ALLEGHENY GENERAL HOSPITAL

Hospital Institutional Master Plan | March 2023

Allegheny Health Network

ikm

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Allegheny General Hospital
Institutional Master Plan
project no. 20-016
February, 2023

Allegheny Health Network

ikm

1 Introduction

[1.1] Mission, Vision, Values & Objectives

[1.1.1] Background

Allegheny General Hospital (AGH) is a proud member of the Allegheny Health Network, a non-profit academic medical system. Working as an integrated system within Highmark Health, employees are committed to improving health and promoting wellness in our communities, one person at a time. Inside the hospital's South Tower, AGH's founders etched into a stone wall, "Erected for the benefit of mankind to save life, relieve suffering and conserve health."

[1.1.2] Mission

To create a remarkable health experience, freeing people to be their best.

[1.1.3] Vision

A world where everyone embraces health.

ZONING CODE REFERENCE
905.03.D.4 (b) Mission and Objectives:

The 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 institutional Master Plan advances the goals and objectives of the institution.

[1.1.4] Values

People Matter
Every person contributes to our success. We strive for an inclusive culture, regarding people as professionals and respecting individual differences while focusing on the collective whole.

Stewardship
Working to improve the health of communities we serve and wisely managing the assets which have been entrusted to our care.

Trust
Earning trust by delivering on our commitments and leading by example.

Integrity
Committing to the highest standards encompassing every aspect of our behavior including high moral character, respect, honesty and personal responsibility.

Customer-Focused Collaboration
Because no one person has all the answers, we actively seek to collaborate with each other to achieve the right outcomes for our customers.

Courage
Empowering each other to act in a principled manner and to take appropriate risks to do what is right to fulfill our mission.

Innovation
Committing to continuous learning and exploring new, better, and creative ways to achieve our vision.

Excellence
Being accountable for consistently exceeding the expectations of those we serve.

[1.1.5] Objectives

The following objectives have been identified for the Institutional Master Plan:

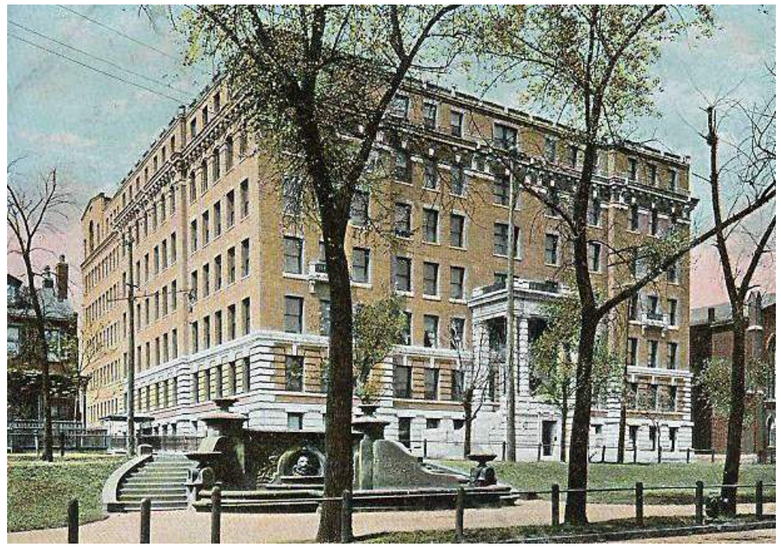
- Transition to a fully private patient room facility.
- Optimize service line locations across campus.
- Modernize procedural and clinical spaces consistent with new standards.
- Continue to engage and partner with the community.

[1.2] Requirements

[1.2.1] EMI District

Allegheny General Hospital's is located within an Educational/Medical Institution (EMI) District. As a Medical Institution within the district, City of Pittsburgh Zoning Code Section 905.03.C requires AGH to submit an Institutional Master Plan (IMP) for approval. The IMP shall provide a framework for development of large institutions such as hospitals and colleges, which control large areas of land within the City, contain a much greater density of development than surrounding areas, are a source of substantial employment, and are usually located immediately adjacent to residential neighborhoods. An IMP is intended to permit flexibility for a large institution which is not possible on a lot-by-lot basis, while providing a level of understanding to the public and the community about the potential growth of institutions and the resultant impacts.

This IMP follows the IMP Best Practices Guide for Medium and Large Academic Institutions, dated November 2018, created by the Pittsburgh Department of City Planning (DCP) and adopted by the City Planning Commission. The Guidelines do not create new requirements or replace the existing requirements of Section 905.03.D.3.



The seven-story, 400-bed 1904 facility that preceded the current hospital

[1.3] Planning Context

[1.3.1] History

Opening its doors in 1885 with modest facilities and medical resources, Allegheny General Hospital (AGH) in Pittsburgh has evolved from 50 beds inside of two adjoining brick homes into one of the country's premier health-care institutions. Through the decades, our talented and expert physicians and health-care professionals have always dedicated themselves to providing patients with innovative treatments, pioneering research discoveries, and exceptional medical care that is both personalized and compassionate.

The original 50-bed facility was replaced by a seven-story, 400-bed facility in 1904 with modern amenities such as on-site laboratory and analysis facilities. The 50- and 400-bed facilities were located in what was once Allegheny City. In 1907, Allegheny City was incorporated into the City of Pittsburgh.

Less than 30 years later, the hospital looked for further expansion. The 22-story South Tower building was completed in 1936 after the Great Depression paused construction for several years. The iconic yellow brick building was one of the first high-rise hospitals in the country, representing a high-quality standard for patient care and architecture.

In the 1960s and 1970s, AGH added medical office space, reflective of a growing trend towards consolidated outpatient care in a clinic setting. The East Wing, Allegheny Professional Building, and Hemlock Building structures were added during this time period. AGH purchased the Federal North Building in 1999 to further add to its medical office space.

The next significant hospital expansion came in 1981, when the 12-story Snyder Pavilion was completed. The building was lauded for its contemporary design and modern technological amenities. The subsequent decades saw interior renovation projects to modernize surgical and imaging facilities, as well as orthopedics.

Most recently, the AGH Cancer Institute addition was completed in 2020. With prominent frontage along E North Avenue, the building pays homage to the historic South Tower while also celebrating the future of patient care in a modern space.

Allegheny General Hospital currently has 524 licensed beds, approximately 800 physicians, 100 medical students, and 4,000 staff members. We are committed to improving and maintaining the good health of people in our communities and utilizing every possible technology, resource and talent to make that happen.

[1.3.2] Previous IMPs

1989 Five Year Master Facility Plan

As part of the Conditional Use Permit application for the Continuing Care Facility (now called the Hemlock Building) in 1989, AGH submitted a Five Year Master Facility Plan which also contained long-term projections of 20 to 30 years.

1992 Institutional Master Plan

The IMP prepared by IKM Incorporated described planned development to occur at five, ten, and twenty year intervals, as was required by the Department of City Planning at the time. The approved Plan included a strategic plan that anticipated future staff, patient, and technology changes, building projects, and a traffic study.

2017 Institutional Master Plan

In 2017, AGH submitted an Institutional Master Plan prepared by IKM Incorporated to the City of Pittsburgh. The plan was approved by the City on February 1, 2018. The 2017 IMP included the new Cancer Institute on E North Avenue, a docking station at Hemlock Street for medical mobile equipment, and a 1,500 sf storage structure between the Hemlock Building and Snyder Pavilion. These items are described in further detail in section 2.2.

The Cancer Institute and docking station were both completed prior to the submission of this current Institutional Master Plan. The storage structure is currently under construction and due to be completed in late 2022.

[1.3.3] Other Planning Efforts

Planning initiatives adjacent to, and in the vicinity of the AGH campus include:

Allegheny Commons Master Plan

The 2018 Allegheny Commons Master Plan, developed by the Pittsburgh Parks Conservancy, continues the goals of the benchmark 2002 Master Plan to increase the historic park's value to the community. Allegheny Commons Park, listed on the National Register of Historic Places since 2013, is a significant neighborhood amenity. Highmark Health, representing Allegheny General Hospital, has made financial contributions to promote the rehabilitation and improvement of this important landmark, including the restoration of the iconic fountain along E North Avenue.

One Northside Community Plan

One Northside is a resident-driven initiative that catalyzes and supports long-term sustainable change by coordinating the efforts of eighteen neighborhoods. Formed in 2014, One Northside worked with thousands of residents to develop a framework divided into five key focus areas (or "pillars"), education, employment, health, place, and safety. The Community Plan, published in 2015, focuses on four key areas: education, human services, youth development, and economic and community development. As the Northside's largest employer and the regions' pre-eminent health care facility, AGH plays a role in all five of the key pillars identified.

Manchester-Chateau Neighborhood Plan

The Manchester-Chateau Neighborhood makes up the westernmost edge of the Northside area. It has a rich history that dates back to the era of manufacturing magnates such as Andrew Carnegie. Despite economic downturn in the 1970s and 1980s, the neighborhood is poised for a comeback. In order to ensure that this resurgence is equitable and sustainable, the community and the Department of City Planning engaged in a planning process in 2017-2018 that produced a 10-year Neighborhood Plan for development. A thriving Manchester-Chateau and a strong and sustainable AGH are mutually beneficial.

[1.4] Process

The IMP planning process involved meetings with AGH leadership and stakeholders to gather and organize information about existing conditions and programs, and to establish long-term goals. This included an evaluation of current service lines and anticipated service line restructuring to meet the needs of the community and integrate into the regional network of healthcare facilities.

AGH retained outside planning, traffic and civil engineering consultants to facilitate development of the IMP content and participate in the community engagement process.

Members of the AGH and consultant teams met with the Department of City Planning, the Department of Mobility and Infrastructure, and other local agencies to review the IMP and ensure that its contents aligned with the City of Pittsburgh Zoning Code and the IMP Best Practices Guide.

The community engagement process consisted of meetings with local neighborhood councils and public community sessions. Community group sessions held in early 2022 were virtual due to a resurgence of the COVID-19 pandemic. Lower transmission numbers in summer 2022 allowed for the in-person public engagement that is crucial to community involvement.

While the IMP was developed based on current knowledge, information, and data, matters may arise during the implementation process that necessitate amendments. Any amendments will be subject to the City review process and will follow the same methodology outlined here and in the Best Practices Guide, incorporating any updates made by the City between now and then.

[1.4.1] Project Team and Committees

AHN/AGH/Highmark (Owner):

- Mark Nussbaum, COO
- Mark Jones, Senior Community Affairs Analyst
- Mark Hartman, Senior Program Manager
- Eric Lawson, Senior Program Manager
- Lauren DeDominic, Community Affairs Analyst
- Tammy Suchanek, Project Manager
- Angela Holtzman, Project Manager
- Bernard Lindstrom, Director of Facilities
- Phyllis Barber, Sustainability Manager
- Chris Reinard, Senior Counsel
- Daniel Lesinski, Energy Manager

Reed Smith (Consultant):

- Michael Kostiew, Real Estate Partner
- Rachel O'Neill, Real Estate Associate

IKM (Architecture and Planning):

- John Keelan, Principal-in-Charge
- Catherine Wick, Project Manager
- Mindy Coblentz, Sustainability Consultant
- Maddi Johnson, Project Designer

Trans Associates (Traffic & Parking):

- Cindy Jampole, Principal/CEO
- Ann Kline, Associate Analyst

Gateway (Civil Engineering):

- Sean Donnelly, Project Manager

[1.4.2] Government/City Bodies

The IMP development team met with the following government and city entities during the IMP process:

- City of Pittsburgh Department of City Planning
- City of Pittsburgh Department of Mobility and Infrastructure
- Green Building Alliance (GBA)
- Pittsburgh Regional Transit (PRT)
- Pittsburgh Water Sewer Authority (PWSA)

[1.4.3] Public Engagement Summary

As part of the IMP process, community groups will be engaged on issues related to the helipad relocation, planned new towers, traffic and parking impact, and the comprehensive plan. The following community groups were engaged:

- December 14, 2021: Pre-Application Meeting
- January 12, 2022: TIS Scoping Meeting
- January 25, 2022: Fineview and Perry Hilltop Community Meeting
- February 2, 2022: Northside Leadership Conference Community Meeting
- March 8, 2022: East Allegheny Community Meeting
- March 14, 2022: Allegheny Central Community Meeting
- April 6, 2022: Northside Leadership Conference Community Meeting
- April 7, 2022: Performance Target Review Meeting #1
- June 14, 2022: Fineview and Perry Hilltop Board Meeting
- June 15, 2022: Performance Target Review Meeting #2
- June 20, 2022: Fineview and Perry Hilltop Community Meeting
- July 6, 2022: Community Open House
- August 3, 2022: Northside Leadership Conference Board Meeting
- September 13, 2022: Performance Target Review Meeting #3
- It is anticipated that this IMP will be valid through 2032.

Groups Engaged:

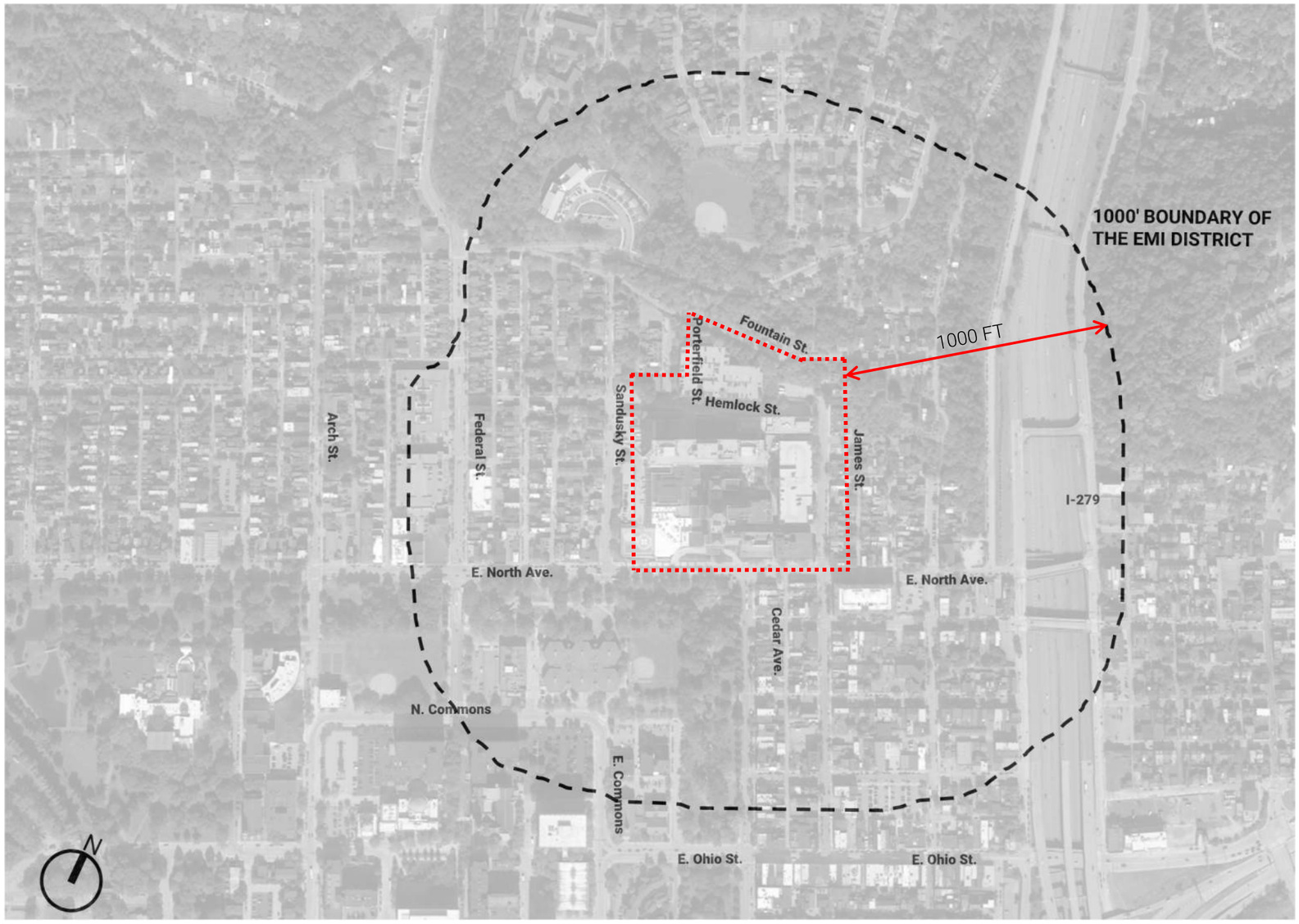
- North Side Leadership Conference
- Allegheny Central City Association
- East Allegheny Citizens Council
- Fineview Citizens Council
- Perry Hilltop Citizens Council

2 Existing Conditions

[2.1] IMP Boundary

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.



The existing EMI district is bounded by E North Street to the south, Sandusky Street to the west, an irregular alignment of Hemlock Street from Sandusky to Porterfield Street to Fountain Street to James Street to the north, and James Street to the east. The planning area for the Institutional Master Plan includes the EMI district described and the properties owned by AGH within on thousand (1,000) feet of the EMI District.

The area within the red dashed profile is the area being considered for this Institution Master Plan. AGH is not seeking to modify the EMI district boundary as part of this IMP effort.

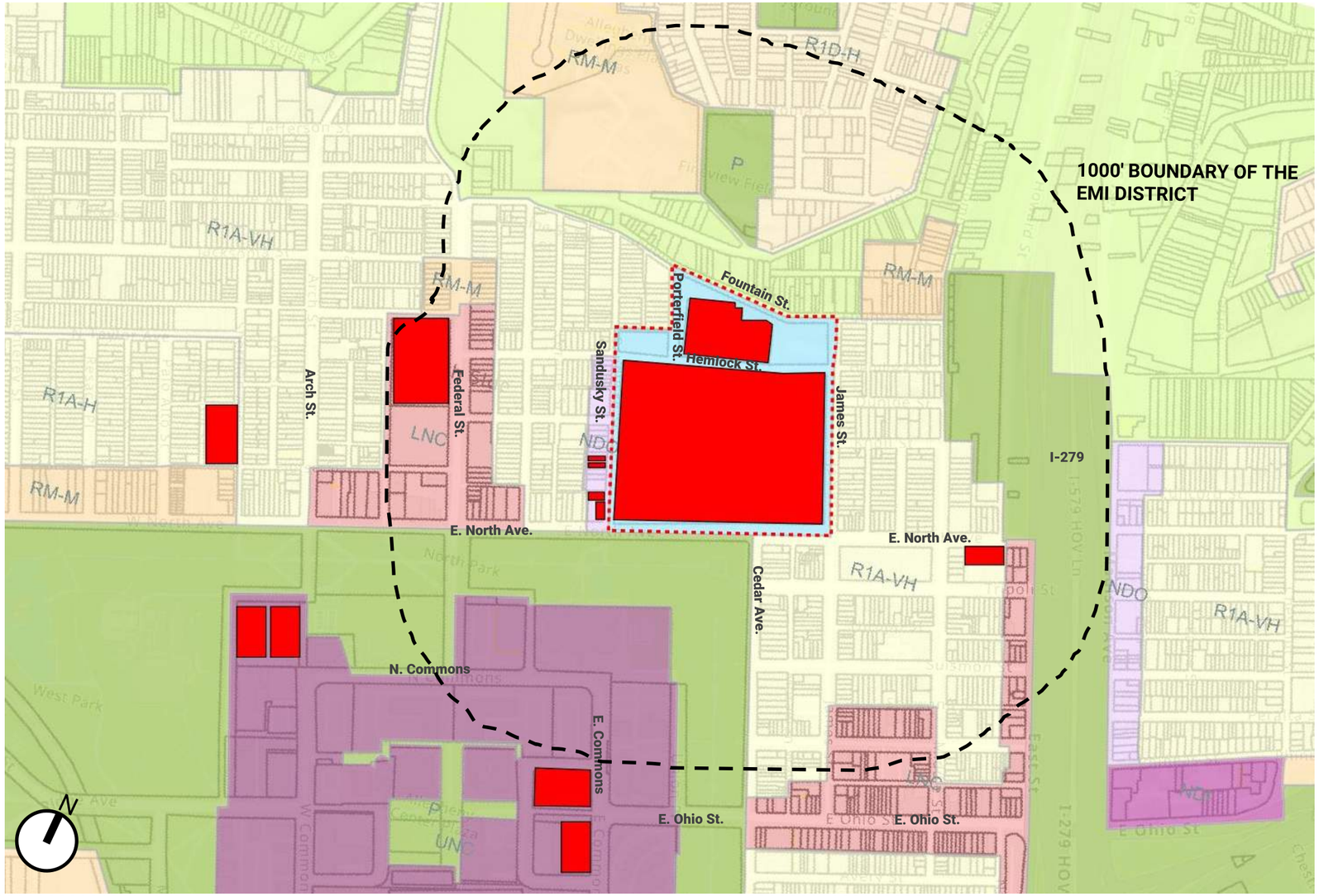
Zoning Legend:

EMI boundary

[2.2] Existing Property and Uses

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 (5) A description of off-street parking and loading areas and facilities, including a statement of the approximate number of parking spaces in each area or facility.



Allegheny General Hospital is located within an Educational/Medical Institution (EMI) zone. It is bordered by residential zones to the south-east, east, north, and north-west. The western border of the EMI zone is primarily made up of a Neighborhood Office (NDO) zone. A park zone borders the south-west corner of the EMI zone.

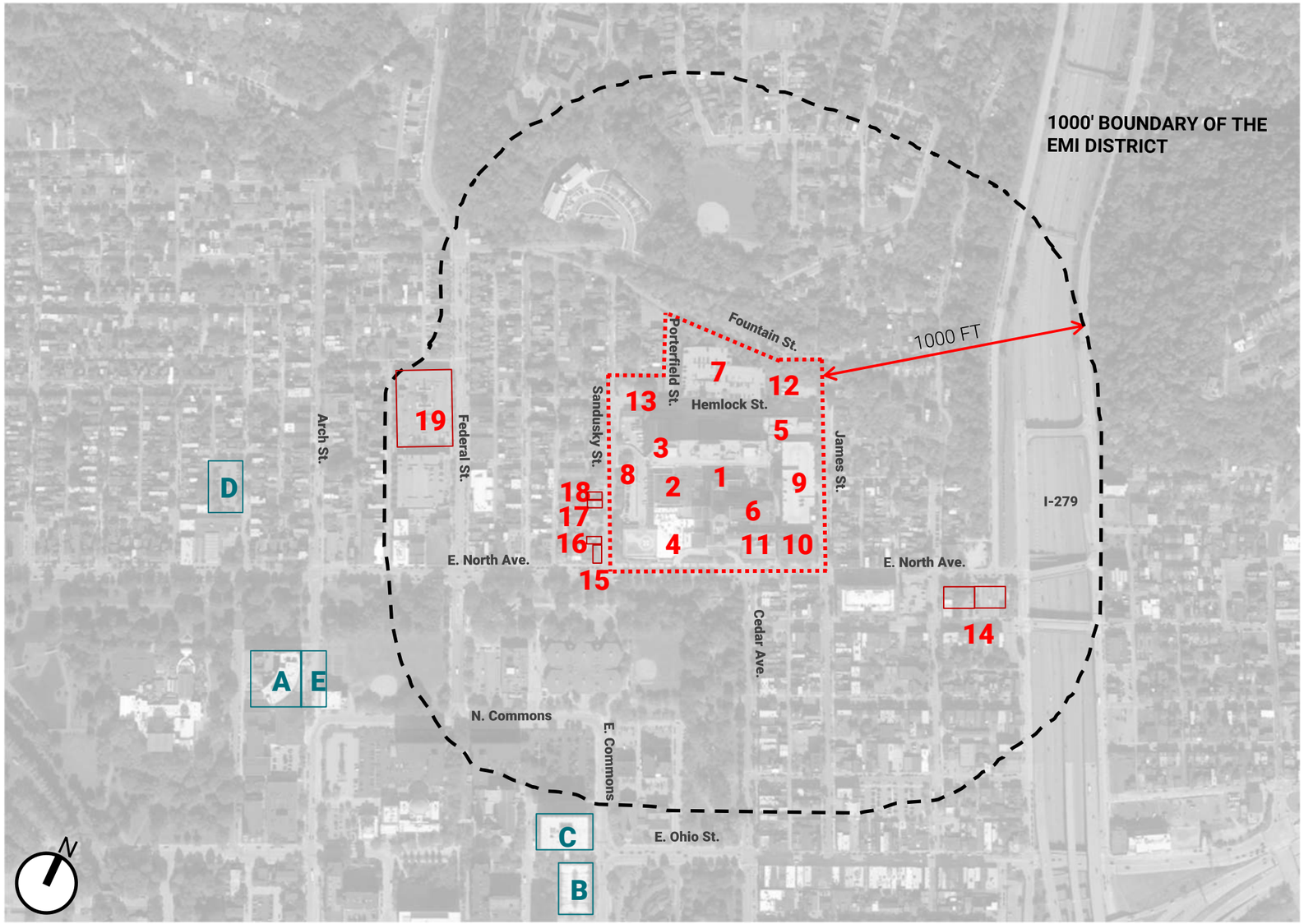
Zoning Legend:

- Downtown Riverfront
- Planned Unit Development
- Educational/Medical Institution
- Neighborhood Office
- Parks
- Hillside
- Neighborhood Industrial
- Urban Industrial
- Local Neighborhood Commercial
- Urban Neighborhood Commercial
- Single-Unit Attached Residential
- Single-Unit Detached Residential
- Multi-Unit Residential
- AGH Buildings
- EMI boundary

Source: Pittsburgh Zoning GIS

[2.2] Existing Property and Uses

[2.2.2] Site Plan



The existing EMI district is bounded by E North Street to the south, Sandusky Street to the west, an irregular alignment of Hemlock Street from Sandusky to Porterfield Street to Fountain Street to James Street to the north, and James Street to the east. The planning area for the Institutional Master Plan includes the EMI district described and the properties owned by AGH within one thousand (1,000) feet of the EMI District.

The area within the red dashed profile is the area being considered for this Institution Master Plan. AGH is not seeking to modify the EMI district boundary as part of this IMP effort.

Legend:

- EMI Boundary
- 1000' of EMI Boundary
- AGH Property within 1000' of EMI District
- AHN Property Outside IMP Study Area

	Property/ Parcel Name within 1000' of EMI
	Allegheny General Hospital
1	South Tower
2	Northwest Wing
3	Snyder Pavilion
4	Academic Cancer Center
5	Hemlock Building
6	Power House
7	Hemlock St. Garage
8	Sandusky Garage
9	James St. Garage
10	Allegheny Professional Building
11	East Wing Office Building
12	1403 James St
13	200 Hemlock St
14	AGH Child Care Center
15	Aeberli Building
16	1219 Sandusky St
17	1217 Sandusky St
18	1205 Sandusky St
19	Federal North Building

[2.2] Existing Property and Uses

[Table 1A] AGH owned or controlled properties within EMI

	Property/ Parcel Name	Building / Land Use	GSF	Year Built	Story/Height above grade	Lot #	Hours of Operation
---	Allegheny General Hospital	Multiple interconnected buildings listed below comprising the licensed hospital	Varies	Varies	Varies	23-M-245	24/7
1	South Tower	Building within the licensed hospital	444,064 sf	1936	21 Stories Above Grade / 2 Stories Below Grade / 265'	23-M-245	24/7
2	Northwest Wing	Building within the licensed hospital	136,358 sf	1970	5 Stories Above Grade / 2 Stories Below Grade / 70'	23-M-245	24/7
3	Snyder Pavilion	Building within the licensed hospital	683,915 sf	1981	13 Stories Above Grade / 1 Story Below Grade / 202'	23-M-245	24/7
4	Academic Cancer Center	Building within the licensed hospital	68,327 sf	2020	3 Stories Above Grade / 2 Stories Below Grade / 65'	23-M-245	Business Hours
5	Hemlock Building	Building within the licensed hospital	96,112 sf	1991	5 Stories Above Grade / 1 Story Below Grade / 90'	23-M-245	Business Hours
6	Power House	Facilities	51,719 sf	1932	4 Stories Above Grade / 2 Stories Below Grade / 265'	23-M-245	24/7
7	Hemlock St. Garage	See Table 2A	-	-	5 Stories Above Grade / 2 Stories Below Grade / 91’	23-M-247-A 23-M-247-L 23-M-247-S	24/7
8	Sandusky Garage	See Table 2A	-	-	2 Stories Above Grade / 20’	23-M-12	24/7
9	James St. Garage	See Table 2A	-	-	6 Stories Above Grade / 1 Story Below Grade / 68’	23-M-10-A 23-M-10-L 23-M-10-S	24/7
10	Allegheny Professional Building	Medical Offices, Fitness Center	74,928 sf	1977	6 Stories Above Grade / 93'	23-M-5-S	Business Hours
11	East Wing Office Building	Medical Offices	79,836 sf	1958	5 Stories Above Grade / 2 Stories Below Grade / 75'	23-M-5-S	Business Hours
12	1403 James St	See Table 2A	-	-	-	23-H-245	-
13	200 Hemlock St	Greenfield Lot	-	-	-	23-G-174	-

[2.2] Existing Property and Uses

[Table 1B] AHN parcels within 1,000 ft of EMI

	Property/ Parcel Name	Building / Land Use	GSF	Year Built	Story/Height above grade	Lot #	Hours of Operation
14	Bright Horizons at Allegheny General Hospital	Employee Child Care Center	21,025 sf	Unknown	1 Story Above Grade	24-J-22	M-F, 6:30am – 6pm
15	Aeberli Building	Office	9,023 sf	c1860	3 Stories Above Grade / 1 Story Below Grade	23-L-258	Business
16	1219 Sandusky St	Surface Parking	-	-	-	23-L-244	-
17	1217 Sandusky St	Surface Parking	-	-	-	23-L-243	-
18	1205 Sandusky St	Surface Parking	-	-	-	23-L-249	-
19	Federal North Building	Medical Offices	203,577 sf	2002	3 Stories Above Grade	23-L-20	Business Hours

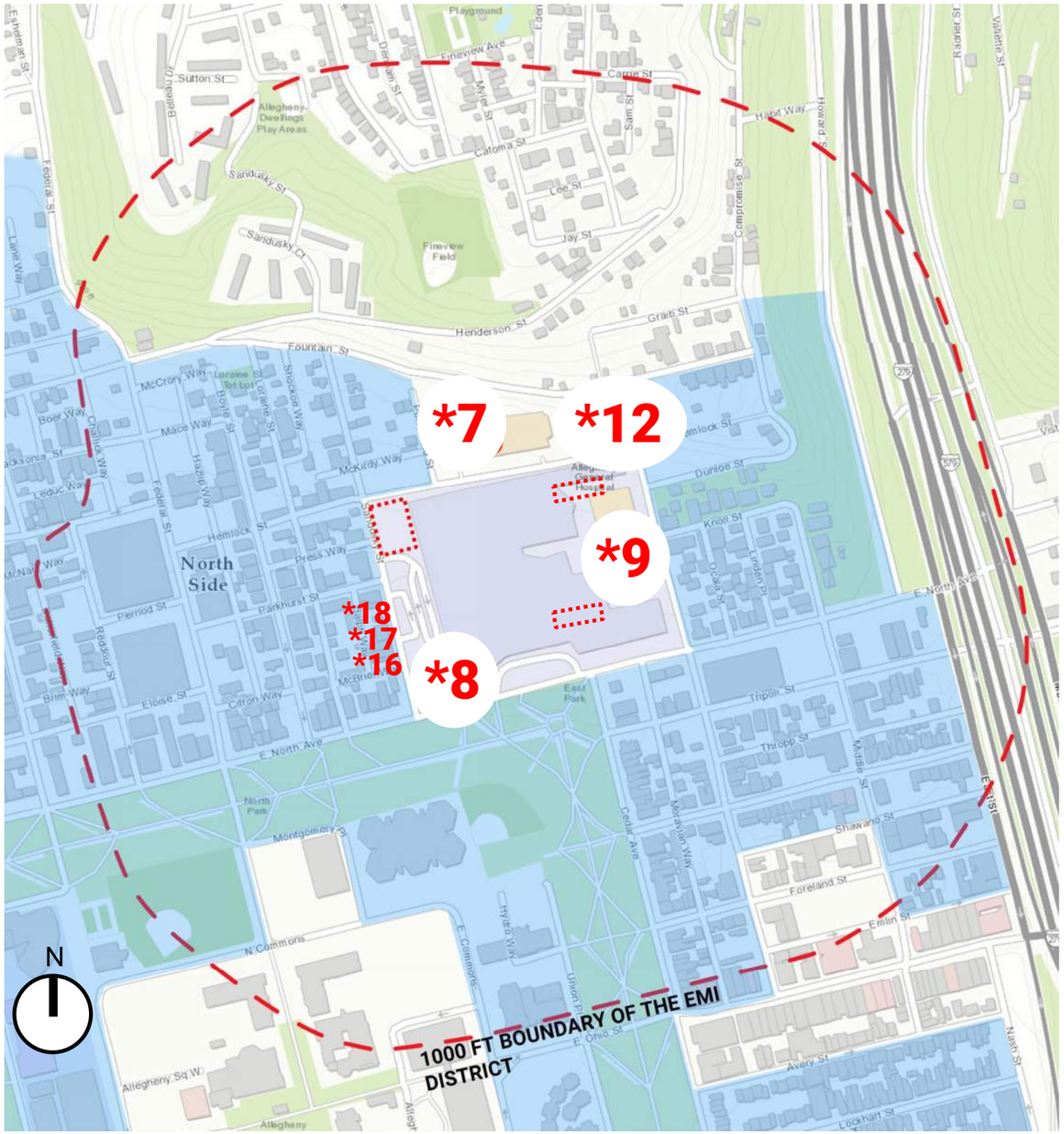
[Table 1C] AHN properties outside EMI 1,000 ft boundary but within the Allegheny Central Neighborhood

	Property/ Parcel Name	Building / Land Use	GSF	Year Built	Story/Height above grade	Lot #	Hours of Operation
A	Former Kindred Hospital	Hospital	74,417 sf	1906	6 Stories Above Grade / 1 Story Below Grade	23-P-90	Business Hours
B	4 Allegheny Center	Garage	101,331 sf	c1980	4 Stories Above Grade	23-R-50-0-1	24/7
C	4 Allegheny Center	Office	255,002 sf	c1980	10 Stories Above Grade	8-C-300	Business Hours
D	1201-1215 Sherman Ave	Vacant Lot	-	-	-	23-K-174	-
E	Diamond Street	Street Adjacent to Kindred Hospital	-	-	-	23-P-501	-

The properties listed in table 1C lie outside the EMI district boundary and are not within the scope of the IMP. However, since they are owned or leased by AHN and are located within the North Side community, they are listed as they are of interest to the community.

[2.2] Existing Property and Uses

[2.2.4] Parking Facilities



* Parking within the EMI District

The10-year master plan envisions no increase in parking capacity within the EMI district or within the 1,000 foot zone around the district. Priority use of on-campus parking will continue to be assigned to patients and their families. Staff parking that cannot be accommodated within the on-campus facilities will continue to be located in facilities outside a 1,000 foot radius of hospital and shuttle buses will transport staff to and from the Hospital. Shuttle busses will continue to transport staff to and from the Hospital. AGH currently leases parking spaces in facilities adjacent to Acrisure Stadium (formerly Heinz Field) to provide the additional spaces necessary to meet the staff parking requirement. AGH operates a shuttle bus service for its staff between the AGH campus and the "T-Station" on General Robinson Street.

	Facility	Total Parking Spaces
*7	Hemlock St. Garage	1,232
*8	Sandusky Garage	119
*9	James St Garage	774
*12	1403 James St	25
*16 *17 *18	Sandusky St. Lots	20
	TOTAL ON-SITE	2,170
	Off Site Parking (Leased)	1,160
	GRAND TOTAL	3,330

Existing Northside Commercial Parking

For illustrative purposes only.

Most of the on-street parking shown in the blue zone is residential permit parking, with a 2-hour maximum parking limit for non-permit holders. AGH provides adequate parking for its staff in on-campus and off-campus parking facilities. AGH will instruct new employees during orientation to park in AGH facilities, not in the neighborhood, and will periodically issue reminders to all staff to park only in AGH facilities.

Loading

AGH receives supplies at its loading dock on Sandusky Street. Some classes of supplies are shipped directly to the hospital by vendors, and others are received at the corporate receiving warehouse in Zelienople where the tractor trailer trucks are unloaded, supplies sorted, and deliveries are made to hospital facilities with smaller trucks. This delivery process will continue in the future and no change is expected with the future growth. This Master Plan does not address loading activities during construction. Construction management plans will be developed and adopted in due course as specific projects are advanced.

[2.2] Existing Property and Uses

[Table 2A] On-Site Parking Facilities

	Property/ Parcel Name	Facility Type	Parking Space Count	Patient/ Visitor	Employee	ADA Spaces	Reserved (Ambulance, Lab, Police)	Bicycle Parking Capacity	Location
7	Hemlock Garage	Structured Parking	1,232	-	1,212	20	-	4	Located within EMI zone, North side
8	Sandusky Garage	Structured Parking	119	24	-	2	34	14	Located within EMI zone, Southwest corner
9	James St Garage	Structured Parking	774	602	172	32	-	10	Located within EMI zone, East side
12	1403 James St	Surface Lot	25	-	25	-	-	-	Located within EMI zone, Northeast corner
16, 17, 18	Sandusky St. Lots	Surface Lot	20		20	-	-	-	Located outside the EMI zone, adjacent to the west side

[Table 2B] Off-Site Parking Facilities

	Property/ Parcel Name	Facility Type	Parking Space Count	Patient/ Visitor	Employee	ADA Spaces	Reserved (Ambulance, Lab, Police)	Bicycle Parking Capacity	Location
A	Gold 1 Garage	Structured Parking	750	-	750	-	-	-	792 W General Robinson St
B	1201 Sherman Ave	Surface Lot	60	-	60	-	-	-	Corner of Sherman Ave and Eloise St
C	Federal North MOB	Structured Parking	350	-	350	-	-	-	Corner of E Commons and Allegheny Sq E

[2.2] Existing Property and Uses: Site Plan and Building Uses

[2.2.2] EMI Existing Building Images

This page identifies buildings located within The EMI District, providing images of the existing buildings that make up the Allegheny General Hospital.

East Wing 11

South Tower 1

Allegheny Professional Building 10

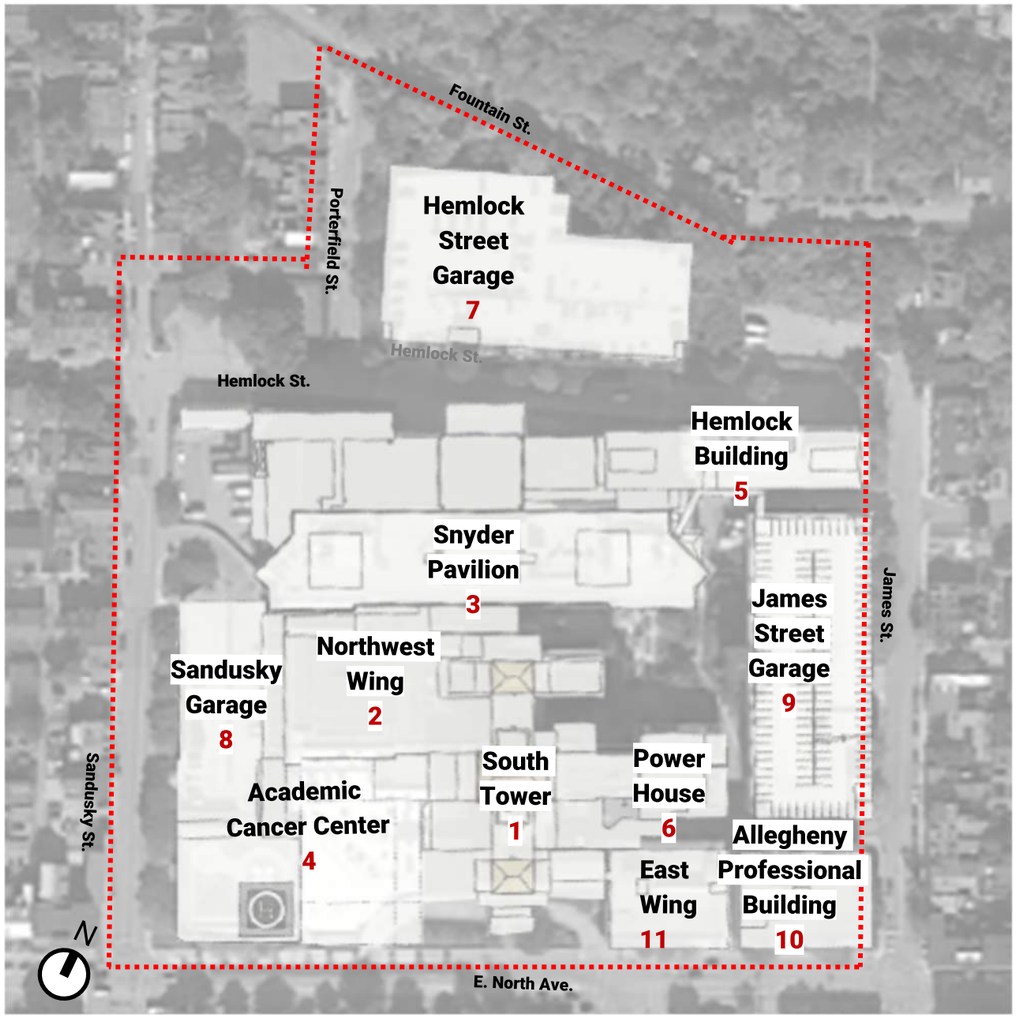
Hemlock Street Garage 7

James Street Garage 9

Snyder Pavilion 3

Hemlock Building 5

Sandusky Garage 8



EMI Boundary

Academic Cancer Center 4

[2.2] Existing Property and Uses: Site Plan

[2.2.3] Changes to the Campus Since Previous IMP

Cancer Center

The new 81,000 sf Academic Cancer Center addition located along E North Avenue was completed in 2020.

Re-clad the Sandusky Parking Garage

In connection with the new Cancer Center's construction, the exterior of the Sandusky Parking Garage was re-cladded in 2020 to provide for a more cohesive design along E. North Avenue and Sandusky Street.

Horseshoe Drive to the South Tower

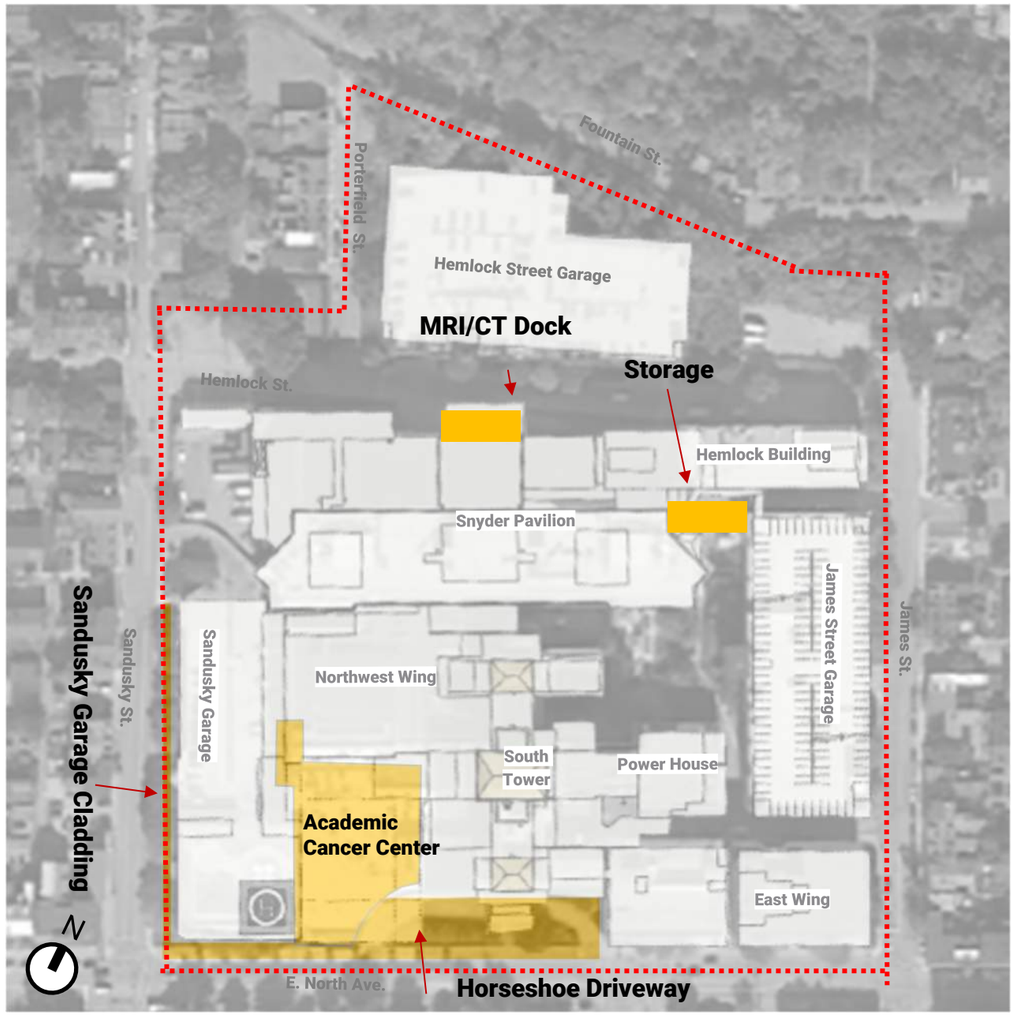
Improvements to the existing horseshoe drive to the South Tower include additional open/green space and minor improvements to the existing green space. This project occurred concurrently with the Cancer Center construction and was completed in 2020.

MRI/CT Dock

This project consists of a 585 sf dock for mobile MRI and CT imaging services. This project was completed in 2020.

Storage Structure

This project consists of a 1,500 sf one-story storage structure constructed on top of an existing roof. This project will be complete in 2022.



3 Needs of the Institution

[3.1] Expectations for Growth or Change

ZONING CODE REFERENCE
905.03.D.4 (d) Needs of the Institution:

The Institutional Master Plan 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.

ZONING CODE REFERENCE
905.03.D.4 (b) Mission and Objectives:

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

[3.1.1] Existing AGH Institution

AGH currently has 524 licensed beds, approximately 800 physicians, 100 medical students and 4,000 staff members. The hospital is committed to improving and maintaining the good health of people in our communities and utilizing every possible technology, resources, and talent.

Each year, AGH accommodates approximately:

Admits 24,000 patients
Records 300,000 outpatient visits
Handles more than 55,000 emergency department registrations
Performs more than 23,000 surgical procedures

The institution has a long history of conducting basic, clinical, and translational research that has contributed to finding more effective ways to prevent, diagnose and treat disease. This provides their patients with a direct gateway to some of the most cutting-edge treatments and therapies as AGH continually acquires new medical knowledge and translates its findings to help save lives and improve outcomes. AGH anticipates the future state of research will remain consistent with the current state.

AGH continues its commitment to academic medicine, including graduate and undergraduate medical education and health sciences education. AGH serves as a regional clinical campus for third-year and fourth-year undergraduate medical students at Drexel University College of Medicine. In addition, AGH hosts students from LECOM (Lake Erie College of Medicine) clinical campus sites at Forbes Regional Hospital and St Vincent's Hospital, and accommodates additional external rotating students from AAMC (Association of American Medical Colleges) accredited schools.

[3.1.2] Services and Specialties

Allegheny General Hospital provides a full range of health care services, including inpatient, outpatient, and emergency care, as well as highly specialized diagnostic and treatment procedures. The combination of high-tech medicine and compassionate care touches every one of the thousands of patients who enter AGH each year.

[3.1.3] AGH Service Lines

Allegheny General Hospital offers a variety of specialty areas, including:

Allergy & Immunology
Cardiology
Colorectal Surgery
Diagnostic & Interventional Radiology
Emergency Medicine
Gastroenterology
Hospitalists
Internal Medicine
Maternal & Fetal Medicine
Mohs Micrographic Surgery
Neurology
Nutrition
Oral & Maxillofacial Surgery
Palliative Care
Pediatrics
Plastic & Reconstructive Surgery
Reproductive Medicine & Fertility
Urogynecology
Cancer Care Services
Cardiothoracic Surgery
Dental Medicine
Endocrinology
General Surgery
Infectious Disease
Liver & Bile Duct Surgery
Minimally Invasive Surgery
Nephrology
Neurosurgery
Ophthalmology
Otorhinolaryngology
Pathology and Laboratory Medicine
Physical Medicine & Rehabilitation
Psychiatry
Transplant
Vascular Surgery

The hospital also has several disease-specific comprehensive centers, including:

Diabetes
Epilepsy
Cancer Genetics
Minimally Invasive Surgery
Neuro-oncology
Sports Medicine
Wound Care
Digestive Health
Genetic Disease
Prenatal Genetics
Multiple Sclerosis
Orthopedic Surgery
Stroke

[3.2] Current and Future Needs of the Institution

[3.2.1] AGH Future Volumes and Needs

AGH is planning to see growth over the next 10 years in the cardiac, neuro, surgery, and medicine service lines. AGH plans to consolidate service lines that are spread out across the campus and replace antiquated buildings that no longer meet the needs of the institution.

Inpatients

Advances in medical technology are increasingly shifting treatment from an in-patient to an outpatient environment. The effective result will be a fewer number of hospital in-patients who have a higher average acuity. This will be combined with a shift from the two-patient rooms that currently predominate the hospital, to single patient rooms. Renovations of the hospital nursing units will reflect this dynamic.

Outpatients

As AHN continues to develop its community-based facilities, lower acuity outpatient visits to the AGH campus are expected to decrease. Acuity will increase for those that remain on campus. Same-day procedures may increase. Visitor traffic is projected to decrease, but those coming are staying longer. Cancer Care moves 8,856 encounters to regions. It will grow by a minimum of 2,165 back to AGH by year 5.

Staff Members

The future care delivery model places the availability of medical care closer to where the patients live. We anticipate most of the growth in healthcare staff to be at outlying locations. In the next 3 years AGH projects a personnel increase of about 55 employees. This includes but is not limited to, doubling its infusion staff and coaches. By the 10 year mark, there is only a slight growth projection of 2%.

4 Long Term Vision & Growth

[4.1] Twenty-Five Year Development Envelope

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 a minimum, the size and location of each parcel which may be developed within a twenty-five year period.

AGH is committed to two initiatives: remaining within its currently defined EMI district, and limiting building heights to be no higher than Snyder Pavilion. The opportunities for expansion beyond the existing campus building envelope that maintain this commitment are limited. The need for further expansion beyond the 10-year development proposals could be driven by an increase in patient volume, added service lines, new code requirements increasing the space required for certain program elements, among other things.

The Porterfield and Hemlock site has been identified as a potential development site within the next 25 years. Current City of Pittsburgh zoning code restricts the height and size of this structure based on the adjacent residential zone.

AGH does not currently anticipate demolishing any buildings in the 25-year development envelope. The Snyder Pavilion expansion would be a horizontal expansion.

The area noted within the 25-year development envelope is roughly 42,000 square feet. There is no intent that external growth of the 25-year plan to be this entire development envelopment identified in plan.

25 Year Plan Sites

5 Ten Year Development

[5.1] Proposed Development

ZONING CODE REFERENCE

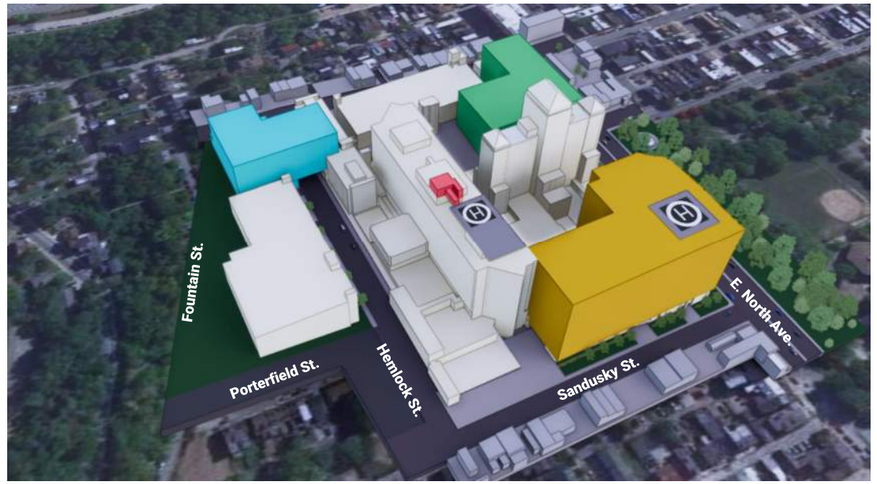
905.03.D.4 (e) Ten-Year Development Envelope:

The Institutional Master Plan 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 Institutional Master Plan 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.

The ten-year development envelopes as shown by the colored masses in the images below designate the maximum allowable envelope permissible by the Pittsburgh Zoning Code. The envelope identifies areas for potential growth. Actual layout within the envelope will be defined as the specific projects are advanced. The heights of these envelopes demonstrate AGH's commitment to building no higher than Snyder Pavilion. The Hemlock Tower, James E North Tower, and Sandusky Tower developments will all be medical in nature. Should AHN decide to pursue a building project within any one of these envelopes, that building will be subject to further review by the City of Pittsburgh and the North Side community. Structures included in the ten-year development envelope will be subject to applicable City of Pittsburgh Residential Compatibility Standards.



Legend

- Helipad
- Sandusky Tower
- James E North Tower
- Hemlock Tower

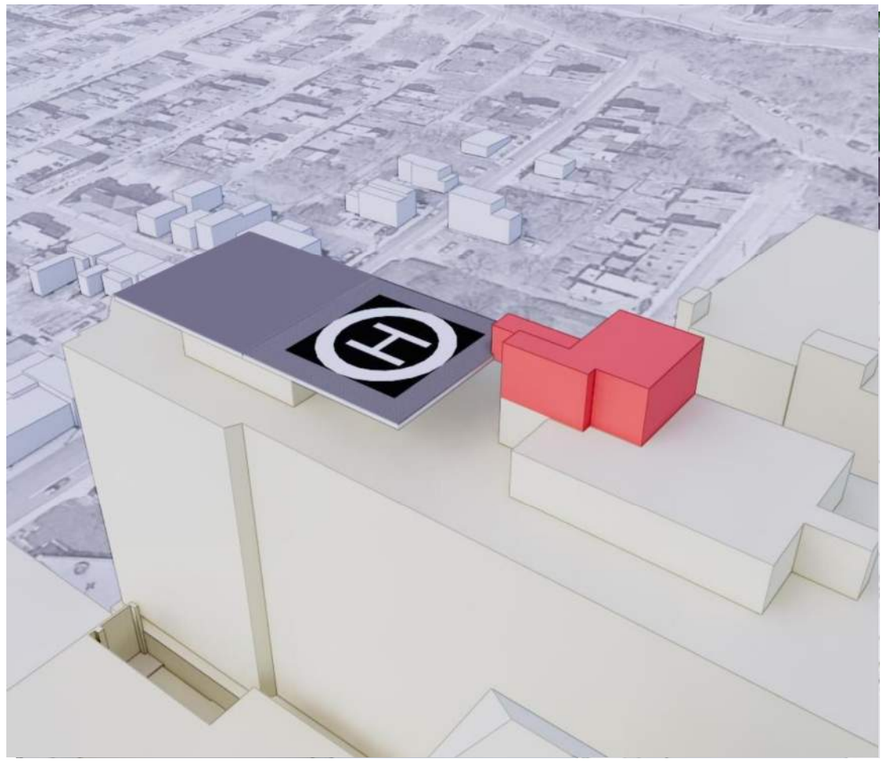
[5.1] Proposed Development

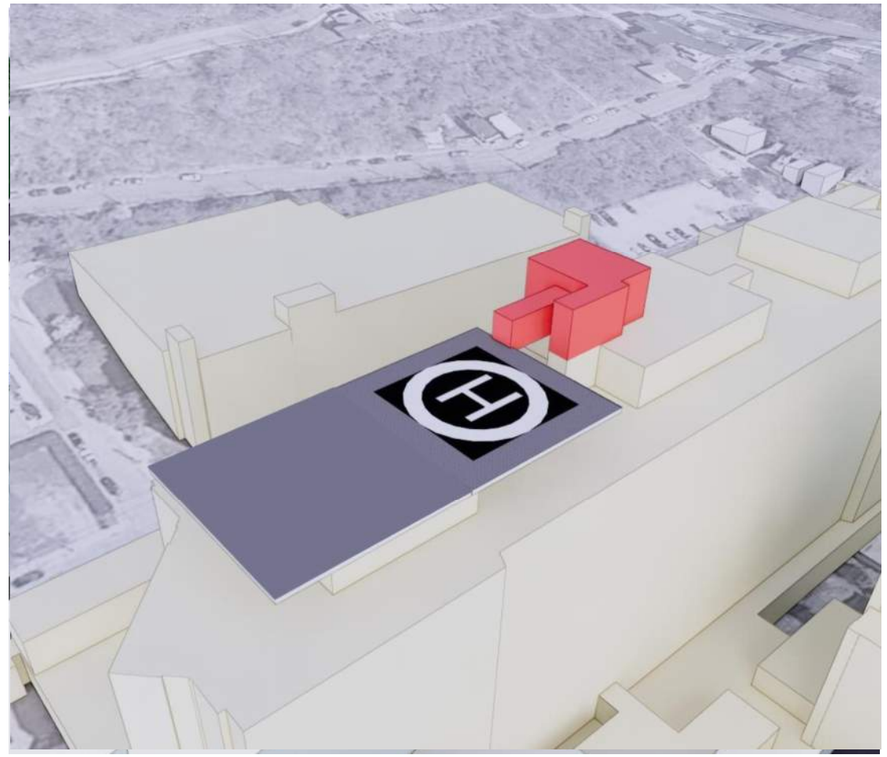
[5.1.1] Helipad Relocation

This is an enabling project connected with the Sandusky Tower project (see next page). Prior to constructing the Sandusky Tower, the helipad would be temporarily relocated to the top of Snyder Pavilion.

Site development includes one helipad on the roof of Snyder Pavilion, extension of two existing elevators to service the helipad, and elevated walkway to connect the helipad to the elevators.

Site Location	Snyder Pavilion roof
Use	Hospital
Maximum GSF	1,400 gross square feet
# of Stories	1 additional story above existing Snyder Pavilion
Setbacks	N/A
Maximum Height	35 feet above existing Penthouse Roof
Stepback	N/A





Helipad

[5.1] Proposed Development

[5.1.2] Sandusky Tower

Site development includes overbuild of the existing AGH Academic Cancer Center. Existing Sandusky Street parking structures would be demolished and replaced in-kind. Once completed, the helipad would return to the rooftop of the Sandusky Tower.

The massing is influenced by the site's adjacency to an NDO district, and the mass will respond to the existing context of AGH and the surrounding community. Any building built on this site will not exceed the height of Snyder Pavilion and will comply with City of Pittsburgh Residential Compatibility Standards.

Minimum 15' sidewalk will be provided on East North Avenue and Sandusky Street.

Site Location	Corner of Sandusky St and E North Ave
Use	Hospital
Maximum GSF	290,000 gross square feet
# of Stories	12 total stories above grade, existing building is 2 stories above and 2 stories below grade
Setbacks	Sandusky St: 15 feet from property line E North Ave: Existing setback to be maintained. Approximately 25 feet
Maximum Height	200 feet as measured from the average finished grade along the primary façade on E North Ave.
Stepback	Sandusky St: 0 feet E North Ave: 0 feet required per adjacent Parks District (P) Stepbacks will be considered prior to building design to control overall site density and scale.

Sandusky Tower
Property Line

[5.1] Proposed Development

[5.1.3] James E North Ave Tower

Site development includes construction of a nine story structure at the corner of James Street and North Avenue. The site is currently occupied by 2 business-based structures which would be replaced to make way for the new building.

The mass will respond to the existing context of AGH and the surrounding community and will comply with City of Pittsburgh Residential Compatibility Standards.

Minimum 12’ sidewalk will be provided on East North Avenue and James Street.

Site Location	Corner of E North Ave and James St
Use	Hospital
Maximum GSF	288,000 gross square feet
# of Stories	9 stories above grade, 2 stories Below grade
Setbacks	E North Ave: 0 feet James St: Existing setback to be maintained. Approximately 18 feet.
Maximum Height	130 feet as measured from average finished grade along the primary façade on E North Ave.
Stepback	E North Ave: 10 foot stepback above 3 stories James St: 25 foot stepback above 3 stories

James E North Tower

Property Line

[5.1] Proposed Development

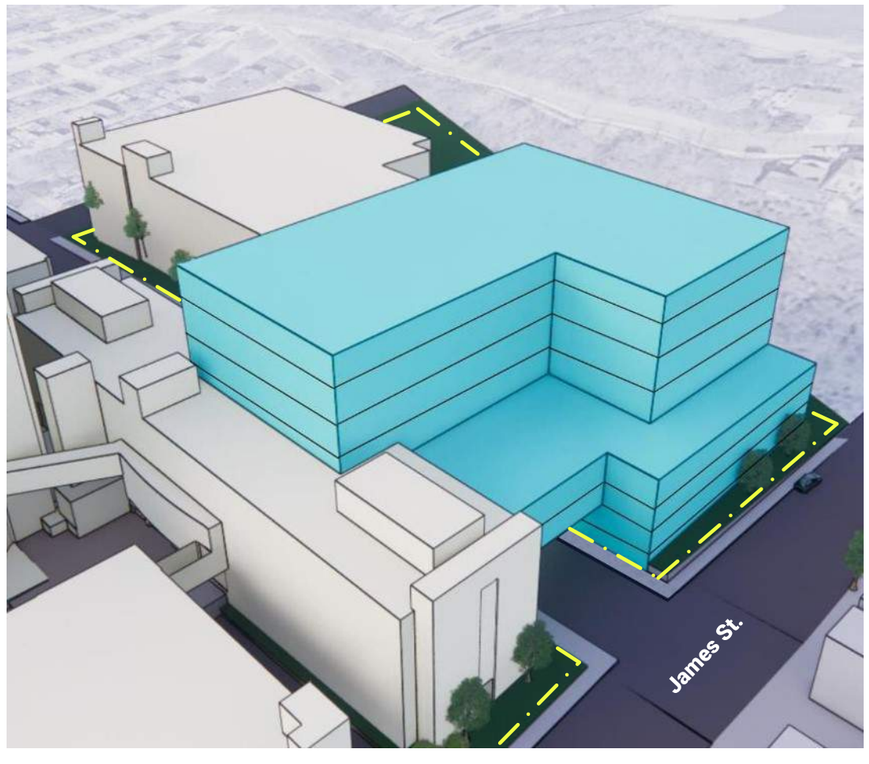
[5.1.4] Hemlock Tower

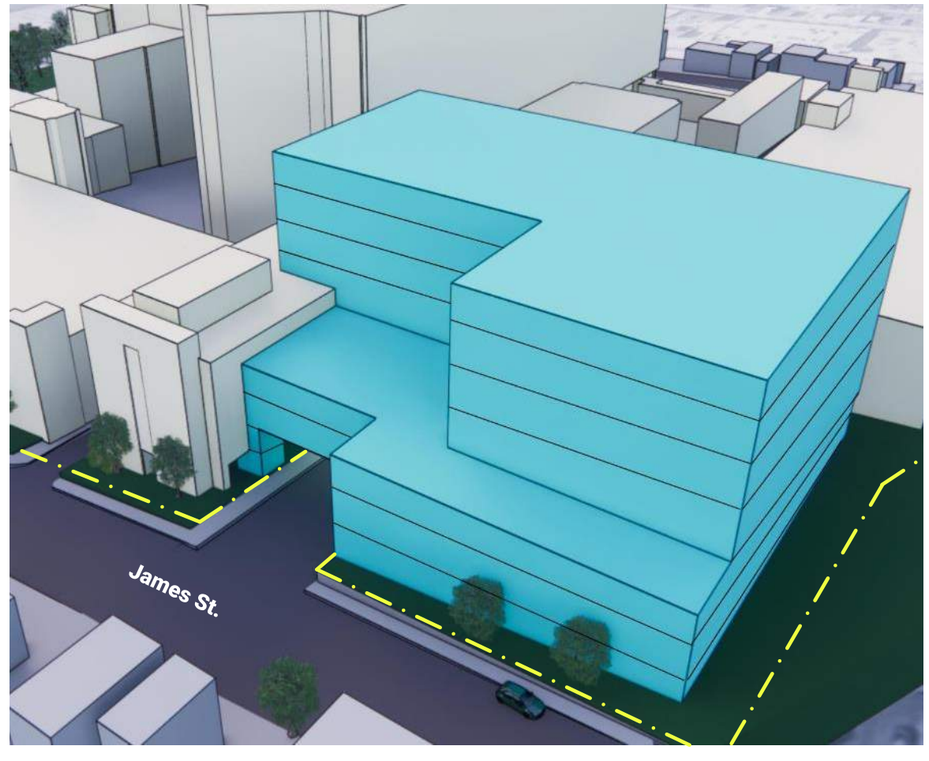
Site development includes an 8 story structure located at the corner of James and Hemlock Streets which would span over Hemlock Street. The site is currently unoccupied.

The mass will respond to the existing context of AGH and the surrounding community and will comply with City of Pittsburgh Residential Compatibility Standards. Structures over the Right-of-Way will require Art Commission review and approval. An Encroachment Permit will be required.

Minimum 8’ sidewalks will be provided.

Site Location	Corner of Hemlock St and James St
Use	Hospital
Maximum GSF	256,000 gross square feet
# of Stories	8 stories above grade, 1 story partially below grade
Setbacks	15 feet from property line at James St. 0 feet from Hemlock St.
Maximum Height	135 feet as measured from average finished grade along the primary façade on Hemlock St.
Stepback	James St: 25 foot stepback above 4 stories. Hemlock St: Step back as shown above 4 stories (excluding sky bridge).





Hemlock Tower

Property Line

[5.2] Implementation Plan

[5.2.1] Implementation Process

Implementation of the projects identified in the 2022 Institutional Master Plan will be prioritized based on the critical needs of the hospital, and the extent to which each site best fits the need. Although the sites identified may not all be realized over the next decade, development of these sites is needed to fulfill the mission of AGH to create a remarkable health experience.

Stakeholders

The key stakeholders in the implementation process are hospital leadership, clinical staff, patients and their families, and the North Side community.

Priorities

There are several priorities when implementing the IMP:

- Transition to a private patient room facility.
- Optimize service line locations across the campus to improve wayfinding, patient experience and team-based care.
- Accommodate space challenges associated with increased space needs to meet patient care needs associated with equipment and teams.
- Continue to engage and partner with the community.

Funding and Capital Investment

Any capital investments will be reviewed and planned via existing processes that fit into the strategic and operational needs across AHN. If and when a plan to implement the IMP is identified, grant opportunities and fundraising will be explored. No public investment needs have been identified at this time.

[5.3] Urban Design Guidelines

ZONING CODE REFERENCE
905.03.D.4 (j) Urban Design Guidelines:

The Institutional Master Plan 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.

[5.3.1] Materials, Colors, Transparency & Design Elements

As a neighborhood fixture at its current location since 1936, AGH has contributed to the character of the North Side through decades of growth. The campus today is compact and clearly defined within its EMI district. Further development within the district will continue the legacy established by the campus. The following guidelines establish criteria for each development:

• New additions to buildings will architecturally complement the existing neighborhood materiality off campus as well as the historical South Tower.

• Development should be guided by the sustainability plan outlined in this IMP and AHN's commitment to advancing sustainable design by building healthy, high performing buildings.

• Materials and colors for new construction will be selected for high quality, durability, and with an effort to create continuity within the project area and the existing neighborhood. Sustainably sourced materials with low environmental impact should be utilized where possible.

• The impact of new buildings in the public realm will be given special consideration, particularly at the street level.

• The pedestrian experience should be enhanced by incorporating principles of Universal Design, which promotes spaces for equitable use.

• The design should address the visual connection with the public realm, most notably the existing historic elements of the hospital and the surrounding neighborhood, including the Deutschtown historic district.

• The design should address the physical connection with the public realm, respecting the scale of the campus and the surrounding neighborhood.

• Each side of the campus faces a unique part of the neighborhood. New development should address the context of the face which it borders.

• Streetscape features will add interest and activity to enhance the pedestrian experience.

• Development should avoid the use of flimsy, short-lifespan materials that are inappropriate for the climate, such as stucco and EIFS.

•New buildings will be designed to provide maximum natural light into its interior spaces and to encourage strong visibility and transparency at the street level.

• Ground floors along primary streets should be highly transparent to create a visual connection between interior and exterior spaces. In circumstances where compliance with the transparency standard cannot be achieved due to privacy, safety or other factors, AGH shall be permitted to provide an alternative compliance plan which incorporates the use or arrangement of building materials that simulate transparency and/or provides enhanced architectural amenities or the use of art.
Goal is that transparent glazing shall dominate the ground floor facades to encourage walkability and human engagement.
• For facades over 50 feet in length abutting a public street, modulations, architectural elements, changes in color or other building ornamentation shall be provided to break up blank walls and add visual interest. There shall be no more than 50 feet between such forms of building articulation.
.

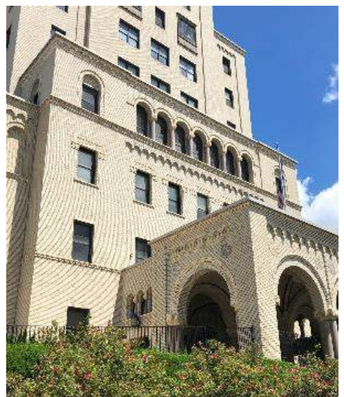
[5.3.2] Campus Materials, Colors & Design Elements

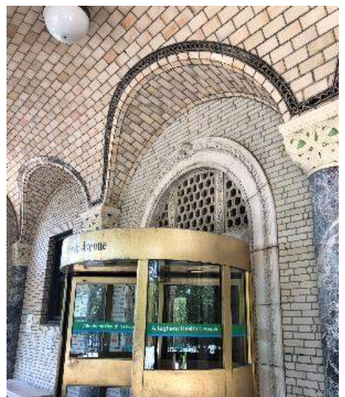
Over the course of its nearly ninety-year history, buildings on the AGH campus have used exterior materials based on a cohesive, coordinated material palette. The original historic South Tower beige brick informs subsequent buildings, such as the East Wing, Hemlock Building, and Academic Cancer Center. The iconic Snyder Pavilion's is the only building on campus that uses metal panel. The horizontal façade language is shared with the Allegheny Professional Building and the Northwest Wing.

The recently completed Academic Cancer Center introduces an all-glass façade to the AGH campus.

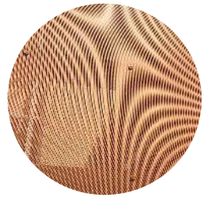
Snyder Pavilion

South Tower

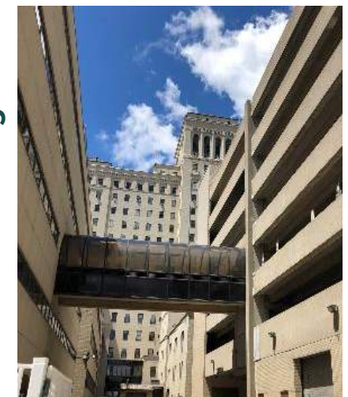




Academic Cancer Center



James St. Garage



Allegheny Professional

[5.3.3] Neighborhood Materials, Colors & Design Elements

A variety of materials can be found in the North Side neighborhood, from stone and brick to glass and metal panel. The neighborhood buildings are products of their time and function: richly detailed stone and masonry facades in the historic Deutschtown, metal panel and glass at Allegheny Center / Nova Place.

Similarly, a variety of building scales are present in the North Side. The majority of buildings are four stories or less, with some taller office and residential buildings interspersed. The tallest buildings are concentrated in and around Allegheny Center, in and around the Commons ring road.

Allegheny Center Alliance Church

Allegheny Center

E. Ohio St.

W North Ave.

MLK Elementary School

Allegheny Carnegie Library

Cedar Ave

Single-Unit Attached Residential / Business / Parks and Open Space

Cedar Ave is the main avenue of approach from downtown Pittsburgh. The AGH campus features prominently at the head of the street where it intersects with E North Ave. To the east are 3-story historic residences and businesses, which are primarily elevated walk-ups. These buildings are mostly brick, with detailed architectural features. To the west is Allegheny Commons Park, with well-maintained grass and leafy trees, and a large new fountain.

E North Ave

Single-Unit Attached Residential / Business

E North Ave is the main avenue of approach from I-279 and the rest of the North Side. It forms the southern border of the AGH campus and provides access to the South Tower entrance. To the west is Allegheny Commons Park and the newly refurbished fountain graces which the intersection of E North Ave and Cedar Ave. Also to the west is the historic Mexican War Streets neighborhood, including first floor business and civic buildings. To the east are 3-story single unit attached homes, and the 4-story Schoolhouse apartments. Buildings are primarily constructed of brick with historic architectural features.

Sandusky St

Single-Unit Attached Residential / Business / Parks and Open Space

Sandusky Street forms the west edge of the AGH campus. The street is lined with 2- and 3-story buildings, exclusively residential with the exception of the Community House church and non-profit organization. Buildings are primarily brick, with simpler detailing than Cedar and E North Ave, the notable exception being the Aeberli building on the corner of Sandusky and E North.

James St.

Single-Unit Attached Residential / Hospital Campus

James Street forms the east boundary of the AGH campus. Similarly to Sandusky Street, James Street is also lined with 2- and 3-story buildings, primarily single-unit attached. Most buildings are brick, with the remainder being vinyl or wood siding. Some homes have rooftop decks. The architectural detailing is generally simpler than what can be found on Cedar Ave or E North Ave. James Street ends at a steep hill below Fountain Street.

Hemlock St.

Hospital Campus / Single-Unit Attached Residential / Civic

Hemlock Street is partially captured within the AGH campus footprint. It forms the border between the main campus and the Hemlock Street Parking Garage to the north. To the west, Hemlock Street is fronted by a few single unit attached residential homes, and the Brown Chapel. Buildings are exclusively made of brick, with a mix of architectural detailing.

Porterfield St.

Hospital Campus / Single-Unit Attached Residential

Porterfield Street forms the edge of the northern tip of the AGH campus. It borders the Hemlock Street Parking Garage to the east, and single unit attached residential units to the west. These homes are approximately half constructed of brick and half of vinyl siding. Like James Street, Porterfield Street ends at the hill below Fountain Street.

[5.3.5] Neighborhood Landmarks & Future Development

Pittsburgh's historic North Side neighborhood boasts an array of significant landmarks.

The Northeast Fountain, located at the intersection of E North Ave and Cedar Ave, is a grand statement about the importance of parks to our city. A wide plaza with benches surrounds the fifty-foot-diameter fountain. Rebuilt in 2019 from the original 1868 design, the fountain serves as a gathering place, a connection to nature, and a symbol of joy.

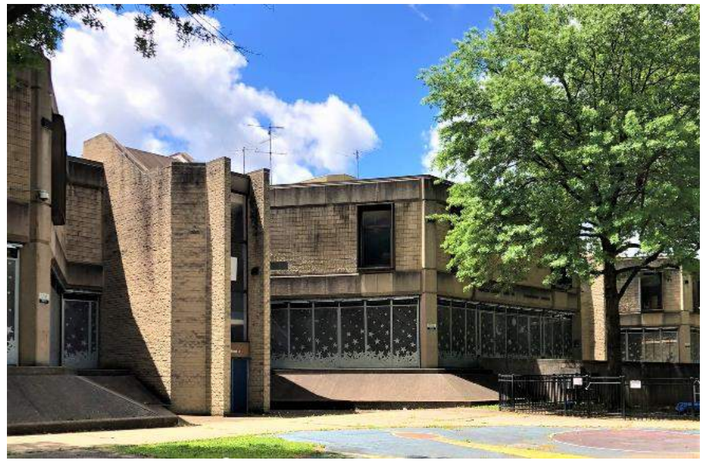
The Martin Luther King Jr Elementary School (now the King PreK-8 school) was built in 1973. The unique hexagonal design creates a welcoming façade. With only two stories above grade, the building has a pedestrian scale.

Redevelopment planned for the Garden Theater Block site at W North Ave and Federal Street will bring a mixed-use residential and commercial space to the North Side. The project is scheduled to be complete in early 2023.

Allegheny Commons Park

Allegheny Center Alliance Church

Garden Theater Block Redevelopment (Under Construction)



Martin Luther King Jr. Elementary School

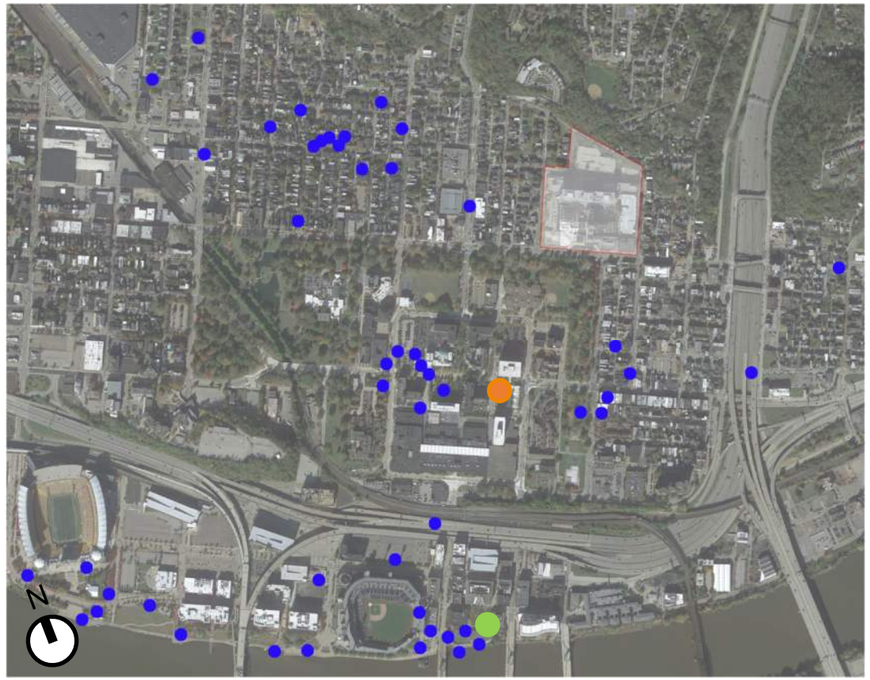
[5.3.6] Public Art

The goal of public art is to enhance the community experience by expressing the culture and heritage of the community through works of art. Public art could engage historically underrepresented groups by expressing their culture and history, and through the display of works by underrepresented members of the community.

There is no Public Art in the EMI district currently listed on the City of Pittsburgh's public art registry. The addition of public art in the future will connect this zone with the existing murals and public art present in the adjacent Deutschtown and Central North Side neighborhoods and parks. Art will also engage hospital users by adding desirable exterior spaces and amenities.

Being the most public and iconic face of the EMI district, the engagement of placemaking strategies along East North Ave paired with streetscape improvement will provide better safety, visibility and refuge for those using the Hospital and those enjoying the neighborhood.

AHN has an Art Committee which is responsible for reviewing and approving new artwork concepts, patient board information, and facilitating donor opportunities. The Art Committee solicits proposals for campus art, and seeks to promote diverse, include art and artists that reflects the region.

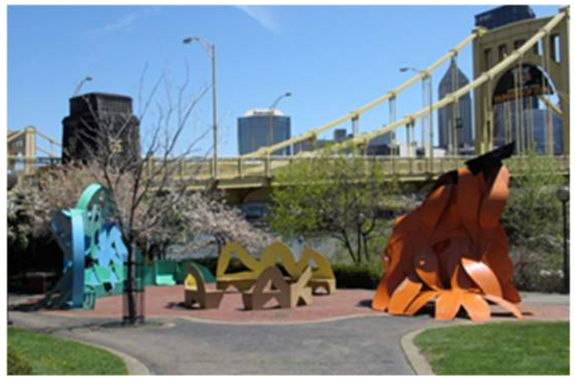


Public Art / Murals Map

Public art has long served as a means for expressing defining and reflecting the unique characteristics of a neighborhood. Here we see locations of existing public art in the northside area. There is an emphasis on art along the Three Rivers Heritage Trail, around museums and other landmarks where placemaking strategies have helped create places of interest and that are rich in Pittsburgh culture.

In the examples below we see how art installation can enhance public spaces. Adding art adds personality and authenticity to shared space, lending to the strategies outlined for placemaking / landmarks, seating and gathering, and streetscape improvement.

- Pittsburgh Variations
- Discobulus Sculpture
- Public Art or Mural
- EMI boundary



Three Rivers Heritage Trail, Pittsburgh Variations by George Sugarman, 2010.

Four Allegheny Center, Discobulus by Marina Warren Nash, 1994.

University of Pittsburgh, Light Up by Tony Smith

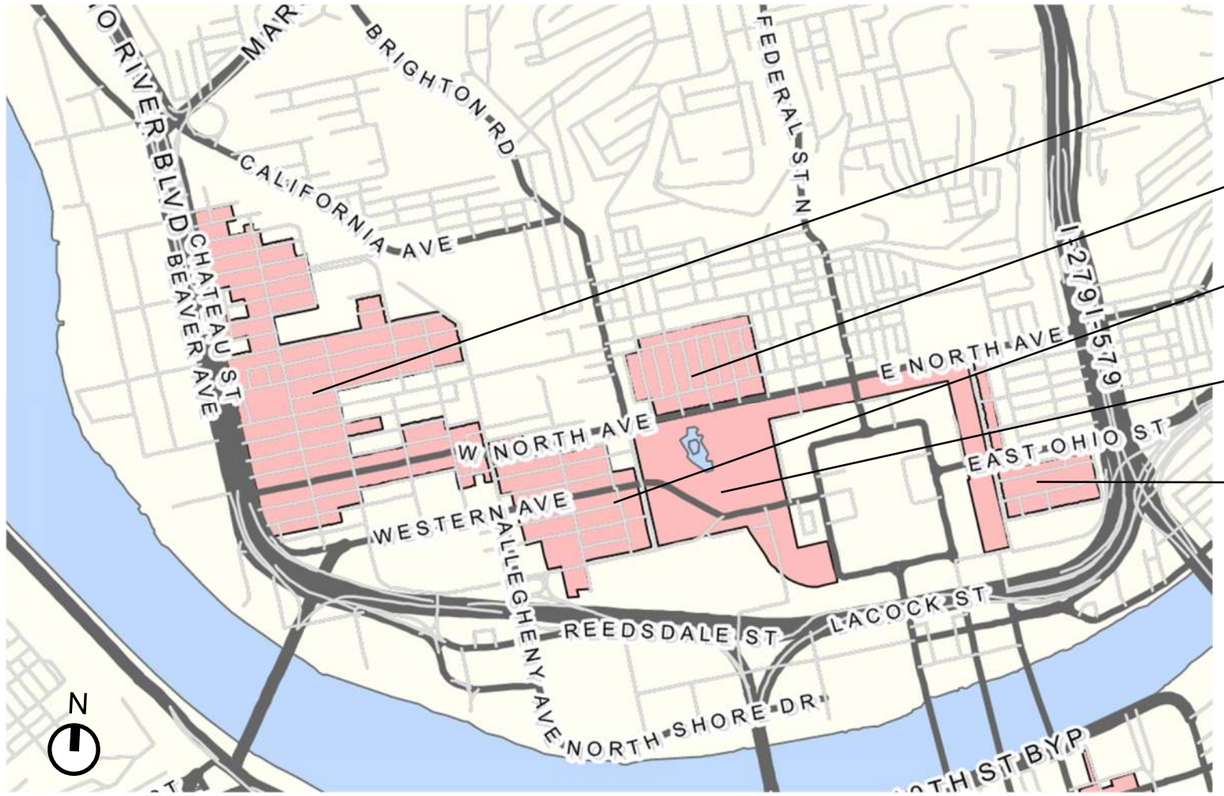
Birmingham Bridge, Welcome to Uptown by James Simon.

[5.3.7] Historic Districts

The North Side is home to five historic districts, the most of any neighborhood in Pittsburgh. Its first historic district, the Mexican War Streets, was designated in 1972. Manchester followed in 1979, the largest historic district in terms of number of buildings. Deutschtown was designated a historic district in 1997. It remains the smallest historic district in the North Side today. The last two historic districts, Allegheny Commons Park and Allegheny West, were both designated in 1990.

Allegheny Commons Park and the Deutschtown Historic District immediately border the AGH campus. Allegheny Commons Park includes the National Aviary, Lake Elizabeth, and the Northeast Fountain. Allegheny West includes a variety of historic churches.

Historic Deutschtown is characterized by expressive brick and stone facades in the Victorian style, frequently with stained glass windows. The Priory and the Allegheny Inn are among its landmarks.



Dept. Of City Planning, Historic District Map

Deutschtown Historic District

Allegheny Commons Park

[5.3.8] Building Design Guidelines: Sandusky Street Massing

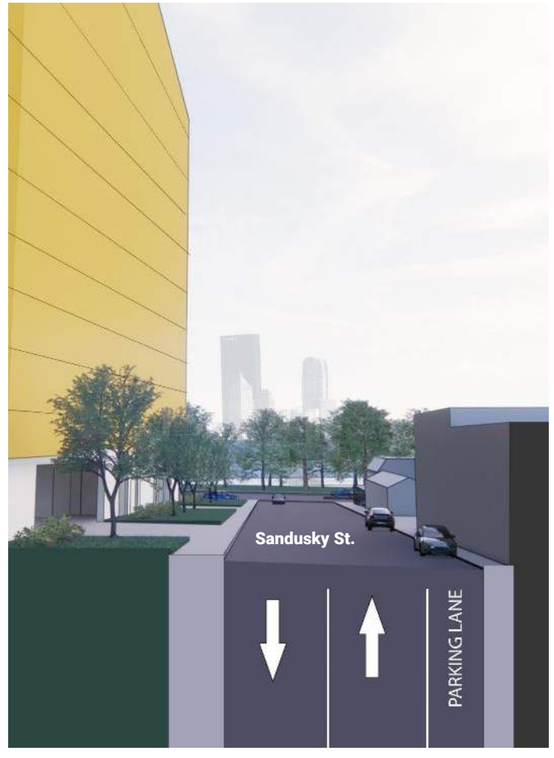
The Sandusky Street structure will be a substantial new element on the AGH campus and the North Avenue streetscape. The structure will be a visible presence in the community, as well as from downtown and the nearby highways. As a responsible member of the urban landscape, the architectural design will reflect the technological advancements and human-centered principles of the hospital.

The building will be designed to provide a respectful separation from the existing historical 20-story AGH South Tower and its iconic cupola.

The Sandusky Street development will be the new gateway to the AGH campus when approaching from the west. The architectural design should compliment the new Academic Cancer Center, completed in 2020.

Building Design Goals

- The building should be designed to be engaging and attractive from the park and adjacent neighborhoods, while also exuding high design quality from a distance.
- The façade of the building should reflect the varying widths of neighboring buildings. Strategies should be multi-scalar and intentional, manipulating light and shadow, pattern, and texture to create human scale.
- The building will be built on top of the 2-story existing AGH Academic Cancer Center. The Cancer Center has a strong, dynamic presence at the street level, while maintaining a pedestrian-friendly scale.
- Service entry to the buildings shall not be located on North Avenue.
- The building's mechanical systems should meet the outlined sustainability goals. Building equipment, vents, ducts, or other systems shall be well incorporated into the overall building design. This shall include rooftop screening of mechanical equipment to minimize visual impact and ventilation louvers that complement the aesthetic quality of the building façade.
- Particular care will be paid to the scale of the building at the Sandusky Street side in order to provide a neighborly presence to the NDO-zoned properties across the street.

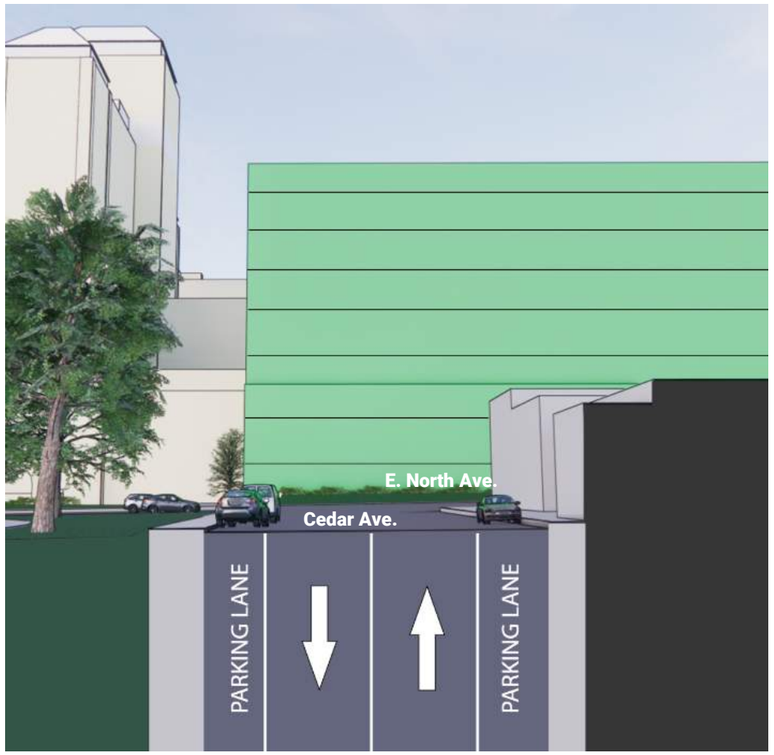


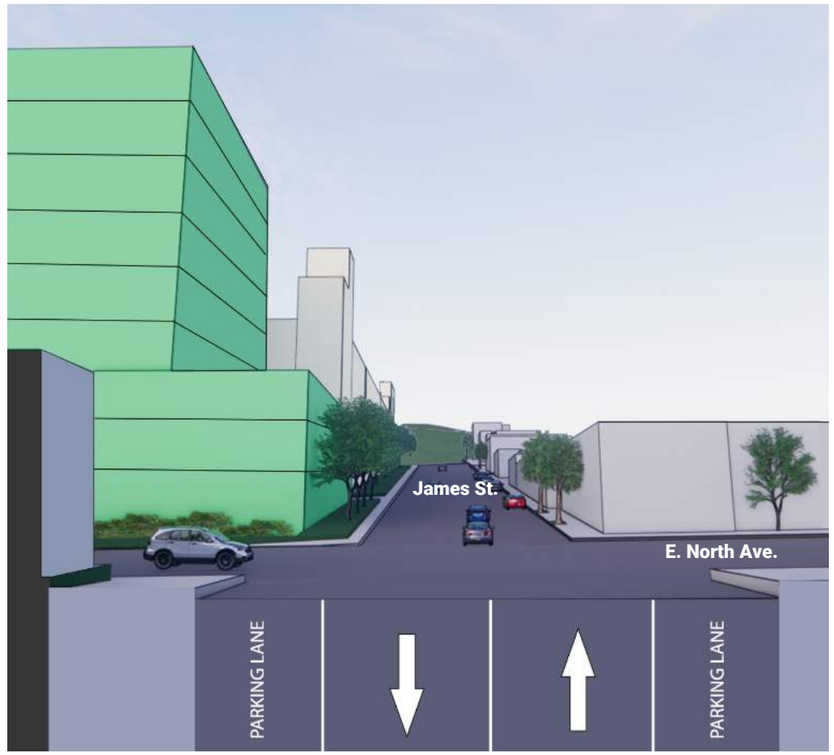
[5.3.9] Building Design Guidelines: James Street Massing

The James Street structure will provide a new gateway to the AGH campus from the east. While the building is a substantial presence at AGH, it is critical that the overall building design remain sensitive to the residential districts across James Street and North Avenue. The 9-story building will be designed to provide a respectful separation from the existing 20-story AGH South Tower. The construction of this building will require the removal of the East Wing and the Allegheny Professional Building, two outmoded 1980's buildings which are inconsistent with the current goals of the hospital. Pedestrian entry will be located to facilitate entry via public transportation.

Building Design Goals

- The building should be designed to be engaging and attractive from the park and adjacent neighborhoods, while also exuding high design quality from a distance.
- The façade of the building should reflect the varying widths of neighboring buildings. Strategies should be multi-scalar and intentional, manipulating light and shadow, pattern, and texture to create human scale.
- As the new eastern gateway to the AGH campus, the building should provide a memorable presence at the corner of James and North.
- Light and noise pollution should be contained within the campus to minimize negative effects on the residential neighbors.
- The building's mechanical systems should meet the outlined sustainability goals. Building equipment, vents, ducts, or other systems shall be well incorporated into the overall building design. This shall include rooftop screening of mechanical equipment to minimize visual impact and ventilation louvers that complement the aesthetic quality of the building façade.
- Entry and wayfinding should be abundant and clear. Architectural elements, such as canopies, ground floor glazing and streetscape, help visitors quickly and easily navigate the campus.
- Particular care will be paid to the scale of the building at the James Street side in order to provide a neighborly presence to the residentially zoned properties across the street.



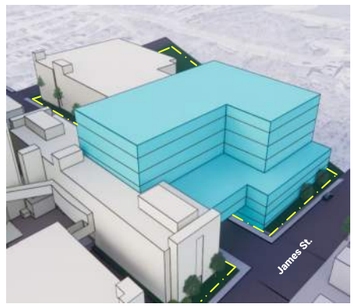


[5.3.10] Building Design Guidelines: Hemlock Street Massing

The Hemlock Street structure will be located across Hemlock Street from AGH on an unused corner of the campus. The building design will pose unique design challenges as it is located on a steeply sloped site.

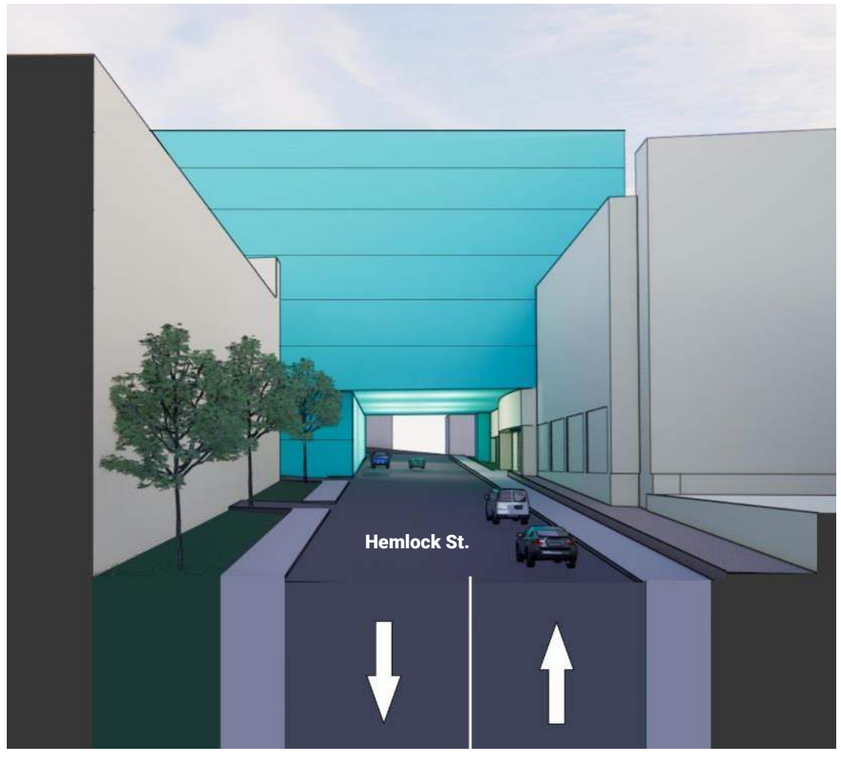
The building will connect to existing AGH by bridging over Hemlock St at the Third Floor. Pedestrian and vehicular traffic will pass underneath. A new pedestrian and vehicular entrance will be located on Hemlock Street.

The primary neighbor to this building is the hospital itself, with a series of small groupings of houses located on James Street and on Fountain Street to the north.



Building Design Goals

- The building must be acutely aware of its role as a new member of the AGH campus while also taking great care to be respectful to the adjacent residential streets.
- The building will have minimal impact on the adjacent residential neighborhoods due to its location on the hill above campus. However, the massing of the building will be scaled appropriately to its residential neighbors and will meet all applicable criteria established in the Residential Compatibility Standards.
- Light and noise pollution should be contained within the campus to minimize negative effects on the residential neighbors. Particular attention will be paid at the rooftop where mechanical equipment may be located near residential areas.
- Entry and wayfinding should be abundant and clear. Architectural elements, such as canopies, ground floor glazing and streetscape, help visitors quickly and easily navigate the campus.
- The building's mechanical systems should meet the outlined sustainability goals. Building equipment, vents, ducts, or other systems shall be well incorporated into the overall building design. This shall include rooftop screening of mechanical equipment to minimize visual impact and ventilation louvers that complement the aesthetic quality of the building façade.

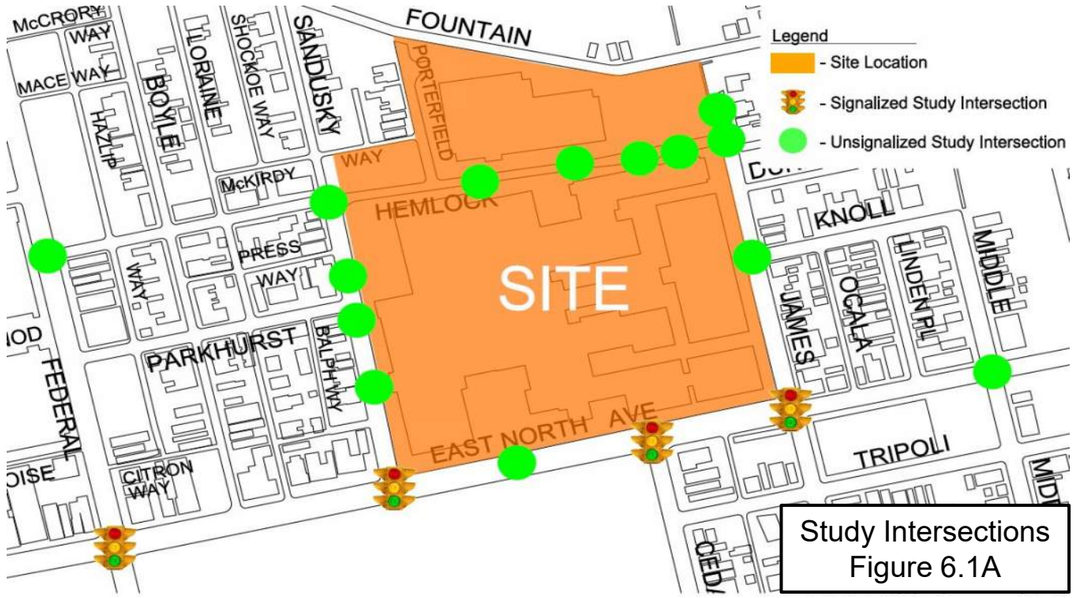


6 Mobility Plan

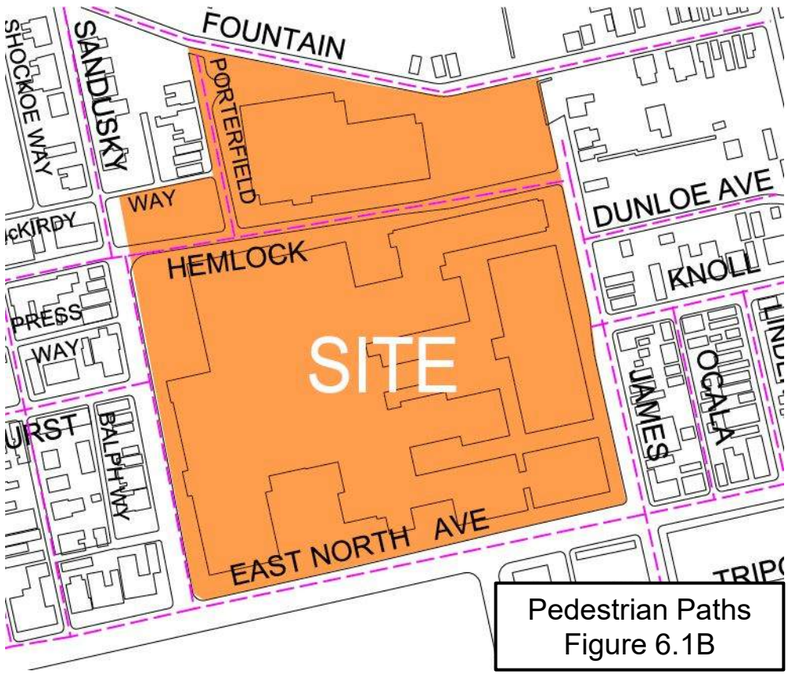
[6.1] Existing Conditions

[6.1.1] Existing Transportation Network Maps

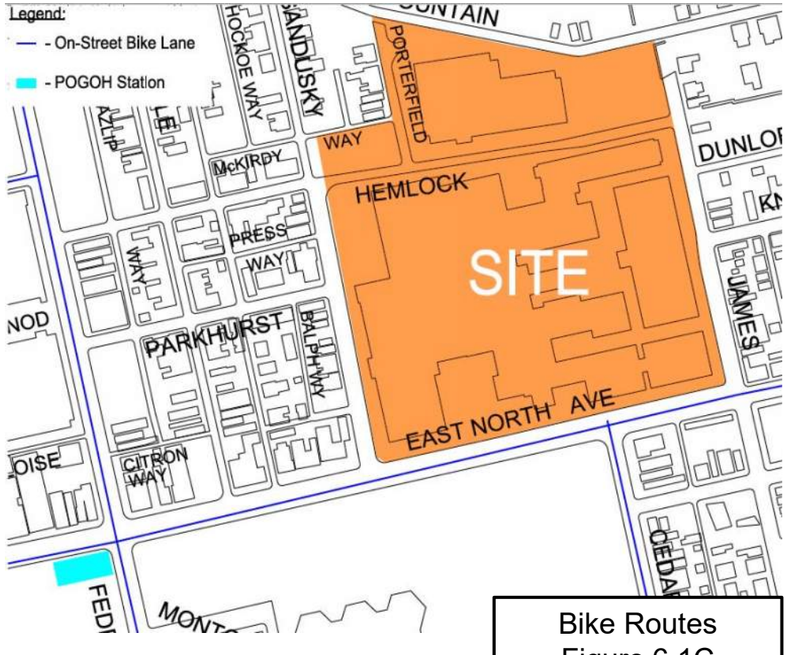
The area of influence surrounding Allegheny General Hospital is shown in Figures 6.1A through 6.1D. Figure 6.1A includes public arterials, public and private collector streets, and local streets, and the figure indicates the study intersection control type. Figure 6.1B details pedestrian paths. Figure 6.1C shows public bicycle routes and POGOH stations. Bus routes and bus stops providing access to the site are shown in Figure 6.1D.



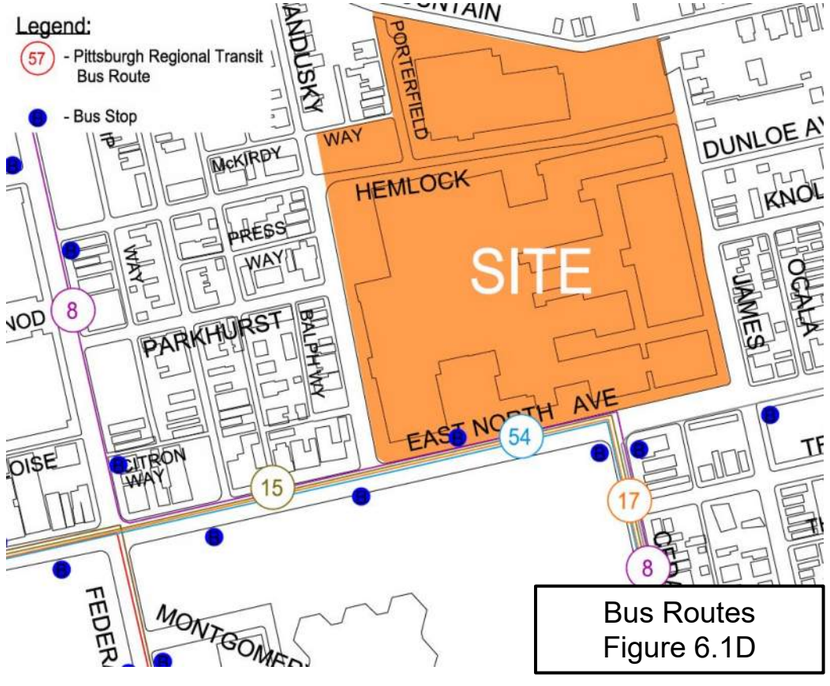
Study Intersections
Figure 6.1A



Pedestrian Paths
Figure 6.1B



Bike Routes
Figure 6.1C



Bus Routes
Figure 6.1D

TABLE 6.1A
PARKING INVENTORY AND SPACE ALLOCATION - 2022
AGH Institutional Master Plan
Pittsburgh, Pennsylvania

Parking Facility	Number of Parking Spaces [1]									
	Patient/ Visitor	Standard Employee	ADA	Valet	Compact Cars	Cancer Patients	Reserved Ambulance	Reserved Lab	Reserved Police	TOTAL CAPACITY
On-Site Hospital Parking - Garages										
Hemlock Street Garage	--	1,212	20	--	--	--	--	--	--	1,232
James Street Garage	602	104	32	--	20	16	--	--	--	774
Sandusky Street Valet Garage	--	--	--	28	--	--	12	2	4	46
Sandusky Street Overflow Valet Garage (Cancer Center)	--	--	2	31	--	--	--	--	--	33
Total – Hospital Parking Garages	**602**	**1,316**	**54**	**59**	**20**	**16**	**12**	**2**	**4**	**2,085**
On-Site Hospital Parking - Lots										
Hemlock Street Parking Lot	--	25	--	--	--	--	--	--	--	25
Sandusky Street ED Lot	24	--	--	--	--	--	8	--	8	40
Northerly Sandusky Street Parking Lot	--	--	--	10	--	--	--	--	--	10
Southerly Sandusky Street Parking Lot	--	--	--	10	--	--	--	--	--	10
Total – Hospital Parking Lots	**24**	**25**	**0**	**20**	**0**	**0**	**8**	**0**	**8**	**85**
Total - On-Site Parking	**626**	**1,341**	**54**	**79**	**20**	**16**	**20**	**2**	**12**	**2,170**
Off-Site Parking										
Gold 1 Garage	--	750	--	--	--	--	--	--	--	750
Sherman Avenue and Eloise Street Parking Lot	--	60	--	--	--	--	--	--	--	60
Fed North Medical Office Garage	--	350	--	--	--	--	--	--	--	350
Total – Off-Site Parking	**0**	**1,160**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,160**
TOTAL - ALL PARKING	**626**	**2,501**	**54**	**79**	**20**	**16**	**20**	**2**	**12**	**3,330**

(1) Field verified by TA during January 2022.

TABLE 6.1B
MAXIMUM ADJUSTED PEAK PARKING DEMAND - PARKING SUPPLY / DEMAND COMPARISON
AGH Institutional Master Plan
Pittburgh, Pennsylvania

Total Parking			
Parking Supply	Number of Parking Spaces[1]	Maximum Adjusted Parking Demand[2]	Parking Surplus or (Deficit)[3]
100% Efficiency	3,330	3,190	140
90% Efficiency	2,997	3,190	(193)

Total Employee Parking			
Parking Supply	Number of Parking Spaces[1]	Maximum Adjusted Parking Demand[2]	Parking Surplus or (Deficit)[3]
100% Efficiency	2,555	2,517	38
90% Efficiency	2,300	2,517	(217)

Total Patient/Visitor Parking			
Parking Supply	Number of Parking Spaces[1]	Maximum Adjusted Parking Demand[2]	Parking Surplus or (Deficit)[3]
100% Efficiency	775	673	102
90% Efficiency	698	673	25

Travel Inventory

Parking spaces available for lease and daily (hourly) parking spaces are shown in Table 6.1A. There are 2,170 on-site parking spaces and 1,160 off-site parking spaces. Table 6.1B shows the existing supply/demand comparisons during maximum demand conditions. At 100% efficiency, there is an existing surplus of 140 spaces. At 90% efficiency, there is a deficit of 193 spaces. With the employee parking at 100% efficiency, there is an existing surplus of 38 spaces and at 90% efficiency, there is a deficit of 217 spaces. With the patient/visitor parking at 100% efficiency, there is an existing surplus of 102 spaces and at 90% efficiency, there is a surplus of 25 spaces.

Travel surveys of employees and of students were conducted during May 2022. Based on the survey results, 90.4% of employees drive alone to the campus.

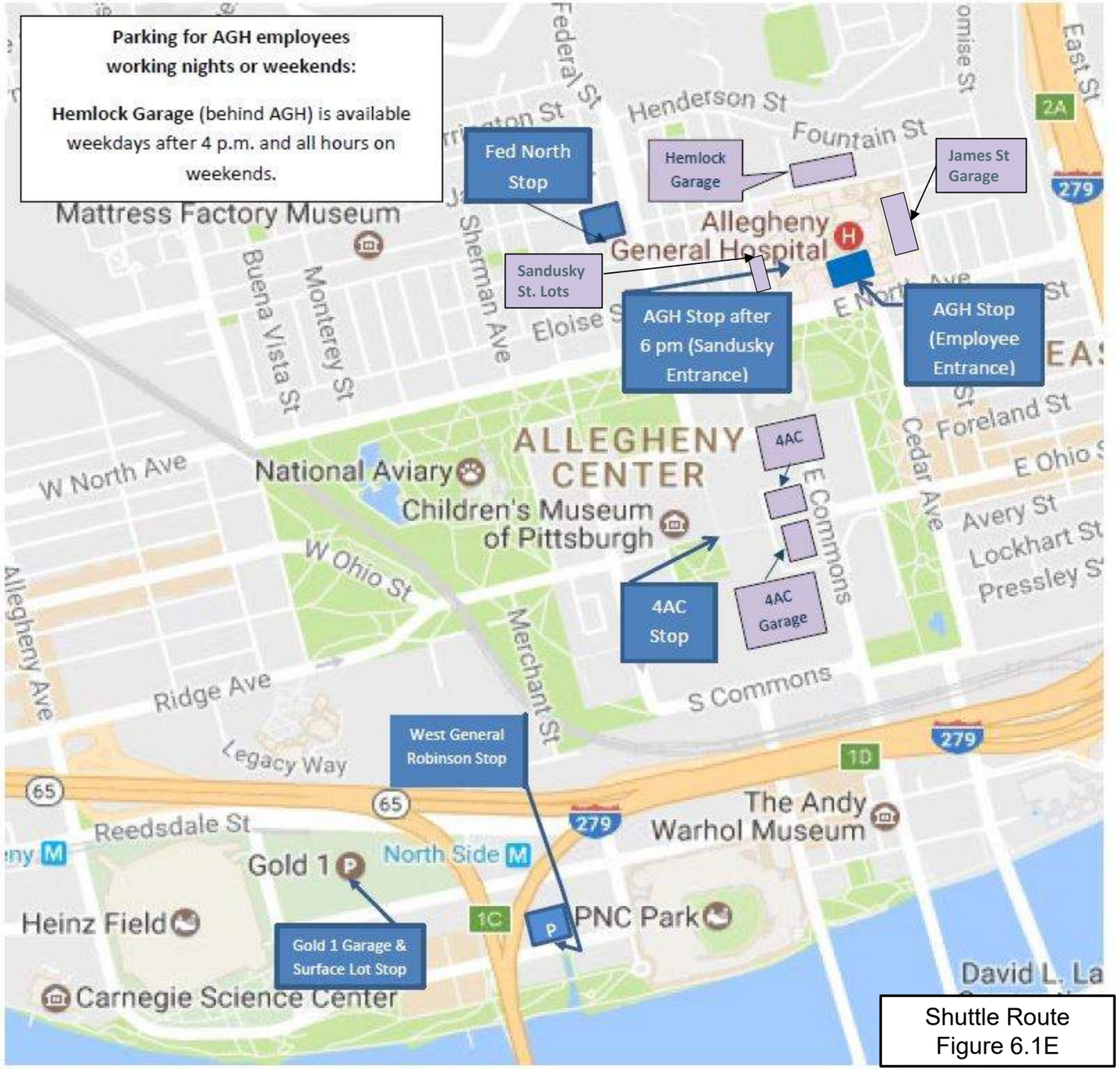
Ongoing Projects

There are no recent, ongoing or planned transportation planning projects with which AGH is or has been involved.

[6.1] Existing Conditions

Transportation Systems and Services

AGH offers shuttle service between the campus and off-site parking locations. The shuttle operates Monday through Friday from 5:00 AM until 12:30 AM. The shuttle routes are shown in Figure 6.1E.



Shuttle Route
Figure 6.1E

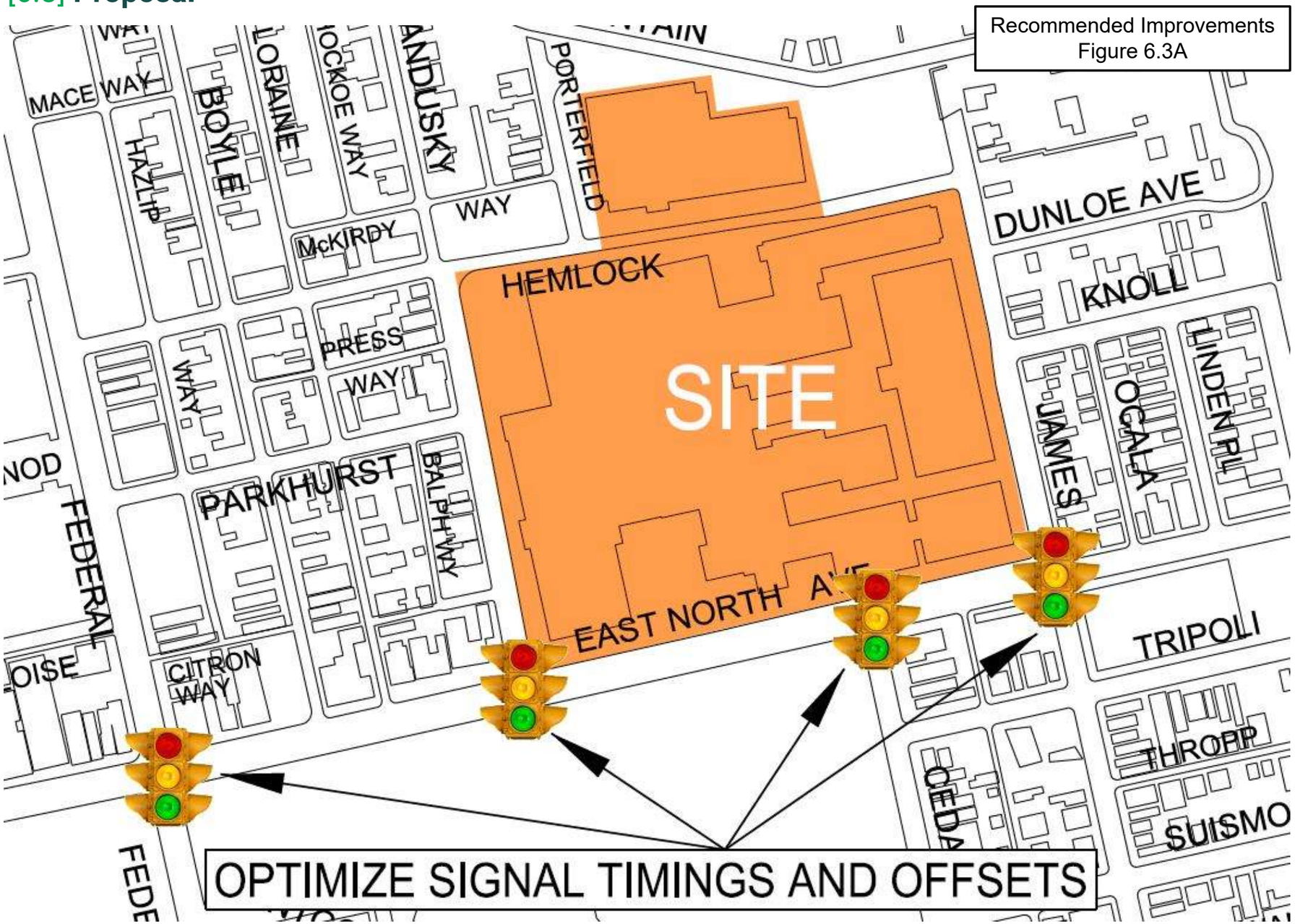
[6.2] Mobility Goals

AGH's transportation-related goals include the following:

- Implementation of a multi-faceted approach to increase multi-modal transportation options for employees and patients/visitors on campus while reducing the use of single occupant vehicles (SOVs) for both employees and patients/visitors.
- Enhanced campus community health through increased use of active transportation (walk, bike, etc.)
- Decreased parking demand related to transportation mode changes from automobile to active transportation and public transit.

These goals are consistent with current City/DOMI initiatives.

[6.3] Proposal



No transportation issues are expected to occur for the proposed projects at AGH.

Proposed Transportation Network Map(s)

There are no changes to the transportation network.

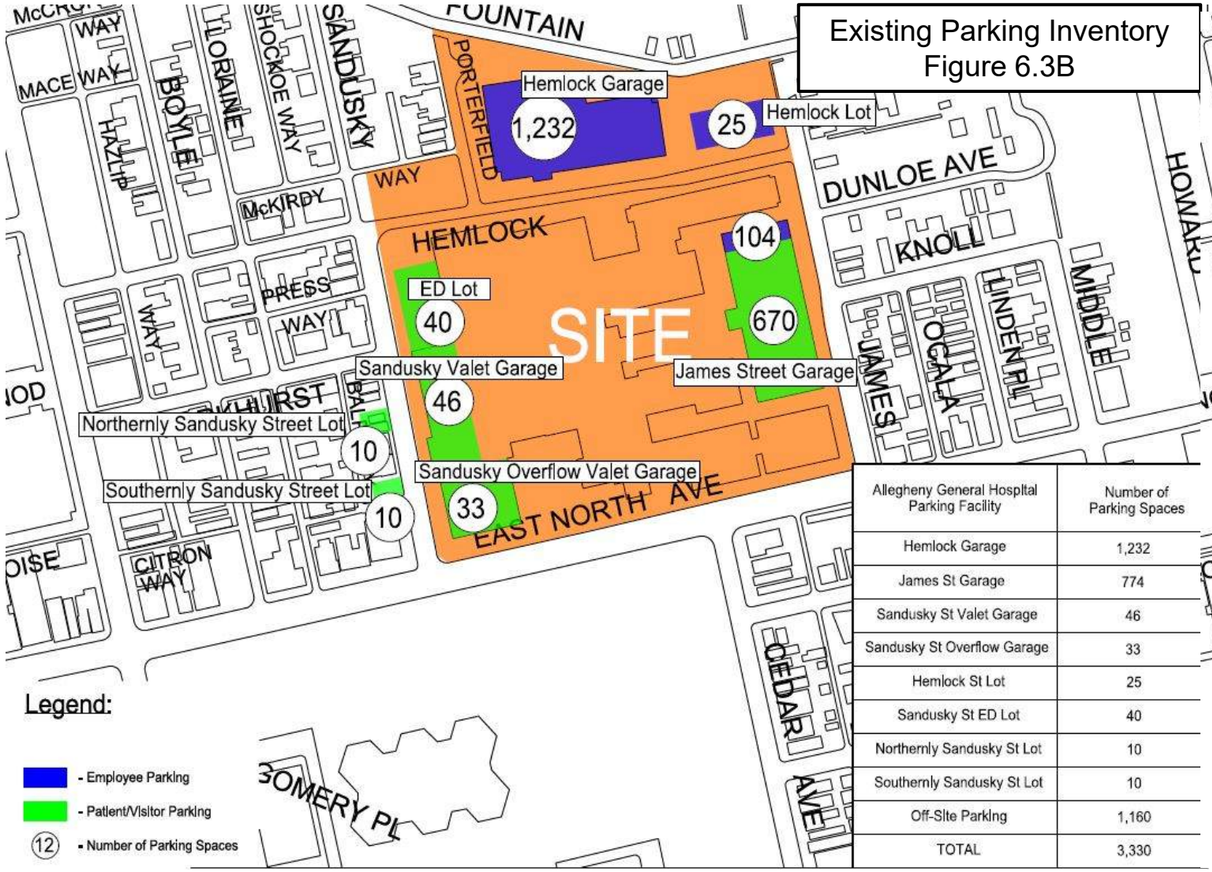
Proposed Transportation Projects Table

Refer to Figure 6.3A for recommended improvements. No additional improvements are planned for the implementation of the IMP by AGH.

Proposed Parking Facilities Map(s)

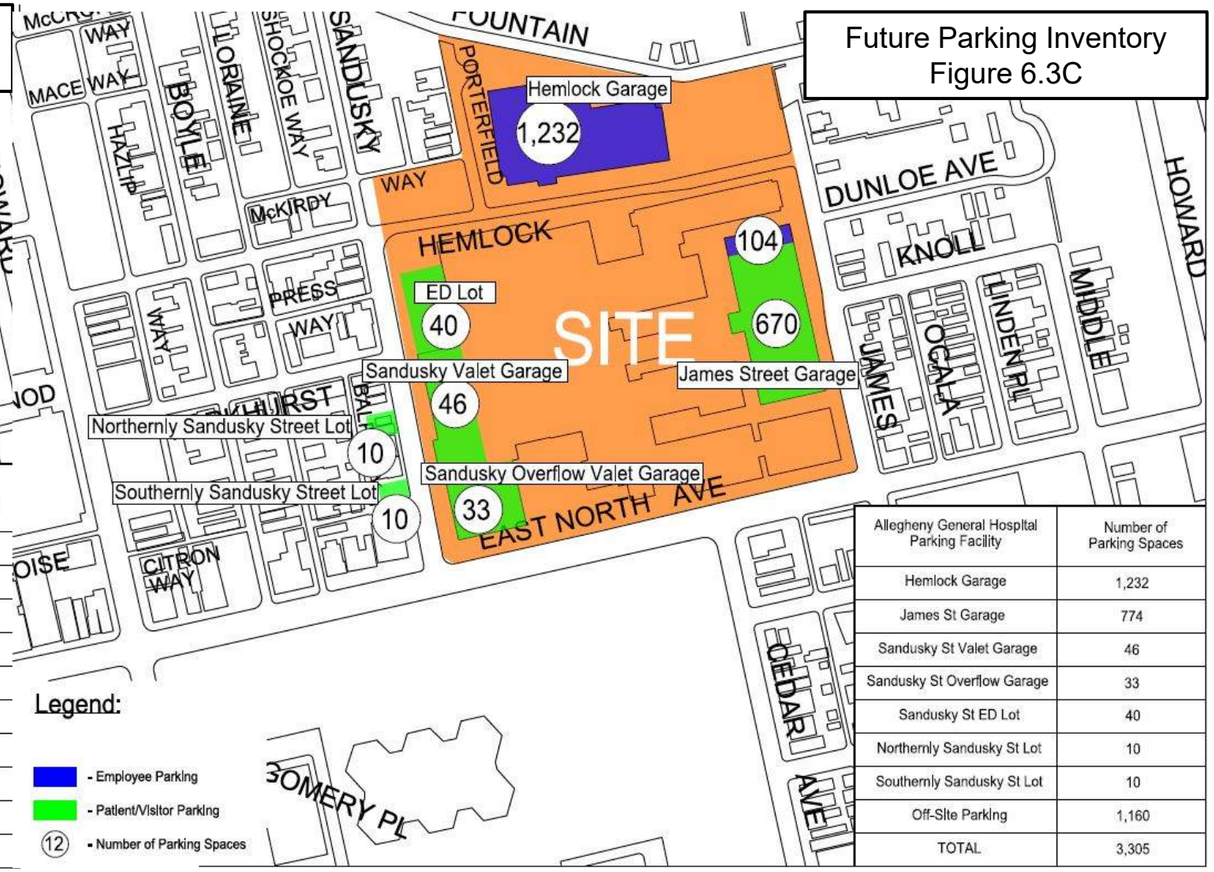
Refer to Figure 6.3B (existing) and Figure 6.3C (future).

Existing Parking Inventory
Figure 6.3B



Allegheny General Hospital Parking Facility	Number of Parking Spaces
Hemlock Garage	1,232
James St Garage	774
Sandusky St Valet Garage	46
Sandusky St Overflow Garage	33
Hemlock St Lot	25
Sandusky St ED Lot	40
Northernly Sandusky St Lot	10
Southernly Sandusky St Lot	10
Off-Site Parking	1,160
TOTAL	3,330

Future Parking Inventory
Figure 6.3C



Allegheny General Hospital Parking Facility	Number of Parking Spaces
Hemlock Garage	1,232
James St Garage	774
Sandusky St Valet Garage	46
Sandusky St Overflow Garage	33
Sandusky St ED Lot	40
Northernly Sandusky St Lot	10
Southernly Sandusky St Lot	10
Off-Site Parking	1,160
TOTAL	3,305

[6.3] Proposal

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

AGH is currently evaluating a comprehensive suite of TDM initiatives to reduce the amount of single-occupancy vehicle traffic to the AGH campus.

AGH Employee Survey

Based on the 2022 transportation survey results, 90.4% of the employees at AGH currently drive alone to employment at the AGH campus. AGH's TDM strategy will have a target of reducing that percentage to 80% over the 10 years of the IMP.

Potential TDM Initiatives for AGH

AGH will appoint a TDM Coordinator to manage TDM strategies by the end of the year 2022. This individual will be responsible for developing and implementing effective communication programs to promote TDM options to new and current AGH employees. The individual will be responsible for assessing the effectiveness of the TDM initiatives, modifying them as appropriate, and providing updates to the City of Pittsburgh DOMI as required. TDM information will also be made available to individual physicians' office staff as well. To promote the programs and provide individual employee assistance, the TDM coordinator will be available for individual consultation in the forms of email, telephone calls and in-person individual meetings and will attend new employee orientation meetings. The TDM coordinator will submit a status report documenting the results of TDM initiatives to DOMI.

Potential general initiatives include:

- Develop a Mobility Vision Statement or set of mobility goals that are supportive of the organization's mission.
- Evaluate providing or increasing the number of electric vehicle (EV) charging stations (cost and feasibility) to encourage the use of lower energy options for commuting.
- Explore marketing and other opportunities with Pittsburgh Regional Transit.
- Perform annual data collection to track the success of TDM programs and progress toward mode split goals. AGH will use this information to reassess mode split goals in partnership with DOMI and Pittsburgh Regional Transit as needed.

[6.3] **Proposal**

TDM Plan and Parking Demand Management Strategy

Potential employee initiatives include:

- Place TDM information on the AGH website.
- Request installation of an additional POGOH bike station nearby.
- Reassess the cost of parking passes/leases to discourage automobile usage.
- Continue to provide remote parking with shuttle service.
- Provide an informational kiosk in the building lobby, which would provide real time information on public transit and locations of available POGOH Bikes.
- Offer free bus passes.
- Identify opportunities to sell Pittsburgh Regional Transit ConnectCards on campus.
- Learn about Pittsburgh Regional Transit products and offerings related to employee programs.
- Explore potential first mile/last mile strategies for those using public transportation.
- Offer a Guaranteed Ride Home program for transit users.
- Provide easily accessible Uber/Lyft pick-up/drop-off locations.
- Provide priority parking for carpools and vanpools.
- Investigate with Pittsburgh Regional Transit to identify service changes that would allow substituting PRT service for AGH shuttle service..
- Provide website option, bulletin board, and/or marketing for employees to connect to each other for ride sharing opportunities. Cross promote with physical literature distributed in key areas and during appropriate events.
- Establish and enhance wayfinding strategies to direct pedestrians to bus stops, bike racks, and bike repair stations. . Add wayfinding inside ground floors of buildings to allow non-driving visitors to easily find locations within the building/campus.
- Hold annual transportation fairs to encourage alternate modes of commuting.
- At new employee orientation, the TDM Coordinator will present TDM options and information.
- Investigate incentives to promote walking, biking, and taking transit.

[6.3] Proposal

TDM Plan and Parking Demand Management Strategy

Potential patient/visitor initiatives include:

- Provide a link on the AGH website to Pittsburgh Regional Transit to promote the use of public transit for patients/visitors.
- Install outdoor public bike racks.
- Install outdoor public bicycle repair station(s).
- Place TDM information on the institution's website.
- Request installation of an additional POGOH bike station nearby.
- Continue the use of valet parking.
- Reassess parking cost to discourage automobile usage.
- Provide an informational kiosk in the building lobby, which would provide real time information on public transit and locations of available POGOH Bikes.
- Explore potential first mile/last mile strategies for those using public transportation.
- Provide easily accessible Uber/Lyft pick-up/drop-off locations.
- Investigate opportunities to provide directions for accessing public transit, Paratransit, and ridesharing services. Where these options are deemed not feasible, coordinate Uber service to bring local patients from home to the hospital (direct door-to-door contract).
- Establish and enhance wayfinding strategies to direct pedestrians to bus stops, bike racks, and bike repair stations. Add wayfinding inside ground floors of buildings to allow non-driving visitors to easily find locations within the building/campus.
- Investigate methodologies to survey patients and visitors about their trip choices as well as potential programs they would utilize that don't rely on single occupancy vehicles.

7 Infrastructure Plan

[7.1] Environmental and Sustainability Goals

[7.1.1] Environmental Initiatives

AHN, with its parent company, Highmark Health, established a cross-disciplinary Environmental, Social, and Governance (ESG) working group in mid-2021. The ESG working group has identified material topics and reporting metrics related to energy, water, waste, and GHG emissions (Scope 1 and 2 building utilities related). At present, the group continues to meet with the respective AHN sector leaders to confirm metrics and baselines and discuss targets and goals. Initial ESG reporting readiness recommendations were presented to the Highmark Health Audit Committee in May 2022.

Goal Alignment

Category	City of Pittsburgh Goal	Allegheny General Hospital Goal	Goal Status	Goal Source
Emissions	100% reduction below baseline levels by 2040	100% reduction below baseline levels by 2040	2% above custom baseline	2030 District Goals
Energy	50% EUI reduction below benchmark by 2030	50% EUI reduction below custom benchmark by 2030	5% reduction below benchmark	2030 District Goals
Renewable Energy	100% energy use met by off-site RECs or renewable energy purchase by 2030	0% energy use met by off-site RECs of renewable energy purchase by 2030	Investigating off-site REC options	City of Pittsburgh
Water Consumption	50% reduction below baseline by 2030	50% reduction below baseline by 2030	52% reduction	2030 District Goals
Stormwater Management	Manage 50% of stormwater runoff through Green Infrastructure	All new landscaping to be native species requiring no irrigation.	21% pervious site coverage	PWSA Green First Plan
Waste Management	Zero Waste	20% reduction	Tracking 7 waste streams	PCAP v3

[7.1.2] City of Pittsburgh Plans and Initiatives

Pittsburgh 2030 District

AHN is committed to adopting energy management policy to reduce energy consumption and costs in our facilities and to promote the long-term environmental and economic sustainability of our operations. As a partner of the Pittsburgh 2030 District, administered by The Green Building Alliance, AGH endeavors to be fully aligned with the City of Pittsburgh in achieving its goals. The energy, emissions, and water use baselines shown in this document are custom values developed by the GBA.

Benchmarking

As a participant of *The Pittsburgh Building Benchmarking Ordinance* effort, enacted in 2018, AHN benchmarks performance of all its buildings by tracking and reporting their energy and water consumption. Allegheny General Hospital complies with the city's ordinance requirement for annual reports.

Pittsburgh Policies and Climate Plans

The City of Pittsburgh has published a variety of plans to improve resilience and mitigate the effects of and impacts on climate change. These documents all inform AHN's efforts to transform AGH into a resilient, sustainable, high-performing campus.

- OnePGH Resilience Plan
- Climate Action Plan
- Green First Plan
- City Comprehensive Plan

[7.1.3] Healthcare Anchor Network

AHN became a member of the Healthcare Anchor Network (HAN) in 2021. HAN exists to build a critical mass of health systems adopting the anchor mission, an institutional priority to leverage all their assets, including hiring, purchasing, and investment to improve community health and well-being by building inclusive, local economies. AHN participated in the HAN data collection process for reporting year 2021, which includes data collection points for energy usage and renewable energy.

[7.1] Environmental and Sustainability Goals

[7.1.4] Resilience

For a health care system to practice resiliency in the future, the first step is to fully understand the stresses and shocks that can happen to the system, the community and surrounding region. The OnePGH Resilience plan identifies a series of chronic stresses and acute shocks that require planning in order to mitigate their effects on the community.

Chronic Stresses

Social Inequity

Accessibility to the campus for the entire community is essential to the fulfillment of the AGH mission. Maintaining public transportation access, access for persons with disabilities, and coherent navigation of the site are all important aspects.

Racial Inequity

AGH employs approximately 5,000 people at its campus. Leadership recognizes the importance of a diverse workforce for providing excellent care and is committed to eliminating racial disparity in the workplace through workforce education and diverse hiring practices.

AGH is committed to tackling the pernicious reality of racial disparities within the healthcare system. With support from Highmark Health, the First Steps & Beyond Program seeks to reduce infant deaths and racial disparities within healthcare through education and community outreach. This program is one facet of a wholistic approach to addressing the social determinants of health in the community.

Economic Inequity

The problem of economic inequity in our communities affects AGH through increases in patients requiring government assistance for medical insurance and medical bills. AGH has a direct interest in the reduction of economic disparity.

Aging Infrastructure

Infrastructure affects AGH in several important ways. The quality of roads and bridges affects the ability of staff, patients, and supplies to access the campus. Maintenance of utilities impacts the campus' ability to function and provide a high level quality of care to patients.

Poor Air and Water Quality

Environmental quality, particularly air and water quality, are a chronic stress that affect AGH. The persistent health impacts of these issues on the population increases the utilization of the hospital for the treatment of diseases requiring long-term treatment.

Acute Shocks

Climate Change: Extreme Weather and Extreme Temperatures

As extreme weather events grow increasingly common, AGH will be affected by an increase in patients due to accidents and incidents caused by extreme weather events. Flooding and winter storms will affect staff and patients' ability to get to the campus. Extreme weather can also affect the delivery of utilities to the site. Extreme temperatures can exacerbate health issues and lead to an influx of patients during especially high temperatures.

Economic collapse

The country is currently experiencing economic shocks in the form of high inflation and slow supply chains due to the pandemic and geopolitical conflict. These shocks add pressure to the costs of healthcare, which have been rising steadily for many years. The ability of AGH to source supplies and control costs is directly affected by the economy.

Pandemic

The COVID-19 pandemic, which reached the Pittsburgh region in March 2020, has had a profound impact on AGH and the region as a whole. While AGH has been able to respond successfully, the pandemic highlighted the need for preparedness in terms of supplies and operations. The pandemic delayed care deemed non-essential for many patients, which in some cases could lead to more acute care needed in the future, further stressing the health system. Like other health care providers in the region and the country, staff shortages due to the pandemic have affected AGH.

[7.2] Environmental Protection

District Overlay Maps

The following maps provide the extents of each environmental constraint within the Environmental Study Area. These constraints are important geological/environmental characteristics that should be considered when planning for development.

Land that falls in the Landslide-Prone Overlay District (LS-O) requires subsurface investigations and approval before construction can begin to reduce risk of damage or hazards that may occur, like sliding or movement of earth.

ZONING CODE REFERENCE

905.03.D.4 (h) Environmental Protection Plan

The Institutional Master Plan shall identify all sensitive environmental resources within the Institutional Master Plan area, as well as any view corridors that traverse the Institutional Master Plan area. The Institutional Master Plan shall identify Environmental Overlay Districts that affect the Institutional Master Plan area and shall include reports on those conditions as required in Chapter 906. The Institutional Master Plan shall identify areas of the Institutional Master Plan 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.

LANDSLIDE-PRONE OVERLAY DISTRICT

- IMP Environmental Study Area
- Landslide-Prone Overlay (LS-O) District

SS-O Steep Slope Overlay District

The purpose of this section is to create a Steep Slope Overlay District (SS-O) that includes any land comprising a steep slope (i.e. a natural slope of twenty-five (25) percent or greater); Recognize the importance of the City's steep slopes in defining the character of Pittsburgh; Assure that the steep slope site is appropriate for development considering natural site limitations, associated hazards, public safety, and the need to provide public services and infrastructure and; Assure that the design of the proposed development responds to the site's limitations and attributes.

*These are steep slopes according to the COP over districts on GIS. All of these slopes appear to have been disturbed and are no longer natural, therefore do not qualify as a steep slope. Reference aerial imagery.

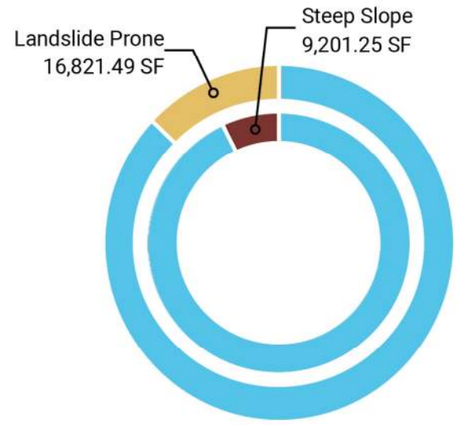
STEEP SLOPE OVERLAY DISTRICT

- IMP Environmental Study Area
- Steep Slope Overlay (SS-O) District

Environmental Protection

The northern portion of the campus is part of the Landslide-Prone Overlay (LS-O) district and the Steep Slope Overlay (SS-O) District, which identifies areas with greater than 25% slope. AGH is not impacted by Undermined Areas (UM-O).

IMP Development Areas Impacted by Environmental Overlay Districts:



TOTAL AREA OF IMP PROJECTS:
117,834 SF

*Note: Actual SS-O impact is 0 SF

ENVIRONMENTAL OVERLAY DISTRICTS

- IMP Environmental Study Area
- Landslide-Prone Overlay (LS-O) District
- Steep Slope Overlay (SS-O) District
- 10-Year Development
- 10-Year Landscape Development Area

Recommendations for Areas Impacted by Environmental Overlay Districts

The overlay districts on Allegheny General Hospital's campus are mostly contained to the northern portion the Environmental Study Area. The environmental overlay districts are comprised of three geological constraints: Steep slopes, landslide prone areas and undermined areas. There are no undermined areas in the study area. Each can be a limiting factor when proposing new development projects. These constraints must be examined on a case-by-case basis and it is likely that developing within the overlay districts will impact cost. Sites that are on steep slopes and are landslide prone will require remediation related to erosion and slope stabilization.

Steep Slope Areas (S)

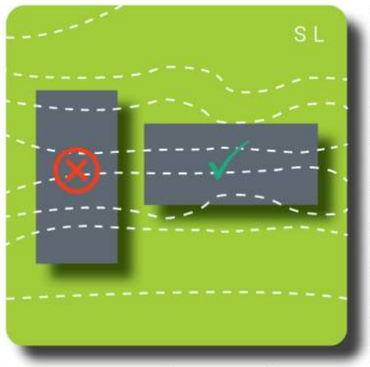
The northern portion of Allegheny General Hospital's campus is located on steep slopes. While the majority of this area is forested and has a retaining wall, the wall has been compromised in several locations and trees are leaning toward the employee parking garage. Areas with significant tree coverage on steep slopes should remain unless trees are unhealthy or invasive. Those trees should be removed and replaced with native and non-native speces in its place while monitoring the area until the plants are established; vegetation helps hold soil in place and if it is removed, the slope may need to be stabilized by regrading or terracing the land with retaining walls.

Landslide-Prone Areas (L)

Slopes that expose siltstone and shale have the tendency to percolate water, which could result in a landslide. These areas can be identified by mapping the bedrock. Further investigation of the exposed material can reveal high permeable substances such as decaying roots, trees, and other organic debris. It is important to deter storm-water infiltration in landslide prone areas. Infiltration can encourage permeability and weaken the slope material.

Retaining Walls on Steep Slopes

In order for development to occur, a portion of land must be leveled to create a building pad. More land may need to be flattened to provide vehicular and pedestrian routes. Retaining walls can be used in the event that grades are already at maximum slope, 2:1. Though retaining walls are expensive, they permit land to be drastically reshaped for the development. The city of Pittsburgh has 10' maximum wall height requirement.



Limiting Grading Envelopes

When planning the site development, it is important to analyze the natural topography throughout a site. Aligning roads and buildings along ridge lines and contours can save significant cost related to earthwork. It is especially important to limit unnecessary grading on landslide prone areas. Less disturbance reduces the chances of adjacent erosion and slope movement.

Minimize Stormwater Infiltration

Storm-water infiltration is preferable and encouraged in most locations. However water can have adverse reactions when it drains into severely sloped areas that are undermined. Storm-water can penetrate the mines and exit hillsides in the form of acid mine drainage. Increasing groundwater in landslide prone areas can encourage erosion as well. It is important in these areas to utilize storm-water inlets and pipes to capture excess storm-water and eliminate potential slope movement.

Extending Fill Embankments

Landslide potential can be reduced by keying engineered fill material through older fill, topsoil, and colluvium, the material that commonly forms at the base of a slope. Fill slopes should be benched and the key-way should extend into intact bedrock at the base of the proposed slope. This is called the toe-of-fill key-way.

Tree Preservation

A complete survey of trees within the Environmental Study Area was compiled. 231 trees over two inches in diameter at breast height, which is the approved size for trees planted in the city of Pittsburgh, were documented within the study area. These trees encompass a diverse range of species and maturity size. The data collected includes species, approximate diameter at breast height (DBH), tree condition, and approximate canopy size. Refer to the Appendix for the complete tree survey.

Tree canopy was calculated by using the "Manual of Woody Landscape Plans" by Michael A. Dirr. (Sixth Edition, Revised in 2009). It is important to understand that the canopy growth projections are not to be considered final since trees in urban environments are subject to a number of stressors which can impact growth and decrease tree longevity. These factors include, but are not limited to:

- Soil compaction
- Poor nutrient deficient soils
- Soils with low water storage capacity
- Deicing salts, root injuries
- Physical damage to roots, trees and/or bark
- Extreme temperatures
- Reduced moisture availability due to restricted roots and surrounding impervious pavement
- Lack of adequate sun exposure (due to building shading)
- Inadequate soil volumes
- Limited spacing between trees and limited size of tree opening

For reference see the Arboriculture and Urban Forestry journal article "Appraisal of Key Abiotic Parameters Affecting Street Tree Growth" and also the lecture "Three Design Issues that Impact Long Term Health of Urban Trees" by James Urban, FASLA. With these parameters and limitations in mind, it is imperative that future trees are sited in streetscapes and urban conditions in a manner that reduces the impact of these stressors on tree health. Street trees will be selected and planted based on the City of Pittsburgh Municipal code and the City of Pittsburgh Department of Forestry recommended species and tree quality requirements.

Some goals outlined by the Sustainable Landscape Design Principles that should be considered in the IMP Environmental Study Area:

- Protect significant trees during renovations, infill development, and greenfield construction
  - Tree roots, trunks, and canopies should be well outside of the limits of development
  - Tree protection fences should be utilized around the trees predicted root zone extents
  - Construction entrances should be planned to avoid tree stands
- New site designs should consider pervious or permeable pavements to promote extended root systems for trees
- Landscape designs should locate shade trees away from paved surfaces to encourage maturation of tree heights and canopies
- Partner with North Side community and groups to replant street trees
- Monitor health of significant trees on campus
  - Utilize GIS data to identify trees susceptible to current and possible diseases, pests, and fungi
  - Proposed treatments for trees that are in poor health
  - Remove trees if diseases are highly contagious
- Plant new shade trees at a spacing that factors in mature canopy size
  - Trees will compete for root and canopy space if planted too close together
- Require designers to maintain a percentage of tree cover within future RFPs
  - RFP should reference the Landscape Sustainability Guidelines and the IMP Environmental Protection section
  - Designers should be required to preserve a minimum percentage of existing canopy and propose a percentage that aligns with the goal of increasing net tree canopy

Examples of Trees Located During Survey

Pin-Oak

Osage Orange

Princeton Elm

Tree-of-Heaven

Thornless Honey Locust

Little Leaf Linden

[7.2] Environmental Protection

Total IMP Environmental Study Area: 15.93 Acres

Total Canopy Area: 1.96 Acres

Existing Tree Canopy Coverage: 12.30%

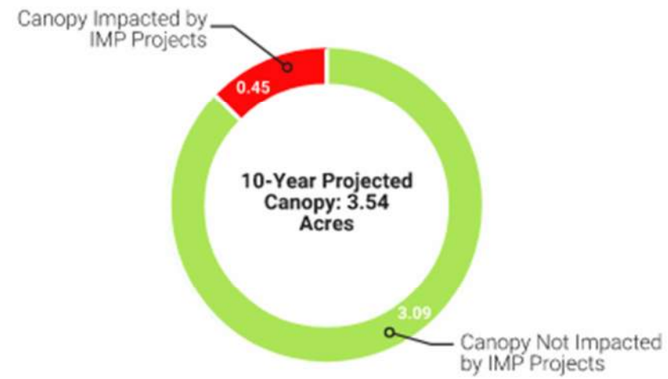
EXISTING TREE CANOPY

- IMP Environmental Study Area
- Existing Tree Canopy
- Projected 10-Year Canopy

[7.2] Environmental Protection

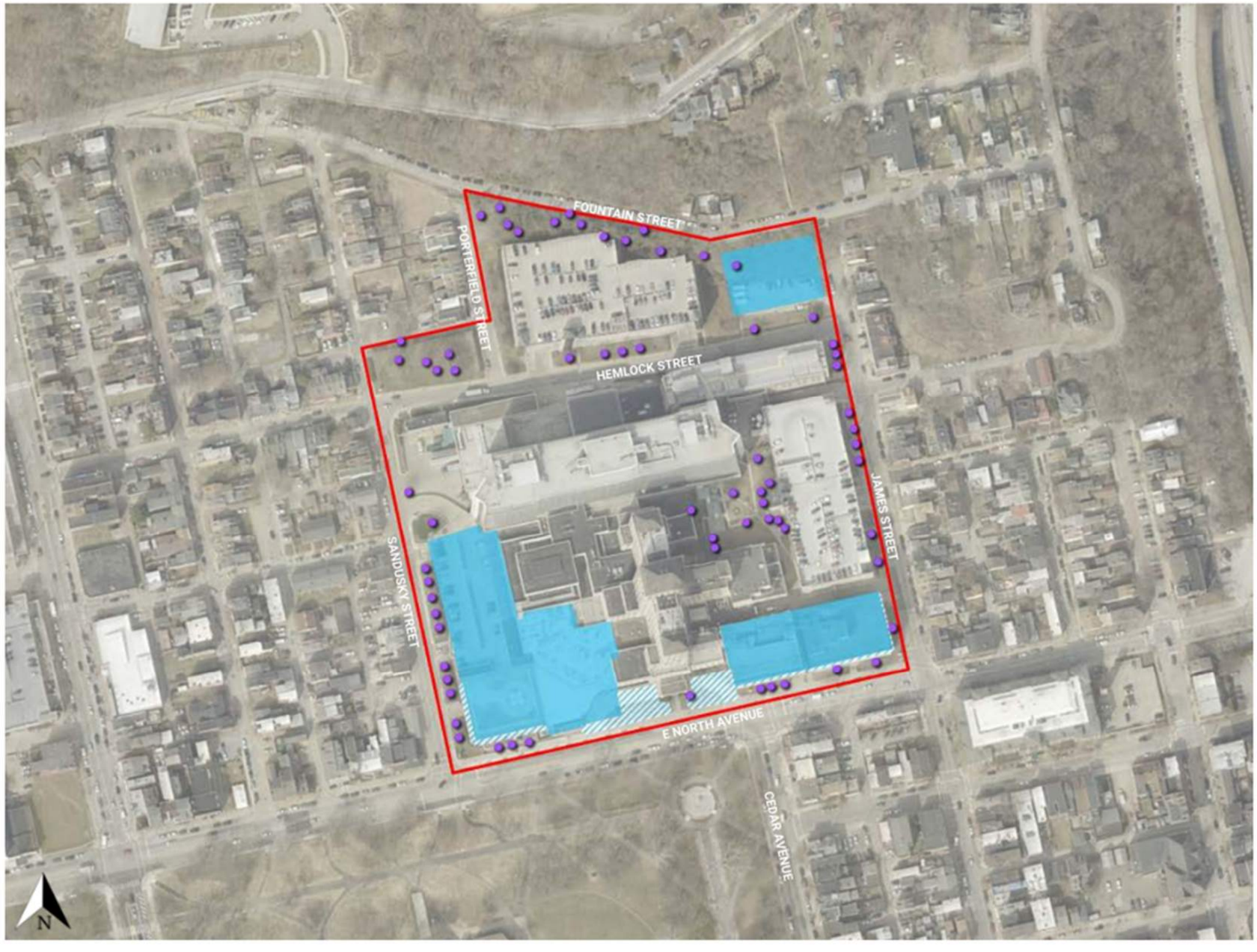
Total 10-Year Projected Canopy: 3.09 Acres

10-Year Projected Canopy Impacted by IMP Development Areas: 0.45 Acres



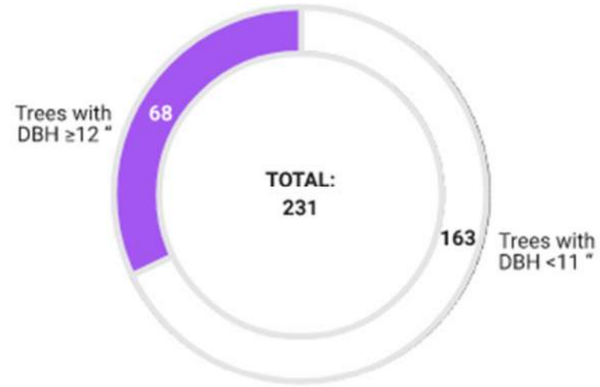
DEVELOPMENT SITES OVERLAY - TREE CANOPY

- IMP Environmental Study Area
- Existing Tree Canopy
- Projected 10-Year Canopy
- Impacted by IMP Projects
- 10-Year Development Sites
- 10-Year Landscape Development Area



Trees of Significance

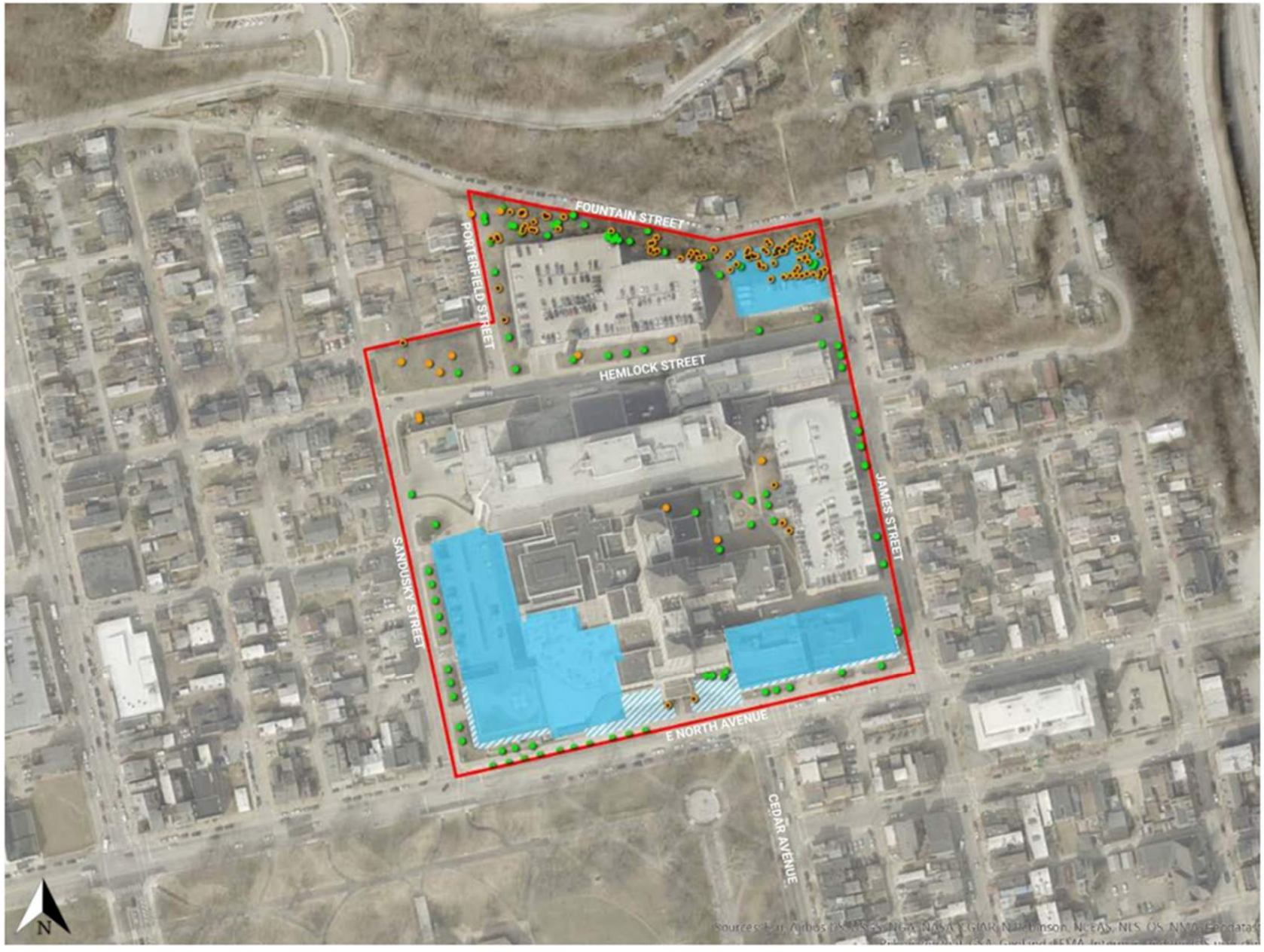
A tree of significance as defined by the City of Pittsburgh is a tree that exceeds or is equal to 12 inches Diameter at Breast Height (DBH). DBH is measured to be approximately 4 feet above ground elevation. City of Pittsburgh Zoning requires that all trees 12 inches and above that are removed from a property are replaced inch-for-inch on site. There is one significant tree within the 10-Year Development Sites that would need to be replaced.



DEVELOPMENT SITES OVERLAY - TREES OF SIGNIFICANCE

- IMP Environmental Study Area
- Tree with DBH ≥12 Inches
- 10-Year Development Sites
- 10-Year Landscape Development Areas

[7.2] Environmental Protection



Total Number of Trees: 231

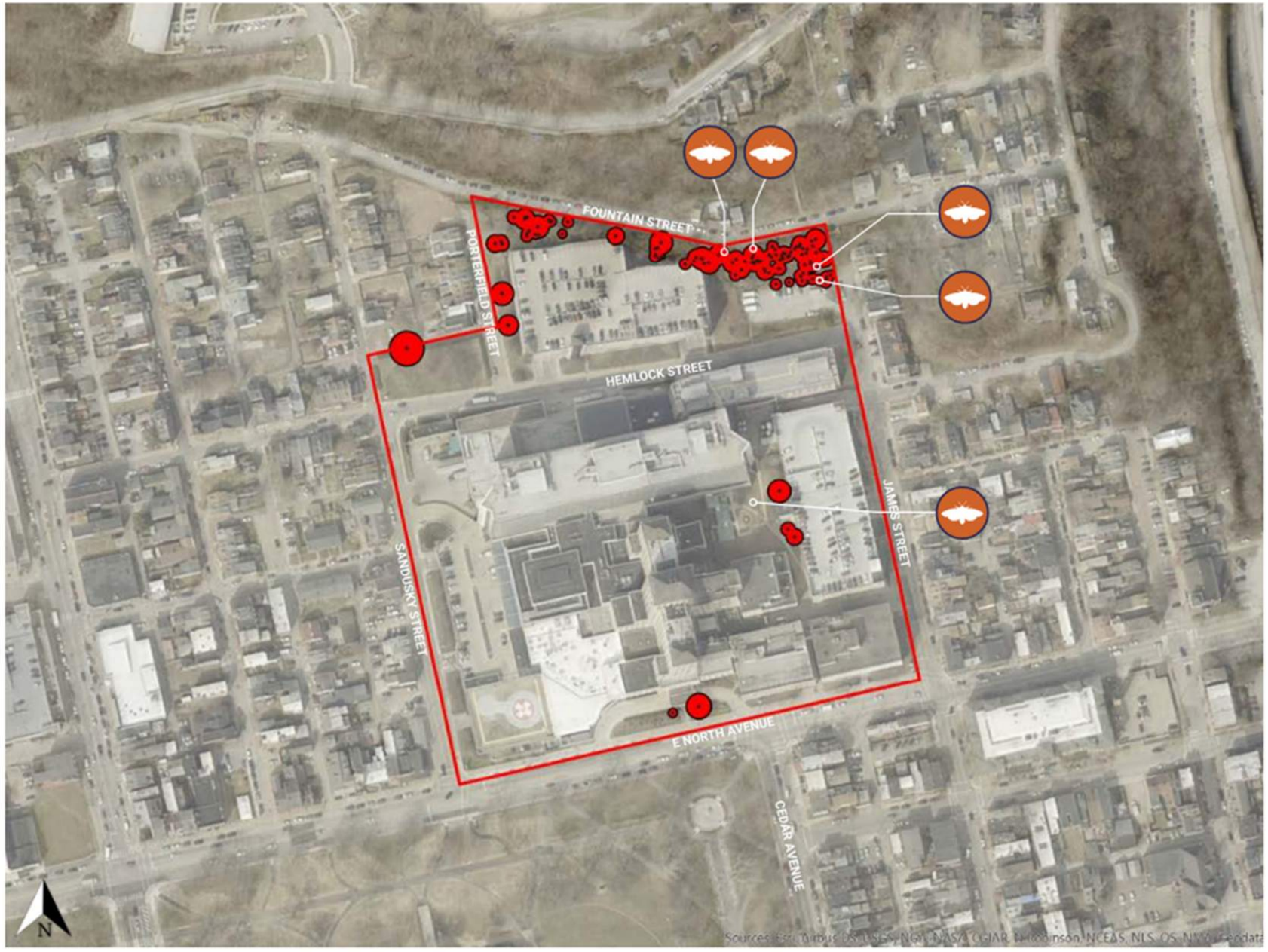
Native Tree Species: 40.8%

Non-Native & Non-Invasive Tree Species: 5.6%

Non-Native & Invasive Tree Species: 53.6%

DEVELOPMENT SITES OVERLAY - NATIVE & NON-NATIVE

- IMP Environmental Study Area
- Native Trees
- Non-Native Trees
- Non-Native & Invasive Trees
- 10-Year Development Sites
- 10-Year Landscape Development Area



Environmental Constraints

The northern hillside on the AGH campus poses several challenges to current and future development. The soil is landslide prone, a significant retaining wall is compromised, and multiple large trees are leaning towards a parking garage. The majority of AGH's northern hillside is over populated with invasive plant species including, Invasive Vines, Japanese Knot-weed, Virginia Creeper, Poison Ivy, and Honeysuckle.

On site, five spotted lanternflies were documented and reported to the Pennsylvania Department of Agriculture. Allegheny County, was recently placed under a spotted lanternfly quarantine order. The spotted lanternfly is an invasive insect that feeds on the sap from grape vines, maples, black walnut, birch and willow trees. These plants are vital to Pennsylvania's economy. The spotted lanternfly's feeding can stress plants and contribute to their premature death. The best approach to stop the spread of the spotted lanternfly is physical removal of the insect, removal of Tree-of-Heaven host trees, and pesticide applications.

The most concerning invasive trees are the species that exist in naturalized areas due to how quickly invasives plant species spread, displacing native plants, preventing native plant growth utilmately decreasing tree coverage, and increasing erosion due do their shallow root structures. Gradual removal of invasive species and replacement of native species should be considered as future projects develop on development sites. Adjacent and off-site remediation should also take place to encourage a healthier urban canopy.

Invasive Tree Canopy Area: 0.69 Acres

EXISTING TREE CANOPY - AREA CONSTRAINTS

- IMP Environmental Study Area
- Invasive Tree Canopy
- Constraint

Spotted Lanternfly

Development Driven Constraints

The majority of the Allegheny General Hospital's campus is defined by impervious surfaces such as buildings, streets and pavement. Although that impervious coverage will continue to increase over the next 10 years, there are still plenty of locations within the Environmental Study Area where trees can be planted to combat that change. Most existing buildings on the hospital campus will not be demolished in the foreseeable future, thus the tree canopy will not dramatically increase on previously developed sites. Preserved and proposed tree canopy will mostly be limited to areas that are pervious and will feasibly remain pervious for the next 10 years.

TREE CANOPY - AREA CONSTRAINTS

- IMP Environmental Study Area
- Existing Tree Canopy
- Projected 10-Year Canopy
- Invasive Trees
- Pervious Surfaces
- Impervious Surfaces
- 10-Year Development Sites
- 10-Year Landscape Development Areas

[7.2] Environmental Protection

Total Canopy Area in 10 Years: 2.76 Acres

Proposed Additional Canopy Area: 0.35 Acres

Total IMP Environmental Study Area: 15.93 Acres

Tree Canopy Coverage in 10 Years: 17.33%

Proposed Canopy Coverage: 19.52%

It is reccommeded that invasive species should be removed from the IMP and should be replaced with native species.

EXISTING TREE CANOPY - POTENTIAL TREE CANOPY

- IMP Environmental Study Area
- Adjusted Tree Canopy
- Projected 10-Year Canopy
- Conceptual Tree Placement
- Pervious Surfaces
- Impervious Surfaces
- 10-Year Development Sites
- 10-Year Landscape Development Areas

Tree Canopy Growth Projections within the IMP Environmental Study Area

Despite limited available green-space, there is potential for future tree canopy growth. The total surface area of existing canopy is approximately two acres. The total proposed projected canopy areas amounts to 0.35 acres. This results in a 2.9% increase in canopy coverage. Several factors must be considered before assuming that space is available for additional trees.

Shade trees can grow an average of 40-60 feet wide and 60-100 feet tall over their lifetime. When a 2" caliper shade tree is planted, it is usually 4-6 feet wide and 10-12 feet tall. Shade trees provide some of the best functional aspects for a site. They are utilized for their dense and wide branching structure that can obscure UV spectrum light. Their leaves filter the air by intercepting pollutants and particle debris. They can remove large quantities of storm water from the ground using their extensive root systems while also surviving extended droughts. Their canopy also creates a barrier for precipitation and reduces the heat island effect of urban communities. When used appropriately, shade trees can be a direct economic benefit by reducing heating and cooling costs and increasing property values.

While larger trees provide numerous benefits, they also have drawbacks. They require more maintenance as they age, their large canopies can block views, and they require more space to grow. The orange dots on the map on the following this page indicate potential areas for trees to be planted in the future to increase the overall canopy within the Environmental Study Area. The trees are arranged by the following criteria. The trees are planted with space to account for a variety of species and for the average mature spread of an urban shade tree. There are many locations throughout the study area that would be more appropriate for trees with narrower growth habits. This would need to be examined on a case-by-case basis. Existing trees, especially those that are middle-age, should have exclusive space to expand their canopies. Most of the proposed trees are staggered to mimic existing woodland conditions and utilize space more efficiently.

Trees are not proposed in areas that are expected to have heavy development. Rooftops that will be fitted with greenroofs are another potential area to create canopy. Special considerations and planning must accompany potential rooftop tree plantings, but this is a possibility. Public streets are also envisioned with additional street trees. Tree canopy along streets could be incorporated into future BMPs, enhance views, and provide areas of refuge in warmer months. Using native tree species throughout AGH's campus saves water, reduces erosion, and increases energy efficiency. Rainfall alone is enough to keep native speices thriving, reducing the need for irrigation.

Example of a street-tree planted properly along East North Avenue

Example of a tree planted too close to a building in AGH lower courtyard

Place-Making

It is important to create a sense of intimacy, healing, safety, and wellbeing throughout AGH's campus. Encouraging the use of greenspaces, gathering areas, and pedestrian connection creates a positive healing environment for patients, staff, and visitors. Landmarks and streetscape improvements causes people to observe and interact with spaces passively and actively which enables stimulation and wellbeing. Each of these improvements are potential place-making ideas and can be created by incorporating art, comfortable and diverse furnishings, plant material, or shaded refuge.

POTENTIAL PUBLIC AREA IMPROVEMENT SITES

- IMP Environmental Study Area
- Existing Tree Canopy
- Projected 10-Year Canopy
- Pervious Surfaces
- Impervious Surfaces

Greenway/ Greenspace

Outdoor Seating/ Gathering

Placemaking/ Landmark

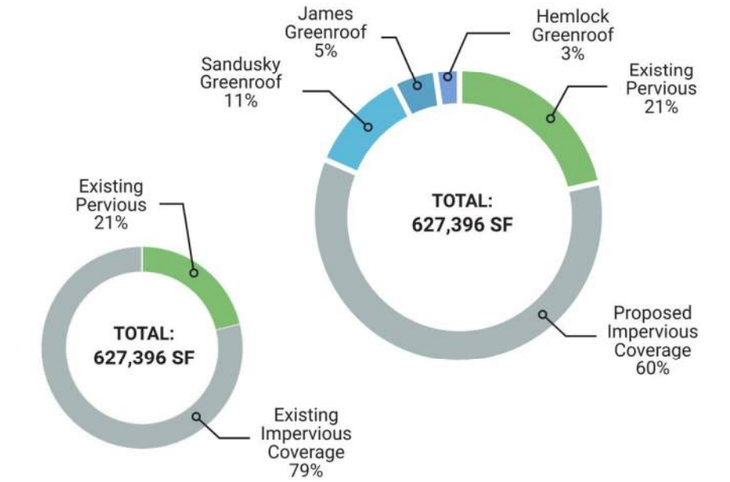
Streetscape Improvements

Pedestrian Connection

Pervious and Impervious Impacts

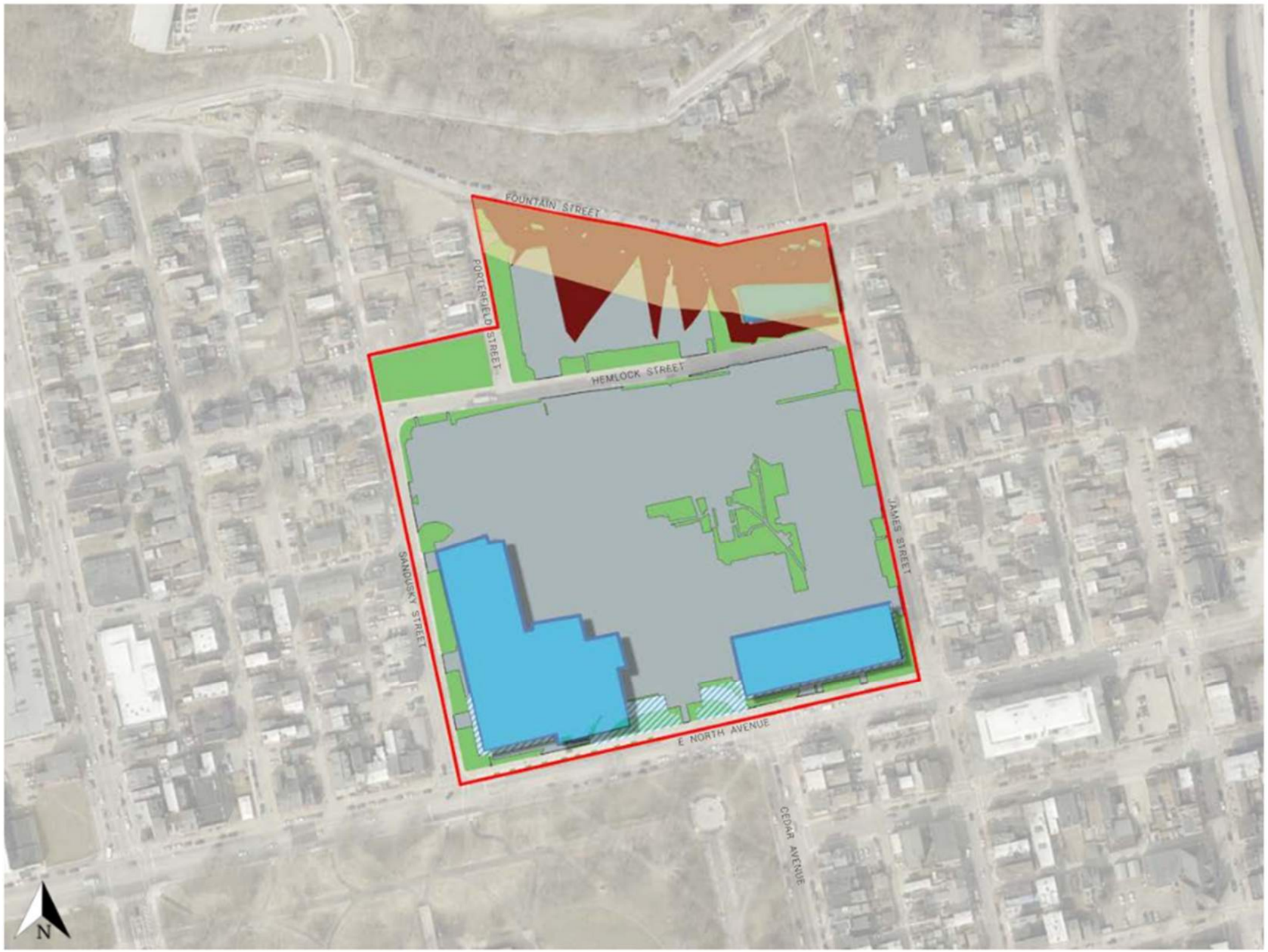
Although the ten-year development sites will increase in impervious coverage by +/- 9,700 s.f. on the hospital's campus, each one of these sites presents opportunities to create healthy and sustainable places. Future development should be balanced with adequate greenspace.

Most ten-year development sites are proposed on impervious areas. Future projects within these development sites should explore methods to reduce impervious surfaces while providing a high-quality user experience. Stormwater management must be incorporated into Best Management Practies (BMPs) and be a guiding force in the design process.



DEVELOPMENT SITES OVERLAY - PERVIOUS & IMPERVIOUS

- IMP Environmental Study Area
- Pervious Surfaces
- Impervious Surfaces
- 10-Year Development Sites
- 10-Year Landscape Development Areas



Infiltration

The 10-Year Development Sites in landslide prone or steep slope areas should not be tested for infiltration due to the potential environmental impacts such as excessive erosion, landslides, or slips. Other non-infiltration type water quality Best Management Practices (BMPs) should be considered in the overlay areas or infiltration BMPs can be installed on other areas of the campus that are not within these two environmental overlay areas.

INFILTRATION - ENVIRONMENTAL OVERLAY DISTRICTS

- IMP Environmental Study Area
- Landslide Prone Areas
- Steep Slope Areas
- Pervious Surfaces
- Impervious Surfaces
- 10-Year Development Sites
- 10-Year Landscape Development Areas

Streetscape Improvement

E North Ave is an important corridor for the Northside community, and acts as the southern edge of the AGH campus. Streetscape improvement specifically along E North Ave will be addressed with each new development project and bolster connection to the Northside community by providing a safe, enjoyable experience for pedestrians.

Improvements along this existing wide sidewalk include lighting, crosswalk safety, and sidewalk enhancement. Strategies in all of these categories can serve to aid wayfinding. AGH will work with the community for best practices and towards streetscape safety improvement.

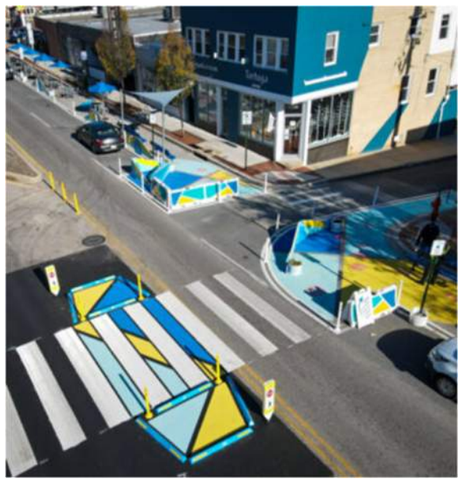
The images below are inspiration for potential designs.

Lighting Experience

Additional street and pedestrian path lighting to illuminate the sidewalk and street along North Ave. Corridor. Promotion of safety at night, wayfinding, and interactive design element.

Crosswalk Safety

Creating opportunities for pedestrians to cross safely and at the correct locations. Crosswalk enhancement aims to add more visibility to crosswalks as a tactic to create safer means for pedestrians and awareness for drivers. Addition of color or graphic art can enhance driver awareness.



Sidewalk Strategy

Sidewalk improvement includes the integration of stormwater collection, additional plantings between the sidewalk and street and the integration of shuttle stops along the street front at key moments along the North Ave. Corridor.

Design precedent images for example only

Transit Amenities

Placemaking strategies also consider in current AGH transit infrastructure and wayfinding for the employee shuttle system.

Streetscape enhancement priorities relating to transit include the addition of bus shelters, real time arrival / departure display information for shuttles, accessibility and the promotion of streetscape safety.

AGH will work with Pittsburgh Regional Transit (PRT) on best practices and strategies to improve and enhance transit amenities on campus.

Transit Shelters

The addition of open air shuttle shelters or covered seating along the East North Ave corridor to accommodate stops with high ridership. Shelters are designed and placed to promote safety while waiting through lighting and visibility. Shelters can integrate wayfinding information. Stops reinforce AGH brand identity and are subject to DOMI and Port Authority review and approval.

Design precedent images for example only

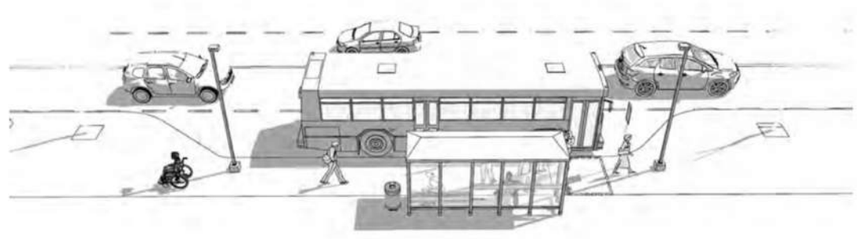
Real time Transit Info

With audible led signage displays information for routes can be accurately conveyed, integrate real time arrival and departure information, disclose important transit and hospital related information and feature route maps. Signage to comply with accessibility requirements.

AGH is currently engaged in an effort to install real-time transit screens inside the Hospital lobby.

Pedestrian Safety

One method to better define the threshold between street and sidewalk is to use curb cuts to define shuttle stop areas from traffic allowing better transitions between bus and sidewalks for people and less traffic backup behind shuttles. The Indication of bikes lanes, shuttle lanes and crosswalks more clearly with paint or signage is another safety strategy to diffuse confusion between different uses of the streetscape.



Bird-Safe Design

Project development plans will implement bird-safe glazing techniques to minimize bird collisions, particularly from ground level to 60 feet in height and adjacent to green roofs.

In addition, lighting design should consider strategies to minimize light pollution that affects night-flying migration patterns. When using LED technology, it is important to consider color temperature. Large amounts of blue light can be harmful to wildlife.

Use of bird-safe glass in new construction is encouraged for all of the proposed projects in the 10-year building envelope.

[7.3] Campus Energy Planning

[7.3.1] Energy Initiatives

AHN's Energy Management program seeks to improve energy utilization by targeting the systems that use the most energy (HVAC, Chiller) and the computers that monitor and control them (Automation).

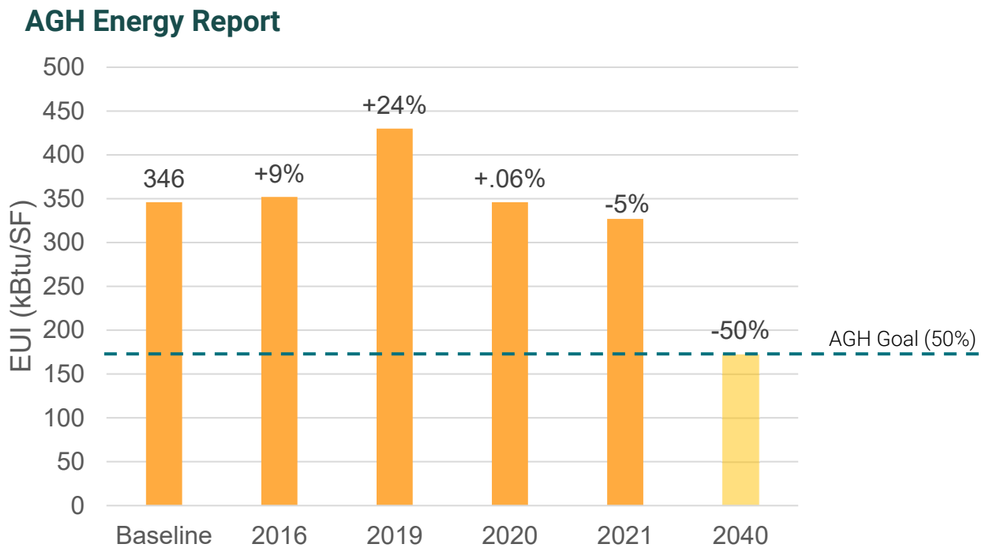
Several industry best practices are being considered in the areas of energy conservation, energy efficiency, and alternative/renewable energy for our existing buildings, major renovations and new construction projects. In 2018, AHN identified six areas to concentrate on improving performance across its facilities. These initiatives are aimed at reducing operations expenses (Opex).

Opex Initiative	Status	Dependencies / Outcomes
1.14 Energy Supply Procurement	On Track: 1800 accounts, Multiple contracts	Service, Contract spend / Energy saved
1.15 Demand Response	On Track: Implemented at AGH	Service, Revenue, Energy Saved
1.16 HVAC Retro-Commissioning	On Track: Implemented at AGH	# faults remedied, Energy Saved
1.17 Energy Use Optimization (Automation Modernization)	On Track: AHN IT reviewing hardware addition for CcX Proof of Concept	AHN IT approval, Energy Saved
1.18 Energy Savings Measures (Infrastructure as a Service)	On Track: Hexamodal LED Emergency Lighting Proof of Concept complete. Purchase and install LED lighting for all AHN-owned facilties.	Energy Saved
1.19 Waste Stream Efficiency	On Track: RR in place	Waste Reduced

[7.3.2] Demand Response

Demand response (DR) provides a no-risk, no-cost opportunity for AHN Facilities to drive energy savings while helping to maintain reliable electricity throughout the region. When there is not enough supply to meet demand participants can earn recurring capacity payments for agreeing to curtail electricity consumption in response to abnormally high demand and additional energy. Demand Response is a payment from the utility companies for our emergency generator systems to be available for activation in the event that the available power on the grid falls below acceptable levels.

AHN is paid for having the ability to add capacity to the grid on demand. Revenue from the DR program are estimates based on potential demand reduction targets. AHN established a partnership with NRG since 2016 to set up and participate in the NRGCS Power pay, Demand Response Program. All AHN Hospitals participate in the Demand Response program and follow the guidelines of the Reduction Action Plan. The NRGCS Power pay program includes annual automated curtailment of electric usage for all Event (Pre-Emergency, Emergency) and test hours during the performance obligation period. All AHN Hospital generators meet EPA regulation: "Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines."



[7.3.3] Emissions

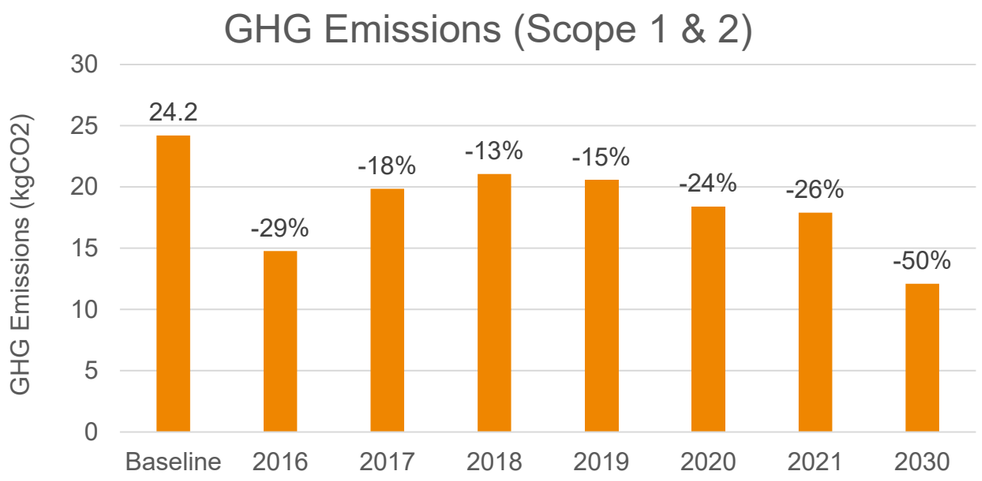
AGH recognizes the role it plays in mitigating climate change through reducing GHG emissions. The AGH energy management team, in conjunction with the enterprise sustainability team, will evaluate emissions data and develop strategies to decarbonize the campus. Greenhouse gas Scope 1 and Scope 2 emissions tracking began in 2019. Three complete years of data are available and reported in the table below.

AGH's goal is to reduce existing carbon emissions by 50% by 2030 in existing buildings and for new building and major renovations to be net zero carbon by 2040.

Decarbonization Strategies

Decarbonizing the AGH campus requires a multi-pronged approach that looks holistically at energy system demand and energy production sources and may include:

- Working with the North Shore Energy plant to reduce GHG emissions.
- Reducing reliance on the North Shore energy plant in favor of low-impact energy production, such as hot water instead of steam.
- Improving system efficiencies through energy recovery and line loss reduction.
- Utilizing exhaust recovery and heat recovery to minimize impacts of simultaneous heating and cooling loads.
- Implementing off-site renewable energy purchasing, such as wind and solar.
- Researching opportunities for on-site renewable energy production, such as solar for electricity generation or thermal energy.



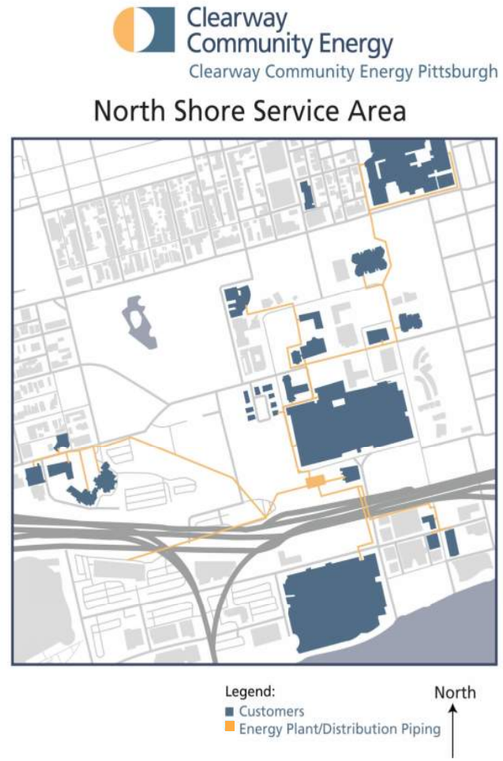
[7.3.4] Commissioning

- AGH is currently in the process of Retro-Commissioning (RCx) to create a comprehensive understanding of existing systems operations and performance. Results will be organized based on cost to implement and impact on building performance.
- Ultimately, AGH aims to implement a continuous commissioning program to provide seamless monitoring of building systems to ensure optimal operations and performance.

[7.3.5] North Shore Energy Plant

The steam and chilled water used by the AGH campus is supplied by the Clearway Community North Shore Energy Plant (NSEP). The Plant is shared by other notable institutions such as PNC Park, Nova Place, and the Carnegie Science Center. AGH is NSEP's largest customer and one of its longest partners. The presence of this Energy Plant in the North Side neighborhood boosts efficiency and lowers environmental impact by reducing loss due to transmission.

In May 2022, Clearway Energy's thermal division, including energy production plans like the NSEP, were sold to KKR. Since the purchase was completed, KKR has been actively evaluating plant performance and working on developing net zero energy and net zero carbon strategies for its existing plants. A formal plan has yet to be announced, but is anticipated for later this year. Torey Barr, who represents the NSEP, will coordinate with AGH on further energy efficiency and carbon reduction measures.



[7.4] Stormwater Management

Regulations

For new development, it's required by the City of Pittsburgh to note the location and type of stormwater best management practices and stormwater volume control offests planned in relation to future development.

BMP Structure Description

There are many different stormwater management solutions available to a developer or landowner. Some of these solutions are more impactful than others, and this may be due to regional issues such as climate (temperature, rainfall amounts, etc.), geology (subsurface conditions, steep slopes, landslide prone areas), or the condition of the property (mostly undeveloped, highly impervious, etc.).

When analyzing the study area, we took the above conditions into consideration and then classified the BMPs that are appropriate into three tiers. Tier 1 being the best case, stand-alone solutions that are suitbale for this area. There are limited restrictions when using Tier 1 type BMPs meaning they can be used all through the study area and can be designed to control a significant amount of stormwater. Tier 2 being still impactful but the application areas are more restricted on this site. And Tier 3 being the least impactful and most limited solution (in the case of this property--the Tier 3 solutions are tree pits--so naturally there are less areas where these can be installed thus the size and ability to control stormwater is limited.

Tier 1 - Stormwater BMPs that have potential to handle the entire project's stormwater requirements

Tier 2 - Stormwater BMPs that will need to be used in combination to handle the entire project's stormwater requirements

Tier 3 - Stormwater BMPs that will have very small impacts on the entire project's stormwater requirements

ZONING CODE REFERENCE
905.03.d.4 (e)(8) Proposed Stormwater Management Strategies

Proposed stormwater management strategy including the type and location of stormwater best management practices and stormwater volume control offsets planned in relation to future development.

Green Roof

Detention/Infiltration Tanks

Cistern/Water Re-Use

Rain Garden

Porous Pavers/Pavement

Tree Pits/Planters

TIER 1

Green Roof

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

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

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

Detention/Infiltration Tanks

Description: Collects surface runoff via inlets and stores it below grade in a gravel bed and/or pipes. The outflow from the system is controlled to slowly release the volume over a long period of time.

Design Considerations: This BMP is generally installed below parking lots and away from building foundations, under recreational fields or within open space areas.

Operation/Maintenance: Maintenance programs typically require a regular schedule of sediment and debris removal. All inlets connected into the facility should be inspected and cleaned a minimum of two times annually.

Cistern/Water Re-Use

Description: Cisterns are used to retain runoff that can be reused. The facilities can be either underground or aboveground. The re-use of the water is typically used for irrigation of surrounding vegetated areas.

Design Considerations: These BMPs are typically used to collect roof water, which generally has minimal pollutants compared to runoff from streets and parking areas. Regular re-use of the water is necessary to maximize the storage capacity of the facility. Typically these structures require a grit screening and/or oil and water separators just upstream.

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

TIER 2

Rain Garden

Description: Rain gardens are a bioretention system consisting of depressed areas within landscaping that collect and filtrate water through soil and gravel layers prior to discharging downstream. Rain gardens are typically landscaped with specialized plantings that soak the water up through the roots and provide evapotranspiration.

Design Considerations: Rain gardens are typically installed adjacent to impervious surface areas to disconnect the runoff from the down stream storm sewer system.

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

Porous Pavers/Pavement

Description: Pervious pavement or paver blocks consists of porous asphalt, concrete or paver surface underlain with a uniformly-graded stone bed which provides storage volume and promotes infiltration into the underlying soils.

Design Considerations: Pervious pavements are ideal applications for parking lots, sidewalks, plazas, playgrounds, tennis courts, and other similar uses. In addition to capturing surface runoff, area inlets and roof collectors can be connected into the stone bed.

Operation/Maintenance: Pervious pavements are more maintenance-intensive than other stormwater BMP facilities; requiring biannual vacuuming with a commercial cleaning unit.

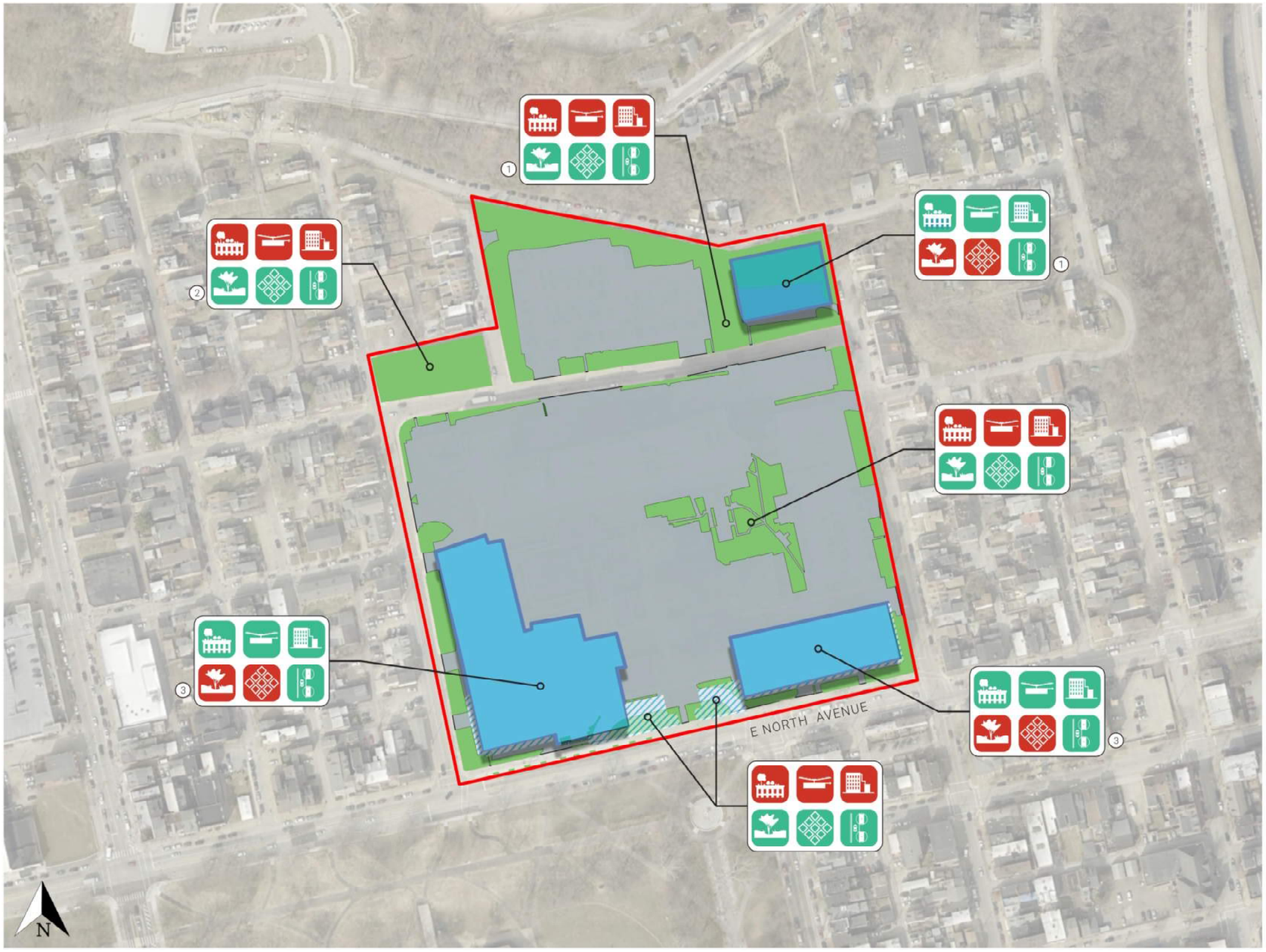
TIER 3

Tree Pits/Planters

Description: Planters or tree pits are landscaped islands where runoff can be directed and filtered through the vegetation, soil, and underlying stone.

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

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



The IMP identifies sites that are candidates for potential renovation, development, or redevelopment. These sites are constrained by the surrounding uses and environmental factors. The IMP shows these sites in full build out conditions, however as this is a planning document, details of the specific development are not available. As such we've evaluated the constraints and are recommending the following BMPs be considered for each zone. Some BMPs are not advisable, given the limitations of each development site. Each individual future project within the development sites will evaluate the practicality and benefits of these and other selected BMP practices. As part of any future development approvals, designs will be prepared for each site that will meet the volume and rate requirements either on the specific development site or elsewhere on campus.

BMPs LEGEND

TIER 1
- Green Roof
- Detention/ Infiltration Tank
- Cistern/ Water Re-Use

TIER 2
- Rain Garden
- Porous Pavers/ Pavement

TIER 3
- Tree Pits/ Planter

*BMP Feasibility Notes:

(1) Evaluate feasibility of infiltration BMPs to avoid steep slopes and landslide prone areas on the site.**

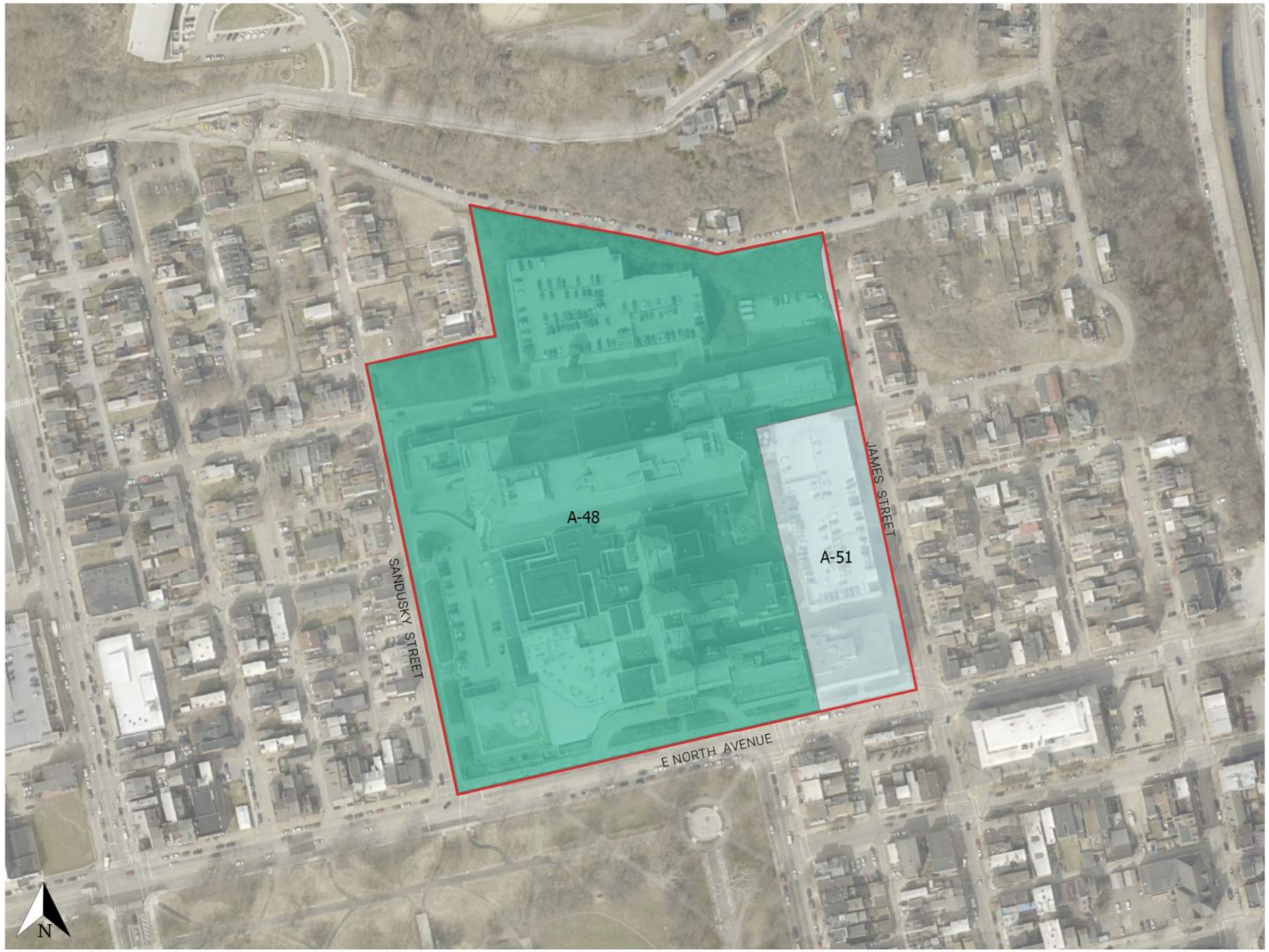
(2) The IMP considers a field for this site. However, green roof is possible if buildings are proposed.

(3) The IMP indicates potential development over the base of a building/structure. There are BMP limitations with this construction.

**Hydraulic conductivity for infiltration must be tested before infiltration options are considered.

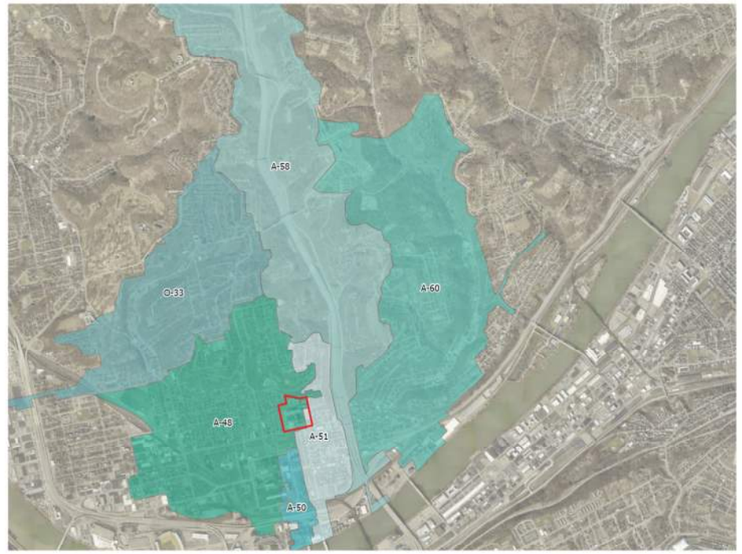
POTENTIAL BMP SITES

- IMP Environmental Study Area
- Pervious Surfaces
- Impervious Surfaces
- 10-Year Development Sites
- 10-Year Landscape Development Areas
- BMPs Not Advisable



Pervious and Impervious Impacts

Allegheny General Hospital is located within the Main Rivers Sewershed. As projects are planned, it is important to consider where downstream effects will occur from the source. Topography is a significant influencer for the sewersheds. Most sewershed boundaries exist on an existing ridge line where water moves in one of two directions.However, in the case of this study area, the sewershed boundry is affected by the underground public infrastructure.



EXISTING SEWERSHEDS - EXPANDED VIEW

- IMP Environmental Study Area
- A-58 - Sewershed (Main Rivers)
- O-33 - Sewershed (Main Rivers)
- A-48 - Sewershed (Main Rivers)
- A-51 - Sewershed (Main Rivers)
- A-60 - Sewershed (Main Rivers)
- A-50 - Sewershed (Main Rivers)

[7.5] Green Buildings

Driven by its mission to create a remarkable health experience for all people, AHN is committed to advancing sustainable design by improving the performance and indoor environmental quality of its existing buildings.

[7.5.1] Green Building Practices

Standards/ Certifications
All proposed new buildings should be designed with consideration for LEEDv4.1 for Healthcare or New Construction, and other best practices for sustainable design for a tailored sustainable approach to the site and occupant needs. Passive House will be explored for all new buildings and rehabilitation projects. Parksmart will be explored for existing parking garages. Sustainable SITES will be explored for open space projects.

LEEDv4.1 for Healthcare is a version of the LEED rating system that is tailored to the unique needs of 24 hour facilities providing inpatient medical treatment, including acute and long-term care. The rating system encourages energy efficiency, responsible material purchasing, future flexibility, and wellness for patients and staff.

Clean Construction
A construction activity pollution prevention plan that focuses on reducing pollution by controlling soil erosion, waterway sedimentation, airborne dust generation, hazardous material (asbestos, mercury, lead, PCBs, and mold) removal or encapsulation in existing buildings undergoing renovation should be implemented alongside enforcement of a construction indoor air quality management plan. All new construction and renovation projects should utilize construction waste management plans.

Building Envelope
New buildings should be designed to exceed the International Building Code (IBC) and International Energy Conservation Code (IECC) standards for building envelope systems, while still providing a pleasing aesthetic that compliments the campus as a whole. Building envelope systems should use best practices from the Passive House certification. All new design should incorporate solar shading and drought-resistant rooftop gardens.

Electricity and Lighting
New buildings should be designed to tie into the campus Building Automation System (BAS) to ensure efficient operation. All lighting will be LED lighting, and daylight automation will be used to the greatest extent practicable. Occupancy and timing controls will be considered where allowed by code.

Energy Star
Purchase ENERGY STAR specified standard appliances, when available.

Water Consumption and Quality
New buildings will seek to employ modular plumbing and water delivery systems. Employ strategies that in aggregate use, at a minimum, 20% less water than the water use baseline calculated for the building (not including irrigation). The baseline should meet the requirements of the plumbing code requirements as stated in current Uniform Plumbing Code or International Plumbing Code pertaining to fixture performance. Fixtures will be selected for high water usage efficiency where practicable and allowed by code.

Employ strategies that in aggregate use, at a minimum, 20% less water than the process water use baseline calculated for equipment performance requirements as detailed in LEED Water Efficiency Water Use Reduction Prerequisite.

For all medical equipment in the project, demonstrate that potable water use will be minimized for equipment cooling.

Materials and Finishes
To minimize the impact of rapidly emitting VOCs on indoor air quality, where possible, newly applied adhesives, sealants, paints and coatings applied inside the building should meet all VOC emission thresholds recommended in the WELL Building standard v2 X06 VOC Restrictions and X05 Enhanced Materials Restrictions. Renovations of existing buildings will comply with AHN finish standards, which have been specifically selected for low-emissions, high recycled content, and low environmental impact. Materials should not contain Halogenated Fire Retardants (HFRs), heavy metals, phthalates, PFCs, or other harmful chemicals.

Newly installed furniture and furnishings should be sourced from sustainably managed forests, contain no PBTs, PVC, heavy metals, and should meet, where allowable, VOC emission thresholds set using either ANSI/BIFMA e3-2011 Furniture Sustainability Standard sections 7.6.1 or 7.6.2, tested in accordance with ANSI/BIFMA Standard Method M7.1-2011 (or any more recent version) or California Department of Public Health (CDPH) Standard Method v.1.1-2010 (or any more recent version).

HVAC
Mechanical system design should reference ASHRAE Standard 90.1-2019 Appendix G Building Performance Rating Method. Energy modeling will be performed and used to help inform decision-making in conjunction with prescriptive solutions. New buildings should also set an EUI goal once the design team has been established.

[7.6] Waste Management and Water Conservation

[7.6.1] Waste Management Tracking

AGH is responsible for its waste from cradle to grave. In accordance with OSHA, EPA, Department of Health and Joint Commission guidelines, policies and procedures have been implemented to assure the health and safety of employees, staff, community, and environment.

For any existing or new AHN facility, implement building-wide sustainable waste programs that are designed to divert materials away from landfills and support AHN's sustainability initiatives. This includes activities relating to construction and demolition waste by recovering, reusing, and recycling materials.

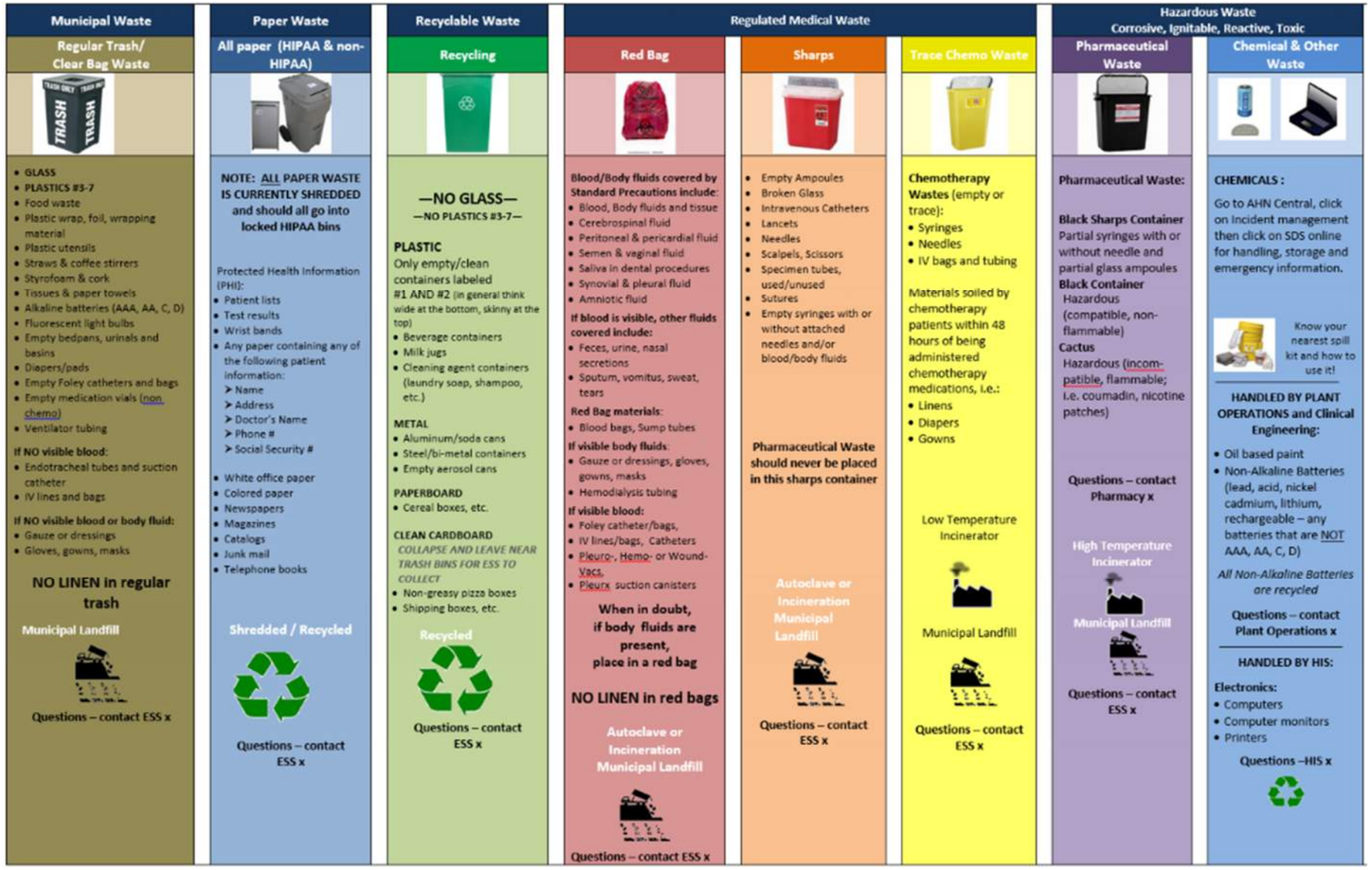
AGH tracks seven materials streams as part of its waste management program (see graphic on right). In addition, AGH has implemented policies related to the following:

- Reduce landfill waste.
- Reduce regulated medical waste generation.
- Alkaline batteries are recycled with Infinite Electronics Recycling.
- Scrap metal, light bulbs, and machine oils are recycled.
- IT safely disposes of and recycles e-waste where able, including toner cartridges.
- Use natural and environmentally benign cleaning products wherever possible as allowed by regulations.
- Reduce the use of hazardous chemicals with a national chemical management service. Document use and storage of all hazardous chemicals on site.

AGH is also exploring ways to improve food service waste on their campus through the following measures:

- Improve food compost programs
- AGH is in the process of removing Styrofoam from all patient units and food service areas.
- Dietary team recycles kitchen grease.
- Exploring elimination of plastic straws.

Create and display signage prominently throughout AHN's facilities which will increase recycling rates and, in turn, divert materials away from landfills. The signage will provide clear instructions on what to recycle (and what not to recycle) as well as the appropriate receptacle to use for recyclable materials. In addition to the signage, educating all members of AHN's staff who interact with waste will reinforce the waste program and increase higher recycling rates.



[7.6] Waste Management and Water Conservation

[7.6.2] Water Conservation

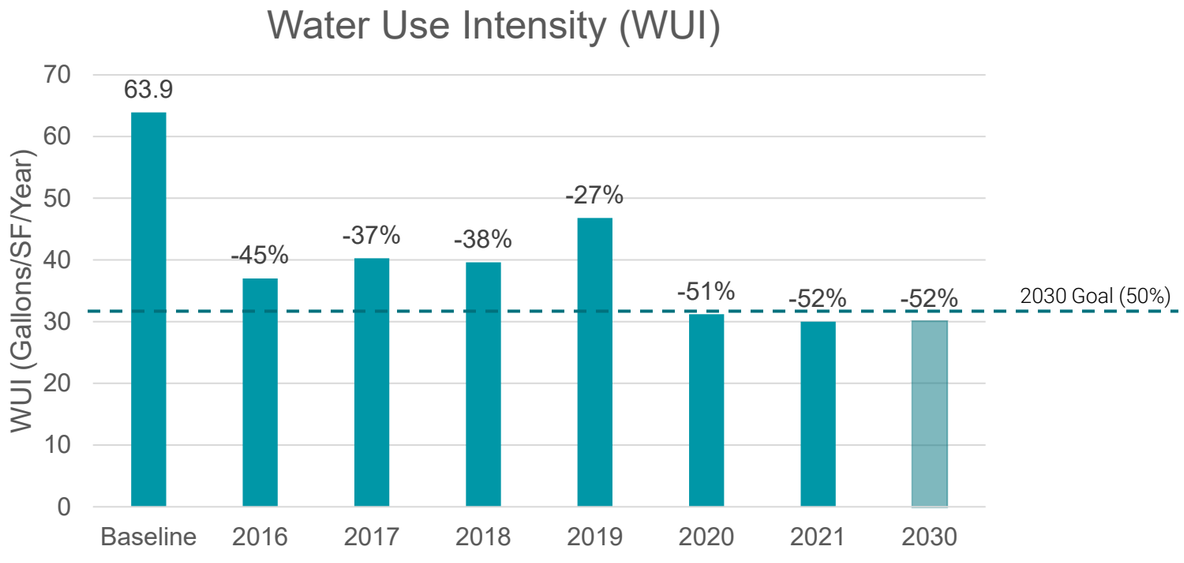
The AGH campus, due to its density, includes a significant amount of impervious surface. AGH aims to reduce its burden on the City water system by implementing measures to reduce and responsibly manage its consumption of potable and non-potable water resources.

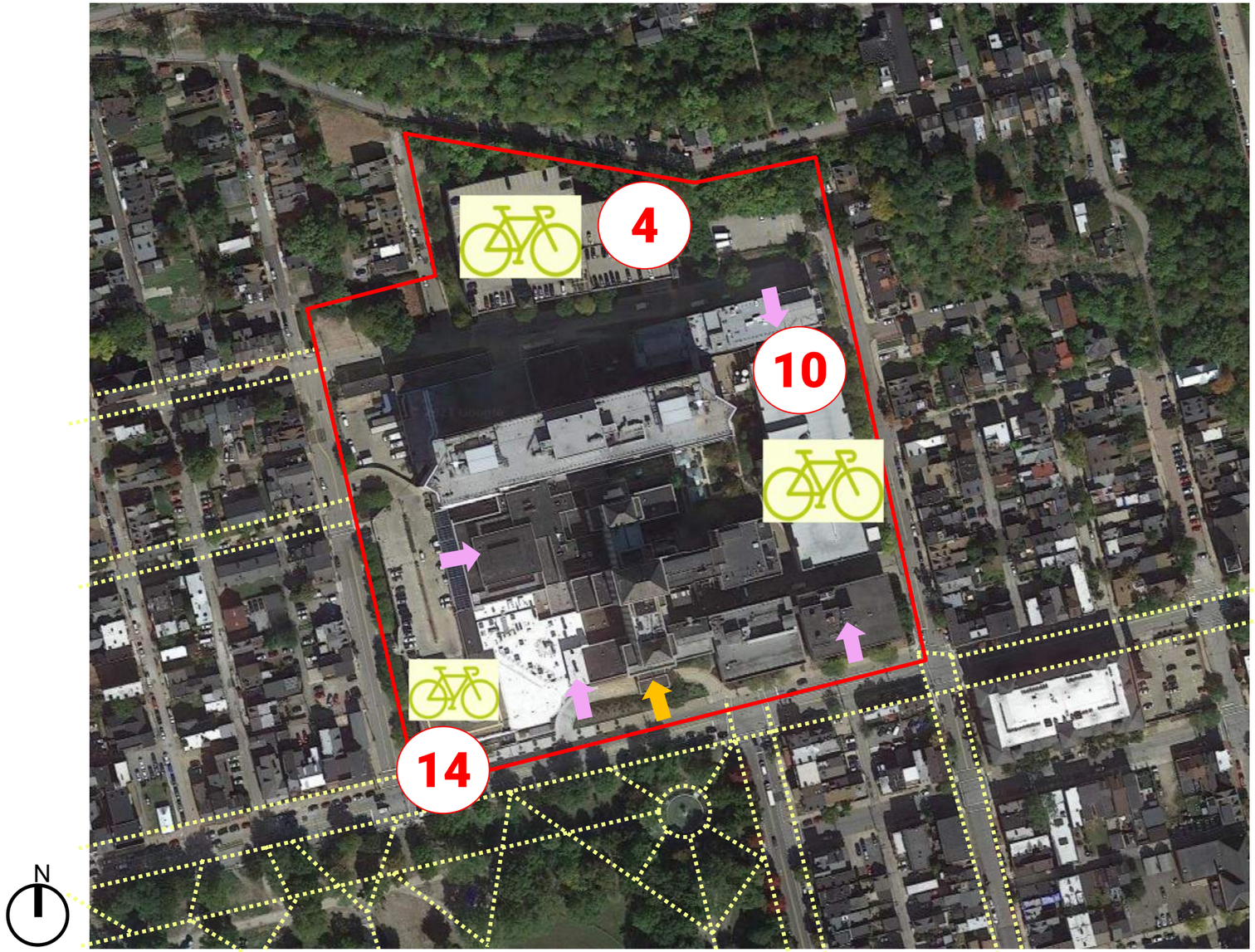
Site-related water conservation measures may include:

- 2030 District goal to reduce water consumption by 50% from district baseline
- Reduce impervious surfaces by 20% through the implementation of BMPs such as green roofs, and porous pavement.
- Any new building project will not increase the impervious area of the campus.
- Divert 50% of stormwater from impervious surfaces to remain by 2030.

Building-related water conservation measures may include:

- Replace plumbing risers as part of systems upgrade. Right-size the system to reduce overall usage.
- Reduce water consumption by upgrading older fixtures to newer, more efficient models.



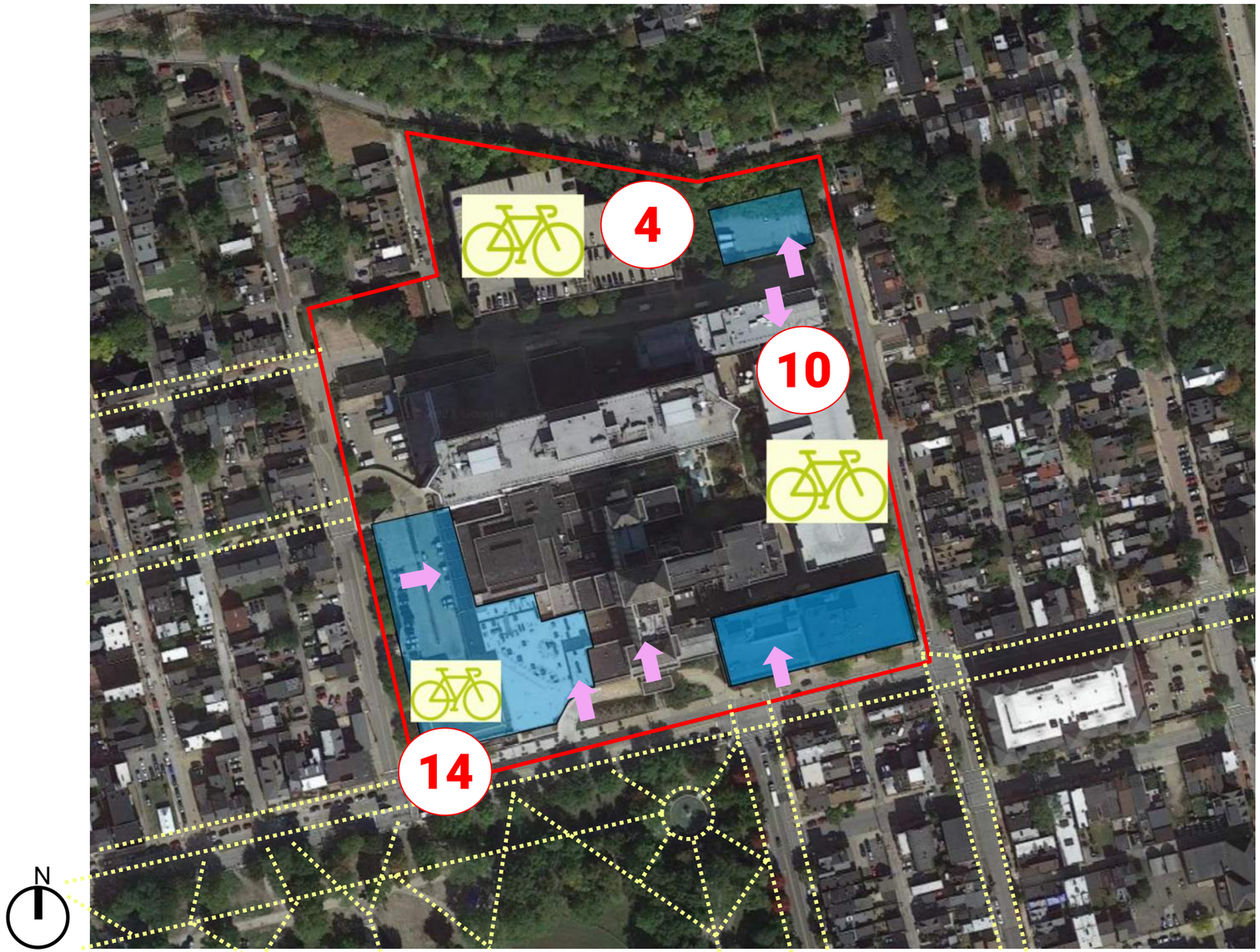


Existing Open Space and Pedestrian Circulation

The campus is accessible to pedestrians primarily from E North Ave and Sandusky St, with one pedestrian entrance located off of Hemlock St. There are numerous sidewalks that link AGH to the North Side community. Protected crosswalks are primarily located at E North Ave.

Legend:

- EMI Footprint
- Pedestrian Circulation
- Accessible Public Entrance
- Employee Entrance
- Bike Parking
- # Number of Bike Parking Spaces



Proposed Open Space and Pedestrian Circulation

The proposed plan preserves the pedestrian entrances at E North Ave to the South Tower and Cancer Center, the Sandusky St entrance to the Emergency Department, and the Hemlock St entrance to the Hemlock Building.

The entrance near the corner of E North Ave and James Street would be relocated for the replacement building. Locating the entrance closer to existing bus stops and pedestrian crosswalks would improve access for those arriving by foot or by bus. A new pedestrian entrance would be added at Hemlock St for the new Hemlock Development.

Legend:

- EMI Footprint
- 10-Year Development Sites
- 10-Year Plan Design Scenarios
- Pedestrian Circulation
- Accessible Public Entrances
- Bike Parking
- # Number of Bike Parking Spaces

Place Making / Landmark

Purpose

The purpose of placemaking is to increase community engagement by improving the public experience on the campus, enhance pedestrian corridors, and educate the public about hospital activities. Being the most public and iconic face of the EMI district, the engagement of placemaking strategies along East North Avenue, paired with streetscape improvement, will provide better safety, visibility, and refuge for those using the Hospital and those enjoying the neighborhood.

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Shared History

Share the narrative for how AGH has played an important part in the neighborhood and city for over 100 years. Introduce signage that illustrates historical significance and connection to neighborhood.

Urban furniture

Seating visible and integrated with the streetscape. For employees and hospital users, those waiting for the buses and temporary use. Reinforce safety with lighting and visual connection to street.

Public Art

The addition of public art to the EMI district will connect this zone with the existing murals and public art present in the adjacent Deutschtown and Central North Side neighborhoods and parks. Art will also engage hospital users by adding desirable exterior spaces and amenities. Being the most public and iconic face of the EMI district, the engagement of placemaking strategies along East North Ave paired with streetscape improvement will provide better safety, visibility and refuge for those using the Hospital and those enjoying the neighborhood.

Design precedent images for example only

8 Neighborhood Enhancement Strategy

[8.1] Neighborhood Protection Strategy

ZONING CODE REFERENCE
905.03.d.4 (k) Neighborhood Protection Strategy

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

[8.1.1] Ongoing Community Program Partnerships

North Side Partnership Agreement

Allegheny General Hospital and the North Side Leadership Conference have committed to providing community outreach programs and services to the North Side Community. This 32-year, long- standing partnership provides a framework for Hospital and Community communication in areas such as parking, traffic congestion, and facility maintenance and health and wellness partnerships. AGH leadership participates in the monthly NSLC meetings in addition to other support on an as-needed basis.

North Side Community Newspaper Printing

AGH pays the printing costs for 3 neighborhood-based community newsletters. The newsletters are distributed to more than 20,000 North Side residents.

Highmark Health Summer

AGH and Highmark provided essential health and wellness items to community-based organizations during the summer to assist underserved youth and seniors during the COVID pandemic. The grant supplied products for six weeks.

Workforce Development Programs and Initiatives

Allegheny General Hospital, either as a campus or with AHN, directly sponsors a variety of workforce development initiatives that benefit North Side residents and emphasize diversity.

Initiative Name	Description	Partners
White Coats for Diverse Allied Health Professionals	The program works to recruit those underrepresented in medicine, with the goal of doubling the diversity of AHN's workforce by 2025.	Magovern Residency Program Other Medical Schools and Universities
Nazareth Prep Student Internship Program	Interns are assigned to a department for one-day a week to provide exposure to healthcare careers. Students also have the opportunity to observe procedures, and engage with staff about their career paths. Currently restructuring the program for 2023 with HR and past programs to improve outcomes.	Highmark Health Nazareth Prep
Triumphs Minority Residency Mentoring Program	High-achieving high school students are assigned a resident mentor who establishes a strong relationship with students through shadowing, check-ins, and advising.	West Penn - Volunteer Services, PPS CTE
Pittsburgh Public Schools - SOS Program for Students with Exceptionalities	The program aims to prepares youth with disabilities for successful employment or post-secondary education or training. We provide placements for students, and potentially hire students after graduation.	Pittsburgh Public Schools, Northside Leadership Conference
Pittsburgh Public Schools - Clinical Engineering Shadow Program	Students spend one day within the department with general, respiratory, and ultrasound equipment as well as patient monitoring. The following days students are able to view both perioperative and imaging areas. Also, touring OR when permitted.	Pittsburgh Public Schools
Summer Learn and Earn	A 6-week, paid summer employment program. Program is open to young people ages between 14-21, who spend at least 20 hours per week at their assigned site. Preference is given to Northside residents, and West Penn participates as well.	AGH Administration
NorthsideWorks!	A workforce development program that connects employers, residents, training providers and service organizations to relevant resources. 2022 will be the first year the program is up and running. Multiple initiatives including a Lunch and Learn career discovery series, AGH specific job listings, shadowing, and more.	Northside Chamber of Commerce CCAC, Buhl Foundation, Partner4Work, Northside Leadership Conference

[8.1] Neighborhood Protection Strategy

[8.1.2] Annual Special Community Events

Career Exploration and Work Experience Program

During 2021, AGH hosted the following career/training ~ for students from Pittsburgh Public Schools, Nazareth Prep, Bloomfield Garfield Corporation and Neighborhood Learning Academy. This program provides the student with a valuable observation experience and the opportunity to talk with professionals in their chosen career field. Professionals and managers share their time and talent with the student. More than 2,500 training hours were provided to these students in addition to the 500 support hours of AGH leadership. Due to visitation restrictions during COVID, all program activities did not occur in the spring and commenced in October 2021.

North Side Children's Christmas Party

The Medical Staff at AGH contributed funds towards the expense of the North Side Children's Christmas Party. The 2021 party was a drive-through event due to the COVID pandemic. Approximately 100 community members benefited from this event.

AGH Employee Christmas Party for MLK School

The AGH medical staff, the AGH Auxiliary and employees from 28 departments purchased Christmas presents for 28 families at MLK Elementary school, reaching over 300 community members.

Women's Center and Shelter

AGH employees donated gift cards for the residents of the Women's Shelter, reaching over seventy community members.

[8.1.3] Community Sponsorships

North Side Chamber of Commerce

AHN (on behalf of AGH), sponsors the North Side Chamber of Commerce through membership dues, program fees for annual events, and programs of the chamber including ads, tickets to events, and marketing, reaching over 400 community members.

Light of Life Ministries Programs and Events

AHN (on behalf of AGH) sponsors the Annual Day of Hope banquet that provides clothing, healthcare, and other basic needs to over 300 homeless members of the community.

Fineview Citizens Corporation

AHN (on behalf of AGH) sponsors the annual 5k walk and run in the Fineview neighborhood. The most recent event was held in late October 2021, and over 100 members of the community participated.

[8.1.4] Community Health Needs Assessment

Overview
The Patient Protection and Affordable Care Act (PPACA), which went into effect on March 23, 2010, requires tax-exempt hospitals to conduct community health needs assessments (CHNA) every three years, and to adopt an implementation strategy plan to improve the health and wellbeing of residents within the communities served by the hospitals. These strategies created by hospitals and institutions consist of programs, activities, and plans specifically targeted toward community populations.

The most recent CHNA was conducted in 2021 by Tripp Umbach for each AHN hospital facility. The information below is specific to Allegheny General Hospital.

Access to Care
- AGH is working to reduce missed appointments due to inability to access transportation services, and reduce ED admissions due to this lack of transportation access for routine medical appointments.
- Increase employment through community events, student outreach, and employment pipelines to specific job openings.

Behavioral Health
- Increase staff training for overdose complications.

Chronic Conditions
- Improve quality outcomes for patients with diabetes by increasing the number of nurse navigators, comprehensive transition of care models, and increased staff and patient education.
- Improve quality outcomes associated with heart disease by utilizing a chronic disease care model and increasing the number of nurse navigators, and increased staff and patient education.
- Identify cancer in patients earlier to improve patient outcomes by increasing the number of age-appropriate screenings based on most recent guidelines.

[8.1.5] Neighborhood Health Programs

Overview
AGH runs multiple programs with the goal of improving neighborhood health and wellness. These programs are ongoing.

Mobile Health Clinics
AGH runs mobile vaccine and/or screening clinics in the following neighborhoods and locations:
- North View Heights
- Allegheny Dwellings
- Allegheny Commons
- Manchester
- Children's Museum
- Barber Shop Clinic's – Dave's Barber Shop
- Allen Place – Senior clinic
- Brighton Heights – 2 clinics at senior high rises and 1 at the Healthy Living Center
- North Side Farmer's Market - Partnership with North Side Christian Health Center and Highmark Whole Care to provide vaccines, HIV and Hepatitis C testing, nutrition counseling.

[8.1] Neighborhood Protection Strategy

[8.1.6] Neighborhood Impact

Overview
The following concerns were raised during the community engagement process. AGH's plan to address these concerns is in the right column.

Community Comment/Concern	AGH Response
Concerns regarding expansion of the AGH footprint into the Northside community	The IMP contains development within the existing AGH EMI campus, and the EMI district boundaries are not changing.
Concerns related to the current helipad location and noise	The helipad's temporary relocation will move the pad inwards into campus, further away from residential areas, and should not negatively impact the surrounding neighborhood.
Concerns regarding the height of potential new construction projects	The proposed heights are below the height of the existing South Tower and comply with the City requirements across from residential zones, and AGH is not seeking variances from this requirement.
Complaints regarding employees and visitors parking in the residential area	AGH advises employees not to park in residential areas and provides on-campus parking and shuttles to off-campus parking. AGH has and will continue to notify employees of City restrictions on parking in residential areas.
Complaint regarding litter near the AGH campus edge	AGH will do its part to keep the campus clean

9 Appendices

[9.1] Supplemental Information: Zoning Code Reference

1.1 905.03.D.4 (b) Mission and Objectives:	The 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 institutional Master Plan advances the goals and objectives of the institution.
2.1 905.03.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.
2.2 905.03.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 (5) A description of off-street parking and loading areas and facilities, including a statement of the approximate number of parking spaces in each area or facility.
3.1 905.03.D.4 (c) Needs of the Institution:	The Institutional Master Plan 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.
3.1 905.03.D.4 (b) Mission and Objectives:	The statement should describe the population to be served by the institution, and any projected changes in the size or composition of that population.
4.1 905.03.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 a minimum, the size and location of each parcel which may be developed within a twenty-five year period.
5.1 905.03.D.4 (e) Ten-Year Development Envelope:	The Institutional Master Plan 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 Institutional Master Plan 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.
5.3 905.03.D.4 (j) Urban Design Guidelines:	The Institutional Master Plan 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.
6.1 905.03.D.4 (g) Transportation Management Plan	The Institutional Master Plan 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.
7.2 905.03.D.4 (h) Environmental Protection Plan	The Institutional Master Plan shall identify all sensitive environmental resources within the Institutional Master Plan area, as well as any view corridors that traverse the Institutional Master Plan area. The Institutional Master Plan shall identify Environmental Overlay Districts that affect the Institutional Master Plan area and shall include reports on those conditions as required in Chapter 906. The Institutional Master Plan shall identify areas of the Institutional Master Plan 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.
7.4 905.03.d.4 (e)(8) Proposed Stormwater Management Strategies	Proposed stormwater management strategy including the type and location of stormwater best management practices and stormwater volume control offsets planned in relation to future development.
8.1 905.03.d.4 (k) Neighborhood Protection Strategy	The Institutional Master Plan shall identify standards and programs that will be put in place to ensure that the quality of the surrounding neighborhoods is maintained or enhanced.

[9.2] Supplemental Information of Interest to the Community

Allegheny Health Network conducts operations in areas of the Northside that are unrelated to the zoning aspects of the EMI district, but are of interest to the community and provide for a broader context for information documented in the basic plan. This appendix provides additional information that has been requested by the community.

• 1004 Arch Street - Former Kindred/Divine Providence Hospital:
In 2015 Allegheny Health Network (AHN) purchased this former hospital building originally constructed in 1906 and expanded in 1976. The buildings are currently vacant. AHN leadership has considered a variety of uses for the property, but at this time have made no decisions regarding its future.

• 1201 Sherman Avenue – Former school site, now a parking lot
In 2015 when AHN purchased the former Kindred Hospital, this property was included in the transaction. The property is currently used for parking. AHN leadership has made no decisions regarding its future.

• 122 E. North Ave – Aeberli Building
This building is located at the corner of North Ave. and Sandusky Street. The exterior of the building is maintained within its historical context. The interior of the building has been completely demolished. AHN leadership is considering multiple options as to how the building may be utilized in the future. No decisions have been made at this time, but any future use will conform to the historic context and applicable zoning.

• 4 Allegheny Center – Office building and parking structure
This property is master leased by AHN from Four Allegheny Associates, L.P. The lease expires June 30, 2026. The building is primarily used for office functions for Highmark Health affiliates. As this is a leased facility, there is no anticipated future change of use.