

During a typical 5-day work week, how many days do you commute to work?		
Days Commuting Per Week	**Number of Employees**	**Percentage of Employees**
1	14	2.5%
2	18	3.2%
3	51	9.2%
4	48	8.6%
5	426	76.5%
Total	**557**	**100.0%**
Average Commute Days Per Week	**4.5**	
Percentage on Campus during an Average Day	**90.7%**	

In a typical 5-day workweek, which transportation mode did you use most often for your commute?		
Transportation Mode	**Number of Employees**	**Percentage of Employees**
Drive + Parked On-Campus	378	67.9%
Drive + Park in Private Lot/Garage (With Lease)	56	10.1%
Drive + Park in Private Lot/Garage (Without Lease - Paid Hourly or Daily Parking Rate)	12	2.2%
Ride Duquesne Shuttle from the South Side	1	0.2%
Transit (Bus or Light Rail)	74	13.3%
Registered Carpool or Vanpool	2	0.4%
Dropped Off/Picked Up by Friend, Relative, Uber/Lyft, etc.	14	2.5%
Walk	4	0.7%
Bike	5	0.9%
Telecommute/Telework (Work from Home)	1	0.2%
Other	10	1.8%
Total	**557**	**100.0%**

Parking Location	**Number of Employees**	**Percentage of Employees**
Park in the South Side and Ride the Duquesne Shuttle	1	0.2%
Park On-Campus	378	84.6%
Park in Private Lot/Garage (with Lease)	56	12.5%
Park in Private Lot/Garage (without Lease - Paid Hourly or Daily Parking Rate)	12	2.7%
Total	**447**	**100.0%**

TABLE 6.3 (CONT.): EMPLOYEE SURVEY RESULTS

Adult Passengers in Cars (Including Driver)	Number of Employees	Percentage of Employees
1 person	401	89.9%
2 people	37	8.3%
3 people	8	1.8%
4 people	0	0.0%
5 people	0	0.0%
6 people	0	0.0%
Total Number of Vehicles	**446**	**100.0%**
Total Number of Persons Transported	**499**	**--**
Average Auto Occupancy, persons per vehicle	**1.1**	**--**

What options are available to you to get to campus?	
Transportation Options - All Modes that Could be Used at Various Times by an Individual	**Number of Responses[(1)]**
Walk	19
Bike	54
Transit	317
Drive Alone	504
Drive with Others	137
Total	**1,031**

If walking or biking are not options available for you to get to campus, why?	
Transportation Mode	**Number of Responses[(1)]**
Distance or Time (Too far away. It takes too long to travel.)	428
Conditions of Sidewalks, City Steps, or Other Pedestrian Facilities	13
Lack of Bicycle Parking or Bicycle Repair Stations	1
No Bicycle Routes	31
Walking or Biking Feels Unsafe	27
Walking or Biking is Inconvenient	13
Personal Health/Mobility Reasons	12
Other	32
Total	**557**

TABLE 6.3 (CONT.): EMPLOYEE SURVEY RESULTS

Reason for Driving Alone	Number of Responses[(1)]
Other travel modes (bus, train, walk, or bike) are inconvenient or take too long	301
I like the convenience of having my car	305
My commute distance is too long	211
Family care or similar obligations	184
My schedule requires me to work hours when transit is infrequent or unreliable	148
My schedule requires me to work hours when walking to/from transit seems unsafe	61
I need more information on the cost, stop locations, service times, etc. of transit	41
Other	87
Total	**1,338**

If your employer were to offer a transportation benefits program, what three features would you be most interested in?	
Transportation Mode	**Number of Responses[(1)]**
Discounted Transit Fares if this Could be Negotiated by Duquesne with the Port Authority	408
Transit Screens which Display Real Time Bus Arrivals On-Campus or Through Student Web Portal or App	241
Bike Repair Stations, Bike Pump, Covered Bike Parking, and Bicycle Storage	88
Preferred Parking Space and/or Discounted Parking Lease for Registered Carpools or Vanpools	363
Ride Matching Service to Help me Find a Carpool or Vanpool	285
None of the Above	286
Total	**1,671**

Data collected through survey developed by TA, approved by the City of Pittsburgh and distributed during October 2018 by Duquesne University. Employees could select multiple answers.

Source: Analysis by Trans Associates

TABLE 6.4: STUDENT SURVEY RESULTS

During a typical 5-day (Monday through Friday) week, how many days are you on campus?		
Days On-Campus Per Week	**Number of Students**	**Percentage of Students**
1	18	1.9%
2	30	3.2%
3	58	6.2%
4	76	8.1%
5	760	80.7%
Total	**942**	**100.0%**
Average Commute Days Per Week	**4.6**	
Percentage on Campus during an Average Day	**92.5%**	

In a typical 5-day (Monday through Friday) week, which transportation mode did you use most often for your commute?		
Transportation Mode	**Number of Students**	**Percentage of Students**
Live on Campus, Walk	302	32.1%
Live off Campus, Walk	76	8.1%
Drive + Parked On-Campus	236	25.1%
Drive + Park in Private Lot/Garage (With Lease)	111	11.8%
Drive + Park in Private Lot/Garage (Without Lease - Paid Hourly or Daily Parking Rate)	28	3.0%
Ride Duquesne Shuttle from the South Side	29	3.1%
Transit (Bus or Light Rail)	108	11.5%
Registered Carpool or Vanpool	0	0.0%
Dropped Off/Picked Up by Friend, Relative, Uber/Lyft, etc.	30	3.2%
Bike	6	0.6%
Telecommute/Telework (Attend Class from Home)	3	0.3%
Other	13	1.4%
Total	**942**	**100.0%**

Parking Location	**Number of Students**	**Percentage of Students**
Park in the South Side and Ride the Duquesne Shuttle	29	7.2%
Park On-Campus	236	58.4%
Park in Private Lot/Garage (with Lease)	111	27.5%
Park in Private Lot/Garage (without Lease - Paid Hourly or Daily Parking Rate)	28	6.9%
Total	**404**	**100.0%**

TABLE 6.4 (CONT.): STUDENT SURVEY RESULTS

How many additional adults, besides yourself, were usually in the car with you?		
Adult Passengers in Cars (Including Driver)	**Number of Students**	**Percentage of Students**
1 person	300	80.0%
2 people	51	13.6%
3 people	19	5.1%
4 people	5	1.3%
5 people	0	0.0%
6 people	0	0.0%
Total Number of Vehicles	**375**	**100.0%**
Total Number of Persons Transported	**479**	**--**
Average Auto Occupancy, persons per vehicle	**1.3**	**--**

What options are available to you to get to campus?	
Transportation Options - All Modes that Could be Used at Various Times by an Individual	**Number of Responses[(1)]**
Walk	471
Bike	102
Transit	373
Drive Alone	462
Drive with Others	306
Total	**1,714**

If walking or biking are not options for you to get to campus, why?	
Transportation Mode	**Number of Students[(1)]**
Distance or Time (Too far away. It takes too long to travel.)	436
Conditions of Sidewalks, City Steps, or Other Pedestrian Facilities	30
Lack of Bicycle Parking or Bicycle Repair Stations	11
No Bicycle Routes	23
Walking or Biking Feels Unsafe	86
Walking or Biking is Inconvenient	50
Personal Health/Mobility Reasons	7
Other	30
Total	**673**

TABLE 6.4 (CONT.): STUDENT SURVEY RESULTS

If you drive alone to Duquesne, what are the three most important reasons why?	
Reason for Driving Alone	**Number of Student Responses[1]**
Other travel modes (bus, train, walk, or bike) are inconvenient or take too long	239
I like the convenience of having my car	274
My commute distance is too long	169
Family care or similar obligations	58
My schedule requires me to work hours when transit is infrequent or unreliable	157
My schedule requires me to work hours when walking to/from transit seems unsafe	136
I need more information on the cost, stop locations, service times, etc. of transit	34
Other	58
Total	**1,125**

If Duquesne University were to offer a transportation benefits program, what three features would you be most interested in?	
Transportation Mode	**Number of Student Responses[1]**
Discounted Transit Fares if this Could be Negotiated by Duquesne with the Port Authority	776
Transit Screens which Display Real Time Bus Arrivals On-Campus or Through Student Web Portal or App	518
Bike Repair Stations, Bike Pump, Covered Bike Parking, and Bicycle Storage	89
Preferred Parking Space and/or Discounted Parking Lease for Registered Carpools or Vanpools	405
Ride Matching Service to Help me Find a Carpool or Vanpool	198
None of the Above	96
Total	**2,082**

Data collected through survey developed by TA, approved by the City of Pittsburgh and distributed during October 2018 by Duquesne University. Students could select multiple answers.

Source: Analysis by Trans Associates

MOBILITY GOALS 6.2

Example of a Bike Share Pittsburgh, Inc. (dba POGOH) Bike Docking Station

Duquesne University's transportation-related goals include the following:

- Implementation of a multi-faceted approach to increase multi-modal transportation options for students, faculty and staff on campus while reducing the use of single occupant vehicles (SOVs) for both employees and students, with an employee goal of reduction from 80.2% to 60% SOVs and a student goal of reduction from 39.9% to 30% SOVs.

- Enhanced campus community health through increased use of active transportation (walk, bike, etc.)

- Decreased parking demand related to transportation mode changes from automobile to active transportation and public transit.

These goals are constructed with current City/DOMI initiatives and with the goals of the Uptown EcoInnovation District project report. See details in the Transportation Impact Study (see Appendix). A summary of transportation demand management goals and strategies is presented in Table S-1 of that document.

6.3 PROPOSAL

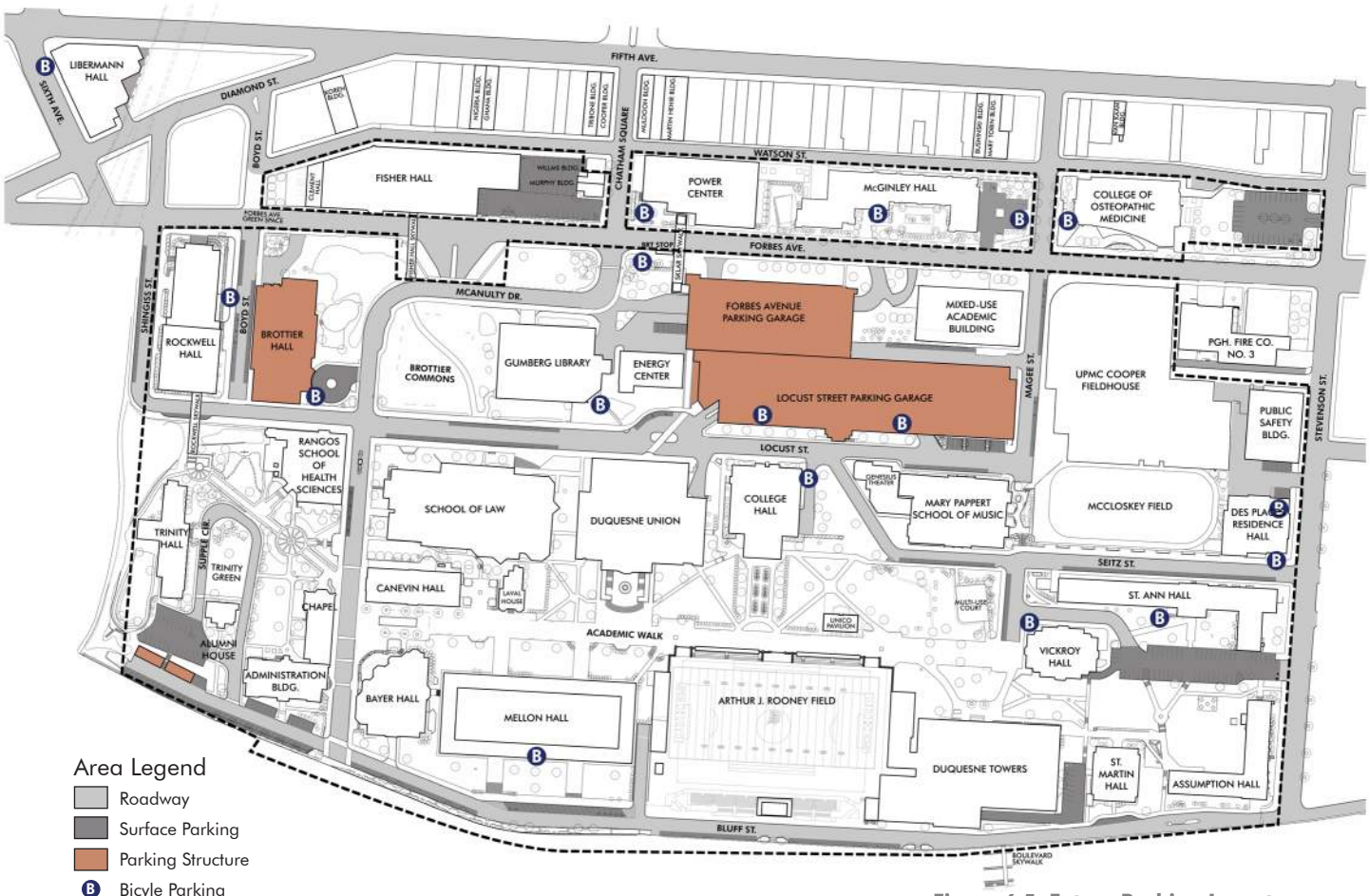


Figure 6.5: Future Parking Inventory

With the implementation of the BRT project, no transportation issues are expected to occur for the proposed projects at Duquesne University.

Proposed Transportation Network Map(s)

Refer to Figures 6.6 through 6.9 for BRT improvements.

Proposed Transportation Projects Table

Refer to Table 6.5 for proposed improvements. In addition to projects associated with the BRT, Duquesne University plans to install more bike racks on the campus to encourage bicycle usage among students and employees and will request a POGOH station on Forbes Avenue at McAnulty Drive. The proposed improvements are consistent with what was presented in the 2020 IMP.

Proposed Parking Facilities Map(s)

Refer to Figure 2.8 (existing) and Figure 6.5 (future). Also this is shown in Table 6.6.

Proposed Parking Summary

On-Campus Parking Garages:	2,479 Spaces
On-Campus Parking Lots:	304 Spaces
On-Campus, On-Street Parking:	230 Spaces
Subtotal:	3,013 Spaces
Off-Campus Parking:	403 Spaces
Total Parking:	3,416 Spaces

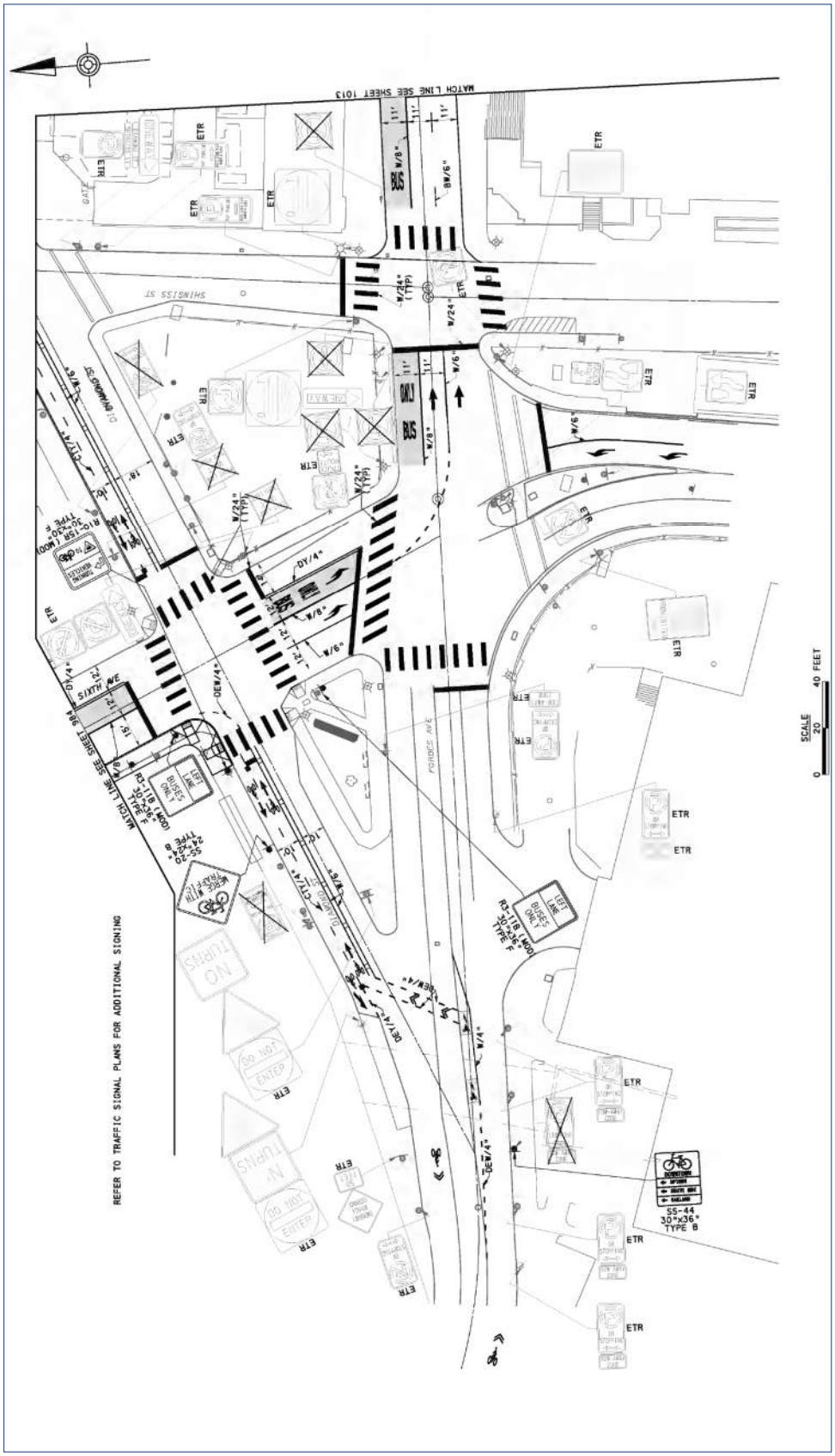


Figure 6.6: Sixth Avenue and Forbes Avenue and Liberty Bridge Ramps
BRT Signal Plans - City of Pittsburgh DOMI 100% Design Drawings

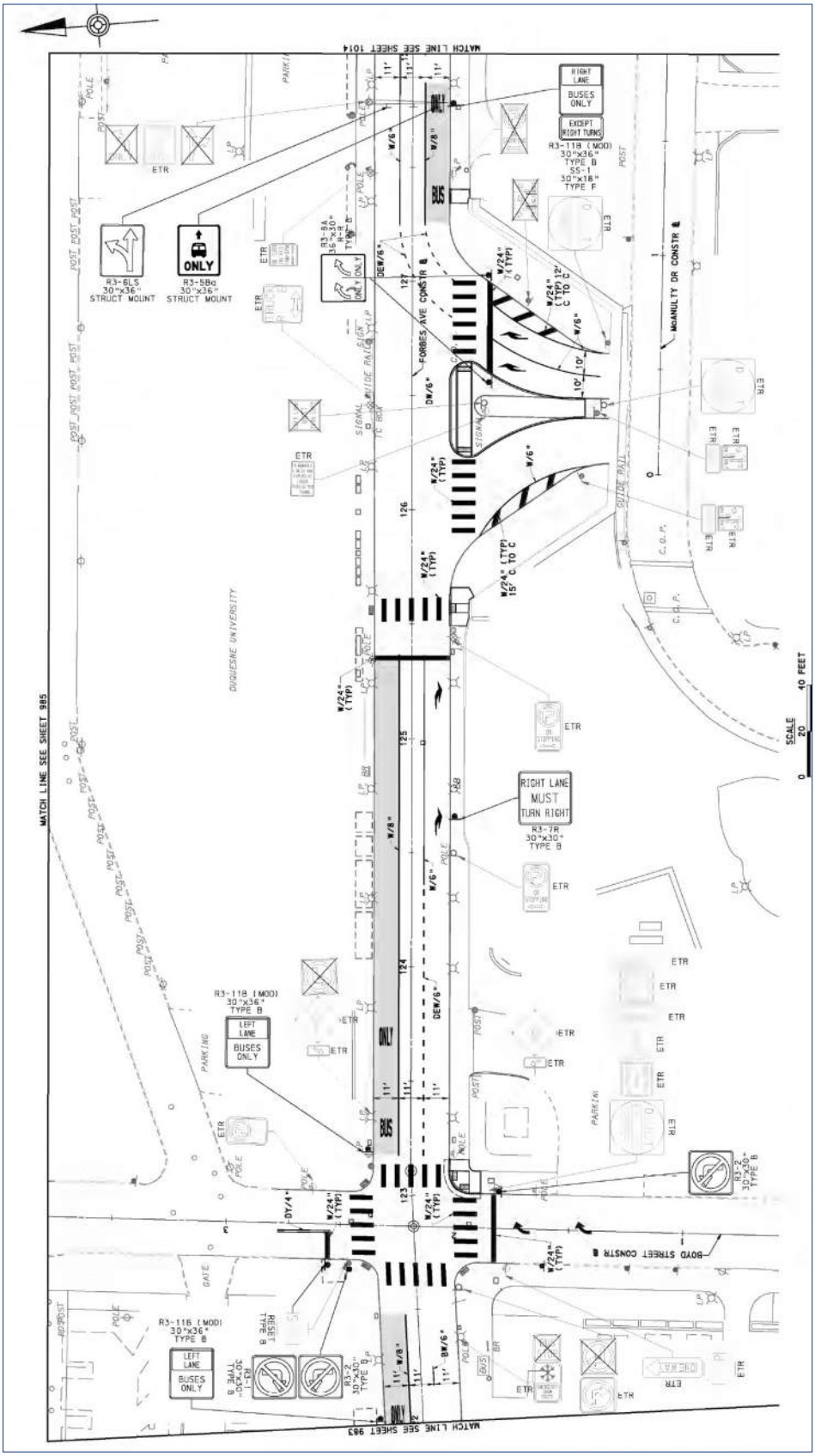


Figure 6.7: Forbes Avenue and Armstrong Tunnel
BRT Signal Plans - City of Pittsburgh DOMI 100% Design Drawings

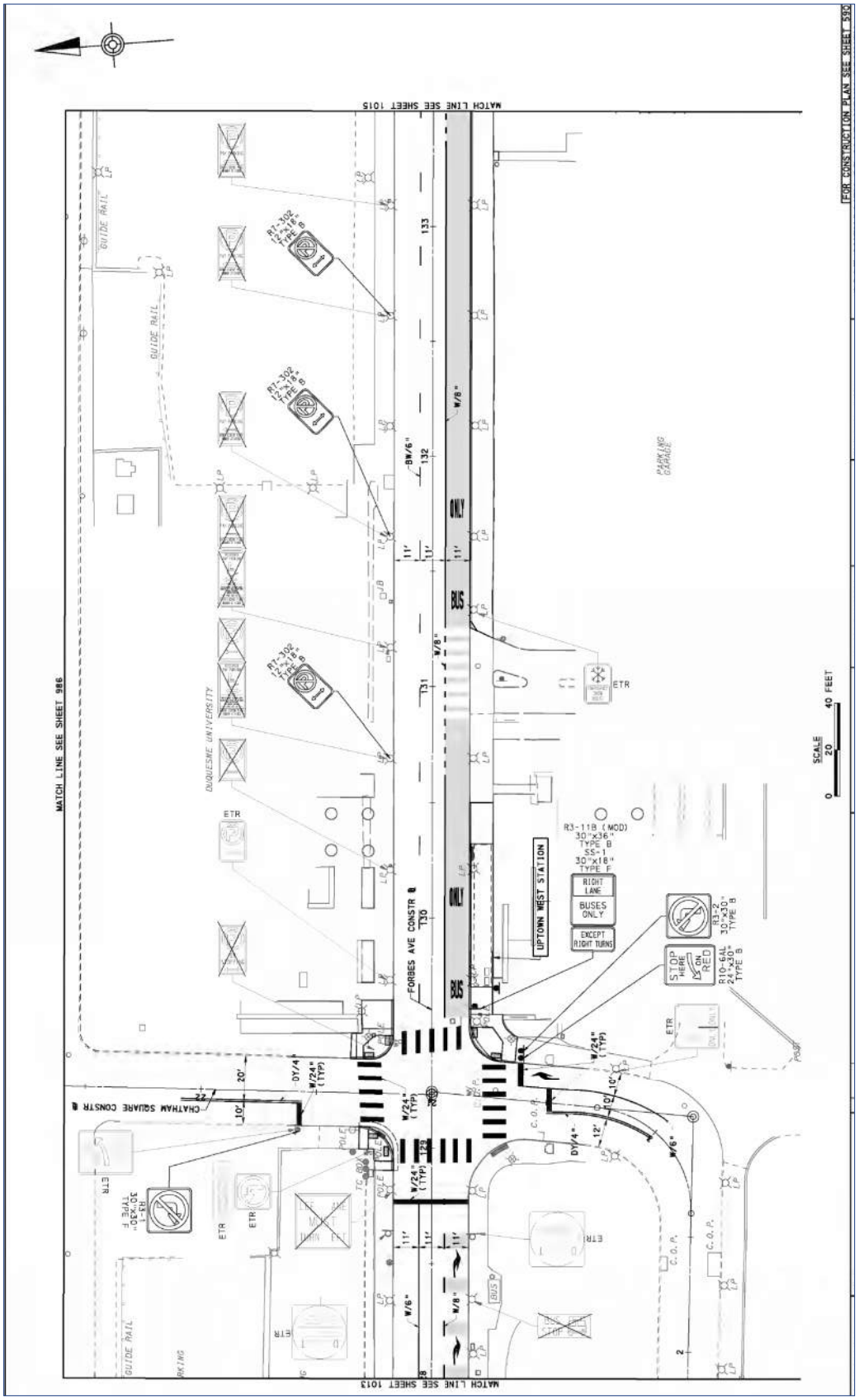


Figure 6.8: Forbes Avenue and Chatham Square and McAnulty Drive
BRT Signal Plans - City of Pittsburgh DOMI 100% Design Drawings

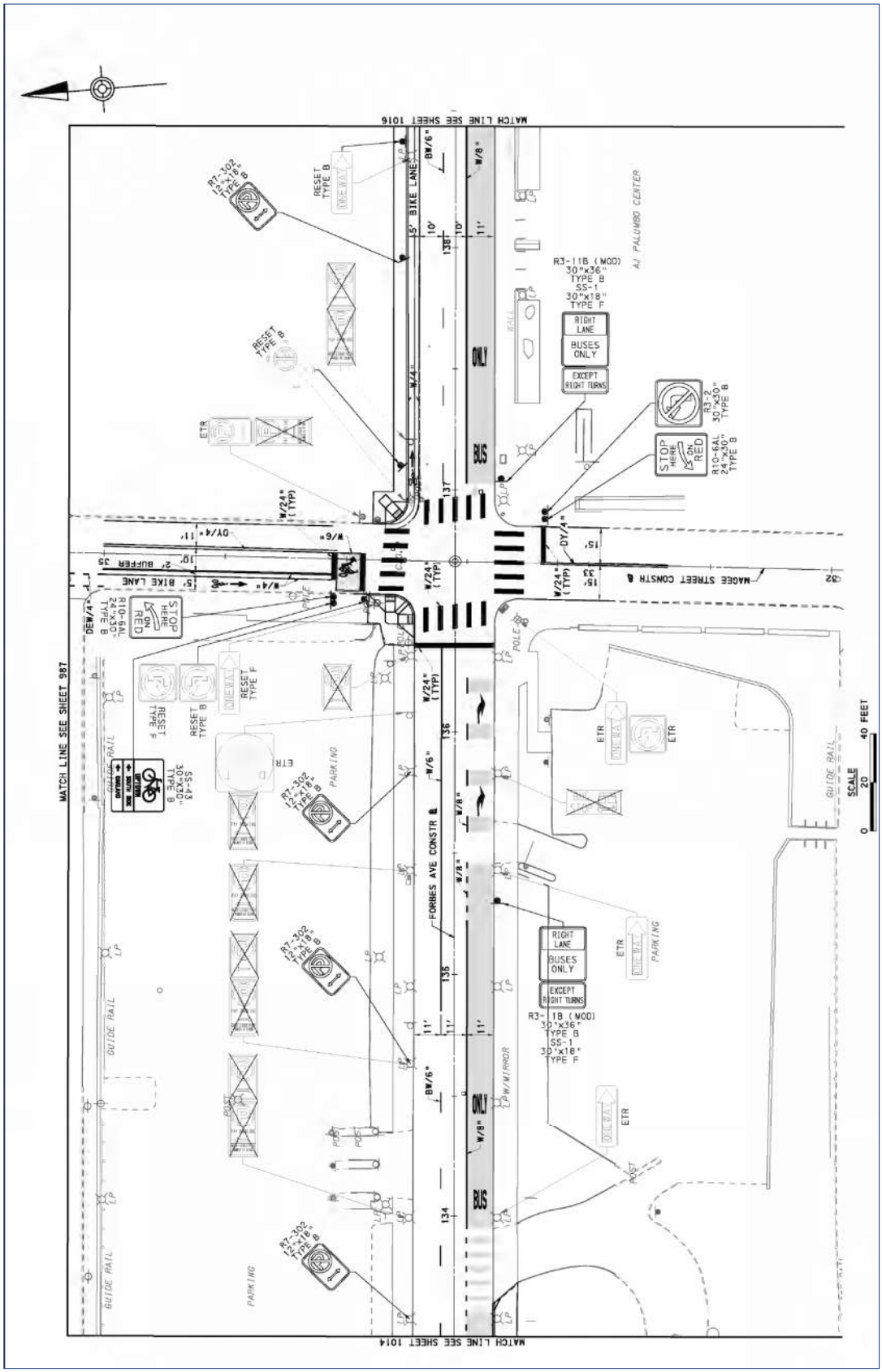


Figure 6.9: Forbes Avenue and Magee Street
BRT Signal Plans - City of Pittsburgh DOMI 100% Design Drawings

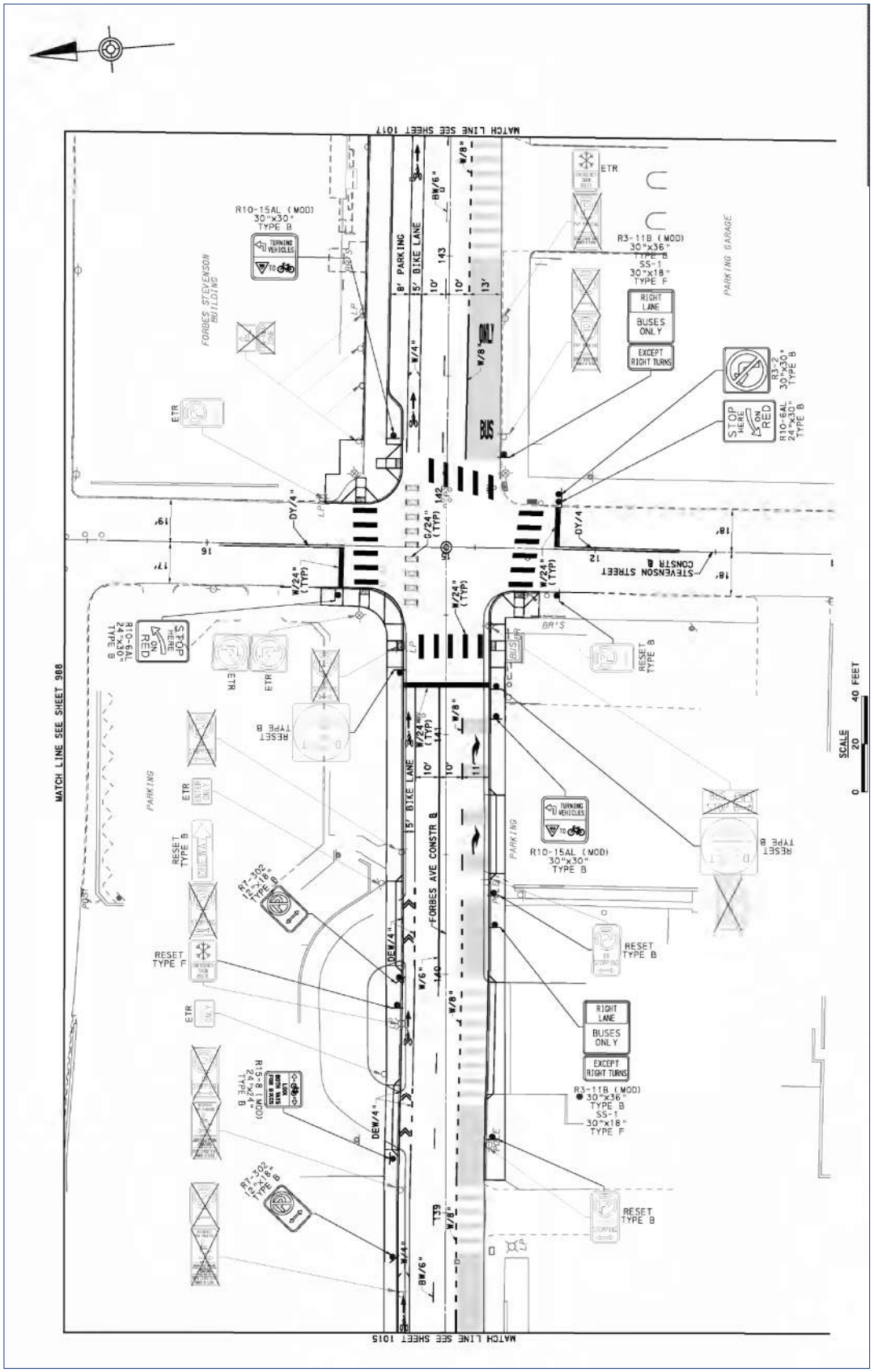


Figure 6.10: Forbes Avenue and Stevenson Street
BRT Signal Plans - City of Pittsburgh DOMI 60% Design Drawings

TABLE 6.5: PROPOSED IMPROVEMENTS

Project	Improvement
BRT Project	Signal upgrade at the Fifth Avenue and Sixth Avenue intersection.
BRT Project	Dedicated bike lane on Fifth Avenue and Diamond Street
BRT Project	Signal upgrade at the Diamond Street and Sixth Street intersection
BRT Project	Dedicated bus lane on Fifth Avenue.
BRT Project	BRT Station near the intersection of Fifth Avenue and Chatham Square/Washington Place.
BRT Project	Dedicated bus lane on Forbes Avenue.
BRT Project	BRT Station near the intersection of Forbes Avenue and McAnulty Drive/Chatham Square.
BRT Project (proposed by Duquesne University)	Addition of exclusive pedestrian phase at the Forbes Avenue and McAnulty Drive/Chatham Square intersection.
Duquesne University	Addition of bike racks throughout campus.
Duquesne University	Addition of a bike repair station near the new BRT Station located at Forbes Avenue and McAnulty Drive/Chatham Square.
POGOH Bike Share	New POGOH Station to be constructed on Forbes Avenue at McAnulty Drive.

Source: Analysis by Trans Associates

TABLE 6.6: 2030 FUTURE PARKING INVENTORY WITH MASTER PLAN PROJECTS

Parking Facility	Number of Parking Spaces				
	2020 Capacity[1]	Removed[2]	Added[2]	Net	2035 Capacity
Parking Garages					
Forbes Avenue Garage	724	--	--	0	724
Locust Street Garage	1,674	--	--	0	1,674
Brottier Hall Garage	81	--	--	0	81
Subtotal, Parking Garages	**2,479**	**--**	**--**	**0**	**2,479**
Parking Lots					
Lot 1	46	-46	--	-46	0
Under Locust Garage - Gibbon Street Near Magee Street	61	--	--	0	61
Under Locust Garage - Middle of Gibbon Street	10	--	--	0	10
Upper Fisher Lot	19	--	--	0	19
Lower Fisher Lot	19	--	--	0	19
Stevenson Street/Des Place	12	--	--	0	12
Stevenson Street/Public Safety Building	11	--	--	0	11
Vickroy Street (St. Ann Hall)	47	--	--	0	47
Duquesne Towers	7	--	--	0	7
Bluff Street Lot	40	--	--	0	40
Trinity Hall	22	--	--	0	22
COM Lot	48	--	--	0	48
McGinley Hall Lot[3]	8	--	--	0	8
Subtotal, Parking Lots	**350**	**-46**	**--**	**-46**	**304**

(1) From Table 6.1
(2) Provided by Duquesne University.
(3) The eight (8) parking spaces at McGinley Hall lot were not included in the 2020 IMP but were added during the construction of McGinley Hall.

Source: Analysis by Trans Associates

There will be no addition of parking with the master plan projects.

TABLE 6.6 (CONT.): 2030 FUTURE PARKING INVENTORY WITH MASTER PLAN PROJECTS

Parking Facility	Number of Parking Spaces				
	2020 Capacity[1]	Removed[2]	Added[2]	Net	2035 Capacity
Parking Garages					
Forbes Avenue Garage	724	--	--	0	724
Locust Street Garage	1,674	--	--	0	1,674
Brottier Hall Garage	81	--	--	0	81
Subtotal, Parking Garages	**2,479**	**--**	**--**	**0**	**2,479**
Parking Lots					
Lot 1	46	-46	--	-46	0
Under Locust Garage - Gibbon Street Near Magee Street	61	--	--	0	61
Under Locust Garage - Middle of Gibbon Street	10	--	--	0	10
Upper Fisher Lot	19	--	--	0	19
Lower Fisher Lot	19	--	--	0	19
Stevenson Street/Des Place	12	--	--	0	12
Stevenson Street/Public Safety Building	11	--	--	0	11
Vickroy Street (St. Ann Hall)	47	--	--	0	47
Duquesne Towers	7	--	--	0	7
Bluff Street Lot	40	--	--	0	40
Trinity Hall	22	--	--	0	22
COM Lot	48	--	--	0	48
McGinley Hall Lot[3]	8	--	--	0	8
Subtotal, Parking Lots	**350**	**-46**	**--**	**-46**	**304**

(1) From Table 6.1
(2) Provided by Duquesne University.
(3) The eight (8) parking spaces at McGinley Hall lot were not included in the 2020 IMP but were added during the construction of McGinley Hall.

Source: Analysis by Trans Associates

Transportation Demand Management (TDM) Plan and Parking Demand Management Strategy

Duquesne University's 2025 Amendment TDM plan, managing both traffic and parking, includes the following initiatives:

- Expand Parking Services to include transportation services: Assign a designee to administer/monitor TDM programmatic and systemic changes. Commit to a regular monitoring and reporting process with DOMI including 6 months and 2 years after the opening of the BRT and/or at other development milestones such as submitting a Project Development Plan.

- Increase Southside Shuttle Ridership: In the Fall 2022 the Southside Shuttle became free for all students which is expected to double ridership.

- Maximize Opportunities with Pittsburgh Regional Transit: Continue relationship with Pittsburgh Regional Transit. Promote use of UPass through Pittsburgh Regional Transit on campus to provide convenient access for students, faculty and staff. Invite Pittsburgh Regional Transit on campus to market public transportation and educate our campus community at student and employee events. Learn about Pittsburgh Regional Transit products and offerings related to employee and student programs.

- Pedestrian Enhancement to intersection of McAnulty and Forbes Avenue: To improve safety and align with the Uptown EcoInnovation District goals, the University is seeking an Exclusive Pedestrian Phase for that intersection, providing safe protected crossing conditions at all four crosswalks. Improvements along Forbes Avenue between Shingiss Street and Stevenson Street are an important safety factor for Duquesne students and pedestrians navigating along that corridor. The intersection of Forbes, McAnulty and Chatham has historically been a pinch point for traffic congestion and unsafe crossing conditions. During the period of 2013-2018, PennDOT records indicate that seven crashes involving pedestrians occurred at this intersection, the single highest pedestrian crash location in the Duquesne University campus area. With the implementation of the BRT system, all traffic from the Armstrong Tunnel will be forced to turn right onto Forbes Avenue, increasing the vehicular volume moving through this intersection. In addition, the positioning of the BRT stop at Forbes and McAnulty will increase the complexity of movements of pedestrian, transit and bike traffic.

- Continue to explore shared initiatives with Penguins/PPG Paints and UPMC to strategize on event parking and explore possibilities of shared parking initiatives. Continue collaboration with Chatham parking garage on shared parking for special events.

- Continue to work with Allegheny County to improve the Armstrong Tunnel to enhance pedestrian safety and experience at both Forbes Avenue and Second Avenue portals.

- Continue to provide employee telecommuting opportunities when appropriate. .

- Designate rideshare spaces: Designate specific spaces throughout campus for ease of pick up and drop off by rideshare programs such as Uber and Lyft. We currently have designated Zipcar spaces and will look to increase marketing of the program to all individuals, targeting our incoming freshman population who may not be aware of the program.

- Establish priority parking spaces for carpool and vanpool commuters: Designate reserved parking spaces in various desirable locations to accommodate these commuters.

- Continue to evaluate for additional Electronic Vehicle (EV) charging stations: Evaluate cost and feasibility of adding charging stations in our garages for individuals with electric vehicles. Evaluate and establish partnerships with third parties to learn about EV charging station program offerings.

- Increase alternate transportation messaging: Increase carpooling and ridesharing opportunities by creating a specified tab on our parking website to provide resources and awareness to "Opt In" Services. Information will include a message board, marketing and FAQ designed specifically for the Duquesne community with the intent to provide both awareness and easier access. Cross promote with physical literature to be available in key areas as well as marketing at appropriate university events (Employee Benefits Fair, Student Resources Fair, Earth Week, etc.).

- Evaluate installing additional bike racks around campus for student and employee use.

- Finalize plans for a guaranteed ride home program to support employees utilizing ride share programs and public transit..
- Explore potential last mile strategies for public transportation that could be implemented at the time the BRT opens.
- Continue exploring additional shuttle strategies with other local institutions.
- Continue use of valet parking in the on-campus garages at peak demand periods.
- Offer rideshare/carpool/vanpool matching for employees (coordinate with Southwestern Pennsylvania Commission).

7.1 ENVIRONMENTAL AND SUSTAINABILITY GOALS

Aerial view from Trinity Green over Administration Building toward the Monongahela River and the Southside Slopes

The University has established several long-term environmental and sustainability goals. Achieving these goals will help our students by giving them a healthier living/learning environment, protecting the world that they and their children will inherit, and helping to keep their education affordable and available. The high-level goals, and some specific initiatives to achieve them, are as follows. See later sections of the Infrastructure Plan for a more detailed discussion of these items. Duquesne University will pursue sustainability certifications for new construction and renovations as appropriate based on feasibility project scope and budget considerations. See section 7.5 Green Buildings for criteria and guidelines.

- Participate in City of Pittsburgh and Uptown EcoInnovation District Environmental and Sustainability Initiatives:
    - Reduce energy use, water use and greenhouse gas emissions, in line with goals established by Pittsburgh 2030 District. As an example of this commitment, the University's aggregate energy use intensity (EUI) is currently about 4.46% below our national baseline (without counting the 10% credit for renewable energy purchases). The Campus Energy Planning Section 7.3 lists several proposed projects that will further decrease EUI.
    - Enhance neighborhood character and protect long-term residents
    - Promote alternate transportation and bicycle culture
    - Improve open/green space and other community amenities
    - Pursue district energy
- Reduce the University's impact on the environment:
    - Green building practices for major new construction and renovation
    - Energy planning initiatives to reduce energy use and costs
    - Employ green cleaning, recycling and other operational initiatives
    - Decrease water use and improve storm water management
- Enhance the sustainability of University operations through a Resiliency Plan that address the City's and University's stresses and shocks.
- Work towards receiving Sustainable Restaurant Certifications for remaining dining facilities; Red Ring Restaurant, Business Leaders Bistro and Hogan Dining Room are currently certified.

RESILIENCY

Universities remain some of Pittsburgh's greatest assets, creating considerable economic impacts and investments to the surrounding communities. (See Section 8.1 for economic impact.) Their effects help shape our region's outlook, propelling its blue-collar, industrial roots to a more economically diverse, innovative city of the future. The OnePGH Resilience Strategy, published by the City of Pittsburgh in 2017, provides a framework to evaluate various "shocks" and "stresses" that threaten the vitality of the city. A shock is defined as a sudden, large scale adverse event, while a stress is a long-term problem that taxes city resources and erodes residents' well-being. The strategy document notes that in 2016, the City of Pittsburgh celebrated its 200th anniversary while recovering from a declining population between the 1970s and 2006. The City has seen an increase in population, with the number of millennials and recent college graduates going up by more than 8% over the past decade; however, OnePGH also lists many shocks and stresses that continue to challenge the city and recommends steps to mitigate them.

In 2018, Duquesne University celebrated 140 years, recognizing its importance as an anchor institution during Pittsburgh's recent period of recovery and sustainable growth. Looking ahead, our academic success demands thoughtful examinations of our resiliency strategies, affording long-term benefits by ensuring improved coordination, better budget and capital management, adoption of resilient practices and the co-benefits of community engagement and empowerment.

Resiliency planning and implementation practices involve an ongoing, holistic approach to manage challenges and identify opportunities. Duquesne's Emergency Operations Plan, developed in collaboration with our Emergency Management Team, helps prepare and anticipate the numerous shocks and stresses that can affect our campus and neighboring communities. In addition, several key departments within the University convene regularly to help strategize initiatives and guide the institution to realize the root causes of systemic challenges, creating their own Business Continuity Plans. Each of these plans helps direct the institution for activities needing further initiation, coordination, acceleration and amplification.

The goals outlined in our Strategic Plan set the framework for the University's resiliency expectations and our partnerships with outside groups and community stakeholders enrich these opportunities. As we implement this plan, future programs will express the values of the University's Mission and will align with those of the Uptown EcoInnovation District and the OnePGH Resiliency Strategy, using those plans' "P4" context of people, place, planet and performance to benefit the institution and provide co-benefits across the neighboring community sectors and stakeholders.

Identifying the constellation of chronic stresses and acute shocks within our campus and our neighboring communities provides a clear vision of the institution's goals, objectives and desired outcomes.

Duquesne's planning context for the subcategories of the shocks and stresses outlined in OnePGH are outlined below:

Shocks:

Infrastructure Failure

- Objective: Minimize possibility of infrastructure failure.
    - Action: Adequate funding of infrastructure capital projects, focusing on areas of greatest risk to operations.
    - Action: Preventive maintenance to prevent unexpected failures.
- Objective: Minimize disruption to operations in the event of an infrastructure failure to continue services to students, faculty, staff and neighbors.
    - Action: Develop multiple business continuity and disaster response plans.
    - Action: Promote awareness of business continuity and disaster response plans within the University community and the local community.

Extreme Weather or Natural Disaster

- Objective: Minimize possibility that extreme event will disrupt University operations or cause risk to life or property.
    - Action: Infrastructure maintenance and capital improvements as described for the infrastructure shock.
    - Action: Develop plans to be implemented prior to a predicable event: i.e., material and personnel planning for snow events, freeze patrol of vulnerable buildings and equipment during predicted cold weather.

- Objective: Minimize the disruption, property and personnel safety risks due to unexpected extreme weather or natural disaster.
    - Action: Develop emergency plans to be taken prior to and immediately following an extreme weather event or natural disaster.
    - Action: Designate essential personnel who are in place to monitor and respond to extreme events.

Hazmat Accident

- Objective: Prevent injury or disease resulting from exposure to chemicals (laboratory or cleaning) and oil (transformers, elevators and other equipment).
    - Action: Mandatory laboratory safety training and use of personal protective equipment.
    - Action: Maintain chemical inventory list to track and limit quantities of chemicals used and stored.
    - Action: Regular scheduled collections and processing/disposal of unwanted or waste chemicals.
    - Action: Regular inspections of labs, elevators, generators, etc.
    - Action: Use of non- and low-toxic "green" cleaning chemicals and pest control methods.
- Objective: Minimize injury and property damage in the event of a Hazmat accident.
    - Action: Provide strategically located spill kits at campus storage locations and training on their use.
    - Action: Provide eyewashes and safety showers in areas of chemical usage.
    - Action: Proper design of generator secondary containment.

Economic Collapse

- Objective: Help prevent economic collapse.
    - Action: Educational programs that give students the background and skills that are in demand in the local and national economies.
    - Action: Special programs, like the Small Business Center, that seek to create partnerships between the University and local business.
    - Action: Contribute to the local economy through staff salaries, purchases and secondary spending by students and staff.
- Objective: Continue providing students, faculty and staff with educational and economic opportunities in the face of a sudden downturn in the regional or national economy.
    - Action: Efforts to increase the endowment, lessening the University's reliance on tuition to maintain current operations.
    - Action: Efforts to increase recruitment of students from outside the Pittsburgh region, to limit the effects of a downturn in the regional economy.

Disease Outbreak/Health Emergency

- Objective: Prevent or contain an infectious disease outbreak or other health emergency among students, faculty or staff.
    - Action: Immunization and health insurance requirements for incoming students.
    - Action: Maintain ongoing monitoring of national infectious disease immunization standards (CDC/ACIP/ACHA) as well as both local and national epidemiological patterns of infectious diseases.
    - Action: Plan for identification of infectious outbreaks and appropriate control measures.
    - Action: Isolation of contagious students, considering either temporary housing or return to off-campus home until no longer contagious.

Stresses:

Aging Infrastructure

- Objective: Ensure that University infrastructure can support the University's operations and mission.

- Action: Prioritize funding of capital improvement and replacement projects that address critical infrastructure. This includes costly, scheduled replacements of major electrical, HVAC and plumbing systems before catastrophic failure.

- Action: Perform preventive maintenance on infrastructure to keep in functional and safe.

- Action: Periodic inspections of electrical and steam distribution systems, HVAC systems and building envelope components to prevent the shock of a failure.

Environmental Degradation and Climate Change

- Objective: Minimize impacts of environmental degradation and climate change for the University and its neighbors.

  - Action: Pursue sustainable landscape and green infrastructure features (see Section 7.2)

  - Action: Pursue energy planning and conservation projects (see Section 7.3)

  - Action: Improve stormwater management (see Section 7.4)

  - Action: Pursue green practices in building construction and operation (see Section 7.5)

  - Action: Monitor transportation practices and needs of the University (see Section 6.1) and establish goals to improve the environmental footprint of University-related transit (see Sections 6.2. and 6.3)

Economic Challenges

- Objective: Maintain the vitality of the University in the face of adverse demographic trends affecting enrollment.

  - Action: Efforts to increase the endowment, lessening the University's reliance on tuition to maintain current operations during period of stagnant enrollment.

  - Action: Efforts to increase recruitment of students from outside the Pittsburgh region, to limit the effects of a demographic trend toward smaller population of college age students in the University's traditional base.

  - Action: Continue to develop and expand new academic programs that provide training and skills that are in demand to attract more students.

Inequity and Diversity

- Objective: Ensure that the educational and economic benefits provided by the University are available to everyone.

  - Action: Help improve student academic achievement through the Learning Skills Department.

  - Action: Senior Employment Recruiter Diversity Leader in HR Department to provide emphasis on inclusive hiring.

  - Action: President appointed committee focused on Diversity and Inclusion.

  - Action: Community outreach programs that benefit the disabled and less advantaged, such as the St. Anthony's programs, speech and hearing clinic and community legal and pharmacy centers.

Fragmentation

- Objective: Work with neighboring institutions and governmental bodies to practice mutually beneficial cooperation.

  - Action: Academic and administrative collaborations with other universities.

  - Action: Sightlines reports for annual benchmarking of physical assets among peer institutions.

  - Action: Continuous collaboration with notable neighbors such as UPMC Mercy, Pittsburgh Penguins, community partners, Cordia (previously NRG), City First Responders (Pittsburgh Police Zone 2 and Pittsburgh Bureau Fire Department Station 4) to discuss any projects or events which could cause shock or stress to one's daily operation.

  - Action: Collaboration with local utilities to discuss upcoming and ongoing initiatives.

7.2 ENVIRONMENTAL PROTECTION PLAN

Aerial view from the top of Duquesne Towers looking west over Arthur J. Rooney Field and Academic Walk

ENVIRONMENTAL RESOURCES

Duquesne University's campus is situated atop a bluff with declining elevations on the north, south and west sides. As such, there are numerous view corridors in each direction from campus, but not from the surrounding areas through campus. Views to the north overlook the lower adjacent areas to the hillsides of the Hill District. Views to the west include the Pittsburgh downtown skyline. Views to the south provide a sweeping vista over the Monongahela River Valley to the South Side and the slopes beyond. This view is only interrupted from the southwest corner of campus by the Allegheny County Jail. Bluff Street provides a continuous open view along the southern edge of campus, with all structures north of the roadway. These views will be preserved.

View along part of Academic Walk

The campus is densely built and therefore green space is at a premium. The Academic Walk and the surrounding green space is the most important outdoor resource on campus, and no construction is planned for this area. The Trinity Green is more of a passive area and will also be maintained, with the exception of a new small residential-style Alumni House that will define the southern edge of the green. Since the completion of the previous Institutional Master Plan, Brottier Commons is a new open green space, created by the demolition of the parking deck. This space has become a nice amenity for campus. While it may be considered again as a potential building site in the long term, there are currently no plans for development of this space. Developments will follow Zoning Code's Section 918 for landscaping and screening. Refer to section 5.3 for Open Space Guidelines.

1% Chance Annual Flood (from Pittsburgh Zoning Maps)

Figure 7.1: FP-O Flood Plain Overlay District

OVERLAY DISTRICTS

The City of Pittsburgh has outlined the following Environmental Overlay Districts that require additional approval and compliance (see overlay district plans on the subsequent pages):

FP-O Flood Plain Overlay District
RF-O Riverfront Overlay District
LS-O Landslide-Prone Overlay District
UM-O Undermined Area Overlay District
VP-O View Protection Overlay District
SM-O Stormwater Management Overlay District

FP-O Flood Plain Overlay District

None of the property owned by Duquesne University lies within the "1% Chance Annual Flood" area. The Monongahela River Flood Plain lies just south of campus, but there is an approximately 180' elevation difference between the Monongahela River and the southern edge of campus. Due to the hilltop location, it is highly unlikely to experience flooding.

RIV Zoning Maximum Height Overlay (from Pittsburgh Zoning Maps)

Figure 7.2: RF-O Riverfront Overlay District

RF-O Riverfront Overlay District

The RIV Zoning District related to the Monongahela River lies between the river and Second Avenue. Duquesne University's campus does not overlap with this region.

Landslide Prone Areas (from Pittsburgh Zoning Maps)

Figure 7.3: LS-O Landslide-Prone Overlay District

LS-O Landslide-Prone Overlay District

A significant landslide-prone area overlaps the entire southern edge of campus where there is an immediate elevation drop of up to 80' down to the Boulevard of the Allies. This edge consists of exposed bedrock that was cut into to create space for the Boulevard and often covered in metal wire netting to prevent loose materials from falling onto the roadway, concrete retaining walls and minimal vegetation. Bluff Street lies between any University structures and the edge of the precipice, which is lined with walkways and parallel parking. Many structures are very close to the overlay district, with only St. Martin Hall extending into it. The replacement of the Trinity Hall Parking Garage with covered parking and the Beard Press Box with a new press box will be the only construction adjacent to the overlay district. No new construction will occur inside the overlay district. Due to the heavily engineered nature of the slope, there should be minimal to no impact on landslide prone areas.

N/A Undermined Areas (from Pittsburgh Zoning Maps)

Figure 7.4: UM-O Undermined Area Overlay District

UM-O Undermined Area Overlay District

There are no undermined areas within the University's property boundaries, though it should be noted that the Armstrong Tunnel does lie beneath campus. All future construction on campus will take this into consideration.

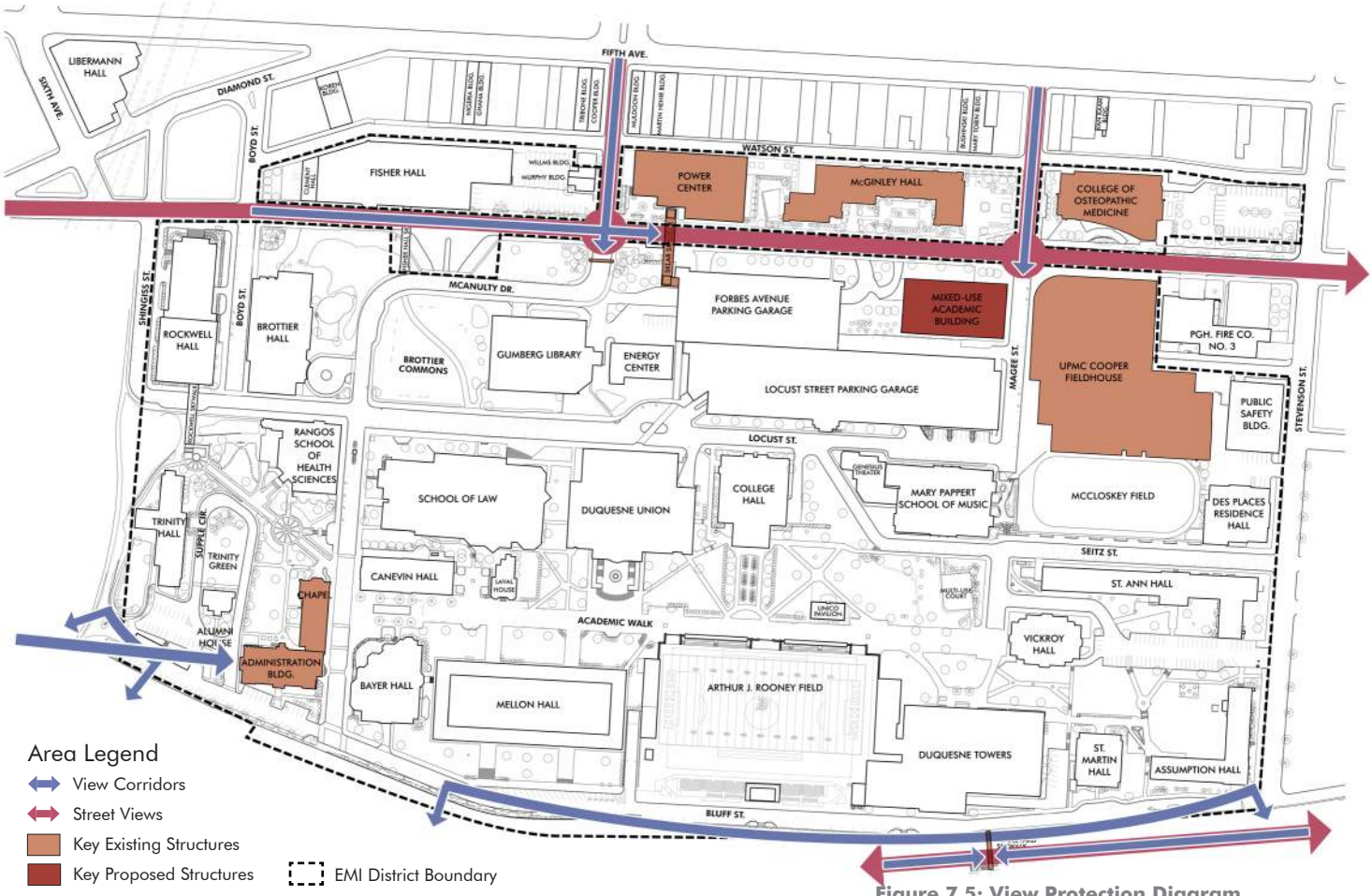


Figure 7.5: View Protection Diagram

VP-O View Protection Overlay District

Situated on top of a bluff overlooking the Monongahela River Valley to the south, view corridors are a key aspect of Duquesne University's campus. The sweeping view over the river valley toward Pittsburgh's South Side Slopes is only interrupted by the Allegheny County Jail. Improvements along Bluff Street have catered to this view, encouraging the community to enjoy the stunning vista.

The Administration Building and Chapel, while blocked by the jail from many angles, are still a highly visible and recognizable "Duquesne University" landmark, particularly from the Boulevard of the Allies in downtown Pittsburgh. The Boulevard also passes under the Boulevard Skywalk at the southeast corner of campus, another important University landmark.

While the views to and from the southern side of campus are the most dramatic, views into and around campus from the city streets to the north are just as important to the University's image and identity. With the continuing development along the north side of Forbes Avenue, this portion of Forbes has an increasingly urban-collegiate feel. Banners, building signage and student life and vitality fill the street and provide a lot of exposure for Duquesne. While the gateway at the base of McAnulty Drive feels somewhat understated against the backdrop of the surrounding large scale development, it is the traditional entrance to the University.

The UPMC Cooper Fieldhouse was the first University structure along this corridor, but over the years the addition of the Power Center and Skylar Skywalk, which crosses over Forbes Avenue, are the most prominent structures and likely the most recognizable Duquesne University icons. The College of Osteopathic Medicine and McGinley Hall have also improved the quality of this corridor into an even more vibrant thoroughfare.

Views into the campus from cross streets like Chatham Square and Magee Street have nondescript termini that could be further enhanced.

The taller University buildings benefit from expansive 360 degree views, stretching from downtown to Oakland.

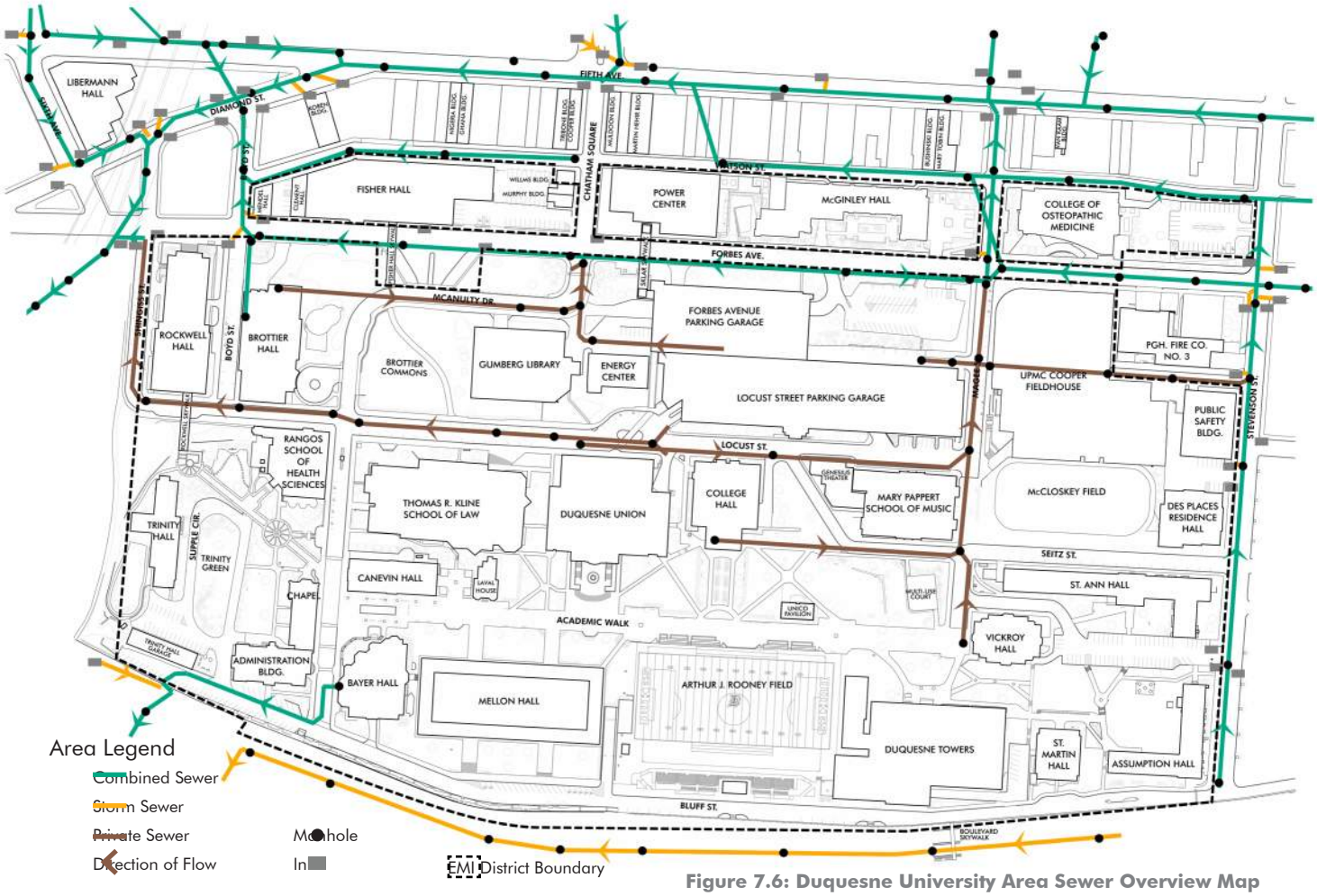


Figure 7.6: Duquesne University Area Sewer Overview Map

SM-O Stormwater Management Overlay District

The University lies within the Monongahela River Watershed Subarea 1, which has a release rate percentage of 100% per Section 906.07.F.3.(e) of the Stormwater Management Overlay District Code. In addition, the University lies within the PWSA M-05 combined sewer overflow watershed. Refer to Section 7.4 Stormwater Management for a detailed description of how stormwater will be addressed.

SUSTAINABLE LANDSCAPE AND GREEN INFRASTRUCTURE BENEFITS

The public realm of Duquesne's campus reflects the University's mission, values, Spiritan heritage and focus on community as part of the groundbreaking Uptown EcoInnovation District. The implementation of campus landscape and green infrastructure projects is key in enabling Duquesne University to fulfill Master Plan Initiatives including: providing enhanced student experiences, supporting a vibrant and active campus, prioritizing and improving campus green spaces, defining campus gateways and strengthening connections and corridors to the Uptown community.

In keeping with these goals, by developing and maintaining the campus through sustainable land development and management practices, built landscapes and green infrastructure can provide "ecosystem services," a multitude of direct or indirect benefits, which include:

1. Climate Regulation
   - Maintaining healthy air quality
   - Regulating local, temperature, precipitation and humidity through shading, evapotranspiration and windbreaks
   - Sequestering carbon (by preserving and planting campus trees)

2. Air and Water Cleansing
   - Removing and reducing pollutants in air and water

3. Water Retention and Infiltration
   - Storing and conserving water within watersheds (and aquifers)
   - Managing precipitation on site
   - Reducing flooding and mitigating stormwater – allowing soils to absorb and filter stormwater
   - Reducing outdoor water use

4. Enhance Habitats
   - Providing opportunities for plant pollination
   - Providing plant and animal habitat – contributing to biological diversity

5. Erosion and Sediment Control
   - Retaining soil within an ecosystem/area
   - Preventing damage from soil erosion and siltation

6. Human Health and Well-Being
   - Enhancing physical, mental and social well-being due to interaction with nature
   - Creating spaces for socialization and interaction
   - Supporting pedestrian and bicycle friendly amenities (i.e., multi-modal transit, reducing street widths/pedestrian crossings through landscape bump-outs)
   - Supporting physical activity
   - Providing for equitable/accessible site use
   - Providing a campus community garden with edible plants for food

7. Educational Benefits
   - Supporting Duquesne University's mission – serving others (students, community, environment)
   - Promoting sustainability awareness and education (through campus tours, educational signage and continued partnerships with the Green Building Alliance and the Uptown EcoInnovation District and Uptown Partners)
   - Providing potential hands-on learning for students through the MBA Sustainable Business Practices Program (https://www.duq.edu/academics/schools/business/graduate/mba-programs/mba-sustainable-business-practices) and the Center for Environmental Research and Education (CERE) (https://www.duq.edu/academics/schools/natural-and-environmental-sciences/academic-programs/environmental-science-and-management/about)
   - Supporting programming that welcomes, encourages and expands sustainability education

- Providing opportunities for students and faculty to be a part of monitoring or documenting site/landscape performance (or by developing and communicating case studies of the value of campus sustainable landscape projects)

- Creating partnerships to extend sustainability learning to local community groups/organizations

- Demonstrating innovative sustainable practices and projecting an image of a welcoming and innovative University

8. Reduce Energy Footprint
   - Enhancing the University's urban tree canopy – shade buildings and hard surfaces

   - Reducing urban heat island effects

   - Reducing outdoor energy consumption (i.e., LED lighting)

   - Incorporating regional materials

   - Incorporating renewable energy sources

   - Using vegetation placement to minimize building energy use

Duquesne University is a recognized Arboretum. We were awarded Level 1 status March 2022 through March 2027 by Arbnet/Morton Register of Arboreta. http://www.arbnet.org/accreditation/levels-accreditation/level-i-criteria

Duquesne University is recognized by the Arbor Day Foundation as a Tree Campus Higher Education 2021. Annual renewal. tree-campus-higher-education-toolkit.pdf (arborday.org)

SUSTAINABLE LANDSCAPE DESIGN PRINCIPLES

Duquesne University is committed to creating a sustainable campus landscape that is accessible, safe and is reflective of the University's mission, vision and core values. As such, the University supports the development of campus and green infrastructure projects that utilize natural systems as an amenity and tool for the improvement and/or creation of high-functioning ecosystems – providing these layered benefits to the University students, faculty and community.

Campus landscape and green infrastructure projects should be guided by the local sustainable principles, including the Pittsburgh P4 performance measures, highlighting: people, place, planet and performance (www.p4pittsburgh.org), and the principles, goals and practices outlined by LEED (https://new.usgbc.org/leed) and the Sustainable SITES Initiative (www.sustainablesite.org). These guiding principles include:

- Do not make changes to the site that will degrade the surrounding environment.

- Do not make decisions that can pose a threat to human and environmental health.

- Implement designs that are responsive to the local/regional context and cultural, economic or environmental conditions.

- Maximize the benefits of sustainable landscapes through a process that supports preservation, conservation and regeneration of natural systems.

- Design with the future in mind and the benefits that these systems can continue to provide for the next generation.

- Design from a holistic viewpoint – support ecosystem services and the human and environmental benefits.

- Use a collaborative and integrated design approach.

Of the twelve (12) p4 Performance Measures, the overarching measures of "Rainwater," "Public" and "Design" provide local guidance on elements most applicable to Duquesne University's campus landscape. These measures are supported by metrics that encourage the built landscape to:
- provide a host of "ecosystem services"
- mitigate the impacts of significant rainfall events

- connect people to nature
- create active, safe, accessible environments
- respond to a site's unique context and reflect local identity
- be durable and resilient

SUSTAINABLE LANDSCAPE DESIGN GUIDELINES

An overview of the landscape design guidelines is provided below. It provides a "systems-thinking approach" to campus landscapes and green infrastructure and examines four key categories of water, planting and soils, materials and human-health and well-being. Note that these guidelines focus on the landscape design and do not address specific landscape construction or operations and maintenance measures. Consider the Sustainable SITES Initiative as a resource for all landscape and site planning on campus.

Water

- Employ best management practices for stormwater management to promote the University as a leader in innovation and sustainable practices.
    - Manage precipitation on site to avoid additional stresses on existing stormwater infrastructure.
    - See the Environmental Protection Agency's (EPA) web page on green infrastructure for case studies, benefits and types (https://www.epa.gov/green-infrastructure/green-infrastructure-cost-benefit-resources).
- Design to minimize impervious surfaces.
    - Consider utilizing permeable materials for new hard surfaces (i.e., permeable concrete, resin-bound paving, permeable clay brick pavers or permeable concrete pavers).
- Utilize on-site landscape areas to accept water runoff from hard surfaces.
    - Utilize the living landscape (vegetation and healthy soils) as an opportunity to filter, absorb, evapotranspirate and infiltrate water, recharge groundwater and reduce pollutant loads (i.e., bio-swales, rain gardens, vegetated buffers, green roofs, stormwater planters).
    - Prioritize the use of vegetated channels over pipes, culverts or underground channels to convey surface water.
- Improve the soil's water retention capacity by increasing the organic matter content by adding compost or organic soil amendments.
- Where site appropriate use stormwater planters in place of traditional tree pits.
- Use rainwater harvesting systems to reduce precipitation runoff volume and rates.
- Design functional stormwater features as amenities.
    - Provide a maintenance plan for green infrastructure features to ensure long-term effectiveness.
    - Make the features visually and physically accessible to site users.
    - Aesthetically integrate the stormwater features into the site.
    - Reduce outdoor water use for created water features.
        - 50% of annual make-up water comes from alternative water sources.
- Minimize the use of fertilizers on campus and implement practices to reduce fertilizer runoff (i.e., slow release fertilizers).
- Reduce outdoor water use for landscape irrigation by 30% minimum from the calculated baseline for the site's peak watering month (achieved through irrigation efficiency and plant species selection per EPA Water Sense Budget Tool). (https://www.epa.gov/watersense/water-budget-tool).
    - Design and utilize high-efficiency equipment and layouts (i.e., drip irrigation), rain-sensor/climate-based controllers and soil moisture sensors.
    - Consider the use of alternative water sources (i.e., captured rainwater, reclaimed water,

recycled graywater, blowdown water from boilers and cooling towers, air conditioner condensate) to reduce potable water use or WaterHub decentralized (on-site) water reuse system (http://sustainablewater.com/). Proper filtration/sterilization standards are required dependent upon reuse application. These represent only a few options available; new technologies/practices should also be considered.

- Use appropriate plant species suited for the site conditions and climate, where appropriate design with low water use plants.
- Exemptions include athletic fields and water used to irrigate community (food) producing gardens.

Planting and Soils

- Create high quality and high performing landscapes.
  - Design with plantings to create a cohesive campus aesthetic.
  - Use the landscape to frame key views and screen less-desirable ones.
  - Consider the maintenance implications of plantings.
  - Select plants for seasonal interest, designing for maximum effect when classes are in session.
- Select plants based on their suitability to each site's unique conditions.
  - Avoid tall massings of shrubs that limit site visibility and require excessive trimming and maintenance.
  - Select plant materials whose natural branching or form best fits the location (i.e., planting open habit, drooping shrubs immediately adjacent to walkways should be avoided).
  - Plants should be selected based on suitability to site conditions including cold hardiness, plant water use requirements, sun and shade requirements, soil volume requirements and plant maintenance requirements.
- Protect sensitive environmental features (i.e., significant mature trees).
- Landscaping should consist of 50% native plants or plants adapted to the region and should incorporate species from the Pennsylvania Department of Conservation on Natural Resources (DCNR) native plant publications (http://www.docs.dcnr.pa.gov/forestry/plants/nativeplants).
- Design native plantings as communities, i.e., those that typically occur in the EPA Level III ecoregion of the 70. Western Allegheny Plateau (https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states).
- Avoid the use of invasive plant species as listed by DCNR (https://www.dcnr.pa.gov/Conservation/WildPlants/InvasivePlants).
- Protect the campus tree collection as trees provide shade and thermal comfort, reduce stormwater runoff by capturing and storing rainfall in the canopy and releasing it into the atmosphere, and help to slow down and temporarily store runoff.
  - Existing trees on campus that are invasive species are the exception; remove invasive species and replace with native/adaptive plant species.
  - Remove and replace trees in poor condition or health.
- For street tree species selection, refer to the City of Pittsburgh recommended species list (http://apps.pittsburghpa.gov/dpw/08_recommended_species_pgh_streets.pdf).
- Comply with City of Pittsburgh landscape and street tree standards as a baseline.
- Prioritize the removal of invasive plants on campus and replace with appropriate plant species.
  - Appropriate plants are adapted to site conditions, climate and design intent and may be native or non-native.
- Plant diverse trees and vegetation; for larger development projects, generally plant no more

than 10% of any species, no more than 20% of any genus and no more than 30% of any family.

- Avoid planting within 1' radius per inch diameter at breast height (DBH) due to potential negative impacts on tree roots and soils.
    - DBH- measures the tree trunk diameter at 4.5' off the grounds on the uphill side.
- Shade walkways with trees or vegetated structures to reduce urban heat island effects.
- Use trees or vegetated structures to minimize building energy use.
    - For shading, locate new trees on the southern building façades to reduce building heating and cooling demands.
    - For windbreak, locate trees (preferably evergreen species) on the west /west southwest façade to address prevailing winter winds, using densely branched trees and/or shrubs.
- Always protect steep slopes and areas prone to erosion by maintaining adequate vegetation cover.
- Protect existing trees and their root zones and prevent compaction of soil within the tree's dripline.
- Minimize disturbance during site construction to limit the amount of additional restoration required.
- In areas that will be re-vegetated, restore soil characteristic to support selected vegetation types.
    - Stockpile and reuse existing healthy site topsoils, adding organic amendments if necessary.
    - Amend site soils with organic matter or import topsoil.
- Use soil best management practices and use soils for functions comparable to their original function (topsoil used as topsoil, subsoil used as subsoil).
- Support healthy plants, communities and soil water storage and infiltration functions by restoring soils and limiting soil disturbance during construction.
- Protect any healthy soils present on site by limiting the disturbance to existing appropriate plants and healthy soils.
- Planting soils should support healthy plant growth; site soils can be tested and amended to support plant health.
    - Healthy soils filter pollutants, help prevent runoff, erosion, sedimentation and flooding and provide ecosystem benefits. They do not contain toxic compounds and may support native plantings, have organic content, characteristics or densities similar to the reference soil (defined in the United States Department of Agriculture Natural Resources Conservation Service Soil Survey).
- Trees, shrubs and herbaceous materials should meet ANSI Z60 current edition for size and conditions.
- Trees and shrubs should be mulched with a 3" layer of double shredded natural hardwood mulch to assist with moisture retention and reduce weed growth.
    - No more than 1" of mulch should cover tree or shrub root ball; do not pile mulch against the tree trunk.

Materials

- Select materials that are in keeping with the campus aesthetic.
- Minimize the use of materials in the landscape that contribute to stormwater pollution including:
    - Galvanized materials (i.e., fences, fence posts, guardrails, sign posts)
    - Treated lumber
    - Copper and zinc roofs, roof gutters and downspouts

- Reduce urban heat island effects through material selections.
    - When designing hardscape areas, select paving and surfaces that are light colored vs. shiny dark surfaces to increase solar reflectance and reduce solar radiation.
    - Select paving materials with a solar reflectance (SR) value of at least 0.33 at installation.
    - Refer to LEED and SITES standards for reflective roof materials and charts for solar reflectance based on roof slope.
    - If appropriate, place a minimum of 50% of new parking under cover. These structures should meet the above solar reflectance measures.
    - Shade walkways with vegetation/structures.
- Eliminate the use of wood from threatened tree species.
    - Use wood products from sustainably managed forests.
- Where appropriate, reuse existing paving materials and/or structures on site.
- Where feasible, reuse salvaged materials or plants (plants should be disease free and in good condition).
- Use recycled content materials when possible (i.e., using crushed concrete for aggregate base).
- Use LED light fixtures (or latest available lighting technology).
- Use regional materials.
    - Soils, compost, mulch, rocks and aggregate should be extracted /harvested/sourced from within 50 miles of campus.
    - Plants should be grown/supplied from within a 250-mile radius.
    - All other materials should be sourced from within 500 miles.

Human Health and Well-Being

- Protect and maintain campus objects or landscapes significant to the University's heritage.
- Provide optimum site accessibility safety and wayfinding.
    - Design for natural surveillance – place features, amenities and people to optimize visibility and enable an informal monitoring of the site.
    - Create clear site lines; include a variety of options for access.
    - Incorporate site elements that improve the effectiveness of security efforts.
    - Wayfinding – Create clear entrances, landmarks, gateways and a hierarchy of pedestrian and vehicular circulation, and incorporate orientation maps, systems or devices as appropriate to facilitate access and orient users and improve legibility.
- Provide amenities to support physical activity.
    - Provide drinking fountains, bicycle racks, bicycle Fix-It stations and emergency call boxes.
    - Perform walkability audit to assess safety and desirability of walking routes.
    - Provide access to bike trails, networks or on-site paths if feasible.
    - Provide programming that supports physical activity if site appropriate.
- Design for universal access, considering the needs of all users.
    - Design to Americans with Disabilities Act (ADA) Standards for Accessible Design (https://www.ada.gov/2010ADAstandards_index.htm).

- Support social connection.
    - Provide amenities, services or activity spaces that accommodate a variety of group sizes.
    - Design for flexibility of seating and uses.
    - Incorporate elements that address site specific conditions (including sun, wind, shade).
    - Where appropriate provide opportunities for picnic/dining, wireless access, food, activities or concessions.
- Support mental restoration.
    - Provide accessible, quiet outdoor spaces with visual and physical access to landscape plantings (if site appropriate).
    - Reduce noise in these areas and address site conditions (sun, wind, shade).
    - For new campus buildings, provide unobstructed views from 50% of common spaces (i.e., classrooms, dining halls, etc.) to vegetation/plantings.
- Provide campus lighting for safety and comfort.
    - Provide adequate site lighting for safety while using fixtures that reduce sky glow, increase night visibility and reduce light trespass on campus.
- Reduce exposure to environmental tobacco smoke.
    - Designate limited smoking zones.
    - Prohibit smoking outdoors within 25' regular building entrances, operable windows and other outdoor gathering areas.
    - Clearly designate these areas with signage which is located 10' from building entrances.

Active walkway through Trinity Green

TREE INVENTORY

Duquesne University's campus is home to a diverse tree community comprised of trees of a variety of species and maturity levels. The IMP boundary contains approximately 500 trees made up of 50+ species with a total DBH (Diameter at Breast Height) of approximately 5,300 inches. The tree inventory was established utilizing mobile GIS technology to obtain individual locations as well as attributes such as species, scientific name, DBH, canopy spread, condition, and photos.

The following figures focus on field data gathered and analyzed on the existing canopy, the projected 10-year canopy of the existing trees, as well as the existing DBH of each tree. It is recommended that this information be utilized as IMP projects are considered as it provides the baseline of information to determine the overall impact the project(s) will have on the surrounding tree canopy coverage.

It is important to understand that the canopy growth projections are not to be considered final since trees in urban environments are subject to a number of stressors which can impact growth and decrease tree longevity. These factors include, but are not limited to: soil compaction, poor nutrient deficient soils, soils with low water storage capacity, deicing salts, root injuries, physical damage to roots, trees and or bark, extreme temperatures, reduced moisture availability due to restricted roots and surrounding impervious pavement, lack of adequate sun exposure (due to building shading), inadequate soil volumes, limited spacing between trees and limited size of tree opening. For reference see the Arboriculture and Urban Forestry journal article "Appraisal of Key Abiotic Parameters Affecting Street Tree Growth" http://joa.isa-arbor.com/articles.asp?JournalID=1&VolumeID=36&IssueID=1 and also the lecture "Three Design Issues that Impact Long Term Health of Urban Trees" by James Urban, FASLA (http://www.jamesurban.net/webinars-1). With these parameters and limitations in mind it is imperative that future trees are sited in streetscapes and urban conditions in a manner that reduces the impact of these stressors on tree health. Street trees will be selected and planted based on the City of Pittsburgh Municipal code and the City of Pittsburgh Department of Forestry recommended species and tree quality requirements (http://pittsburghpa.gov/dpw/forestry/planting-street-tree.html). Refer also to the University's Sustainable Landscape Guidelines in Section 7.4.

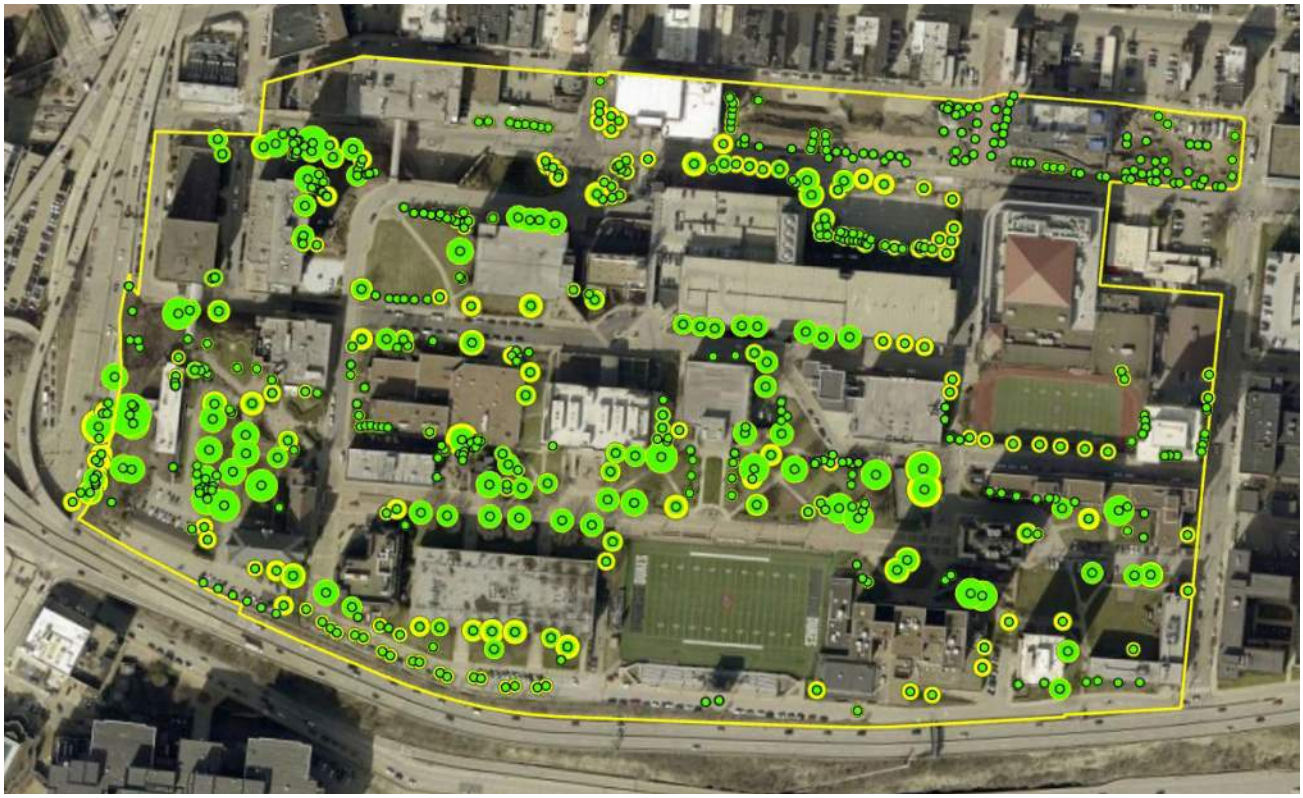


Figure 7.7: Existing Tree Canopy

Area Legend

- Campus Tree
- Existing Tree Canopy
- Est. 10-Year Canopy*
- EMI Boundary

Figure 7.7 above shows the location of trees, the current canopy, and the projected 10-year growth of the current canopy.

- IMP Boundary = 50.3 acres
- Existing Tree Canopy = 9.9 % of IMP boundary (5.01 acres)

Growth calculations were derived by researching normal full-size canopy spread and maturity age of each species (referenced from the Manual for Woody Landscape Plants) to determine an average growth rate. Current age was estimated by dividing current spread by the average growth rate. Trees estimated to reach normal full size within the 10-year projection were capped at the normal full canopy size. Trees currently larger than the normal full canopy size did not have a growth factor applied.

Figure 7.8: Proposed Projects Tree Impact

Area Legend

- Campus Trees
- Impacted Trees
- Proposed Projects
- EMI Boundary

Figure 7.8 above shows the location of the IMP projects and the projected preservation of tree canopy over the 10-year development timeline.

The shaded green polygons represent trees that will be preserved and not impacted by the IMP projects. These trees were selected through GIS processes which identify trees that have projected 10-year canopies, and do not intersect with a nearby IMP project boundary. Trees impacted by the projects are shown in red.

Based on the University's proposed projects and the 10-year projected tree canopy estimates, the existing canopy is projected to increase over the next 10 years as shown in the data below (statistics take into account proposed IMP projects):

- Projected 10-year canopy = 15.6 % of IMP boundary (7.83 acres)
- Projected 10-year tree canopy increase = 56.3 % increase (2.82 acres)

The projected increase of 56.3% of tree canopy over the next 10 years shows significant progress toward the City's canopy coverage goal. The University will continue to monitor canopy growth and evaluate future planting strategies in an effort to maximize and preserve canopy growth and sustainability.

The above projected increase does not consider projected future plantings within the IMP boundary. Please refer to figure 7.10 for information on projected future planting efforts.

Area Legend

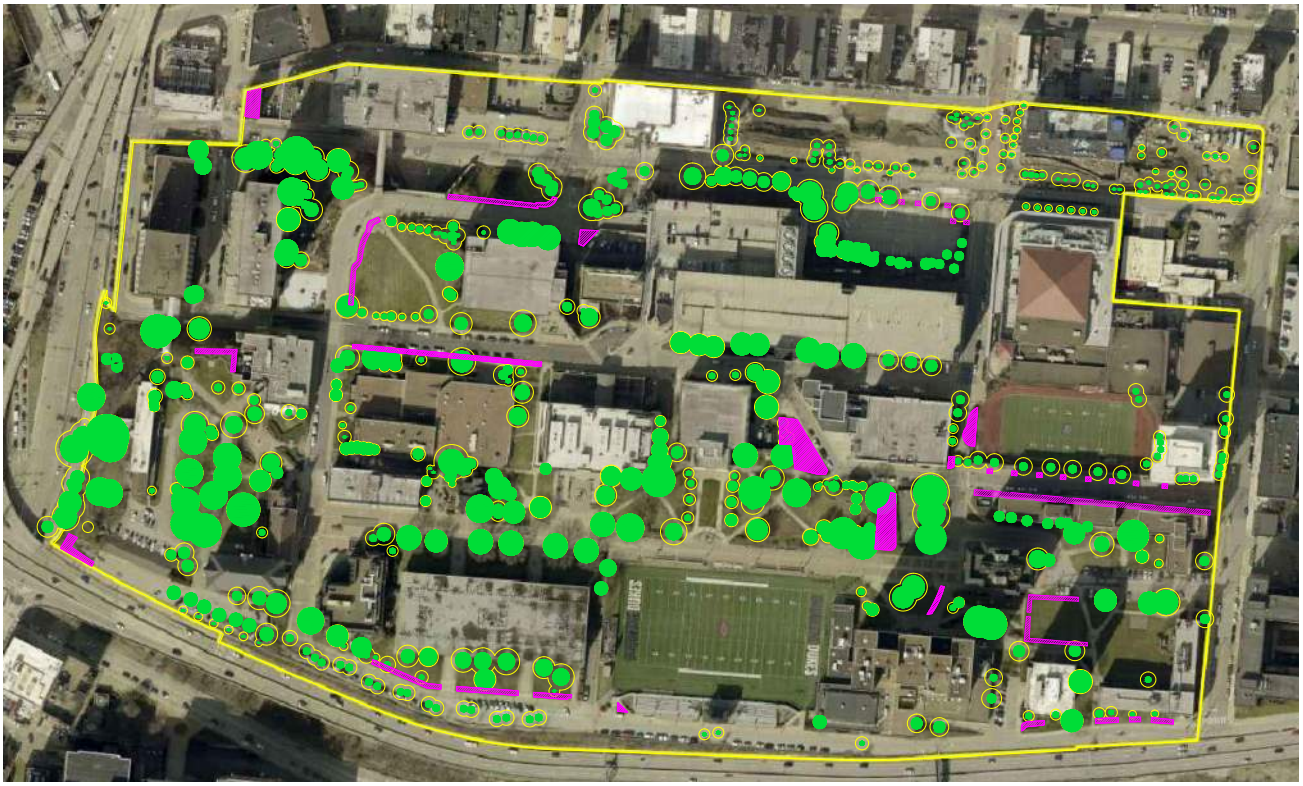
- 2″ - 6″ DBH
- 6″ - 12″ DBH
- 12″ - 24″ DBH
- Greater than 24″ DBH
- EMI Boundary

Figure 7.9: Existing Tree DBH with Proposed Project's Overlay

Figure 7.9 below shows the distribution of trees by DBH across the IMP Boundary and their proximity to proposed IMP projects.

The trees in Figure 7.9 are classified into 4 ranges of DBH which are differentiated by color based on the following:

2″ – 6″ DBH	-Yellow
6″ - 12″ DBH	-Orange
12″ – 24″ DBH	-Red
Greater than 24″ DBH	-Blue



Area Legend

Existing Trees

EMI Boundary

Proposed Tree Locations

Figure 7.10: Proposed Tree Canopy Enhancement

Duquesne University understands and appreciates the benefits of its existing campus trees as they not only enhance the University landscape, but they provide habitat, shade and thermal comfort, reduce stormwater runoff and help to slow down and temporarily store runoff. It is a priority of the University to protect the campus tree collection and where possible enhance the extent of the existing canopy by the planting of additional trees.

Through the preservation and growth of the existing campus trees and the strategic planting of new trees on campus, Duquesne University's tree canopy is projected to increase to 7.83 acres (15.6% of the IMP boundary) over a ten-year period. Refer to Figure 7.7 in this section for information on the existing tree canopy growth.

Projected 10-year tree canopy	= 7.83 acres (15.6% of IMP boundary)
Potential new tree plantings	= 0.15 acres (0.30% of IMP boundary)
7.83 acres + 0.30 acres	= 8.13-acre Tree Canopy Goal (16.2% of IMP boundary)

(See Figure 7.10) The diagram indicates potential areas where enhancing the tree canopy would result in approximately 0.15 acre (0.30%) overall increase in campus tree canopy coverage (assuming that trees with an 8' diameter canopy are planted at installation). The placement of the proposed trees was coordinated with Duquesne University during a campus walk-through to best determine feasible locations for new tree plantings that would enhance the campus while maintaining the functionality/ programming of the existing campus open spaces. Trees are proposed in interior campus planting areas to further reinforce the existing landscape and define the perimeter edges of campus commons. Additional street trees are proposed along interior campus roads including along McAnulty Drive, Locust Street and Seitz Street.

Duquesne University has also outlined protection, preservation and planting recommendations for campus trees in the "Sustainable Landscape Design Guidelines" in Section 7.2.

CAMPUS ENERGY PLANNING 7.3

View from the Duquesne University Bluff toward downtown Pittsburgh

Duquesne University is committed to energy conservation and sustainable building and operating practices. Major new building projects in recent years, the Des Places Residence Hall and the Power Center recreational facility, have achieved LEED Gold and Silver certifications, respectively, from the U.S. Green Building Council. An interior renovation of the Duquesne Union also achieved Silver certification. The University is committed to applying sustainable practices to major new building and renovation projects where financially feasible. Going forward, this will include consideration of the Passive House criteria for building design. See Section 7.5 for a further discussion of the University's green building and operating practices. The University also participates in the Pittsburgh 2030 District program, which promotes energy reduction in commercial buildings; and Sustainable Pittsburgh, which promotes increased use of renewable energy sources.

Achieving the goals of sustainability - whether through green operations, construction projects, research, academic coursework or community engagement initiatives - is one of the principal ways that Duquesne University has been able to transform respect for the integrity of creation into action and to honor their Catholic founding in the Spiritan tradition. Whether or not the University pursues LEED or any other sustainability certifications will be determined in concert with each project's design team based on their recommendations and the cost/benefits associated with such certifications. Some of the requirements for LEED certification can be more symbolic than practical, and Duquesne owes it to their partners and community to steward their resources well. The University sees being a good steward, in addition to pursuing certifications, as using their existing facilities effectively as part of the greater campus community.

Following is a discussion of specific campus energy planning efforts, including recent/present achievements and proposed projects.

CAMPUS CENTRAL ENERGY PLANT

Achievements:

- All electricity used on campus is either produced in the efficient, natural gas-burning cogeneration plant, or purchased from renewable energy providers. The cogeneration plant, operated by Cordia Inc., has been in service for over 20 years and is a more efficient energy source than a standard electrical generating plant because the "waste heat" produced by the electric generator's gas-fired turbine is used to produce steam required year-round by the campus. This plant is still the City of Pittsburgh's leader for this type of energy generation and remains the only one of its kind in Pittsburgh.

- This plant was recently upgraded with new cooling towers that consume less water, and the 50-year old boilers were replaced with higher efficiency boilers that reduced emissions from over 100 PPM Nox to less than 9 PPM. The capacity of the plant was increased to provide greater resiliency in the event of an equipment failure.

- The cogeneration plant uses ice storage to produce cooling capacity at night, when it is more efficient and does not contribute to utility grid peak loads.

- Expansion of the chilled water system to the UPMC Cooper Fieldhouse and Vickroy Hall allowed the elimination of inefficient air-cooled systems at the Fieldhouse and an inefficient satellite chiller plant in Vickroy that served several Residence Life buildings.

- The U.S. Environmental Protection Agency has recognized Duquesne University as the Individual Conference Champion of the College & University Green Power Challenge for using more green power than any other school in the Atlantic 10 Conference every year between 2007-2008 and 2016-2017.

- The University's energy use, as measured in BTU/gross square foot, is 30% less than the average of a peer group of eight similar universities in the northeastern U.S. with cogeneration plants.

- A 2015 analysis of the campus chilled water piping network by an engineering consultant identified several portions of the network that should be upsized or re-configured to decrease flow velocities, to obtain improved flow and lower pumping energy. Recommended upgrades were completed for the Rockwell Hall and Canevin Hall portions of the piping system. Others are in the planning stages.

- Replaced inefficient, unreliable steam absorption chillers with more efficient and reliable electric chillers.

- Cordia has been engaged to provide chilled water and steam as District Energy. The college of Osteopathic Medicine will be integrated to this system.

Proposed Projects:

- The University has entered into a 40-year public-private partnership with Cordia to ensure optimal use of the co-gen plant waste heat and increase the resiliency of both plants against a shock of a boiler failure. This bold move, in keeping with the Uptown EcoInnovation District's goal of an increased use of district energy, will also include ownership of the Energy Center by Cordia, promoting operational efficiency and providing increased capital improvement funding.

- The Energy Center on Duquesne's campus will be interconnected to the Clearway Uptown Plant in order to provide the ability for plant optimization. Excess steam from the Energy Center will be used to feed the Uptown needs and vice versa, incorporating the City's goals of district energy and energy efficiency.

- Continue implementing the chilled water piping system improvements, including upsized pump headers in the Energy Center and rearrangement of piping serving Mellon Hall and Bayer Hall to eliminate excessive velocities in the piping mains along Locust Street.

- Continue to work with Sustainable Pittsburgh, Pittsburgh 2030 District and other groups to develop future energy consumption targets and consider additional renewable energy alternatives.

View of the Cogeneration Plant

LIGHTING SYSTEMS

Achievements:

- For several years, all lighting replacements and new lighting installations have used highly efficient LED fixtures where technically feasible. In addition to several whole-building conversions, LED conversions in the Gumberg Library, the parking garages and the street lights along Forbes Avenue not only save energy, but also produce higher quality lighting and color rendering than the replaced fixtures.

- Outdoor projects, such as the parking garage and Forbes Avenue fixture replacement, have been designed to reduce sky glow and glare through use of directional shielding. Motion sensors were added to the parking garage stairwells, which reduces spillover through these stairwells' extensive glazing. Bollard lighting has been used on some sidewalks and plazas to place the right amount of light in the right place.

Proposed Projects:

- In the near future, the University is replacing HID fixtures on Rooney Field with new, directional LED lighting that will save energy and address long-standing concerns from South Side residents about nighttime glare.

- Include considerations of light trespass and spillover on all projects proposed by the IMP, especially projects like the new College of Osteopathic Medicine that abut the public realm.

- Survey the campus to find ways to minimize light trespass from the interior and exterior of buildings including site lighting.

- Continue to replace HID and fluorescent fixtures with LED fixtures in renovation projects of all sizes.

HVAC/MECHANICAL RENOVATION PROJECTS

Achievements:

- Significant or whole-building HVAC replacements include the School of Music, College Hall, Duquesne Union, Canevin Hall, UPMC Cooper Fieldhouse, Brottier Hall, Libermann Hall, Assumption Hall and several others. These renovations typically replace decades-old, inefficient constant volume air and water systems with more efficient variable volume air and water systems with modern direct digital control (DDC) systems and improved ventilation. They also typically have energy saving features lacking in some of the older systems, such as demand-controlled ventilation, economizer cooling and exhaust energy recovery.

- Residence Life HVAC renovations and new construction use vertical fan coil units that allow room-by-room control and occupancy sensors that automatically set back temperatures when residents are absent.

- Recent renovations in Mellon Hall include use of low-flow fume hoods that have a significantly lower exhaust rate than the replaced, original fume hoods. Mellon Hall's numerous fan coil units are being replaced with units with quieter and more efficient ECM motors, and the pneumatic controls for these units are being replaced with DDC controls for improved comfort and efficiency. The chilled water pumping system in Mellon Hall was converted from constant to variable flow, resulting in energy savings and a large rebate through the PA Act 129 program.

Proposed Projects:

- All proposed IMP projects that include HVAC systems will be designed with high efficiency systems, in keeping with University's green building and environmental protection goals.

- Whole-building HVAC renovations are planned for the Gumberg Library, Duquesne Towers, St. Ann Hall and Rockwell Hall.

- Several building direct digital control (DDC) systems are being upgraded for more focused control and better operation, which will improve occupant comfort and off-hour scheduling capabilities.

- Pursue further study and funding for a conversion of Mellon Hall's fume hood exhaust system from constant to variable volume operation, and replacement of the Towers Pool HVAC system with an energy recovery system. Feasibility studies of these projects indicated large potential energy savings, but the significant costs have delayed funding of these projects.

- Replacement of Mellon Hall's walk-in scientific coolers and freezers, currently using air-cooled refrigeration equipment, with water-cooled equipment utilizing the building's chilled water return system.

- Renovation of the Duquesne Union's large kitchen will include a more efficient arrangement of cooking hoods and more efficient, Energy Star appliances where applicable.

BUILDING ENVELOPE IMPROVEMENTS

Achievements:

- Roof replacements on the Duquesne Union, Duquesne Towers, Libermann Hall (7th/8th floors), Trinity Hall and Mellon Hall have improved energy efficiency with greater insulation thickness.

- Window replacements in Assumption Hall, St. Martin Hall, Canevin Hall and other buildings have improved energy efficiency and increased occupant comfort.

Proposed Projects:

- Roof replacement at Cooper Hall and Libermann Hall (6th floor).

- Window replacement at Brottier Hall, College Hall, Rockwell Hall and St. Ann Hall.

BUILDING METERING SYSTEMS

Achievements:

- A 2015 metering study by an outside consultant provided a roadmap for metering all utilities at the building level, including recommended meter types/manufacturers for each application, and estimated construction costs. Implementation of this additional metering is not yet funded.

- All recent new buildings and major renovation projects included installation of previously lacking building-level meters on central steam, chilled water and/or electricity. Rockwell Hall is a recent example.

- In a cooperative project with Duquesne's MBA Sustainability Program, chilled water, steam and electric submeters were installed in Rockwell Hall, readable by faculty and students in this program. The goal of this project is to create a "living-learning laboratory" for our students.

- Building submeters for steam and chilled water added to Brottier and St. Martin Hall.

Proposed Projects:

- Continue to install building-level meters on central utilities during major renovations. This will improve the University's ability to compare energy use to benchmarks at the building level and correct conditions resulting in excessive energy use.

- Because of the metering study, the costs of adding meters into buildings are now known. The most pertinent projects will be pursued as funding becomes available. Duquesne will engage the Green Building Alliance in finding grants and outside funding sources to support data analysis of the 2030 EUI goals. Meters in residence halls will allow for consideration of student behaviors and encourage more student involvement.

EQUIPMENT EFFICIENCY

Achievements:

- All University standard configuration Dell and Apple computers are at the highest Energy Star rating. That is one of the primary selection criteria for university computer purchases.

Proposed Projects:

- Work with facilities and central purchasing departments, and other departments making direct purchases, to ensure that Energy Star rating criteria are used for purchases of all other equipment and appliances (i.e., refrigerators, copiers/printers, etc.).

- Work with Residence Life to look into the student behavior initiatives that help students take ownership of their energy consumption and better understand how this involves their activities. This could take the form of floor competitions for electrical use, trash audits or display boards that show energy use reductions and the corresponding impacts. Display boards are already being incorporated into Rockwell Hall and Des Places and could be expanded.

RENEWABLE ENERGY

Achievements:

- Installation of a 10 KVA Photovoltaic (PV) solar array on Des Places Residence Hall.

- Purchase of renewable (wind) power to offset purchased grid power (see Energy Center discussion above).

- Conducted studies of other PV and wind turbine installations with renewable energy providers for other campus locations. These projects were not implemented due to unfavorable life cycle costs.

Proposed Projects:

- Continue to study the feasibility of renewable energy installations for new construction projects and at existing campus sites, using the expertise of building design consultants and/or renewable energy equipment vendors.

- Continue to work with and expand academic programs in sustainability and renewable energy studies such as the Sustainable MBA Program and the Center for Environmental Research and Education (CERE).

- Look at developing a procurement policy where only Energy Star equipment can be purchased.

STORMWATER MANAGEMENT 7.4

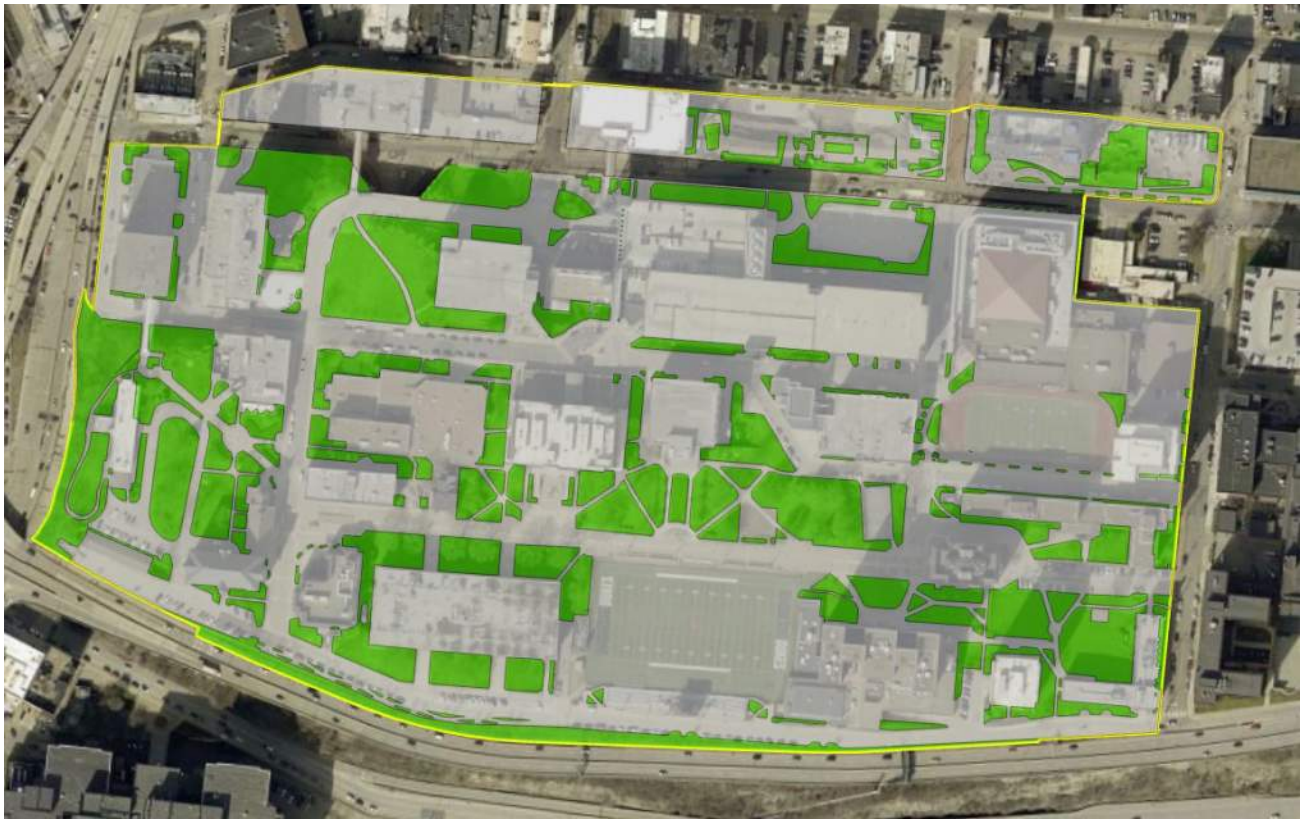


Figure 7.11: Existing Impervious Coverage Areas

STORMWATER EXISTING CONDITIONS

Duquesne University is an urban campus compacted into the City of Pittsburgh's surrounding street grid with limited open space and existing stormwater management facilities. Nearly all the development and infrastructure occurred prior to the enactment of more stringent stormwater management and water quality regulations. The Institutional Master Plan boundary encompasses approximately 50.28 acres of land. The area within the boundary was analyzed using GIS and aerial technology to determine the current acreage of impervious coverage. The areas of pervious and impervious coverage are illustrated on Figure 7.11, with the pervious areas shaded green and the impervious areas shaded gray. The amount of pervious area is approximately 12.25 acres and the amount of impervious area is approximately 38.03 acres.

Stormwater runoff generally flows from plateau areas in the south and central part of campus towards existing collection systems located within Forbes Avenue to the north and the Boulevard of the Allies to the south. The entire drainage area is tributary to the M-05 combined sewer overflow watershed. There are currently no green infrastructure BMPs located on the campus; however, one detention tank facility was installed as part of the Genesius Theater project to control the rate of stormwater runoff leaving the site.

The long-term goal for stormwater management will be to capture and treat the required stormwater runoff volume associated with the future improvements, as well reduce the impervious area within the overall Institutional Master Plan boundary by 0.5% (approximately 10,000 SF). Although the campus is fully built-out and located within an entirely urban area, there are opportunities to meet the goal for impervious area reduction. The plan for meeting this goal will be the addition of a park in the northwestern portion of the campus, the demolition of Saint Ann Hall and converting the area to green space, as well as the addition of pervious area in what is cur-

rently an impervious parking lot along Forbes Avenue. With these additions of pervious area as part of future development, the goal for reducing the overall impervious area on campus by 0.5% is realistic and achievable.

To determine the required stormwater runoff volume that will need to be captured and treated both the City of Pittsburgh Stormwater Ordinance and the Volume Control Guideline 1 in the Pennsylvania DEP's Stormwater BMP Manual will need to be considered. Whichever is more stringent will be the requirement the proposed project will follow for volume control.

The City of Pittsburgh Stormwater Ordinance requires that the 95th percentile storm event shall be permanently removed from post site development. The 95th percentile storm event equates to 1.66 inches of precipitation over a 24-hour period but is subject to change and be recalculated every five (5) years by the Review Body. To determine the volume requirement impact, the impervious area within the projects limit of disturbance shall be multiplied by 1.66 inches converted to feet (approximately 0.13833 ft) to get the cubic foot capacity that will be required to be permanently removed through the implementation of Best Management Practices (BMPs).

The Volume Control Guideline 1 in the Pennsylvania DEP's Stormwater BMP Manual requires both pre-condition and post condition site coverage to be analyzed and compared to determine the increase in runoff volume that the proposed development may cause. It requires that existing non-forested pervious areas be analyzed as meadow in good condition and that 20 percent of existing impervious areas are considered meadow in good condition. As development occurs over the campus and new impervious areas increase the runoff volume, green infrastructure will be developed to offset these increases.

In most cases the City of Pittsburgh Stormwater Ordinance requirements will be the more stringent and cause for greater volume storage on sites that are mostly impervious. For this report City requirements will be considered for all projects for consistency, but when the project designs begin it is recommended that both the City and the PADEP volume requirements be calculated to determine which one applies to the project.

The following is a list of the Duquesne University master planning projects that are anticipated to occur within the 10-year time frame. Each includes an accounting of the existing pervious and impervious land coverage for the project area:

1. **Forbes Avenue Green Space**

   Location: Between Forbes Avenue and Watson Street, west of Fisher Hall
   Description: Demolition of one or two existing structures to create a parklet/plaza, in coordination with the City of Pittsburgh's plan to vacate the adjacent section of Boyd Street, to include gateway signage for the University.
   Phase: 0-10 years

Existing Pervious Coverage:	0 S.F.
Existing Impervious Coverage:	5,733 S.F.
Required Storage Volume:	-600 C.F.

2. **BRT Station**

   Location: South side of Forbes Avenue, east of McAnulty Drive
   Description: New mass-transit street-side station to be designed and constructed by others on University property.
   Phase: 0-10 years

Existing Pervious Coverage:	0 S.F.
Existing Impervious Coverage:	235 S.F.
Required Storage Volume:	33 C.F.

3. **New Rangos School of Health Sciences**

   Location: Southwest corner of Forbes Avenue and Magee Street intersection
   Description: Academic facility for classrooms, labs, offices and auxiliary uses.
   Phase: 0-10 years

Existing Pervious Coverage:	0 S.F.
Existing Impervious Coverage:	10,983 S.F.
Required Storage Volume:	1,519 C.F.

4. **Alumni House**

   Location: South lawn of the Trinity Green
   Description: Small residential-style building with guest bedrooms and entertainment spaces.
   Phase: 0-10 years

Existing Pervious Coverage:	1,951 S.F.
Existing Impervious Coverage:	1,991 S.F.
Required Storage Volume:	545 C.F

5. **Arthur J. Rooney Field Visitors' Locker Room**

Location: West end of existing Arthur J. Rooney Field
Description: New at-grade locker room and support space structure with a roof-top viewing deck and canopy.
Phase: 0-10 years

Existing Pervious Coverage:	2,758 S.F.
Existing Impervious Coverage:	1,110 S.F.
Required Storage Volume:	454 C.F.

6. **Arthur J. Rooney Field Perimeter Wall**

Location: North side of existing Arthur J. Rooney Field stands
Description: New perimeter wall and landscaping around the north side of the field and stands with gates and controlled access points (may include modifications to existing stands).
Phase: 0-10 years

Existing Pervious Coverage:	0 S.F.
Existing Impervious Coverage:	1,595 S.F.
Required Storage Volume:	224 C.F.

7. **Arthur J. Rooney Field New Press Box**

Location: Site of existing Arthur J. Rooney Field press box
Description: New press box to replace the existing outdated press box.
Phase: 0-10 years

Existing Pervious Coverage:	0 S.F.
Existing Impervious Coverage:	2,063 S.F.
Required Storage Volume:	285 C.F.

8. **New Athletics Offices**

Location: Southeast corner of Duquesne Towers
Description: Athletics offices and support space located in a new addition to the Duquesne Towers first floor athletics uses.
Phase: 0-10 years

Existing Pervious Coverage:	0 S.F.
Existing Impervious Coverage:	978 S.F.
Required Storage Volume:	135 C.F.

Figure 7.12: Proposed Impervious Coverage Areas

STORMWATER PROPOSED CONDITIONS

The overall campus sees an approximate 0.20 acre net increase in impervious area in the proposed conditions. The proposed development projects present opportunities to implement green infrastructure stormwater management strategies to reduce runoff from the site and alleviate stress on the downstream systems. These strategies include installation of stormwater best management practices (BMPs) that promote retention, infiltration, reuse, and evapotranspiration. Incorporation of green infrastructure and low impact development techniques in future planning will provide further benefits to the surrounding community by mitigating thermal impacts and reducing pollutant loads to the receiving waterway.

Examples of these strategies are currently in motion with the UPMC Cooper Fieldhouse and College of Osteopathic Medicine projects. Due to the limited available surface area surrounding the UPMC Cooper Fieldhouse project, which is currently under construction, tree pits and a subsurface infiltration BMP were implemented along Forbes Avenue. This allows for stormwater to be captured and infiltrated within the general project area, promoting groundwater recharge at the site. The College of Osteopathic Medicine project, which is currently in the design phase, will utilize similar design strategies, however, there is more open space area proposed around the site and above-ground BMP's such as bioswales and rain gardens will be considered for the project.

A summary of the long-range projects is illustrated on Figure 7.12 and summarized below:

1. **Forbes Avenue Green Space**

Proposed Pervious Coverage:	5,733 S.F.
Proposed Impervious Coverage:	0 S.F.
Required Storage Volume:	-600 C.F.

Potential Stormwater BMPs: Subsurface Infiltration, Bio-Swale, Rain Garden, Porous Pavement/Pavers

2. **BRT Station**

Proposed Pervious Coverage:	0 S.F.
Proposed Impervious Coverage:	235 S.F.
Required Storage Volume:	33 C.F.

Potential Stormwater BMPs: Planter/Tree Pit, Porous Pavement

3. **New Rangos School of Health Sciences**

Proposed Pervious Coverage:	0 S.F.
Proposed Impervious Coverage:	10,983 S.F.
Required Storage Volume:	1,519 C.F.

Potential Stormwater BMPs: Planter/Tree Pit, Rain Garden, Green Roof, Cistern/Water Re-Use, Bio-Swale, Subsurface Infiltration/Detention

4. **Alumni House**

Proposed Pervious Coverage:	0 S.F.
Proposed Impervious Coverage:	3,942 S.F.
Required Storage Volume:	545 C.F.

Potential Stormwater BMPs: Cistern/Water Re-Use, Rain Garden, Porous Pavement, Bio-Swale, Green Roof

5. **Arthur J. Rooney Field Visitors' Locker Room**

Proposed Pervious Coverage:	0 S.F.
Proposed Impervious Coverage:	3,280 S.F.
Required Storage Volume:	454 C.F.

Potential Stormwater BMPs: Planters/Tree Pits, Porous Pavement

6. **Arthur J. Rooney Field Perimeter Wall**

Proposed Pervious Coverage:	0 S.F.
Proposed Impervious Coverage:	1,619 S.F.
Required Storage Volume:	224 C.F.

Potential Stormwater BMPs: Planters/Tree Pit, Porous Pavement

7. **Arthur J. Rooney Field New Press Box**

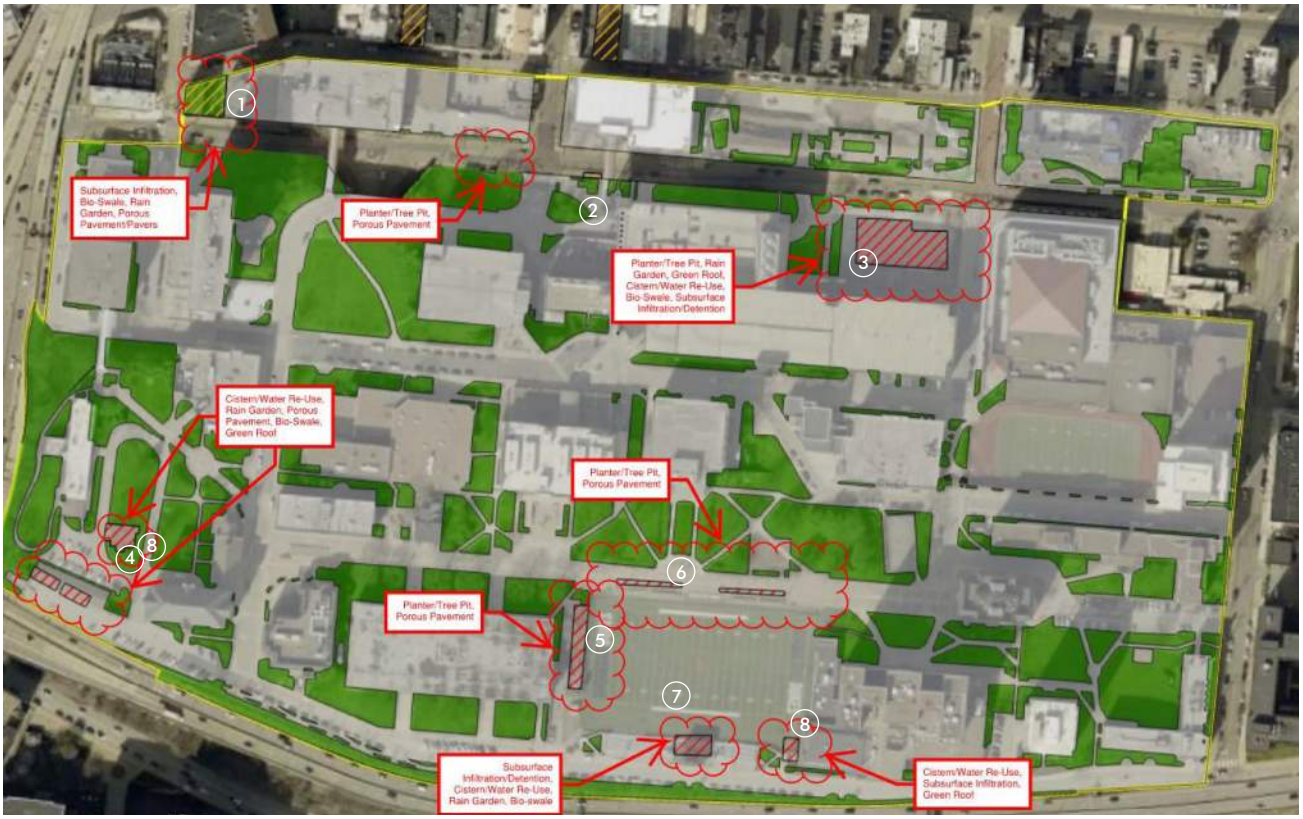
Proposed Pervious Coverage:	0 S.F.
Proposed Impervious Coverage:	2,063 S.F.
Required Storage Volume:	285 C.F.

Potential Stormwater BMPs: Subsurface Infiltration/Detention, Cistern/Water Re-Use, Rain Garden, Bio-swale

8. **New Athletics Offices**

Proposed Pervious Coverage:	0 S.F.
Proposed Impervious Coverage:	978 S.F.
Required Storage Volume:	135 C.F.

Potential Stormwater BMPs: Cistern/Water Re-Use, Subsurface Infiltration, Green Roof



Area Legend

Pervious Area
Impervious Area
Proposed Construction
EMI Boundary
Combined Sewer Line
Private Sewer Line
Storm Sewer Line
Sewer Inlets
Sewer Junctions
Sanitary Sewer Manholes

Figure 7.13: Proposed Stormwater Management BMPs

The various stormwater management BMPs that are ideal for development within urbanized areas and can be utilized to meet development goals are listed below:

Subsurface Infiltration

- Description of BMP: Collects surface runoff via inlets and stores it below grade in a gravel bed and/or pipes. The outflow from the system is controlled to slowly release the volume over a long period of time. The attenuation of the stormwater runoff promotes infiltration into the subsurface soils below the gravel layer. Percolation through a gravel bed also provides some filtration to improve water quality. Refer to the Proposed Impervious/Pervious Coverage Area Map for examples of potential Underground Detention locations.

- Design Considerations: This BMP is generally installed below parking lots and away from building foundations, under recreational fields or within open space area. **If located within a landslide prone area, it is recommended that an impervi-**

ous liner be installed around the BMP.

- Operation/Maintenance: Subsurface infiltration facilities are generally less maintenance intensive than other structural BMPs. Maintenance programs typically require a regular schedule of sediment and debris removal. All inlets connected into the facility should be inspected and cleaned a minimum of two times annually.

Bio-Swales

- Description of BMP: Bio-swales are utilized to disconnect runoff from impervious areas and are a conveyance alternative to storm sewers. The advantage of using bio-swales in lieu of storm sewers is that the swales slow down the water and allow water to infiltrate into the soils below, as well as pollutant removal. Refer to the Proposed Impervious/Pervious Coverage Area Map for examples of potential Bio-swale locations.

- Design Considerations: Bio-swales can be used to collect drainage off parking lots or drive aisles. Ideal locations for bio-swales are flat areas where the swales can be installed at less than 2% slope. Bio-swales should be 2' – 8' wide to spread flow and provide room for diverse vegetation. Check dams can be installed within the swales to provide storage and promote infiltration. **If located within a landslide prone area, it is recommended that an impervious liner be installed around the BMP.**

- Operation/Maintenance: Maintenance activities include inspection of the facility after large storm events to correct erosion problems and sediment and debris removal. Bio-swales must be maintained throughout the year with regular mowing and trimming and restoring channel geometry and vegetation as needed.

Rain Gardens

- Description of BMP: Rain gardens are a bioretention system consisting of depressed areas within landscaping that collect and filtrate water through soil and gravel layers prior to discharging downstream. Rain gardens are typically landscaped with specialized plantings that soak the water up through the roots and provide evapotranspiration. Refer to the Proposed Impervious/Pervious Coverage Area Map for examples of potential Rain Garden locations.

- Design Considerations: Rain gardens are typically installed adjacent to impervious areas to disconnect the runoff from the downstream storm sewer system. **If located within a landslide prone area, it is recommended that an impervious liner be installed around the BMP.**

- Operation/Maintenance: Routine maintenance of these facilities requires annual pruning, weeding and removal of sediment and debris. The rain garden should be inspected after large storm events for erosion, clogging and vegetative conditions. Mulch beds should be replaced every 2-3 years.

Cisterns / Water Re-Use

- Description of BMP: Cisterns or rain barrels are used to retain runoff that can be reused. The facilities can be either underground or aboveground. The re-use of the water is typically used for irrigation of surrounding vegetated areas or athletic fields. Refer to the Proposed Impervious/Pervious Coverage Area Map for examples of potential Cistern/Water Re-use locations.

- Design Considerations: These BMPs are typically used to collect roof water, which generally has minimal pollutants compared to runoff from streets and parking areas. Regular re-use of the water is necessary to maximize the storage capacity of the facility.

- Operation/Maintenance: The facility should be inspected a minimum four times annually and after storms exceeding 1 inch of rain for any sediment build-up or trash and debris which may clog the system and reduce capacity. Any upstream inlets or gutters should be cleaned four times annually and after storm events exceeding 1 inch of rain.

Green Roof

- Description of BMP: Green roof is a layer of soil media, vegetation, waterproofing and insulation installed on the top of flat or gently sloped rooftops. Green roofs collect water at its source, slow its release, and reduce volume through evapotranspiration from plants, in addition to mitigating thermal impacts.

- Design Considerations: Structural design of the

building must accommodate the addition of the facility on the rooftop. Steeper sloped roofs may require supplemental structural stability measures against sliding.

- Operation/Maintenance: Maintenance of vegetated roof systems requires a minimum bi-annual inspection of the roof membrane, health of the vegetation, and drainage collection system. Weeding, fertilization, in-fill planting and irrigation should be completed as needed.

Porous Pavement / Pavers

- Description of BMP: Pervious pavement or paver blocks consists of porous asphalt, concrete or paver surface underlain with a uniformly-graded stone bed which provides storage volume and promotes infiltration into the underlying soils. Refer to the Proposed Impervious/Pervious Coverage Area Map for examples of potential Porous Pavement/Paver locations.
- Design Considerations: Pervious pavements are ideal applications for parking lots, sidewalks, plazas, playgrounds, tennis courts and other similar uses. In addition to capturing surface runoff, area inlets and roof collectors can be connected into the stone bed. **If located within a landslide prone area, it is recommended that an impervious liner be installed around the BMP.**

- Operation/Maintenance: Maintenance programs for pervious pavements are more intensive than other stormwater BMP facilities in order to maintain its functionality. The pavement surfaces should be vacuumed bi-annually with a commercial cleaning unit. The surface should be inspected after large storm events and any deposited soils should be cleaned immediately. Any inlets or gutters connected to the gravel bed should be cleaned a minimum of 4 times annually and inspected after storm events greater than 1 inch of rain.

Planters / Tree Pits

- Description of BMP: Planters or tree pits are landscaped islands where runoff can be directed and filtered through the vegetation, soil, and underlying stone. Refer to the Proposed Impervious/Pervious Coverage Area Map for examples of potential Planter/Tree Pit locations.

- Design Considerations: Planters or tree pits are ideal for areas adjacent to buildings, along streetscapes or steep slope areas. An underdrain at the bottom of the system must be able to connect into a nearby storm sewer system.

- Operation/Maintenance: Maintenance of the facility requires routine inspection to remove any trash and debris, and upkeep of the plantings.

On the following pages, refer to the "Schedule of Stormwater Management Best Management Practices" (Table 7.1) for additional information.

The Stormwater Management BMP Calculation Table (Table 7.2) has been created as a bookkeeping tool to record and organize the green infrastructure installations as they are developed. The BMP Table can be utilized as a template for ongoing projects. As stormwater BMP's are installed, the location, type, and total storage volume can be recorded and compared with required volumes.

TABLE 7.1: SCHEDULE OF STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES (BMPs)

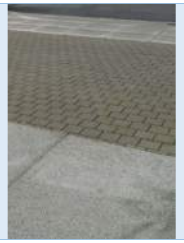
	Subsurface Infiltration	Bio-Swale	Rain Garden	Cistern / Water Re-Use	Green Roof	Porous Pavement / Pavers	Planters / Tree Pits
Description of BMP	Below grade gravel bed and/or pipe system	Gently sloped, vegetated open channel conveyance	Bioretention system within landscaping that collects and filtrates water through soil and gravel layers	Above or below ground well that retains runoff for re-use	Layer of soil media, vegetation, waterproofing, and insultation installed on rooftops	Pervious surface (porous asphalt, porous concrete, or pavers) underlain by a uniformly-graded stone bed	Landscaping used to collect, filter, and infiltrate stormwater through the vegetation, soil, and underlying stone
Design Considerations	Generally installed below parking lots, under recreational fields or within open space areas	Flat areas adjacent to parking lots and drive aisles	Installed adjacent to impervious areas to disconnect the runoff from storm sewers	Roof water collection. Regular re-use of the water necessary to maximize the storage capacity	Collects water at source, slows release, provides evapotranspiration and reduces thermal impacts	Ideal for parking lots, walking paths, sidewalks, playgrounds, plazas, tennis courts, or other similar uses	Ideal for areas adjacent to buildings with setback requirements or steep slope areas
Example of BMP							
Operation & Maintenance	Periodic sediment and debris removal; clean inflow pipes and structures	Regular mowing, trimming and restoring channel geometry and vegetation as needed	Sediment and debris removal, plant upkeep, weeding, mulching	Debris removal, tank inspection, clean upstream inlets and gutters	Weeding, fertilizing, irrigation, regular inspection of roof membrane, plant health, and drainage collection system	Surface should be vacuumed bi-annually with a commercial cleaning unit	Trash and debris removal, plant upkeep
Typical Section	Proposed Length x 36" Diameter Perforated Pipe in a 72" Wide x 72" Deep Stone-Filled Trench	Proposed Surface Area x 30" – 48" Depth (18" – 36" Soil and 12" Stone)	Proposed Surface Area x 30" – 48" Depth (18" – 36" Soil and 12" Stone)	500 Gallons - 20,000 Gallons	Proposed Surface Area x 6" - 12" Soil Depth	Proposed Surface Area x 12" – 36" Stone Depth	Proposed Surface Area x 30" – 48" Depth (18" – 36" Soil and 12" Stone)
Volume Storage w/ Typical Section	18.64 CF per LF	0.85 – 1.30 CF per SF	0.85 – 1.30 CF per SF	0.13 CF per Gallon	0.15 – 0.30 CF per SF	0.40 – 1.20 CF per SF	0.85 – 1.30 CF per SF

TABLE 7.2: STORMWATER MANAGEMENT CALCULATION TABLE

Proposed IMP Project	Approximate Required Storage Volume (CF)[1]	Proposed Storage Volume (CF)[1] per Stormwater Management BMP							Total Proposed Storage Volume (CF)[1]	Total Reduction in Storage Volume (CF)[1]	Adequate Storage Volume or Storage Volume Required?
		Subsurface Infiltration	Bio-Swale	Rain Garden	Cistern / Water Re-use	Green Roof	Porous Pavement / Pavers	Planters / Tree Pits			
UPMC Cooper Fieldhouse Renovation and Addition	1,443	-	-	-	-	-	-	-	0	1,443	Additional Storage Volume Required
College of Osteopathic Medicine	6,535	-	-	-	-	-	-	-	0	6,535	Additional Storage Volume Required
Mixed-Use Building	1,519	-	-	-	-	-	-	-	0	1,519	Additional Storage Volume Required
Arthur J. Rooney Field Visitors' Locker Room	454	-	-	-	-	-	-	-	0	454	Additional Storage Volume Required
Arthur J. Rooney Field New Press Box	285	-	-	-	-	-	-	-	0	285	Additional Storage Volume Required
Arthur J. Rooney Field Perimeter Wall	224	-	-	-	-	-	-	-	0	224	Additional Storage Volume Required
New Athletics Offices	135	-	-	-	-	-	-	-	0	135	Additional Storage Volume Required
Alumni House	545	-	-	-	-	-	-	-	0	545	Additional Storage Volume Required
BRT Station	33	-	-	-	-	-	-	-	0	33	Additional Storage Volume Required
Mixed-Use Residence Life Building	6,825	-	-	-	-	-	-	-	0	6,825	Additional Storage Volume Required
Forbes Avenue Gateway Park	-600	-		-	-	-	-	-	0	-600	Adequate Storage Volume
Saint Ann Hall Demolition & New Green Space	-4,160	-		-	-	-	-	-	0	-4,160	Adequate Storage Volume
Total Storage Volume (CF)[1]	**13,238**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13,238**	Additional Storage Volume Required Overall

[1] **Storage Volume is calculated as the volume associated with the 2-year, 24-hour storm event or 1.66" across all impervious, whichever is greater**

GREEN BUILDINGS 7.5

Two existing buildings, the Power Center and Des Places Residence Hall, incorporated green building practices from the beginning of the design process through current operations. The Power Center is a 136,877-square-foot building constructed in 2007, achieving LEED Silver certification. The main student recreation center, ballroom, bookstore and two food service establishments are located in this building. Des Places is a 131,621-square-foot suite-style residence building constructed in 2012, achieving LEED Gold certification. To achieve these certifications, both buildings received significant credits for sustainable site selection due to their location in a dense urban area with very good community connectivity, alternate transportation options, no added parking and use of reflective roofing materials to reduce heat island effect in the neighborhood. Both buildings earned water efficiency credits for having no potable irrigation systems, and Des Places received credit for 40% water use reduction. Both buildings received credits for energy use at least 20% below baseline (including a PV solar array on Des Places), diversion of at least 75% of construction waste from landfill, use of at least 20% regional materials and 20% recycled content, use of certified wood products and use of low emitting materials. During construction and occupancy, both projects employed enhanced commissioning and construction indoor air quality plans.

The most recent residence hall, Des Places, achieved a sustainability rating of LEED Gold

The University intends to employ a similar, comprehensive green design process for the major new projects described in Section 5.1, including the new College of Osteopathic Medicine. This process will include consideration of the Passive House criteria for building design. Renovations and smaller projects will be evaluated on a case-by-case basis to determine which green design principles can be incorporated within the budget and scope constraints. The new Forbes Residence Hall, McGinley Hall, will be LEED Silver and part of the 2030 District.

Following construction of both the existing and proposed green buildings, the facilities' ongoing operation and maintenance includes various sustainable practices, such as use of green cleaning and pest management methods, recycling and other initiatives described in Section 7.1. All of these efforts contribute to the University's sustainability goals by minimizing the impact of major new projects' consumption of natural resources during construction and operation. In addition to benefiting the environment, this has a direct positive impact on our students by providing them with healthier living and learning spaces. Finally, use of green building practices helps advance the University's mission by demonstrating to the students and community that being a responsible steward of God's creation is both possible and worthwhile.

Duquesne University is committed to uphold high sustainability standards in new construction and renovation projects by utilizing green building criteria and guidelines as those established by LEED and Passive House as applicable and will include them in projects where feasible.

7.6 WASTE MANAGEMENT AND CONSERVATION

Similar facility at Emory University to proposed WaterHub® wastewater reclamation and reuse system

Duquesne University is committed to waste reduction, recycling and management programs focused on reuse and reduction. We have several active programs and continually pursue new opportunities in a rapidly changing waste and recycle industry.

On campus, we have an active and successful recycling and food compost program where we collect organic food waste from our two campus kitchens and recycle product from every campus building. Recycle product is co-mingled in a recycle-only compactor where contents are taken to a Material Recovery Facility (MRF) on Neville Island. Collected and recycled materials include cardboard, paper, metals and various plastics. In 2018, our waste diversion rate was 27%.

Duquesne is committed to responsible waste management, not market volume when it comes to recycle product. We continually work with our vendor with focus on collecting quality clean products and count on them to find acceptable markets for end use while keeping our collected product out of local landfills. This partnership is critical due to the reduction in available markets for recycle product worldwide. Part of this responsible waste management plan includes pursuing technological inroads in on-site food waste dehydration in our campus kitchens, implementation of trayless dining in 2008, elimination of Styrofoam containers in 2017 and removal of plastic liners and contaminated food and drink containers from our collection process. This effort will increase our waste diversion rate, lessen load contamination risk and support hauler efficiency in the sorting process at the MRF.

Standard purchasing procedures include low-VOC furniture and carpeting, purchase of carpeting from vendors who can recycle old carpeting and low or no-VOC paint. The University frequently donates replaced furniture and food service equipment to the local salvage outlet Construction Junction for reuse, keeping them out of landfills.

Over the years, the University has taken major steps to reduce water use on campus. Currently, Duquesne University's water consumption, as measured in gallons/gross square foot, is about 20% less than the average of a peer group of six similar universities in the northeastern US, with similar water requirements.

We have approximately 152 bottle fillers on campus, the majority in our living learning centers, reducing the use of bottled water sold in disposable containers. We make it a practice to include new hydration stations on all new builds and renovations, as well as retrofit existing fountains as financially feasible throughout campus. Installation of low flow water fixtures, including waterless urinals where appropriate, is standard practice. In recent years, ongoing conservation measures for water use and sewage in all living learning centers have been implemented by replacing fixtures with low flow fixtures, or installing restrictors on existing fixtures. These measures walk a fine line between reducing output and student satisfaction in the living learning centers and academic buildings.

The University is also considering the benefits of implementing the WaterHub®, an eco-engineered wastewater reclamation and reuse system that combines natural treatment techniques with the latest water filtration and disinfection technologies. With a lush, natural system aesthetic, complete odor-control features and compact footprint, the WaterHub® is specifically designed for integration into urban settings. A WaterHub® reclamation system serving Duquesne's main campus has been estimated at 250,000 gallons per day of treatment capacity. The WaterHub® also has the potential to be a living, learning laboratory that will allow for academic engagement as well as a source for grant writing across multiple research avenues.

The proposed system will intercept domestic wastewater from the campus or adjacent municipal sewer network and provide on-demand "reclaimed water" for cooling tower and boiler makeup at the central utility and is expected to eliminate potable water use in campus heating and cooling operations, providing water resiliency in the event of drought or water service disruption. Overall, the system is expected to decrease the University's potable water footprint by over 25 million gallons annually. This results in a 30% decrease in potable water use and 45% decrease in wastewater discharge compared to business-as-usual conditions.

Sustainable Water, the project developer and operator, provides project finance opportunities that require no capital or operational cost obligations from the University. Under a Water Processing Agreement (WPA), water savings produced by the project are used to pay off the capital and operational costs of the facility over time. The University will share in these savings – receiving guaranteed discounts from municipal water and sewer rates throughout the 30-year contract term. Meanwhile, the University will have no operational or maintenance responsibilities for the system.

Since this proposal is still in the analysis stage, upon completion, the University will decide the location and work to make this a reality. Duquesne University is aware of the regional issues with Pittsburgh Water and Sewer Authority infrastructure and is undertaking this to stay as a leader in energy and water conservation.

Interior photo of WaterHub® wastewater reclamation and reuse system at Emory University

7.7 OPEN SPACE AND PEDESTRIAN CIRCULATION

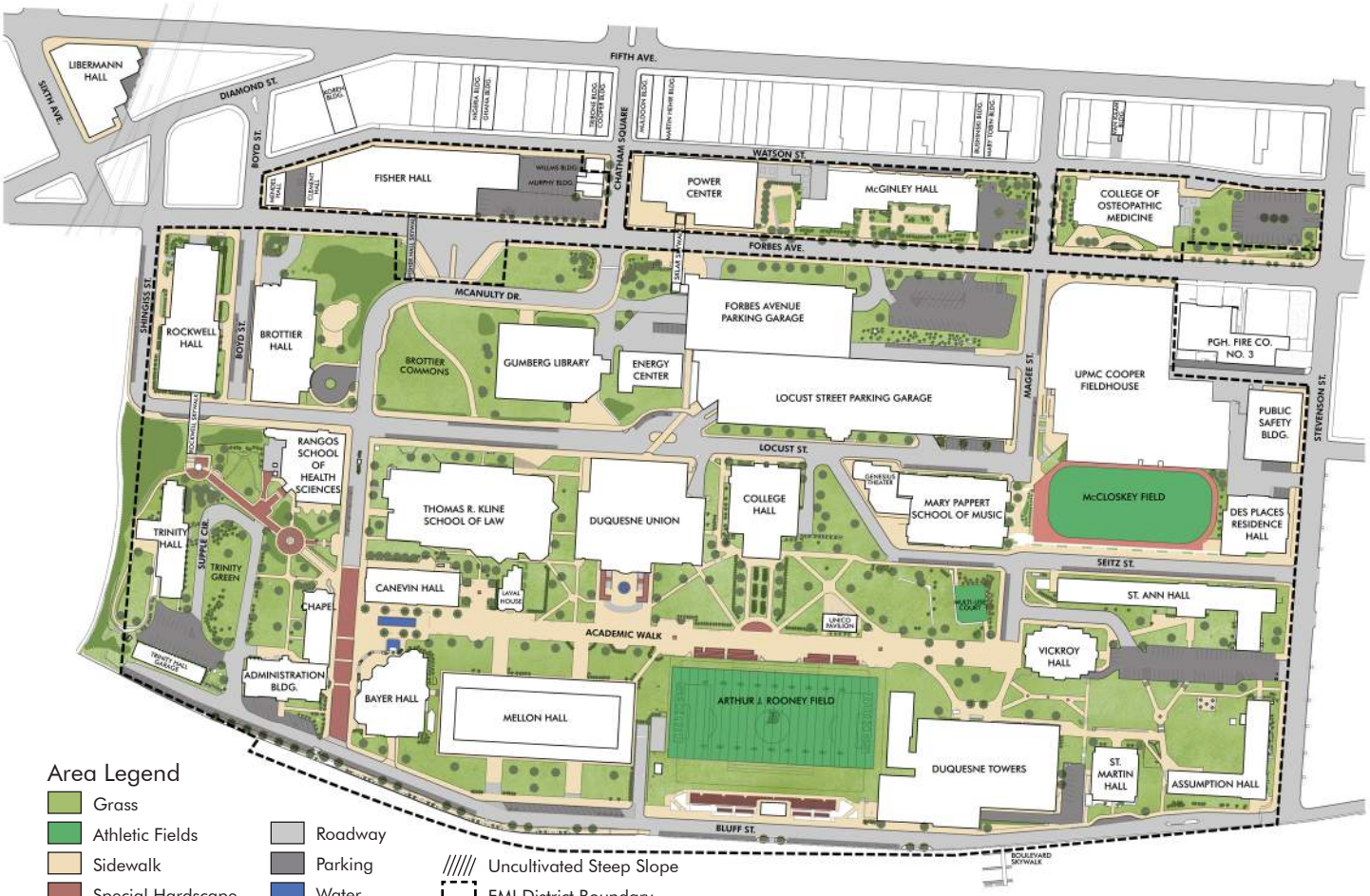


Figure 7.14: Existing Open Space Plan

OPEN SPACE EXISTING CONDITIONS

Since Duquesne is an urban campus and evolved from a tight city street grid, there is not a large amount of natural open green space on campus. Almost all of the campus consists of highly cultivated landscapes with cut grass and manicured plantings. Only steep slope areas west and north of Trinity Hall and north of Brottier Hall remain uncultivated.

The majority of Duquesne's open space on campus is located around the Academic Walk, a former street that was converted into a pedestrian walkway. Academic Walk is the most pleasant of all of the pedestrian areas on campus, featuring fountains and public works of art. It is surrounded by several smaller open lawn areas with a mature tree canopy, shaped bushes and seasonal plantings.

The two artificial turf fields, McCloskey and Rooney Fields, receive a large amount of use. These fields are used for athletic, recreational and intramural sports, as well as informal play. McCloskey Field is also currently accessible to Uptown residents.

The residential quad at the east end of the Academic Walk is only moderately used. Some recent improvements have made the area more appealing, but parking and grade changes still present challenges.

The Trinity Green, at the west end of the Academic Walk, provides a quiet setting with mature landscaping and comfortable site amenities. The walkway from the Rockwell Hall Skywalk to Academic Walk experiences a lot of pedestrian traffic during class changes.

The green space west of Gumberg Library, Brottier Commons, is the former site of a parking garage. While this site may eventually be utilized as a future building site, it is the largest open green space on campus and has developed consistent, mostly passive use. One walkway cuts diagonally across the open grassy area and picnic tables and benches are placed around the perimeter. There are currently no plans to develop this site.

Figure 7.15: Topography Plan

TOPOGRAPHY

The Duquesne University campus is made up of several plateaus separated by mild to severe sloping terrain. The diagram above shows the approximate height above sea level and the more than 100-foot grade change from the lowest points on campus to the highest point.

Most of the central and southern campus, the top of the Bluff, is relatively flat and easily walkable. The most significant on-campus terrain changes occur between Locust Street and Forbes Avenue.

Not shown in this diagram are the dramatic slopes and highways that mark the campus's southern and western edges. In most cases, this major grade change and natural environs provide enough separation from these highways to prevent any negative visual or auditory impact on the campus's atmosphere.

The four pedestrian bridges help to link the lower elevation in and around campus to the upper elevation of campus. Elevators in the connected buildings make the grade change more convenient and accessible. The Sklar Skywalk and the elevators on both sides have dramatically increased connectivity from Forbes Avenue to the main campus on the Bluff. The Boulevard Skywalk, south of Duquesne Towers, crosses over the Boulevard of the Allies and connects to city steps that lead down to Second Avenue at the northern end of the 10th Street Bridge, approximately 130 feet below.

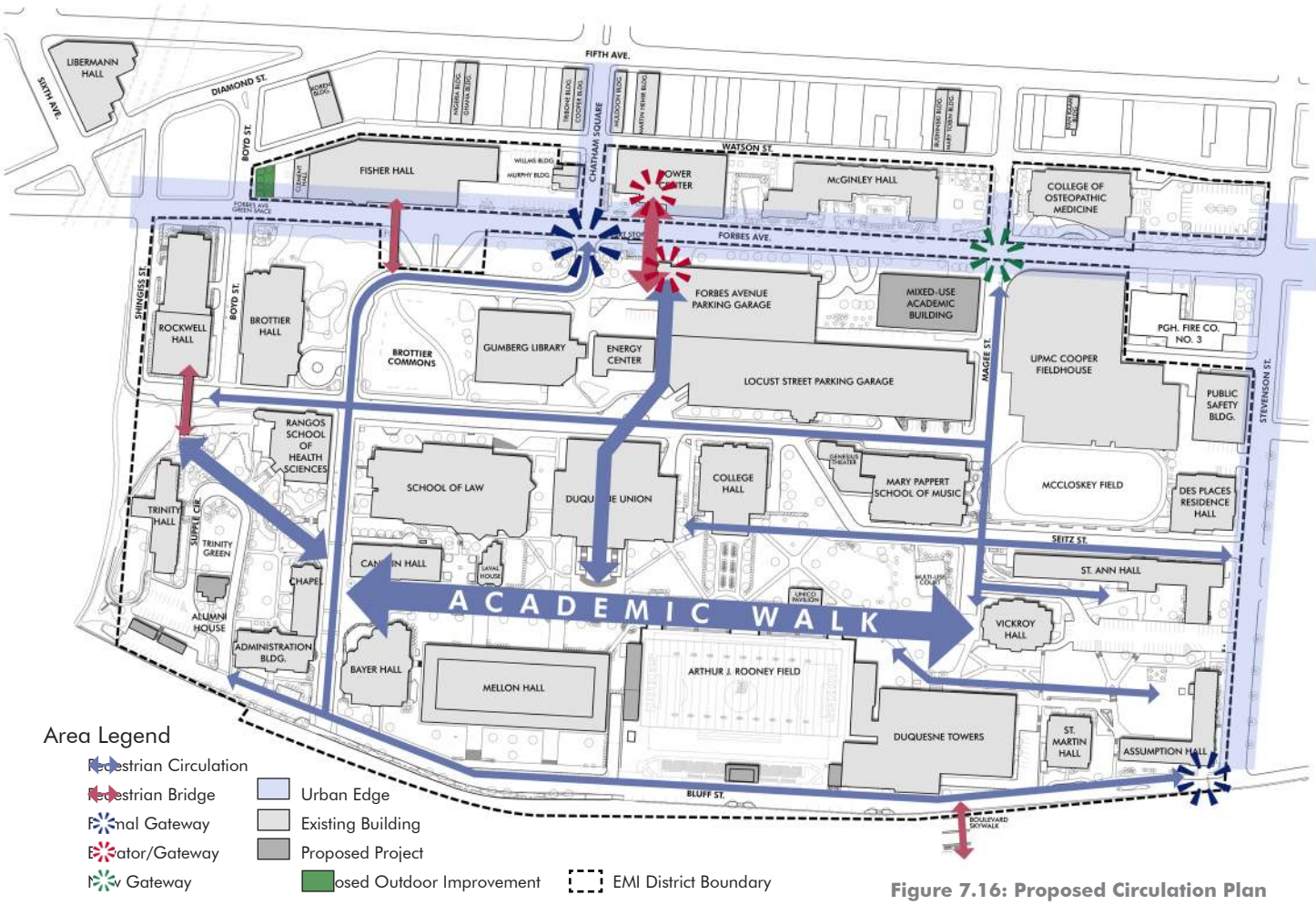


Figure 7.16: Proposed Circulation Plan

PEDESTRIAN CIRCULATION

Pedestrian circulation through campus is well established and well maintained. As the University develops more property on the north side of Forbes Avenue, this major urban corridor becomes an integral part of the campus, especially at the intersection of Forbes Avenue and Magee Street.

Two formal gateways along the urban edge of campus mark the vehicular entrances to campus, one at the intersection of McAnulty Drive with Forbes Avenue and the other at the intersection of Bluff Street with Stevenson Street. Most vehicles coming to campus, though, enter directly into the parking garages and do not come through these gateways. Pedestrian traffic through these gateways is also limited.

The pedestrian bridges over Forbes Avenue, the Fisher Hall Skywalk and especially the Sklar Skywalk, also act as symbolic gateways into the campus. Duquesne Square, at the base of the Sklar Skywalk (along with the elevators on either side of the Sklar Skywalk), is the most prominent pedestrian entrance to campus, bringing pedestrians from street level and the majority of campus parking up to the main elevation of the central campus.

From the Sklar Skywalk and the parking garages, all pedestrian traffic coming into the main campus will arrive at the northern entrance to the Student Union along Locust Street. The Locust Street sidewalks provide some east/west circulation with primary entrances to the Student Union, Gumberg Library and the School of Law, or beyond to McAnulty Street or Magee Street.

Most pedestrian traffic filters through or around the Student Union to Academic Walk, the core of pedestrian circulation through campus. Academic Walk is surrounded by the majority of Duquesne's academic buildings and extends to the west through Trinity Green to reach the Rangos School of Health Sciences and Rockwell Hall. To the east, Academic Walk reaches out to the largest residential neighborhood on campus and to the UPMC Cooper Fieldhouse.

Bluff Street edges the southern border of campus and therefore does not see as much destination-oriented traffic. However, the dramatic views over the Monongahela River Valley do bring more leisurely pedestrian circulation.

Area Legend

- Areas of Respite
- Wooded Hillside
- Programmable Open Space
- Campus Quad/Plaza
- Active Open Space
- Proposed Project
- Landscape Zone/Buffer
- Walkway

Figure 7.17: Landscape Character

The University shuttle stop will not be part of the BRT station – it will move to a location up on campus once the BRT is done. Doing so will eliminate the possibility of added traffic and congestion and move the stops up on campus on our own streets.

LANDSCAPE CHARACTER

Duquesne University's campus is comprised of several key open space types that provide opportunities for learning, socialization, recreation, and quiet reflection. The campus includes six (6) primary open space typologies including: areas of respite, wooded hillsides, programmable open space, campus quad/plaza, active open space, and landscape zone/buffer. Overall qualities of each open space typology are listed below.

Areas of Respite

These spaces incorporate seating within a garden setting and create places for quiet contemplation. Often pathways or seating extend into these areas off a primary circulation path. Significant cultural, religious statuary/features are frequently a focal point. Examples include Lourdes Grotto and Trinity Green.

Wooded Hillsides

Wooded hillsides form campus edges and provide essential slope stabilization. While inaccessible for pedestrian use, the canopy of these wooded areas contributes to the overall campus tree canopy and the reduction of urban heat island effects. Examples include hillside behind Trinity Hall.

Programmable Open Space

Open lawns that are shaped by trees and/or buildings at their perimeter, are informal and flexible spaces for gathering and socialization. These spaces can also be programmed for campus wide events. Examples include Brottier Commons and Assumption Commons.

Campus Quad/Plaza

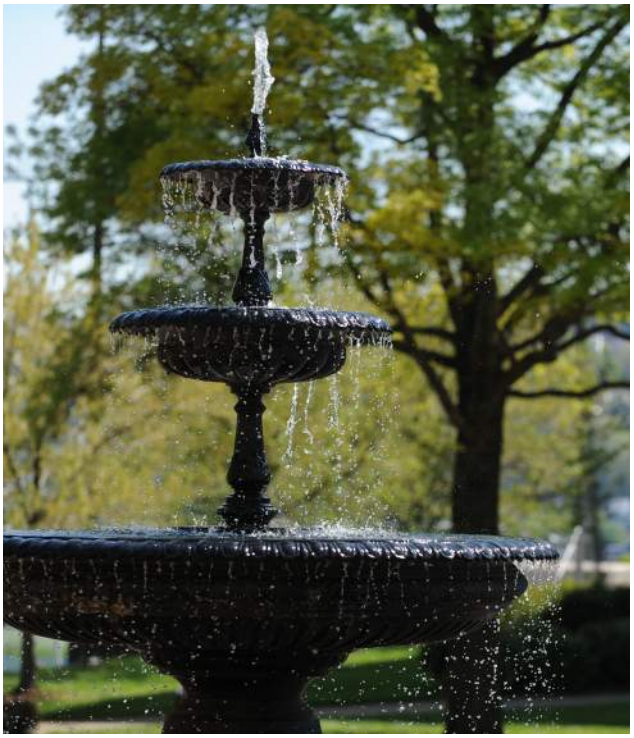
These campus spaces feature hardscape plazas and walkways that facilitate socialization, gathering and movement. Often incorporating University standard lighting, site furnishings and paving materials, these spaces are essential connections to building entries and campus hubs. The Academic Walk is the central pedestrian mall through the campus core framed by mature canopy trees, lighting, and benches. Examples also include Gumberg Library Plaza and the plaza at the College of Osteopathic Medicine.

Active Open Space

Actively programmed by the University, these spaces are used for athletic, recreational, and intramural sports. These artificial turf fields are surrounded by buildings and main pedestrian pathways that define the field space. Examples include McCloskey Field and Arthur J. Rooney Field.

Landscape Zone/Buffer

The open spaces between buildings and adjacent to sidewalks, often contain canopy trees, understory planting and lawn. This landscape connects buildings, pathways, and spaces, creating a cohesive framework that unifies the campus landscape. Examples include the open space between St. Ann Hall and Vickroy Hall and the area between the School of Law and Duquesne Union.



Academic Walk fountain

Sklar Skywalk

PROPOSED PROJECTS

In keeping with the general principles and guidelines for landscape improvement outlined in Section 7.2, the future demolition of Mendel Hall provides a unique opportunity to create a green campus gateway along Forbes Avenue. The Forbes Avenue Green Space will transform the site's steep topography into a pervious landscape of native and adapted plantings. The green space will be framed by brick perimeter walls and decorative fencing (consistent with the University's aesthetic), and incorporate small trees and a variety of plantings. The Forbes Avenue Green Space will enhance this campus gateway and serve as a welcome visual reprieve in a dense urban corridor. The proposed open space will be guided by the Sustainable SITES standards, Uptown EcoInnovation District measures and stormwater management.

The University also continues to explore improvements to its existing walkway network for accessibility, safety, desire lines and comfort. One such improvement will be the removal of the dead-end sidewalk on the west side of McAnulty Drive, starting at the Forbes Avenue gateway pillar. This walk will be replaced with soft surface, porous landscaping, including low level plantings and street trees. Additionally, Duquesne looks to further expand the tree canopy, particularly with street trees and along pedestrian walks.

College of Osteopathic Medicine

McAnulty Street

Academic Walk

8.1 NEIGHBORHOOD ENHANCEMENT STRATEGY

View of the McAnulty Drive entrance to campus and the Forbes Avenue corridor

As a premier institution of higher learning, a major employer in the region and a prominent organization, Duquesne University holds an enduring influence on the vitality of the City of Pittsburgh and its surrounding communities. For more than 140 years, Duquesne University has lived up to its responsibility to shape and enhance Pittsburgh in many different ways, making important economic, research and service contributions.

As one of the major employers in the region, Duquesne provides valuable jobs and benefits to local residents, fueling the Pittsburgh economy and energizing the prosperity of southwestern Pennsylvania. Duquesne's total economic impact in fiscal 2015 was nearly half a billion dollars, which included employee wages, student and visitor spending, and volunteer hours lending a hand to local residents.

Duquesne University continues to be recognized as a top research institution by U.S. News & World Report, Kiplinger's and the Princeton Review, to name a few, allowing the security of millions of dollars in research grants and funding from national and regional agencies. Duquesne is included in an elite group of 361 institutions to hold the Carnegie Foundation's Community Engagement Classification, the nation's highest honor for colleges and universities that have made community engagement a pervasive and key aspect of their institutional commitments. This support has allowed Duquesne to continue creating innovative ideas, foster partnerships and influence students to do significant and meaningful things with what they learn.

Additionally, Duquesne has been acknowledged for its community-oriented efforts through campus ministry initiatives, fundraising for local charities and hands-on volunteer projects. Duquesne has been selected for the President's Higher Education Community Service Honor Roll, the country's highest federal recognition for universities that strengthen communities. Our students and employees directly contributed more than 282,000 hours in civic engagement and volunteer projects, with an estimated service value of $6.5 million (2015). Duquesne's approach to community engagement is guided by the University's distinctly unique Spiritan mission. In this effort, we strive to uphold the following commitments:

1. Building authentic relationships with others;
2. Being open, teachable and reflective;
3. Walking with those on the margins;
4. Valuing a diversity of expertise;
5. Taking responsible social action to build a more just world; and
6. Collaborating with communities, local and global, where there is a University or Spiritan commitment.

This approach has driven the University's community engagement work for decades and has informed, under President Ken Gormley's leadership, Duquesne's recently completed strategic plan for the next five years (2018-2023). In fact, one of the plan's five strategic imperatives is dedicated to community engagement: *Duquesne will become the region's flagship institution for community engagement through mutually beneficial partnerships that advance the city, the region and the world.*

The University has already taken a number of high-profile steps towards implementing this particular imperative, including hiring William Generett Jr. as the first-ever Vice President for Community Engagement as well as Dr. Jessica Mann as the new Director for the Center for Engaged Teaching and Research (CETR). Additionally, in February 2018, the Vice President for Community Engagement announced the creation of the Office of Community Engagement to lead the coordination of the University's community engagement efforts and to serve as the "front door" for external audiences who are interested in learning more about the University's community engagement activities. The Office of Community Engagement will have focused efforts across five areas of impact:

<u>Growth and Innovation:</u> Working with government and community partners allows Duquesne to support entrepreneurs, attract new industry and bring together research, infrastructure and investment to generate new ideas and solutions in and around Pittsburgh, including:

- Duquesne University School of Law Clinics
- Duquesne University Small Business Development Center
- Uptown EcoInnovation District
- Pittsburgh Central Keystone Innovation Zone
- MBA in Sustainable Business Practices – Consulting Projects
- Partnerships with the Allegheny Conference on Community Development, VisitPittsburgh and Pittsburgh Downtown Partnership
- Uptown Task Force

Duquesne's approach to community engagement is guided by the University's distinctly unique Spiritan mission

Health and Wellness: As a leading urban research university, Duquesne works to address critical community health care issues and make health care accessible to community neighbors, including:

- Asthma-tracking and Prevention Program for Region's school children
- Chronic Pain Consortium
- Duquesne University Pharmacy and Center for Pharmacy Care
- Expansion of the University's Trauma Informed Work
- Helping After-School Programs Tackle Childhood Trauma
- Pioneering Cancer Research
- The Partnership in Education
- Trauma-Informed Community Development Institute

Education: Duquesne empowers neighbors with the skills, knowledge and confidence to solve community problems, meet their career goals and foster the next generation of change-makers, including:

- August Wilson House Fellowship
- Citizen Science Lab
- City Music Center
- Gussin Spiritan Division
- Pittsburgh Promise Preferred College Partner
- Project for Academic Coaching through Tutoring (PACT)
- School of Education Equity x Innovation Lab
- School of Education Reading Clinic
- Duquesne University Leadership Academy for High School Students

Empowerment: Duquesne establishes and supports partnerships that change lives and strengthen communities, including:

- Center for Community-Engaged Teaching and Research (CETR)
- Duquesne University Small Business Development Center (SBDC)
- English as a Second Language (ESL) Non-Degree Programs
- Greater Pittsburgh Higher Education Diversity Consortium
- Office of Diversity and Inclusion Programs
- University Minority Development Internship Program
- Law Clinics, including Law School Legal Clinic Expungement Work

Volunteerism: Each year, Duquesne students, faculty and staff complete over 282,000 service hours of volunteering, including:

- Athletics Community Outreach
- Duquesne University Volunteers (DUV)
- Engaging with Africa
- Evergreen
- Pure Thirst
- Spiritan Campus Ministry
- Spring Clean-Up, Hosted in Collaboration with UPMC Health Plan

Public Safety: Duquesne University's Department of Public Safety (DU-DPS) is a fully accredited police department and one of only 7 universities accredited by the Pennsylvania Chiefs of Police Association in 2019. That accreditation requires that departments provide extensive training and meet very high qualifications necessary to safeguard all members of the campus community.

Use of Force Policy and Added Duty to Intervene Policy: Just days after the killing of George Floyd, our police chief took the initiative immediately to strengthen DU-DPS already very strong use-of-force policy and added a duty-to-intervene policy and engaged the department in de-escalation training. That training was completed in August 2020. Attached is a copy of the revised use of force police. DU-DPS has always pursued training opportunities and will continue to do so, in order to remain current with best-practices for community-engaged policing and public safety.

DU-DPS Training and Education: DU-DPS pursues training and education regularly, especially in use of force and mental health crisis. In 2019 DU-DPS received a grant to pursue additional mental health awareness and crisis intervention training in 2020 and 2021. Currently, about half of the department is trained in crisis intervention. DU-DPS's goal over the coming years will be to train all of its officers. Additional trainings that will be added to the robust police training include but are not limited to the following:

- Synthetic drug use - Novel Psychoactive Substances (NPS'), illicit manufacture, distribution, systems of abuse, and laboratory testing. NPS include synthetic cannabinoids, phenethylamines, and tryptamines.
- Intervention and De-escalation in use of force incidents
- Training prepared by the UPMC Crisis Training Institute

Body Cameras: As the latest step in its efforts to enhance safety and security measures on campus, DU-DPS announced that it invested in a system that will equip each of its 40 police officers with a body-worn camera. The cameras were received in October of 2020. The new cameras complement the roughly 1,000 cameras already placed throughout campus for safety and security, which constituted the first step in the University's action plan. DU-DPS is collaborating with its police officers' union on implementation details. Like other agencies that have successfully adopted a body-worn camera program, the hallmark of the University's effort is grounded in its commitment to pursuing the best practices that have shaped previous successful and comprehensive written policies.

Patrol Area: Duquesne University's police patrol boundaries are consistent with its campus boundaries.

- North- is on Fifth Avenue to the opposite curb from our Fifth Ave. properties,
- South- Bluff St., East- on Stevenson to the opposite curb from campus,
- West- the opposite curb on Sixth Ave across from Lieberman building & then up Shingiss St.

Duquesne Diversity, Equity and Inclusion and hiring practices of workers from surrounding communities: Duquesne University is motivated by its Catholic identity and values equality of opportunity, human, dignity, racial, cultural and ethnic diversity, both as an educational institution and as an employer. Accordingly, the University prohibits and does not engage in discrimination or harassment on the basis of a person's race, color, gender, sexual orientation, age, religion, national origin, marital status, genetic history, Veteran status or disability. Duquesne University will continue to take affirmative steps to support and advance these values consistent with the University's mission statement.

The University requires a search and selection plan for all administrative/professional and faculty positions in which hiring departments outline their advertising plan and steps they will take to generate a diverse applicant pool. The University has been recognized locally and nationally for our Minority Development Internship Program. This program was created to provide employment opportunities to unemployed or underemployed college-educated minorities through compensated, full-time temporary employment. The program launched in fall of 2007 with the selection of two interns. In 13 years, over 20 talented interns have been hired through this program and many have been placed in full-time positions with the University.

In Fall 2018, the University adopted an ambitious, five-year Strategic Plan focused on enhancing the student experience through a variety of strategic imperatives, including creating a vibrant campus community that fosters the achievements of its talented students, faculty and staff. Since then, the University has taken many important actions to boost its commitment to diversity and inclusion. At President Ken Gormley's request in Fall 2020, the University is engaging in a comprehensive process to create a more diverse, inclusive and equitable campus community.

Goals and Objectives for Planning Process:

- Focus on University's Strategic Plan commitments
  - Recruit and retain talented, diverse faculty and staff to enrich campus
  - Cultivate culture of diversity and inclusion through recruitment, hiring and programming across campus, supported by D&I Advisory Council
- Assess existing diversity and inclusion efforts and initiatives
- Leverage experience/expertise of campus leaders in this space
- Establish assessment and related metrics – key to Strategic Plan progress and Middle States mid-point review in 2023
- Review all University related policies and procedures around harassment, discrimination and other related policies
- Build upon existing efforts in schools to develop school-based diversity & inclusion plans (Law School example)
- Establish Task Forces focused on initiatives related to students, faculty and staff in the following focus areas:
  - Environment
  - Education
  - Employment
  - Community Engagement
- Develop recommendations that include short- and long-term actions and embed evaluation/assessment metrics with associated goals in each of the four focus areas

The University will work to improve upon its work, especially as it relates to hiring more employees from the Hill District and Uptown communities.

Minority and Women Owned Business Enterprises:
Duquesne University requires that all contractors, vendors, redevelopers, and borrowers demonstrate a good faith effort to obtain the participation of MBEs and WBEs in work to be performed in connection with all university construction projects. Duquesne acknowledges the City of Pittsburgh's goal of 18% minority and 7% women participation in construction contracts and purchases, and strives to achieve these goals. While the University has not achieved these goals in the past, it is experiencing an increase in minority and women business participation. As mentioned above, the University is engaging in a comprehensive process to create a more diverse, inclusive and equitable campus community. This work will include reviewing all policies and procedures regarding contracting with minority and women owned businesses.

The Uptown Neighborhood, the community that Duquesne University calls home, has and always will be a focal point of not only the University's community engagement efforts, but the University's overall mission to serve its neighbors. These efforts have recently been amplified due to the creation of the Uptown EcoInnovation District (EID), which is a groundbreaking initiative that combines the goals of both Eco-Districts and Innovation Districts that have helped to positively transform communities across the country. The EID is an opportunity to identify the ways in which redevelopment can improve the environment, support the needs of existing residents, and expand entrepreneurship and job growth.

The EID is a community growth and preservation plan which focuses on four topics:

- **Community** – Preserve affordable housing, encourage job growth, support local institutions
- **Development** – Encourage new development and preservation, align zoning with community goals
- **Mobility** – Calm traffic, improve safety, encourage walking and bicycling
- **Infrastructure** – Improve community health, upgrade existing and create new parks, manage storm water, implement district energy

This EID in Pittsburgh is truly the first of its kind, and at the request of the City of Pittsburgh, Duquesne University has served as the convener of the Uptown Task Force since August 2017. This Task Force is a partnership of organizations, institutions, community groups, property owners and public agencies focused on implementing the EID to improve and enhance the Uptown neighborhood in the City of Pittsburgh.

In addition to convening this Task Force, Duquesne University will continue to serve the Uptown neighborhood by adding several projects into its Institutional Master Plan (IMP) specifically located along the Fifth and Forbes Avenue corridors to campus, that will positively impact the surrounding neighborhood. All of the proposed projects are within the University's current footprint and will not displace any existing businesses or residents.

The first project is the proposed Forbes Avenue Green Space. This park is a small, urban green space near a portion of the Downtown/Uptown border that is currently dominated by the I-579 overpass and its dark understory of surface parking lots and busy streets. This parklet will be a signal that one is entering a new and more inviting neighborhood.

The second project is located a few blocks east on Forbes Avenue where the newly transparent façade of the UPMC Cooper Fieldhouse will inject life along the avenue. The renovation, funded from donor contributions and grants, will utilize a percentage of Minority, Women and Disadvantaged Business Enterprises (MWDBE) for construction. The four-story glass frontage will show daily activity such as student athletes' strength and conditioning as well as light up and emphasize nighttime events.

The third project is the new College of Osteopathic Medicine, to be developed on the northwest corner of the intersection of Forbes Avenue and Magee Street. Paired with the improvements to the UPMC Cooper Fieldhouse, this intersection will see a dramatic revitalization. Street level activity spaces within this academic facility and new outdoor space amenities will bring additional life and vitality to Forbes Avenue.

The fourth project is the proposed Bus Rapid Transit station that will be located on campus at the corner of Forbes Avenue and Chatham Square. This is an amenity that will be used by neighborhood residents as well as Duquesne students, faculty and staff. It will contribute to neighborhood growth by linking employees and residents to area services, businesses, activities and cultural attractions.

Finally, the last project proposed in the IMP is the creation of the Fifth Avenue Commercial Corridor Community Development Plan. This plan will guide the

The new BRT stop will be located at the base of the Sklar Skywalk – one of the main campus entrances – across from the entrance to the Power Center

successful development and preservation of Uptown's Fifth Avenue business corridor. It will be driven by the collaboration of the University and the community stakeholders within Uptown.

In addition, a few of the University-owned commercial structures are proposed to become part of the Fifth Avenue Commercial Corridor Community Development Plan. The exact future use of these buildings will be determined in coordination with the Office of Community Engagement, neighborhood groups and community stakeholders to provide amenities and programs desired by area residents. These projects will also help preserve the remaining 19th and early 20th century commercial urban fabric that has, in recent decades, become riddled with surface parking lots.

Over the last 10 years, the Uptown community and these stakeholders have experienced significant economic growth, but, despite this substantial progress, a considerable amount of work still needs to be done in order for the neighborhood to reach its full potential. This growth has included prominent commercial and residential real estate development which in turn has resulted in new housing for residents as well as an active hub for startup technology and innovation companies. The Uptown community has also supported and praised the Uptown EcoInnovation District Plan that is helping to transform their community in many paramount ways.

However, the community has not been successful in launching a prosperous business corridor in its main business artery, the Fifth Avenue business corridor. With proper planning, that has the potential to drastically change. Over the next five years, a plethora of real estate development will happen and if harnessed appropriately, this development can give the Uptown community the momentum it needs to create a successful business corridor. These projects include, but are not limited to, the Fifth and Forbes Bus Rapid Transit System (BRT), the Lower Hill development, the renovation of the UPMC Cooper Fieldhouse and the construction of the new UPMC Vision and Rehabilitation Tower at UPMC Mercy. Additionally, because of Uptown's strategic location between downtown Pittsburgh and the Oakland section of Pittsburgh on top of its recent distinction by the federal government as an Opportunity Zone, many experts anticipate significant private commercial and residential development also happening in the near future. Combined, these many real estate development projects will not only increase the number of people working and living in Uptown, but also bring much needed vitality and excitement to the community.

All of these significant advancements present the perfect opportunity for the Uptown community to complete the goals outlined in the EID. To ensure that the community capitalizes on all of this opportunity, the creation of an actionable plan by the University to guide the development of the Fifth Avenue business district is vital. This plan can provide existing businesses that weathered the storm of several years of construction with a roadmap for post-construction success. It can also serve as a marketing document that can convince new entrepreneurs that Uptown is the right community to either start a new business in or relocate an existing business to. Finally, it can provide Uptown residents with the opportunity to start successful business enterprises that can provide the products and services that their community needs.

Duquesne University is proud of its past, present and future development projects that benefit its neighbors. As a community partner and anchor institution, the proposals in this IMP will help maintain Duquesne University as a thriving educational, service and employment asset to the nearby Uptown and Hill District neighborhoods and the region beyond.

Below are projects that embrace and promote the EcoInnovation Goals:
BRT Station at the base of Sklar Skywalk
College of Osteopathic Medicine
Mixed-Use Residence Life Building
Forbes Avenue Green Space

The Uptown neighborhood is a focal point of the University's community engagement efforts and the University's overall mission to serve its neighbors

DUQUESNE UNIVERSITY

APPENDIX

LETTERS OF COMMUNITY SUPPORT

Bethlehem Haven - Deborah Linhart, CEO

Life's Work of Western PA - Timothy Parks, President & CEO

Pittsburgh Innovation District - Mike Madden, Innovation District Manager

UPMC - Roger Altmeyer, Vice President of Project Development and Construction

InnovatePGH - Sean C. Luther

Uptown Partners - Dr. Brittany McDonald

Pittsburgh Penguins - Tracey McCants Lewis

OUTREACH / ENGAGEMENT REPORT

(See complete meeting list in Section 1.4)

TRANSPORTATION IMPACT STUDY

(Completed by Trans Associates)

PUBLIC SAFETY

Duquesne University, Department of Public Safety, Use of Force