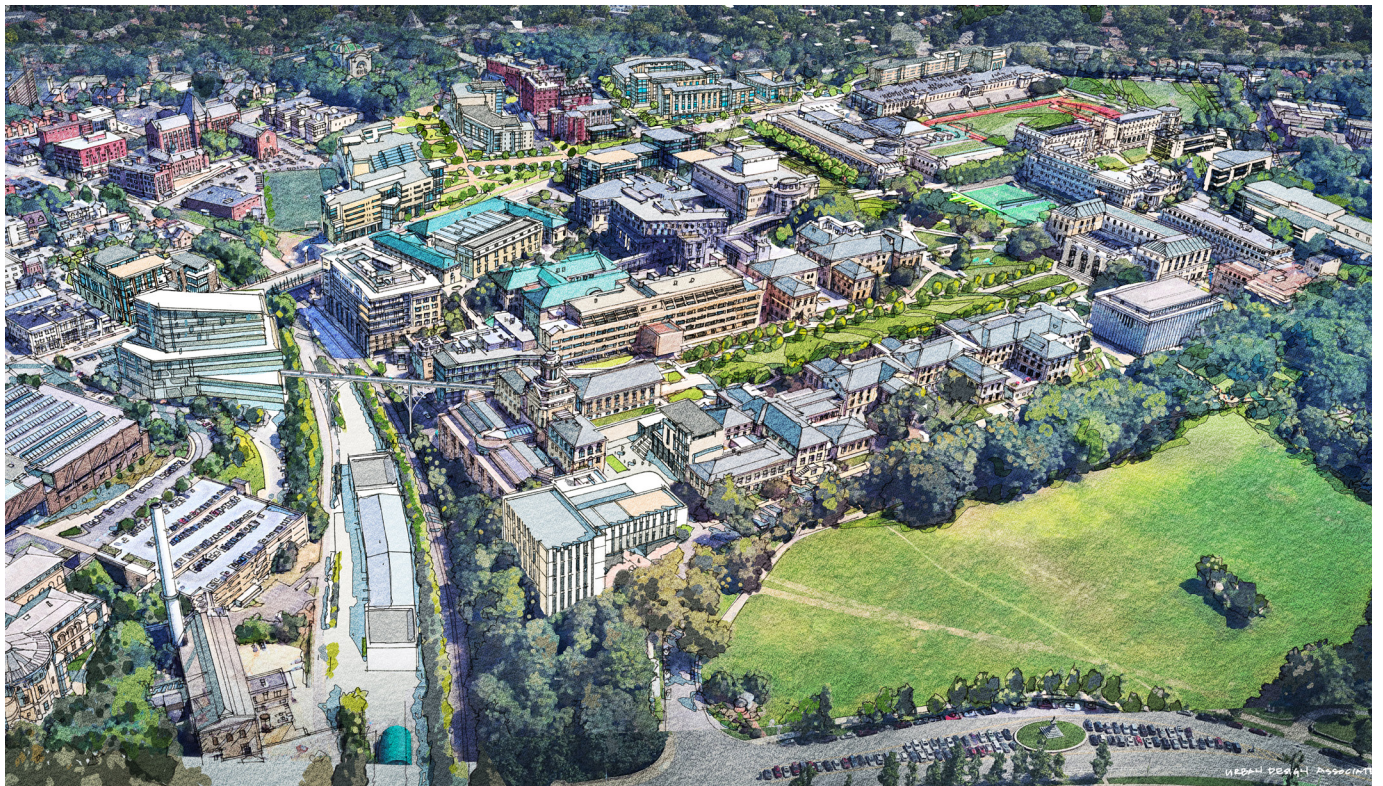


Carnegie Mellon University

INSTITUTIONAL MASTER PLAN 2022

DRAFT SUBMISSION - April 2022



DRAFT SUBMISSION FOR PLANNING COMMISSION REVIEW - April 2022

Carnegie Mellon University



Copyright
Campus Design and Facilities Development
Carnegie Mellon University
Pittsburgh, PA
January 2022
<https://www.cmu.edu/cdfd/planning-and-design/master-plan/index.html>
cmp2022imp@andrew.cmu.edu

Unless otherwise noted all images are supplied by
Carnegie Mellon University, Urban Design Associates, evolveEA, and GAI Consultants

TABLE OF CONTENTS

1. INTRODUCTION • 3 <ul style="list-style-type: none">1.1 Mission & Objectives • 41.2 Planning Context • 81.3 Requirements • 101.4 Process • 12	8. NEIGHBORHOOD PROTECTION STRATEGY • 119 <ul style="list-style-type: none">8.1 Introduction • 1208.2 Manage Impacts on Neighbors • 1228.3 Connect Campus and Community • 1248.4 Enhance South Craig Street • 1268.5 Provide Amenities to All • 1288.6 Commit to Regional Economic Growth • 130
2. EXISTING CONDITIONS • 15 <ul style="list-style-type: none">2.1 IMP Boundary • 162.2 Existing Property & Uses • 20	APPENDICES • 133 <ul style="list-style-type: none">A Master Plan Team & Schedule • 134B Outreach and Letters of Support • 136C Simonds Principles • 140D Campus Population Trends • 146E 2022 Building Inventory • 150F 2022 Parking Inventory • 156G Transportation Improvement Study • 158H Tree Canopy Replacement Strategy • 208I Streetscape Program • 218J Housing Master Plan • 228
3. INSTITUTIONAL NEEDS • 39 <ul style="list-style-type: none">3.1 Expectations for Change • 403.2 Current and future needs for Facilities • 413.3 Current and future needs for Housing • 42	
4. LONG-TERM VISION AND GROWTH • 45 <ul style="list-style-type: none">4.1 25-Year Development Sites • 464.2 Other Pittsburgh Sites • 48	
5. 10-YEAR DEVELOPMENT ENVELOPES • 51 <ul style="list-style-type: none">5.1 Proposed Campus Developments • 525.2 Campus Development Plan • 545.3 Campus Design Guidelines • 565.4 Historic Core District • 585.5 North Campus • 685.6 Craig Street Area • 76	
6. MOBILITY PLAN • 85 <ul style="list-style-type: none">6.1 Existing Conditions • 866.2 Mobility Goals • 886.3 Mobility Proposal • 90	
7. INFRASTRUCTURE PLAN • 103 <ul style="list-style-type: none">7.1 Environmental and Sustainability Goals • 1047.2 Environmental Protection • 1067.3 Campus Energy Planning • 1087.4 Stormwater Management • 1107.5 Green Buildings • 1127.6 Waste Management and Water Conservation • 1147.7 Open Spaces and Pedestrian Circulation • 116	



Carnegie
Mellon
University

1.0 INTRODUCTION

- 1.1 Mission and Objectives
- 1.2 Planning Context
- 1.3 Requirements
- 1.4 Process

1.1 MISSION & OBJECTIVES

1.1.0 Preface

Carnegie Mellon University (CMU) is a global research university with more than 14,500 students, 109,000 alumni, and 1,300 faculty. Carnegie Mellon is consistently recognized in university ranking studies for its world-class arts and technology programs, collaboration across disciplines, and innovative leadership in education.

Carnegie Mellon University was founded in Pittsburgh in 1900 by industrialist and philanthropist Andrew Carnegie as the Carnegie Technical Schools (later named Carnegie Institute of Technology). In 1967 Carnegie Institute of Technology merged with the Mellon Institute of Industrial Research to form Carnegie Mellon University. Carnegie Mellon University consists of seven schools and colleges and maintains a global presence in twelve other countries and four US cities. Most of the university’s activities take place on the 155 acre traditional campus adjacent to the Squirrel Hill, Shadyside and Oakland Neighborhoods.

Carnegie Mellon University is a global research university of 14,500 students roughly split between undergraduate and graduate/PhD students, approximately 5,700 faculty and staff and 109,000 alumni. In 1967 Carnegie Tech merged with the Mellon Institute of Industrial Research to form Carnegie Mellon University. Internationally recognized as a leader in research and education, Carnegie Mellon consistently ranks highly in its world-class engineering, technology and fine arts programs. Built upon a foundation of collaboration and inter-disciplinary education, Carnegie Mellon has evolved from a regional technical school to a global university. There are seven colleges and schools at the 155 acre Pittsburgh campus that also support degree granting facilities in Silicon Valley, Qatar and Rwanda; the seven colleges/schools are (see Appendix D, page 149):

- Carnegie Institute of Technology (College of Engineering)
- College of Fine Arts
- Dietrich College of Humanities and Social Sciences
- Mellon College of Science
- Tepper School of Business
- Heinz College of Information Systems & Public Policy
- School of Computer Science



Commencement, Gesling Stadium



Students on the Cut

1.1 MISSION & OBJECTIVES

1.1.1 The Strategic Plan 2025 (2015)

Our Vision

Carnegie Mellon University will have a transformative impact on society through continual innovation in education, research, creativity and entrepreneurship.

Our Mission

To create a transformative educational experience for students focused on deep disciplinary knowledge; problem-solving; leadership, communication and interpersonal skills; and personal health and well-being.

To cultivate a transformative university community committed to (a) attracting and retaining diverse, world-class talent; (b) creating a collaborative environment open to the free exchange of ideas, where research, creativity, innovation and entrepreneurship can flourish; and (c) ensuring individuals can achieve their full potential.

To impact society in a transformative way - regionally, nationally and globally - by engaging with partners outside the traditional borders of the university campus.

Our Values

- Dedication
- Impact
- Collaboration
- Creativity
- Empathy and compassion
- Inclusion
- Integrity
- Sustainability

For more information, visit <https://www.cmu.edu/strategic-plan/index.html>.

In November 2015, Carnegie Mellon University released a ten-year strategic plan to set an aspirational course for our university’s future. Four goals were identified.

1. A Diverse and Inclusive Community

Create a diverse and inclusive community and environment where CMU faculty, staff, students, and alumni develop a distinctive ability to work, learn and live in diverse environments.

2. A Concentration of World-Class Talent

Recruit and retain world-class undergraduate students, graduate students, faculty and staff and foster a culture of support for professional and personal development.

3. A Culture of Interdisciplinary Approaches to Problem-Solving

Engage students, faculty and staff in meaningful interdisciplinary approaches to solving problems; provide students with the tools to integrate perspectives across boundaries, with an emphasis on deep disciplinary knowledge driving new thinking at the edges and intersections of traditional fields.

4. A Destination of Choice for Innovation and Entrepreneurship

Make CMU the academic destination for faculty, staff, students and alumni seeking a culture of innovation and entrepreneurship with opportunities to learn, conceive collaborate, launch and lead in new endeavors.

1.1 MISSION & OBJECTIVES

1.1.3 Sustainability Initiative (2019)

A Sustainability Initiative was launched in September 2019. Carnegie Mellon University is committed to enhancing CMU’s goals for education, research, and practice within the framework of the seventeen Sustainable Development Goals (SDGs) of the United Nations. The CMU Sustainability Initiative is building on more than two decades of CMU’s engaged effort in support of the broader definition of sustainability afforded by the SDGs.

In 2019 CMU established a Sustainability Initiative Steering Committee, an Advisory Council, and conducted a Voluntary University Review (VUR) that was published in September 2020. The

Sustainability Initiative is intended to improve coordination of and stimulate new approaches to education, research, and practice by students, faculty, and staff so that the CMU community can contribute to achieving the SDGs by 2030. Plans for the Sustainability Initiative follow-up in each of the four mission areas of the university: Education; Research; and Practice.

For more information, visit <https://www.cmu.edu/leadership/the-provost/provost-priorities/sustainability-initiative/cmu-vur-2020.pdf>



1.1 MISSION & OBJECTIVES

1.1.4 Diversity, Equity and Inclusion Initiative (2020)

Diversity, equity and inclusion are top priorities for the university. In 2020 CMU launched a university wide Diversity, Equity, and Inclusion Initiative. We recognize that cultivating diverse perspectives and promoting inclusion will fuel the intellectual vitality essential for the health and progress of our campus community. Achieving breakthroughs requires visible commitment at all levels of the institution to recruit, retain and advance diverse world-class talent supported by sustainable programmatic initiatives, as outlined by the 2025 Strategic Plan:

- 1. Develop and implement tools and programs to optimize practices in diversity and inclusion throughout the university community.
- 2. Enhance standards for recruiting practices, including mandatory training in implicit bias for

search committees, cross-departmental sharing of finalists to fill vacant positions, and a focus on recruiting diverse personnel at all levels of leadership.

- 3. Carefully cultivate and mentor existing talent at the undergraduate and graduate levels to broaden pools of prospective candidates for key positions.
- 4. Identify and institute best practices in student recruitment, admissions decision-making and enrollment to recruit a strong and diverse student body.

For more information, visit <https://www.cmu.edu/diversity/>

Diversity

We understand and value that every individual is unique. We see this uniqueness shaped by race, ethnicity, gender, sexual orientation, socioeconomic status, age, physical abilities, religious beliefs, political beliefs and other life experiences and ideologies.

Equity

At CMU, we are intentional about eliminating barriers that have prevented full participation and increased access to resources and networks for underrepresented groups across our student, faculty and staff populations.

Inclusion

We believe that every person at CMU should feel as though they belong here. We are learning how to involve more unique perspectives and actively invite participation from historically underrepresented groups in order to make our community a better place for all.



1.2 PLANNING CONTEXT

1.2.1 A Legacy of Planning

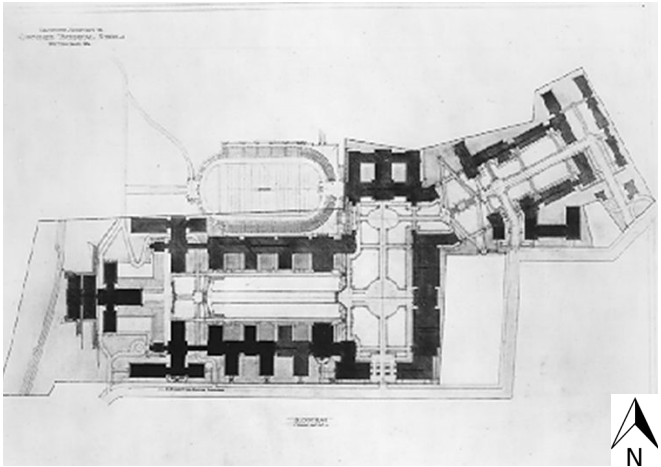
Carnegie Mellon is a uniquely situated urban campus, with strong residential neighbors, including Squirrel Hill , Shadyside and Oakland as well as institutional neighbors such as the University of Pittsburgh, UPMC and Carlow University. To the south, Schenley Park provides over 400 acres of valuable green and recreational space.

Since the first campus master plan by Henry Hornbostel in 1901, Carnegie Mellon has had a strong history of master planning and campus development. Hornbostel’s initial master plan, and his following additional campus plans up until the 1930s, set the stage for the cohesive urban university that Carnegie Mellon is today. Subsequent master plans through the post-war period reinforced the context of the campus while introducing contemporary architecture into the campus vernacular. The development of the Michael Dennis Master Plan in the 1990s served to reinforce the contextual aesthetic of campus while guiding the development of campus into the 21st century.

The 2002 Campus Plan and the 2012 Institutional Master Plan, both developed by Ayers Saint Gross, served to guide a period of rapid campus expansion that mirrored the global presence of the university. The 2022 Institutional Master Plan, developed by CMU with assistance from Urban Design Associates and GAI Consultants, builds upon the university’s historic strength in master planning and provides a roadmap for the development of the Pittsburgh campus for the next generation. The 2022 IMP also integrates several recent campus planning initiatives

Throughout the long tradition of campus planning, Carnegie Mellon has also taken an active role in the planning and development of Pittsburgh. The university’s setting – between strong neighborhoods and adjacent to an important city park – is part of what makes a great campus. As an active participant in both the Squirrel Hill, Shadyside, and Oakland neighborhoods, the university supports in their planning efforts. It has also developed a strong working relationship with the Pittsburgh Parks Conservancy for the enhancement of Schenley Park.

Past Campus Master Plans



1906, Hornbostel and Palmer



1967, Sasaki, Dawson and DeMay

1.2 PLANNING CONTEXT

1.2.2 Simonds Principles

Carnegie Mellon University has emerged as one of the great success stories in American higher education over the last fifty years. The evolution of the university from a strong, regional institution to a pre-eminent global university is without parallel. Founded by Andrew Carnegie for the sons and daughters of steel workers, the university now educates great minds throughout the world in an array of disciplines, led by our exceptional faculty. Throughout, we have maintained a lean and pragmatic ethos, solving real-world problems through hard work, collaboration, interdisciplinary engagement, and an entrepreneurial spirit that is the envy of even our most elite peer institutions. The built environment at the institution reflects these very core values, intended to create spaces that allow for our greatest engagement in research,

learning, service, and community. In addition, our aesthetic ethos is critical to the look and feel of the campus. As we continue to grow, and notably as we move beyond the footprint of the main campus into adjacent communities, the breadth and depth of considerations in any new built or open space is especially critical. The Simonds Commission was empaneled in 2012 to develop guiding principles that will ensure that new projects, while remaining true to their immediate purpose, are a constructive and contributive part to the larger whole that is the Carnegie Mellon University footprint and influence. These principles each have their own discrete and pragmatic objectives. As a collective, they help to translate our deeply held core values into the entirety of our built environment and adjacent spaces. To review the Simonds Principles, see Appendix C, pages 140-145.

- 1

Building

Architecture, Safety & Security, Sustainability
- 2

Community Context

Mixed-Use, Neighborhood Compatibility
- 3

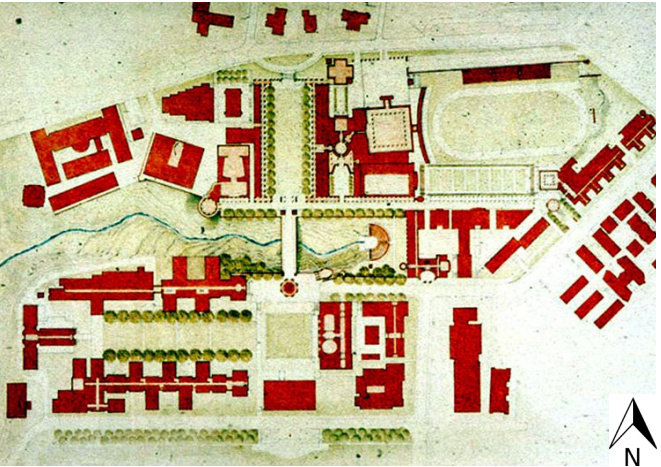
Space

Edges, Entrances, & their connections, Open Space, Public Art
- 4

Movement

Multi-Modal Transportation, Universal Design

Past Campus Master Plans



1987, Dennis, Clark & Associates



2012, Ayers Saint Gross

1.3 REQUIREMENTS

1.3.1 Zoning Code Requirements

The majority of the Carnegie Mellon campus in Pittsburgh is within an Educational/Medical Institution District (EMI) that is located in Squirrel Hill, Shadyside and Oakland; the campus is thus required by Section 905.03.C of the Pittsburgh Zoning Code to submit for review and approval an Institutional Master Plan (IMP) every 10 years. As outlined in the Zoning Code, the purpose of the IMP is to identify potential developments of large institutions that control large areas of land within the city. Often such developments are at a greater density than surrounding areas, are a source of substantial employment, and are adjacent to residential neighborhoods.

The Carnegie Mellon University 2022 IMP follows the City of Pittsburgh adopted IMP Best Practices Guide (BMP) for Medium and Large Academic Institutions, dated November 2018. While the Guidelines do not create new requirements or replace the existing requirements of Zoning Code, they provide guidance for the development and framework of the IMP. For reference, the 2022 CMU IMP provides cross references throughout to both Zoning Code requirements and to the BMP.

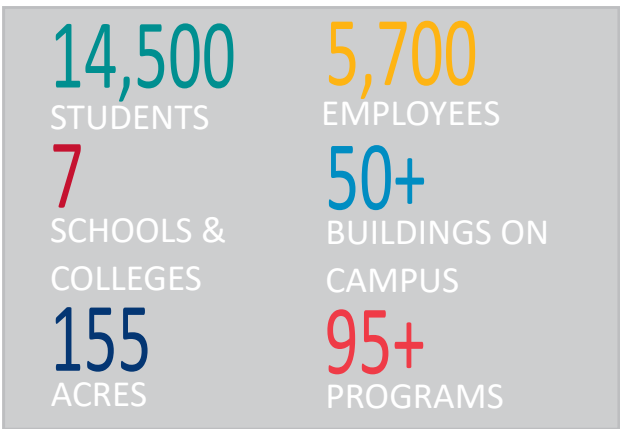
For further information, visit the links below.
https://library.municode.com/pa/pittsburgh/codes/code_of_ordinances/337524?nodeId=PIZO_COTITNINEZO_CO_ARTIIBAZODI_CH905SPPUDI_905.03EMEDMEINDI

https://apps.pittsburghpa.gov/redtail/images/4450_IMP_Best_Practices_Guide_-_2018-11-06_-_Approved.pdf

Zoning Code Reference

905.03.D.4 (b) Mission and Objectives

An Institutional Master Plan shall include a statement that defines the organizational mission and objectives of the institution and description of how all development contemplated or defined by the IMP advances the goals and objectives of the institution.



Scott Hall



College of Fine Arts

1.4 PROCESS

1.4.1 Master Plan Governance Overview

The Carnegie Mellon Institutional Master Plan development and approval process consists of three main phases, from the summer of 2020 through the spring of 2022. The first phase (August 2020 to January 2021), an internal process that analyzed the past decade’s growth of CMU, identified the projected needs and opportunities for the university and developed the mission for the IMP. That process informed the second phase (February 2021 to August 2021): gathering public information and developing the draft IMP document. During that phase, Carnegie Mellon engaged in a broad and systematic outreach plan to both the campus and the city communities, including several public town hall meetings. The final phase (September 2021 to April 2022), the approval phase at the Planning Commission and City Council, included continued campus and community interaction.

To guide the IMP process, the university created an internal Advisory Team, comprised of university leadership and other campus stakeholders, to serve as oversight, and a Working Group, comprised of CDFD staff, other university partners and Planning/Design and Mobility consultants. The development

of the IMP falls under the review of the Property & Facilities Committee of the Board of Trustees who were included throughout the process. Please see Appendix A, page 134 for the list of Advisory Team and Working Group members.

As an integral part of the City of Pittsburgh, Carnegie Mellon has long supported and facilitated strong communication and engagement with our residential, institutional and civic partners. Carnegie Mellon has long taken a position that communication, both on-campus and off, is vital to strong relationships and, has engaged strategies to embed campus and community discussion in to the IMP. The IMP outreach included an intensive information-gathering process during the planning phase, followed by an interactive process during the development of the plan and culminating in additional discussion, at both the campus and the community, level prior to and during the public approval phase. For a full list of meetings with campus, community and civic groups, including dates of meetings and topics, please see Appendix B, pages 136 - 137.



Architectural details on Doherty Hall



Baker Hall

1.4 PROCESS

1.4.2 Master Plan Engagement

The Institutional Master Plan (IMP) planning process began in January 2020 with the intent of adoption by City Council in 2022. From the start, the intention of the Plan was to build upon the strengths of the 2012 IMP while evaluating the potential for new development sites, within the existing boundaries of the EMI district, to support the university’s growth needs. The planning process, which took place in 2020 and 2021, involved significant engagement with the campus community, adjacent neighbors, and the City of Pittsburgh. A detailing of all meetings is included in Appendix B, pages 136 - 137.

Campus Community

The 12-member Advisory Team was the gateway to engagement with university community of close to 20,000 students, faculty and staff. Starting in February 2021, presentations were made via Zoom meetings to introduce the Master Plan principles and overarching themes to a variety of student, staff, and faculty in small group settings. These introductory meetings culminated in a campus-wide Town Hall presentation in April of 2021. In September 2021, a second round of campus meetings was held to share the development of the plan. Feedback was solicited and welcomed from all groups, and incorporated into the final document. A final Town Hall meeting was held in November 2021. The university Board of Trustees was updated on the progress of the IMP in October 2020 and February 2021.

Adjacent Neighbors

Situated primarily in the Squirrel Hill neighborhood of Pittsburgh, but also having land in the Shadyside and Oakland neighborhoods, CMU has long been an active participant in the regular monthly meetings of local Registered Community

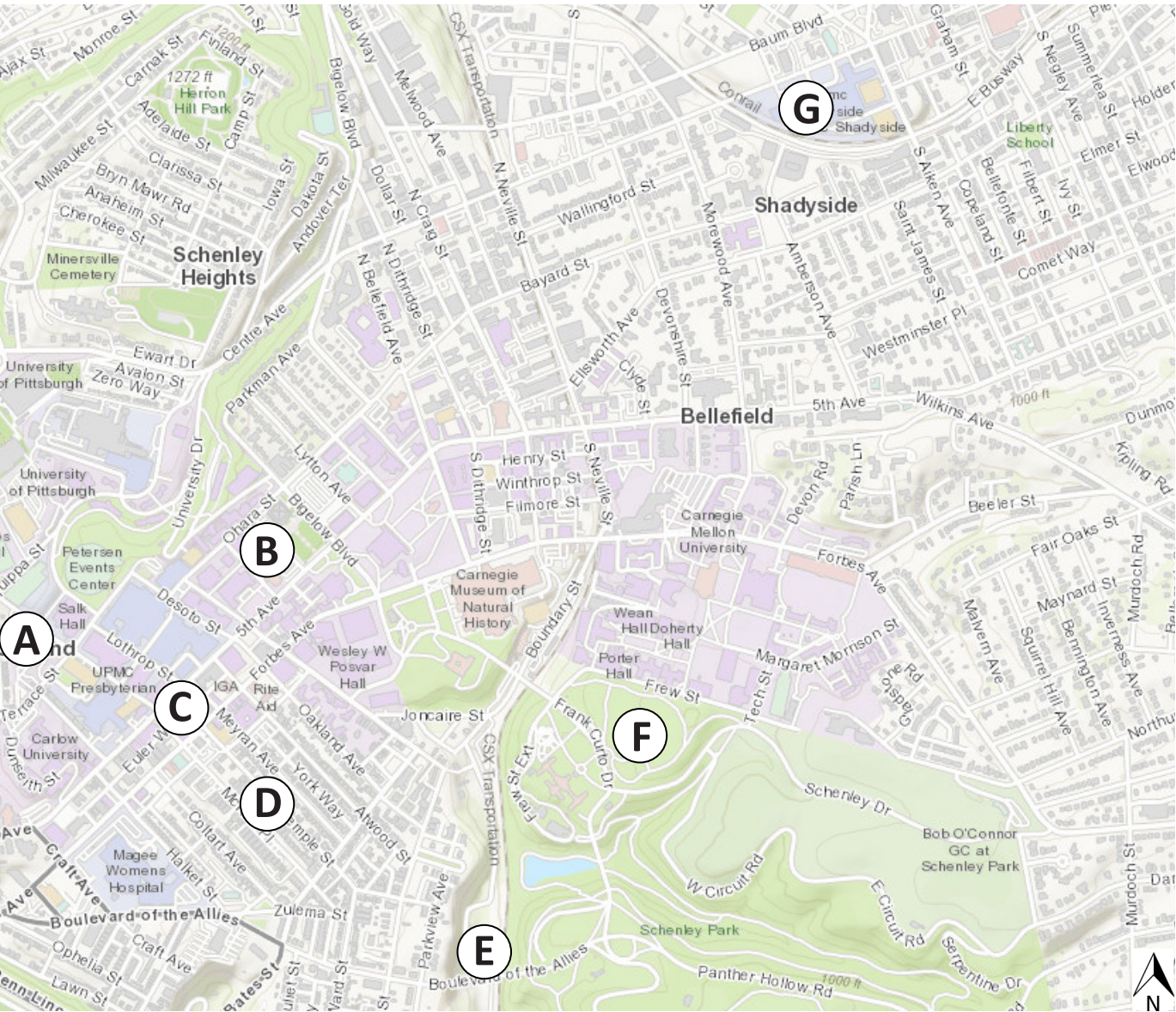
Organizations (RCOs). Two presentations were made in 2021 to each RCO, in addition to the required official Development Activities Meeting (DAM). Official groups include Squirrel Hill Action Coalition (SHUC), Shadyside Action Coalition (SAC), Bellefield Area Community Association (BACA), and Oakland Planning and Development Corporation (OPDC). Other neighbor groups who were engaged in the planning process include the Park Mansions Resident Association, Schenley Farms Civic Association, Oakland Task Force (OTF), and the Oakland Business Improvement District (OBID). As Schenley Park is considered by many to be the university’s fourth neighborhood, the Pittsburgh Parks Conservancy (PPC) is another important constituent. The PPC was engaged in late 2020, and monthly meetings were held throughout 2021 to get input and feedback on the plan.

City of Pittsburgh

All institutions filing an IMP with the City of Pittsburgh are also invited to participate in the Department of City Planning (DCP)’s optional Performance Targets program. The program was created for DCP to collaborate with institutions and developers of major projects to achieve excellence in areas of mobility, sustainability and infrastructure, and neighborhood enhancement. Three Performance Targets meetings were held with DCP and its partners in April, August, and October to review the overall progress of the document. Over twenty meetings were held in addition to the three summary discussions to review the individual sections of the IMP, including meetings with Pittsburgh Water & Sewer Authority, Green Building Alliance, Port Authority of Allegheny County, and City Departments of Department of Mobility & Infrastructure, Public Art & Civic Design, Resilience, Environmental Planning and Review, and Sustainability

1.4 PROCESS

1.4.3 Other Planning Efforts



(Map by City of Pittsburgh)

- A UPMC Institutional Master Plan
- B University of Pittsburgh Institutional Master Plan
- C Oakland Business Improvement District Wayfinding Program
- D Oakland Neighborhood Plan
- E 4 Mile Run Sewer Improvements
- F Pittsburgh Parks Conservancy Flagstaff Hill Improvments
- G UPMC Shadyside Instutlional Master Plan



Carnegie
Mellon
University

2.0 EXISTING CONDITIONS

- 2.1 IMP Boundary
- 2.2 Existing Property & Uses

2.1 IMP BOUNDARY AREA

2.1.1 Carnegie Mellon University in Pittsburgh

Zoning Code Reference

905.03.D.3 Institutional Master Planning Area

An Institutional Master Plan shall illustrate and identify the current land use of all the area within the EMI District, contiguous properties, and properties within one thousand (1,000) feet of the EMI District which are under the control of the institution.



Carnegie Mellon University’s main campus is located in the East End of Pittsburgh, three miles east of Downtown. The university sits between Squirrel Hill, Shadyside and Oakland and is closely connected to these neighborhoods because students, faculty and staff live in and frequent business and cultural venues in the East End. Carnegie Mellon University, with its over 20,000 staff, faculty and students from around the world, is a significant contributor to the economic resurgence of Pittsburgh.

Carnegie Mellon University’s Pittsburgh campus is organized around three large formal open spaces - the historic Hornbostel Mall, the Cut and the newly developed Tepper Quad – with Forbes Avenue running through the campus from west to east. The northern edge of campus is along Fifth Avenue and is bounded by Schenley Park to the south. On the east, the campus adjoins Squirrel Hill, and to the west is the dense urban development of Oakland,

Zoning Code Reference

905.03.D.4 (c) Existing Property and Uses

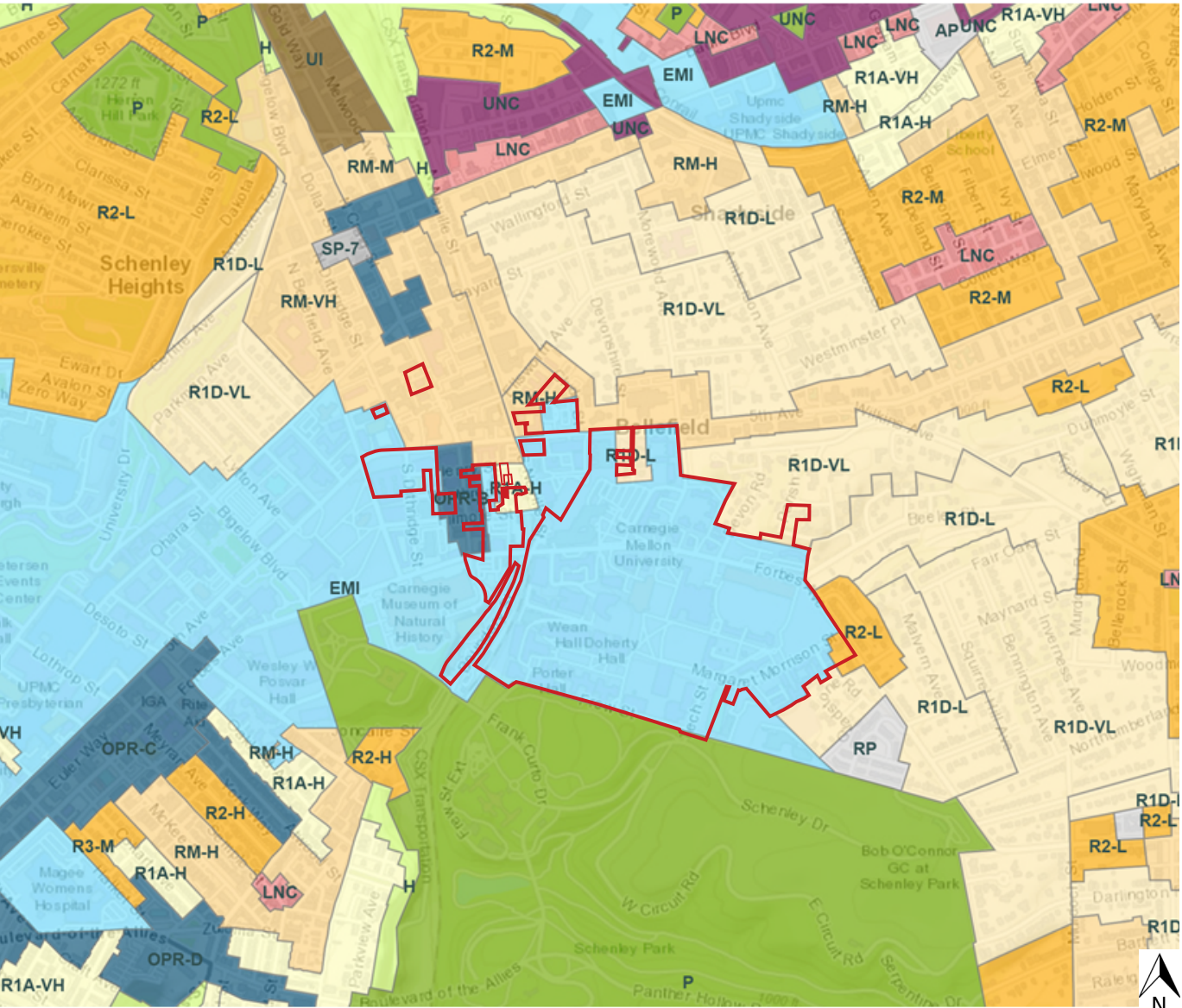
The IMP shall include a description of land, buildings, and other structures owned or occupied by the institution as of the date of submission of the IMP. The following information shall be required: (1) Illustrative site plans showing the footprints of each building and structure, together with roads, sidewalks, parking, landscape features and other significant site improvements; (2) Land and building uses; (3) Gross floor area in square feet; (4) Building height in stories and feet; and facilities, including a statement of the approximate number of parking spaces in each area or facility.

including the University of Pittsburgh and the UPMC Medical Center. To the North is Shadyside.













Academic and instructional space is primarily located within the Historic Core and the developing North Campus areas. Student housing is concentrated in three on campus “neighborhoods” located along Margaret Morrison St, Morewood Avenue and Fifth Avenue. Athletics and recreational facilities are located in the eastern half of the Historic Core (see Section 5.4, page 59). In addition to the main campus in Squirrel Hill, the also owns or leases buildings in North Oakland, Lawrenceville, Downtown, Point Breeze/Larimer and in the Pittsburgh Technology Center (PTC). CMU’s Pittsburgh facilities and global locations are found in Section 4.2, pages 48 - 49 and found in Appendix D, page 149.

2.1 IMP BOUNDARY AREA

2.1.2 Pittsburgh Zoning Map

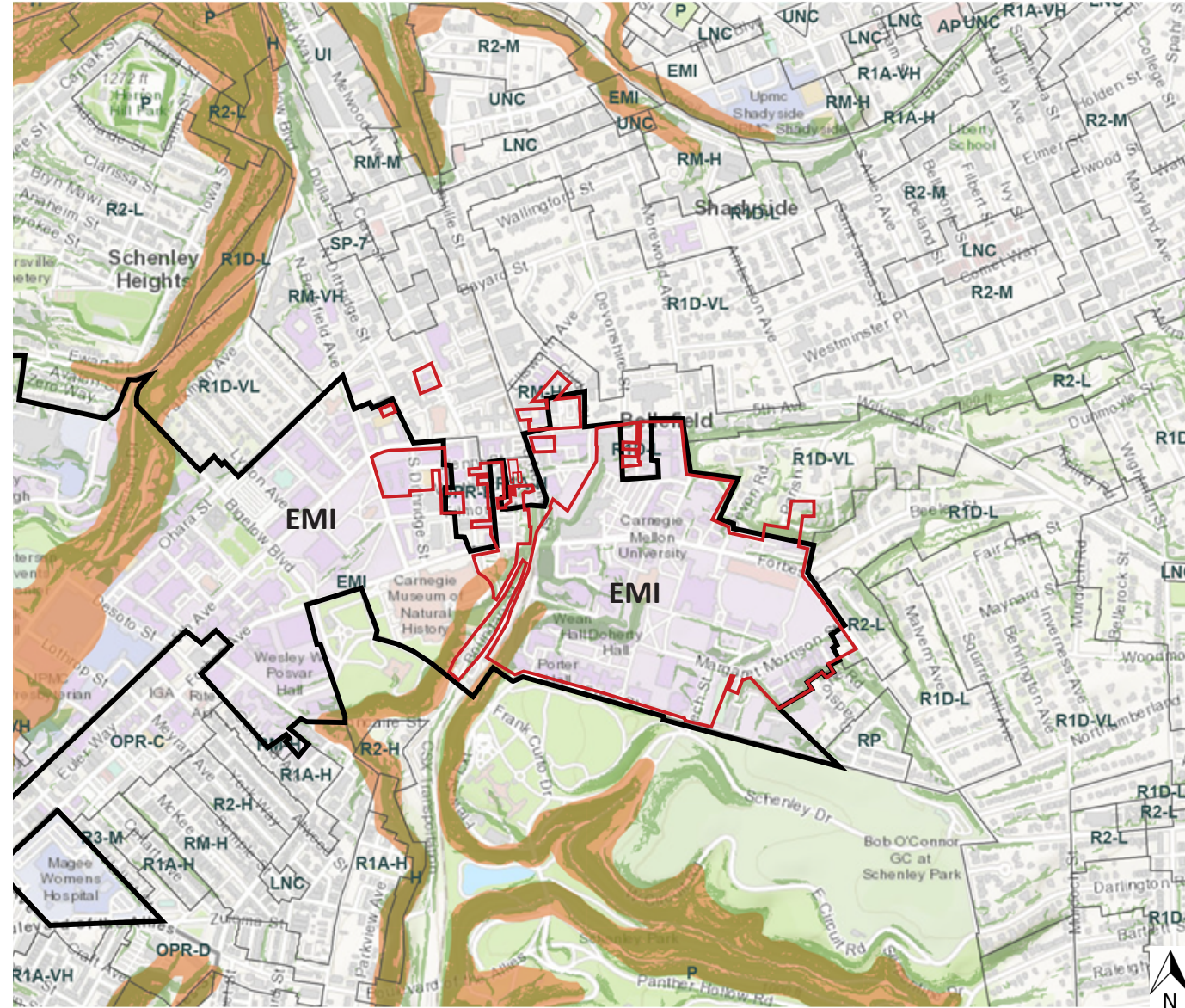


(Map by City of Pittsburgh)





	Carnegie Mellon University Property in 2022 IMP			RM	Residential Multi-Unit
	Planned Development Space			LNC	Local Neighborhood Commercial
	EMI	Educational Medical Institutional		UNC	Urban Neighborhood Commercial
	OPR	Oakland Public Realm		UI	Urban Industrial
	P	Park			
	H	Hillside			
	R1D	Residential Single-Unit			
	R2	Residential Two-Unit			

2.1 IMP BOUNDARY AREA

2.1.3 Environmental Overlays and Zoning

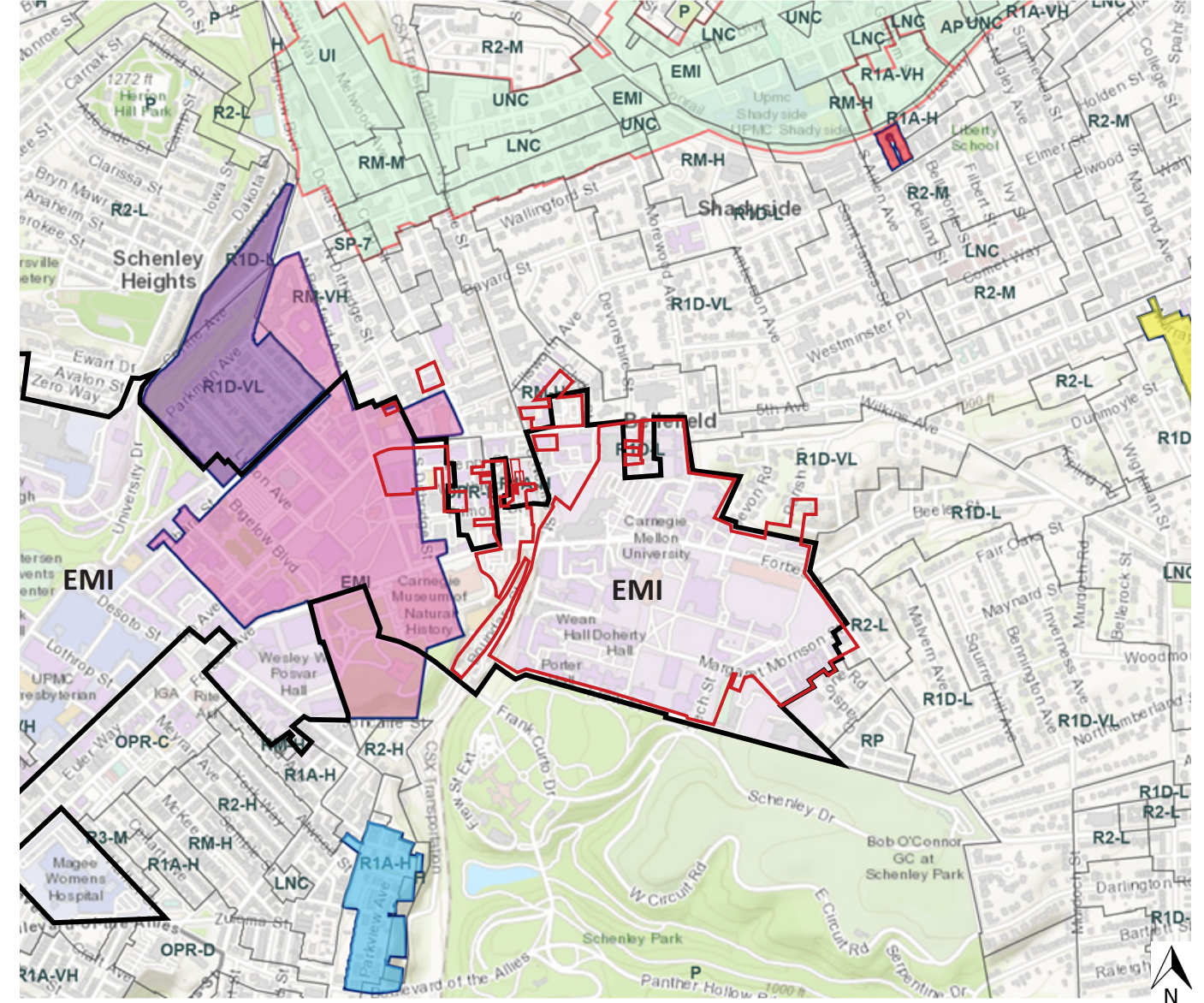


(Map by City of Pittsburgh)

-  Carnegie Mellon University Property in 2022 IMP
-  Zoning District Outlines
-  25% or Greater Slope
-  Landslide Prone

2.1 IMP BOUNDARY AREA

2.1.4 Historic Districts and Zoning



(Map by City of Pittsburgh)

-  Carnegie Mellon University Property in 2022 IMP
-  Zoning District Outlines
-  Oakland Civic Center
-  Schenley Farms
-  Oakland Square
-  Murray Hill Avenue
-  Roslyn Place

2.2 EXISTING PROPERTY AND USES

2.2.1 Aerial of Campus

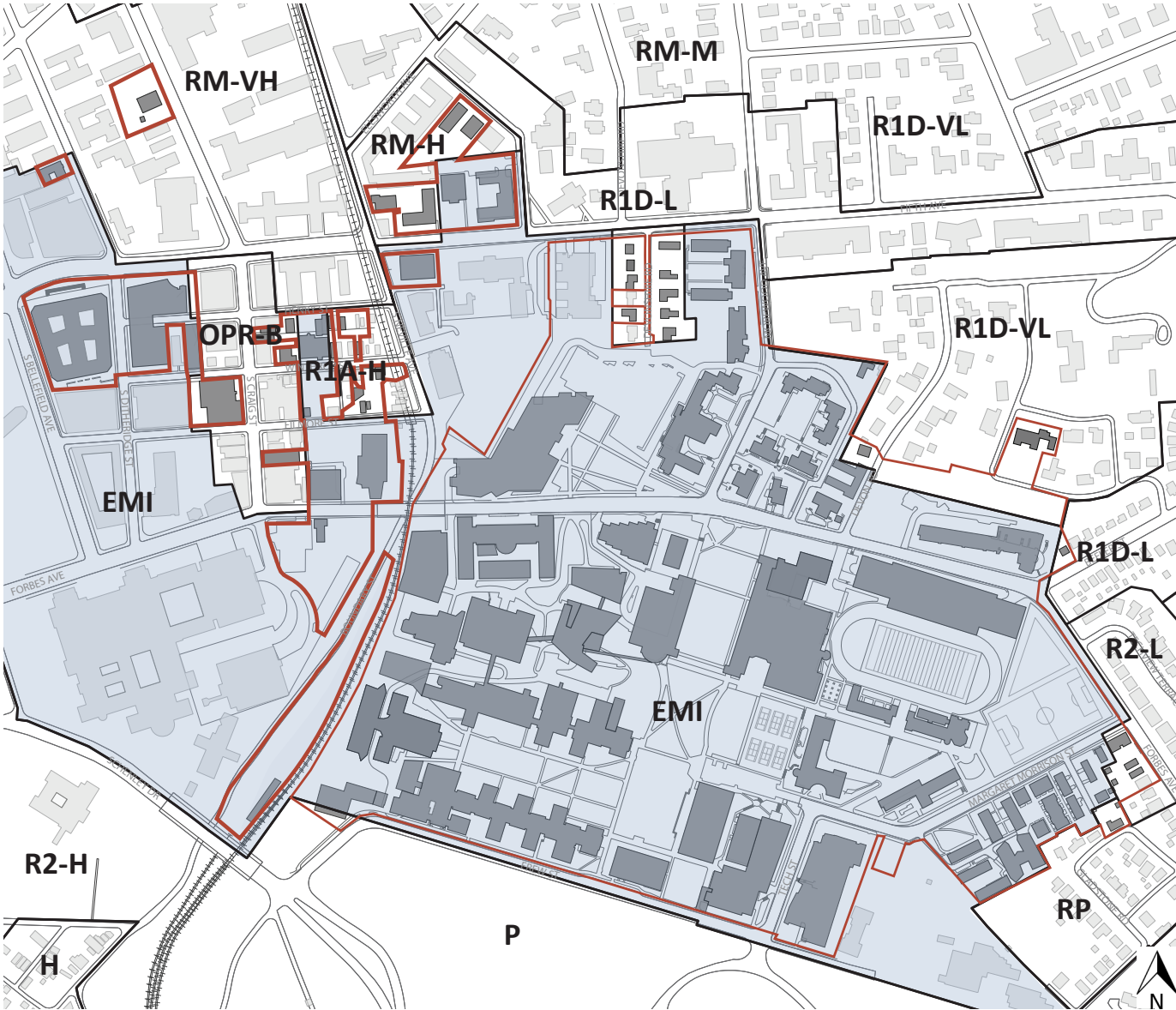


(Map by Bing Maps)

— Carnegie Mellon University Property in 2022 IMP

2.2 EXISTING PROPERTY AND USES

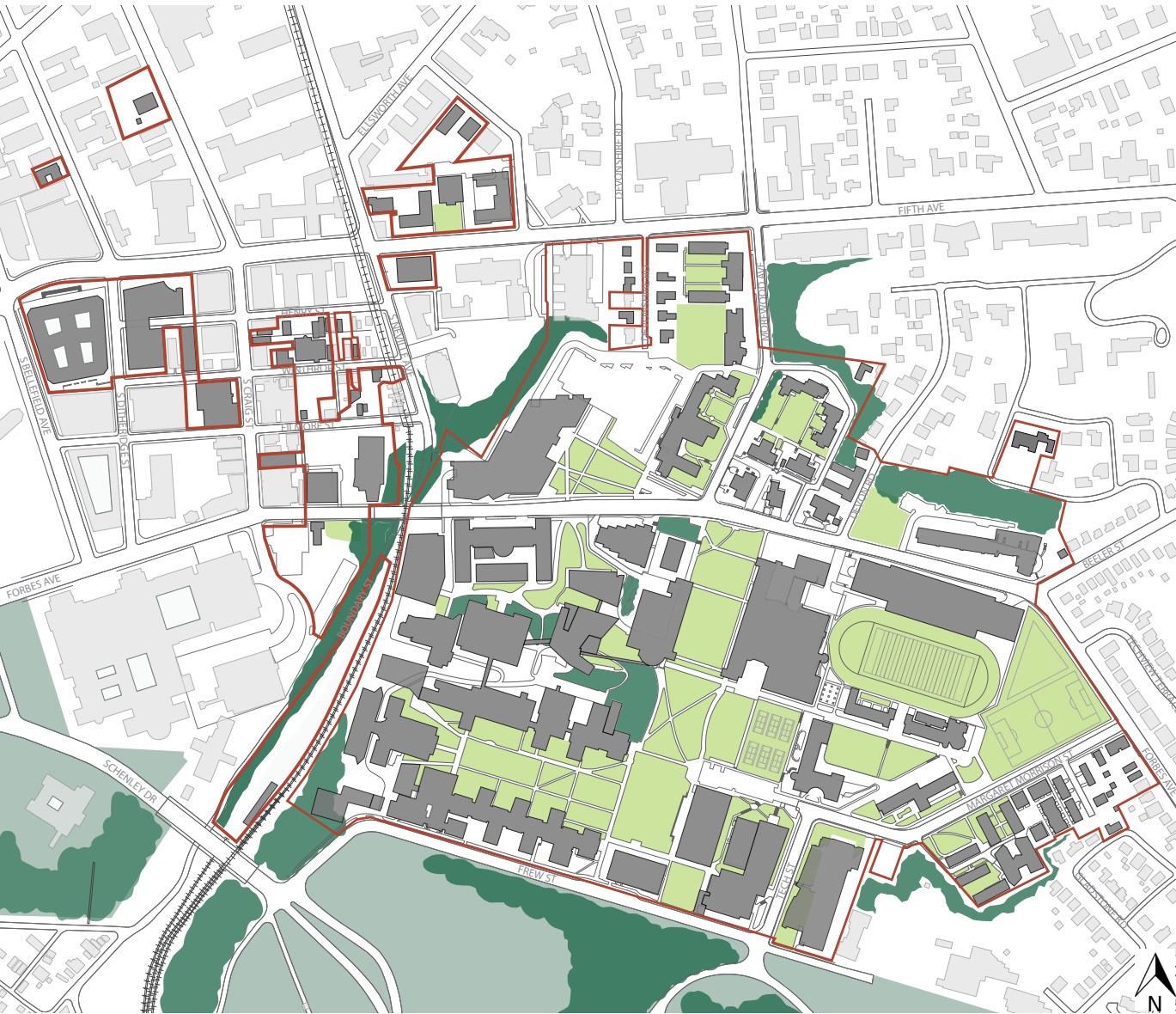
2.2.2 CMU Properties and Zoning lines



- Carnegie Mellon University Property in 2022 IMP
- EMI (Educational Medical Institutional) Zoning District
- Carnegie Mellon University Existing Buildings
- EMI Educational Medical Institutional
- OPR-B Oakland Public Realm
- P Park
- H Hillside
- RP Residential Planned Unit Development
- R1D-VL Residential Single-Unit Detached, Very Low Density
- R1D-L Residential Single-Unit Detached, Low Density
- R1A-H Residential Single-Unit, High Density
- R2-L Residential Two-Unit, Low Density
- RM-M Residential Multi-Unit, Moderate Density
- RM-H Residential Multi-Unit, High Density
- RM-VH Residential Multi-Unit, Very High Density

2.2 EXISTING PROPERTY AND USES

2.2.3 Site Plan



- Carnegie Mellon University Property in 2022 IMP
- Carnegie Mellon University Existing Buildings
- Formal / Landscape Greens (on campus)
- Wooded Greens (Slopes)
- Wooded Greens (off campus)

2.2 EXISTING PROPERTY AND USES

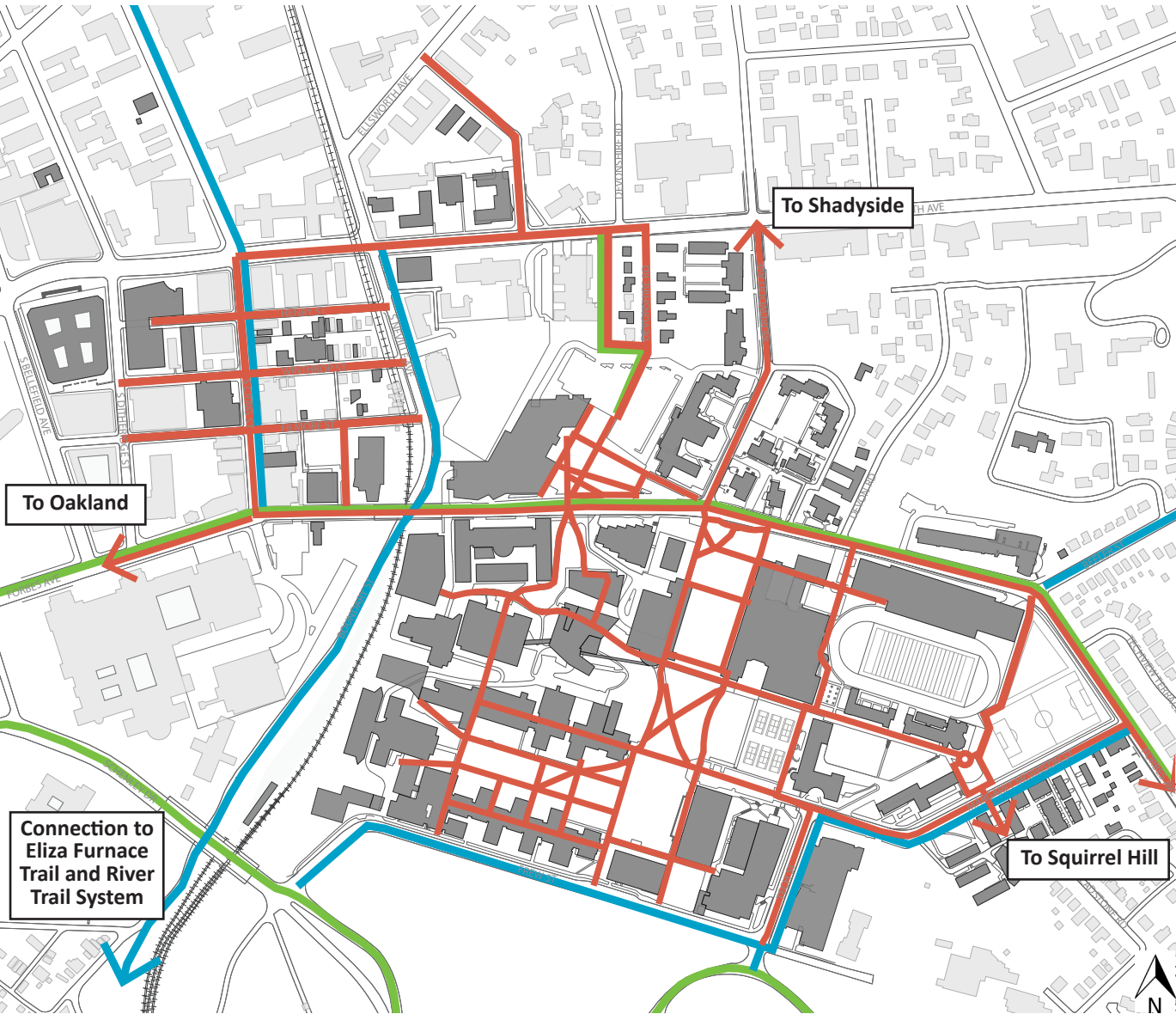
2.2.4 Primary Building Uses



- Carnegie Mellon University Property in 2022 IMP
- Academic & Research
- Student Life
- Administration
- Residential
- Sports Facility Open Space
- Research

2.2 EXISTING PROPERTY AND USES

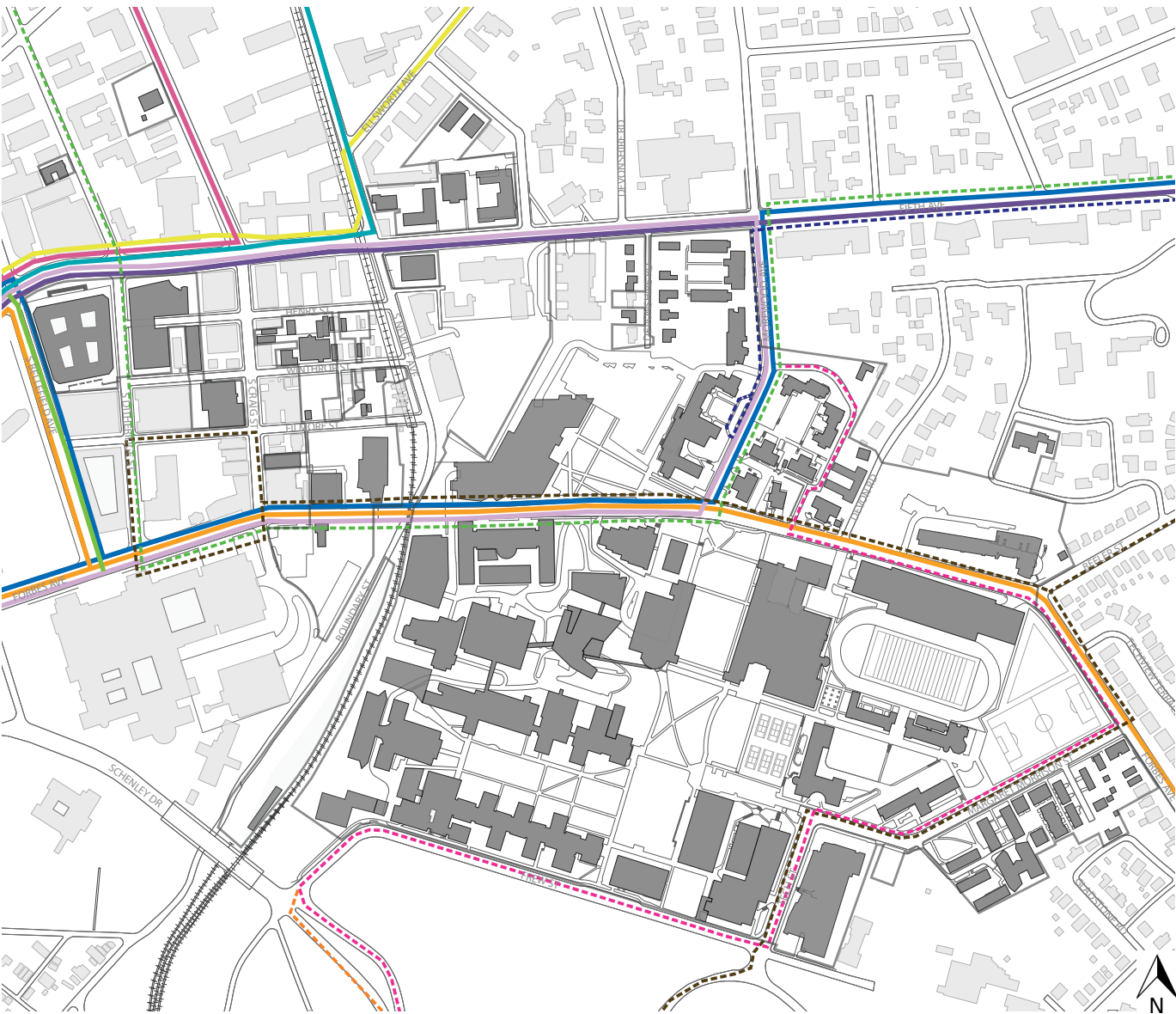
2.2.5 Bike and Pedestrian Network



- Carnegie Mellon University Existing Buildings
- Major Pedestrian Network
- Bike Network
- Bike Friendly Streets

2.2 EXISTING PROPERTY AND USES

2.2.6 Transit and Shuttle Network



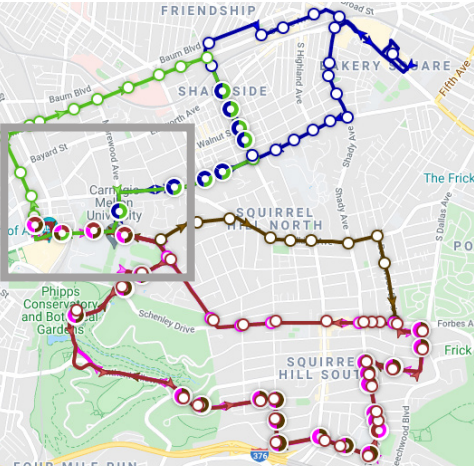
Port Authority

- P3
- 28
- 58
- 61A, B, C, D
- 71B, D
- 71A, C/93
- 75

CMU Shuttles

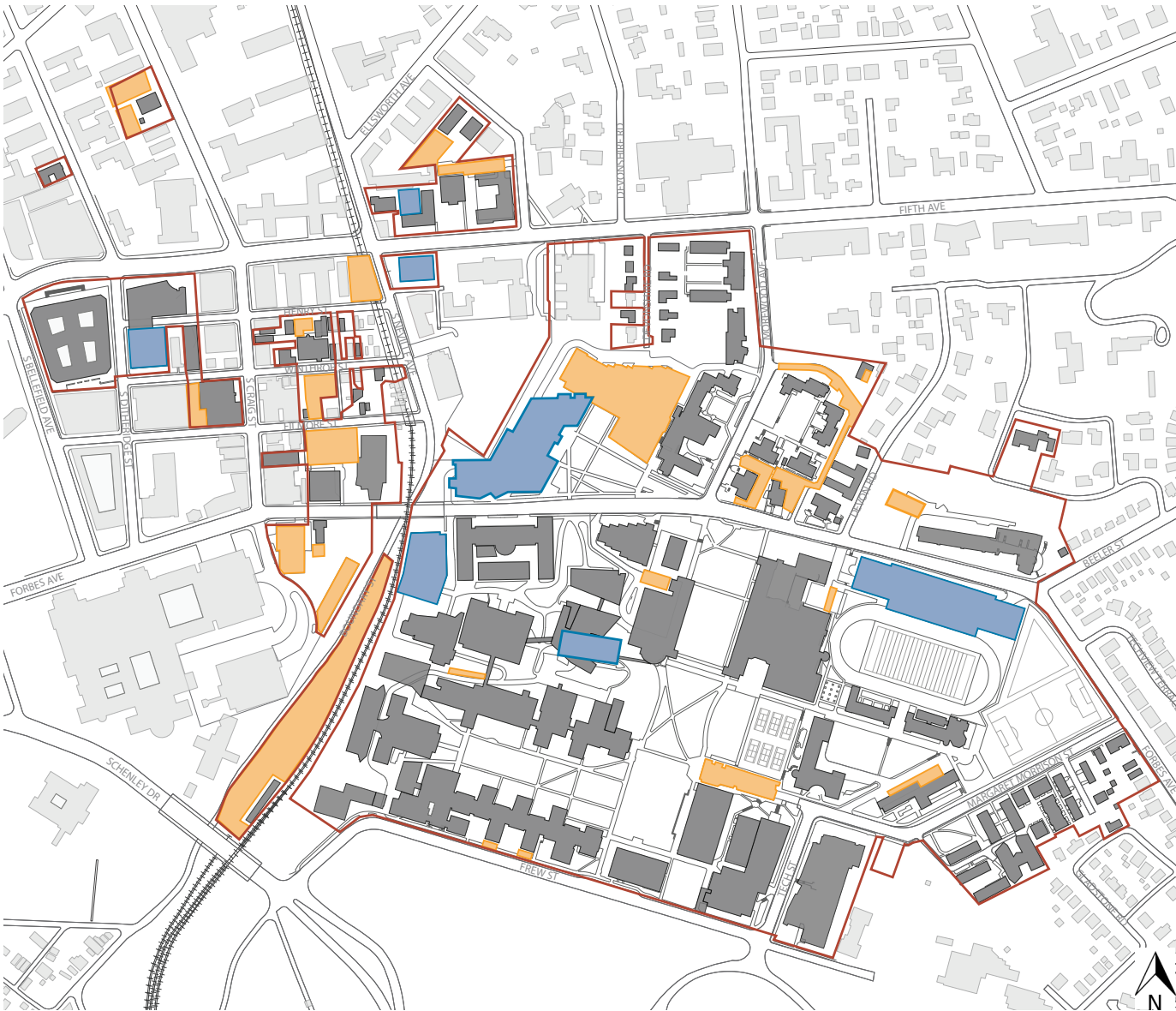
- CMU A
- CMU B
- CMU C
- PTC/MILL 19

Enlarged Campus Shuttle Map



2.2 EXISTING PROPERTY AND USES

2.2.7 Parking Facilities - Carnegie Mellon University Campus

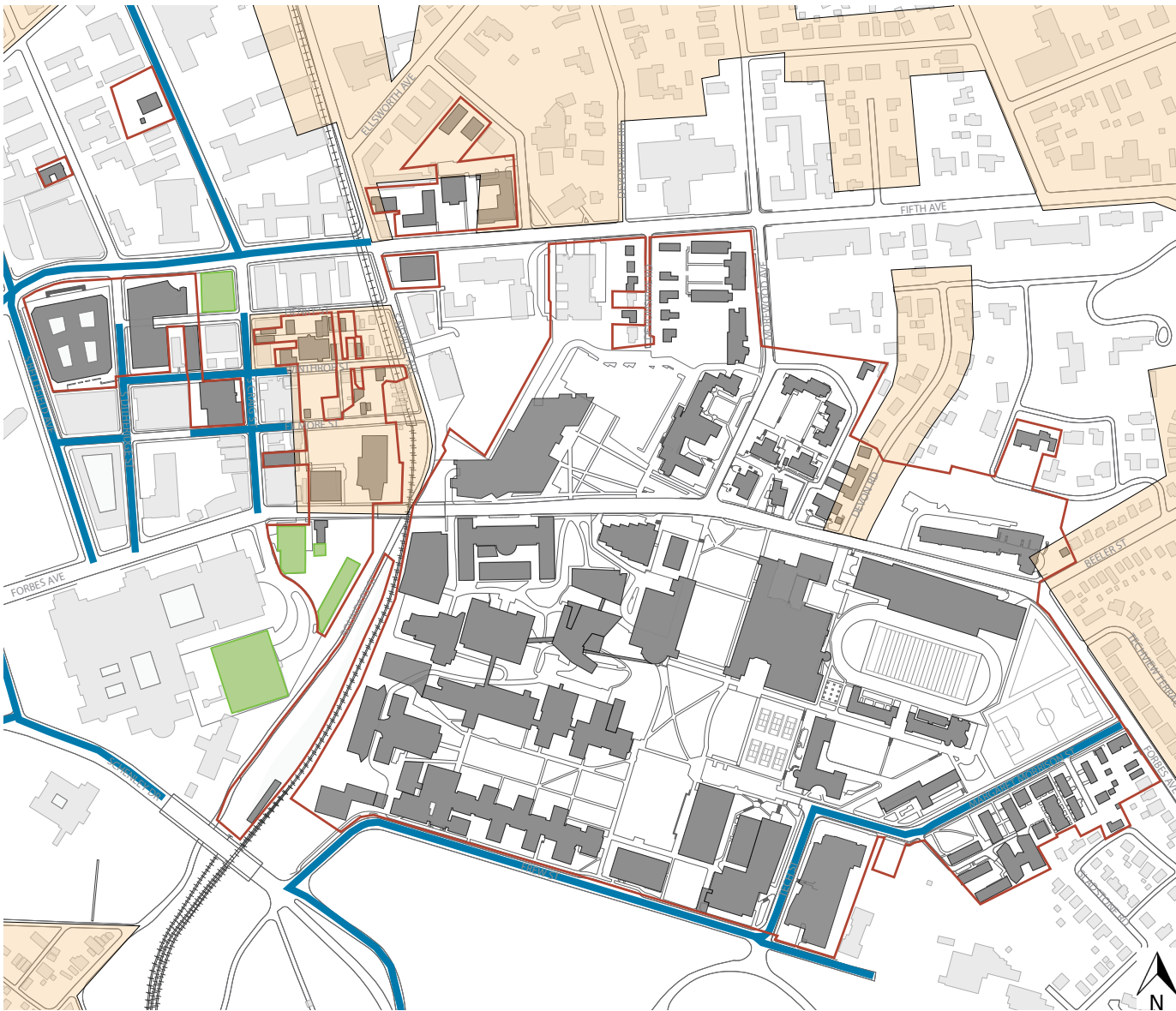


Refer to Appendix F, pages 156-157 for Parking Inventory

- Carnegie Mellon University Property in 2022 IMP
- Carnegie Mellon University Existing Buildings
- Carnegie Mellon University Garage / Structured Parking
- Carnegie Mellon University Surface Lot

2.2 EXISTING PROPERTY AND USES

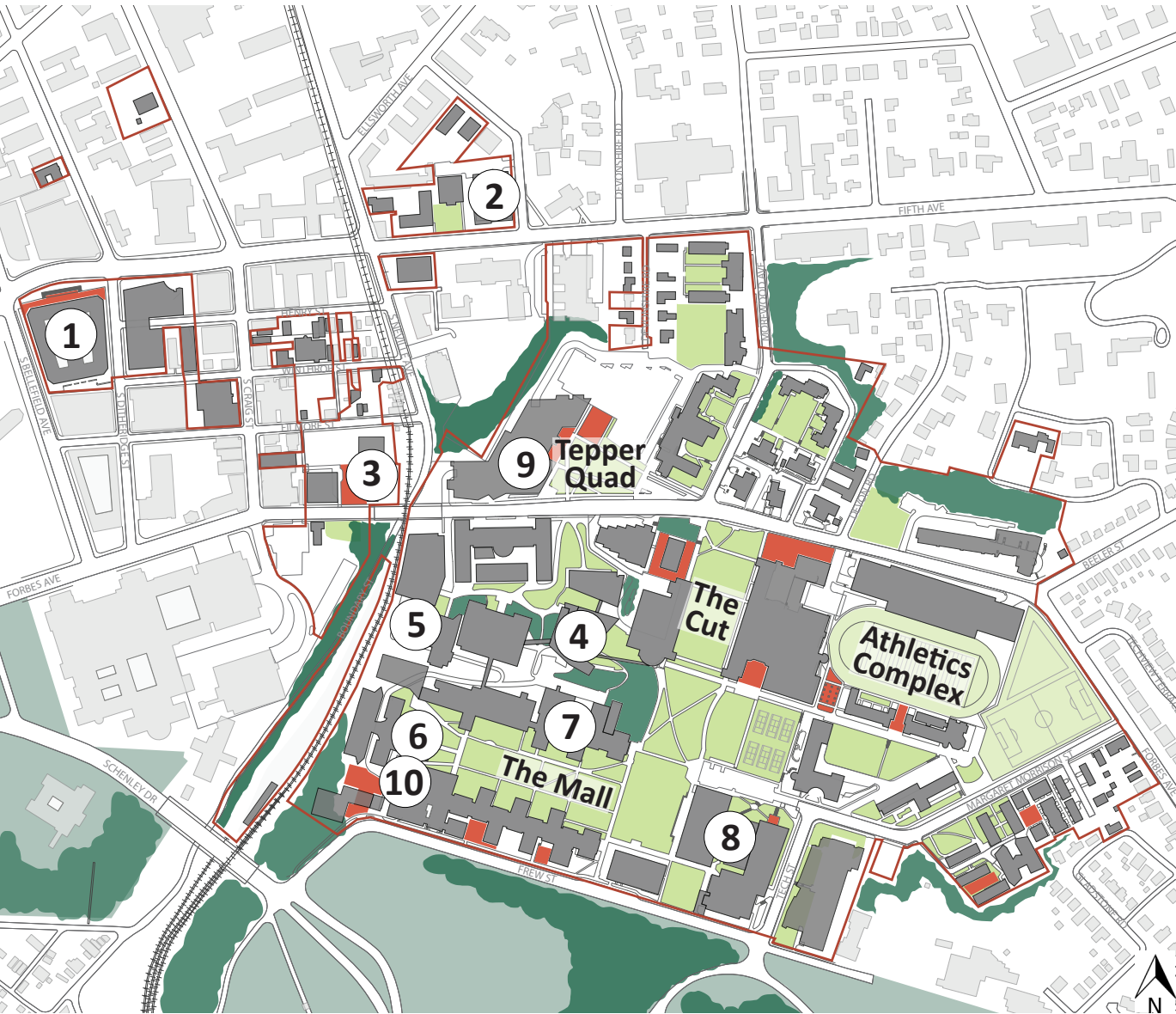
2.2.8 Parking Facilities - Surrounding Areas



- Carnegie Mellon University Property in 2022 IMP
- Carnegie Mellon University Existing Buildings
- Metered Street Parking
- Residential Permit Parking
- Carnegie Mellon University Leased Parking (off campus)

2.2 EXISTING PROPERTY AND USES

2.2.9 Open Space



Green Roofs		
	Carnegie Mellon University Property in 2022 IMP	1 Mellon Institute
	Carnegie Mellon University Existing Buildings	2 Fifth Clyde Residence
	Formal / Landscaped Greens (on campus)	3 TCS Hall
	Sports Facility Open Spaces	4 Gates and Hillman Centers
	Wooded Greens (off campus)	5 Scott Hall
	Wooded Slopes	6 Hamerschlag Hall
	Hardscaped Plazas	7 Doherty Hall
		8 Posner Center
		9 Tepper Quad Building
		10 ANSYS Hall

2.2 EXISTING PROPERTY AND USES

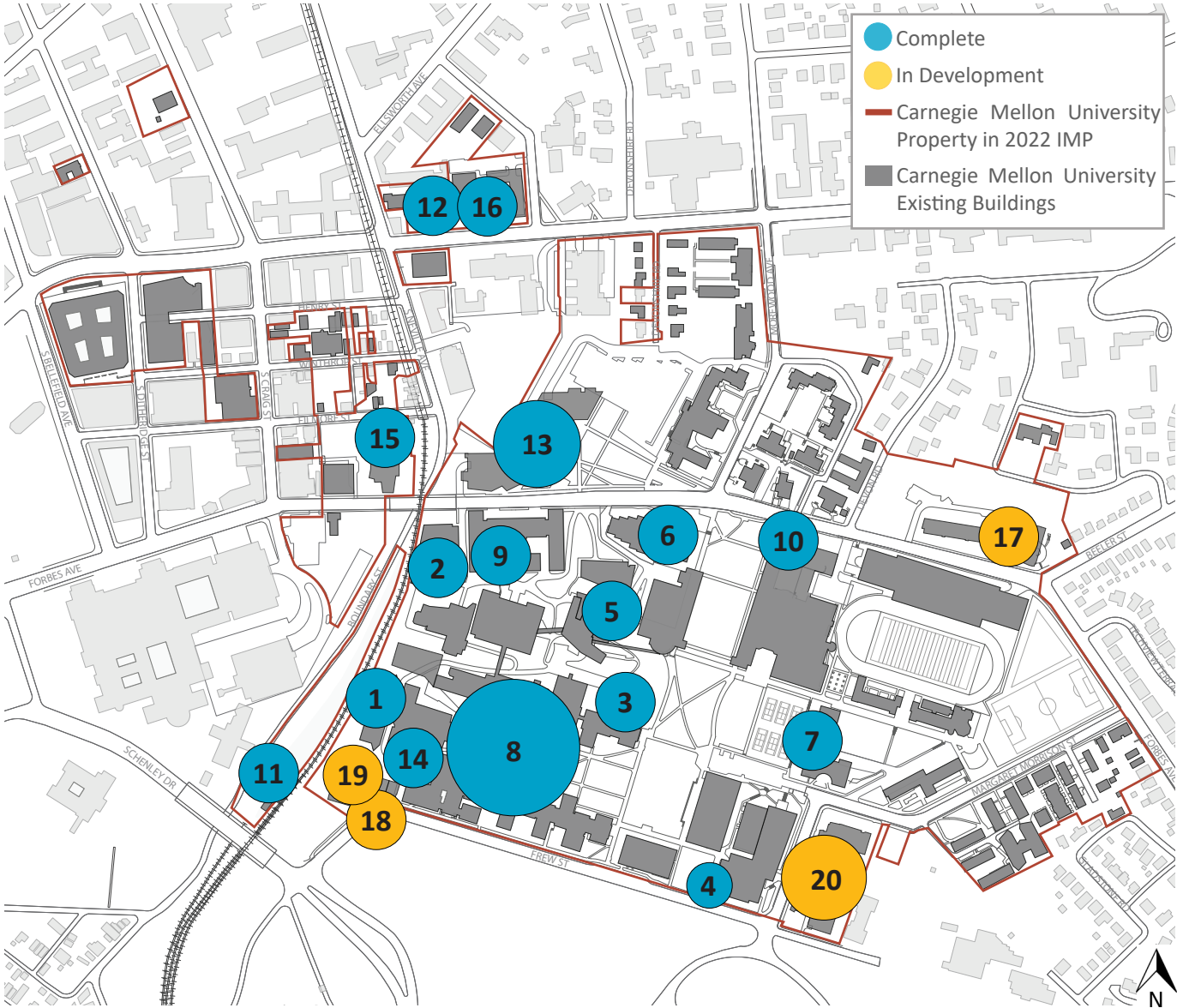
2.2.10 Tree Cover



	Carnegie Mellon University Existing Buildings
	1 - 5" Diameter at Breast Height (DBH)
	6 - 15" DBH
	16 - 25" DBH
	26 - 35" DBH
	36 - 55" DBH

2.2 EXISTING PROPERTY AND USES

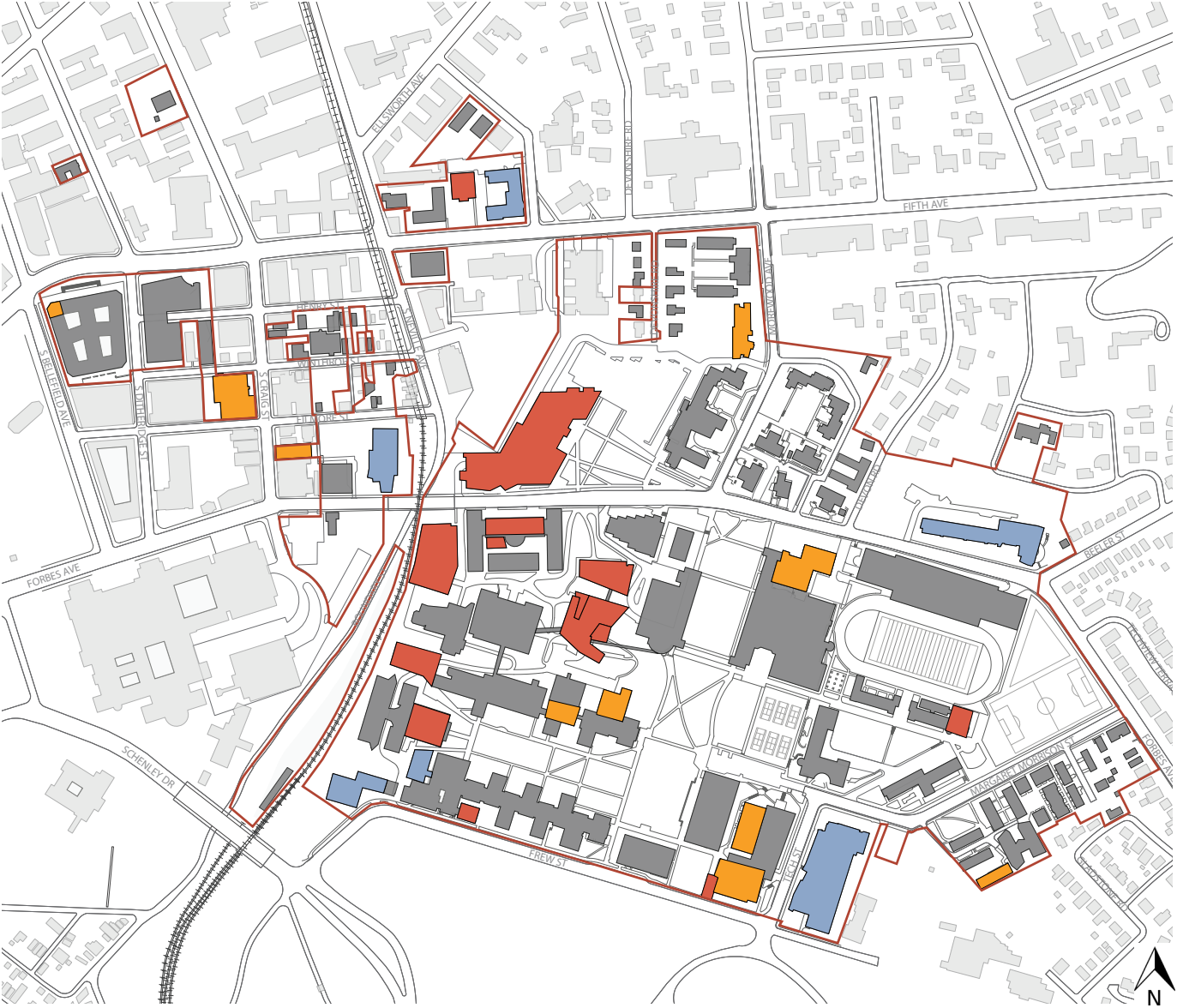
2.2.11 Stormwater Management Retention/Mitigation Facilities



Map	Project	Year	Type	Size
1	Roberts Engineering Hall	1994	Retention	33,8000 gal
2	R. Mehrabian Collaborative Innovation Center	2005	Retention	5,000 gal
3	Doherty Hall	2008	Raingarden	n/a
4	West Entry Addition	2009	Infiltration	3,700 gal
5	Gates and Hillman Centers	2009	Retention/Reuse/Raingarden	10,000 gal
6	Warner Hall Plaza	2010	Raingarden	n/a
7	Margaret Morrison Carnegie Hall Plaza	2014	Raingarden	n/a
8	The Mall / Scott Hall	2016	Retention/Reuse	275,000 gal
9	Hamburg Hall	2016	Retention/Reuse	3,000 gal
10	Cohon University Center	2016	Raingarden	45,000 gal
11	S Neville Facility	2016	Retention	24,000 gal
12	4721 Fifth Avenue	2017	Infiltration	5,700 gal
13	Tepper Quad	2018	Retention/Reuse	127,000 gal
14	ANSYS Hall	2019	Raingarden	10,000 gal
15	TCS Hall	2020	Retention	26,500 gal
16	Fifth and Clyde Residence Hall	2021	Retention	25,500 gal
17	Forbes and Beeler Residence Hall	2023	Retention/Infiltration	41,300 gal
18	New Scaife Hall	2023	Retention of Baker/Porter Hall	99,150 gal
19	New Scaife Hall	2023	Retention of site/building	143,820 gal
20	Highmark Center for Health, Wellness & Athletics	2024	Retention/Infiltration	59,900 gal

2.2 EXISTING PROPERTY AND USES

2.2.12 LEED Buildings



For more information, see Appendix E, pages 150-155.

- Carnegie Mellon University Property in 2022 IMP
- Carnegie Mellon University Existing Buildings
- LEED Gold
- LEED Silver
- LEED Registration in Progress

2.2 EXISTING PROPERTY AND USES

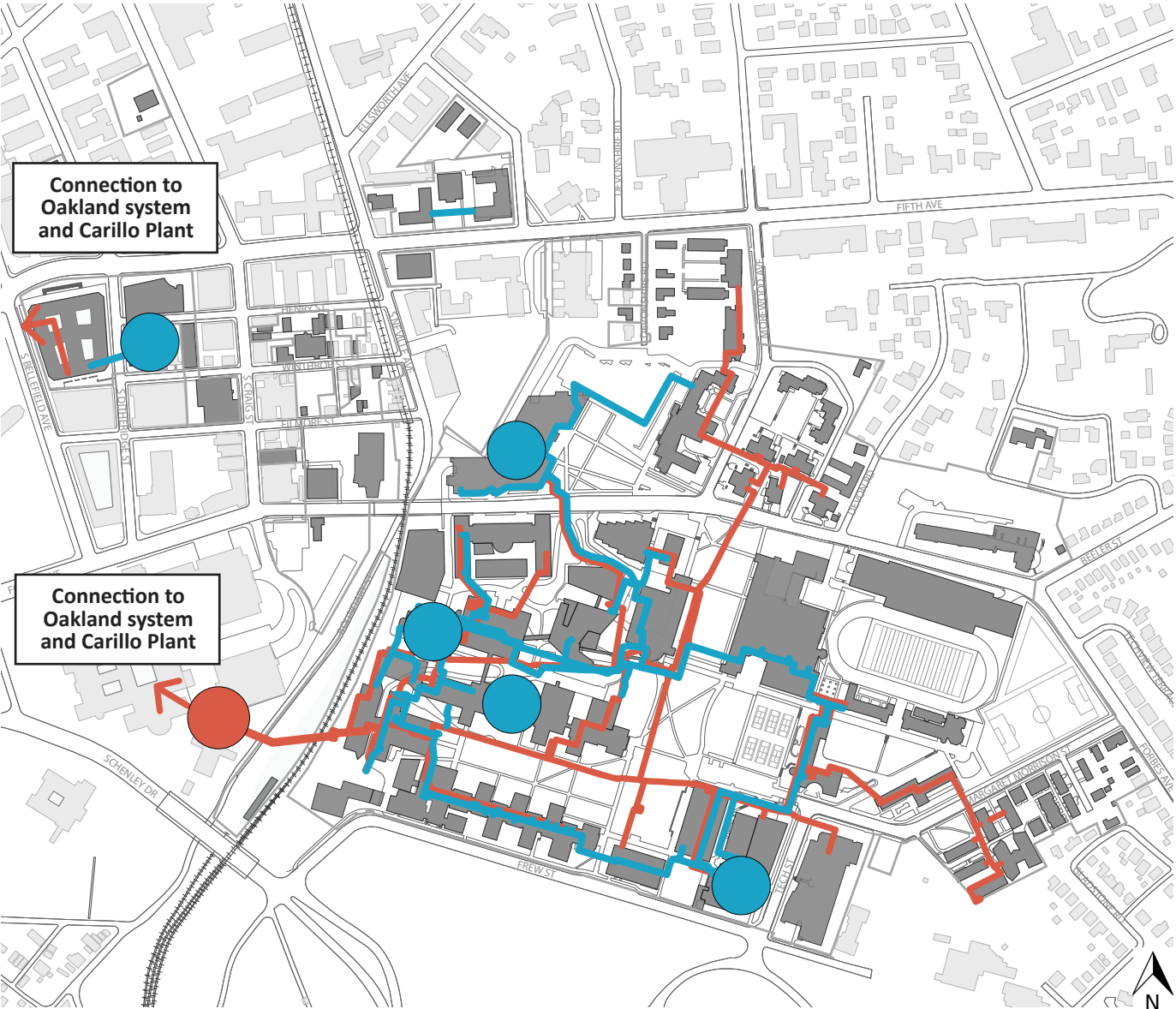
2.2.13 Sewer and Water Lines



- Carnegie Mellon University Existing Buildings
- Chilled Water Line
- Water Laterals
- PWSA Water Mains
- Sewer Gravity Mains

2.2 EXISTING PROPERTY AND USES

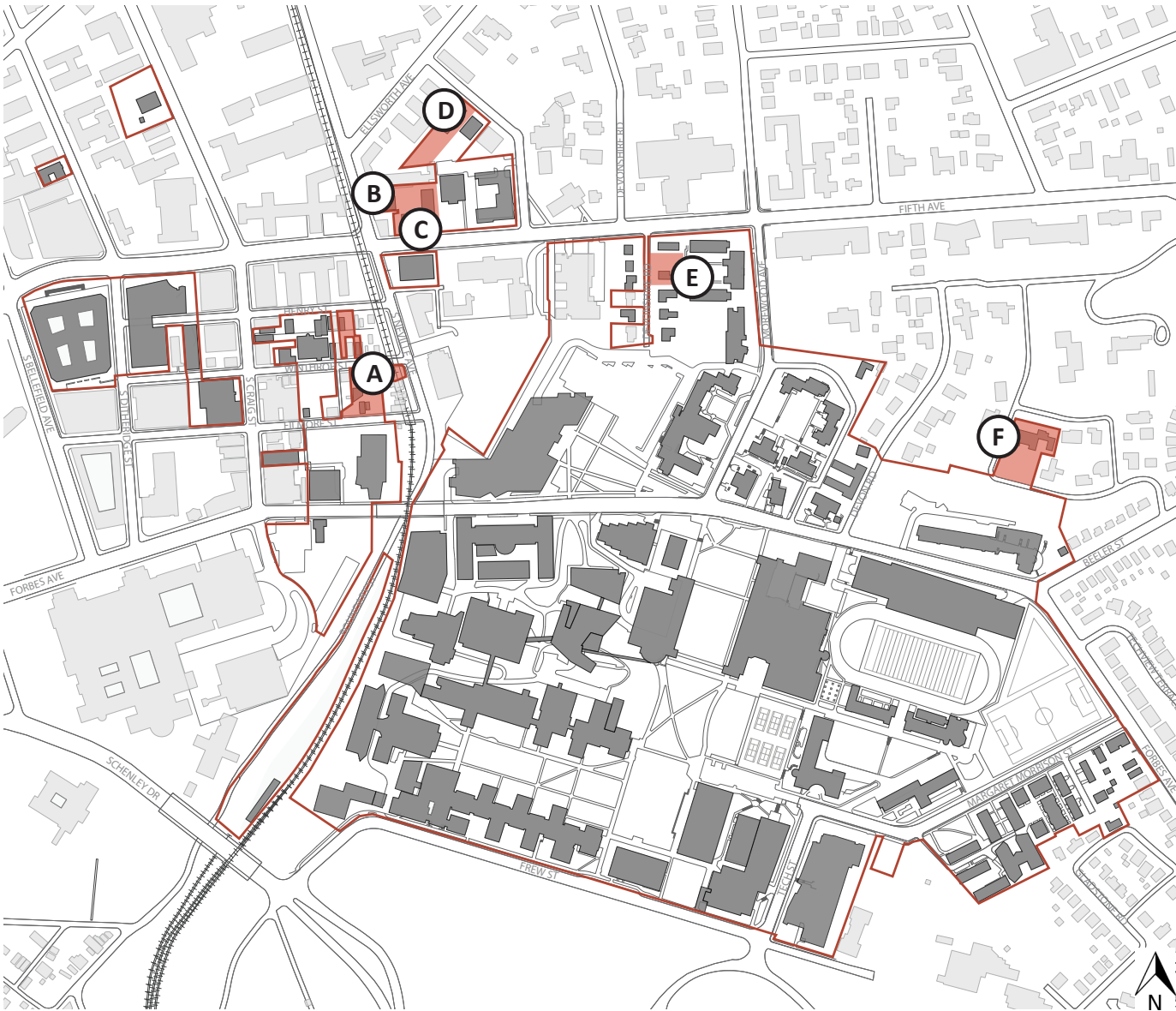
2.2.14 Energy Source: Heating and Cooling



- Carnegie Mellon University Existing Buildings
- Chillers
- Chilled Water Line
- Steam Line
- Bellefield Boiler

2.2 EXISTING PROPERTY AND USES

2.2.15 Properties acquired since 2012

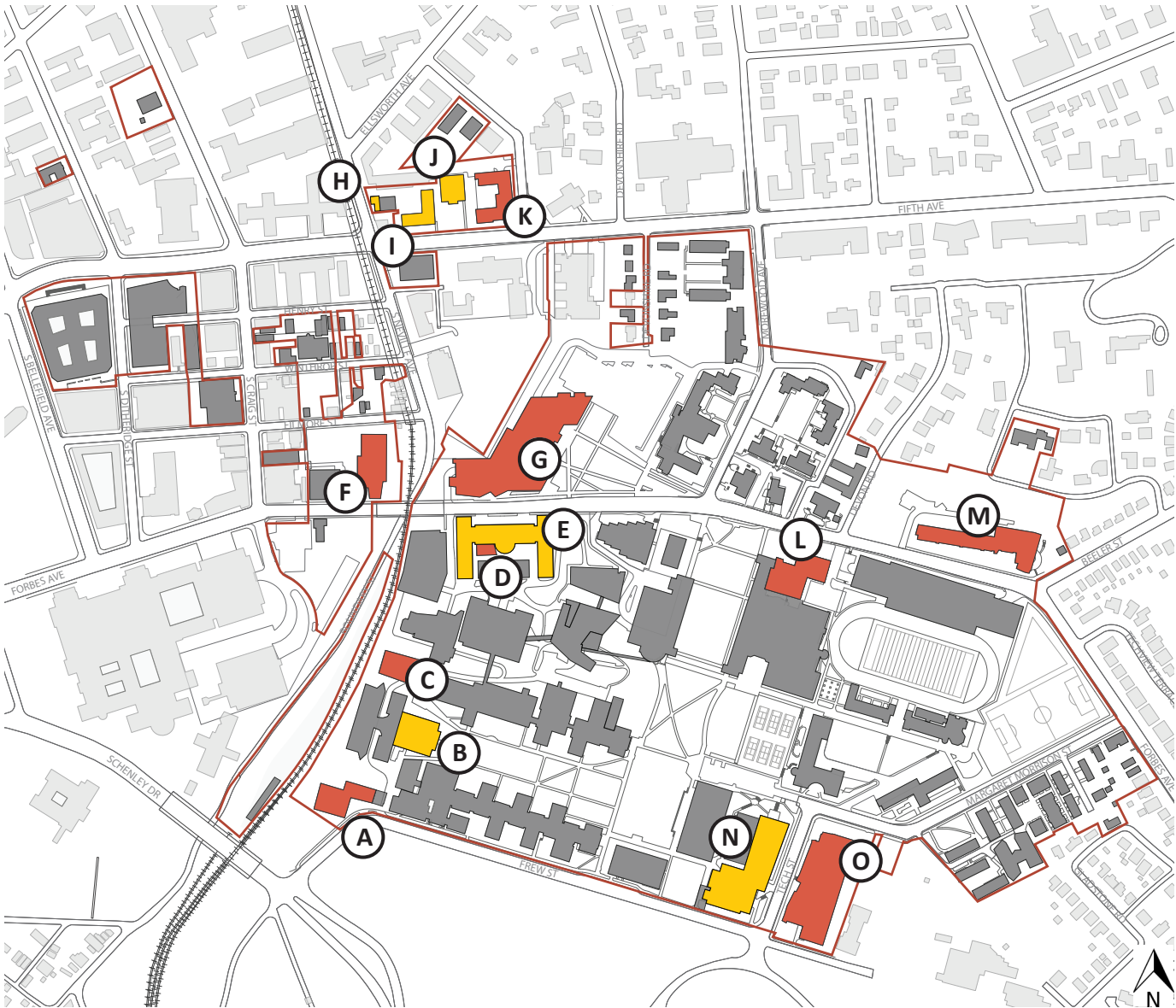


Site Names

	Carnegie Mellon University Existing Buildings	A	Henry, Winthrop, and Filmore Properties
	Carnegie Mellon University Property in 2022 IMP	B	Neville Apartments
	Properties acquired since 2012 IMP	C	Fifth/Neville Apartments
		D	Highlands Apartments
		E	Devonshire Road
		F	Holyrood Road

2.2 EXISTING PROPERTY AND USES

2.2.16 Projects developed since 2012



Project Names

	Carnegie Mellon University Existing Buildings	A	New Scaife Hall
	Carnegie Mellon University Property in 2022 IMP	B	Hamerschlag Hall Maker Wing
	New Buildings developed since 2012 IMP	C	Scott Hall
	Major Renovations since 2012 IMP	D	Hamburg Hall Expansion
		E	Hamburg Hall
		F	TCS Hall
		G	Tepper School of Business
		H	Neville Apartments
		I	Fifth Neville Apartments
		J	4721 Fifth Avenue
		K	Fifth Clyde Residence
		L	Cohon University Center Edition
		M	Forbes Beeler Residence
		N	Hall of Arts and Posner Center
		O	Highmark Center for Health, Wellness, and Athletics

2.2 EXISTING PROPERTY AND USES

2.2.17 2022 Building Inventory and Master Plans

Completed	Building	Architect/Planner	Sq Feet
1903-1911	Campus Master Plan	Hornbostel	
1906	Porter Hall (Industries Hall)	Hornbostel	135,000
1908	Doherty Hall (School of Applied Science)	Hornbostel	290,000
1912	Hamerschlag Hall (Machinery Hall)	Hornbostel	117,000
1912	Baker Hall (Administration Hall)	Hornbostel	144,000
1912, 1916	College of Fine Arts (School of Applied Design)	Hornbostel	125,000
1913	Margaret Morrison College (MMCH)	Hornbostel	117,000
1915	Hamburg Hall (US Bureau of Mines, acquired 1984)	Hornbostel	108,000
1915-1918	Hill Dorms (Henderson, Boss, McGill, Scobell, Welsh)	Hornbostel	65,000
1918	4721 Fifth Avenue	Unknown	22,000
1922	Mudge House (acquired 1960s)	Henry D Gilchrist	67,000
1924-1932	Skibo Gymnasium/Thistle Hall	Hornbostel & Palmer	63,400
1925	Neville Apartments	Unknown	8,850
1927	Morewood Gardens A-D	Farrar, Marks & Kann	135,200
1930	Roselawn Terrace Apartments (acquired 1957)	Unknown	19,000
1930s	Shirley Apartments	Unknown	16,200
1931	Mellon Institute (acquired 1967)	Janssen & Cocken	357,000
1935	300 S Craig (Vision Service Center, acquired 2005)	n/a	85,400
1938	Campus Master Plan	Githens & Keally	
1939	Smith Hall (US Bureau of Mines, acquired 1984)	Lawrence Wolfe	22,000
1952	Graduate School of Industrial Administration (GSIA)	Marlier & Johnstone	53,000
1954	Donner House	Mitchell & Ritchey	53,500
1956	Lower Greek Quad	Lawrence & Anthony Wolfe	80,000
1957-1959	Campus Master Plan	Rice, Schweiker	
1959	Doherty Hall addition	Francis Keally & Palmgreen	50,000
1959	Doherty Apartments	Franklin Douden Associates	34,000
1959	Spirit House	Unknown	2,950
1959	Woodlawn Apartments	Unknown	11,300
1960	Hammerschlag House	Celli-Flynn	31,200
1960	Morewood Gardens E-Tower	Alfred Reid & Associates	59,400
1961	Hunt Library	Lawrie & Green	101,530
1966	Warner Hall	Charles Luckman Associates	44,600
1966	Graphic Arts Technical Foundation (acquired 2009)	WTW	49,000
1968	Campus Master Plan	Sasaki, Dawson & Demay	
1970	Upper Greek Quad	Curry and Martin	45,000
1971	Wean Hall (Computer-Science Building)	Deeter Ritchey Sipple	295,000
1983	Cyert Hall (University Computer Center)	Deeter Ritchey Sipple	64,000
1984	Margaret Morrison Apartment A	Damianos & Pedone	16,000

2.2 EXISTING PROPERTY AND USES

Completed	Building	Architect/Planner	Sq Feet
1984	Margaret Morrison Apartment B	Damianos & Pedone	6,500
1984	Margaret Morrison Apartment C & Plaza	Damianos & Pedone	23,000
1985	4616 Henry/INI (acquired 2006)	Damianos & Pedone	25,250
1985	Campus Master Plan	CRS Sirrine	
1986	Residence at Fifth (acquired 2010)	Tasso Katselas Associates	65,000
1987	Software Engineering Institute	Bohlin Powell Larkin Cywinski	129,000
1987	Campus Master Plan	Dennis Clark & Associates	
1988	FMS Building (Physical Plant)	IKM, Inc.	54,550
1990	West and Resnik Houses	Dennis, Clark & Associates	70,000
1990	East Campus Parking Garage and Gesling Field	Dennis, Clark & Associates	6,400
1993	Posner Hall (GSIA addition)	Kallmann McKinnell Wood	90,000
1995	Pittsburgh Technology Center (formerly CMRI)	Bohlin Cywinski Jackson	81,000
1996	Cohon University Center	Michael Dennis & Associates	68,000
		Urban Design Associates	
1997	Roberts Hall	Payette Associates	65,000
1997	Intelligent Workplace (MMCH Addition)	Bohlin Cywinski Jackson	7,000
1999	Newell Simon Hall	WTW Architects	155,000
2000	Purnell Center for the Arts	DDF Associates, Inc.	105,000
		Damianos + Anthony	
2000	Baker Hall Addition	Burt Hill Kosar Rittelman	24,000
2000	Posner Hall Fourth Floor Addition	The Design Alliance	20,000
2000	Doherty Hall Addition Phase 1	Burt Hill Kosar Rittleman	45,000
2002	Campus Master Plan	Ayers Saint Gross	
2002	Stever House (formerly New House)	Bohlin Cywinski Jackson	63,000
2003	R. Mehrabian Collaborative Innovation Center	Davis, Gardner, Gannon, Pope	135,000
2004	Posner Center and the Kraus Campo	WTW & Mel Bochner	8,000
2007	Tartans Pavilion	Springboard	6,000
2008	Doherty Hall Addition Phase 2	Burt Hill Kosar Rittelman	15,000
2009	Tepper School West Entry Addition	Edge Studio	6,000
2009	Gates & Hillman Centers	Mack Scogin & Merrill Elam	216,000
2012	Institutional Master Plan	Ayers Saint Gross & GAI Consultants	
2015	Scott Hall	Office 52 / Stantec	105,000
2015	S Neville Facilities Building	Baker / Klavon Design	8,000
2018	Tepper Building	Moore Ruble Yudell	315,000
2019	ANSYS Hall	Bohlin Cywinski Jackson	36,000
2020	TCS Hall	Bohlin Cywinski Jackson	75,000
2021	Fifth Clyde Residence	LTL Architects	99,000
2022	Institutional Master Plan	Urban Design Assoc. & GAI Consultants	

Refer to Appendix E, pages 150 - 155 for more detail.



Carnegie
Mellon
University

3.0 INSTITUTIONAL NEEDS

- 3.1 Expectations for Growth or Change
- 3.2 Current and Future Needs for Facilities
- 3.3 Current and Future Needs for Housing

3.1 EXPECTATIONS FOR GROWTH OR CHANGE

Zoning Code References

905.03.D.4 (c) Needs of the Institution

The IMP shall include a summary and projection of the institution’s current and future needs for the following facilities: Academic; Service; Research; Office; Housing; Patient care; Public assembly; Parking; and Other facilities related to the institutional use.

905.03.D.4 (c) Mission and Objectives

The statement should describe the population to be served by the institution, and any projected changes in the size of composition of the population.



The past two decades of population growth at Carnegie Mellon have changed the overall make up of campus. There are now more Graduate and PhD students than undergraduate students (see Chart in Appendix D, page 146). This growth in post-graduate education drove recent campus developments such as the Tepper School of Business and new facilities for the College of Engineering. However, significant expansion of post-graduate and undergraduate education is not anticipated. Future campus space demands are expected to be from working to densify the campus (a result of the recent post-graduate population growth), to improve the on-campus student experience and to address emerging pedagogical trends, such as the move to more team-learning practices and remote learning. To address these demands the following strategies have been developed.

Strategy for Campus Growth

To continue to be a world leader in research and education, the university will strategically utilize campus resources, will enact a development strategy to optimize the use of existing land and buildings and will connect the Historic Core to the North Campus and to the Craig Street Area.

Strategy for Academic Spaces

To further strong academic traditions, the university will systematically upgrade and enhance teaching spaces, will create academic spaces that maximize flexibility, and will seek opportunities to add new classroom spaces to the campus.

Strategy for Quality Public Spaces

To attract and retain the best and brightest, the university will preserve and create dynamic and innovative open spaces, will develop the front door to campus at Forbes and Morewood Avenue and will continue to increase the quality of housing, dining, athletic and recreational spaces.

Strategy for a Sustainable Campus

The university will continue to innovate and be a leader in sustainable building and operating practices and the development of emerging sustainable technologies.

3.2 CURRENT AND FUTURE NEEDS FOR FACILITIES

With an anticipated stabile undergraduate and post-graduate population for the ten-year time frame of the 2022 IMP, the plan seeks to provide development opportunities to support both existing and potential academic and research needs. As these initiatives are advanced, the campus will be also upgraded with public realm improvements and diversified mobility networks that will enhance the university experience. The development of new and renovated campus facilities is dependent on pedagogical and funding opportunities.

Academic Needs (by College/School)

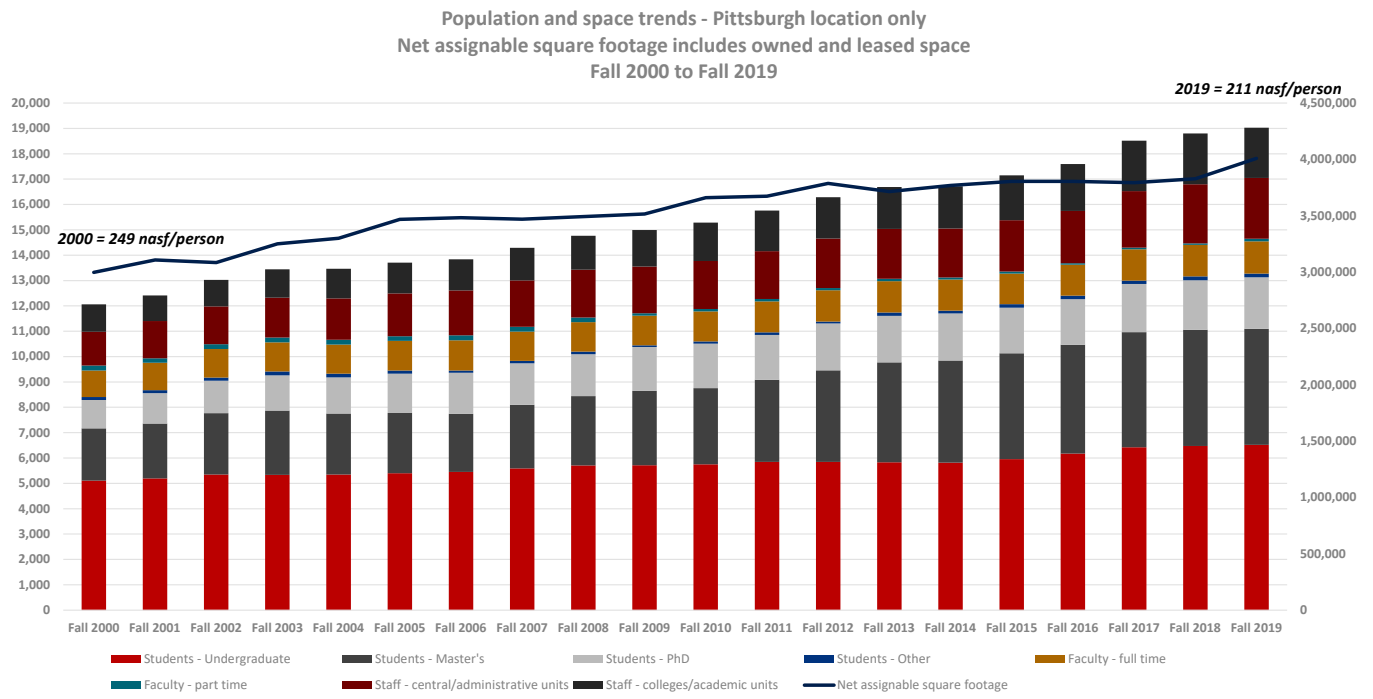
College of Engineering (CIT - Carnegie Institute of Technology) – The last decade has seen significant growth in the College including Scott Hall, ANSYS Hall and the New Scaife Hall which have consumed all available space in the Engineering Quad. Any future College development will be in adjacent areas, such as the FMS Building site.

College of Fine Arts (CFA) – The recent Posner Hall conversion of part of the former business school building into the Hall of the Arts has provided for the immediate space needs of the College. In the

longer term, to reinforce the diverse community of the arts, the college plans for the development of physical spaces that support transdisciplinary ventures. Such initiatives could include the development of the Margaret Morrison Extension and the Purnell North Wing addition; off site locations could also include the 477 Melwood Avenue facility.

Dietrich College of Humanities and Social Science (DC) – The recent expansion into the former business school building (Posner Hall) has provided the College with space for immediate needs. The College’s spaces in Baker and Porter Halls will be reconfigured to adapt to contemporary needs.

Heinz College of Public Policy and Information Management (HNZ) – The recent expansion, and the associated renovations of Hamburg Hall have accommodated the Colleges immediate space needs. Future needs could be met by realizing plans to enclose the courtyard behind the building and by expanding Smith Hall.



3.2 CURRENT AND FUTURE NEEDS FOR FACILITIES

Mellon College of Science (MCS) – To continue to be a leader in engineering and computer science, the university will advance improvements to the hard sciences (Biology, Chemistry, Math and Physics) and will develop state-of-the-art research and teaching labs. It is planned that the South of Forbes site will be the home of the new RK Mellon Science Building that will spearhead this initiative. Further, the reconfiguration of the Mellon Institute will also be a major need for the College.

School of Computer Science (SCS) – Space needs for the School have been alleviated by the recently completed TCS Hall, but the School continues to have space needs. Potential sites for new SCS facilities could include the North and South of Forbes site (adjacent to TCS) the Morewood site; the FMS Building; and the Cyert/Warner site.

Tepper School of Business (TSB) – The recent completion of the new Tepper Building on the North Campus will provide for the space needs for the School in the foreseeable future. As future needs arise, the site to the north of the new facility is reserved to address those needs.



ANSYS Hall



Purnell Center of the Arts



Hamerschlag and Roberts Engineering Halls



Scott Hall

3.3 CURRENT AND FUTURE NEEDS FOR HOUSING

The development of the Housing Master Plan in 2018 has guided the largest university investment in student housing since the East Campus development in the early 1990's. The result of this initiative will be the construction of two new facilities (the Fifth/Clyde and the Forbes/Beeler residences), the purchase of two facilities (the Fifth/Neville apartments and the Neville Apartments) and the engagement in a long-term lease of the entirety of the Fairfax Apartments as student housing. Further, significant facility upgrades were completed to the largest housing facility on campus – Morewood Gardens. These investments have improved / added-to over a third of all university housing.

The university is developing plans for additional new housing facilities as well as continuing to upgrade existing facilities over the next decade. As with the first phase of the plan, this component will focus on improving the student experience by providing a variety of housing unit types, by providing student support spaces and by creating open spaces around housing facilities. The 2022 IMP illustrates opportunities to accommodate the housing master plan by anticipating the redevelopment of the Donner House and the Greek Quad at a greater density, possible new facilities at the Morewood site, and additional Student Commons at Hamerschlag and the Greek Quad. See Appendix J, page 228 for more detailed information about the Housing Master Plan.



Fifth Clyde Residence Commons



Students on Campus



Student Housing



Student in Mudge House



4.0 LONG-TERM VISION & GROWTH

- 4.1 25-Year Development Sites
- 4.2 Other Pittsburgh Sites

4.1 25-YEAR DEVELOPMENT SITES

4.1.1 Long Term Vision

Zoning Code Reference

905.03.D.4 (f) Twenty-five Year Development Sites

The IMP shall include written and graphic materials identifying future development sites in addition to those noted in the Ten-Year Development Envelope. This information shall include, at minimum, the size and location of each parcel which may be developed within a twenty-five year period.



The Carnegie Mellon 2022 IMP provides a vision for campus that can adapt to a changing future while providing a reliable framework for both 10-Year and 25-Year Development Sites. The 2022 IMP is a strategic vision for campus development within a framework that balances university needs with what can be realistically implemented. To guide the development of the Carnegie Mellon campus, the 2022 IMP has the following four core themes:

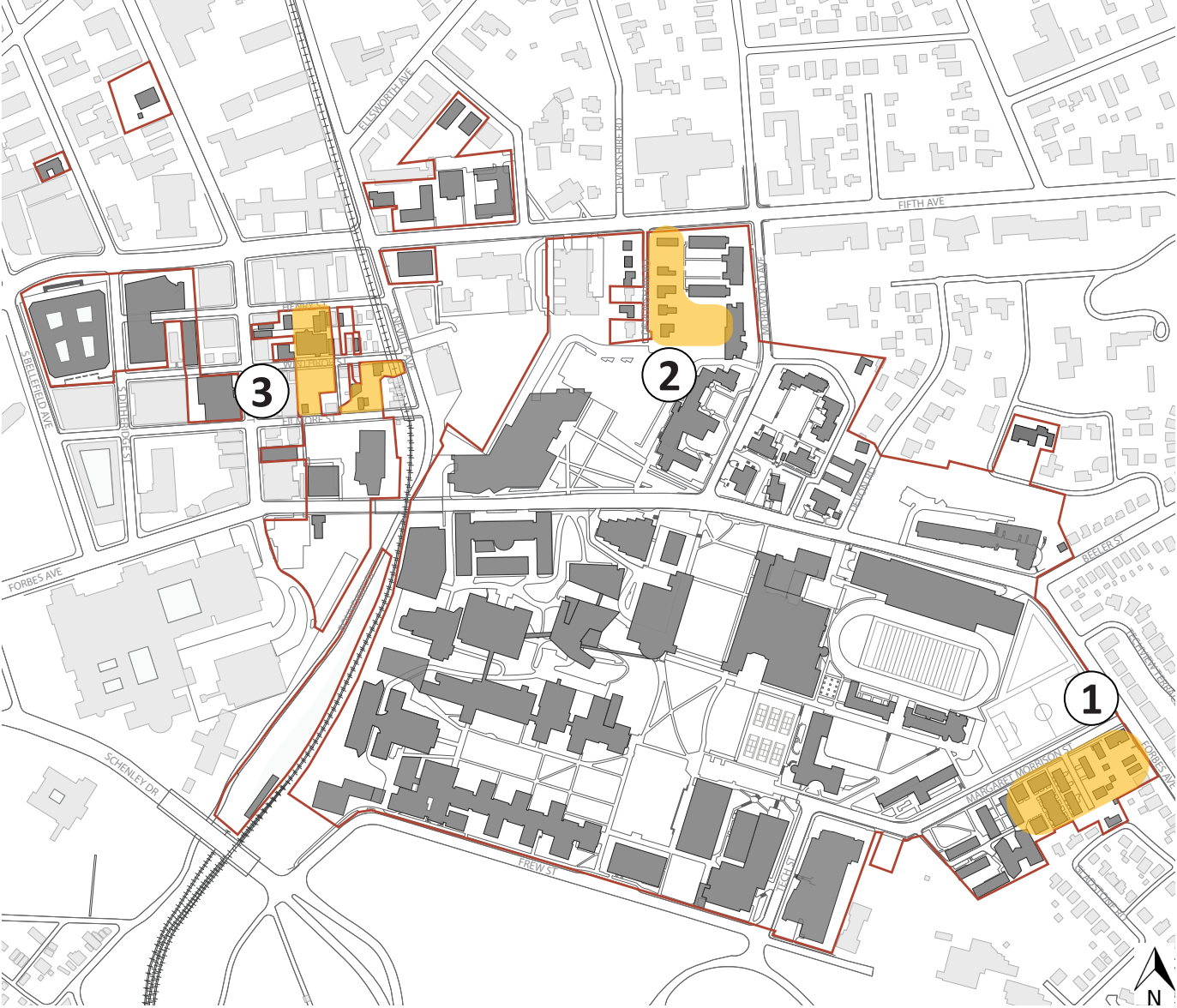
- 1. Enhance the campus experience and develop addition academic sites in the Historic Core.
- 2. Build on the success of the Tepper Quad to increase density in the North Campus and improve integration with the Historic Core.
- 3. Support the urban framework of the Craig St area and connect it to campus.
- 4. Connect to Schenley Park and improve the Frew, Tech and Margaret Morrison Corridor.

The Long-Term Vision of the campus identifies both 10-Year Development Sites (as detailed in Section 5) as well future, 25-Year Development Sites (Section 4.1, page 47). The implementation of these sites will be driven by evolving campus needs and funding. The Long-Term Vision also anticipates that the university will continue to partner with others in the development of areas outside of the main campus EMI district, especially in the Baum/Centre corridor to East Liberty and at Hazelwood Green. Such developments, while not part of the university’s EMI district and thus not detailed in this 2022 IMP, have been contemplated as part of the long-range needs of the university. Over the 10-year span of the 2022 IMP, campus development will be supported by commensurate improvements in mobility, infrastructure and open spaces systems as detailed in Sections 6 and 7.

Although the sites in the 25-Year horizon are not intended to be developed during the 10 years span of the 2022 IMP, the sites are included in campus planning for their long-term importance to the university. There are no specific plans for these sites. However, their location and under-optimization may result in new facilities and/or major rehabilitation in the future. As the university continues to evolve, the long-term redevelopment of these sites may become necessary.

4.1 25-YEAR DEVELOPMENT SITES

4.1.2 25-year Development Sites



- Carnegie Mellon University Property in 2022 IMP
- Carnegie Mellon University Existing Buildings
- Future Development Sites
- 1 Margaret Morrison Street District
- 2 East side of Devonshire Road
- 3 Henry/Winthrop/Filmore Area (infill sites owned by the university)

4.2 OTHER PITTSBURGH SITES

4.2.1 Carnegie Mellon University in Pittsburgh

As noted previously, Carnegie Mellon is an important contributor to the continued evolution of Pittsburgh to an information and technology based economy. As a result, the university often is a partner in new development throughout the City and the region. And while such developments are not part of the main campus EMI district, and thus not included in the 10 year development sites, it is important such sites retain programmatic and design connections to campus and are important to consider in regards to campus planning and to neighborhood impacts.

Stand-Alone University Facilities

477 Melwood Ave – Recently purchased by the university, this 36,200 GSF facility is located in the Urban Industrial Zoning District in North Oakland. Future use of the building is anticipated to be for College of Fire Art functions (event, gallery and performance spaces) as well as campus-supporting office spaces. The adjacent parking area will also house the university shuttles.

6555 Penn Ave – For several decades, the 120,000 GSF Penn Ave facility has served as a central receiving and storage facility for the university, allowing larger deliveries to be broken down and mitigating the need to have large delivery vehicles frequent the main campus. As the area around the Penn Ave facility, which is zoned Urban Industrial, has evolved, especially with the development of Bakery Square, new academic and research functions have and will continue to expand in the facility. Potential research spaces, such as automated labs and other research uses, could eventually change the long-term function of the facility. If that happens, the university will explore a new receiving facility at another location. The Penn Avenue facility is served by the university shuttle system, which also serves the greater Bakery Square area.

National Robotics Engineering Center – The 102,000 GSF Lawrenceville-based facility has spurred the growth of the robotics industry in the area and will continue to operate as research-based facility. While the research projects will change at the facility, which is located in the Riverfront Zoning District, and thus may require reconfiguration of the building’s interior and of the exterior yard spaces, changes to the building itself is not expected. The NREC facility does not have significant pedagogic connections to campus and thus is not currently served by the university shuttle system.

PPG Place – Due to the connections to partner organizations and functions Downtown, the university leases 30,500 GSF at 6 PPG for its Finance and Advancement groups; there are no academic or research locations at this site. There are parking accommodations at the facility and the location is also served directly to campus by the Port Authority.

Pittsburgh Technology Center – The 86,000 GSF academic and research facility located on Second Ave houses the Entertainment Technology Center as well as several lab-based programs. And while the site, located in the PTC Specially Planned zoning district, has an approved future expansion site, the addition to the building is not anticipated. The PTC facility is currently served by the university shuttle system, which also connects to the Hazelwood Green development.

WQED – While the university owns the land, it does not own the WQED building, which is located in the same EMI district as the main campus. CMU has leased space office and academic uses in the building from WQED for the last decade. Due to the building’s close proximity to main campus, it is anticipated that this will continue.

4.2 OTHER PITTSBURGH SITES

Hazelwood Green – Carnegie Mellon is particularly excited to work with the development partners on the redevelopment of the former LTV Coke Works facility in Hazelwood. The 178 acre redevelopment project presents a once in a generation opportunity to both provide needed space for research and development as well as to support the rehabilitation of the Hazelwood neighborhood.

In working with the development partners at the site, the university will develop research-based facilities that support the overall mission of the development, while also providing space for university functions that can support campus. And while not the lead in the development activities at Hazelwood Green, the university will continue to be a partner and work with the development

team, the City and the Hazelwood neighborhood to meet the goals of the PLDP for the site, including its build-out and mobility improvements.

Specifically to functions at Hazelwood Green, Carnegie Mellon envisions a technology research hub that includes robotics innovations, advanced manufacturing and related research activities. Due to the geographic separation, it is not anticipated at this time that undergraduate academic and support spaces nor university undergraduate housing would be located at Hazelwood Green.

For more information in Hazelwood Green, visit <https://www.hazelwoodgreen.com/>.



A	Carnegie Mellon University Main Campus	E	National Robotics Engineering Center (NREC), Lawrenceville
B	Hazelwood Green	F	477 Melwood Avenue
C	Pittsburgh Technology Center (PTC), Oakland	G	WQED
D	6 PPG Place, Downtown	H	Warehouse, Penn Avenue, Larimer/Point Breeze



Carnegie
Mellon
University

5.0 10-YEAR DEVELOPMENT ENVELOPES

- 5.1 Proposed Campus Developments
- 5.2 Campus Development Plan
- 5.3 Campus Design Guidelines
- 5.4 Historic Core
- 5.5 North Campus
- 5.6 Craig Street Area

5.1 PROPOSED CAMPUS DEVELOPMENTS

5.1.1 Master Plan Principles

Zoning Code Reference

905.03.D.4 (e) Ten-Year Development Envelope

The IMP shall include a description of the envelope within which development will occur in a ten-year time frame. The development envelope is the maximum amount of development proposed by an institution, which can be supported through impact studies. The intent of this provision is to provide the institution with flexibility regarding the future development potential of its campus, while addressing the potential impacts of that development on the surrounding neighborhoods.

The development envelope shall include the following;

- (1) Location of each potential development site;
- (2) Maximum Floor Area of structures for each potential development site;
- (3) Total Maximum Floor Area for IMP structures;
- (4) Height of possible structures;
- (5) Required setbacks on each parcel;
- (6) Other factors which may affect the size and form of buildings; and
- (7) Total number and location of parking spaces which will occur within a ten-year period.

Underpinning the 2022 IMP, Master Plan Principles inform the direction of the IMP with the intent of maximizing existing assets while also building on contextual strengths. The Master Plan Principles reinforce a sense of place that is unique to Carnegie Mellon University and provide continuity with the institution’s rich architectural and spatial heritage, while allowing for change and innovation as society evolves. The Principles promote an ethos of community, creativity, accessibility and sustainability, and ensure that campus facilities are designed in harmony with nature and surrounding communities.

The 2022 CMU Institutional Master Plan is guided by the below five principles.

Design

- Reinforce the Connection of Design and Values
- Create an Enduring Framework of Campus Spaces
- Develop Campus Buildings that are Timeless

Experience

- Create Memorable Campus Gateways
- Encourage Collaboration Everywhere
- Foster a Lively On-Campus Lifestyle

Mobility

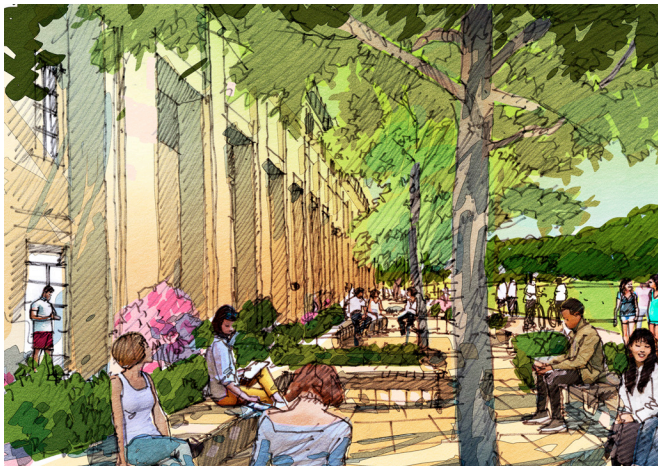
- Expand and Integrate Campus Connections
- Pedestrians>Bikes>Transit>Shared>Single Vehicles

Context

- Nurture S Craig Street as a Great College Street
- Enhance Connections to the City & Schenley Park

Opportunity

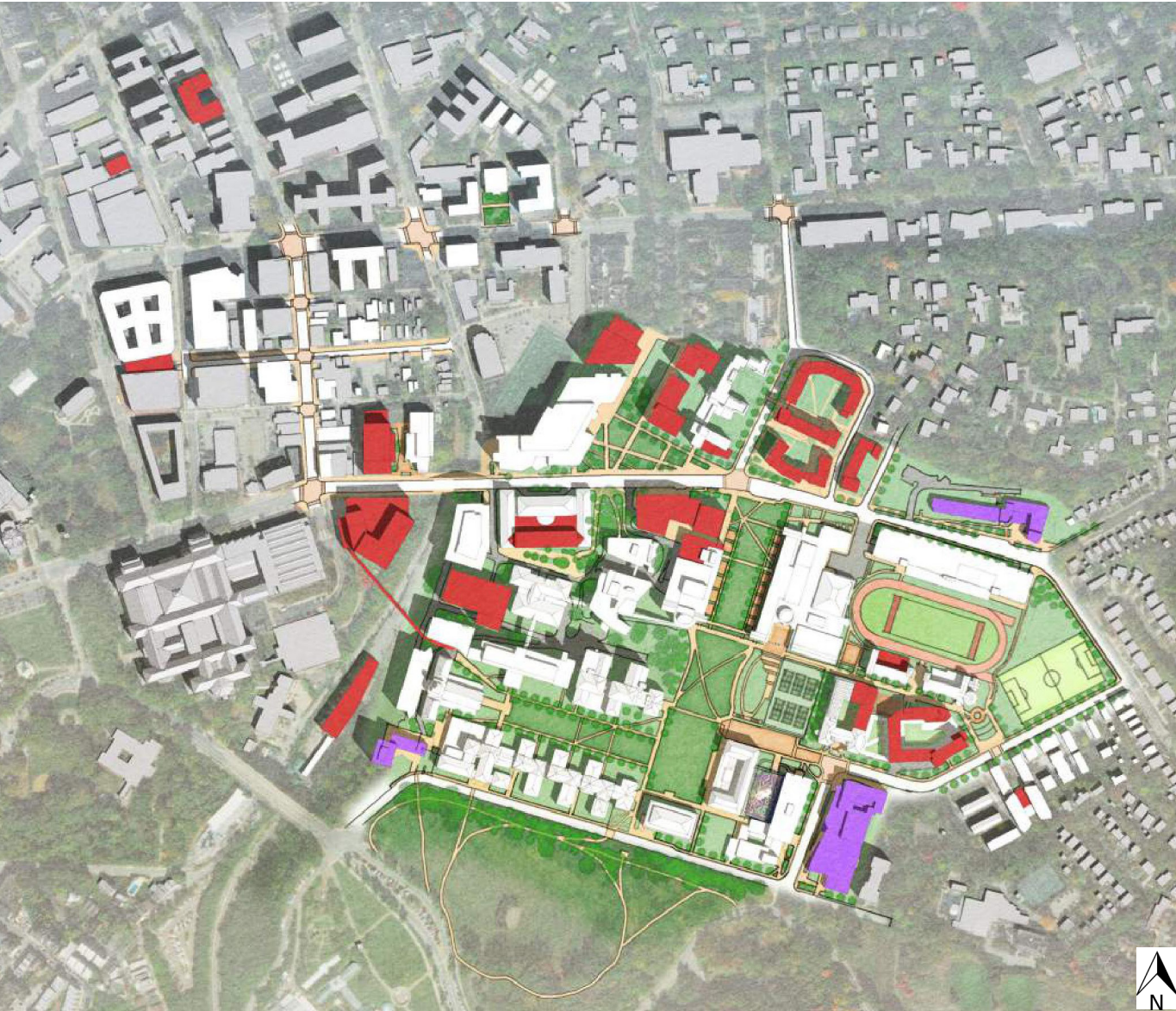
- Utilize Assets for Campus Growth
- Create a Campus that can Respond to a Dynamic Future



The Cut Outdoor Seating

5.1 PROPOSED CAMPUS DEVELOPMENTS

5.1.2 10-Year Development Sites



- Development Sites
- Sites Under Construction

5.2 CAMPUS DEVELOPMENT PLAN

5.2.1 Campus Districts

To implement the projects identified in the 2022 IMP, Carnegie Mellon will identify priorities for implementation based upon the critical space needs of the institution and available funding opportunities. While the 2022 IMP includes building sites that may not be realized over the ten-year span of the document, each proposed development site is intended to meet identified needs of the institution. Further, the 2022 IMP is intended to adapt to the dynamically changing nature of higher education and research and thus embeds flexibility in vision, delivery, financing and schedule. The 2022 IMP provides a planning framework to guide the future regulatory review of prioritized projects while reinforcing the university’s commitment to long-term planning. Each campus district will have different demands and responses to space needs within the planning framework as detailed below.

Historic Core – As the original location of the university, the Historic Core is centered on the two historic campus open spaces, the Cut and the Mall, around which are arranged the university’s engineering, humanities and arts schools. The traditional center of Carnegie Mellon University, the Historic Core is well built-out, and thus opportunities for expansion focus on the reuse of existing buildings or the creation of new development sites by rethinking inefficient and/or older facilities. New buildings will continue to

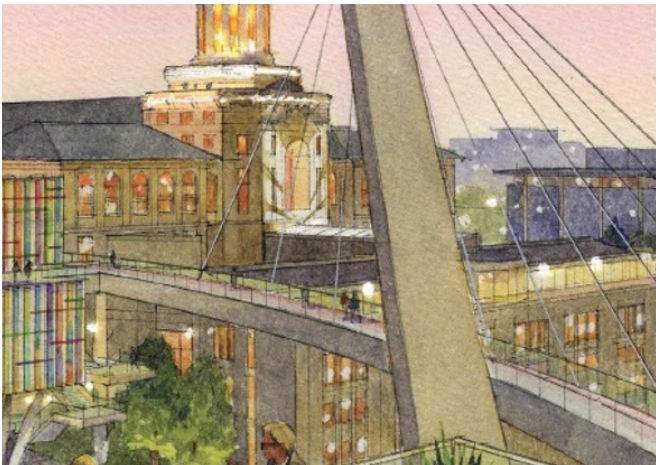
preserve the integrity of the iconic open spaces and its views, and will create a welcoming facade along Forbes Avenue. Future pedestrian bridges connections across Junction Hollow will connect the Historic Core to Craig Street.

North Campus—Building on the recent development of the Tepper Quad, the North Campus will continue to relieve campus space pressure by providing a natural extension to the Historic Core. The North Campus will feature new academic, research and residential facilities centered on the Tepper Quad and will include greater pedestrian connectivity between Fifth and Forbes Avenues. Where new development in the North Campus abuts existing residential areas, designs will mitigate impacts and adhere to Residential Compatibility Standards.

Craig Street Area—An area of mixed-use commercial and residential dotted with institutional buildings, the Craig Street Area has a different context and accordingly development in this district will be urban in nature. While owning properties throughout the district, including two significant parcels along both sides of Forbes Avenue at Craig Street, the university will not be the only active participant in the district. Anticipating continued private development in the area, the university will work with neighborhood partners to ensure that appropriate development enhances the character of the areas and builds connections between Oakland and main parts of campus.



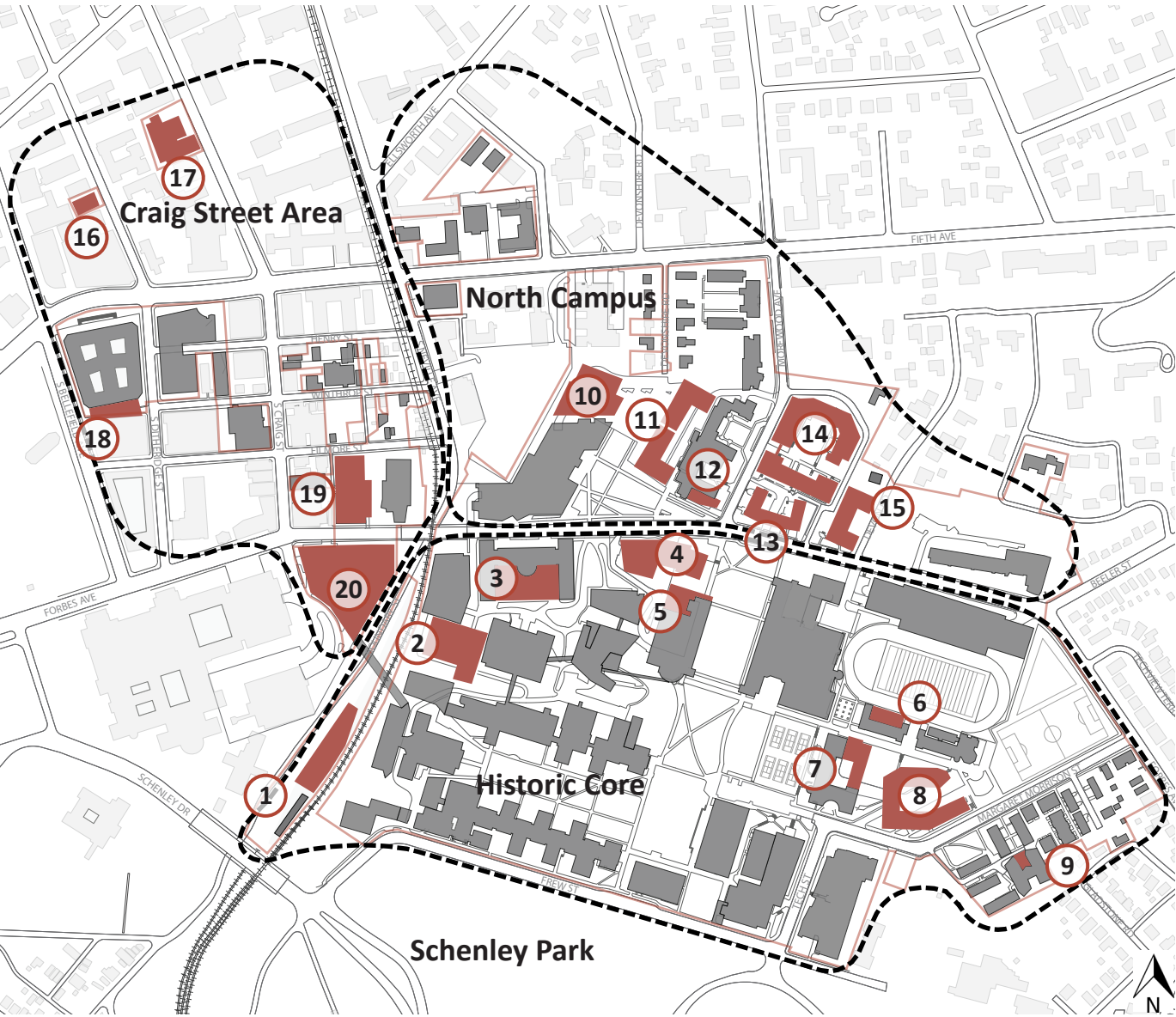
Tepper Quad



Proposed Pedestrian Bridge over Junction Hollow

5.2 CAMPUS DEVELOPMENT PLAN

5.2.2 10-Year Development Sites and Campus Districts



	Carnegie Mellon University Property in 2022 IMP	9	Student Commons
	Carnegie Mellon University Existing Buildings	10	Academic Building
	Campus District Boundaries	11	Mixed Use Building
	Development Sites	12	Student Commons
1	Facilities Operations Center	13	Mixed Use Building
2	Academic Building	14	Student Housing
3	Hamburg Expansion	15	Student Housing
4	Mixed Use	16	Shirley Apartments Renovation
5	Purnell Center Expansion	17	Student Apartments
6	West Wing Addition	18	Mellon Institute Entrance
7	Margaret Morrison Carnegie Hall Expansion	19	Mixed Use Building
8	Academic/Student Housing Complex	20	South of Forbes Site

5.3 CAMPUS DESIGN GUIDELINES

5.3.1 Campus Urban Design Guidelines

Zoning Code Reference

905.03.D.4 (j) Urban Design Guidelines

The IMP shall include design guidelines and objectives for new and renovated buildings and structures to assure their compatibility with supporting neighborhoods and districts and to minimize potential adverse impacts on historic structures and historic districts. Urban design guidelines shall include listings of appropriate materials, height, bulk, massing, and colors that will be used to guide the course of proposed and future development.



The Campus Urban Design Guidelines support and advance the development of the campus as a highly planned environment made up of a variety of buildings and open spaces. The campus and its environs convey the reflection and scholarly purpose in a beautiful, safe, and sociable setting. The original campus – the Historic Core - developed early in the 20th Century, and is organized around the Beaux Arts principles of symmetry with axes connecting monumental buildings and quadrangles edged by architecturally significant structures. Campus landmarks, such as Hamerschlag Hall and the College of Fine Arts, have unique positions creating the terminus of a significant view corridor. The previous campus Master Plans carried these classic design principles forward in the design and siting of new buildings on campus.

Carnegie Mellon University is committed to the preservation and integration of the significant Hornbostel buildings, built between 1900 and 1930, in to the future of campus. Likewise, buildings constructed during Modernist and Post-Modern periods contribute to the campus context as well. Therefore, new buildings on campus, as noted in the Simonds Principles (Appendix C, pages 140 - 145), should be contemporary and of their era, while still being contextual to the overall campus.

Contextual massing, materials, and color will ensure that buildings proposed outside the central core will be designed to display their unique functions through architectural forms and materials that are less historicist in the Hornbostel tradition but still contextual in massing and landscaping.

As each of the three campus districts have unique and different context, each district has specific urban design and development standards. These guidelines, which follow the 10-Year Development Sites for each district, are specific to each district and inform materials, massing and other building standards to develop appropriate developments and to guide the expansion of the campus. Additionally, all building designs are subject to oversight by the university’s Design Review Committee (DRC), made up of faculty, staff and students who review and comment on the designs of consultant architects and engineers. The master plan principles and urban design standards guide the DRC review process and staff at Campus Design and Facilities Development (CDFD) coordinate the work of design consultants and construction contractors in accordance with DRC reviews.

5.3 CAMPUS DESIGN GUIDELINES

5.3.2 Aerial View of Campus 10-year Development Sites



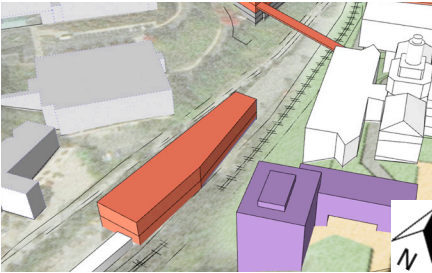
- Development Sites
- Sites Under Construction

5.4 HISTORIC CORE DISTRICT

5.4.1 Historic Core Development Sites

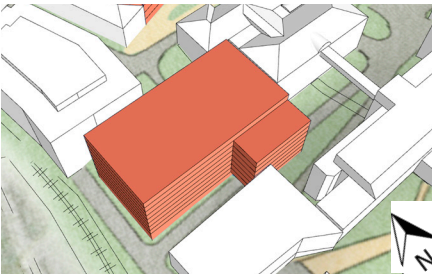
1. Facilities Operations Center

DESCRIPTION	University facilities services center and offices with parking & multi modal trail
USES	Parking, Utility, Office
SQUARE FEET	40,000 gsf (in single or multiple bldgs)
HEIGHT	2 stories / 50 ft
STEPBACKS	None
SETBACK	North: 10 ft from railroad South: 5 ft from property line East: 10 ft from railroad easement West: 10 ft from S Neville
MOBILITY	Up to 135 surface parking spaces May include upgrades to railroad crossing
PUBLIC REALM	Includes trail easement along railroad



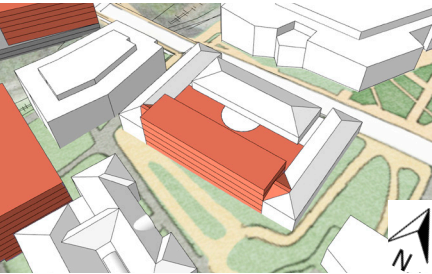
2. New Academic Building

DESCRIPTION	Replacement of existing facilities building with new academic building
USES	Education, Laboratory / Research, Office, Restaurant, Utility
SQUARE FEET	300,000 gsf
HEIGHT	10 stories / 150 ft
STEPBACKS	None
SETBACK	North: 20 ft from RMCIC South: 20 ft from Scott Hall East: 5 ft from Newell-Simon Hall West: 10 ft from RR easement
MOBILITY	Includes Hamerschlag Dr bike boulevard
PUBLIC REALM	Entrance plaza between CIC and Newell-Simon Hall

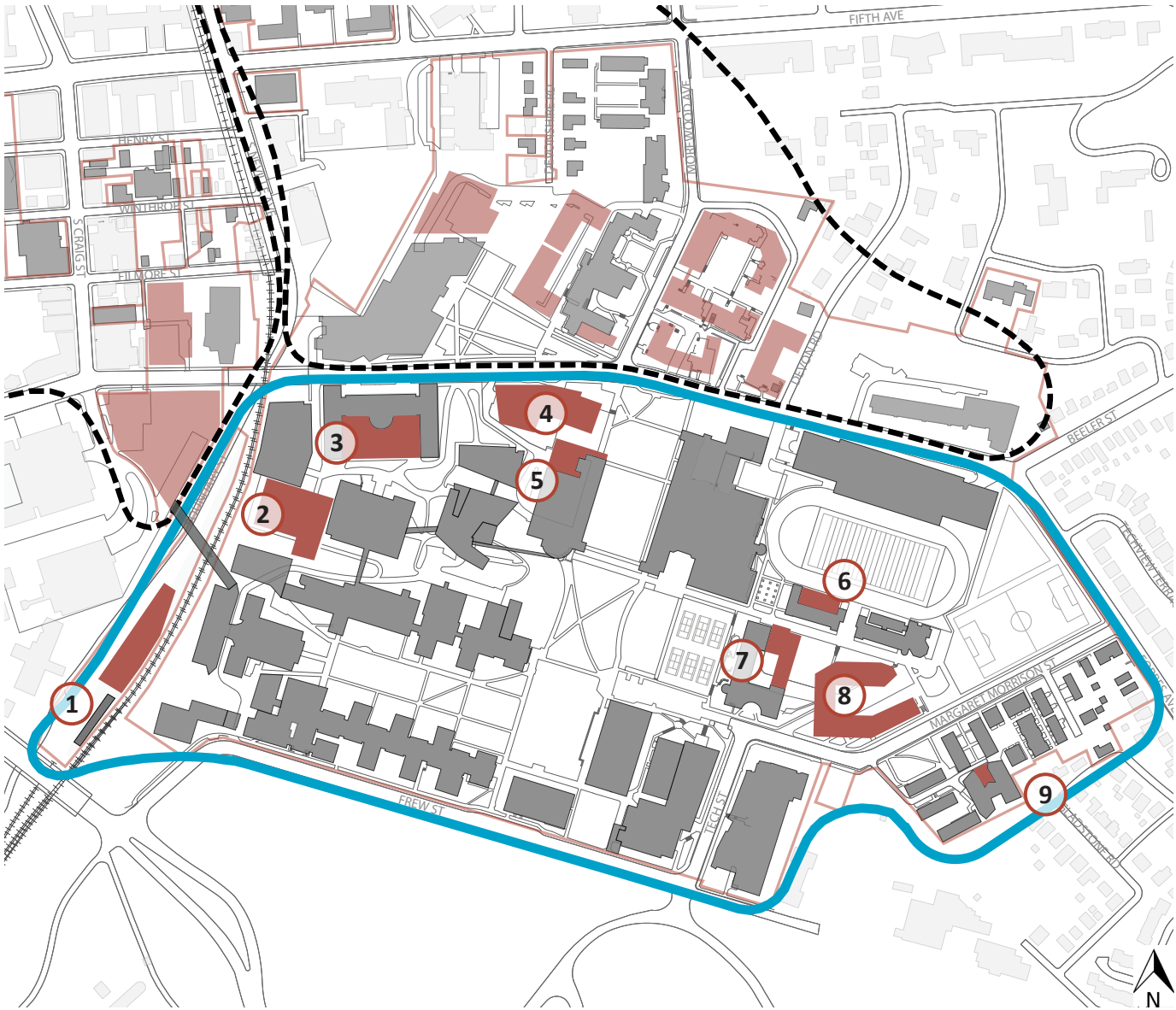


3. Academic Building Expansion

DESCRIPTION	Replacement of Smith Hall with new atrium infill space between buildings
USES	Education, Laboratory / Research, Office, Restaurant
SQUARE FEET	100,000 gsf
HEIGHT	Bldg: 5 stories / 75 ft Atrium: same as Hamburg
STEPBACKS	None
SETBACK	North: adjacent to Hamburg Hall South: match existing Smith Hall East: adjacent to Hamburg Hall West: adjacent to Hamburg Hall
MOBILITY	NA
PUBLIC REALM	Upgrades to Forbes Ave streetscape Upgrades to plaza between Heinz College and Newell-Simon Hall



5.4 HISTORIC CORE DISTRICT

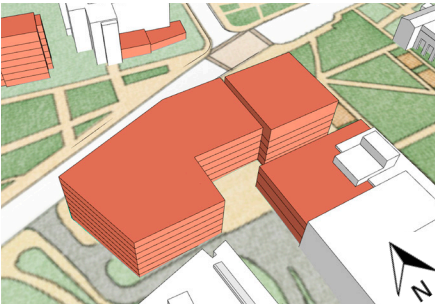


5.4 HISTORIC CORE DISTRICT

5.4.1 Historic Core Development Sites

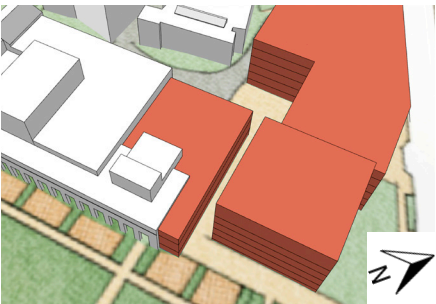
4. New Academic Building

DESCRIPTION	Replacement of Cyert and Warner Halls with new academic building
USES	Education, Laboratory / Research, Office, Parking, Restaurant
SQUARE FEET	250,000 gsf
HEIGHT	7 stories/ 105 ft
STEPBACKS	None
SETBACK	North: match existing Heinz College South: 20 ft from Purnell ext East: match existing Purnell Center West: 20 ft from Heinz College
MOBILITY	Shared loading facility with Purnell Center
PUBLIC REALM	Integration with new BRT station Completion of the Square on Forbes Ave Upgrades to Forbes Ave streetscape



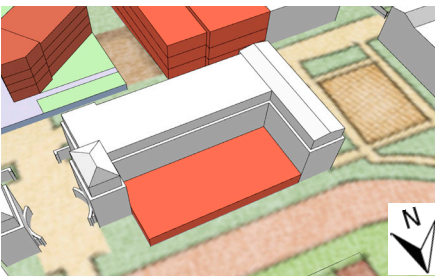
5. Academic Building Expansion

DESCRIPTION	Addition to Purnell Center for School of Drama including new entrance
USES	Education, Laboratory / Research, Office, Public Assembly
SQUARE FEET	30,000 gsf
HEIGHT	3 stories / 50 ft to match the existing building
STEPBACKS	None
SETBACK	North: 20 ft beyond existing building end South: existing building East: existing building West: align with existing building west face <i>Site subject to Residential Compatibility Standards</i>
MOBILITY	Shared loading facility with Site #4
PUBLIC REALM	Includes new outdoor seating on the Cut Includes electronic marquee sign

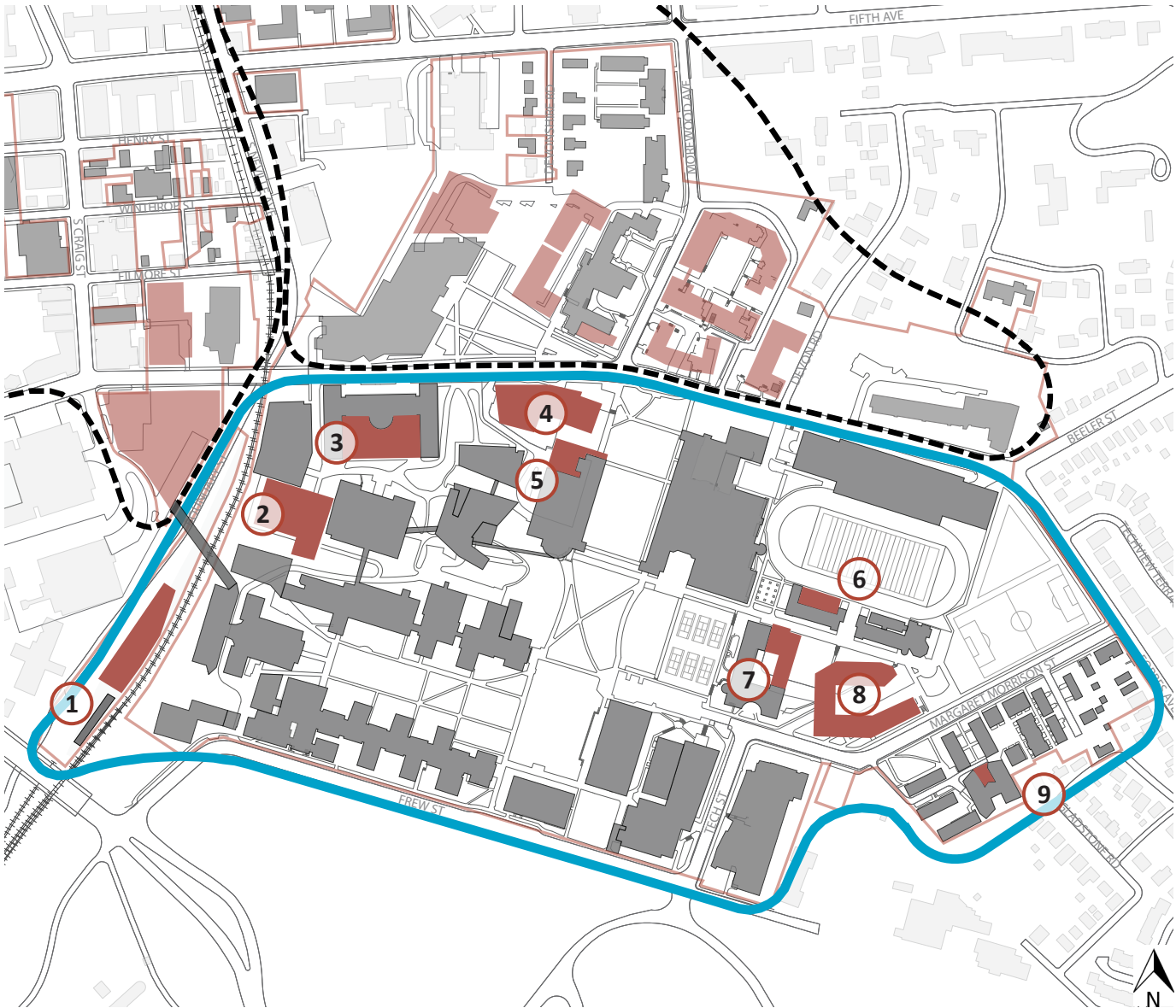


6. Student Support Expansion

DESCRIPTION	Addition to West Wing for student support space
USES	Education, Laboratory / Research, Office, Restaurant
SQUARE FEET	5,000 gsf
HEIGHT	1 story / 15 ft
STEPBACKS	None
SETBACK	North: align w/north wing of West Wing South: 5 ft from West Wing East: adjacent to existing building West: 5 ft from West Wing
MOBILITY	NA
PUBLIC REALM	Provide access to track and field



5.4 HISTORIC CORE DISTRICT

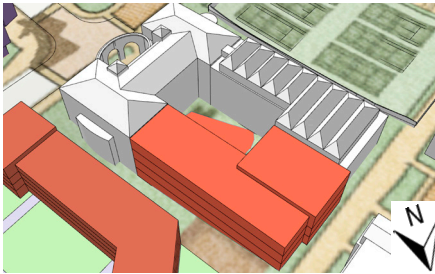


5.4 HISTORIC CORE DISTRICT

5.4.1 Historic Core Development Sites

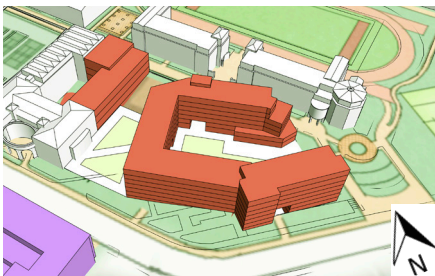
7. Academic Building Expansion

DESCRIPTION	Addition to MMCH for academic use
USES	Education, Laboratory / Research, Office
SQUARE FEET	110,000 gsf
HEIGHT	7 stories (1 below grade) to match existing bldg
STEPBACKS	None
SETBACK	North: match MMCH setback South: adjacent to MMCH East: match MMCH setback West: match MMCH setback
MOBILITY	Integrates dropoff for Children's School
PUBLIC REALM	Includes playground for Children's School New interior courtyard space



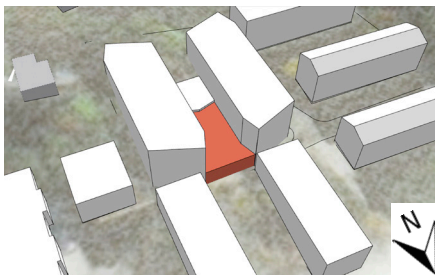
8. New Mixed-Use Building(s)

DESCRIPTION	Replacement of Donner House with up to three mixed use buildings
USES	Education, Laboratory / Research, Office, Parking, Restaurant / Dormitory
SQUARE FEET	266,000 gsf
HEIGHT	7 stories
STEPBACKS	None
SETBACK	North: match MMCH setback South: match MMCH setback East: 20 ft from existing sidewalk West: 30 ft from MMCH <i>Setback 10' from sewer line</i>
MOBILITY	Up to 200 spaces of subsurface parking Includes subsurface district loading facility
PUBLIC REALM	Creates new campus quadrangle Includes North/South pedestrian connections Includes pedestrian improvements to Margaret Morrison St Includes East/West pedestrian connection
HOUSING	Up to 735 beds

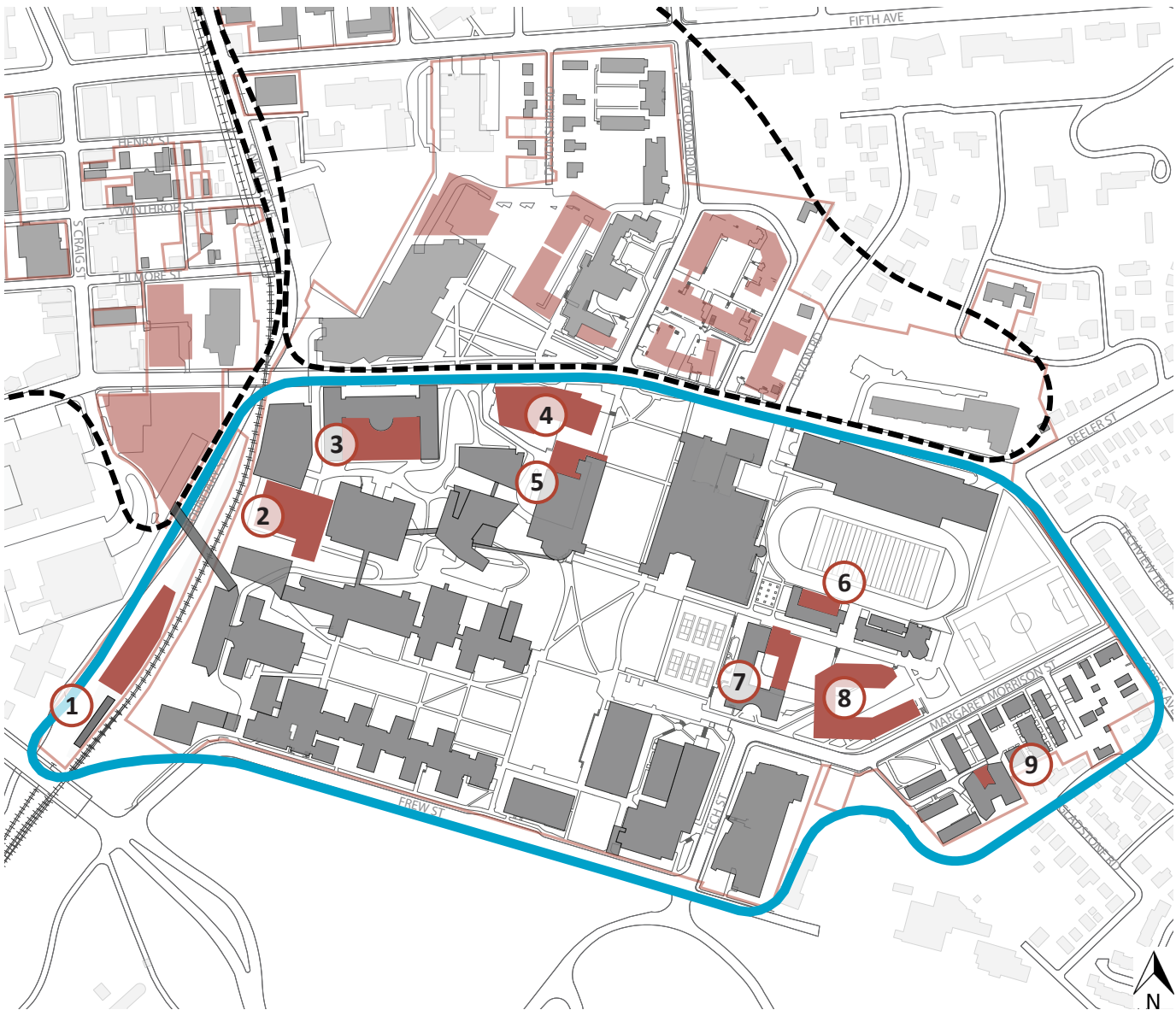


9. Student Support Expansion

DESCRIPTION	Infill ground floor for student support
USES	Office, Restaurant
SQUARE FEET	6,000 gsf
HEIGHT	2 stories/ 25 ft
STEPBACKS	None
SETBACK	North: match Hamerschlag setback South: match Hamerschlag setback East: match Hamerschlag setback West: match Hamerschlag setback
MOBILITY	NA
PUBLIC REALM	New student residential Commons Student courtyard enhancements



5.4 HISTORIC CORE DISTRICT



5.4 HISTORIC CORE DISTRICT

5.4.2 Historic Core Urban Design Guidelines

The Carnegie Mellon University campus is a highly planned environment made up of a variety of buildings and open spaces. It is a 24 hour live-work-play environment for students, faculty, and staff. The campus as a whole is meant to convey an image of reflection and scholarly purpose in a beautiful, safe, and sociable setting. The original campus, developed early in the 20th Century, was organized around Beaux Arts principles of symmetry, axes connecting monumental buildings, and open space quadrangles edged by architecturally significant structures. Certain landmark buildings, such as Hammerschlag Hall, have a unique image and site because of their position at the terminus of a significant view corridor. The 1988 and 2002 Master Plans carried these classic design principles forward in the design and siting of new buildings on campus, primarily in the historic core district.

Building Standards

Siting, Height and Massing

New buildings in the Historic Core will be sited and designed to be compatible with existing adjacent buildings. To provide appropriate area for landscaping and open space, buildings will be designed to maximize natural daylight, and to provide an exterior view and natural ventilation for all occupants. Pitched roofs and flat roofs will be used as appropriate, including green roofs where feasible.

Setbacks and Stepbacks

Buildings within the internal campus will be aligned to form and contain open space of quadrangles or gardens. Buildings on public right-of-ways will generally be aligned with existing adjacent buildings and will allow for architectural expressions. Street-facing buildings will be set back a minimum of ten feet from sidewalks to allow a safe pedestrian environment, including sidewalks, bikeways, street trees, landscaping, and lighting. When appropriate, new buildings will have upper floor setbacks in context with adjacent buildings. Where university property abuts property zoned

Residential, buildings will be set back to equal or exceed the residential compatibility standards in Chapter 916 of the Zoning Code.

Entrances and Transparency

Building entrances in the Historic Core will feature prominent and easily identifiable entrances. Buildings that face public streets will include a main entrance on that street. Buildings fronting internal quadrangle spaces will have a main entrance facing that space. Public areas on the ground floor of buildings will have glazing over the majority of the horizontal frontage between 3 and 8 feet above grade. Buildings may also include restaurant facilities as appropriate; such spaces will include outdoor amenities.

Materials and Composition

New development projects will take special care to select building materials that are complementary to the existing structures in the Historic Core and those immediately adjacent to the development sites. Buildings on the Forbes Avenue side of the district and primarily academic buildings may feature more use of glass and less traditional materials. Residential buildings are more likely to be of traditional masonry construction with punched openings.

Connections across Forbes Ave

Buildings along Forbes Ave in the Historic Core will reflect the urban character and will be designed to respond to buildings, both existing and proposed across Forbes in the North Campus. Building designs will include architectural elements and features, such as entrances and pull-offs, that strengthen the university’s presence on Forbes.

5.4 HISTORIC CORE DISTRICT

Public Realm Standards

Landscape Design

The more-formal nature of the Mall and the Cut will be maintained and augmented as these spaces are an important part of the campus composition. These spaces also serve as informal recreation fields. Smaller spaces in the Historic Core will be more natural in design and will incorporate native species. Best Management Practices (BMP) for storm water management will be incorporated into all landscaping design and construction.

Circulation

Pedestrian walkways shall follow the Open Space Plan (Section 7.0, page 117) and serve to connect new buildings to the campus pedestrian network. Developments along Forbes Ave will expand the university’s new streetscape standards including a raised planting strip between the curb and the sidewalk and minimum 8 foot wide sidewalks.

Furniture and Art

Public art will be a part of all development projects, either in the interior or exterior of the building, as appropriate. Public spaces include pedestrian scaled amenities, furniture, lighting and art and shall be designed to be beautiful and long-lasting.

Transportation Standards

Parking

New parking structures will be either located under buildings or encased in buildings so that impacts on the public realm are minimized. Where parking garage facades may, for reasons of design practicality, face a public street, enhanced architectural features and landscaping will be added to screen and mitigate impacts.

Curb Cuts

To minimize impacts on the pedestrian and bicycle network, curb cuts should be strategically located and, where applicable, consolidated.

Service and Loading

Major development projects will explore opportunities for consolidated waste collection by district as opposed to by building. All service areas are subject to screening standards and shall be screened from pedestrian zones. When appropriate, pull offs may be employed for passenger drop-offs.

Transit Facilities

Buildings that are located along public transit routes may integrate transit facilities; such facilities should be located on the ground floor of the building and should be transparent. New projects facing the Oakland Bus Rapid Transit system will integrate site design and may include ground floor amenities as appropriate.

Bicycles

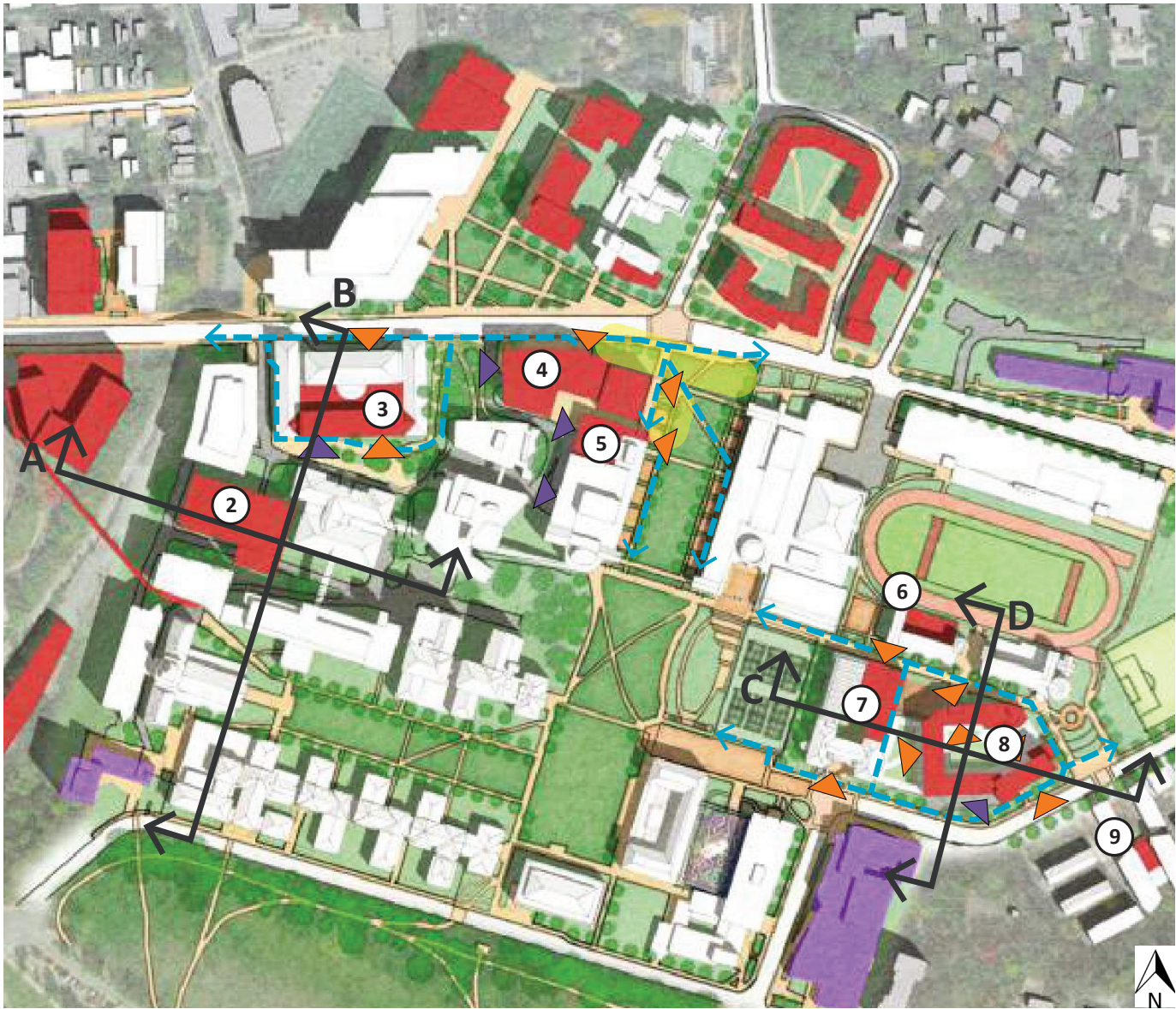
New buildings will include exterior and interior bicycle parking facilities, and will include shower and repair facilities.



Student Sketch of Hammerschlag Hall

5.4 HISTORIC CORE DISTRICT

5.4.3 Urban Design Plan



10-year Development Sites

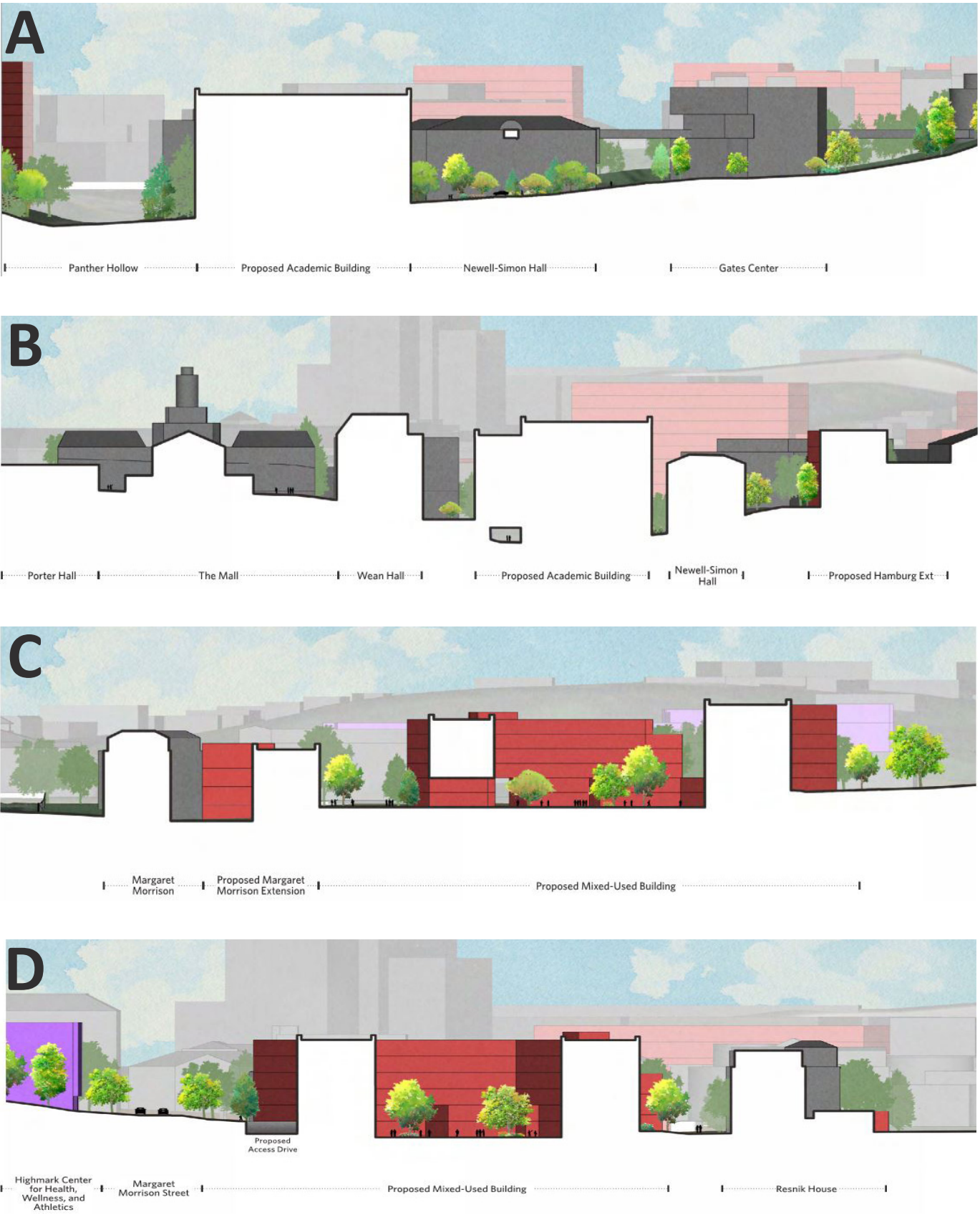
- 2 New Academic Building
- 3 Academic Building Expansion
- 4 New Academic Building
- 5 Academic Building Expansion
- 6 Student Support Expansion
- 7 Academic Building Expansion
- 8 New Mixed-Use Building(s)
- 9 Student Support Expansion

Design Features

- Proposed Buildings
- Circulation Paths
- Primary Entrances
- Service Entrances
- Proposed Public Open Space
- Section Cuts

5.4 HISTORIC CORE DISTRICT

5.4.4 Site Sections

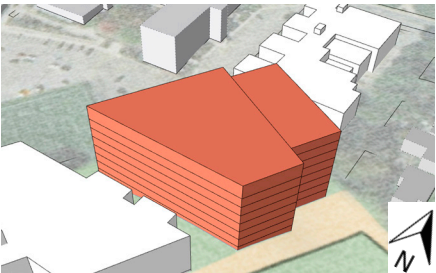


5.5 NORTH CAMPUS

5.5.1 North Campus Development Sites

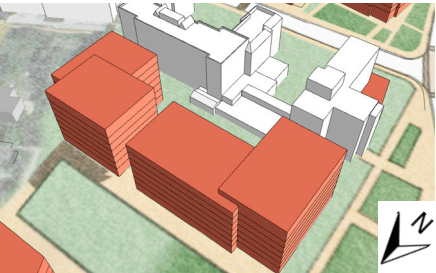
10. Assembly / Administration Building Expansion

DESCRIPTION	Expansion site for Tepper School of Business
USES	Education, Laboratory / Research Office, Parking, Public Assembly, Restaurant
SQUARE FEET	180,000 gsf
HEIGHT	8 stories / 120 ft
STEPBACKS	None
SETBACK	North: 25 ft from WQED Property South: 25 ft from the Tepper Building East: 5 ft on North Green West: 5 ft from top of slope <i>Site subject to Residential Compatibility Standards</i>
MOBILITY	Up to 400 spaces in structure or subsurface Access connection to existing Tepper Building
PUBLIC REALM	Extends North Green beyond Tepper Quad Improves pedestrian connections to WQED



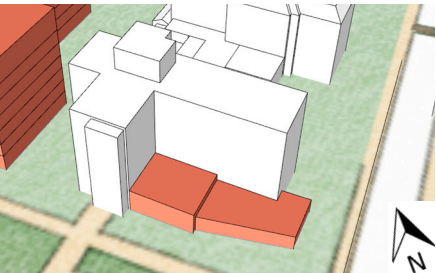
11. New Mixed-Use Building

DESCRIPTION	New mixed use building on existing parking lot
USES	Laboratory / Research, Office, Restaurant / Dormitory
SQUARE FEET	220,000 gsf
HEIGHT	8 stories / 120 ft
STEPBACKS	North: 15 ft from campus drive South: 5 ft from Tepper Quad East: 25 ft from Morewood Gardens West: 5 ft on North Green <i>Site subject to Residential Compatibility Standards</i>
MOBILITY	Up to 200 spaces in structure or subsurface Includes district loading facility
PUBLIC REALM	Extends North Green beyond Tepper Quad Improves pedestrian connections to WQED
HOUSING	Maintains open space of Tepper Quad Up to 500 beds

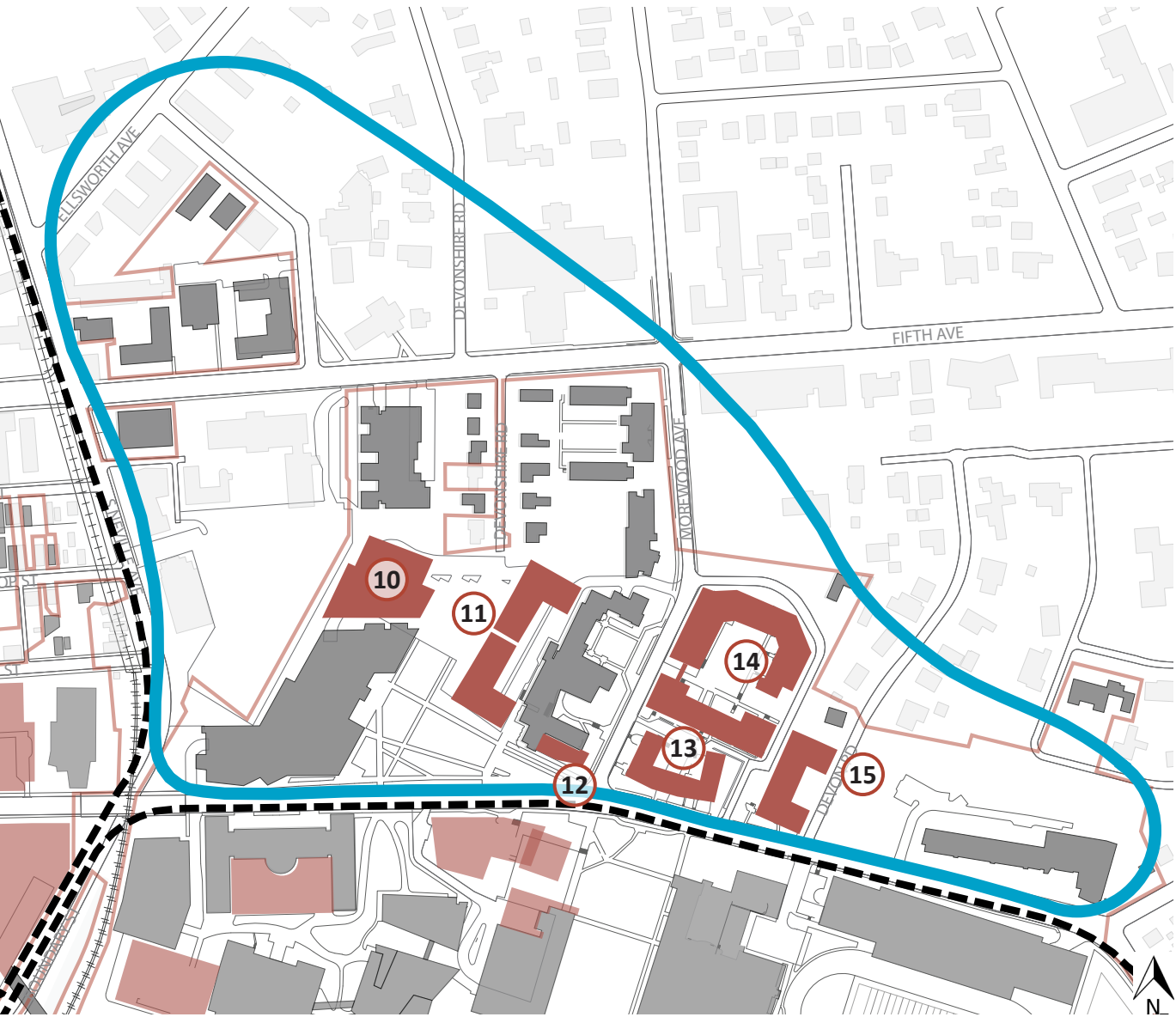


12. E Tower Infill

DESCRIPTION	Infill corner space for student support
USES	Office, Restaurant
SQUARE FEET	6,000 gsf
HEIGHT	3 stories / 50 ft from Forbes + 1 story below
STEPBACKS	None
SETBACK	North: adjacent to Morewood Gardens South: 5 ft from Tepper Quad East: 15 ft from Morewood Ave West: adjacent to Morewood Gardens
MOBILITY	Integration with new BRT station
PUBLIC REALM	Maintains open space of Tepper Quad Upgrades to Forbes and Morewood Ave streetscape



5.5 NORTH CAMPUS

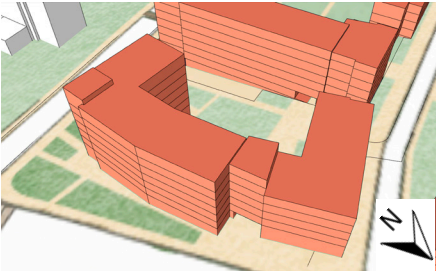


5.5 NORTH CAMPUS

5.5.1 North Campus Development Sites

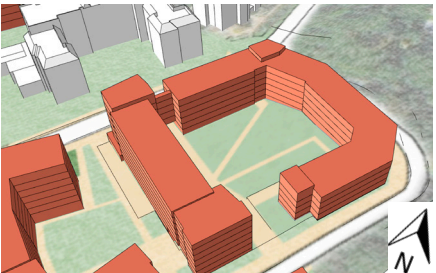
13. New Mixed Use Building

DESCRIPTION	New mixed use building
USES	Education, Laboratory/Research, Office, Parking, Dormitory, Restaurant
SQUARE FEET	200,000 gsf
HEIGHT	8 stories / 120 ft
STEPBACKS	None
SETBACK	North: 20 ft from Greek Housing South: 10 ft from property line East: 10 ft from campus drive West: 10 ft from property line
MOBILITY	Up to 150 structured spaces
PUBLIC REALM	Upgrades to Forbes and Morewood Ave streetscape Creates new campus quadrangle
HOUSING	Up to 300 beds



14. New Residential Building(s)

DESCRIPTION	Replacement of Greek Housing with new Dormitories / Greek Housing
USES	Office, Parking, Student Housing
SQUARE FEET	250,000 gsf
HEIGHT	4-8 stories
STEPBACKS	4 stories at northwest corner
SETBACK	North: 10 ft from property line South: 20 ft from Forbes Avenue building East: 10 ft from property line West: 10 ft from property line <i>Site subject to Residential Compatibility Standards</i>
MOBILITY	Upgrades Morewood Ave streetscape Includes district loading facility
PUBLIC REALM	Creates new campus quadrangle
HOUSING	Up to 720 beds

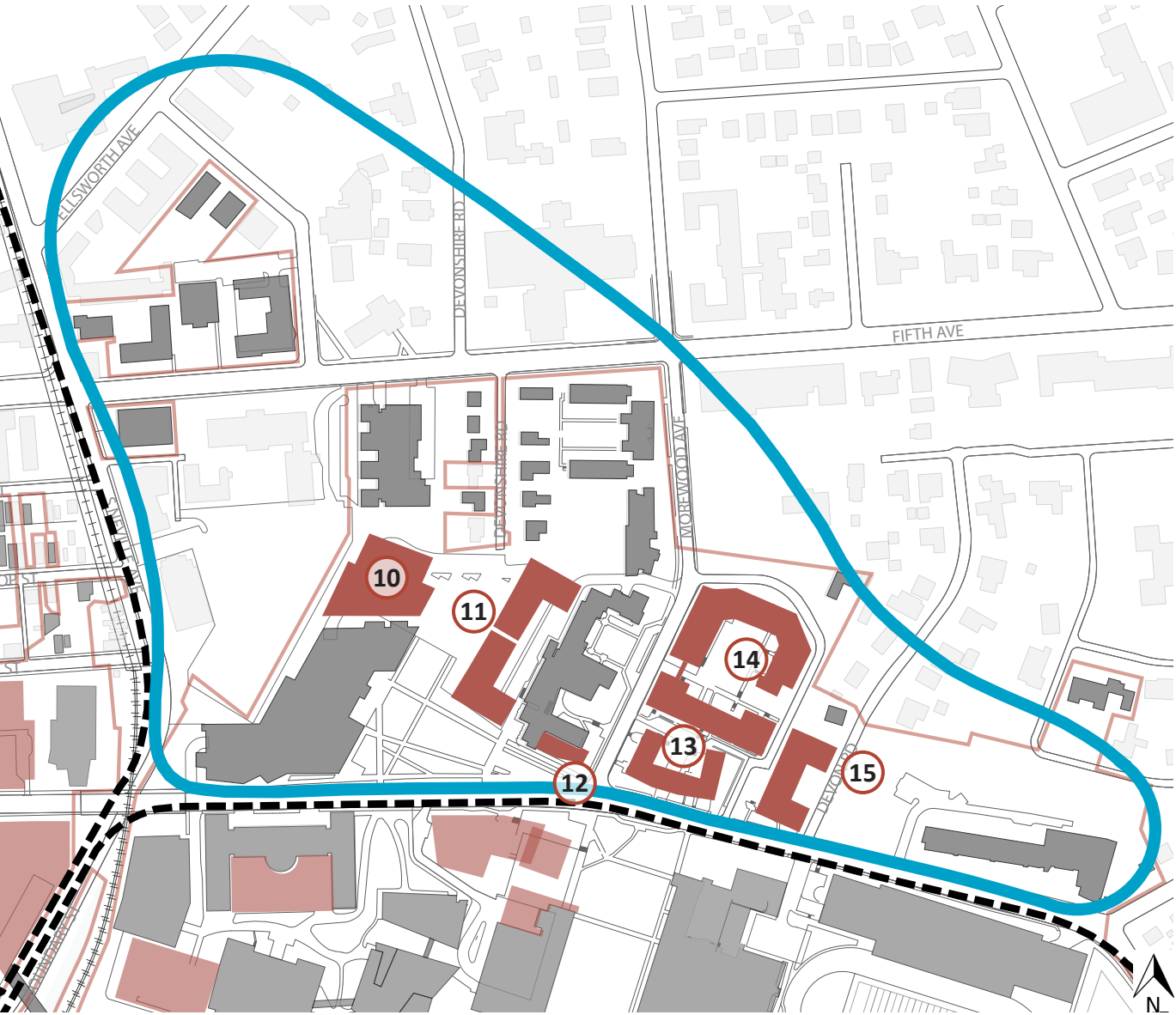


15. New Residence Building

DESCRIPTION	New mixed use building
USES	Dormitory, Office, Parking
SQUARE FEET	40,000 gsf
HEIGHT	4 stories / 50 ft
STEPBACKS	None
SETBACK	North: 20 ft from property line South: 10 ft from property line East: 20 ft from property line West: 10 ft from campus drive <i>Site subject to Residential Compatibility Standards</i>
MOBILITY	No curb cuts on Devon Rd No parking on site
PUBLIC REALM	Upgrades Forbes Ave streetscape
HOUSING	Up to 180 beds



5.5 NORTH CAMPUS



5.5 NORTH CAMPUS

5.5.2 North Campus Design Guidelines

The North Campus will be an extension to the existing Carnegie Mellon campus and will build on the momentum of the development of the Tepper Quad. Much like the Historic Core, the North Campus will include new buildings that frame formal open spaces, including the completion of the Tepper Quad. The North Campus will be collegiate in nature, including academics, classrooms, research, student housing and other university related functions. Existing surface parking will be replaced with both below ground and structured parking resources; there may be small parking courts that serve specific uses.

Building Standards

Siting, Height and Massing

Buildings will frame the Tepper Quad and the future North Green and will be contextual to existing buildings. The height and massing of structures must not only conform to the IMP, but should also respect adjoining buildings.

Setbacks and Stepbacks

Street-facing buildings will be set back a minimum of ten feet from sidewalks to allow a safe pedestrian environment, including sidewalks, bikeways, street trees, landscaping, and lighting. When appropriate, new buildings will have upper floor setbacks in context with adjacent buildings. Additionally, buildings may include architectural features, such as tower elements, that exceed the base height restrictions. Where university property abuts property zoned Residential, buildings will be set back to equal or exceed the residential compatibility standards in Chapter 916 of the Zoning Code.

Entrances and Transparency

Buildings shall feature prominent and identifiable entrances. When buildings face a public street and an Interior campus open space there must

be more than one main entrance. Buildings shall be transparent on ground levels and shall employ fenestration patterns that allow for natural daylight, ventilation and visual interest.

Materials and Composition

Buildings shall employ durable and low-maintenance exterior envelopes. Natural materials are required, proven contemporary materials may also be employed. Buildings facing Forbes should relate to the composition and materials of Hamburg Hall and the Tepper Building. Buildings on the east side of the North Quad should sympathetic to the materials and forms of adjacent residential buildings; those on the west side of the Quad should respect and frame the backdrop of Central Oakland landmarks.

Connections across Forbes Ave

Buildings along Forbes Ave in the North Campus will reflect the urban character and will be designed to respond to buildings, both existing and proposed across Forbes in the Historic Core. Building designs will include architectural elements and features, such as entrances and pull-offs, that strengthen the university’s presence on Forbes.



Tepper Quad and Building

5.5 NORTH CAMPUS

Public Realm Standards

Landscaping

Landscaping should take cues from the space in front of the Hillman Center and the Tepper Quad and should be similar on both sides of Forbes Ave to unify the campus and continue the Forbes Ave pedestrian experience. All landscape development shall incorporate sustainable, low-maintenance materials in an artful manner. Materials that demand excessive water or fertilizer are prohibited.

Circulation

Pedestrian walkways shall follow the Open Space Plan (Section 7.0, page 117) and serve to connect new buildings to the campus pedestrian network. Developments along Forbes Ave will expand the university’s new streetscape standards including a raised planting strip between the curb and the sidewalk and minimum 8 foot wide sidewalks.

Furniture and Art

Public art will be a part of all development projects, either at the interior or exterior of the building, as appropriate. All such installations shall be of high-quality materials and shall be designed to be both beautiful and long-lasting.



Fifth Clyde Residence

Transportation Standards

Parking

To minimize the impacts of surface parking, vehicle parking shall be either underground, structured or in small service courts. Above-ground parking structures shall be designed as buildings and shall not employ horizontal banding. Surface lots should be minimized and shall be in service courts not on major public spaces.

Curb Cuts

To minimize impacts on the pedestrian circulation system, curb cuts should be strategically located and, where applicable, consolidated.

Service and Loading

Service areas are to be treated with consideration, and shall be integrated into the building or in a service court. All service areas are subject to screening standards and shall be screened from pedestrian zones. When appropriate, pull offs may be employed for passenger drop-offs.

Transit Facilities

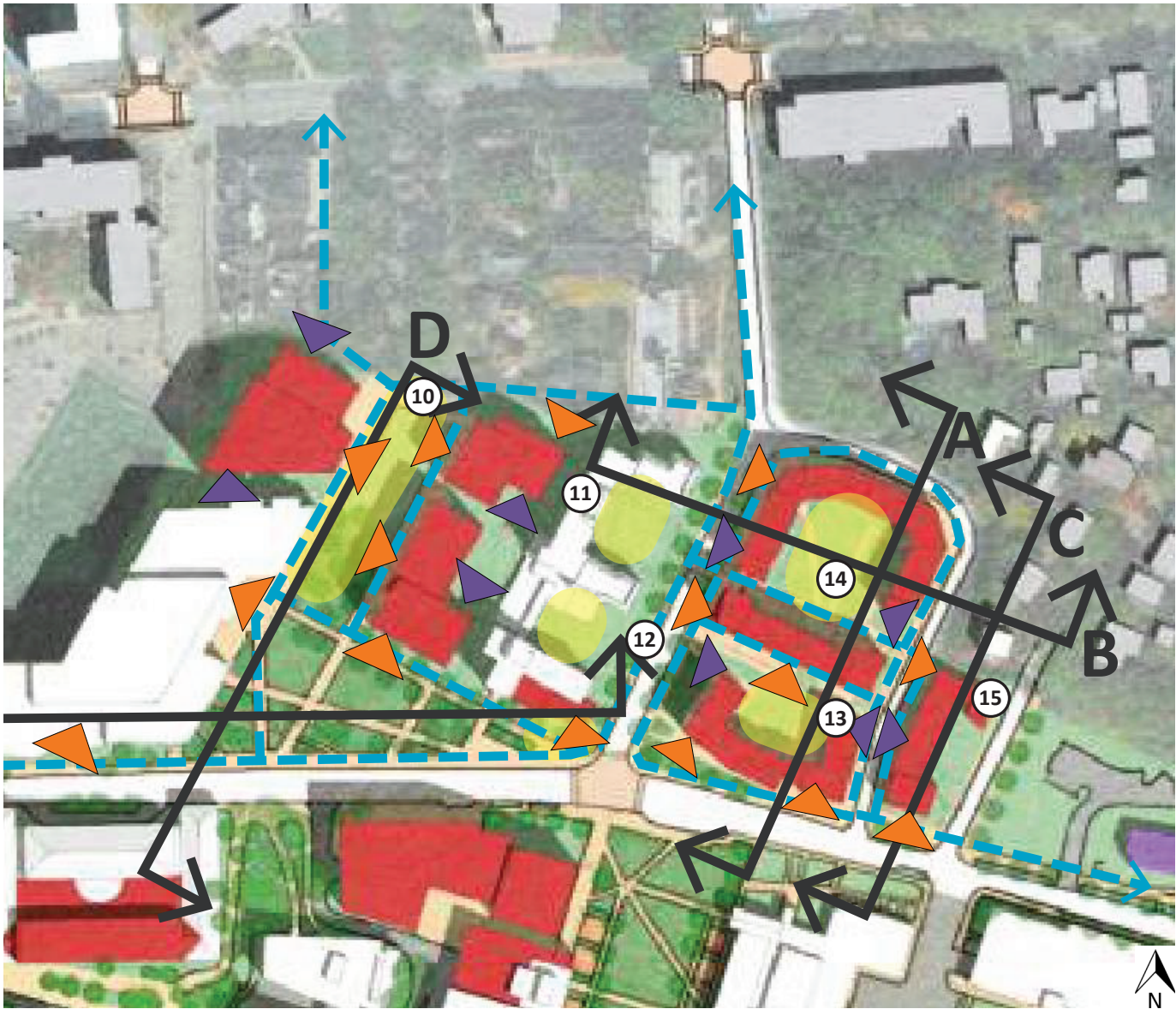
Buildings that are located along public transit routes should integrate waiting facilities where feasible. New developments will integrate site design with the Oakland Bus Rapid Transit network and will include ground floor amenities as appropriate.

Bicycles

New buildings will include exterior and interior bicycle parking facilities, and will include shower and repair facilities.

5.5 NORTH CAMPUS

5.5.3 Urban Design Plan



10-year Development Sites

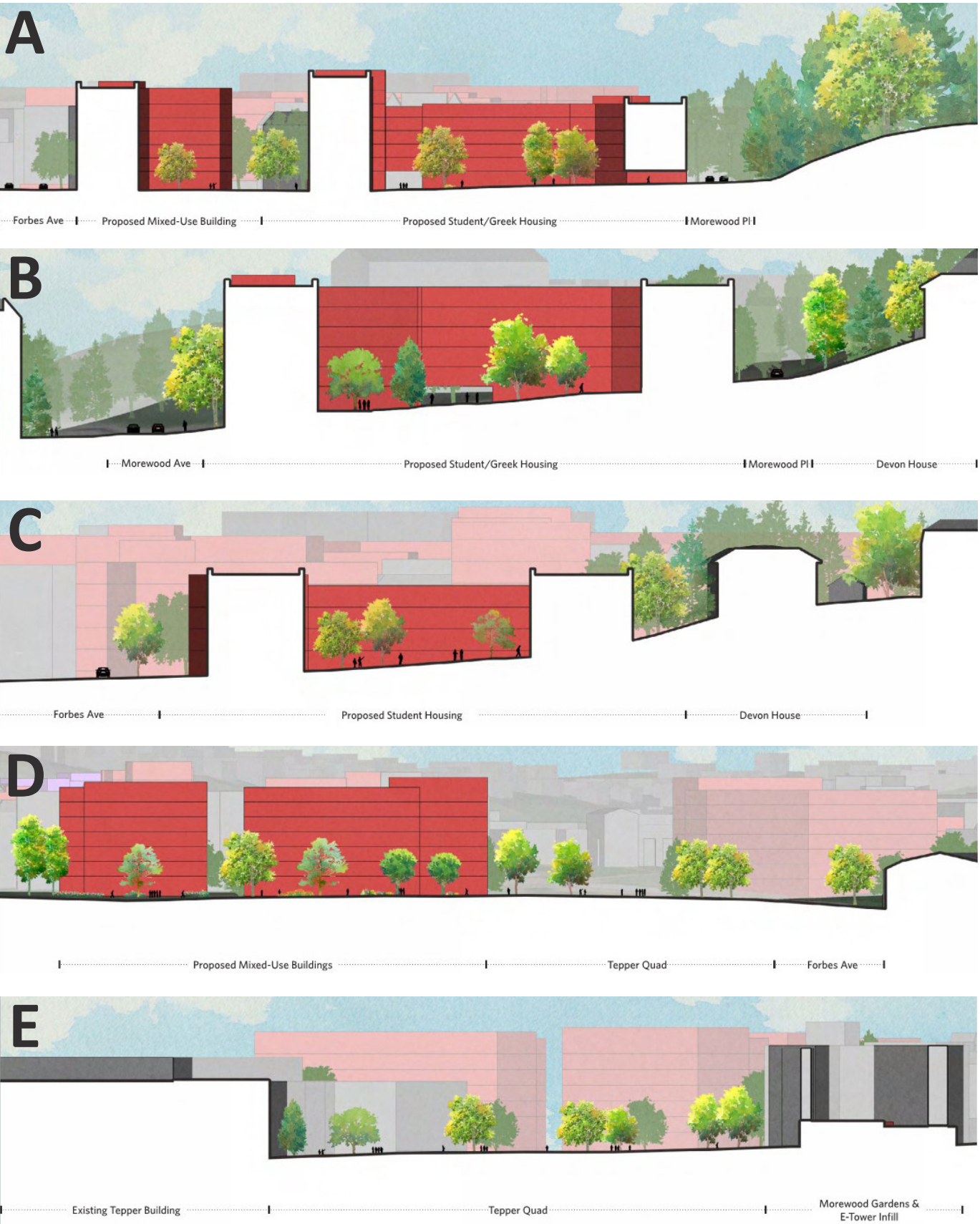
- 10 Assembly / Administration Building Expansion
- 11 New Mixed-Use Building
- 12 E Tower Commons
- 13 New Mixed-Use Building
- 14 New Residential Building(s)
- 15 New Residence Building

Design Features

- Proposed Buildings
- Circulation Paths
- Primary Entrances
- Service Entrances
- Proposed Public Open Space
- Section Cuts

5.5 NORTH CAMPUS

5.5.4 Site Sections

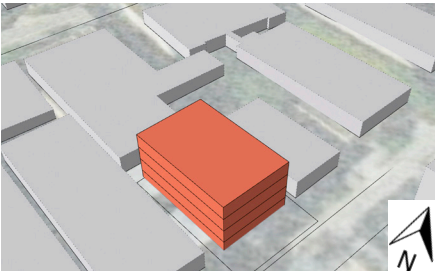


5.6 CRAIG STREET AREA

5.6.1 Craig Street Area Development Sites

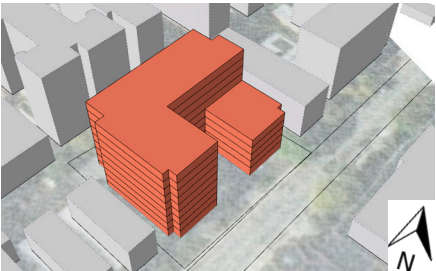
16. Renovate Residential Building

DESCRIPTION	Shirley Apartments Renovation
USES	Office, Dormitory, Parking
SQUARE FEET	20,000 gsf
HEIGHT	4 stories / 50 ft
STEPBACKS	None
SETBACK	North: 5 ft from property line South: 5 ft from property line East: 25 ft from property line West: 0 ft from property line
MOBILITY	NA
PUBLIC REALM	Upgrades to entrance and streetscape



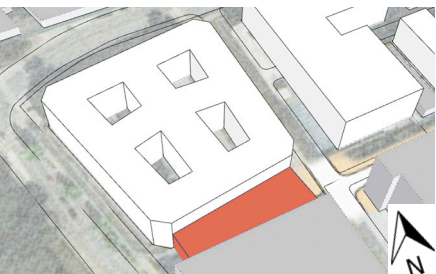
17. New Residential Building

DESCRIPTION	Replacement of Whitfield Hall with new building
USES	Office, Parking, Multi-Unit Residential
SQUARE FEET	160,000 gsf
HEIGHT	9 stories / 150 ft
STEPBACKS	4 stories at north edge
SETBACK	North: 10 ft from property line South: 10 ft from property line East: 25 ft from N Craig property line West: 25 ft from property line <i>Site subject to Residential Compatibility Standards</i>
MOBILITY	Up to 50 structured spaces
PUBLIC REALM	Upgrades North Craig St streetscape
OTHER	Property Zoned Residential Multi-Unit, High Density (RM-H), but it is within 1000 ft of the CMU base EMI district

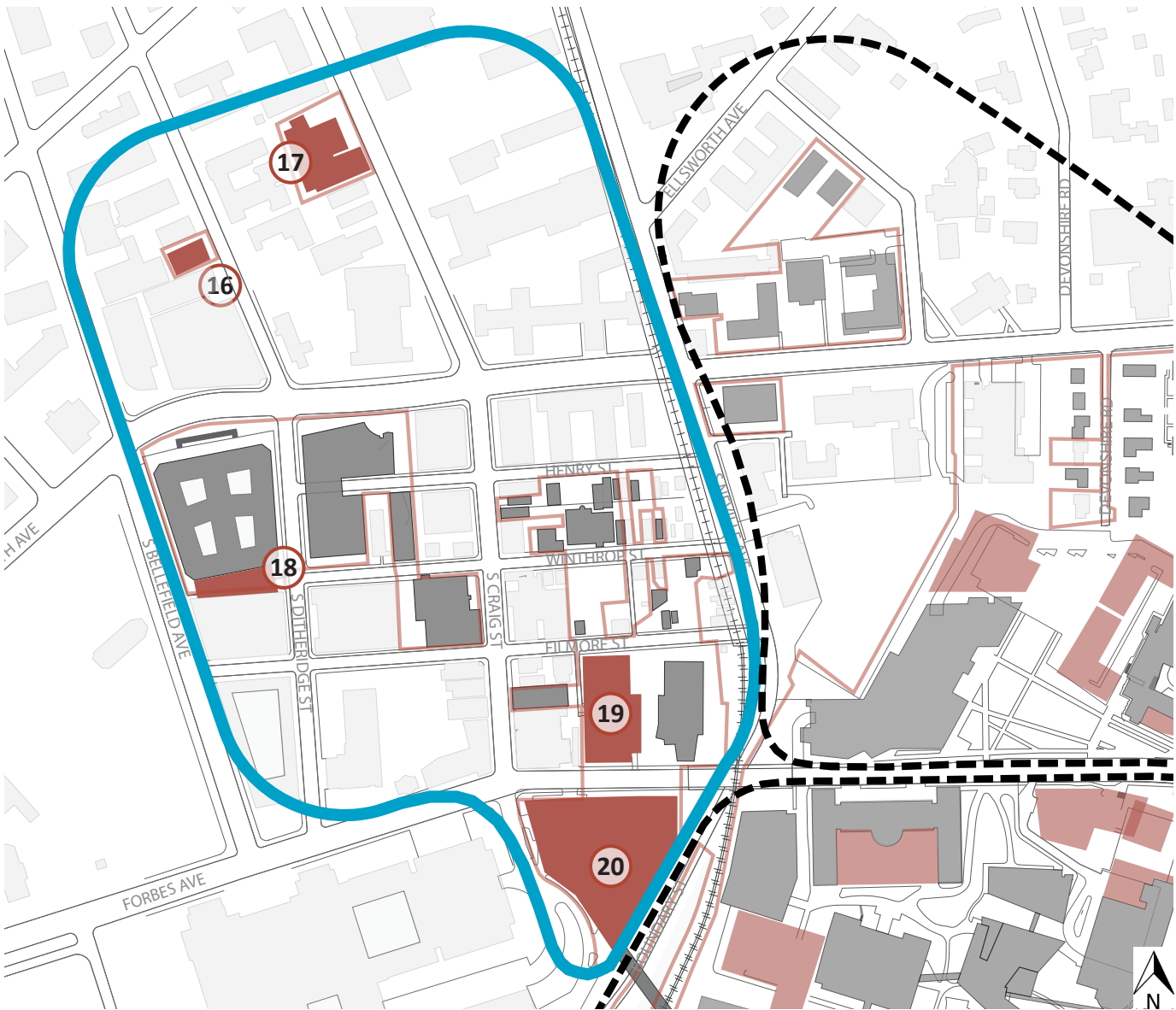


18. Academic Building Expansion

DESCRIPTION	Addition to Mellon for new SW corner entry
USES	Education, laboratory / Research
SQUARE FEET	30,000 gsf
HEIGHT	3 stories / 50 ft
STEPBACKS	4 stories at north edge
SETBACK	North: 0 ft South: 0 ft East: 0 ft West: 0 ft
MOBILITY	Includes loading facility
PUBLIC REALM	Will comply with Oakland Civic Center Historic District standards Upgrades pedestrian connections to South Craig St



5.6 CRAIG STREET AREA

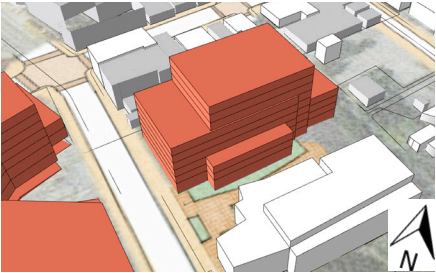


5.6 CRAIG STREET AREA

5.6.1 Craig Street Area Development Sites

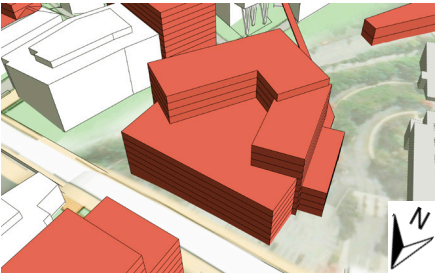
19. New Academic Building

DESCRIPTION	Replacement of GATF with new mixed use building with subsurface parking
USES	Education, Laboratory / Research, Office, Parking, Restaurant, Retail
SQUARE FEET	230,000 gsf
HEIGHT	9 stories / 150 ft
STEPBACKS	4 stories / 50 first 50 ft on Filmore 6 stories / 90 ft first 50 ft on Forbes
SETBACK	North: 15 ft from property line South: 5 ft from property line East: 15 ft from property line West: 5 ft from property line <i>Site subject to Residential Compatibility Standards</i>
MOBILITY	Up to 200 structured spaces
PUBLIC REALM	Extends pedestrian plaza to Filmore St Upgrades Forbes Ave streetscape Includes ground floor public uses

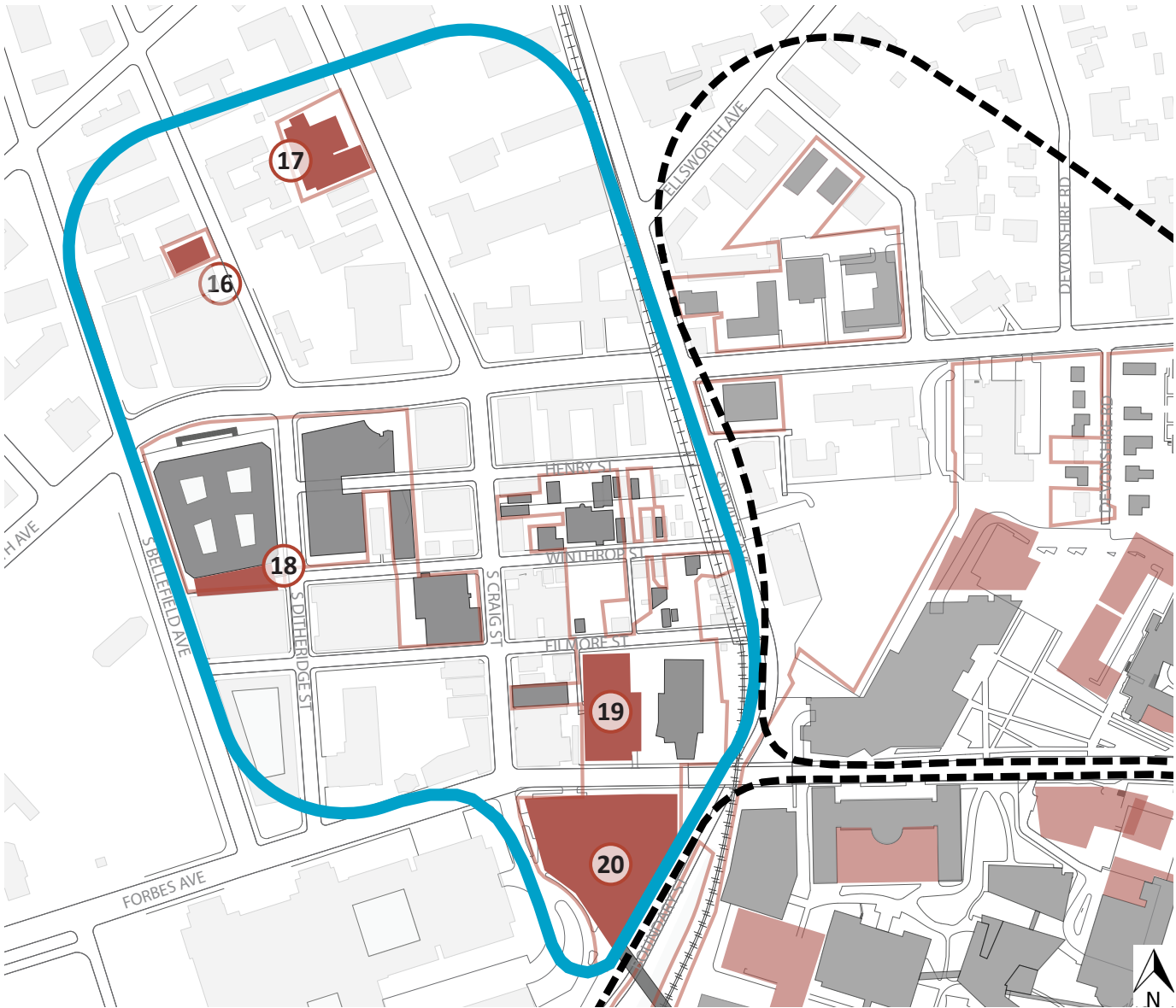


20. New Academic Building

DESCRIPTION	New multiple story building mixed-use development with subsurface parking
USES	Education, Laboratory / Research, Office, Parking, Public Assembly, Restaurant, Retail, Art or Music Studio
SQUARE FEET	425,000 gsf
HEIGHT	9 stories / 150 ft
STEPBACKS	4 stories / 50 first 50 ft on Museum Dr 6 stories / 90 ft first 50 ft on Forbes
SETBACK	North: 5 ft from property line South: 5 ft from Museum Dr East: 15 ft from property line West: 5 ft from Museum Dr
MOBILITY	Up to 500 structured spaces Integrates with BRT station Upgrades Forbes Ave bridge connection No curb cuts from Museum Dr
PUBLIC REALM	Creates pedestrian plaza with Carnegie Museum Upgrades Forbes Ave streetscape May include new pedestrian bridge to campus Includes ground floor public uses



5.6 CRAIG STREET AREA



5.6 CRAIG STREET AREA

5.6.2 Craig Street Area Design Guidelines

University properties in the Craig Street Area represent a significant opportunity for urban development that supports research and technology that supports the S Craig business district as well as the mix of uses in the area. This area allows for a transition from the academic buildings of campus to a denser, more-urban context. As the Craig Street Area supports both the university and its partners, uses include traditional office, academic and research uses with active ground floor retail and restaurants.



TCS Hall



Mellon Institute

Building Standards

Siting, Height and Massing

Buildings shall maintain the Forbes streetwall between grade and the fourth story and shall include wider sidewalks between the Forbes Ave bridge and S Craig St. The height and massing of structures must not only conform to the IMP, but should also respect the urban context of the Craig Street area. Building mass directly on Forbes shall not be taller than 6 stories; taller buildings above the frontage heights are required to be stepped back. Additionally, buildings may include architectural features, such as tower elements, that exceed the base height restrictions.

Setbacks and Stepbacks

Taller buildings above the frontage heights are required to either be stepped further back from established build-to lines and/or be stepped back from the main plain of the building. Architectural features are permitted that comply with the stepback requirements.

Entrances and Transparency

All buildings shall feature prominent and identifiable entrances on Forbes Ave and/or S Craig St. Ground floor active uses shall have direct access to the sidewalk and not to interior lobby spaces. Buildings shall be transparent on ground levels and shall employ fenestration patterns for natural daylighting and ventilation, as well as visual interest.

Materials and Composition

As all buildings in this district may not be built by Carnegie Mellon, it is especially important that all buildings shall employ durable, tested and low-maintenance envelopes and systems, including natural materials as well as proven state-of-art contemporary systems.

5.6 CRAIG STREET AREA

Public Realm Standards

Landscaping

Open spaces in the Forbes and Craig area will serve to transition from campus. Development on the south side of Forbes shall include an appropriately scaled open space to compliment the open space of the Carnegie Museum. New developments shall continue the Forbes Ave streetscape and connections shall be pedestrian-scaled and open to the public. Plantings that demand excessive water or fertilizer are prohibited.

Circulation

Pedestrian walkways shall connect the new buildings to the campus and the business district. Sidewalks should be wide enough for circulation and have seating. Sidewalks along Forbes Ave are to be wide enough to accommodate pedestrians and shall be a minimum of 8 feet wide. . A pedestrian bridge over the railroad may be employed to connect to campus.

Furniture and Art

Public art will be a part of all development projects, either at the interior or exterior of the building, as appropriate. All such installations shall be of high-quality materials and shall be designed to be both beautiful and long-lasting.



TCS Hall

Transportation Standards

Parking

To minimize the impacts of surface parking facilities, vehicle parking shall be underground to the maximum extent possible. The creation of parking resources that serve that business district shall be included.

Curb Cuts

To minimize impacts on the pedestrian circulation system, curb cuts should strategically located, where applicable, consolidated. Only one curb cut is permitted on either side of Forbes between S Craig and the bridge.

Service and Loading

Service areas are to be treated with care to avoid negative impacts on adjoining properties and when possible, shall be integrated into the building or located in a service court behind the building. All service areas are subject to the screening standards and shall be screened from the general pedestrian zones. When appropriate, pull offs may be employed for passenger drop-offs.

Transit Facilities

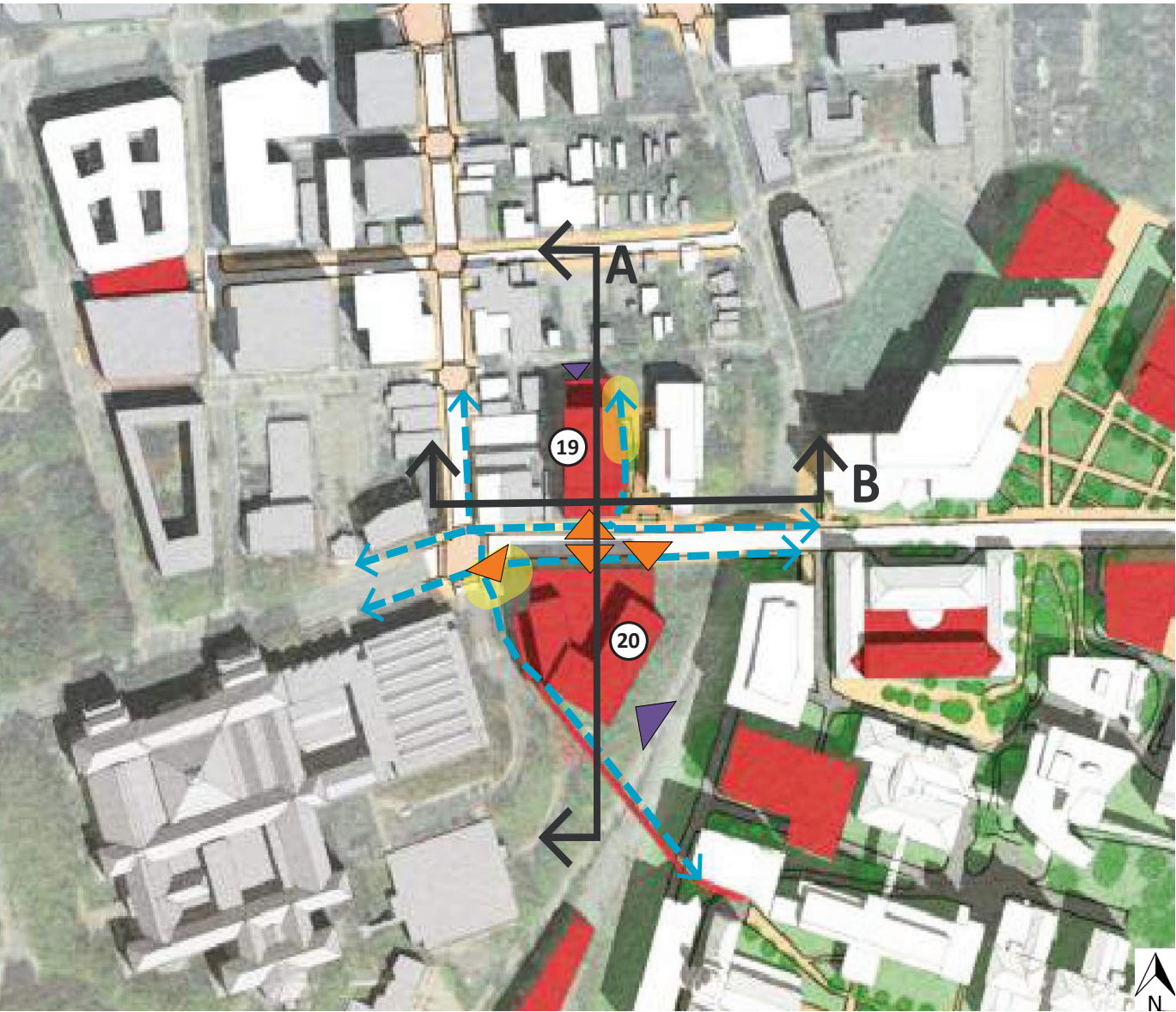
Buildings that are located along public transit routes should integrate waiting facilities where feasible. New developments will integrate site design with the Oakland Bus Rapid Transit network and will include ground floor amenities as appropriate.

Bicycles

New buildings will include exterior and interior bicycle parking facilities, and will include shower and repair facilities.

5.6 CRAIG STREET AREA

5.6.3 Urban Design Plan



10-year Development Sites

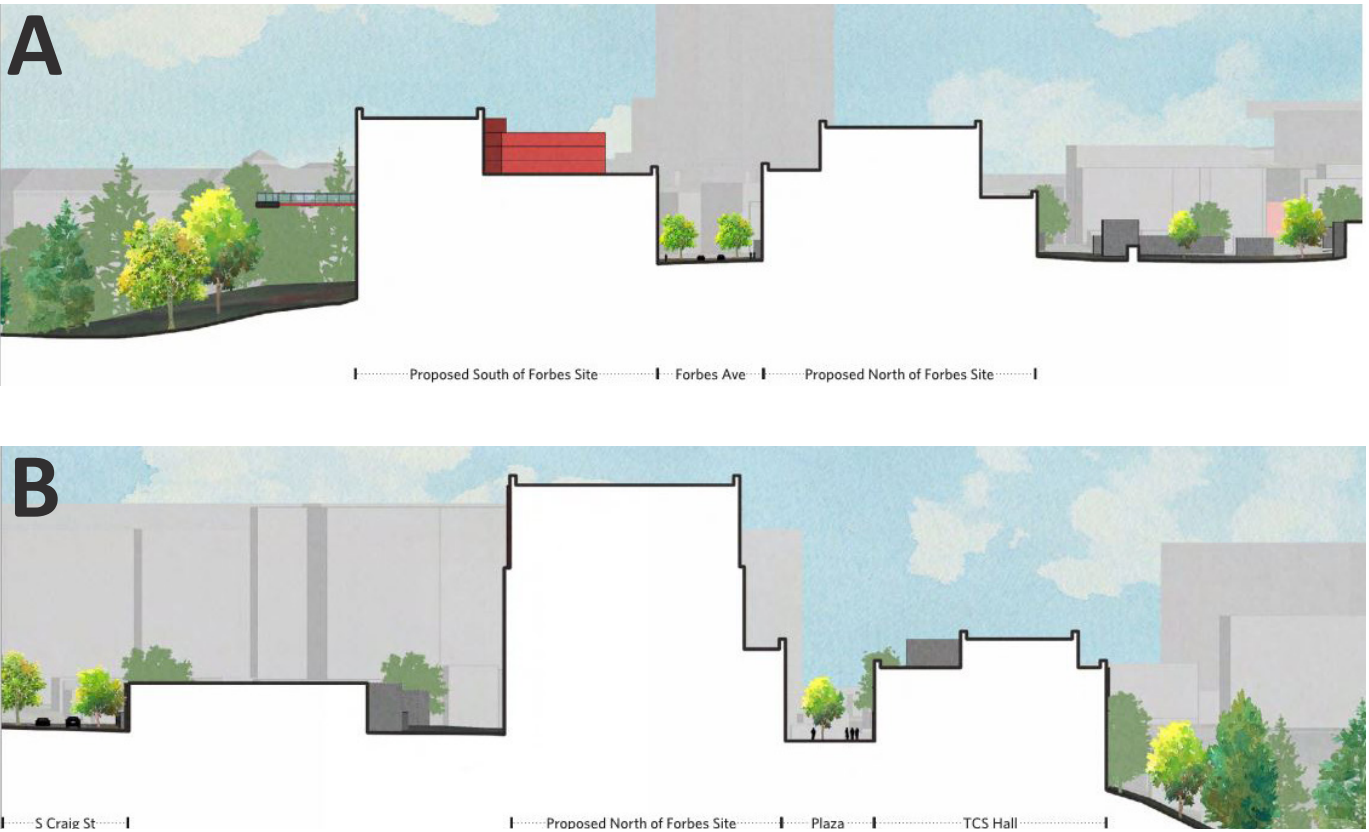
- 19 New Academic Building
- 20 New Academic Building

Design Features

- Proposed Buildings
- Circulation Paths
- Primary Entrances
- Service Entrances
- Proposed Public Open Space
- Section Cuts

5.6 CRAIG STREET AREA

5.6.4 Site Sections





6.0 MOBILITY PLAN

- 6.1 Existing Conditions
- 6.2 Mobility Goals
- 6.3 Mobility Proposal

6.1 EXISTING CONDITIONS

6.1.1 Existing Conditions

Zoning Code Reference

905.03.D.4 (g) Transportation Management Plan

The IMP shall include a transportation and parking management plan, based on the results of the transportation study that identifies any traffic mitigation measures to be employed.



Carnegie Mellon’s Mobility Plan considers how users will travel to and from the university for the next decade, informed by the projects within this plan’s 10-year development envelope. Increased capacity for growth will be provided through multi modal solutions and transportation demand management (TDM) mitigation to minimize single occupant vehicle (SOV) increases. This plan draws on the findings from the master plan’s Traffic Impact Study (TIS) through the City of Pittsburgh’s Department of Mobility and Infrastructure (DOMI)’s planning process, as well as the TDM plan and the Alternative Access and Parking Plan in the appendices. This mobility plan meets or exceeds Department of City Planning (DCP)’s Pittsburgh District 2030 Performance Targets.

Carnegie Mellon’s historic academic core is largely car free, but most residence halls and some academic, athletic, administrative, and support facilities within its EMI district are adjacent to city streets. The EMI district is within the city neighborhoods of Squirrel Hill, Oakland, and Shadyside. Campus mobility is intertwined with the fabric of these neighborhoods, as students, faculty, and staff maintain close academic, commercial, and recreational ties. Robust connections exist between these neighborhoods through a variety of modes, including walking, biking, transit use, ride share, personal mobility, and driving, though they are somewhat impeded by limited connections across Junction Hollow, gaps in the bicycle network, low parking availability, and vehicular conflict points. Carnegie Mellon operates its own shuttle

service that complements existing Port Authority transit service; university ID card holders can use both at no charge. As a result, the majority of campus users use alternative means to commute to campus versus cars. Two percent of students and 38 percent of employees drove and parked on campus (2018 Parking and Commuting Study).

The existing transportation network is detailed in Section 2.0 Existing Conditions with the following maps.

- 2.2.5 Bike and Pedestrian Network (page 24)
- 2.2.6 Transit and Shuttle Network (page 25)
- 2.2.7 Parking Facilities - CMU Campus (page 26)
- 2.2.8 Parking Facilities - Surrounding Areas (page 27)

CMU coordinates transportation management with accessibility and Universal Design. The Universal Access Committee (UAC) is tasked with ensuring university compliance with all applicable federal, state, and local statutes and codes related to accessibility, as well as working to eliminate barriers to access across the CMU campus.

The Committee has three interrelated concerns: accessibility of university facilities, digital accessibility, and accessibility of university programs and services. The committee is charged with the development of a system for regularly assessing and evaluating the campus environment in these three areas and with developing a plan for prioritizing and systematically addressing ongoing improvements, while balancing costs and impact.

6.1 EXISTING CONDITIONS

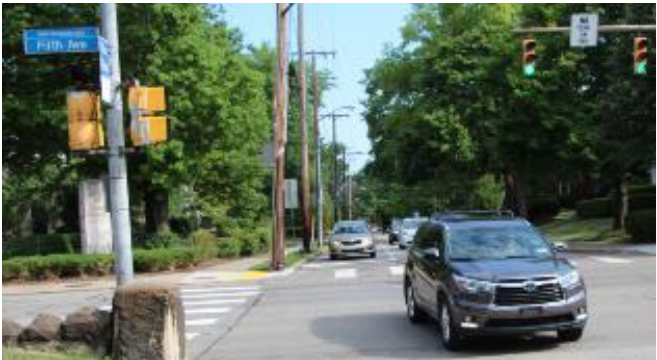
6.1.2 Ongoing Projects



Port Authority of Allegheny County
Bus Rapid Transit (BRT)



Pittsburgh Parks Conservancy
Upgraded Park Access
New Park Entrance
Frew/Tech/Margaret Morrison Neighborway
Tech and Schenley Intersection Improvements



City of Pittsburgh
Fifth and Morewood Intersection Improvements
Trail Connection to River
Frew/Tech/Margaret Morrison Neighborway



Craig Street
CMU Parking for Businesses
Streetscape/Lighting Improvements



Innovation Pittsburgh
Forbes Avenue Bridge Improvements

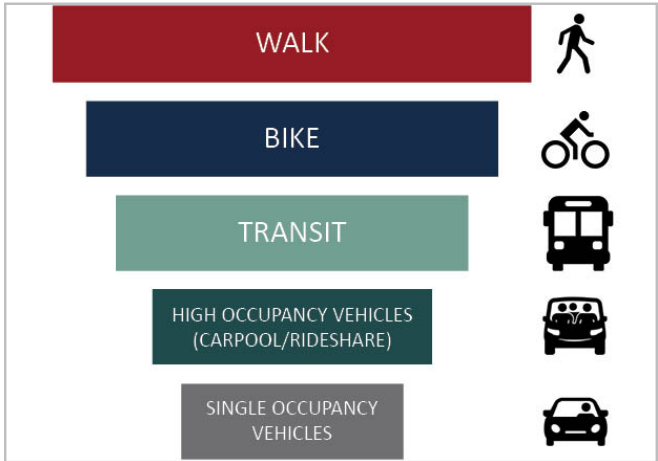


Southwestern Pennsylvania Commission
S Neville Railroad Crossing Improvements

6.2 MOBILITY GOALS

6.2.1 Mobility Vision

Focusing on people over vehicles and flexibility over status quo, Carnegie Mellon’s mobility vision is to foster convenient, connected, and intuitive mobility inclusive of all campus users through sustainable strategies that inherently encourage alternatives to single-occupant vehicle (SOV) use. This will be achieved by following a modal hierarchy that prioritizes walking, biking, transit, carpooling, ridesharing, and finally driving (see diagram below). The university will also establish virtual commuting options for eligible staff, such as work from home and hybrid scheduling, to reduce the need for commuting where feasible. This mobility vision is intended to be consistent with city plans and policies and achievable through stated mobility goals. Alternatives will be defined and implemented through a transportation demand management (TDM) program.



CMU Modal Hierarchy



Proposed Widened Sidewalk on Fifth Avenue

Walk: Pedestrian Improvements will include new and improved pathways and connections to better join the campus with the surrounding neighborhoods and area amenities while increasing pedestrian safety and comfort.

Bike: Bicycle improvements will include adding bicycle amenities and building additional bicycle infrastructure to increase network connectivity and convenience to help achieve modal parity. The university will incorporate applicable bicycle friendly best practices and consider complementary improvements for alternative wheeled mobility.

Transit: Transit improvements will build on the Port Authority’s planned Bus Rapid Transit network and be made through partnerships with current and future Oakland-area mobility and shuttle operators to improve efficiency and expand the service area.

High Occupancy Vehicles: Carpool and rideshare improvements will promote multi-occupant vehicle use through creation of a carpool program and designation of rideshare loading areas.

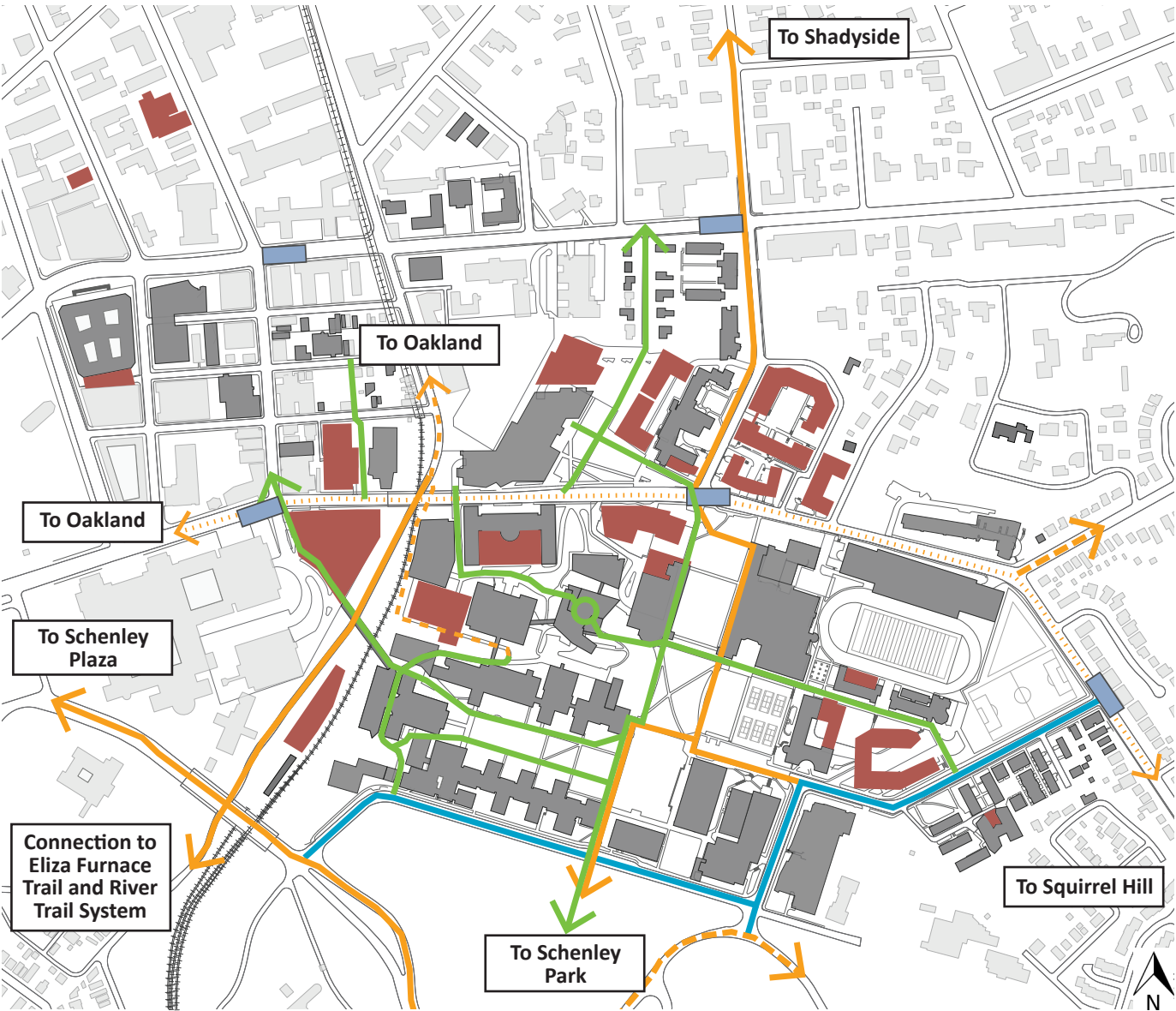
Single Occupancy Vehicles: Automobile improvements will be designed to help reduce vehicular conflicts and improve safety in and around campus.



Sidewalk Improvements

6.2 MOBILITY GOALS

6.2.2 Proposed Network Improvements



- Carnegie Mellon University Existing Buildings
- Development Sites
- Shared Path - Pedestrians/Bikes
- Cycle Track
- • • Bike Lanes
- Neighborway
- - - Shared Street - Bikes/Vehicles
- BRT Stations

6.3 MOBILITY PROPOSAL

6.3.1 Overview

Carnegie Mellon has defined targeted mobility goals to achieve the university’s vision of decreasing its Single Occupancy Vehicle (SOV) commuters and to support its planned growth sustainably. The intent of these goals is to be measurable and implementable, consistent with policies adopted by the city.

- Implement Transportation Demand Management (TDM). Carnegie Mellon will develop a TDM program and monitor its effectiveness to help reduce reliance of SOVs to achieve its mode share goals.
- Provide No Net New Parking. Carnegie Mellon will commit to a no net new parking goal by removing surface lots where feasible, building only targeted new parking at new development sites at a reasonable size, leasing parking at external sites where opportunities become available, and using TDM to mitigate demand for new parking.
- Achieve Mode Share Targets. Carnegie

Mellon’s TDM program will be implemented and monitored to achieve the following mode share for employee trips:

- Walk: Maintain the existing 19% mode share.
- Bike: Improve the existing 7 % mode share to 9%.
- Transit: Improve the existing 29% mode share (22% public transit/7% shuttle) to 30%.
- High Occupancy Vehicles (Carpool/Rideshare): Improve the existing 5% mode share to 7%.
- Single Occupancy Vehicles: Decrease the existing 38% mode share to 30 %.
- Virtual Commuting: Implement work from home programs to increase the 2018 (pre-pandemic) 1% mode share to 5%.

The proposed projects presented in Figure 6.3.2, page 91 show Carnegie Mellon’s planned mobility projects to achieve these mobility goals. For more information and the full TIS, see Appendix G, page 158.

Existing - Removals + Replacement + Leased
+ TDM = 0 at 90 percent efficiency



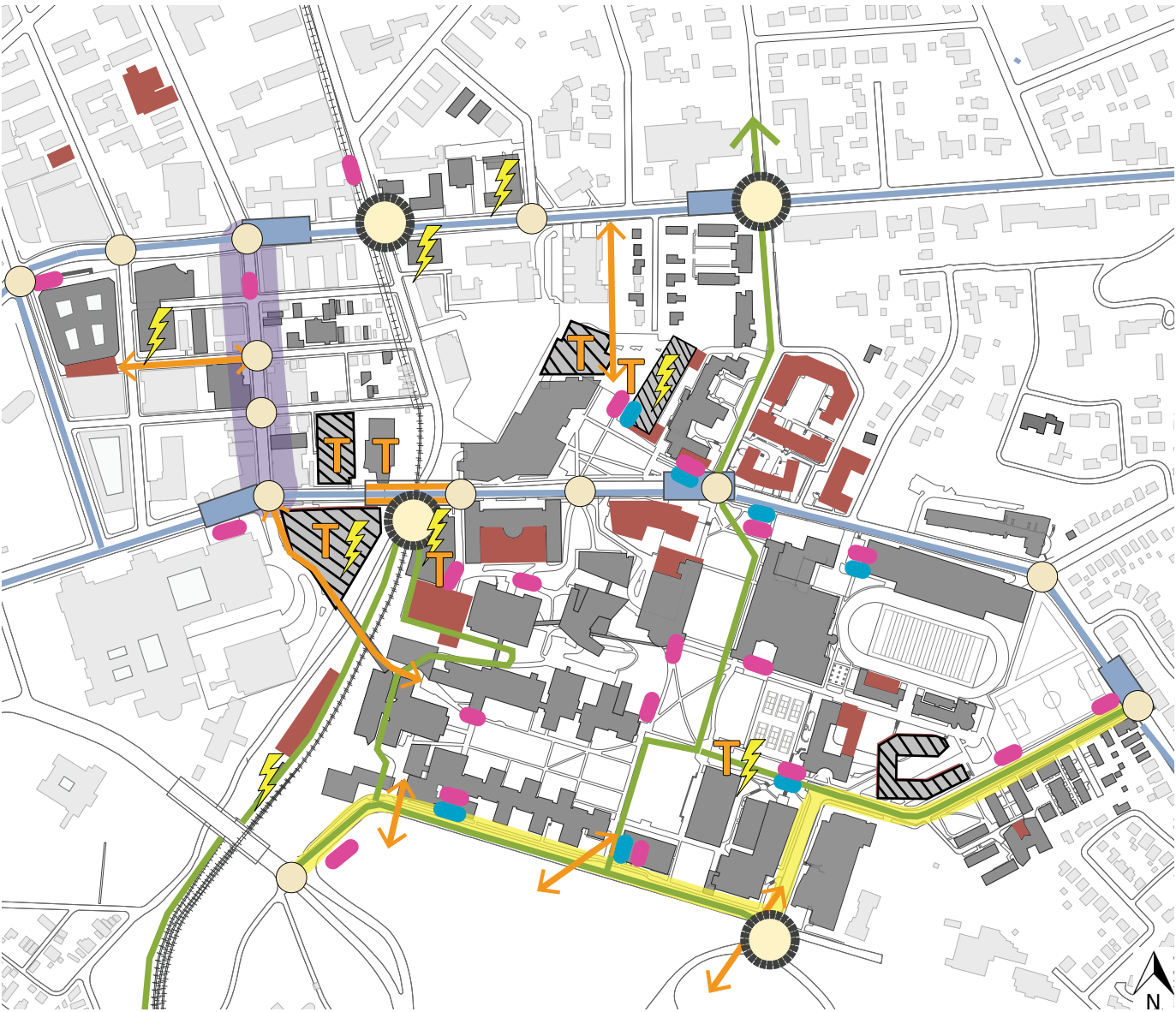
Proposed Connection to Schenley Park



Curb Extensions

6.3 MOBILITY PROPOSAL

6.3.2 Overview of Proposed Improvements



- | | |
|---|-----------------------------------|
| Carnegie Mellon University Existing Buildings | Scooter Parking |
| Development Sites | S Craig Urban Design Improvements |
| Proposed Pedestrian Connections | Future BRT & Stations |
| Pedestrian Oriented Intersections | Improved Intersections |
| Forbes Bridge Improvements | Tandem Parking |
| Proposed Bike Connections | Charging Centers |
| Frew/Tech/Margaret Morrison Neighborway | New Structured Parking |
| Healthy Ride Stations | |

6.3 MOBILITY PROPOSAL

6.3.3 Transportation Demand Management

TDM consists of planned tools and strategies to mitigate transportation impacts of campus expansion through investing in mobility options that do not contribute to SOV trips. Carnegie Mellon has worked with DOMI in developing this plan to offset development impacts with appropriate pedestrian, bicycle, transit, carpool/vanpool, and virtual commuting (work from home) investments to target mode share goals. Carnegie Mellon’s Parking and Transportation Services department will monitor TDM progress and serve as the official reporting mechanism. Tools and strategies that will be used for successful TDM include the following institutional programs:

- Encouraging sustainable commuting and promoting public transit, carpooling, shuttle bus use, and biking through:
- Continuing to provide transit passes for all students and employees and increasing eligibility for on-campus workers not currently eligible for transit passes.
 - Expanding shuttle use to be shared among Oakland-area operators to supplement existing

- transit service.
- Improving sidewalk accessibility, comfort, and convenience for all users.
 - Providing bicycle amenities and parking that meets or exceeds Pittsburgh’s Bicycle Parking Guidelines.
 - Developing a carpool/vanpool program when needed based on demand.
 - Providing electric car charging in new facilities and expanding availability in existing facilities.

- Providing no net new parking on campus through:
- Reducing and removing surface lots.
 - Leasing off-campus parking as applicable.
 - Adjusting parking rates to manage parking demand
 - Building site-appropriate limited parking at new campus buildings outside of the historic core.
 - Adding more tandem parking to manage parking demand

Based on university data and the projects proposed in this 10-year development master plan, these strategies should successfully mitigate any planned population increases; refer to Appendix D, pages 146 - 148 for more information.



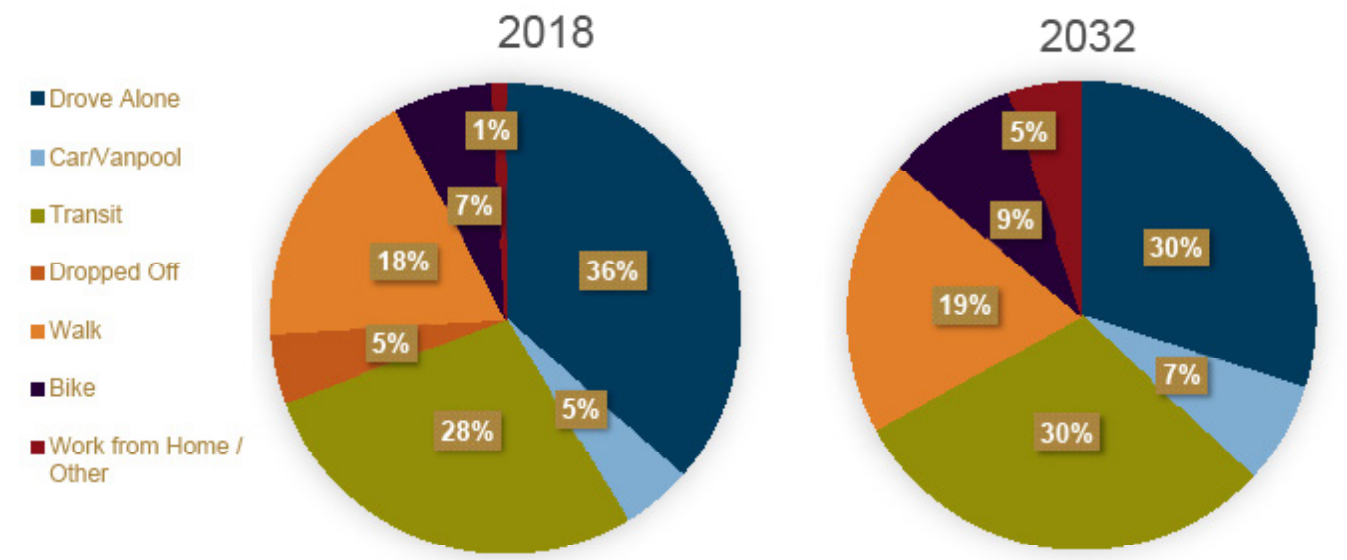
East Campus Garage Electric Car Charging



Forbes Avenue Traffic

6.3 MOBILITY PROPOSAL

Based on 2018 Employee Survey Data



TRANSPORTATION DEMAND MANAGEMENT REDUCTION STRATEGIES			
TDM Strategy	Implementation Timeframe	2018 Commuter Survey Response Rate	TDM Max. Anticipated Commuting Reduction
Increasing Transit Pass Program Eligibility	Short-term	2%	2%
Improving and Expanding Shuttle Program	Mid-term	4%	2%
Providing Improved Bicycle Amentities	Short-term	1%	1%
Improving Sidewalk Accessibility and Safety	Short-to Long-term	1%	1%
Developing a Carpool/Vanpool Program	Mid-term	2%	2%
Enhancing Electric Car Charging	Short-to Long-term	1%	0%
Improving Shared Parking Options with Flexible, Limited-use Parking Passes	Mid-term	7%	3%
Coordinating with the Port Authority for Improved Transit Routes and Options	Long-term	8%	4%
Implement Work from Home Options	Short-to Long-term	1%	5%
Build Bicycle Infrastructure	Mid-to Long-term	N/A	1%
1) Mode share target is to reduce single vehicle commuter use by 6% from 2022 to 2032			
2) Survey data based on 824 participant comments from Employee Commuter Survey, 2018			

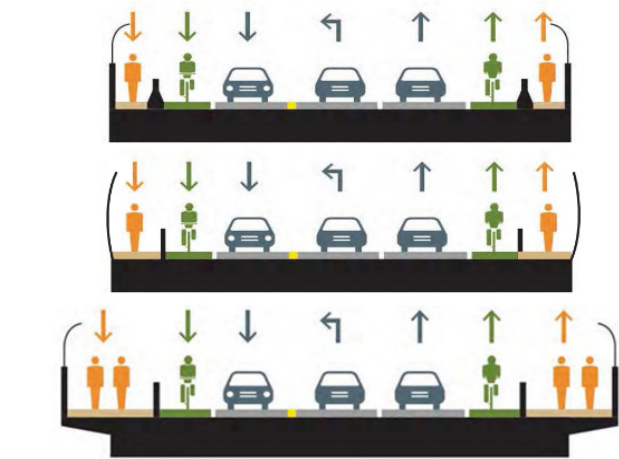
6.3 MOBILITY PROPOSAL

6.3.4 Proposed Pedestrian Improvements

Based on the proposed projects in Figure 6.3.2, page 91 and described in the TIS (Appendix G page 158), the university is proposing several projects to improve pedestrian mobility that build on the recently constructed projects from the previous IMP. The following is a summary of priority projects to better connect the campus to the surrounding neighborhoods and area amenities and to increase pedestrian safety and comfort.

Sidewalk Widening

Carnegie Mellon has invested in improving the pedestrian experience along Forbes Avenue through providing wider, 8-foot sidewalks buffered from Forbes Avenue, so these projects address improving the remaining gaps on both Forbes and Fifth avenues. Of particular importance is widening narrow sidewalks on the Forbes Avenue Junction Hollow Bridge, where heavy pedestrian traffic is funneled into five-foot, four-inch sidewalks alongside vertical bridge barriers and fencing. CMU looks to partner with Department of Mobility and Infrastructure (DOMI) for improvements.



Forbes Avenue Bridge Sidewalk Widening Alternatives

Southeast Campus Neighborway along Frew, Tech, and Margaret Morrison Streets

This project will partner with DOMI to introduce a Neighborway within the Carnegie Mellon Campus by installing context-appropriate traffic calming tools along Frew, Tech, and Margaret Morrison streets to keep motor traffic speeds low, improve safety, and prioritize pedestrians, bicyclists, and other non-vehicular traffic.

Enhanced Schenley Park Entrance and Connections

Through coordination with the Pittsburgh Parks Conservancy, this project would introduce high-visibility, midblock crossings at pedestrian desire lines across Frew Street to Schenley Park, including a new connection opposite Baker Hall.

Mellon Institute Connectivity

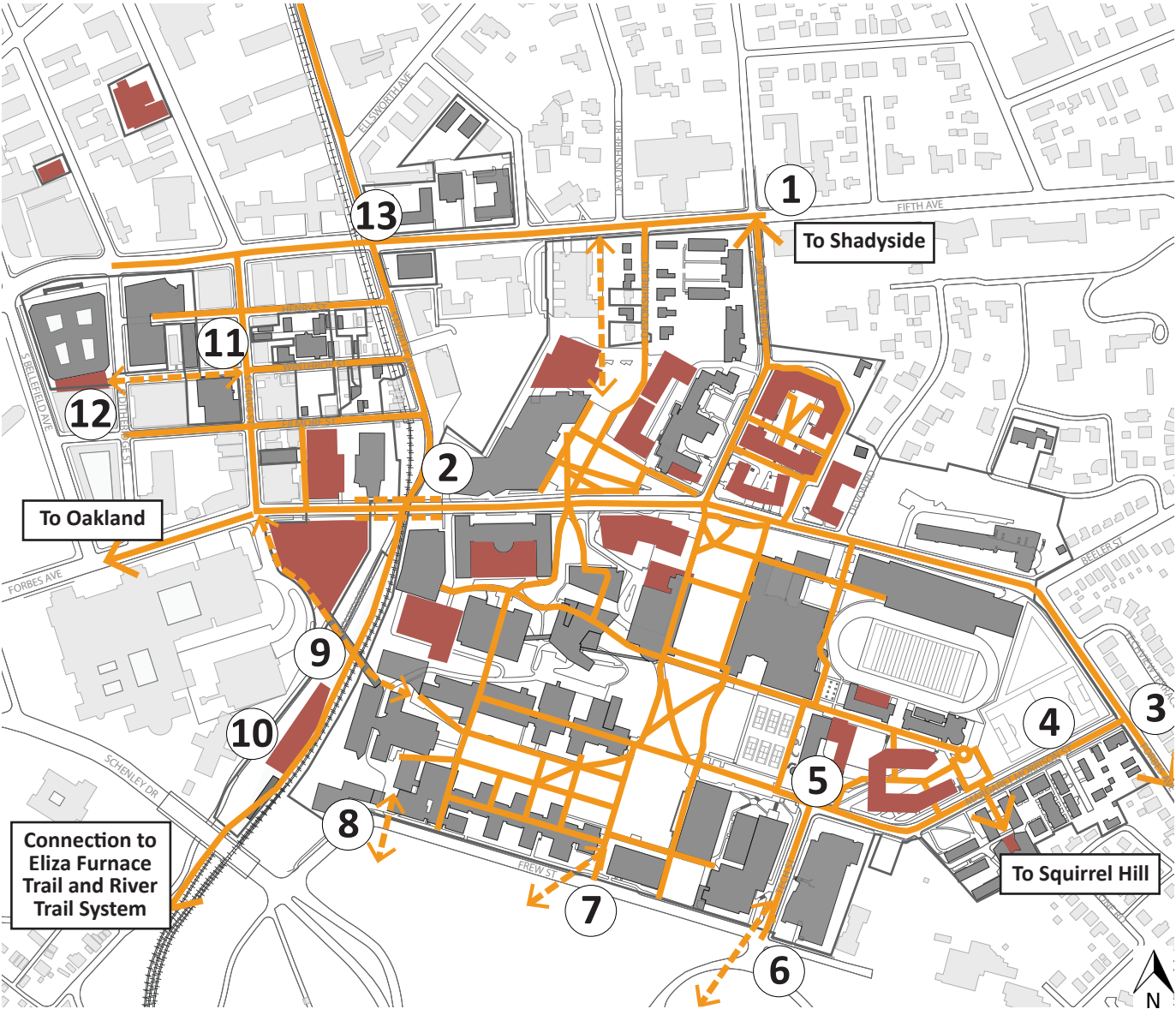
Carnegie Mellon will work with DOMI to determine ways to improve connectivity to Mellon Institute. Options may range from state of good repair improvements to area sidewalks and curb ramps, to larger initiatives such as reconfiguring Henry Street to become a “Shared Street” and provide pedestrians the right-of-way.



Proposed Network to Schenley Park

6.3 MOBILITY PROPOSAL

6.3.5 Proposed Pedestrian Network



Proposed Pedestrian Improvements

	Carnegie Mellon University Existing Buildings	1	Morewood & Fifth Ave Intersection
	Development Sites	2	Forbes Ave Bridge Sidewalk Widening
	Pedestrian Network	3	Forbes Ave & Margaret Morrison St Intersection
	Proposed Pedestrian Connections	4	Margaret Morrison St Pedestrian Safety
		5	Margaret Morrison St & Tech St Intersection
		6	Frew St, Tech St, & Schenley Dr Intersection
		7	Schenley Park Entrance
		8	Connection to Schenley Park
		9	Junction Hollow Pedestrian Bridge
		10	Boundary St Railroad Crossing
		11	Craig St Improvements
		12	Mellon Institute Connectivity
		13	Fifth Ave Sidewalk Improvements

6.3 MOBILITY PROPOSAL

6.3.6 Proposed Bike and Wheeled Mobility Improvements

Carnegie Mellon will enhance options for all wheeled mobility users through increasing connectivity and safety of bicycle routes to encourage alternatives to driving. Additional bicycle friendly strategies will be implemented on campus. Refer to the proposed projects in Figure 6.3.2, page 91 and described in the TIS (Appendix G page 158), which includes the following priority projects:

Morewood Avenue Cycle Track

Through partnering with DOMI, this project proposes a cycle track along Morewood Avenue from Forbes Avenue to Fifth Avenue in place of the existing sidewalk on the west side. Carnegie Mellon will build a new sidewalk along university property further to the west and will allocate space for a bike share station.

North South Cross Campus Cycle Track

This project will create a two-way cycle track along the Cut providing bicycle (and micromobility) connectivity between Morewood Avenue and Frew Street. Pedestrian crossings are a unique challenge to cycle track design, so signage and markings will be evaluated at conflict points, along with providing clear right of way between bicyclists and pedestrians.



Forbes Avenue Bicycle Lane

Southeast Campus Neighborway along Frew, Tech, and Margaret Morrison Streets

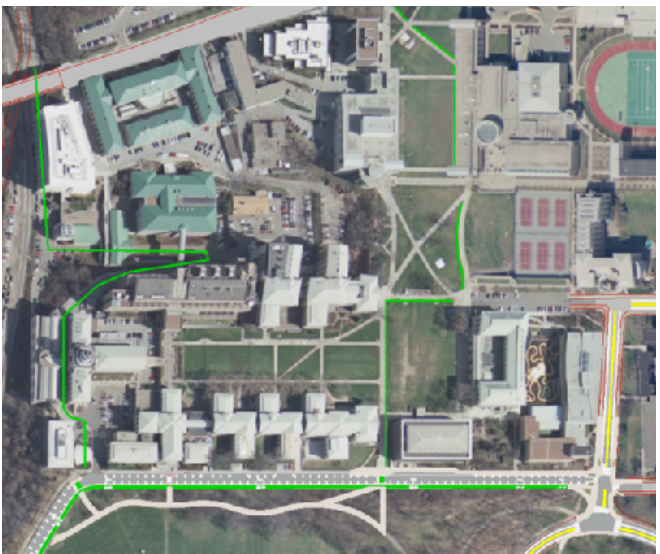
Implementing the Neighborway along these streets will provide connectivity between existing bicycle facilities and further expand the City of Pittsburgh’s, “Proposed Bike+ Network.”

Hamerschlag Drive Bicycle Boulevard

Designating Hamerschlag Drive as a bicycle boulevard will provide a bicycle connection from Frew Street to Boundary and South Neville streets in Junction Hollow. This project will install signing and markings along the route.

Enhanced Bicycle Amenities and Infrastructure

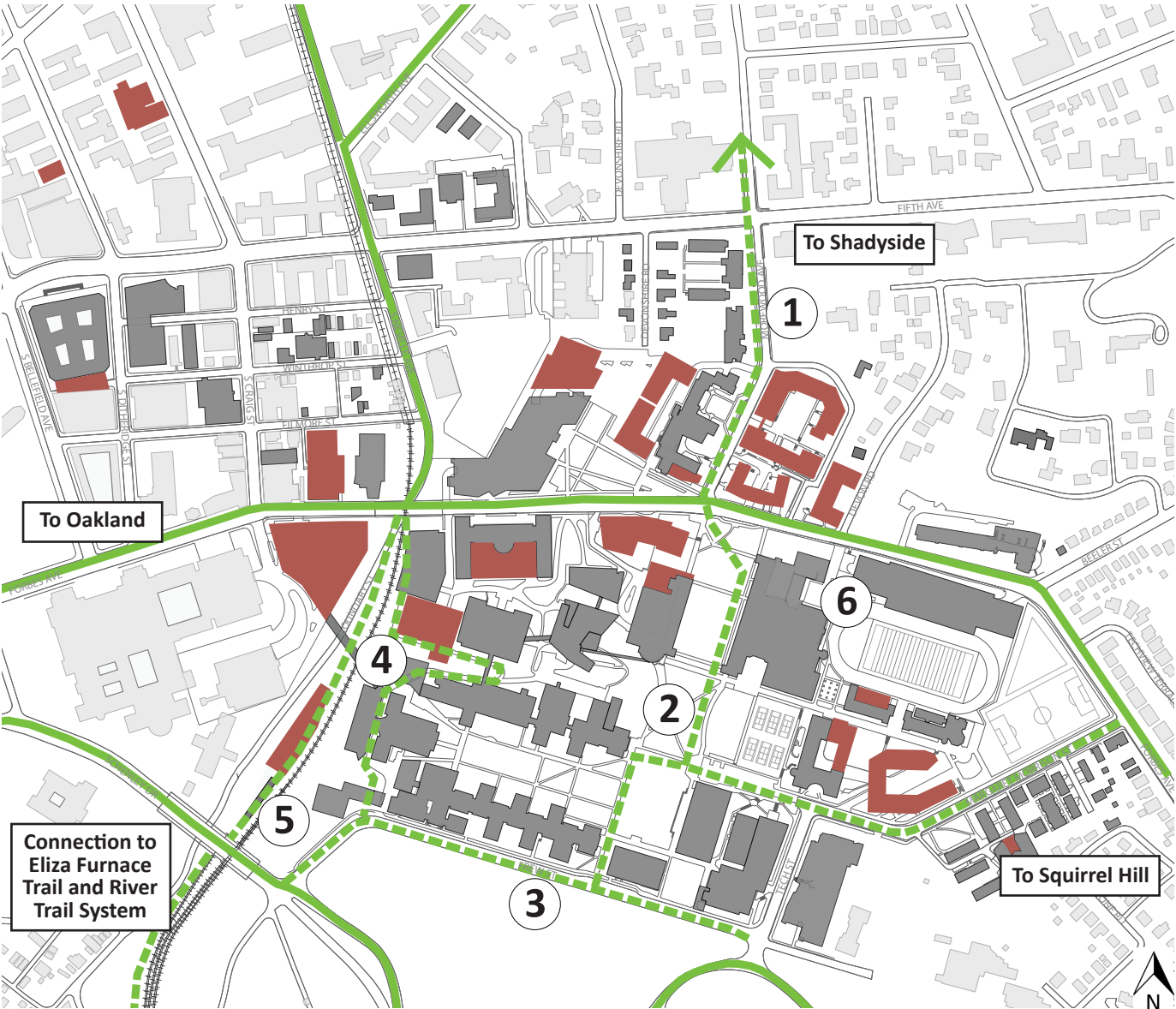
This project would add to and improve upon bicycle infrastructure within the Carnegie Mellon campus, either as standalone installments or through coordination with future development sites. Amenities may include additional covered bicycle parking, bicycle repair stations, and secure parking (e.g., bike racks and lockers). New development will expand beyond Zoning Code requirements to explore bicycle parking in lieu of automobile parking for increased flexibility and equity in addressing parking issues that may arise.



Proposed Bicycle Network through Campus

6.3 MOBILITY PROPOSAL

6.3.7 Proposed Bike Network



Proposed Bike Improvements	
1	Morewood Avenue Cycle Track
2	North South Cross Campus Cycle Track
3	Frew Street Reconfiguration
4	Hamerschlag Drive Bicycle Boulevard
5	Boundary St Railroad Crossing
6	Enhanced Bicycle Amenities & Infrastructure

- Carnegie Mellon University Existing Buildings
- Development Sites
- Bike Network
- Proposed Bike Connections



6.3 MOBILITY PROPOSAL

6.3.8 Proposed Transit and Shuttle Improvements

While already having a robust transit use program, Carnegie Mellon will expand upon it through increasing shuttle efficiency and routes, embracing new transit projects, and resolving first and last mile transit gaps. The current agency transit expansion projects include the Port Authority's Bus Rapid Transit (BRT) project and the potential Mon-Oakland Mobility corridor to provide a direct shuttle connection to Hazelwood Green. Refer to the proposed projects in Figure 6.3.2, page 91 and described in the TIS (Appendix G page 158), which includes the following priority projects:

Fifth Avenue and Morewood Avenue Intersection Improvements

This project proposes partnering with DOMI and the Port Authority to realign the Morewood Avenue northbound intersection approach to Fifth Avenue to eliminate the existing intersection offset and to add pedestrian space for transit users. The project will include:

- Increasing the southwest corner's curb radii to provide space for future BRT movements.
- Altering intersection geometry to eliminate the southbound lane shift through the intersection, converting the northbound shared left/through lane to an exclusive left turn lane and the northbound right lane to a shared through and right lane.
- Providing space for a bus shelter and a future BRT stop at the southwest corner.
- Installing ADA-compliant sidewalks and curb ramps with high-visibility crosswalks.
- Installing new traffic signals to improve safety and operations and to replace equipment impacted by the roadway shift.

Morewood Avenue Cycle Track

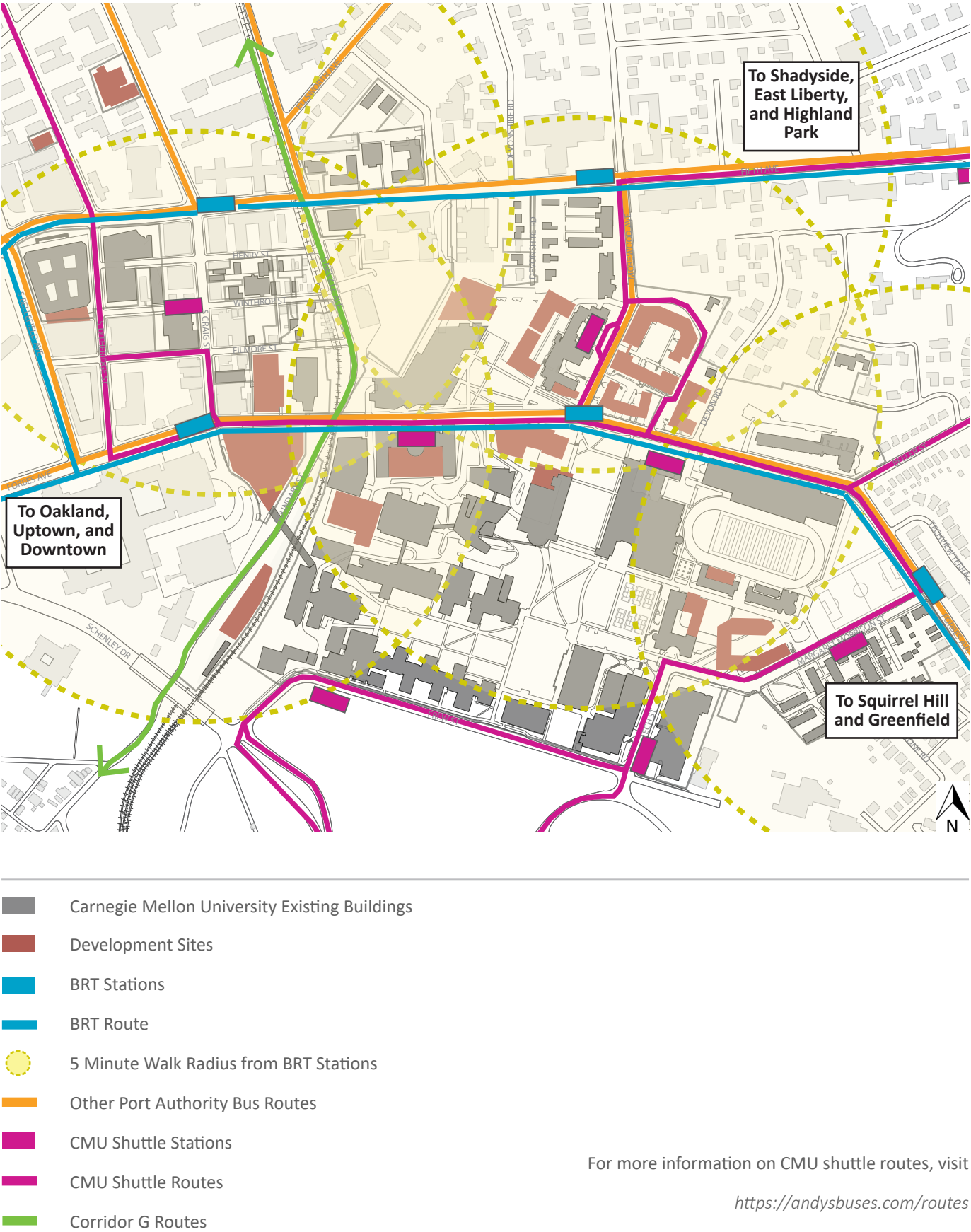
Two of the university's busiest transit stops on Forbes and Fifth avenues are connected by Morewood Avenue, which runs through the university's largest on-campus housing area. University shuttles dwell at the Morewood Gardens pull-off. As described in Section 6.3.6, page 96, by moving the sidewalk away from the travel lanes, this project provides safer FLM connections to some of the most used bus and shuttle stops.

Improve / Expand Shuttle Network

The current university shuttle system, designed to support and not compete with the Port Authority, could be expanded through opportunities with institutional partners to optimize operations. Carnegie Mellon has been exploring such opportunities with other East End institutions including the University of Pittsburgh, UPMC and Chatham University; discussions could add Carlow University, the Port Authority, OTMA and private developers to expand the network. The partners will develop and implement strategies that improve the East End shuttle system with more efficient operations that serve students and employees and incorporating community access

6.3 MOBILITY PROPOSAL

6.3.9 Proposed Transit and Shuttle Network



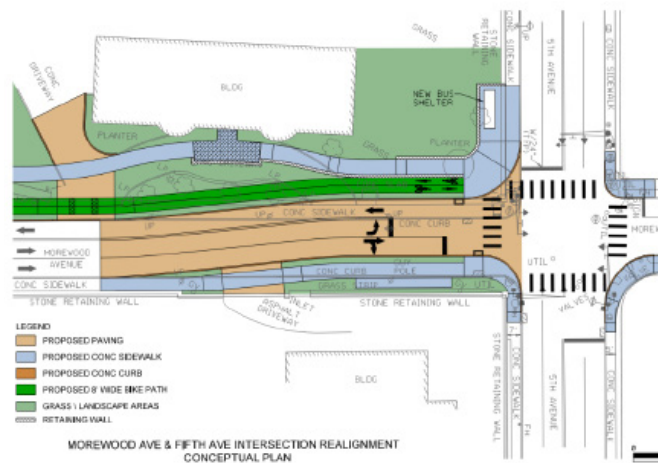
6.3 MOBILITY PROPOSAL

6.3.10Proposed Vehicle/Parking Improvements

As Carnegie Mellon has invested in multi-modal improvements recommended in the 2012 IMP, vehicular use of campus-area roads (except Fifth Avenue) have remained steady or declined while the university has grown. Along with the university’s commitment to using TDM as an alternative to providing new parking capacity, with continued multi-modal investment, traffic volumes in the vicinity of the campus are not anticipated to increase. Therefore, vehicular improvement strategies are based on improving safety rather than adding capacity. Forbes Avenue was reconstructed in 2019 per recommendations in the 2012 IMP, so these targeted vehicular improvements focus on the other campus-area roadways. Refer to the proposed projects in Figure 6.3.2, page 91 and described in the TIS (Appendix G page 158), which includes the following priority projects:

Fifth Avenue and Morewood Avenue Intersection Improvements

By realigning the Morewood Avenue northbound intersection approach to Fifth Avenue, this project will eliminate the existing intersection offset and will allow the northbound left lane to be an exclusive left turn lane and the northbound right lane to be a shared through and right turn lane. This will increase intersection safety and capacity.



Fifth Avenue and Morewood Avenue Proposed Intersection Improvements

Frew Street, Tech Street, and Schenley Drive Intersection Improvements

This project will improve the existing intersection by adding safer multi-way stop control while reducing curb radii, shortening pedestrian crossing distances (and thus reducing exposure time to traffic), adding sidewalks, and improving crosswalk signage and markings.

Frew Street Reconfiguration

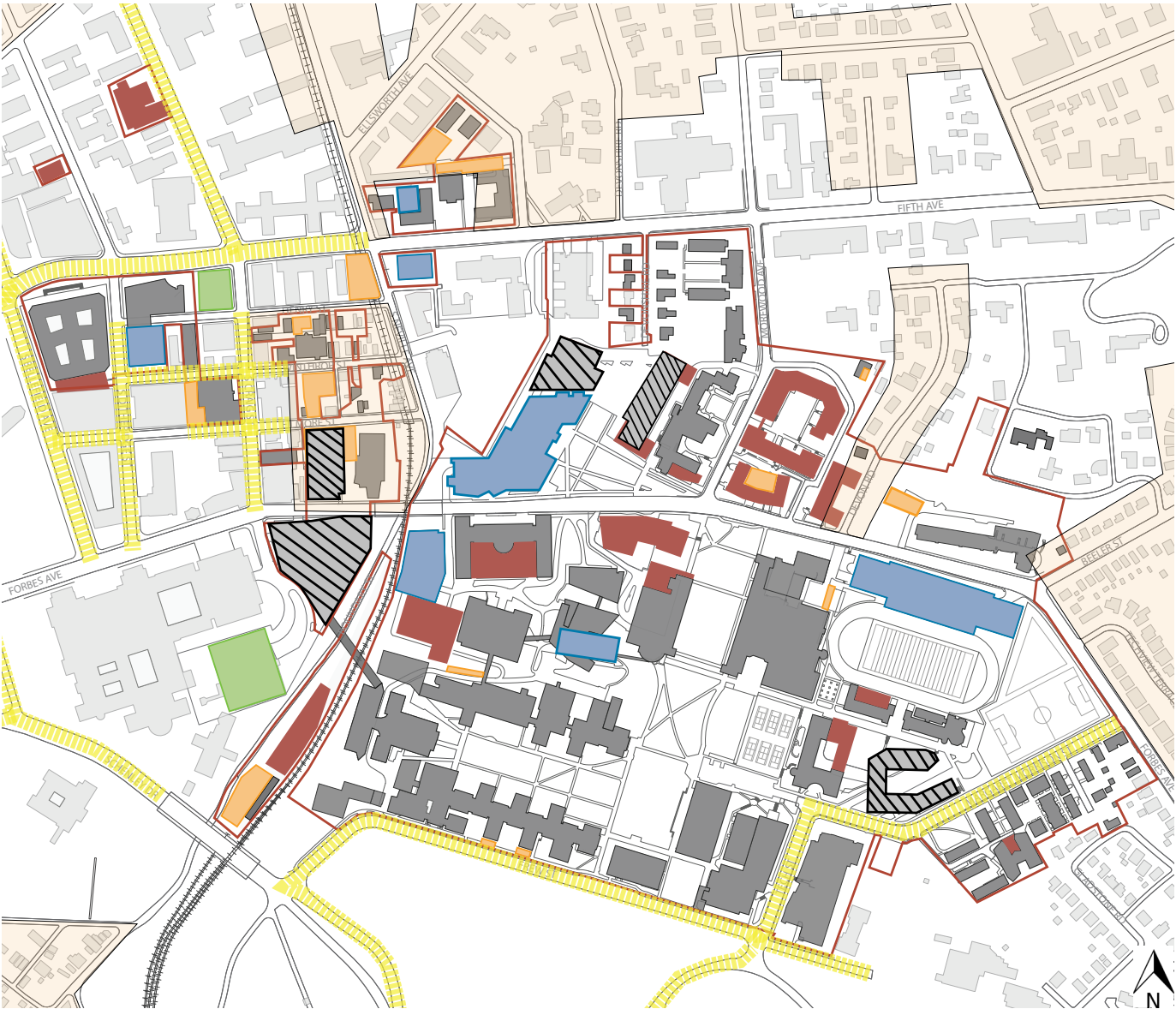
Whether completed as part of the Neighborway reconfiguration or as a standalone project, proposed Frew Street reconfiguration (partnering with DOMI) would convert the existing two-way street to one-way southwest bound with parallel parking on both sides of the travel lane, thus eliminating safety conflicts with vehicular backing movements. This configuration allows for an eight-foot shared path/contraflow bike lane between the parking lane and Schenley Park and includes intersection improvements at each end of Frew Street.



Frew Street, Tech Street, and Schenley Drive Proposed Intersection Improvements

6.3 MOBILITY PROPOSAL

6.3.11Proposed Parking System



Refer to Appendix F, pages 156-157 for Parking Inventory.

- Carnegie Mellon University Property in 2022 IMP
- Carnegie Mellon University Existing Buildings
- Development Sites
- CMU Structured Parking
- CMU Surface Lot
- New CMU Parking
- CMU Leased Parking
- Metered Street Parking
- Residential Permit Parking



Carnegie
Mellon
University

7.0 INFRASTRUCTURE PLAN

- 7.1 Environmental and Sustainability Goals
- 7.2 Environmental Protection
- 7.3 Campus Energy Planning
- 7.4 Stormwater Management
- 7.5 Green Buildings
- 7.6 Waste Management and Water Conservation
- 7.7 Open Spaces and Pedestrian Circulation

7.1 ENVIRONMENTAL AND SUSTAINABILITY GOALS

7.1.1 Overview

Zoning Code Reference

905.03.D.4 (h) Environmental Protection Plan

The IMP shall identify all sensitive environmental resources within the IMP area, as well as any view corridors that traverse the IMP area. The IMP shall identify Environmental Overlay Districts that affect the IMP area and shall include reports on those conditions as required in Chapter 906. The IMP shall identify areas of the IMP area which may be subject to the Environmental Performance Standards of Chapter 915. The plan shall identify the measures that will be used to mitigate impacts for each of these conditions.



Carnegie Mellon University has an historic, demonstrated, and ongoing commitment to sustainability.

Carnegie Mellon is building upon two decades of an engaged effort in support of the broader definition of sustainability afforded by the UN’s Sustainable Development Goals (SDG). Our university’s focus includes education, research, and practice in building environmentally sustainable, peaceful, just and inclusive communities.

Carnegie Mellon is committed to adopting sustainable practices that will reduce the operational footprint of our campuses. In public confirmation of our commitment, we signed on to the ISCN-GULF Charter and pledged to incorporate the Charter principles of sustainability into our university-wide strategic plan. We are committed to:

- Alignment with the United Nations 17 SDGs, including being the world’s first university to complete a Voluntary Assessment.
- AASHE STARS Certification - Gold; recertifying in 2022
- The Goals of the Pittsburgh 2030 District

Overview of Environmental and Sustainability Goals

- 50% reductions in energy use, water consumption, and transportation emissions by Pittsburgh’s 2030 District.

- Indoor Air Quality: To be determined by the 2030 District Partners

New Buildings, Major Renovations, and New Infrastructure

- Over 1,000,000 SF of LEED-rated facilities

- Energy Use: An immediate 70% reduction below the national average, with incremental targets reaching carbon neutral by 2030.

- Water Use, Transportation: An immediate 50% reduction below the 2030 District average.

- Indoor Air Quality: To be determined by 2030 District Partners

For more information on Pittsburgh’s 2030 District, visit <https://www.2030districts.org/pittsburgh>

7.1 ENVIRONMENTAL AND SUSTAINABILITY GOALS

7.1.2 Goals and Resilience

Environmental and Sustainability Goals

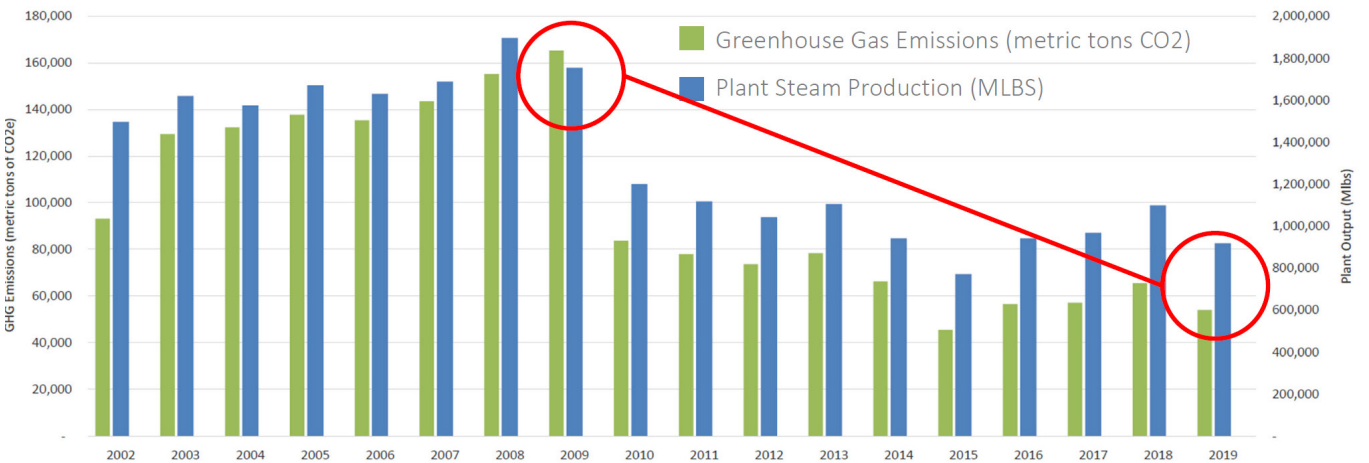
1. Continue to implement & track fulfillment of UNSDG’s.
2. Maintain commitment to Pittsburgh 2030 District.
3. Require LEED Gold v4 for all development projects \$5M+.
4. Create platform to track how new development projects contribute to university sustainability goals.
5. Have resiliency management practices in place to mitigate risks from natural, financial, and other disasters.



The university’s 25-person Enterprise Risk Management (ERM) division has a diverse and comprehensive approach to evaluating risk at the departmental, division, and university levels. Refer to Carnegie Mellon University’s Enterprise Risk Management Model above.

For more information, visit <https://www.cmu.edu/erm>

In 2009, Bellefield Boiler Plant Supervisors Voted to Switch to Natural Gas to Lower Current Plant Emissions by 60%



7.2 ENVIRONMENTAL PROTECTION

7.2.1 Strategy for Tree Replacement

Carnegie Mellon University (CMU) is committed to protecting all non-invasive species of trees and other plantings on our campus, while also continuing to remove invasive species from the campus, and increasing the overall caliper of trees within the campus system. Based on an overall existing inventory, CMU has 2035 trees with a total of 11,731 inches of diameter at breast height (DBH). Of the 2035 existing trees, 291 are equal to or less than 12 inches DBH. 5.5% of the campus trees’ total diameter are invasive species. Not native to this region, they can grow aggressively and spread and displace native vegetation.

Based on future developments from the IMP, there will be a loss of approximately 2415 inches of campus tree caliper as measured in DBH. CMU commits to the following strategies to improve environmental conditions based on ongoing and future developments, existing invasive species, and further growth.

- Commitment to the replacement of 110% of tree caliper lost from future developments under the 2022 IMP
 - Forest Rehabilitation/Restoration through rescuing existing trees from invasive species
 - Reforestation - providing greater canopy cover and tree caliper to improve ecological values and stormwater infiltration
 - Tree Mitigation Banks - offsite areas that are reforested or rehabilitated in advance, building up



Student on CFA Lawn

- a credit, which is drawn down as projects require tree removal
- Interplant canopy species with native understory plants, including understory trees and herbaceous ground cover
 - Interplant understory trees, unmowed ground cover strip between sidewalks and buildings
 - Replace high maintenance hedges with flowering understory trees

Beyond these strategies, CMU has engaged in an effort in support of the broader definition of environmental sustainability afforded by the UN’s Sustainable Development Goals (SDG). Overall goals of the university pertaining directly to tree replacement include increasing canopy cover, invasives management, stormwater performance, and carbon sequestration. For more detailed information on the existing environmental overlays and tree cover of CMU, refer back to Section 2.0, page 18 and 29. For the full Tree Replacement Study refer to Appendix I, pages 218 - 227.

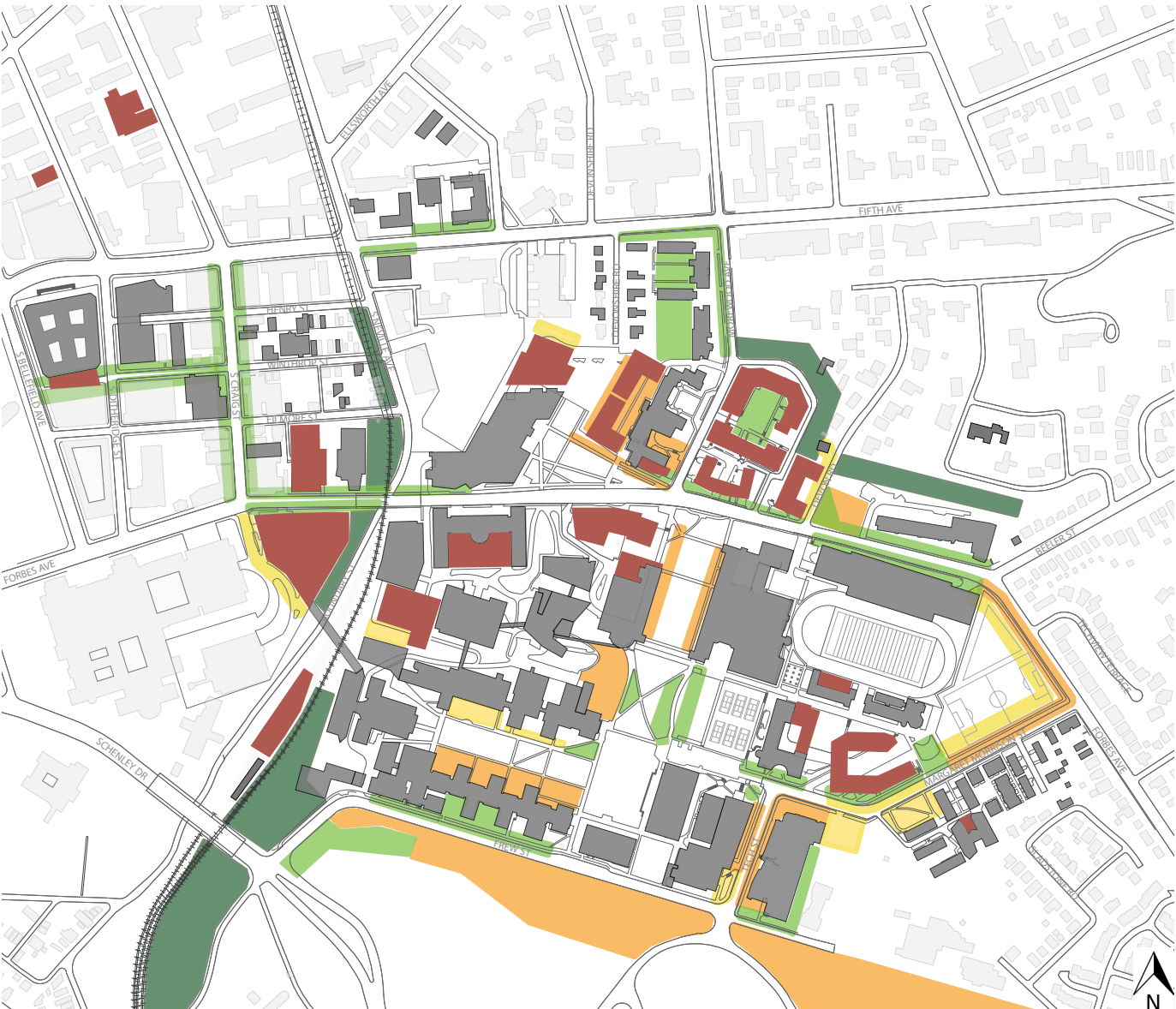
Total Number of Trees	2,035 trees
Carbon Storage	437.45 tons
Gross Carbon Sequestration	7.81 tons/year
Avoided Run Off	28,641.24 cubic feet = 214,236.48 gallons



Goats Grazing on Gates and Purnell Center Hillside

7.2 ENVIRONMENTAL PROTECTION

7.2.2 Tree Replacement Plan



- Development Sites
- Additional Trees
- Interplant Understory Trees with Un-mowed Groundcover
- Additional Trees with Un-mowed Groundcover
- Forest Restoration

UNSDG Goals

7.3 CAMPUS ENERGY PLANNING

7.3.1 Reducing Campus Energy Consumption

On our campus, everyone—from individual students and staff to facilities managers and Deans – plays a vital role in the success of Carnegie Mellon’s energy conservation campaign. Our long-term commitment to energy conservation comes from an institutional culture that values environmental stewardship and social responsibility. Energy conservation mitigates the numerous adverse environmental and social impacts associated with energy production and consumption. As a charter member of the Pittsburgh 2030 District, CMU has ambitious goals for continued energy consumption reductions.

CMU utilizes EnergyCAP software to track utility consumption and cost at the building, invoice and submeter level. We have 114 buildings enabled with reporting and dashboarding for monitoring energy trends – plus direct output to EPA Energy Star Portfolio Manager. These tools assist with targeting progress of current programs, developing new opportunities, and monitoring energy consumption irregularities.

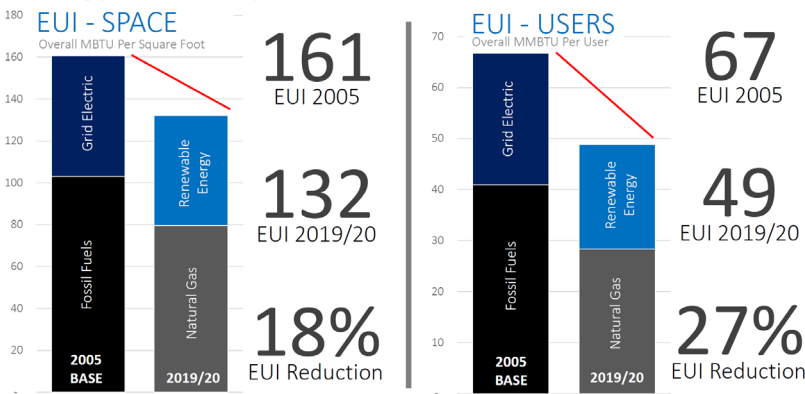
Our ongoing commitments to energy conservation have yielded significant results. Despite significant campus growth, Carnegie Mellon consumes less energy than a decade ago and our total energy utilization in 2021 was less than 2011. In comparison with our 2005 base year and adjusting for growth,

CMU used 18% less total energy in 2019/2020. When adjusting for the campus population growth, our rate of energy consumption dropped by 27%.

In addition to reducing energy utilization, CMU has also been a leader in ‘greening’ our energy supply. CMU began purchasing renewable energy in 2001 with 5% of the university’s electricity usage sourced from local wind power. At that time, it was the largest-ever retail purchase of wind-generated electricity in America. In 2021, the U.S. Environmental Protection Agency (EPA) named CMU to its Top 30 College and University List as part of its Green Power Partnership, ranking it number 11 among all national universities. Carnegie Mellon is purchasing nearly 125,005,846 kilowatt-hours of green power annually, which is enough to meet 111% of the university’s purchased electricity use.

CMU is also home to the Wilton E. Scott Institute for Energy Innovation which is a university-wide research initiative focused on improving energy efficiency and developing new, clean, affordable and sustainable energy sources. The Scott Institute leverages the expertise of more than 145 professors and researchers from across CMU’s seven schools and colleges.

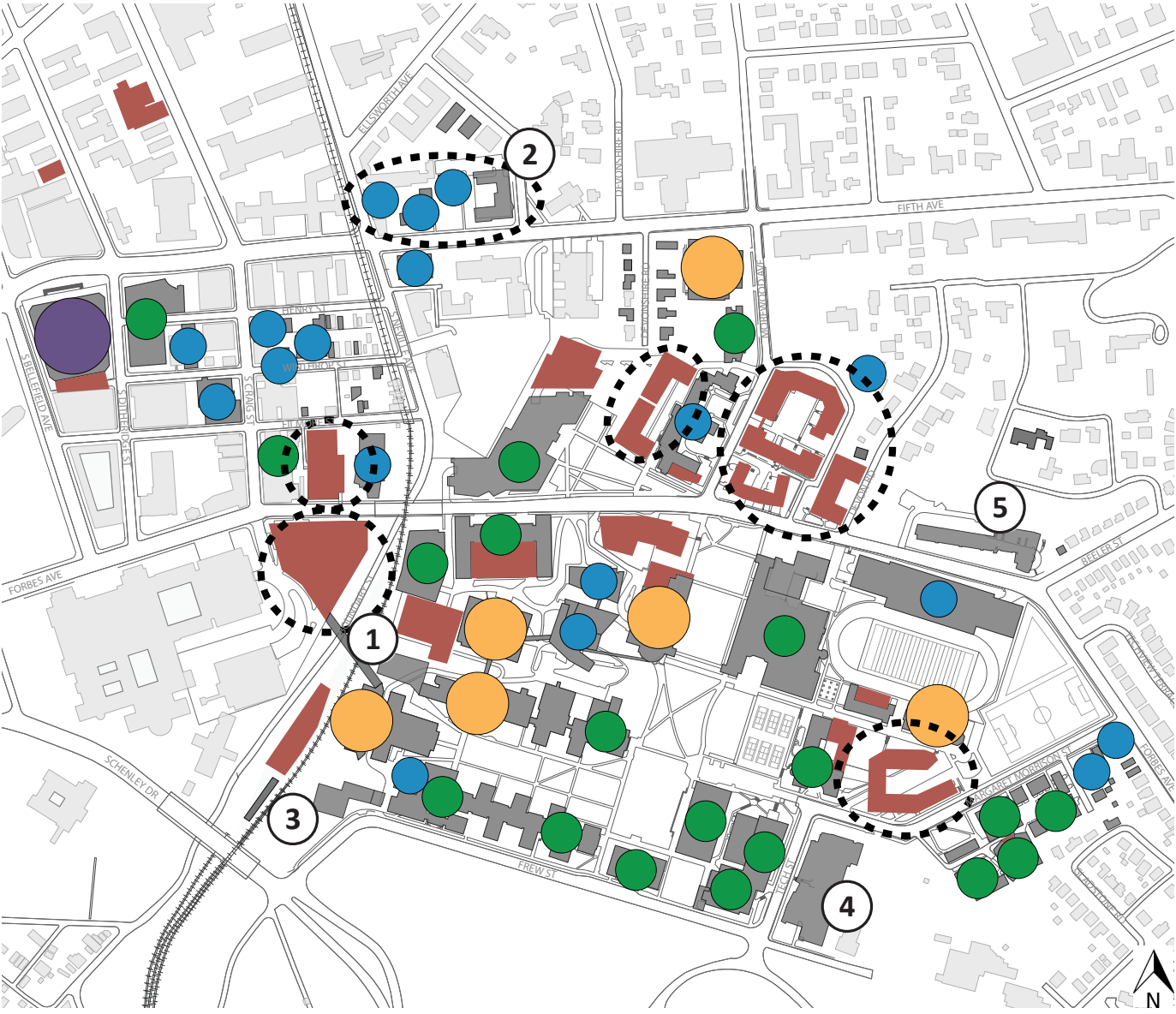
Energy Efficiency Offsets New Demand From Growth



Tepper Quad Atrium, a LEED Gold Building

7.3 CAMPUS ENERGY PLANNING

7.3.2 Energy Use Intensity (EUI) of Buildings and District Expansion



● 0 - 75 Site EUI* (kBtu/ft²)*

● 76 - 150 Site EUI (kBtu/ft²)

● 151 - 225 Site EUI (kBtu/ft²)

● 226 - 300 Site EUI (kBtu/ft²)

■ Development Sites

○ Future Expansion of District Heating & Cooling

THE FOLLOWING BUILDINGS DO NOT HAVE EUI INFORMATION SINCE THEY ARE NEW BUILDINGS ON CAMPUS.

1. Scott Hall
2. Fifth Clyde Residence
3. New Scaife
4. Health, Wellness and Athletics Center
5. Forbes Beeler Residence

*EUI: Energy Use Intensity

*kBtu/ft²: one British thermal unit per square foot

7 AFFORDABLE AND CLEAN ENERGY

11 SUSTAINABLE CITIES AND COMMUNITIES

UNSDG Goals

7.4 STORMWATER MANAGEMENT

7.4.1 Mitigating Stormwater Issues

Carnegie Mellon has sustained millions of dollars of damage from stormwater events over the past decade and responded with strategies in advance of recent state and local efforts to capture or divert rainwater. CMU’s demonstrated commitment to reduce rainwater runoff not only protects flooding inside campus buildings, but also reduces impacts on surrounding areas. Since 2009 we have experienced multiple 100-year floods, and our infrastructure upgrades have mitigated the damage potential from future extreme weather events.

Since 2009 the university constructed 488,200 gallons of storm water structures, reduced impermeable areas to increase infiltration, and continues to design beyond code requirements.

Some examples of recent storm water management strategies implemented on campus:

- Gates Hillman Center installed a 10,000 gallon cistern used in conjunction with a grey water system in the building



Stormwater Tank underneath The Mall

- Warner Plaza rain garden doubled permeable surface
- Neville Parking lot with 24,000 gallons of storm water retention
- Cohon University Center addition added 45,000 gallon rain gardens
- Beneath the Mall is a 275,000 gallon underground cistern for water reuse in the campus cooling system
- Fifth & Clyde incorporated a 5,700 gallon infiltration trench to capture runoff
- Tepper Quad installed a 127,000 gallon cistern used in conjunction with a grey water system in the building

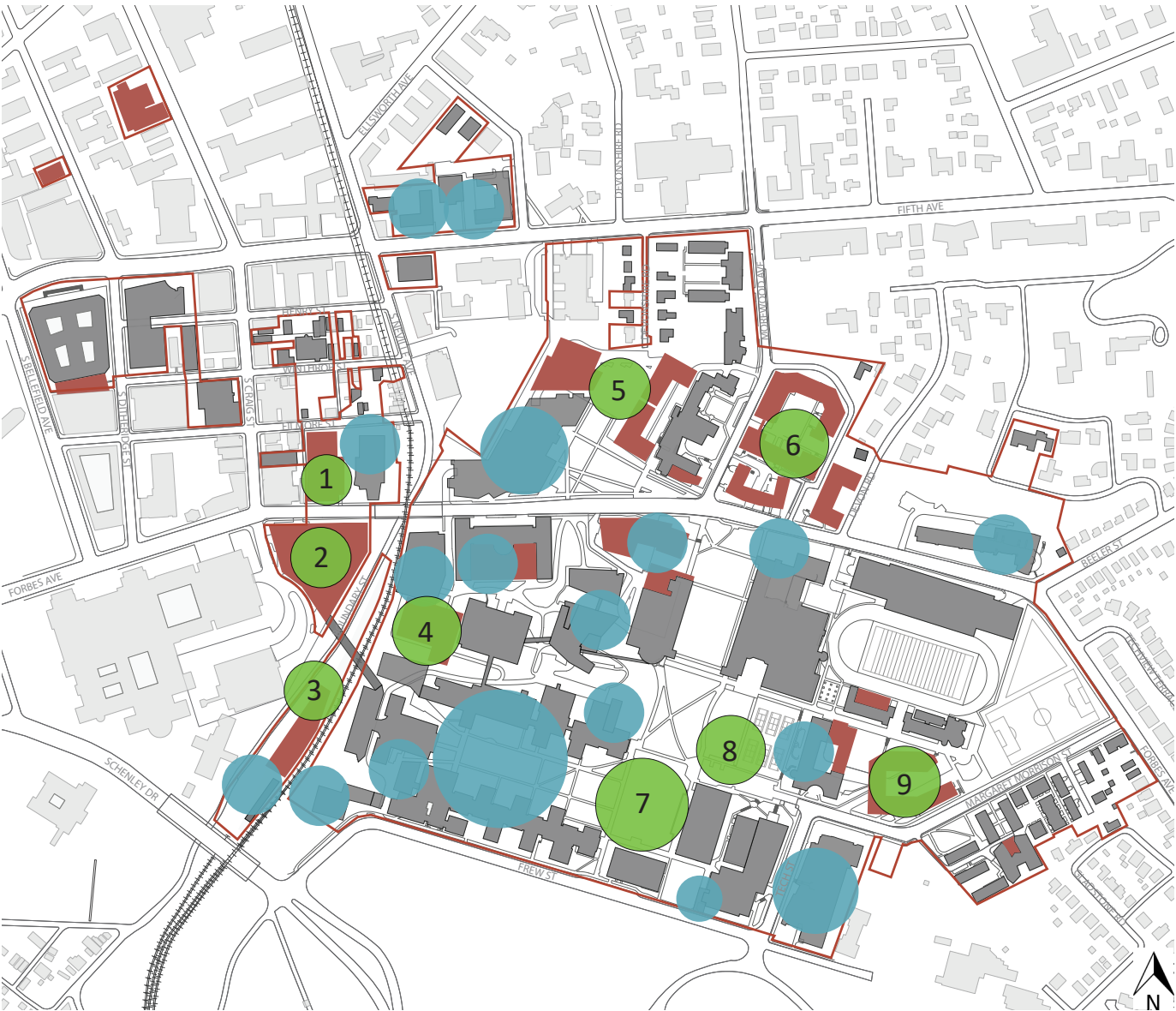
Carnegie Mellon also has many buildings with living and vegetated roofing systems. Our green roofs reduce cooling and heating energy consumption, extends the life of the roof, and lowers stormwater impacts.



The Cohon University Center

7.4 STORMWATER MANAGEMENT

7.4.2 Proposed Stormwater Plan



Refer to Section 2.0, page 30 for more information on current stormwater management.

Completed Projects	Proposed Projects
1	North of Forbes Avenue
2	South of Forbes Avenue
3	S Neville
4	FMS Building
5	Morewood Parking Lot
6	Greek Quad
7	Extend The Mall retention tank to the CFA Lawn
8	CFA Parking Lot/The Beach
9	Donner Site



7.5 GREEN BUILDINGS

7.5.1 Commitment to Building Sustainability

Buildings account for more than a third of all U.S. primary energy use and associated greenhouse gas emissions, making it essential to reduce energy consumption in buildings in order to meet national energy and environmental challenges (US Department of Energy). Carnegie Mellon University has a long and proud tradition of pursuing innovations in building design and construction in an interest of reducing energy usage in its existing and new structures.

The university has committed to adopting the Leadership in Energy and Environmental Design (LEED) green building rating system for all new construction and significant renovations that exceed \$5 million in value. These projects are designed and constructed to meet the current version of the LEED for New Construction and Major Renovations (LEED-NC) standard, or Commercial Interiors (LEED-CI). The university has established the goal of achieving a minimum of a LEED “Gold” rating.

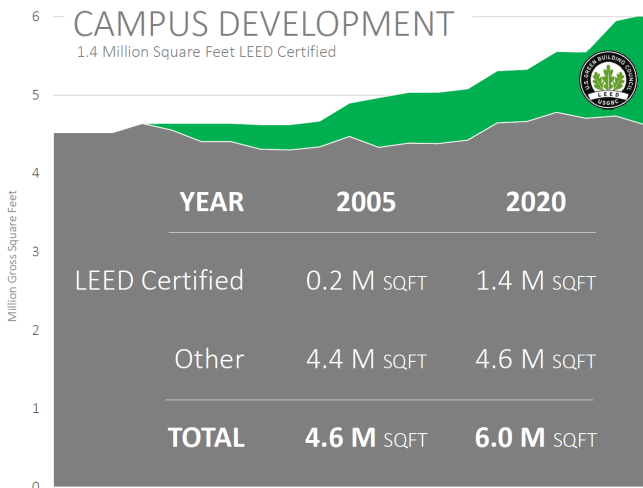
Less extensive renovations may utilize the LEED for Commercial Interiors (LEED-CI) rating system as applicable to their defined scope of work. For example, a project that is exclusively painting might only be eligible for a single LEED point under the Low-Emitting Materials, Paints and Coatings section of the LEED-CI rating system and would be expected to meet the requirements for that point. If the scope of a project broadens, associated sections of LEED-CI may come into play.

Since constructing the nation’s first LEED-certified dormitory (Stever Hall, 2003), the university has built close to 1.5 million square feet of LEED-certified construction. When projects completed recently or currently under construction are added to that quantity, it is expected that the university will have close to 2 million square feet of LEED-certified space by 2025.

Sustainable Building goals of the 2022 Institutional Master Plan include the following:

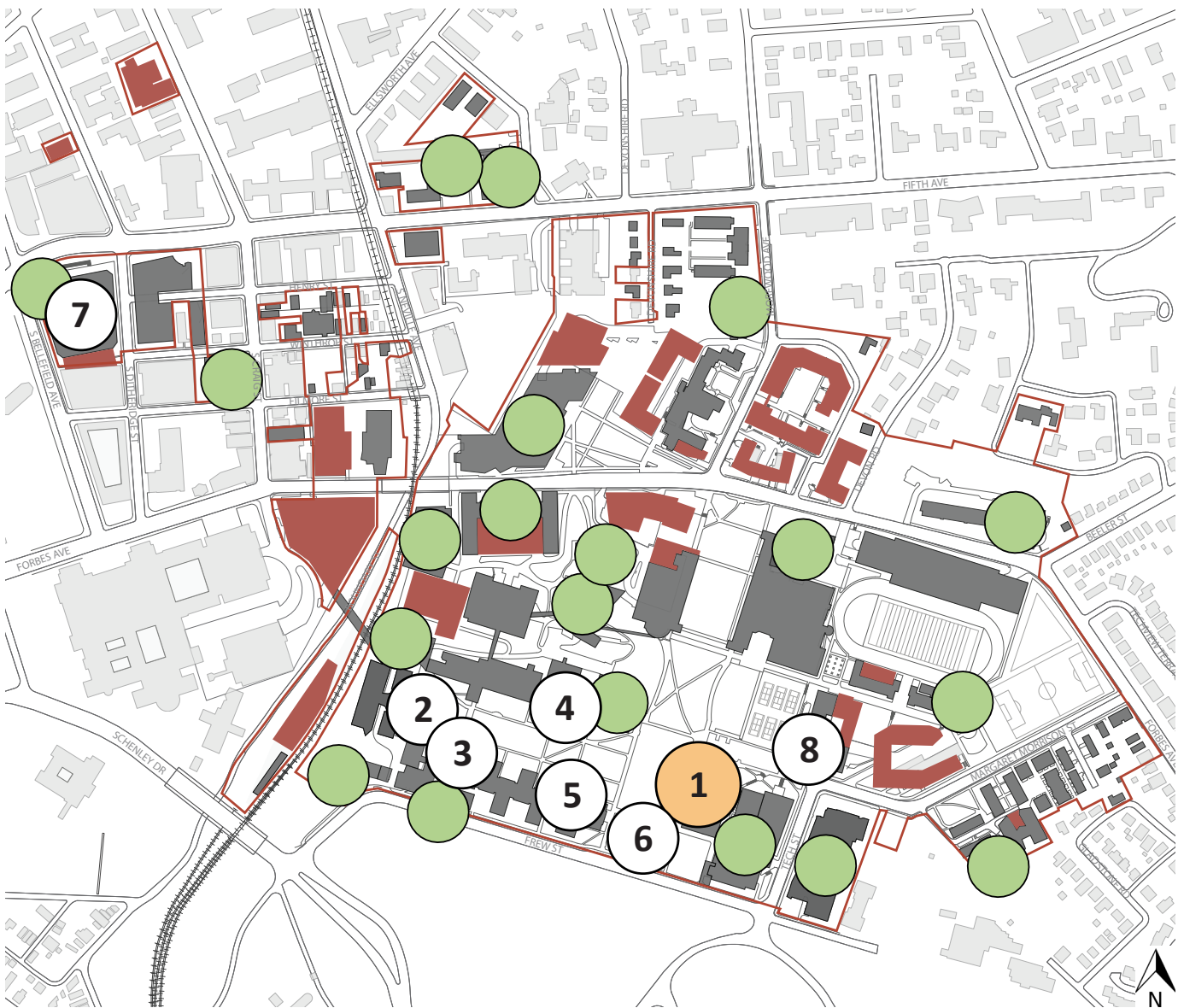
- Conversion of the current LEED information page on the Campus Design & Facility Development web page to a dashboard that provides additional public-facing details regarding projects under construction, as well as links to the USGBC LEED site.
- Consideration for pursuit of LEED certification for projects that are less than \$5 million in value.
- Openness to additional certifications including, but not limited to, WELL and Net Zero, as appropriate to building type.

The university’s commitment to sustainable buildings does not end with its own buildings. Since 1975, the Center for Building Performance and Diagnostics (CBPD) has conducted research, demonstrations, and teaching to advance the sustainability and performance of buildings and communities. In conjunction with its university-industry-government partnership, the Advanced Building systems Integration Consortium (ABSIC), the CBPD is engaged in ground-breaking work that investigates the impact of natural and advanced technologies on the physical, environmental, and social quality in buildings and communities



7.5 GREEN BUILDINGS

7.5.2 Proposed Green Buildings and Rehabilitation



Sustainable Rehabilitation Projects

● LEED Certified Buildings	1 College of Fine Arts
● Sustainable Rejuvenation in progress	2 Hamerschlag Hall
■ Development Sites	3 Porter Hall
— Carnegie Mellon University Property in 2022 IMP	4 Doherty Hall
	5 Baker Hall
	6 Hunt Library
	7 Mellon Institute
	8 Margaret Morrison Carnegie Hall

7 AFFORDABLE AND CLEAN ENERGY

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

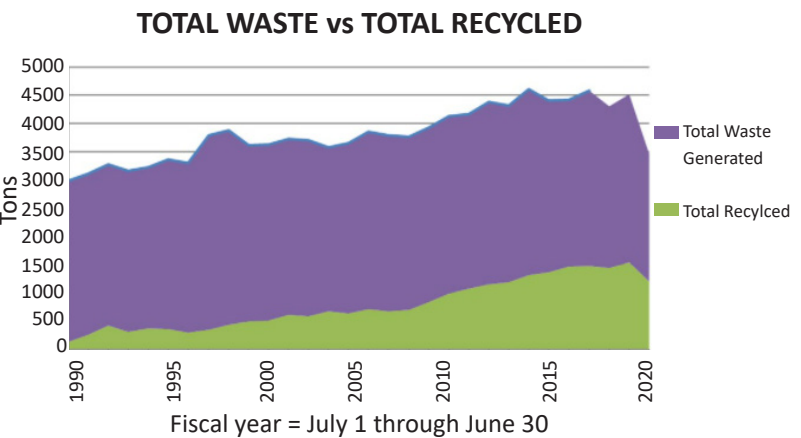
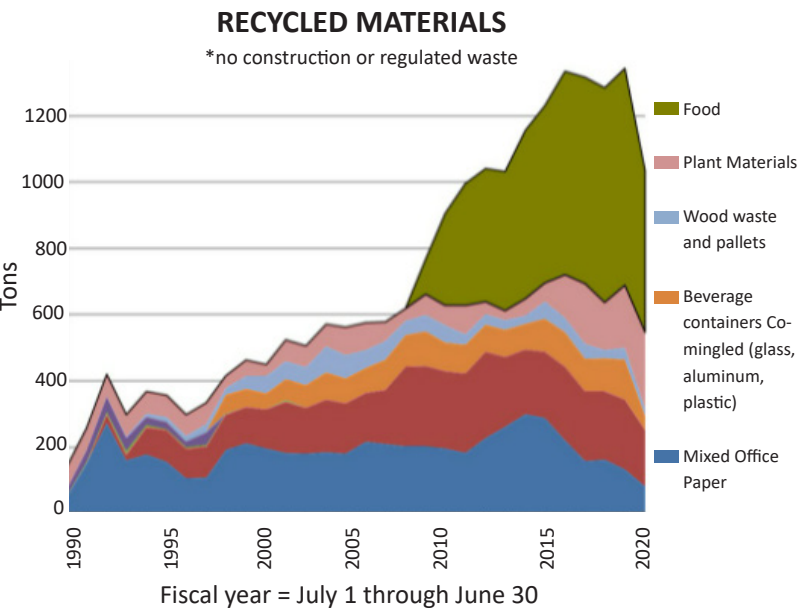
UNSDG Goals

7.6 WASTE MANAGEMENT AND WATER CONSERVATION

7.6.1 Waste Management

Campus-produced waste is currently recycled, composted, donated, or sent to the landfill. Since 2005 CMU has increased its diversion rate from 18% to 35% of waste diverted from the landfill. Recent addition of food waste collection for composting, though only offered in limited areas, currently accounts for almost 50% of all diverted waste. Further increased campus waste diversion rates will be achieved by expanding campus food waste collection points. While diversion rates will increase, CMU will also decrease the total waste generated by campus. Current waste generated per weighted campus user is 0.25 tons per academic year, a decrease of 0.1 tons since 2005.

- If campus population increases, campus waste generation should not increase. This will be accomplished by
- Increasing waste diversion opportunities, such as streamlining the process for hosting zero waste events
 - Increasing the types of items that we can recycle or donate through new programs or partnerships
 - Implementing programming to educate campus users on proper waste practices and how the choice to first reduce and reuse will lead to overall campus waste reduction



Steinbrenner Compost



Big Belly Solar Compactor

7.6 WASTE MANAGEMENT AND WATER CONSERVATION

7.6.2 Water Management

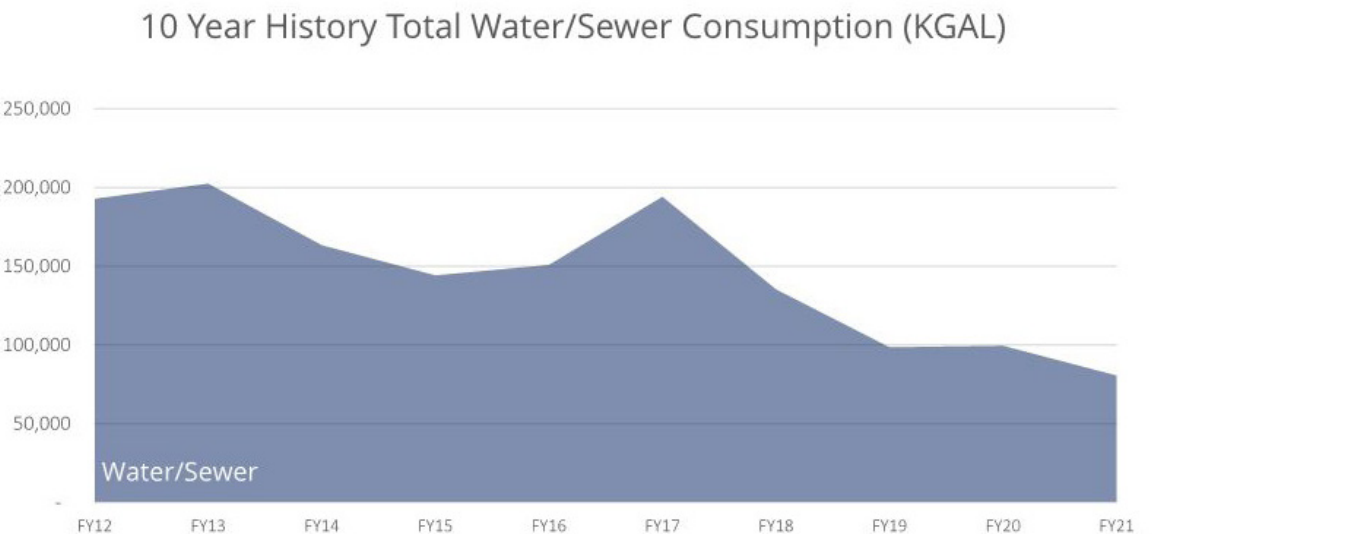
In concert with reducing campus energy consumption, the university is a charter member of the Pittsburgh 2030 District with goals for continued water consumption reductions. The university has focused on widespread installation of presence-sensing devices, flow controllers, and low-flow fixtures within buildings to reduce water consumption. As an integrated environmental strategy, we have installed filtered, water-refill stations to reduce the negative impact of bottled water use. Multiple recent construction projects incorporated rainwater reuse systems that utilize captured water and reduce the consumption of public utility drinking water. These cisterns provide a dual benefit of reducing demands on the PWSA sewer infrastructure and PWSA water supply.

As a result of a continuous focus on resource conservation, total campus water consumption today is 21% lower than the 2005 baseline without adjusting for growth in space or population. In comparison with our 2005 base year and adjusting for campus population growth, our PWSA water consumption rate dropped more than 50%.

CMU utilizes EnergyCAP software to track water consumption and cost at the building, invoice and submeter level. We have 114 buildings enabled

with reporting and dashboarding for comparison of water use trends. These tool assist with targeting progress of current programs, developing new opportunities, and monitoring for water consumption irregularities.

CMU sources water for the campus from the PWSA network but operates and maintains its own water distribution system for most building on the main campus. Our department of Environmental Health and Safety directs the Drinking Water Quality Program to ensure the campus water supply remains safe.



7.7 OPEN SPACES AND PEDESTRIAN CIRCULATION

7.7.1 Campus Open Space Strategy

Zoning Code Reference

905.03.D.4 (i) Open Space and Pedestrian Circulation Plan

The IMP shall include open space and pedestrian circulation guidelines and objectives, including a description of the circulation system to be provided through the campus and plans for ensuring the accessibility of pedestrian areas and open spaces.



Open spaces define the Carnegie Mellon University campus, from the original Hornbostel Mall to the recent Tepper Quad. Other open spaces on campus, such as the East-West Walkway, the West Quad and the Peace Garden, augment the more-formal spaces to create a green and verdant campus. In addition, the 400+ acres of Schenley Park immediate to the south of campus creates a unique urban campus in which the grandeur of one of Pittsburgh’s great parks is right across the street. The 2022 IMP not only continues that tradition of creating important open spaces, but it also works to enhance other campus open spaces and hillsides. With each opportunity, the Universal Access Committee ensures open spaces and pedestrian connections are accessible to all individuals.

By identifying new opportunities for open space, the 2022 IMP creates open spaces that are both immediately recognizable as well as those that are more subdued. Grand public spaces, such as the completion of the Square at Forbes and Morewood, will create a gateway entrance to campus while public space improvements along Frew St will create improved access to Schenley Park. New connections to the pedestrian and bicycle networks will afford continuous pathways to and through campus. Densely replanted hillsides will create green buffers to neighbors.

The Square

A new public space, at the Forbes Avenue end of the Cut, will create a clear front door to the campus,

take advantage of the strength of the architecture of the space, integrate in the major transportation network, especially the new Bus Rapid Transit system and will establish future connections to growth areas, especially in the North Campus area.

Schenley Park Connections

In partnership with the Pittsburgh Parks Conservancy, CMU will upgrade the long underserved campus edge with Schenley Park to include better pedestrian connections, integrated landscape design and new trail connections to Flagstaff Hill.

Pedestrian and Bicycle Connections

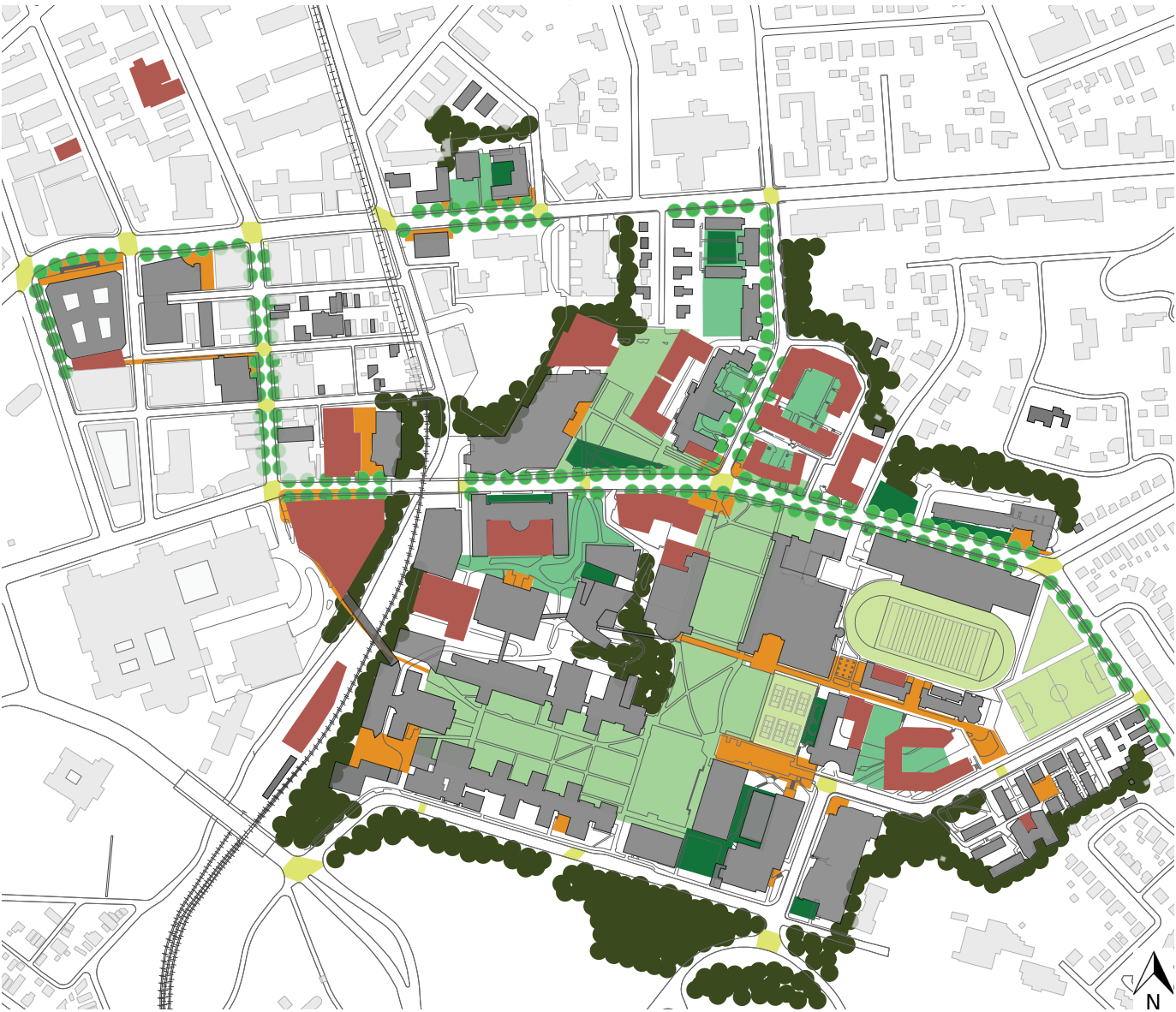
New pedestrian and bicycle connections to and through campus will better integrate campus to the East End bike network. A new north-south bike track from Fifth Ave to Frew St, with a connection to Margaret Morrison St, will provide dedicated access to Schenley Park. Improved pedestrian connections to Mellon Institute, Fifth Ave and Schenley Park will further improve connections to the edges of campus. Refer to the proposed projects in Section 6.0, page 91.

Junction Hollow Crossings

New and improved connections across Junction Hollow will better integrate the Historic Core with the Craig St area. A new pedestrian bridge south of Forbes will seamlessly link S Craig St to the Mall and pedestrian upgrades and art installations to the Forbes Ave bridge will improve the pedestrian experience along Forbes.

7.7 OPEN SPACES AND PEDESTRIAN CIRCULATION

7.7.2 Existing and Proposed Open Spaces



- The Mall / The Cut / Tepper Quad
- Campus Quad
- Garden Space
- Densely Wooded Hillside
- Athletic Field / Playing Surface
- Pedestrian Courtyard / Plaza
- Urban Street with Trees
- Development Sites

Refer to Appendix I, page 218 - 227, for the City’s Art Commission approval of CMU’s major streetscape program.





Carnegie
Mellon
University

8.0 NEIGHBORHOOD ENHANCEMENT STRATEGY

8.1 Introduction

8.2 Manage Impacts on Neighbors

8.3 Connect Campus and Community

8.4 Enhance South Craig Street

8.5 Provide Amenities to All

8.6 Commit to Regional Economic Growth

8.1 INTRODUCTION

8.1.1 Neighborhood Enhancement Strategy

Zoning Code Reference

905.03.D.4 (k) Neighborhood Protection Strategy

The IMP shall identify standards and programs that will be put in place to ensure that the quality of the surrounding neighborhoods is maintained or enhanced.



Carnegie Mellon University is situated between three Pittsburgh neighborhoods, Squirrel Hill, Shadyside and Oakland with most of its property located in the Squirrel Hill neighborhood. These are three diverse neighborhoods rich in history and tradition. Each has strong components of residential, commercial, and institutional development within their borders. We are a regular participant with the Registered Community Organizations (RCO) in the districts, including:

- Oakland Planning and Development Corporation
- Bellefield Area Community Association
- Shadyside Action Coalition
- Squirrel Hill Urban Coalition
- Oakland Business Improvement District
- Pittsburgh Parks Conservancy

With our southern boundary bordering Schenley Park, we appreciated our partnership with the Pittsburgh Parks Conservancy throughout the development of our 2022 institutional master plan. We consider Schenley Park to be a ‘fourth neighborhood’ towards which we feel a deep kinship and high level of responsibility. We have two new development sites in the Schenley Park area, the New Scaife building and the Health, Wellness, and Athletics Center. These newly developed sites will contribute to the significant infrastructure and open space intentions for that campus boundary. We hope these initiatives will benefit not only the university community but the park itself and our surrounding neighborhoods.



Proposed Connection from Schenley Park to Campus

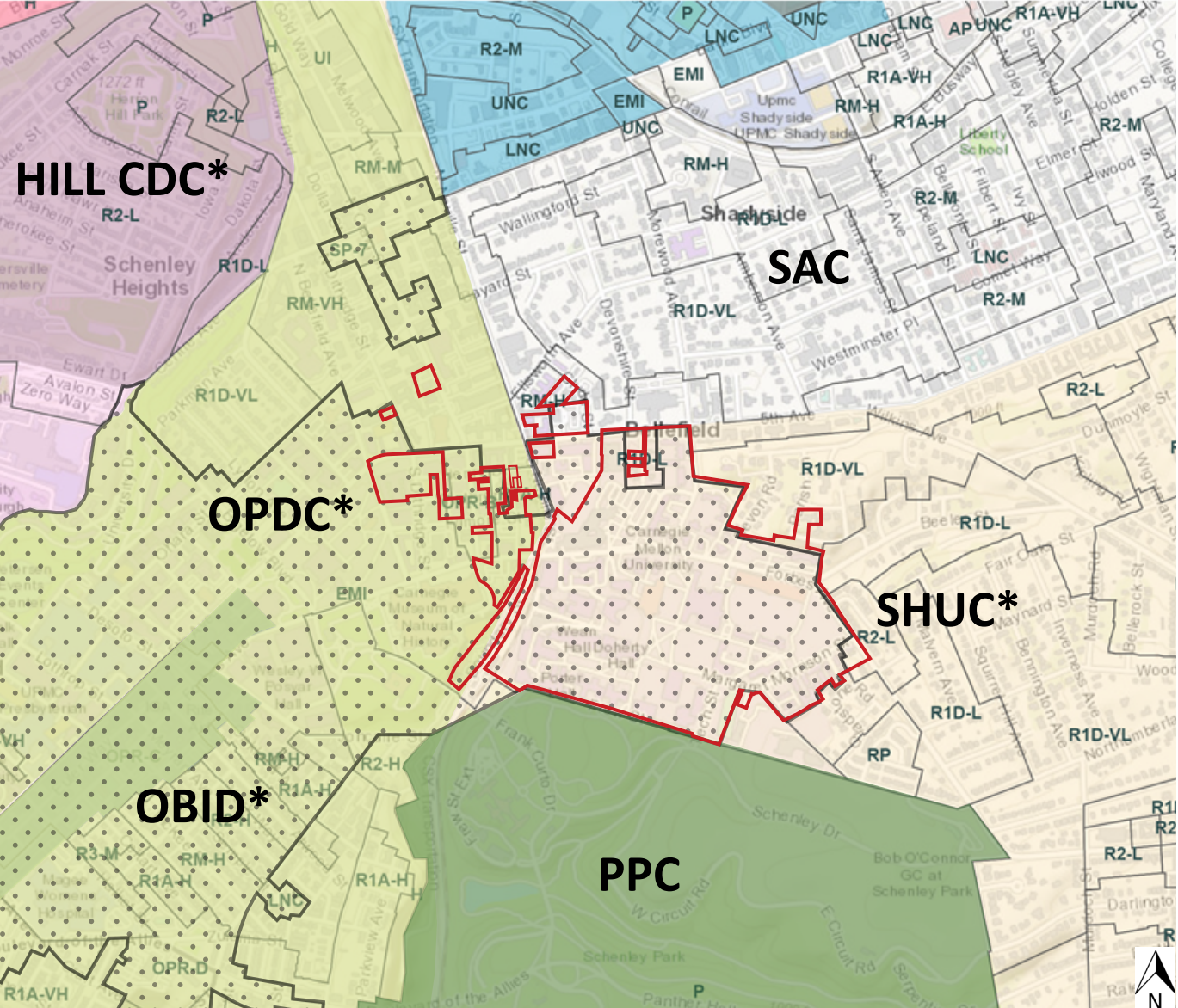
Neighborhood enhancement is an important component of our regular university practices. We will have a multi-faceted approach to supporting our local communities through this master plan.

Areas of enhancement include:

1. Managing impacts on neighbors.
2. Making connections with the community through service, education, research, and arts and culture.
3. Bringing enhancements to South Craig Street.
4. Providing amenities that are open and available to all.
5. Having a positive economic impact on the region.

8.1 INTRODUCTION

8.1.2 Community Organizations



(Map by City of Pittsburgh)

	Zoning Districts	
	Carnegie Mellon University Property in 2022 IMP	
	Oakland Planning and Development Corporation (OPDC)	https://www.opdc.org/
	Oakland Business Improvement District (OBID)	https://oaklandpittsburgh.com/
	Shadyside Action Coalition (SAC)	http://www.shadysideaction.org/
	Squirrel Hill Urban Coalition (SHUC)	https://shuc.org/
	Hill Community Development Corporation (HILL CDC)	https://www.hilldistrict.org/
	Pittsburgh Parks Conservancy (PPC)	https://pittsburghparks.org/
	Registered Community Organizations (RCO)	

8.2 MANAGE IMPACTS ON NEIGHBORS

8.2.1 Neighborhood Protection Strategy

Recognizing that there may be less-than-desirable impacts of living near or adjacent to a college campus, the university has taken time to consider mitigations that would improve the quality of life for our neighbors.

Zone What We Own

There are several properties that have been owned by the university for many years, but are not a part of the EMI district. We will move to add these eight properties to the EMI district, so that they fall under the same development standards as the rest of the campus. No development is proposed on any of these parcels in the 2022 IMP.

Proposed rezoning of three locations to EMI:

- 1. Neville at 5th: 52-J-60 / 52-J-50 (RM-H)
- 2. Devonshire Road: 52-K-175 / 52-K-182 / 52-K-185 / 52-K-188 / 52-K-191 (R1D-L)
- 3. Forbes at Margaret Morrison: 53-C-93 (R2-L)

Increase Undergraduate On-Campus Housing

Currently the university does not have enough beds or variety of housing types to support all of the undergraduate students who wish to live in on-campus residences. The 2018 Housing Master Plan created a strategy for adding up to 1,000 beds for undergraduates, and the 2022 IMP has provided development sites to meet that goal. Every additional bed filled on our campus is one less undergraduate student utilizing private rental properties. We believe that this makes for a more stable environment in the neighborhoods adjoining to or near our campus. The university also recognizes that not every undergraduate student will want to live in on-campus housing. As such, a commitment has been made to ongoing, repetitive communications and teaching opportunities by the university with students who live in private off-campus residences regarding expectations for their behavior in the community. Particular attention is paid to considerations such as parking, noise, and waste management.

Improve Community Engagement Strategy

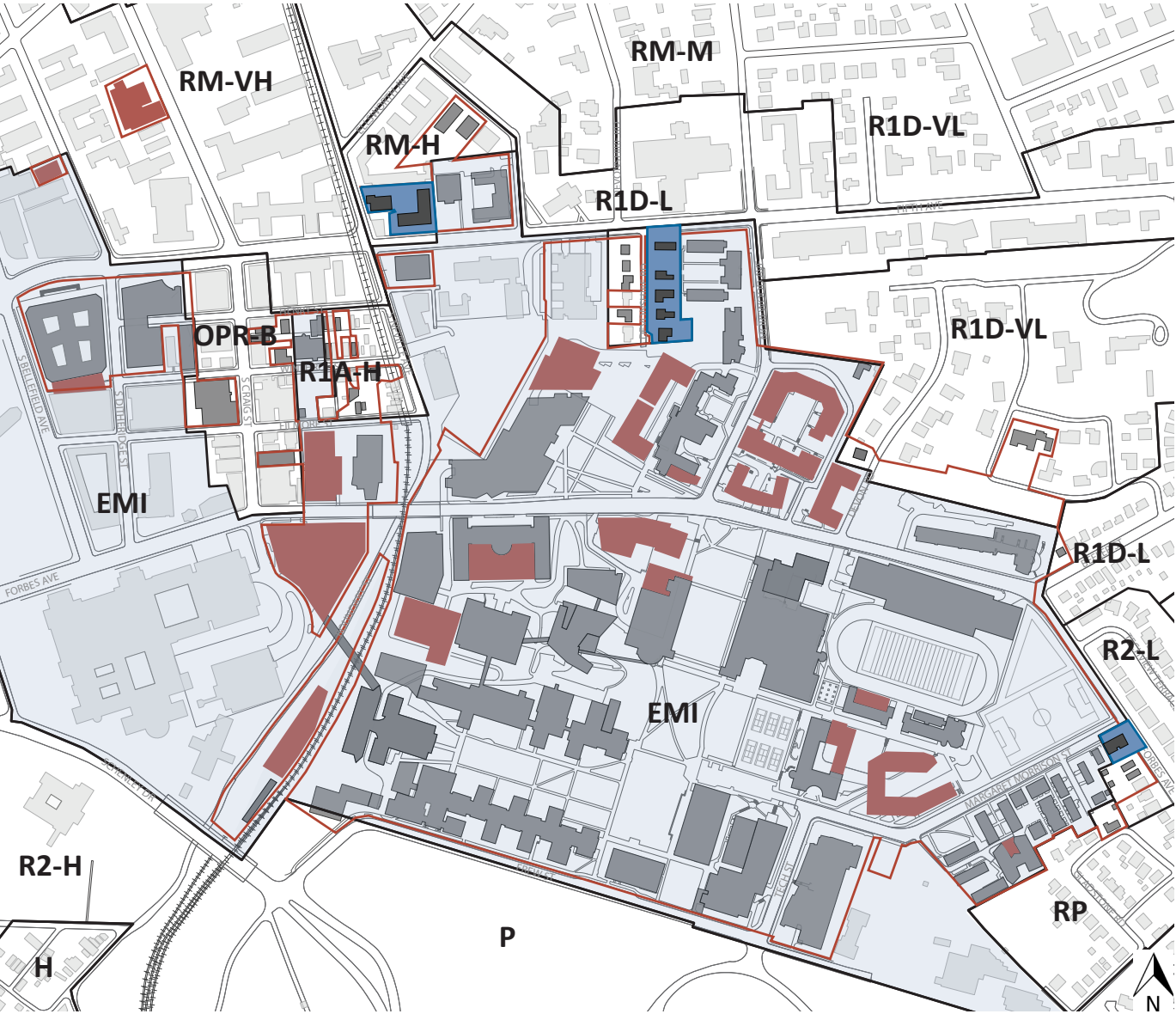
Through its Campus Design and Facilities Development Department (CDFD), the university has expanded its outreach to neighbors by creating a strategy for direct monthly communications regarding activities that may be of interest to those in the area. This communication covers activities of current or upcoming development projects, arts events and athletic competitions, and educational programs that are open for public participation. Responsibility for these communications are assigned to the Project Associate of the Senior Director for Planning and Design.

As new campus development projects may have impacts on adjoining communities, the university will implement a design engagement process for public spaces for projects that abut residential neighborhoods. The university will hold a design engagement session during the Design Development phase of the project and it will occur prior to the required Development Activities Meeting. The intent of design engagement is to include neighbors and community organizations regarding the design of the public spaces of the building, landscape and mobility improvements.

Additional online engagement strategies will be executed through the CDFD publicly available website. One will be a guide and self-guided tour for university public art (described and mapped in Section 8.5, page 129). Another will be a sustainability dashboard that will provide an ongoing snapshot of how the university is performing as a campus system in the areas of energy usage intensity, greenhouse gas emissions, water usage intensity, tree cover, and LEED certified square footage.

8.2 MANAGE IMPACTS ON NEIGHBORS

8.2.2 Proposed Zoning Map Changes



	Carnegie Mellon University Property in 2022 IMP	R1D-VL	Residential Single-Unit Detached, Very Low Density
	EMI (Educational Medical Institutional) Zoning District	R1D-L	Residential Single-Unit Detached, Low Density
	Proposed Zoning Change to EMI (3 small areas)	R1A-H	Residential Single-Unit, High Density
	Development Sites	R2-L	Residential Two-Unit, Low Density
EMI	Educational Medical Institutional	R2-H	Residential Two-Unit, High Density
OPR-B	Oakland Public Realm	RM-M	Residential Multi-Unit, Moderate Density
P	Park	RM-H	Residential Multi-Unit, High Density
H	Hillside	RM-VH	Residential Multi-Unit, Very High Density
RP	Residential Planned Unit Development		

8.3 CONNECT CAMPUS AND COMMUNITY

8.3.1 Making Community Connections

Community engagement has been part of CMU’s ‘DNA’ since Andrew Carnegie founded the Carnegie Technical Schools to educate the children of Pittsburgh factory workers. It is not just a part of our past; it’s a critical part of how we operate today. CMU aims to connect with our community through service, education, research, and arts and culture.

Service

Nurturing and strengthening the communities where our neighbors live, work, and play is an essential part of every student’s education, from day one through graduation. There are more than 40 student-run organizations on campus whose primary purpose is community service. The Office of Student Leadership, Involvement, and Civic Engagement (SLICE) connects students with service organizations and activities, both internal and external to the campus.

Education

As a higher education institution, CMU has a special obligation to equip both learners and educators with the tools they need to succeed. Our education initiatives mentor and support learners of all ages and backgrounds, not just undergraduate or graduate students. Training and supporting school teachers is another important aspect of our outreach, whether through the Robotics Institute, Gelfand Center for Service Learning & Outreach, or LGC Educational media group. CMU also has more than two dozen service learning courses across our seven colleges that feature direct community engagement and support.

Research

When CMU faculty and students collaborate with local government and neighborhood leaders, non-profit organizations, and businesses or startups, it is an expression of our deep commitment to positive societal impact. We leverage years of research and expertise in many sectors to help develop solutions to real-world challenges, among them engineering, public health, sustainability, entrepreneurship, economic development, design, urban planning, and public policy. Many of our over 100 research centers and institutes have a direct focus on local or regional issues.

Arts, Culture, and Recreation

The arts, design, and architecture were an essential part of the founding vision for the university, and arts and culture continue to play an integral role in our educational mission. Through arts and culture, Carnegie Mellon helps to frame problems, construct solutions, challenge audiences, perfect craft, and celebrate human vitality. Exposure to creative experiences positively influences our community, helping members to become more empathetic and well-rounded human beings, more aware of the larger world in which they will make their mark.

For more information, refer to Section 8.5, pages 128 - 129.

8.3 CONNECT CAMPUS AND COMMUNITY



Day of Service



Apple Fest



Carnegie Mellon University Day of Service



Spring Carnival



Margaret Morrison Children’s School



K-12 Summer programs

8.4 ENHANCE SOUTH CRAIG STREET

8.4.1 Making a Great Commercial District

It can be said that every great college has a great college street. For Carnegie Mellon University, South Craig Street is that street. The university intends to continue and expand its support for the mixed-use, diverse nature of the district. While CMU owns and leases properties along and near S. Craig Street, it does not wish to be the sole occupant or tenant of the block. The diversity of uses, building types, and occupants are what makes the district a desirable place to be.

Responsible Building Owner

As a building owner in the S. Craig Street area, the university recognizes its responsibility to contribute to and enhance the urban fabric of the district. New university-owned buildings and major renovation projects to university-owned structures in the area will include generous sidewalks, street trees, enhanced lighting, outdoor furniture, street level retail or restaurant establishments, and public art.

Technical and Financial Support

The university is an active participant in the S. Craig Street meetings of the Oakland Business Improvement District (OBID). Staff from both the Office of the President and Campus Design and Facility Development work with OBID staff to develop programs that will support the businesses. In 2021 the university implemented a year round free parking program for business district visitors.



Welcoming Students on S Craig Street

The CMU-owned lot off Filmore St. is available for visitors after 5 pm on weeknights and all day on the weekends. Other efforts provide design solutions to improve the physical experience of S. Craig Street, and financial and technical support to operationalize and organize business owners.

Design Solutions

CMU has developed several ideas for physical improvements in the district. Many of the buildings that now house restaurants, retail shops, or professional offices were once private homes. One opportunistic idea is to turn what was the rear yards of those single family homes into courtyards that could serve as outdoor seating or small parklets. A second idea is to strategically eliminate a small number of parking spaces and provide some type of booth or bench seating for restaurants in its place. The university is committed to partnering with OBID to see ideas like these implemented.

Promotion

In 2022, CMU would like to restart its Fall Craig Street Crawl event, designed to introduce freshman and transfer students to the district. Most of these students are not from western Pennsylvania and might not have had the opportunity to be aware of the district. The event features dancing, music, giveaways, and food from nearby restaurants.



Welcoming Students on S Craig Street

8.4 ENHANCE SOUTH CRAIG STREET

8.4.2 Concepts for South Craig Street Improvements



This study was developed by Studio for Spatial Practice in collaboration with Councilman Dan Gilman and the Oakland Business Improvement District. All maps and graphics were created by Studio for Spatial Practice. Published November 2017.

8.5 PROVIDE AMENITIES TO ALL

8.5.1 Celebrating an Open Campus

Carnegie Mellon University welcomes neighbors, and community members farther afield, to experience the variety and diversity of offerings of the university.

Public Use Facilities

Most of the university’s non-residential buildings are open to the public. Community members may utilize public lounges, restrooms, dining facilities, outdoor seating, and bicycle racks at no cost. Gesling Stadium’s 8-lane track is also available for use by the public. Two university libraries (Hunt and Sorrells) are also historically open for community members to go inside, relax, and read, study, or review library materials. Visitors to the campus may procure a guest pass to utilize computing facilities within libraries and access electronic databases. (<https://www.library.cmu.edu/>)

Arts and Culture

Throughout the year, opportunities exist for the public to enjoy artistic, dramatic, and musical performances from university students and faculty. The Miller Institute for Contemporary Art in the Purnell Center for the Arts is free and open to the public and features diverse offerings of art on a rotating basis throughout the year (<https://miller-ica.cmu.edu/>). School of Drama students perform new and classic plays and musicals throughout the year in the professional grade Phillip Chosky Theater, with individual show and subscription prices available at minimal cost. Students and faculty in the School of Music give recitals and concerts in a variety of genres including opera, philharmonic, jazz, contemporary and more. Performances take place in venues across campus as well as in the Carnegie Music Hall in Oakland, and many are also simulcast online. Most School of Music events are free.

Athletic Events

Carnegie Mellon fields athletic teams in Division III of the National Collegiate Athletic Association (NCAA). Nine women’s teams and eight mens teams compete in fall, winter, and spring sports. The university is happy to have neighbors attend athletic contests to cheer on our Tartans, or enjoy the Kiltie Band performances at Gesling Stadium football games. Admission is free for all athletic events.

Campus Infrastructure

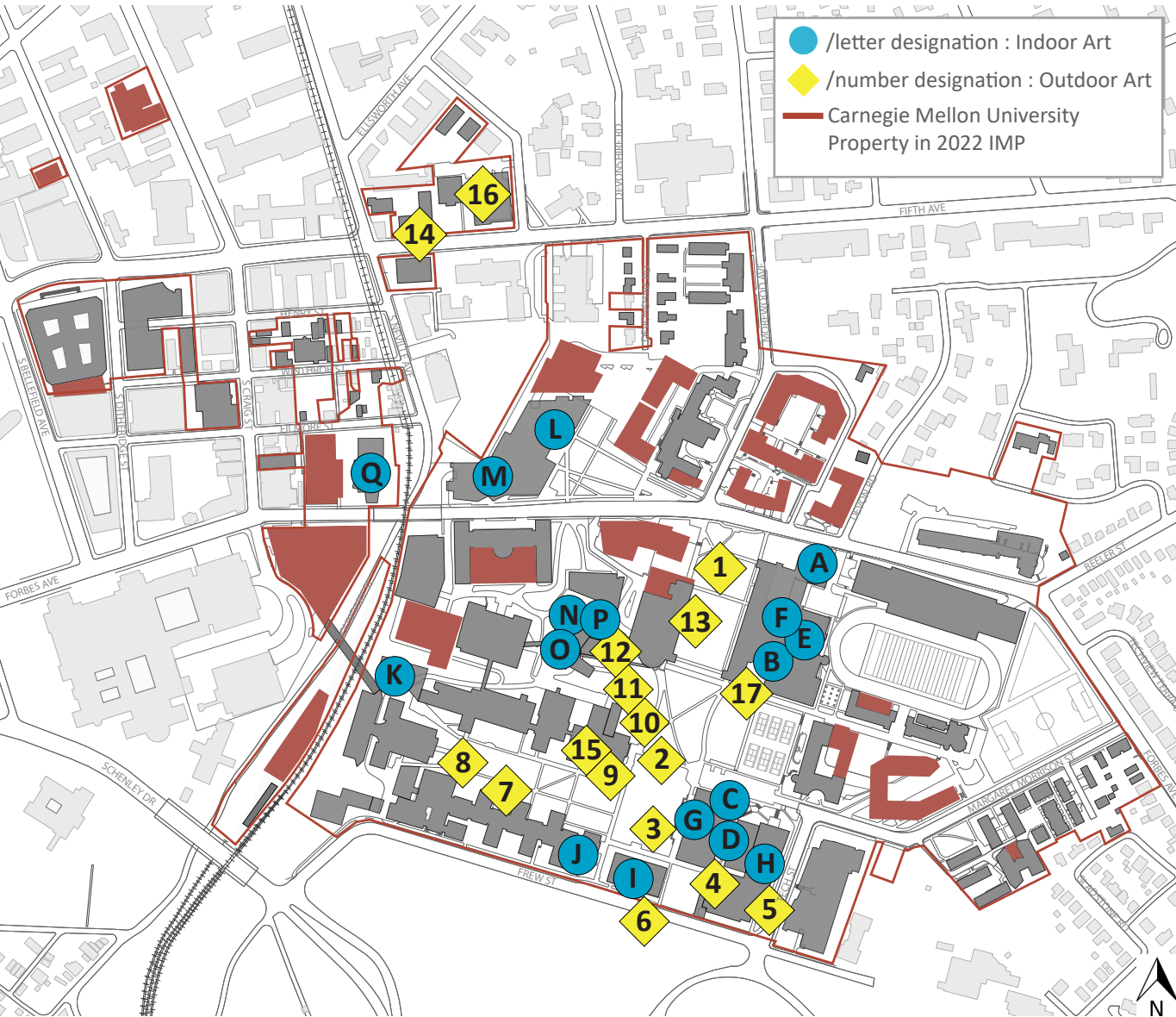
As described throughout Section 6, the university is committed to developing mobility-based improvements for the benefit of the campus community as well as its neighbors, such as dedicated pathways for wheeled mobility devices. Neighborway improvements to the Tech, Frew, and Margaret Morrison Streets corridors will create a calmer environment for pedestrians, cyclists, and drivers in the area. Maintenance of existing outdoor seating and an increase in the availability and types of outdoor seating is also planned. Public art signage will be created and installed to accompany a new online guide and self-guided tour.



Frank-Ratchye End of the Day Chandelier

8.5 PROVIDE AMENITIES TO ALL

8.5.2 Public Art



For more info: <https://www.cmu.edu/news/stories/archives/2021/august/campus-art.html>

A	Frank-Ratchye End of the Day Chandelier	1	Walking to the Sky
B	University Center Mural	2	The Fence
C	Sophomore Faces	3	College of Fine Arts Niches
D	The Young Americans	4	Kraus Campo
E	University Center Tiles	5	Industrial Reliefs
F	University Center Ceramic Tiles	6	Hunt Library Exterior Lighting
G	College of Fine Arts	7	Dr. Mao Yisheng Statue
H	Reliefs	8	Judith A. Resnik Memorial
I	Untitled (cast aluminum doors)	9	Snowmen
J	Baker Hall Staircase	10	Cloud Window
K	Joyce Bowie Scott Collection	11	Doherty Stairs
L	Reliefs II	12	Pausch Bridge
M	Collaborative Campus	13	Curtains
N	Gigapan	14	For The Love of Two Oranges
O	Woodcuts	15	Honeycomb
P	Holderman Piece	16	Inverted Dancer
Q	Stephanie Dinkins	17	Scotty Dog

8.6 COMMIT TO REGIONAL ECONOMIC GROWTH

8.6.1 Creating Positive Regional Impacts

Economic growth happens when everyone — including society’s most underserved and under-represented populations — participates. Likewise, a robust economy helps lift up the most vulnerable members of the community. Both aspects are vital to progress – and both are critical areas of focus for Carnegie Mellon University. Our contributions to public health, job growth, economic development, and cleaner air and water are helping to build a safer, healthier tomorrow for everyone.

We believe that it is our university’s obligation to use our influence and resources to help create opportunities for all — in Pittsburgh, the region, and the Commonwealth of Pennsylvania. This commitment goes far beyond recruiting a student body, faculty, and staff that accurately represent the vibrant diversity of our world.

CMU is leveraging research and creativity to help empower all members of society. Because we’ve always believed that every major societal challenge can be conquered with a fierce determination to make a positive impact.

CMU contributes significantly to its local, regional, and state economies through its operations, capital investments, ancillary spending by students and visitors, and the wage premium of CMU alumni living and working in the region. CMU’s aggregate economic impact is the sum of 4 non-overlapping categories:

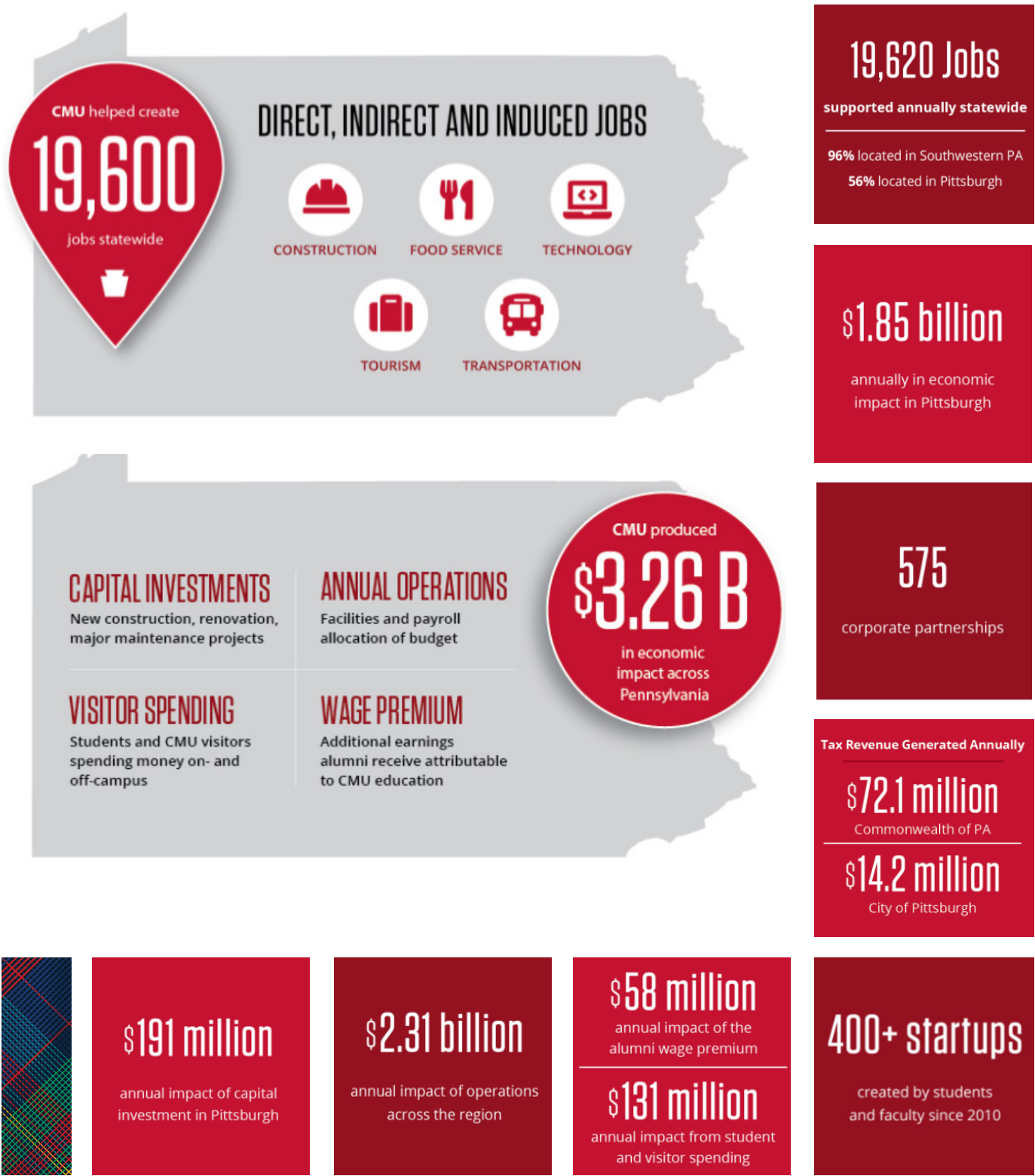
“As we embrace this tech-driven economy, universities like Carnegie Mellon are playing a growing and central role in the innovation ecosystem, helping to drive regional and national economic growth. This latest impact report underscores our commitment to the community and the special, symbolic relationship that Carnegie Mellon has with this city, this region, the Commonwealth of Pennsylvania, and the public, private and nonprofit partners that we work closely with every day.”

Farnam Jahanian
President of Carnegie Mellon University

- Annual Operations**
Total Output, Employment, & Employee Compensation
Tax Revenue
- Capital Investments**
Economic Impact of Capital Investments
Tax Revenue Generation from Capital Investments
- Student & Visitor spending**
Economic Impact of Ancillary Student & Visitor Spending
Tax Revenue Generation from Ancillary Student & Visitor Spending
- Alumni Wage premium**
Economic Impact from Wage Premium Associated with CMU Alumni
Tax Revenue Generation from Wage Premium Associated with CMU Alumni
- For more information, visit <https://www.cmu.edu/regional-impactcommunity-engagement/index.html>
- For more information on the Institute for Shared Prosperity, visit <https://www.cmu.edu/news/stories/archives/2021/april/center-for-shared-prosperity.html>

8.6 COMMIT TO REGIONAL ECONOMIC GROWTH

8.6.2 2019 State and Local Impacts





APPENDIX

- A. Master Plan Team and Schedule
- B. Outreach and Letters of Support
- C. Simonds Principles
- D. Campus Population Trends
- E. Building Inventory
- F. Parking Inventory
- G. Transportation Improvement Study
- H. Tree Replacement Strategy
- I. Streetscape Program
- J. Housing Master Plan

View the full Appendix in separate pdf attached.

