MIDDLESEX COMMUNITY COLLEGE
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CONNECTICUT STATE COLLEGE & UNIVERSITY SYSTEM

MIDDLESEX COMMUNITY COLLEGE

MASTER PLAN UPDATE

FEBRUARY 2020







G3 ARCHITECTURE INTERIORS PLANNING

DRAFT

MIDDLESEX COMMUNITY COLLEGE
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CONNECTICUT STATE COLLEGE & UNIVERSITY SYSTEM

MIDDLESEX COMMUNITY COLLEGE
MASTER PLAN UPDATE

FEBRUARY 2020

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EXECUTIVE SUMMARY



FIGURE 01.1 The Campus Today

EXECUTIVE SUMMARY

The Master Plan Update for Middlesex Community College reflects a collaborative, interdisciplinary process that engaged leadership and stakeholders across the College and CSCU over six months. A core goal of the Plan was optimizing the use of existing facilities. Given that Middlesex has a considerable space deficit, however, the Plan included strategic additions to address the highest priority space needs and to support cost-effective, sustainable renovations of MxCC's older buildings.

The Master Plan team comprehensively assessed MxCC's existing campus – its context, access, land use, buildings, space utilization, circulation, landscape and infrastructure. The team also used the current and projected enrollment figures, multiple interviews, and academic plans as the basis for projecting future space and facility needs. The resulting Recommendations reflect concept-level capital projects to fulfill these needs over the next decade.

Key Facts

- Campus: 35.1 acres
- Facilities: 5 Buildings totaling 126,807 GSF*
- Fall 2019 Enrollment: 2,358 HC / 1,410 FTE
- Fall 2028 Enrollment: 2,715 HC / 1,610 FTE projected
- Parking: 707 spaces
- Transit: served by regional bus
- MxCC has satellite facility at Platt High School
- Off-site programs at Pieper Veterinary Clinic and MxCC Hospital

**excluding central plant*

EXISTING CONDITIONS

Middlesex Community College is located in the Middletown, CT about a mile southeast of the town center. The campus is accessed from Route 9 and abounded by Training Hill Road and Reservoir Road. The College was founded on the site in 1966, as a branch of Manchester Community College. The area to the east is woodland and a reservoir while the other frontages face residential neighborhoods. A key campus feature is the intrusion of a private residential parcel into the campus core. This represents a constraint that prevents the College from using the open space which appears to be the center of the campus. The identity of this house surrounded by college facilities is also visually discordant. Another site planning problem occurs at the Lower Lot, where the campus central plant and loading dock face the main campus entrance. Typically, these service functions are at the periphery and/or screened to be unobtrusive.

With the exception of the newer Pavilion addition and Chapman Hall, the College's buildings are older and have condition issues. The interior layouts are congested, worn down and do not meet current best practice for higher education facilities. Unlike many CSCU community colleges, Middlesex has free standing buildings, rather than an interconnected complex of facilities. In part, this may be due to the moderate slope which crosses the property. The College recently installed a photovoltaic array for renewable energy near the lower parking lot, through a power purchase agreement.

Key Findings: Existing Conditions

- MxCC has one of the lowest average space per students in the system
- The campus is partially divided by a residential parcel under private ownership
- Most of MxCC's buildings are more than 40 years old
- All building are separate, rather than linked
- "Back of house" service functions face the "front" of the campus
- While there is ample land, there are few outdoor gathering areas
- The campus is away from main routes and not highly visible
- There are multiple opportunity areas for expansion

ENROLLMENT

The College provided the System with credit enrollment projections through Fall 2028. Those projections, provided in student headcount, were supplied by related program majors. The projections for Fall 2028 are 2,715, a 15% increase over Fall 2019. Those projections were translated into student FTEs. The assumption is that the credit load –the number of credits taken by each student and currently at 8.90, will remain relatively constant over this time frame, resulting in a projected student FTE growth roughly equal to the projected student headcount enrollment. The student FTE projection for Fall 2028 is 1,610.81, a 15% increase over Fall 2019.

	EXISTING FALL 2019	PROJECTED FALL 2028
Headcount	2,358.00	2,715.00
Full Time Equivalent Credit	1,410.67	1,610.81

TABLE 01.1 Campus Core Today



SPACE NEEDS

The Space Needs Assessment factored enrollment, existing space use, academic and non-credit programs, and new initiatives, to derive its 10-year projection. This space assessment was completed for academic and support space, and each category analyzed in detail. Currently, the College has 61 assignable square feet (ASF) per student FTE. 27 ASF per student FTE is devoted to Academic Space—classrooms, computer labs, teaching labs, and faculty offices. The remainder—34 ASF—is dedicated to the Support Space on campus, including the Library, Assembly & Exhibition space, and Student Activities. The 61 ASF currently places MxCC at the lowest level for its immediate peer group and the lowest among all community colleges in Connecticut.

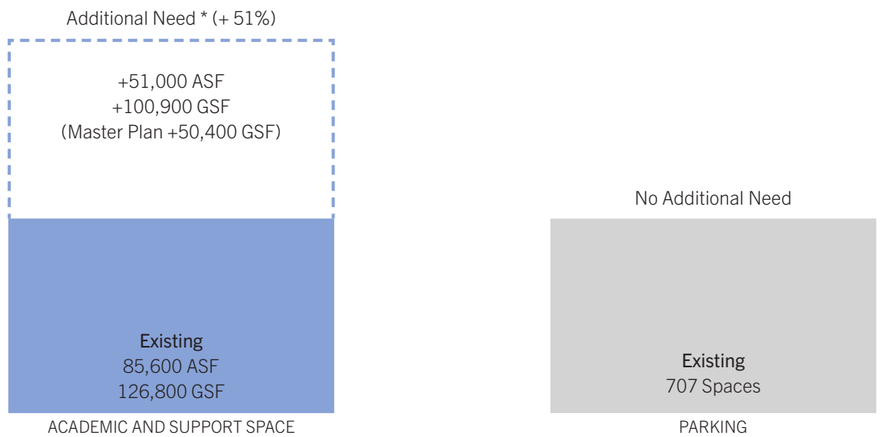
The Space Needs Assessment anticipates that the Assignable Square Feet will need to be expanded to 86 ASF per FTE. This expansion will provide critical academic facilities, including classrooms, Computer labs, health-related labs, and science facilities. Critical expanded support facilities include tutoring facilities, assembly, student life, student services, along with expanded campus services. Even with this expansion, Middlesex Community College will have 77% of the current per FTE allocation for Capital Community College and 62% of the current allocation for Asnuntuck Community College. These two community colleges have current enrollments closest to Middlesex.

PARKING

Middlesex has sufficient parking to meet its current and projected needs in the next 10-year period. While the upper and lower lots are often near capacity at the start of the semester, they are never full. Congestion eases during the semester.

TRANSIT

Capital is served by several bus lines, with a stop by the campus entrance at the lower lot. While there are no ridership studies, it appears the number of students using public transportation is modest.



**Near + Long Term*

FIGURE 01.2 Space Needs Summary

MASTER PLAN RECOMMENDATIONS

The Plan defines several projects to expand, renovate and connect buildings to address MxCC's significant space deficit relative to its CSCU peers and to meet the College's needs for more and better academic and support space.

Snow-Wheaton Renovation and STEM Addition

The Master Plan recommends a comprehensive renovation of Snow and Wheaton Halls and a 2-story STEM addition with a new entrance to connect and unify this complex as an integrated academic community for the arts and sciences. The two older buildings will frame the new entrance. Relocating laboratory space into the new construction will provide proper space and infrastructure. Vacated spaces are repurposed for other, less intensive facility uses such as offices and classrooms. A second floor lounge with vending over the main entrance provides a much needed amenity for evening students and a focal element over the new entrance.

Founders Hall Renovation and Addition

To address the deficit in support space for student services and activities, the Plan recommends a comprehensive renovation of Founders Hall and an addition facing the Lower Lot and campus entrance. The 2-story addition will provide appropriate presence and visibility, as well as a One Stop Facility for prospective students to support recruitment. The addition will enable the phased renovation of Founders to provide better areas for student services to support retention. The renovation will also make the interior less labyrinthine, more welcoming and better connected.

Maintenance Building Upgrades

The Plan includes a project to address lack of insulation, deficient heating in occupied areas and replace obsolete overhead doors.

Site Improvements

The Plan has several projects to improve the access, function and appearance of the site. The Founders Hall project relocates and screens the loading dock and transformers to provide a more appropriate setting for the "front door" of the campus. The connection of the entry drive and Lower Lot is reconfigured to align with the parking bays. In place of the large asphalt circle at the threshold to the campus, the Plan recommends a reconfigured drop off and a new pedestrian-friendly entry plaza with enhanced landscaping. The Snow Wheaton project provides landscaped courts with seating areas in-front of the new entrance and in an enclosed courtyard. The Veterans Garden is relocated to enable the new STEM addition.

A long-term framework shows how the center of the campus can be developed as a central quadrangle and focal point if the residential property can be acquired. The 2020 Master Plan does not rely on this acquisition.

Infrastructure Upgrades

The Plan includes projects to install a new fire protection supply line and to replace obsolete air handlers in Founders and the Chapman cooling tower, each nearing the end of its useful life.

Implementation

The Master Plan Update was prepared to be flexible in implementation. The consultant team prepared a construction cost estimate and total project cost estimate for each project to serve for capital budgeting purposes. The STEM addition to Snow and Wheaton can be done in two phases if a full build-out cannot be funded at one time. As reflected in the estimate, interior renovations would have to be staged in parts given lack of swing space.

Given the significance of Middlesex's space deficit for its current enrollment and the significantly constrained funding outlook, the projects in this 10-year Master Plan Update provide about half the total recommended expansion in the Space Needs Assessment. This is done intentionally, to define the most impactful projects, with the balance of expansion to follow in coming years.

KEY

- **A1** Snow-Wheaton STEM Addition / Renovation Phase 1
- **A2** Snow-Wheaton STEM Addition / Renovation Phase 1
- **B** Founders Addition/ Renovation
- **C** Maintenance Building Renovation
- **D** Lower Lot Site Improvements
- **E** Relocated Veterans Garden
- **F** Property Acquisition

Miscellaneous MEP Infrastructure Upgrades



FIGURE 01.3 Master Plan Recommendations



View of the Snow & Wheaton Today



Rendering of Proposed Addition



Existing Aerial View



Proposed Aerial with New Additions

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1 INTRODUCTION

CSCU SYSTEM CONTEXT

The Master Plan for Middlesex Community College responds to the vision and mission of the Connecticut State Colleges & Universities (CSCU), as well as MxCC's Mission Statement. As one of the twelve community colleges, Middlesex is the tenth to update its Master Plan.

OUR VISION FOR CSCU

The Connecticut State Colleges & Universities will continually increase the number of students completing personally and professionally rewarding academic programs.

CSCU'S MISSION STATEMENT

The Connecticut State Colleges & Universities contribute to the creation of knowledge and the economic growth of the state of Connecticut by providing affordable, innovative, and rigorous programs. Our learning environments transform students and facilitate an ever increasing number of individuals to achieve their personal and career goals.

CONNECTICUT COMMUNITY COLLEGES MISSION STATEMENT

As part of the CSCU system, the twelve Connecticut Community Colleges share a mission to make excellent higher education and lifelong learning affordable and accessible. Through unique and comprehensive degree and certificate programs, non-credit life-long learning opportunities and job skills training programs, they advance student aspirations to earn career-oriented degrees and certificates and to pursue their further education. The Colleges nurture student learning and success to transform students and equip them to contribute to the economic, intellectual, civic, cultural and social well-being of their communities. In doing so, the Colleges support the state, its businesses and other enterprises and its citizens with a skilled, well-trained and educated workforce.



FIGURE 01.4 CSCU Colleges and Universities

MXCC MISSION STATEMENT

Students are the center of Middlesex Community College.

By creating meaningful relationships with our diverse population of students and by providing high quality, affordable, and accessible educational experiences, Middlesex Community College helps students achieve their individual goals and become productive, engaged global citizens.

MxCC Vision

- Our diverse population of students are inspired by our innovative course offerings and wide range of co-curricular activities to help them become critical thinkers with curious and open minds.
- Students feel supported throughout their experience, including individualized advising, personalized services, and easy-to-navigate systems.
- Our professors and staff are our strongest asset. Together, we create a positive workplace climate, where growth and professional development are valued. The college is a "great place to work."
- Our facilities and campus continue to be improved, including more 21st century classroom spaces, professional spaces, and social spaces.
- The student experience is enriched through our wide array of partnerships and relationships with local employers, industry experts, community organizations, and our alumni.
- We are recognized as the "go-to choice" for community college by students, families, and high school advisors.
- We secure sufficient financial resources, both public and private, to continue to support our evolving curriculum and co-curricular experiences and our campus improvements.

Shared Values and Principles

- **Student Centered**
  Our students come first and are at the center of our decision-making. Every effort is made to address their needs and support their efforts to accomplish their goals.
- **Respect**
  We believe that each individual should be treated with respect and dignity and we strive to ensure it is demonstrated in all that we do.
- **Social Responsibility to Common Good**
  We believe we have a shared responsibility to cultivating the common good – from environmental sustainability, global awareness, citizenship, and the equity and inclusion of all.
- **Excellence**
  We strive to meet and sustain the highest standards of performance in all that we do.
- **Compassion**
  We are caring and kind in our interactions and cultivate a culture of compassion and empathy.

MxCC Strategic Plan Goals

The 2017-2022 Strategic Plan focused on four high-priority, strategic goals:

Our Students
Goal 1: MxCC will continue to evolve its curriculum, strengthen student supports and create an enriching and empowering campus experience.

Our Relationships
Goal 2: MxCC will strengthen its engagement with the communities it serves, legislative supporters, local employers, those who support our efforts, other funders, and the general public.

Our Campus Community
Goal 3: MxCC will support its staff and faculty, strengthen workplace culture and campus communication, and evolve its governance.

Our Infrastructure
Goal 4: MxCC will continue to invest in and improve our campus facilities and our technology supports.





GOALS AND OBJECTIVES

INTENT

The Master Plan Updates for the Connecticut State University System will derive capital needs based from space utilization, academic and student life program projections and facility conditions projected over the next 10-year period. The Master Plan Updates for each college and university will reflect system-wide goals and projected demographics.

GOALS

Through a collaborative effort between university stakeholders, CSCU and the consultant team, the Master Plan Update will integrate a system-wide Strategic Plan and college mission into a comprehensive vision that promotes the advancement of higher education through state-of-the-art planning projections over a 10-year period. Concepts will reinforce and institute current and new long-term strategies that guide college decision making for capital investment.

OBJECTIVES

The following objectives will guide the Connecticut State Colleges and Universities Master Plan Updates at each CSCU Institution of higher education.

- The Master Plan will respond to the institution's mission, demographics and projected future enrollment.
- Program space needs will reflect best practice standards and address emerging higher education goals.
- Land planning will balance guidance and flexibility, long-term development capacity and stewardship.
- The Master Plan will optimize the use of existing facilities in the utilization of space, the location of functions, and the renewal of buildings to meet future needs.
- Proposed new buildings will reflect realistic program need and will be used to the greatest extent feasible to enable needed renovations to maximize investment benefit.
- Site access and circulation will be addressed in a comprehensive manner to support a safe, efficient and welcoming campus.
- Future development will strengthen the architectural and landscape character of the campus to foster a cohesive, attractive setting.
- The Master Plan will integrate sustainability throughout and identify strategies for energy conservation.
- Major campus infrastructure needs will be addressed to support university operations.
- The resulting Master Plan Update will be a comprehensive vision comprised a series of capital projects, with associated institutional priorities and phasing strategies.

PLANNING PROCESS

PROJECT TIMELINE

The Master Plan Update was organized in three main tasks.

Task 1. Initiation	September 2019
Task 2. Assessment	October to November 2019
Task 3. Recommendations	November 2019 - February 2020

PROJECT OBJECTIVES

Task 1. Initiation

- Establish the Advisory Committee, confirm project objectives and communications protocol.
- Collect data on the College today.
- Establish the project schedule and milestones.

Task 2. Assessment

- Understand the history, mission and academic objectives of the University.
- Analyze buildings and grounds to understand space use, physical conditions, constraints and opportunities for campus development.
- Undertake a needs analysis and project 10-year space needs based on CSCU approved enrollment projections, benchmarking, and academic goals.

Task 3. Recommendations

- Develop guiding design principles strategy.
- Assess pros and cons of potential development alternatives and assist the Advisory Committee in selecting the preferred approach.
- Refine the master plan elements for buildings, landscape and infrastructure.
- Prepare cost and phasing information.
- Document and present final recommendations to the College.



CAMPUS ENGAGEMENT

The Master Plan was a collaborative process, informed and guided by significant input from College stakeholders.

COLLEGE MASTER PLAN ADVISORY COMMITTEE

The consultant team met four times with the CMPAC, a group which included Interim Chief Executive Officer Steven Minkler, other senior administrators, faculty and staff. As a broad cross section of the College, the Committee provided invaluable insights into programmatic, functional and aesthetic aspects of the Plan. The student representatives also contributed important insights for how College facilities could be further strengthened to support student success.

PROJECT STEERING COMMITTEE

The consultant team conferred regularly with Steve Chester, Building Maintenance Supervisor, Kim Hogan, Dean of Administration and Keith Epstein and Armen Beermann of CSCU to review the progress of the work and provide timely input to advance the work and maintain the project schedule.

PROGRAM INTERVIEWS

The consultant team conducted 16 program interviews with a broad range of college stakeholders, including students, faculty, staff, industry partners and senior administration. The input informed the space need projections and the functional needs assessment.

STUDENT ENGAGEMENT

The planning team conducted a tabling session with students on September 18, 2019 in the cafeteria. Plans of the campus and its buildings today were available, along with a range of questions about facilities - what aspects worked well and which needed improvement.

Multiple students provided input on topics ranging from academic space, to parking, to support functions and a lack of food options for those attending evening classes. The input is summarized in the Existing Conditions chapter following. It was especially valuable in framing the needs and solutions to support student life at Middlesex.



CMPAC Meeting



MxCC Student Work Session

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2 EXISTING CONDITIONS

THE INSTITUTION
- MxCC ACADEMIC DEPARTMENTS
- HISTORY OF THE PHYSICAL CAMPUS

THE CAMPUS
- THE SITE
- CONTEXT
- CAMPUS STRUCTURE AND SCALE
- CAMPUS LAND USE
- LANDSCAPE CHARACTER
- WETLAND AND FLOODING CONSIDERATIONS
- ZONING
- TOPOGRAPHY
- SLOPES
- SITE CIRCULATION AND ACCESS
- PARKING
- PUBLIC TRANSPORTATION
- UTILITIES

THE BUILDINGS
- CIRCULATION AND ACCESS
- ARCHITECTURAL CHARACTER
- BUILDING CONDITION
- CODE CONSIDERATIONS
- CLASSROOM UTILIZATION

ENERGY AND INFRASTRUCTURE
- HEATING, VENTILATION & AIR CONDITIONING, CENTRAL PLANT & AIR DISTRIBUTION
- UTILITIES
- AIR DISTRIBUTION
- FIRE PROTECTION SYSTEMS OVERVIEW
- PLUMBING SYSTEMS OVERVIEW
- ELECTRICAL SYSTEMS OVERVIEW
- MAJOR OBSERVATIONAL ISSUES

STUDENT ENGAGEMENT
- WORKSHOP EXERCISE TAKEAWAYS

OPPORTUNITY AREAS
- SITE CONSTRAINTS
- OPPORTUNITY AREAS



THE INSTITUTION

MXCC ACADEMIC DEPARTMENTS

Middlesex's degree and certificate programs are organized in six academic departments, as illustrated to the right.

Business & Hospitality has 11 programs of study, including courses in accounting, business, entrepreneurship, real estate, medical billing and management information systems.

Humanities & Creative Arts has 23 programs of study, including English, ESL, foreign languages, history, arts, communications, digital broadcasting, theater studies and web design.

Health Careers has 24 programs of study, including CAN, EMT, Rad Tech, Opthalmic Medical Assistant, Health Information Management, Pharmacy Technician, Phlebotomy Technician and Veterinary Assistant.

Social & Behavioral Sciences, Education & Public Service has 16 programs of study, including Early Childhood Education, Criminal Justice, Security, Geography, Human Services, Political Science, Sociology, Psychology, and Social Work.

Science Technology Engineering and Mathematics has 14 programs of study, including Biology, Biochemistry, Biotechnology, Computer Science, Engineering Technology, Environmental Science, Mathematics, Physics and Technology.

Manufacturing and Applied Technology has 4 programs of study, including Manufacturing Machine Technology and Manufacturing Engineering Technology.

BUSINESS & HOSPITALITY

HUMANITIES & CREATIVE ARTS

HEALTH CAREERS

SOCIAL & BEHAVIORAL SCIENCES, EDUCATION & PUBLIC SERVICE

STEM

MANUFACTURING AND APPLIED TECHNOLOGY



HISTORY OF THE PHYSICAL CAMPUS

Founded in 1966 as a branch campus of Manchester Community College, Middlesex Community College became an independent member of the Community College System in 1968. At the outset, the college operated principally in space rented from Middletown Public Schools and loaned by Connecticut Valley Hospital. In 1973, the college moved to its present 38 acre campus, which overlooks the scenic Connecticut River and the city of Middletown.

Founders Hall, Snow Hall, Wheaton Hall are each original to the campus, and opened in 1973.

Chapman Hall and the Maintenance Building were built in 1992. Also in the 1990s, MxCC opened a satellite center in the city of Meriden.

In 2014, the Pavilion addition was built on the north side of Founders Hall.

In the of Fall 2017 , the college's Meriden center relocated to shared space in Platt High School – named "MxCC @ Platt."

In 2018, CSCU through a Power Purchase Agreement, installed a Photovoltaic Solar Array at Middlesex, just north of the Central Plant. This infrastructure improvement will provide renewable energy for years to come.



FIGURE 02.1 Historic Timeline

THE CAMPUS

THE SITE

Middlesex's campus is green and expansive. Its free-standing buildings surrounded by open space provide elements of a traditional collegiate setting. The center of the campus is green and pedestrian-centered. Ample parking at community colleges is often both a necessity and a visual factor. At MxCC, the aesthetic impact is softened by parking being split into two lots at either end of the campus.

Approaching the campus up Reservoir Road, the College is not visible at first. Close to the intersection with Training Hill Road, the view opens up and signage is visible. The are several access points off the adjacent roads, with the main entry for visitors as a one-way drive off Training Hill Road and the exit one-way onto Reservoir Road.

A residential property, not owned by CSCU, protrudes into the center of the campus, thwarting the opportunity to create a central college quadrangle.

The campus encompasses 35.1 acres. It is 715 yards in the north south (long dimension) and 354 yards in the east / west dimension at the widest point.





CAMPUS MAP TODAY

KEY

A	Founders Hall
B	Wheaton Hall
C	Snow Hall
D	Chapman Hall
E	Maintenance
F	Upper Lot
G	Lower Lot
H	Central Plant
I	Solar Panels
J	Community Garden
K	Garden



FIGURE 02.2 Existing Campus Aerial



FIGURE 02.3 The Campus Today

CONTEXT

Regional Context

Middlesex Community College is located in the center of the state about a mile and a half from downtown Middletown. It is 17 miles from Hartford, 24 miles from Manchester, and 27 miles from New Haven. Route 9 is the main regional artery near the campus, leading to I-91.

The College's satellite campus, MxCC @ Platt, is located shared space at Wilcox Technical High School about 14 miles away in Meriden. The College also has programs at off-site facilities closer to the main campus as illustrated on the map below.

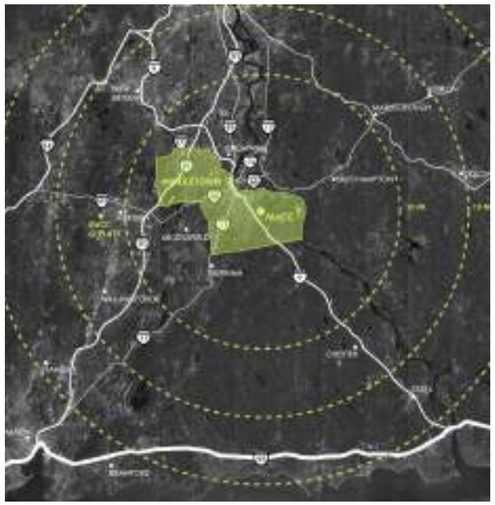


FIGURE 02.4 Regional Context



FIGURE 02.5 Main Campus + Satellite Campus Area Map

Area Context

MxCC's campus occupies a seam between a residential neighborhood and natural areas. A commercial corridor along Route 9 runs parallel to the campus. The approach to campus from Route 9 is on Reservoir Road through a residential neighborhood. For a significant public institution, the campus is not visible from main roadways, but rather set back and somewhat secluded. Many appreciate the quiet character of the setting.

The College reports that its relationship with its neighbors is positive. MxCC shares its parking on weekends with the nearby Temple. The homeowners on Training Hill Road have always had the College nearby. On the east edge of campus, there is a continuous buffer of trees along the woodlands surrounding the reservoir. There is a walking trail in this area along the stream.

KEY



FIGURE 02.6 Area Zoning Map

CAMPUS STRUCTURE AND SCALE

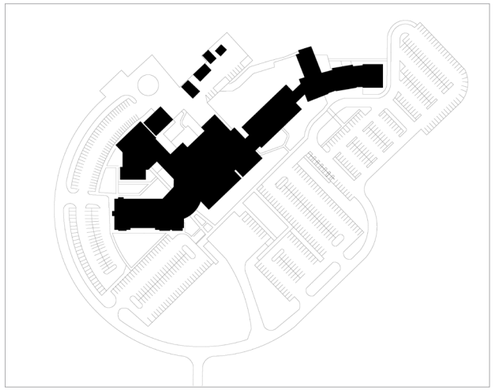
Middlesex's campus core is compact and walkable, easily encompasses by a 1/8 mile radius circle, as illustrated in the diagram below.

The College's buildings, however, are separated and shown in the figure ground diagram at right. In comparison, many community colleges are interconnected complexes. Quinebaug Valley and Three Rivers are two examples from CSCU. Others include Naugatuck Valley, Housatonic and Capital, which is in a single building. A campus with dispersed buildings is not a flaw. In fact, it is the prototypical campus model of the green liberal arts college campus.

Many campuses have an organizational structure that informs the placement of buildings. Often a clear system of open spaces defines this structure. A central quad or courtyard is an example, which is framed by buildings. At Middlesex, however, the placement of buildings does not yet define a greater whole. Rather the siting of structures seems somewhat haphazard. Founders, Wheaton and Snow Halls are all oriented on the same line, but do not frame open space which has a community use. It would be beneficial to locate future buildings to create more coherent and appealing campus open space.



MxCC - Figure-Ground Diagram



Quinnebaug Valley Community College - Figure-Ground Diagram

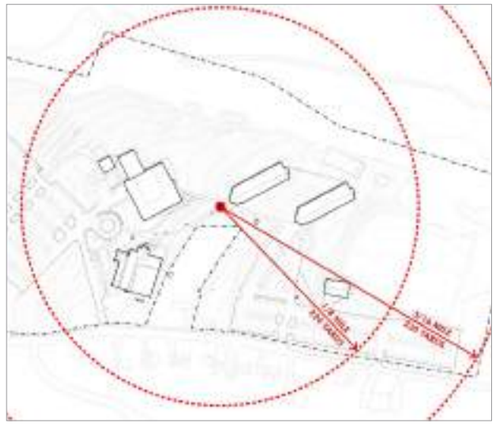
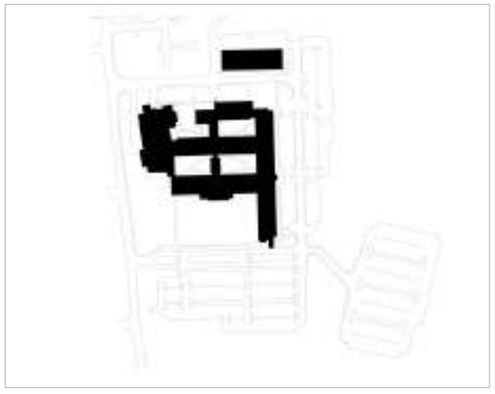


FIGURE 02.7 Campus Walkability Map



Three Rivers Community College- Figure-Ground Diagram

FIGURE 02.8 Campus Structure Diagrams

CAMPUS LAND USE

MxCC's land use is clear with a central campus core with support uses on the edges and open space and woods on the edges. The clarity breaks down in the core when it comes to the intrusion of the residential property not owned by the College. Presumably, when the campus was laid out in the early 1970's, planners assumed this plot could be purchased and the "ownership hole" filled in the campus center. Almost 40 years later, however, this property compromises the campus core.

Visual prominence of service areas is another issue. The lower lot is used by most visitors as an entry into the campus. It is a virtual "front door". The main campus loading dock, central plant and transformers, however, are all especially visible from the lower lot. They are a conspicuous part of the "first impression" arriving at Middlesex. Ideally, land used for services is remote from the front, or at a minimum, screened from view.





FIGURE 02.9 Campus Land Use

LANDSCAPE CHARACTER

Middlesex has a pleasant green campus. The first views coming up Reservoir Road are open lawns and trees. The campus core is likewise verdant and attractive on the whole. The campus edges are framed in woods.

There are some special landscape areas, such as the Grove, where graduation has been held at times. The cedar trees in this area, however, are reaching the end of their lifespan. The Veterans Garden is another special feature. While it is off the beaten path, behind Snow Hall, it is a landscape element that builds community. A small memorial garden near Chapman hall borders the entry walk and is clearly visible entering campus.

Some landscape and hardscape features could be improved. A series of red pipes, needed for venting a below grade tank, were located near the front of Chapman. These are very visually obtrusive. Likewise, the clothesline and deteriorated outbuilding of the residential property that protrudes into the center of the campus are visually discordant.

The Magic Food Bus is a unique landscape feature at Middlesex. It is a colorful, stationery location for the College's food pantry in warmer months, near Snow Hall. In colder months, the food pantry function relocated indoors to the mezzanine of Founders Hall.

For a campus with so much verdant open space, Middlesex is lacking in one key area. It does not have vibrant outdoor gathering areas —either large or small. Most areas are places you pass through rather than places to gather and socialize in warmer weather. While this is not an essential requirement at a commuter campus, making usable open space is a good way to strengthen community for much less cost than for new construction. MxCC should look to activate its expansive site with more usable open space. There should be more places than the loading dock to take in the view to the north to the Connecticut River Valley and downtown Middletown.









Campus Landscape Site Photos

WETLAND AND FLOODING CONSIDERATIONS

A benefit of the sloping site is that Middlesex's campus is well-drained. There are no known wetlands in the developed part of the campus. The Town of Middletown's designated Wetlands Map identifies the east edge of the campus as wetlands. This reflects the water course in the woods down the hill which feeds the reservoir. This natural area is not considered appropriate for development. The FEMA map shows the campus has minimal to no flood risk from nearby water courses.

KEY

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Without Base Flood Elevation (BFE) Zone A,V,A99
  With BFE or Depth Zone AE,AG,AH,VE,AR



FIGURE 02.10 Flood Hazard Areas (Taken from FEMA website)

KEY

- Wetland Soil
- Bodies of Water

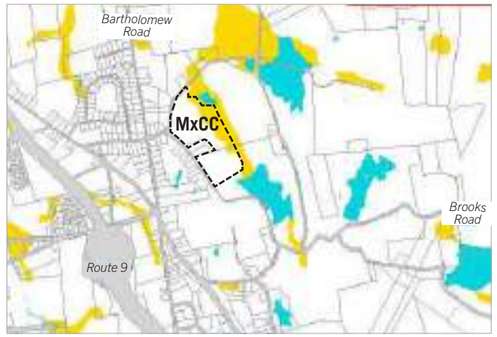


FIGURE 02.11 Designated Wetlands Map (PDF Map by Town of Middletown, CT.

ZONING

As a state institution, MxCC is exempt from zoning. Nevertheless, it is instructive to see how the campus is classified by the local municipality in terms of permitted uses and scale of development. The campus falls in a R-30 residential zone. Educational Institutions are a permitted use in R-30. The residential area on the opposite side of Training Hill Road is a R-45 district.

KEY

- Buildings Larger than 5,000 Sq.ft.
- Road
- Open Space and Parks
- Water
- Floodplain, Wetlands or Wellfield
- B-2 (General Bus.)
- M (Multi-Family
- MX (Mixed Use)
- PRD (Planned Res. Dev.)
- R-30 (Residential)
- R-45 (Residential)
- RPZ (Res. Pre-Zoning)

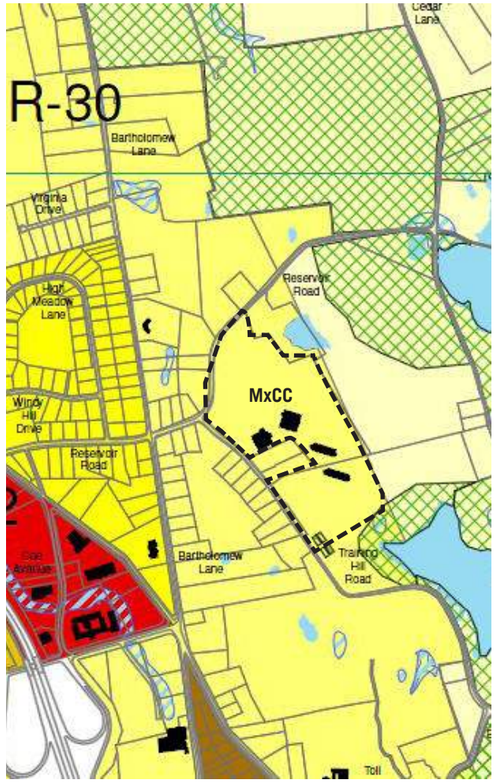


FIGURE 02.12 Zoning Map

TOPOGRAPHY

The campus climbs 93 feet in elevation from its low point in the north to the high point in the south. This gradual slope is visible and noticeable, but not extreme. The lack of large flat areas is likely the main reason why the three original buildings were not connected. It was easier for each to be on its own, stepping up the hill.



Campus Slope Panorama Image

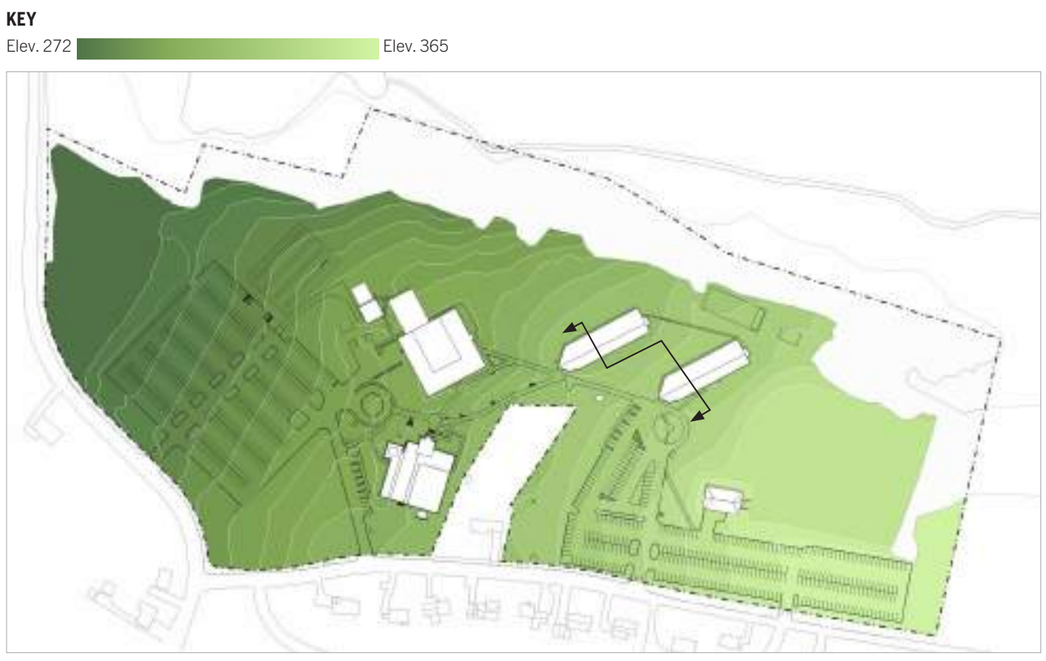


FIGURE 02.13 Campus Topography Diagram

SLOPES

It is typical to avoid steep slopes when siting new buildings. MxCC's campus reflects this common sense approach. As illustrated below in the darker areas, the steepest slopes, 10% or greater, are along the east edge of campus in the woods. Other steep areas are the result of earlier grading to make parking lots. Ample areas remain with low to moderate slopes. These can be suitable building sites when needed.

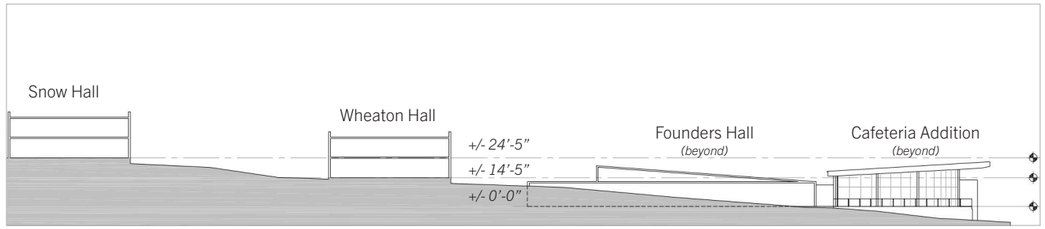


FIGURE 02.14 Campus Slope Section



FIGURE 02.15 Campus Slope Diagram

SITE CIRCULATION AND ACCESS

When driving to MxCC for the first time up Reservoir Road, the College is not visible until one nears the Training Hill Road intersection. The view of the campus opens up and the College sign directs a right turn, up Training Hill Road. The entrance to the lower lot is a one-way drive from Training Hill Road. There is a drop off loop at the threshold into the center of campus. The entry drive is misaligned with the geometry or travel lane of the parking lot.

The exit from the lower lot is one-way to Reservoir Road. While regular users become accustomed to this loop system, visitors may find it confusing.

Access to the upper campus is via two parking lot entrances off Training Hill road and an interior loop through the lots.

Pedestrian circulation on campus is clearly organized. A main path extends from the drop off circle at the lower campus between Chapman and Founders. This path meets a circle where paths radiate to the entrances of Chapman, Founders and up the hill towards Wheaton and Snow. Rather than straight axes these paths curve in pleasant, free form manner.



MxCC Campus Sign at the Intersection



One way street entering the Lower Lot

KEY

- Main Campus Entry
- Exit Only
- Secondary Campus Entry
- Campus Drive
- Main Route
- Secondary Route
- **S** Service/ Loading

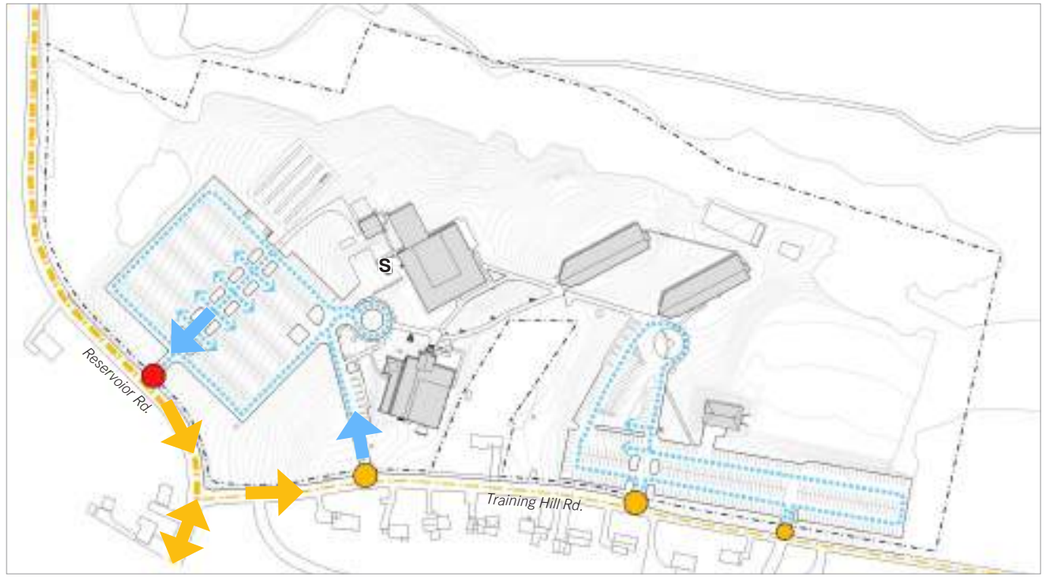


FIGURE 02.16 Site Circulation and Access Points

PARKING

MxCC has a total of 707 parking spaces between the upper and lower lots. Areas are designated for permitted use groups. Some spaces are for Faculty/ Staff and others for ADA / Accessible. These are closest to the core. The other spaces are for Students and Visitors.

While the lots are busy at the start of the semester, congestion eases. The upper lot sometimes reaches capacity with students who park there to go to Snow and Wheaton. Some perceive a need for more parking for this reason. When the upper lot is full on these rare occasions, however, there are always spaces available in the lower lot.



Campus Aerial - Parking Lots



Upper Parking Lot

KEY

A	Lower Lot	374 spaces	Staff & Faculty Parking
B	Upper Lot	333 spaces	Student & Visitor Parking
Total		707 spaces	ADA Parking



FIGURE 02.17 Parking Lots + Space Count

PUBLIC TRANSPORTATION

Middlesex is fortunate to have bus service. Three lines serve the campus. They run to Middletown, Saybrook and Madison. The U Pass CT program provides free bus fare for MxCC students.

The bus stop is on the lower campus at the end of the entry drive, near the entry walk into the campus. Buses then exit through the lower lot as illustrated below.

MxCC does not have bus ridership data. Riders to MxCC are mostly students. The percentage of students taking the bus is believed to be low compared to those driving to campus.

In September 2017, the 525 West Main Street Meriden bus modified its route to stop at MxCC @ Platt, providing a direct ride from the Meriden Train Station. MxCC had had a location in Meriden. Some were concerned enrollment would drop when MxCC moved to Platt. The new bus route was the result of a concerted effort by the College and state officials.



Public transit bus stopping at MxCC



Bus stop on campus

KEY

Route A- Saybrook Rd. (AM) | Saybrook/Middletown | Madison/Middletown | Bus / Transit Stop | Nearest Bus/Transit Stop Route H, #644, #645



FIGURE 02.18 Public Transportation Lines

UTILITIES

As illustrated below, the below-grad infrastructure that keeps the College operating has two main pathways. The blue lines are the hot and chilled water coming from the Central Plant. These provide heating and cooling for Founders, Wheaton and Snow and run along the north and east side of the buildings.

Electric, sewer, phone and other services run along the west sides of Snow and Wheaton under the asphalt path and between Founders and Chapman. Future buildings should largely avoid these lines to avoid relocation cost wherever feasible.

Refer to Energy and Infrastructure (page 56) for additional information.



Central Plant

KEY

Electric Lines | Water Lines | Sewer Lines | Phone Lines | Storm Water Lines



FIGURE 02.18 Site Utilities

THE BUILDINGS

Middlesex's five buildings encompass a wide range of functions and total over 86,000 assignable square feet and almost 127,000 gross square feet as itemized below. A sixth structure, the Central plant, does not include habitable space.

The graphic at right illustrates the main building functions. Blue conveys academic use and pink support use. It is telling that Snow and Wheaton are exclusively academic use while Founders is only support functions. While this single-theme approach may seem logical at first, it actually creates some problems. Snow and Wheaton lack sufficient student gathering space and amenities to make these appealing places and to meet current best practice for academic buildings.

The wide array of support functions in Founders are appropriate, however the circuitous layout, old finishes, and shortfall of space needed indicate that this building – like Snow and Wheaton – needs renewal.

Chapman is the most successful, in its mix of academic, library, conference areas and student activity areas.



Campus Aerial

Building	*Year Built*	*Expanded / Renovated*	*ASF/Floor*	*GSF/Floor*	*Efficiency*
Chapman Total	**1992**		**31,286**	**47,272**	**66%**
Chapman Lower Level		2014 (Media Center)	11,342	18,631	61%
Chapman 1st Floor			14,178	18,631	76%
Chapman 2nd Floor			5,766	10,010	58%
Founders Total	**1973**		**18,736**	**25,676**	**73%**
Founders Hall 1st Floor		2014 (Pavilion)	17,129	23,439	73%
Founders Hall 2nd Floor			1,607	2,237	72%
Snow Total	**1973**		**16,695**	**25,458**	**66%**
Snow Hall 1st Floor			7,839	12,729	62%
Snow Hall 2nd Floor		1992 (Re-Roofing)	8,856	12,729	70%
Wheaton Total	**1973**		**17,277**	**25,458**	**68%**
Wheaton Hall 1st Floor			8,531	12,729	67%
Wheaton Hall 2nd Floor		1992 (Partial Re-Roofing)	8,746	12,729	69%
Maintenance Building	**1992**		**2,617**	**2,943**	**89%**
Total			**86,611**	**126,807**	**68%**

TABLE 02.1 Existing Building Inventory

FOUNDERS HALL

Administrative Offices
Bookstore
Cafeteria
Distance Learning Office
President's Conference Room
Student Services
Student Lounge
The Niche

WHEATON HALL

Classrooms
Computer Lab
Business Division
Math Division
Science Division

SNOW HALL

Classrooms
Art Studios
Broadcast Cinema Studios
Humanities Division
Social Science Division



CHAPMAN HALL

Center for New Media
College Learning Center
Library
Classrooms
Multi-purpose Rooms
Ophthalmic Dispensing Lab
Pegasus Gallery
Veterans Oasis

MAINTENANCE GARAGE

N

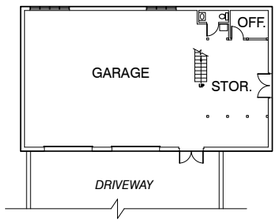
KEY

Academic Library Support Maintenance

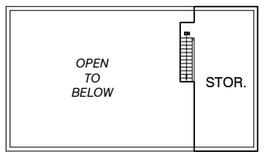
FIGURE 02.19 Existing Building Spaces

MAINTENANCE BUILDING

First Floor

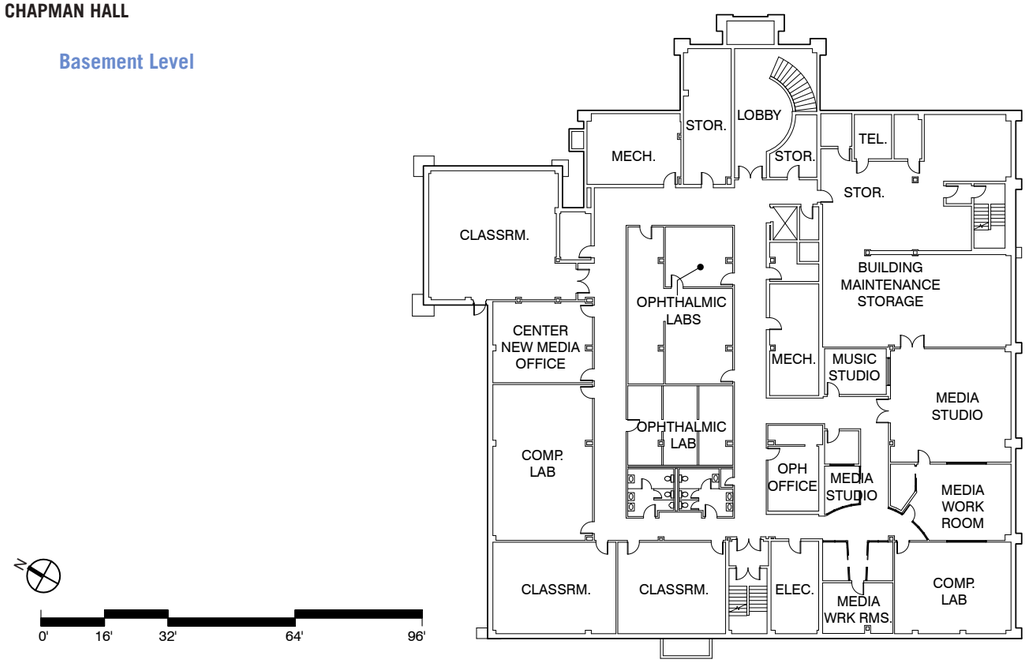


Mezzanine

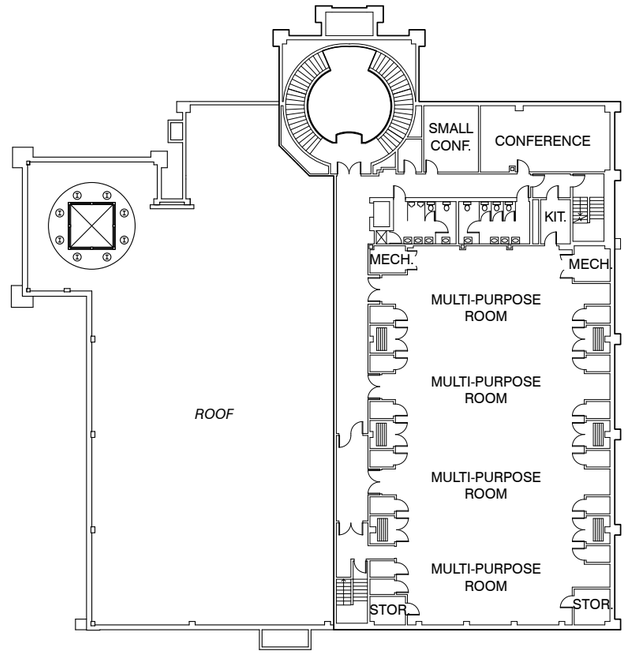


CHAPMAN HALL

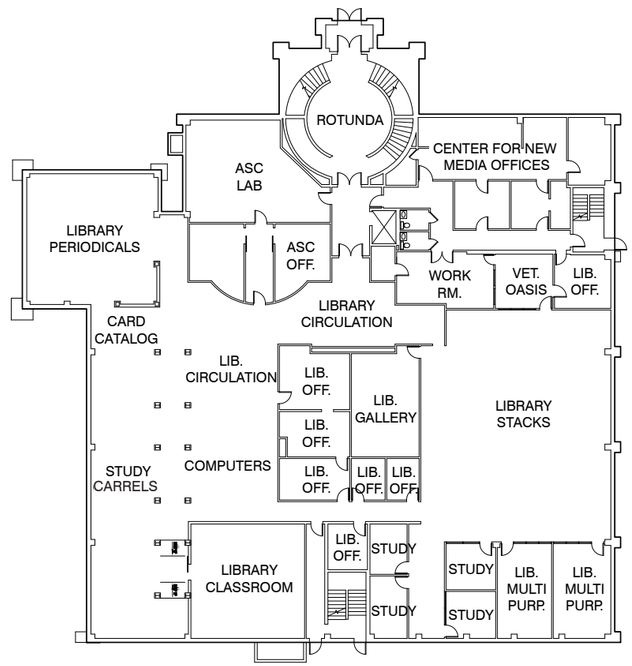
Basement Level



Second Floor

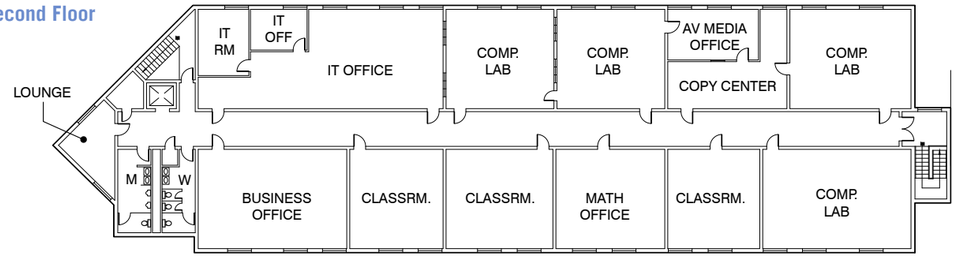


First Floor

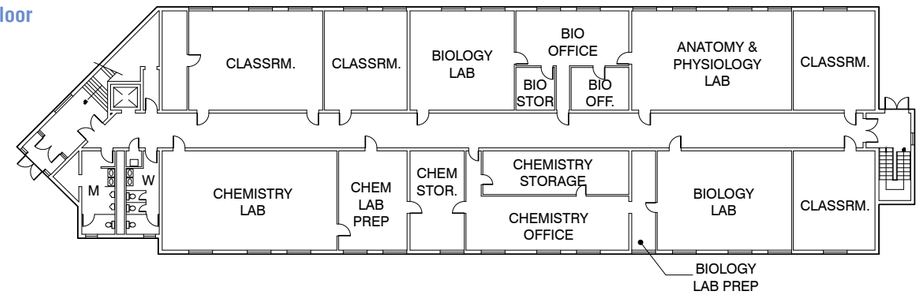


WHEATON HALL

Second Floor

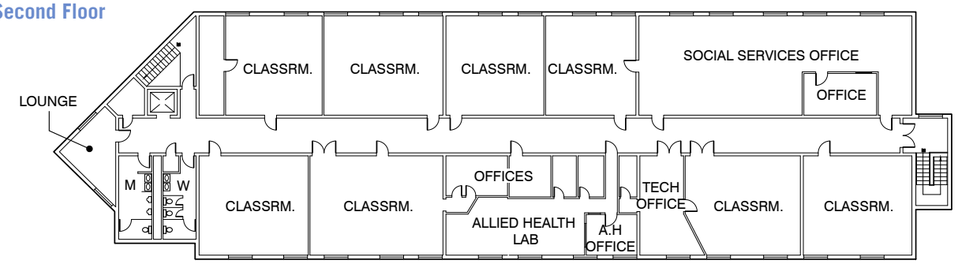


First Floor

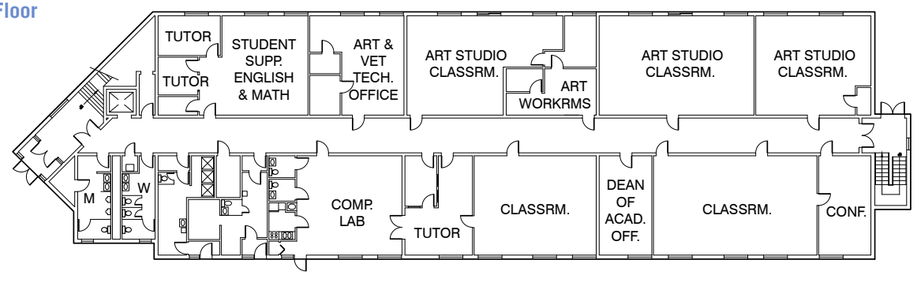


SNOW HALL

Second Floor

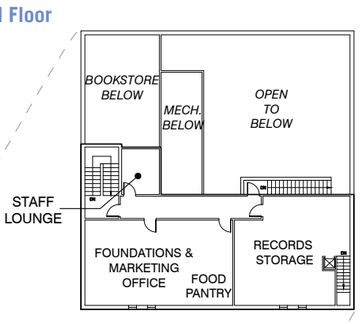


First Floor

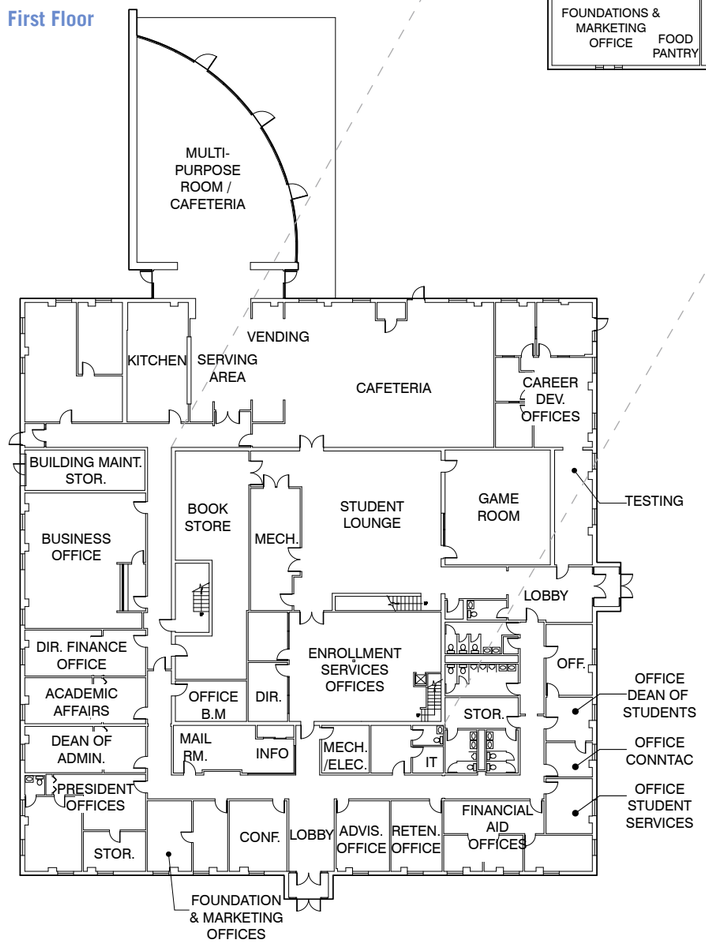


FOUNDERS HALL

Second Floor



First Floor









CIRCULATION AND ACCESS

Each building entrance is oriented to the center of campus and its walkways. Access to Chapman is the most visible as this entrance faces the main path from the lower lot. The entry to Founders is low key and does not relate to the main route into campus from the lower lot for visitors. Prospective students seeking Admissions have to come around the corner to access Founders. In contrast, the loading dock at Founders along with a back door used as a short cut, face the lower lot. The Snow and Wheaton entrances connect to the main campus path.

The quality of internal circulation varies by building. Chapman's internal circulation is well organized and generally clear on its three levels. The straight-run halls in Snow and Wheaton epitomize efficiency. No space is wasted in these double loaded corridors. The side effect, however, is a constricted, unwelcoming tunnel, not a contemporary college space. There are no student gathering areas nor views into areas to either side. In Founders, the halls almost complete a loop, but the circuit is broken. As a result, the circulation system is fragmented and especially for visitors, disorienting. The best space in Founders, the Pavilion addition, is the farther end and hardest to find from the front door.



View of Hallway in Chapmall Hall



View of Hallway in Founders Hall



View of Hallway in Snow Hall



View of Hallway in Chapman Hall



FIGURE 02.20 Interior Circulation and Entry /Exit Points

KEY

- Interior Horizontal Circulation
- Interior Vertical Circulation
- Main Entry
- Secondary Entry
- Exit Only
- Security / Info
- Exterior Campus Circulation



Pathway - Exterior Campus Circulation

ARCHITECTURAL CHARACTER

Middlesex Community College is not defined by a single, identifiable architectural style. The common link is the use of red brick throughout all the major buildings. The character of the original College buildings, Snow, Wheaton and Founders, is utilitarian, spare and contemporary. This was perhaps fitting for the time when cost-effectiveness was an overarching priority. The metal clad service buildings follow this spare language, in a different material. The earth berm next to the Maintenance Building softens this structure by setting it better into the site and reducing its apparent bulk.

Chapman's appearance is a mix of contemporary and classically inspired elements. Its brick cladding links it visually to the other buildings. Its entry portico, shaped roofs and exterior detailing raise the aesthetic bar compared to the basic character of its predecessors.

The Pavilion has a clean, contemporary character and is especially attractive. It does what no other building on campus does – it engages the site, bringing the outside inside with sweeping views of the lawn and woods. Its covered terrace is a wonderful gathering place. And the siting of the addition itself screens off the views of the nearby Central Plant. The language of steel, glass and metal panels fits well with Founders even though it is distinct, likely because the slope of the roof mirrors the slope of the Founders mezzanine roof.



Exterior view of Wheaton Hall



Exterior view of Chapman Hall



Exterior view of the Pavilion / Founders Hall



Exterior view Founders Hall

BUILDING CONDITION

Middlesex's buildings were built in two waves – the first in the 1970s when the campus was founded and the second in the 1990s. Predictably, the older original buildings are in fair condition, with some systems nearing end of life. These include Founders, Wheaton and Snow as shown below. Chapman Hall, built in the 1990s, is in much better condition. The Maintenance Building, while completed in the 1990s, was likely done to a tight budget. As a result, it needs improved insulation and temperature control in its habitable area. The Pavilion addition to Founders, opened in 2014, is in very good condition. The color coded matrix reflects the College's assessment of the condition of each of the listed building systems. Red areas indicated repair, replacement or upgrades needed in the near term.



CODE CONSIDERATIONS

In 2014, Middlesex undertook a Voluntary Corrective Action Plan to assess ADA / accessibility compliance. The majority of the outstanding facility design issues are in Snow and Wheaton Halls. The issues noted are the need for a handicapped entrance to Wheaton, toilet clearances, handrails at stairs, turning space in toilet rooms and projections into an access route (mostly Wheaton Hall). Action to address these issues was deferred until the completion of this master plan.

The stairs in Snow and Wheaton do not appear to be code compliant. The riser heights vary in a single run above and below an intermediate landing. The electrical room in Founders lacks a second means of egress. The office in the Maintenance Building does not have ventilation air. There may be other code compliance issues. A detailed code assessment was not included in the master plan scope.

KEY

- 1- Excellent / New or Very Good Condition
- 2- Good / Needs Investment in 10+ years
- 3- Fair Condition / Needs Investment in 10+ years
- 4- Poor or Critical Condition / Needs Investment in 5-10 years
- U- Condition Unknown / Unclear



FIGURE 02.21 Existing Building Conditions

CLASSROOM UTILIZATION

Middlesex today has 17 general classrooms and one classroom dedicated for Continuing Education.

The scatter chart to the right reflects MxCC's scheduled credit courses "in the grid". The X-axis represents average hours per week of schedule use. The Y-axis reflects average fill rate in % seats occupied. Each blue dot is a general-purpose classrooms. Several things are notable. The general-purpose classrooms have a good fill rate – 12 of 17 are at or above the 60% average goal. The mean of all classrooms for hours of utilization is clustered around 30 hours per week – also the typical goal. 6 classrooms are used significantly more than 30 hours per week.

Looking at the scheduling by day and hour, sometimes 16 of 17 classrooms are in use at one time – on the Wednesday peak. 15 classrooms are in use at the Monday and Tuesday peaks. Use drops off significantly on Fridays. There is actually more than twice as much classroom activity on Saturday as Friday.

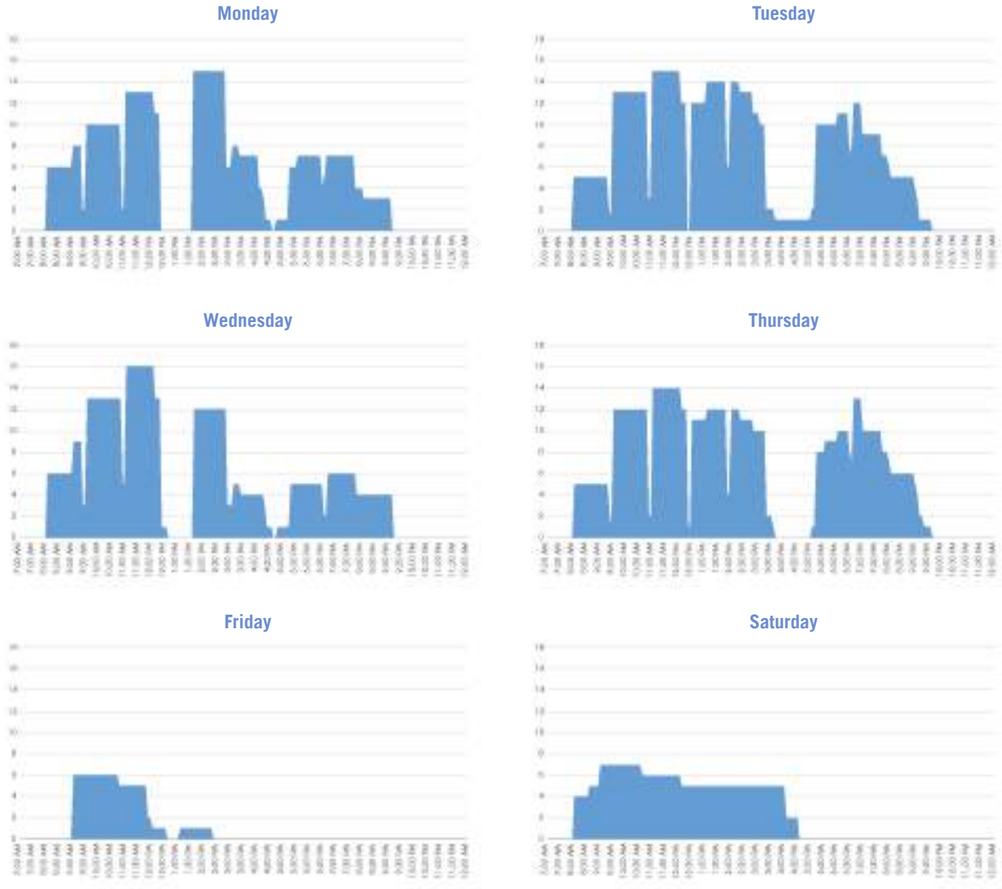


FIGURE 02.22 Classroom Utilization Summary: Rooms in Use by Day and Time

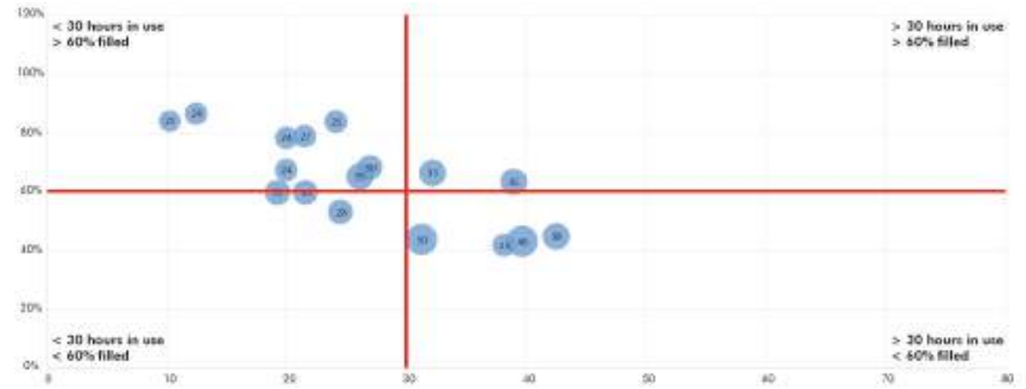
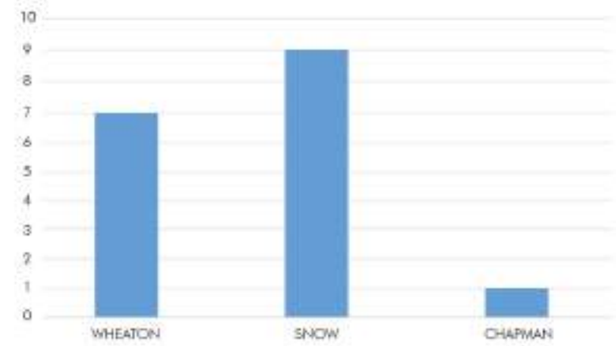


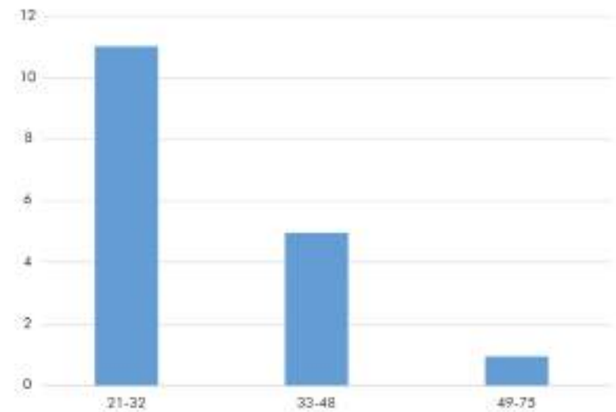
FIGURE 02.23 Utilization Hours in Use Versus Rate by Room

NUMBER OF CLASSROOMS BY BUILDING



Row Labels	# of Rooms
WHEATON	7
SNOW	9
CHAPMAN	1
Grand Total	17

NUMBER OF CLASSROOMS BY SIZE



Row Labels	# of Rooms
21-32	11
33-48	5
49-75	1
Grand Total	17

FIGURE 02.24 Classrooms by the Numbers

CLASSROOM UTILIZATION

Classroom Utilization by Building

Row Labels	#of Rooms	Total ASF	Total Seats	Average ASF per Station	Average Seat Capacity per Room	Total Weekly Hours of Courses	Average Weekly Hours per Room	Average Fill Rate Per Room	Total Weekly Student Contact Hours
WHEATON	7	4,234	196	22	28	146	21	72%	2,011
SNOW	9	6,410	285	23	32	272	30	60%	3,038
CHAPMAN	1	1,089	50	22	50	31	31	43%	433
Grand Total	17	11,733	531	22	31	450	24	64%	5,483

Classroom Utilization by Size Tier

Row Labels	#of Rooms	Total ASF	Total Seats	Average ASF per Station	Average Seat Capacity per Room	Total Weekly Hours of Courses	Average Weekly Hours per Room	Average Fill Rate Per Room	Total Weekly Student Contact Hours
21-32	11	6,821	290	24	26	239	22	69%	2,798
33-48	5	3,823	191	20	38	180	36	57%	2,252
49-75	1	1,089	50	22	50	31	31	43%	433
Grand Total	17	11,733	531	22	31	450	26	64%	5,483

FIGURE 02.25 Classroom Utilization

Note: Seat capacity numbers for each classroom are estimated based on the course schedule. At the time of this draft, seat counts were not available for each classroom and the floor plans provided do not show furniture. This study will be updated after classroom seat counts are verified.



SNOW HALL

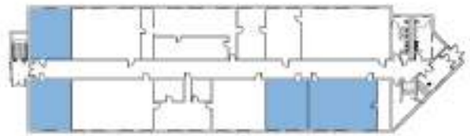


FIRST FLOOR

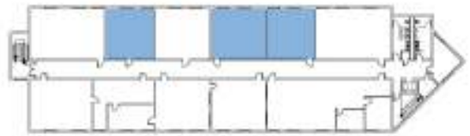


SECOND FLOOR

WHEATON HALL



FIRST FLOOR



SECOND FLOOR

CHAPMAN HALL



BASEMENT

KEY

- General Classrooms
- Continuing Ed. Classrooms

FIGURE 02.26 Classrooms by the Numbers

ENERGY AND INFRASTRUCTURE

The mechanical, electrical, plumbing engineer on the master plan consultant team, AKF Group, toured the buildings, met with the Building Maintenance Superintendent and reviewed available energy use data, including the Middlesex chapter of the 2015 CSCU Energy Master Plan. Following is a summary of their findings on existing conditions for the central plant, HVAC, plumbing, fire protection and electrical.

HEATING, VENTILATION & AIR CONDITIONING, CENTRAL PLANT & AIR DISTRIBUTION

Utilities

- MxCC has a Central Plant which distributes chilled and hot water to Snow, Wheaton, and Founders
- Chapman has dedicated cooling tower and boilers.

Air Distribution

Snow, Wheaton, and Founders
- Variable air volume (VAV) air handling units mostly above ceilings

Chapman
- Water source heat pumps



Chiller Plant

Fire Protection Systems Overview

- There is no fire protection water service on campus.
- Chapman Hall is the only building provide with fire protection system. The fire protection system consists of underground storage tank and fire pump.
- Chapman is provided throughout with sprinkler protection and fire standpipe system with 2½" fire hose valves.

Plumbing Systems Overview

- The Campus Domestic Water is distributed to the buildings by street pressure.
- The buildings' domestic water, sanitary and storm drain sewers are served by the local municipality.
- The buildings are provided with dedicated metered domestic water service from the local utility.
- Propane gas is provided for the Biology and Sciences classroom.
- Multiple electric water heaters located throughout the College serve the plumbing fixtures.



Domestic Water Meter



Chapman Hall Vertical Turbine Fire Pump

Electrical Systems Overview

- Electrical Service
  - Founders, Snow, and Wheaton: 1200A, 208/120V
  - Central Power Plant: 1200A, 480/277V
  - Chapman: 2000A, 208/120V
- Lighting is mostly upgraded to LED as part of recent utility rebate program
- Building Electrical System needs to undergo an NFPA 70E (Short Circuit and Arc Flash) study.
- Fire Alarm is adequate but needs to be upgraded in Snow and Wheaton due to manufacturer phase out of the current system. (Upgrades in 2016 in Chapman and 2014 in Founders)
- The recently installed solar PV array near the lower lot provides lower cost electricity to MxCC through a Power Purchase Agreement.



Chapman Main Distribution Panel

Major Observational Issues Identified by Facilities or Observed by Consultant

- Air Handling Units are reaching end of life and showing signs of failure and will need to be replaced
- The Chapman cooling tower is starting to fail and needs to be replaced.
- The main electrical room does not currently meet code in Founders (missing a second means of egress)
- Office in the Maintenance Garage does not currently have ventilation air



Existing Energy PV Array

STUDENT ENGAGEMENT

To get a better understanding of campus facility needs from the students' perspective, the planning team hosted a workshop session with students in the dining area. The consultants gave a general overview of the Master Plan and asked the students about their opinions and concerns related to the buildings and grounds. Several students shared their thoughts about the environment of the college and their overall experiences while at Middlesex.

As part of the discussion, the planning team engaged some students in a mapping exercise. Students were asked to place different colored dots on maps of the campus or on floor plans in response to a series of questions on the facilities. The results from these exercises confirmed much of what the planning team had uncovered through earlier conversations and analysis with the Master Plan Committee. The results from the student workshop are summarized below and on the following page.

WORKSHOP EXERCISE TAKEAWAYS

Places that Need Improvement:

Site Improvements:
- Students would like more outdoor study space or patios.
- Students would like a nature trail / center near the woods.
- There is currently no path to the gardens.

Snow Hall + Wheaton Hall:
- Current student lounges in Snow & Wheaton are too small and need improvement.
- There is limited food/ vending in the lounges especially for the evening students.
- These buildings are built the same and are "filled with stress"

Parking:
- Parking circulation can be improved. In the beginning it can be confusing.
- There are a lot of parking spaces for teachers that go unused.
- Parking is inconvenient.

Favorite Places:

- Founders Hall Cafeteria
- Community Garden
- Grass field (in between Founders and Wheaton)

Favorite Social Spaces:

- Founders Hall Multi-purpose room/ New Addition
- Founders Hall Game Room

A key takeway was the lack of support space in Snow and Wheaton for students, especially those taking evening classes when the dining facility is closed in Founders. Coming to campus from other commitments, they often do not have time to eat. But there is no food in Snow and Wheaton, or lounge space of any size. The lack of gathering space to collaborate, study or eat was also a drawback.

Another takeway was the lack of outdoor gathering spaces. MxCC has a large green campus, but there are few areas to hang out in warmer weather. The students would like more of this type of space.

Parking location and capacity was a source of frustration for some as well. The upper lot is occasionally full and students have to come from the lower lot to Snow.



Student Input: Things that need Improvement

Favorite Study Spaces:

- Library, Study Carrels
- Library, Stacks
- Outdoor Gazebo (across from Snow Hall)
- Athletic Field Area by Upper Parking Lot.

Favorite Classroom/Lab Spaces:

- Library Multi-purpose rooms



FIGURE 02.27 Student Engagement Exercises

OPPORTUNITY AREAS

SITE CONSTRAINTS

Middlesex is fortunate to have ample land for future development. There are several factors, however, which limit new buildings or additions in some areas.

Steep slopes, greater than 10%, are not suitable typically for building. Most of these areas are in the woods along the east edge of campus. This area should not be considered for new buildings. Buildings and additions can be realized on gentler slopes, less than 10%.

The main path in front of Wheaton and Snow, since it has major utility lines, should be avoided for construction if possible since the cost of relocating these lines would be an unnecessary burden on a project budget that would likely reduce the useful project scope.

While MxCC as a state-owned property is exempt from zoning, it is advisable to set back buildings from Training Hill Road, to create a buffer with the residential neighborhood, similar to Chapman Hall.

Finally, an obvious long term constraint is the non-College parcel of land which protrudes into the center of the campus.



View of other property, cutting through MxCC Campus

KEY

6-10% slope >10% slope Other Property



FIGURE 02.28 Site Constraints Diagram

OPPORTUNITY AREAS

In campus planning, opportunity area often refers to open spaces that are suitable for future buildings or parking. These can be sites for the near or long term. The diagram below reflects this definition.

MxCC has multiple areas where new buildings can be located. The areas highlighted reflect the most promising sites. Buildings could be located on other sites, such as the extreme ends of the property, however these would be disconnected and not as effective as facilities. The development strategy for siting new construction is to connect, not to sprawl. Because the College's academic and support functions need significant expansion, the first priority was exploring suitable addition sites. The area next to Founders is one such opportunity area. The area between Wheaton and Snow is another opportunity area.

Later, beyond the 10-year horizon of this master plan, there are several other sites in the core that are opportunities for new buildings or additions, as highlighted below. If and when part of the upper parking lot is developed, replacement parking can be located on the upper field, as this is no longer used for athletics. The field could also be the site for another PV array to increase MxCC's generation of renewable energy.



Opportunity Area between Snow and Wheaton Hall

There are many important opportunities to enhance the landscape and open space system. Many of these opportunities abound. The most important of these is the center of the campus, which could serve as a unifying open space such as a quadrangle. The opportunity which could enable this is the eventual acquisition of the residential property. CSCU has had discussions with the owner in the past. Eventually, when this property is for sale, CSCU should acquire it to make the campus land whole.

KEY

Expansion Sites Long-Term Expansion Sites Campus Integration / Acquisition Parking Relocation / Solar Power



FIGURE 02.29 Opportunity Sites Diagram

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3 SPACE NEEDS

INTRODUCTION

ASSESSMENT METHODOLOGY
- STANDARDS
- CLASSROOM ANALYSIS

ENROLLMENT PROJECTIONS

CONVERSION TO STUDENT FTE PROJECTIONS
- SPACE DISTRIBUTION BY COMPONENT

OVERALL ASSESSMENT

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- CLASSROOMS
- COMPUTER LABS
- BUSINESS & HOSPITALITY
- HUMANITIES & CREATIVE ARTS
- ENGLISH
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- MATHEMATICS
- SOCIAL SCIENCES
- STEM

SUPPORT SPACE ASSESSMENT
- ACADEMIC SUPPORT
- ADMINISTRATIVE SERVICES
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- CAMPUS SERVICES
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- STUDENT ACTIVITIES
- STUDENT SERVICES
- TECHNOLOGY

CONCLUSIONS
- REVISED BENCHMARKING

PARKING NEEDS

NEEDS SUMMARY

INTRODUCTION

This section covers the space need assessment (SNA) for the Middlesex Community College Master Plan Update. The assessment seeks to determine both the current and projected needs of the College, based on enrollment projections for both credit and non-credit enrollment. The assessment is divided into Academic Space and Support Space.

The Academic Space includes classrooms, class labs or teaching labs, and faculty offices. The Support Space consists of the elements necessary to run a functional campus such as student services, technology, and campus services, and components essential to creating a campus ambiance such as student activities and library. The SNA covers all of these elements. Last, the SNA is in assignable square feet –the space that is useable or programmable—unless otherwise noted.



Currently, Middlesex Community College occupies slightly more than 85,649 Assignable Square Feet (ASF), representing approximately 122,000 Gross Square Feet (GSF) across five buildings.

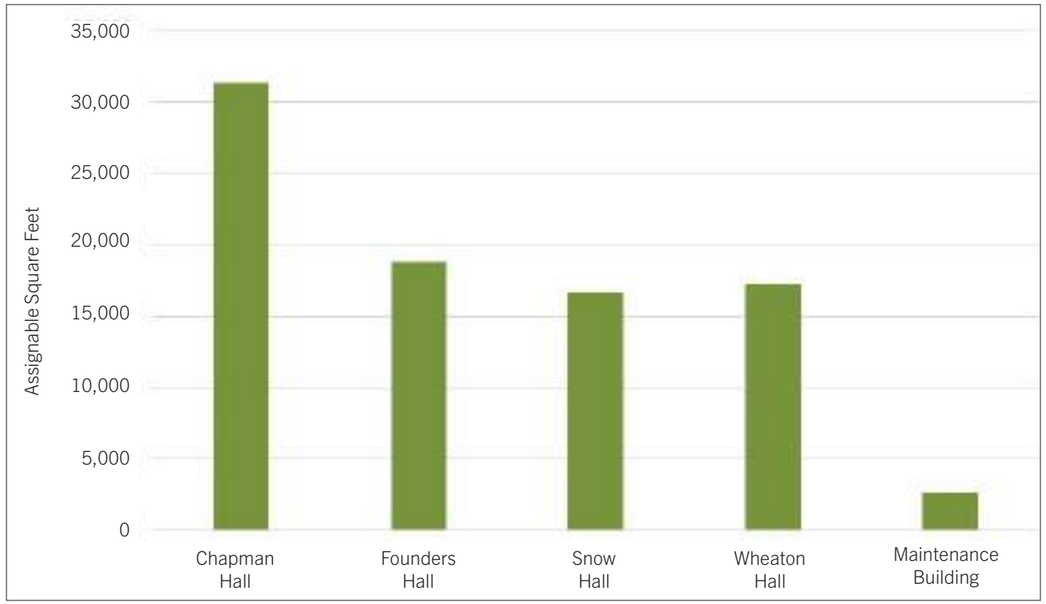


FIGURE 03.1 Existing Assignable Square Feet by Building

ASSESSMENT METHODOLOGY

While most space assessments function much as a "square footage cost estimate" does, the assessment for Middlesex Community College intends to provide a higher level of analysis closer to a quantitative takeoff estimate that a cost estimator might provide for either the design development or construction documentation phases of a building project. Square footage estimates or approximations are useful in the early stages for setting gross area but are inadequate for the comprehensive management of scope in the later stages of a project's development. The goal of this assessment is to establish sufficient specificity to enable the assemblage and execution of projects going forward.

The strategy is to focus on time utilization and design standards rather than individual instructional space factors. By developing the assessment at the departmental level, including faculty and staff lines, the assessment is closer to a design program. Also, the goal is to make the assessment more accessible.

To that purpose, the assessment utilizes extensively weekly student contact hours (WSCH). The consultant utilized 24 WSCH per station for all lecture hall and classroom and 19.2 WSCH per station for all teaching lab and studio analysis. Space factors play a much more diminished role in providing corroborating evidence rather than being the primary driver of space. While much of the detailed analysis in the assessment will not be utilized, the Master Plan Team does not know which elements will be pivotal in their development of options.

STANDARDS

While there are various standards, including CEFPI, most standards work with FTE space factors. This type of analysis is something the Master Plan Team is trying to avoid.

Both the standards and research studies of the Post-Secondary Education Commission of California and the Texas Coordinating Board, both oversight agencies for the allocation of capital in their respective states, inform the consultant's approach to the assessment.

CLASSROOM ANALYSIS

In 2004 the California Post-Secondary Education Commission (CPEC) commissioned a study addressing CPEC's concern about the "tight" scheduling imposed by their state legislature. The tables in that study make references to classroom hours and occupancy rates related to a 40 hour per week utilization target. However, there are no references as to how that was derived. The Master Plan Team considers this appropriate because the original 40 hours is both irrelevant and confusing to utilize.

So, when one looks for a consistent "frame" such as 40 hours, it does not exist. The CPEC study disregards it in favor of setting an hour per classroom, avoiding the "frame" altogether. Now there are systems such as Maryland that calculate based on daytime and nighttime FTEs. The assumption is that a College build for the day and the nighttime enrollment is "free," at least from a space standpoint.

The Master Plan Team sees a daytime and evening WSCH target per seat, and it is up to the institution to utilize that resource effectively. Noted for its small sections, MXCC has only one section that exceeds 40 students. The assessment assumes that the classroom inventory should be designed both for a daytime traditional student population and a part-time evening enrollment. To that purpose, the average classroom station size has been set at 22 ASF.



ENROLLMENT PROJECTIONS

The College provided the System with credit enrollment projections through Fall 2028. Those projections, provided in student headcount, were supplied by related program clusters, rather than individual or departmental majors.





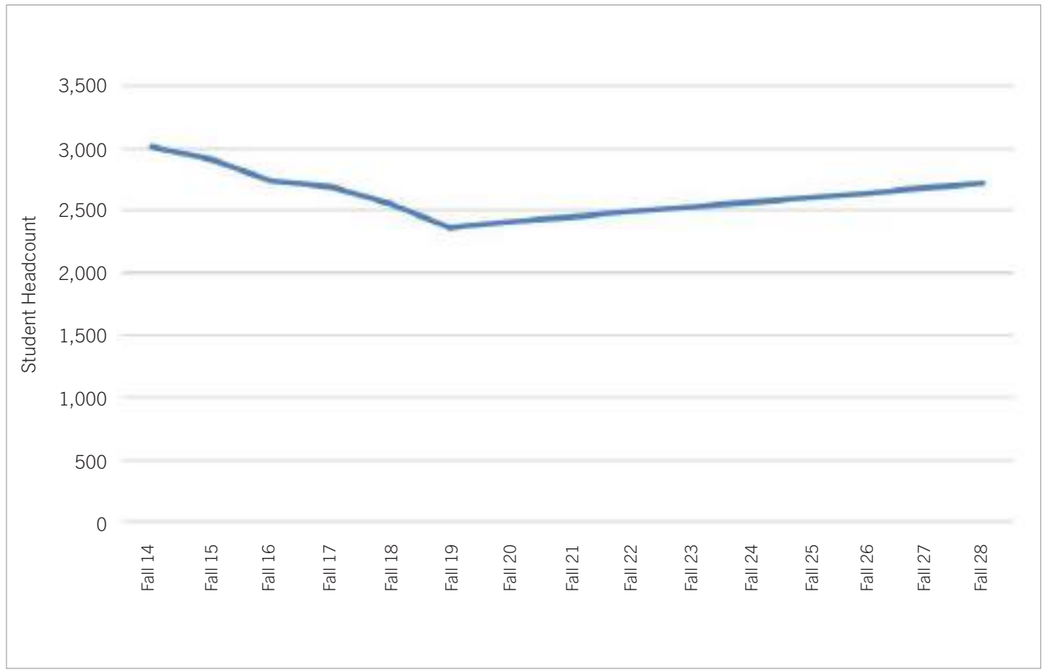
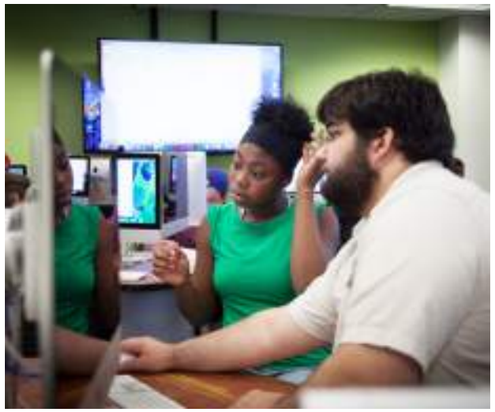


FIGURE 03.2 Student Headcount Projections

Those projections were translated into student FTEs. The assumption is that the credit load –the number of credits taken by each student and currently at 8.90—will remain constant over this time frame, resulting in a projected student FTE growth equal to the projected student headcount enrollment.



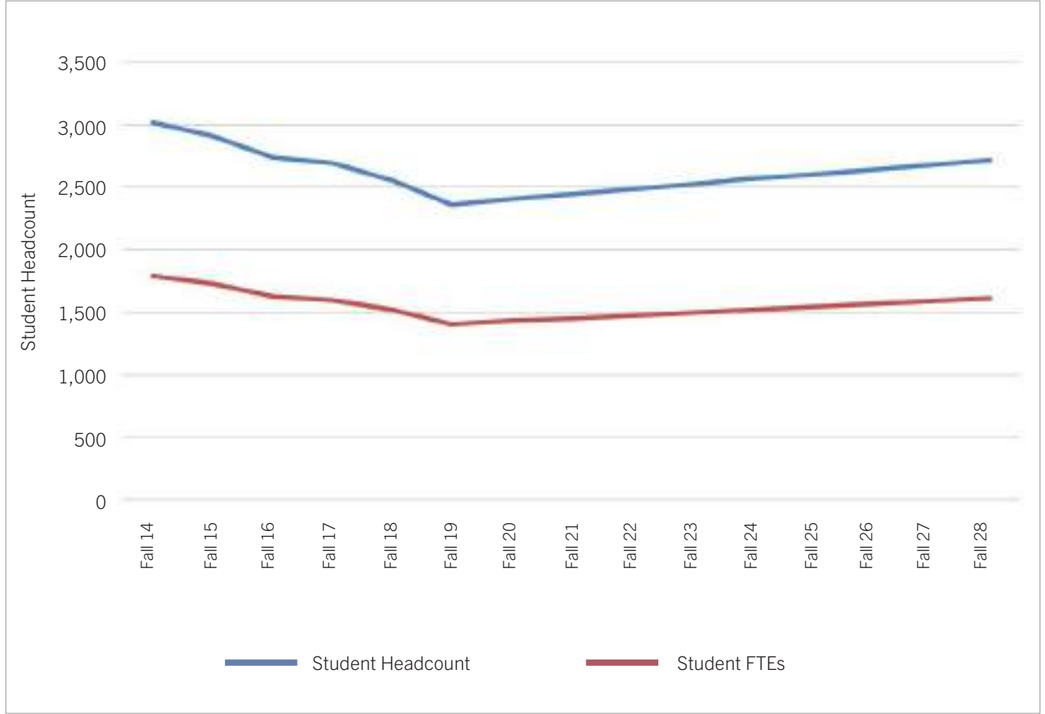


FIGURE 03.3 Student Headcount & FTE Projections

CONVERSION TO STUDENT FTE PROJECTIONS

The College's projections—based on headcount by major—required conversion to student FTEs by discipline. The conversion is necessary to establish the demand by the individual department. The chart below illustrates the projected FTE enrollment by discipline. The chart is sorted by total student FTEs, with the largest discipline, English, at the bottom. English, Mathematics, Biology, Art, Psychology, and Communication represent 50% of all credit instruction at the College. The 15 disciplines individually identified represent 75% of all credit FTEs. The remaining 33 disciplines not identified represent the remaining 25%.



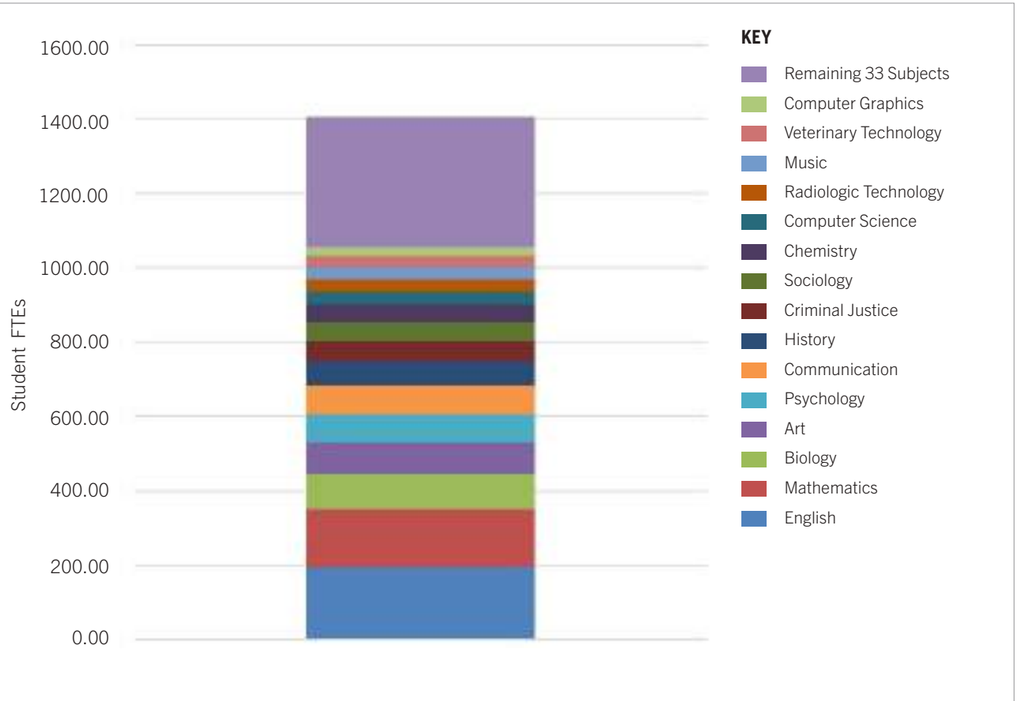


FIGURE 03.4 Student FTEs by Discipline

SPACE DISTRIBUTION BY COMPONENT

The following chart represents the current distribution of space by type across the campus. The chart moving clockwise begins with the academic space, the classrooms, and computer labs, then the academic departments. The most significant components in the inventory are the Classrooms, the Computer Labs, the Creative Arts, the STEM Department, the Library, the Student Activities, and Student Services.



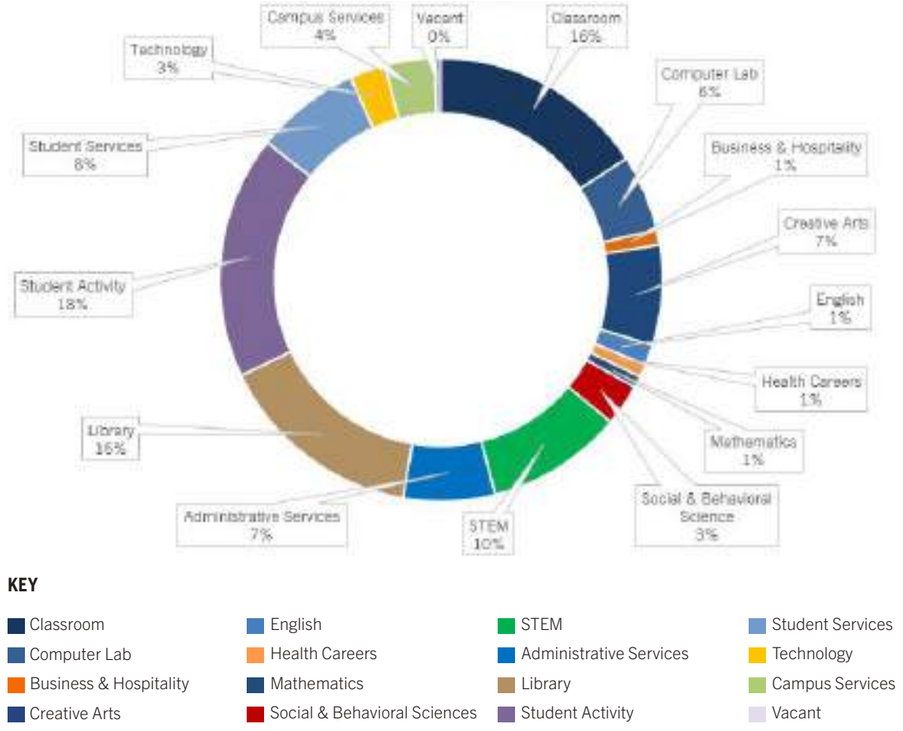


FIGURE 03.5 Space Distribution by Subcategory

OVERALL ASSESSMENT

Currently, the College has 61 assignable square feet (ASF) per student FTE. 27 ASF per student FTE is devoted to Academic Space—classrooms, computer labs, teaching labs, and faculty offices. The remainder—34 ASF—is dedicated to the Support Space on campus, including the Library, Assembly & Exhibition space, and Student Activities. The 61 ASF currently places MxCC at the lowest level for its immediate peer group and the lowest among all community colleges in Connecticut.

The Space Needs Assessment anticipates that the Assignable Square Feet will need to be expanded to 86 ASF per FTE. This expansion will provide critical academic facilities, including classrooms, Computer labs, health-related labs, and science facilities. Critical expanded support facilities include tutoring facilities, assembly, student life, student services, along with expanded campus services. Even with this expansion, Middlesex Community College will have 77% of the current per FTE allocation for Capital Community College and 62% of the current allocation for Asnuntuck Community College. These two community colleges have current enrollments that are closest to Middlesex.

The chart below –sorted by college enrollment—illustrates the assignable square feet per student FTE, across the Connecticut Community Colleges.

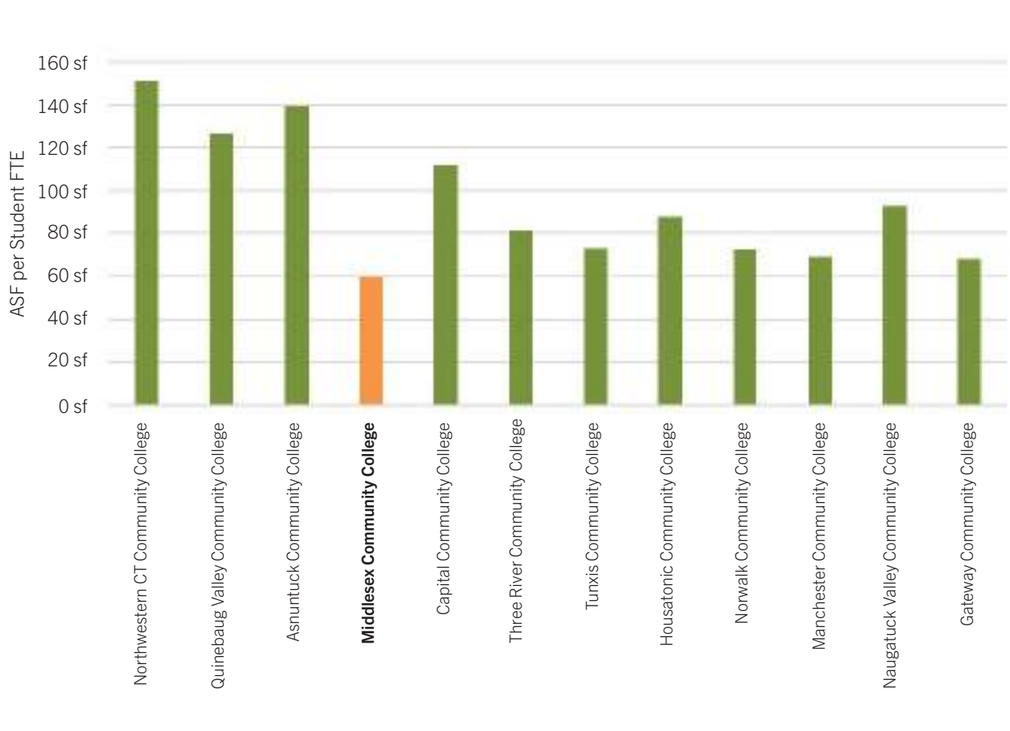


FIGURE 03.6 Benchmarking Across the Connecticut Community Colleges

Middlesex Community College, with roughly 1,400 student FTEs, falls into the lower range of the Connecticut community colleges. In general, smaller community colleges –based on their enrollment—require more space per student FTE. Several elements of any community college are appropriate for both 1,000 student FTEs as well as 4,000 FTEs. As a result, MXCC's space allocation should be higher than Norwalk Community College's, though less than Northwestern's.

The following chart shows the Fall 2018 and Fall 2019 student credit FTE enrollment across the twelve community colleges.



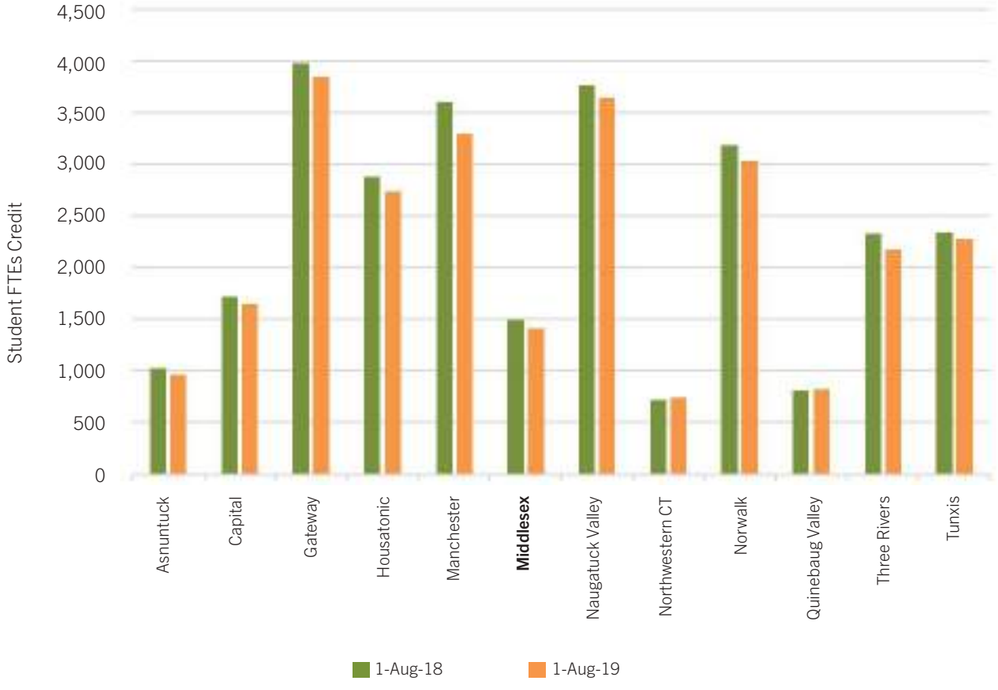


FIGURE 03.7 YOY System Enrollment by Student FTEs

DISTRIBUTION OF SPACE

ACROSS THE TWO MAJOR CATEGORIES: ACADEMIC & SUPPORT

The following chart represents the primary distribution of space at the College: Academic Space and Support Space. Currently, the College has 57% of space devoted to Support Functions and 43% dedicated to Academic Functions. This distribution is typical for most higher education institutions. Academic Space is always the more modest part of a campus. In contrast, the Support Space because of the modest total college enrollment and less efficiency typically tends to be much higher than the Academic Space.

What is unique about Middlesex Community College, given the significant space shortfall, is that the space deficit is equally distributed across both Academic and Support Functions.



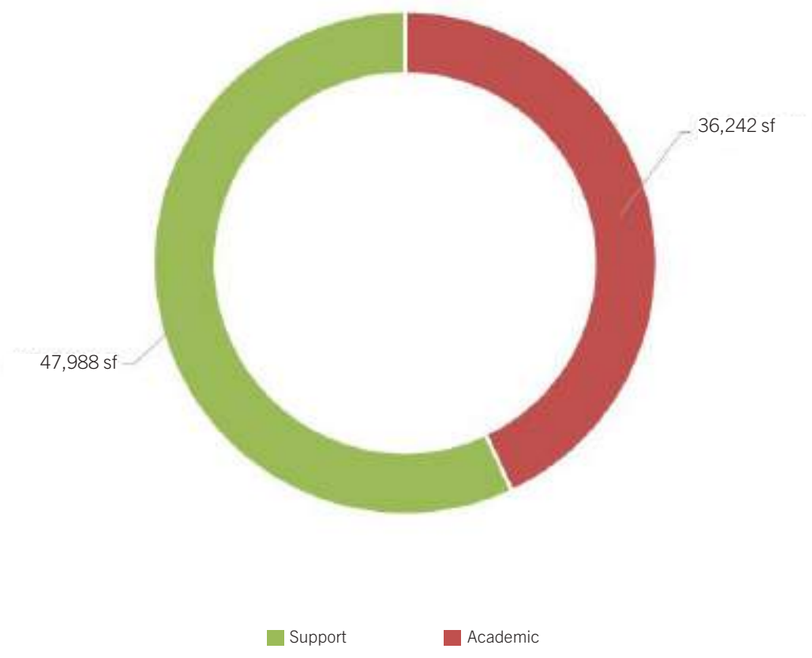


FIGURE 03.8 Assignable Square Feet by Major Category

ACADEMIC SPACE ASSESSMENT

The following chart shows the assessment for Academic Space at Middlesex Community College. Almost all departments and components require a modest amount of additional space with the notable exceptions of the Computer Lab space, the ESL Department, and the Sciences. For Computer Labs, a shared element of the academic space, the College has a surplus.

Classrooms
The Classroom Space at the College has both a current and long-term deficit. The need is not just for additional classrooms but added space in each room. The most important aspect is that the current deficit exceeds the extra space required to support future enrollment. This is true for all of the academic departments as well. For each department, the critical, primary need is to resolve the current deficit.

Computer Labs
Similar to the Classroom Space, the Computer Lab Space has both a current and a projected need. Long term, the Computer Lab Space needs to be expanded by roughly a third.

Business & Hospitality
Located in Wheaton Hall, the Business & Hospitality, despite the name, is a faculty office and classroom department. The office space, as with all academic departments, is inadequate, both in size and providing sufficient privacy for advising students.

Humanities & Creative Arts
The Humanities & Creative Arts Department is distributed between Chapman Hall and Snow Hall. Similar to Business & Hospitality, the department lacks adequate office space. The primary shortfall is in studio space for the Arts. The problem is twofold. The studio count is inadequate but equally critical is that the studios the department does have are too small.

English
Located in Snow Hall, English needs to be substantively expanded to accommodate faculty, both fulltime and adjuncts. As the most significant subject area at the College by student FTEs, the department needs to be expended to provide study and informal tutoring space within or adjacent to the department.

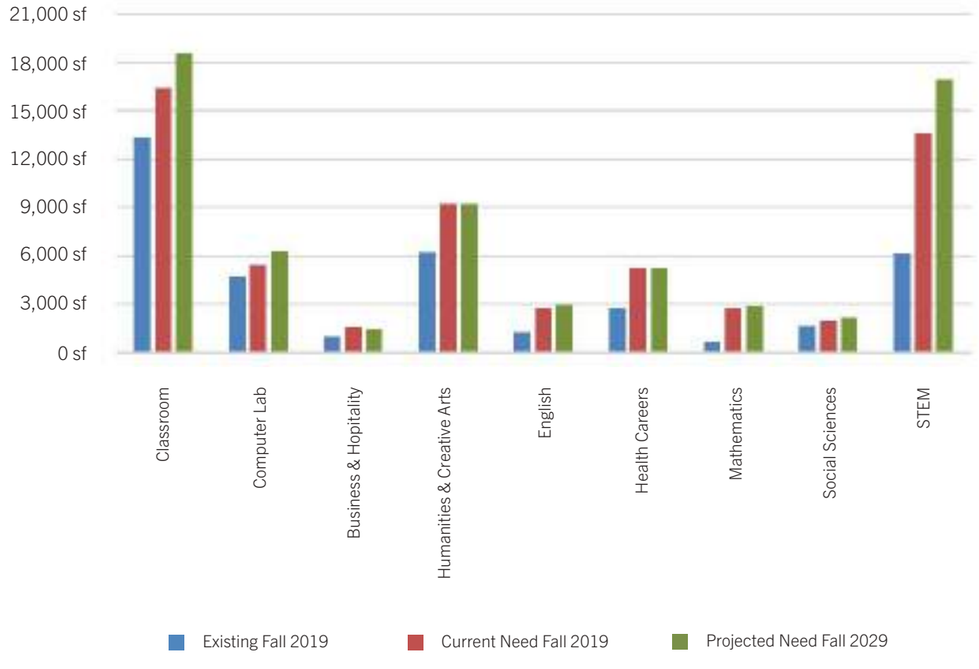


FIGURE 03.9 Academic Space: Existing, Current Need & Projected Need

Health Careers
Within the Health Careers Department, subjects covered include Health Information Management, Magnetic Resonance Imaging, Mammography, Medical Technology, Ophthalmic Dispensing, Radiologic Technology, and Veterinary Technology. With the Ophthalmic Dispensing in the lower level of Chapman Hall and the Allied Health Lab in Snow Hall, expansion required includes faculty office space and lab space to support Radiologic Technology.

Mathematics
The largest content area at the College based on student FTEs, Mathematics, needed to be expanded to provide adequate office space plus teaching facilities.

Social Sciences
The Social Sciences, located in Snow Hall, requires expansion to properly support full-time faculty and adjuncts.

STEM
The most critical need across all the academic departments is the STEM Department. STEM at Middlesex Community College includes Science, Technology, Engineering, and Manufacturing, but not Mathematics. The primary shortfall is adequate science labs. The chart below represents the existing, current need and projected need for science labs.



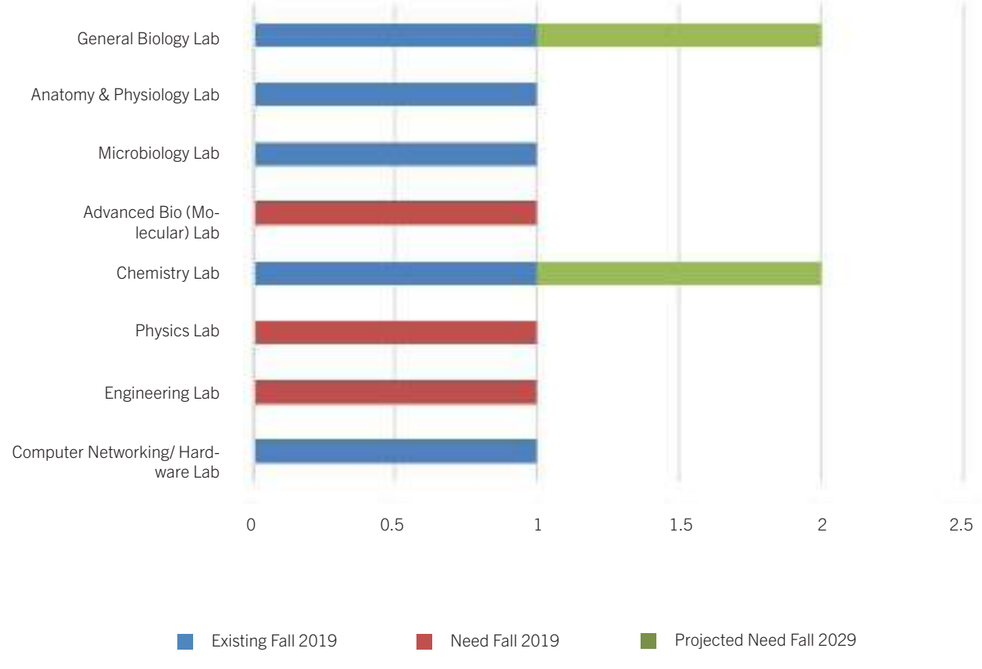


FIGURE 03.10 Existing, Current Need & Projected Need in Science Labs

SUPPORT SPACE ASSESSMENT

The Support Space is divided into eight subcategories: Academic Support, Administrative Services, Assembly & Exhibition, Campus Services, Library, Student Activities, Student Services, and Technology. As stated in a previous section, Support also has significant current and projected space shortfalls. The following chart represents the existing, current need, and long-term space requirements by each subcategory. Critical shortages are in Academic Support, Assembly & Exhibition, Campus Services, Student Activities, Student Services, and Technology.



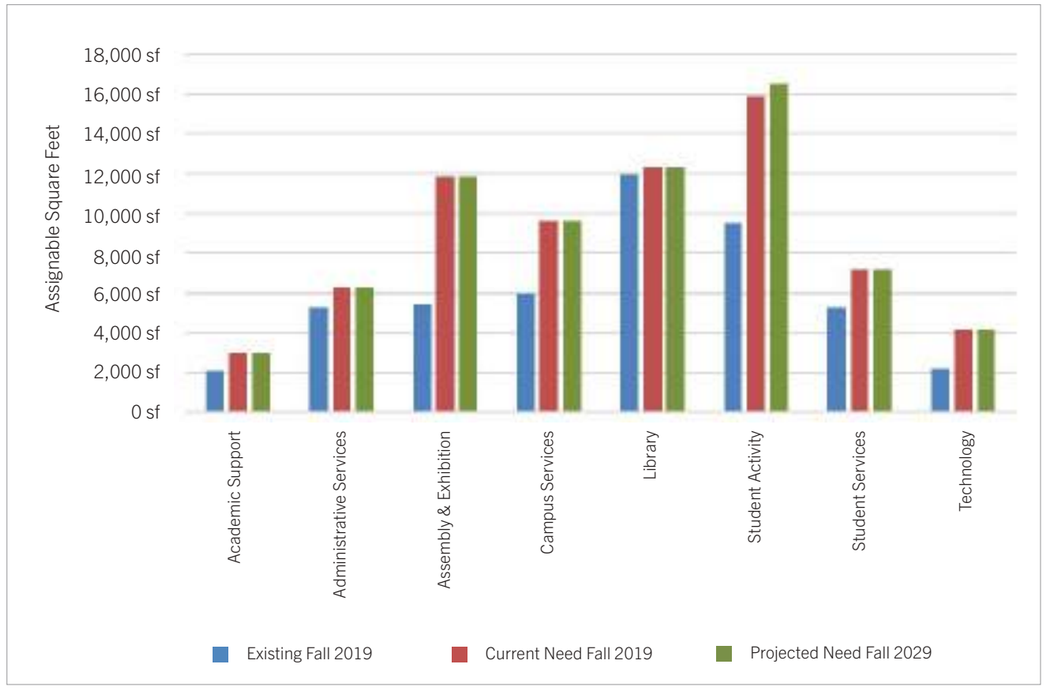


FIGURE 03.11 Support Space: Existing, Current Need & Projected Need

Academic Support
The Academic Support components are located within the Library on the first floor of Chapman Hall. While the overall need is modest, expansion opportunities because the components are located in the Library are limited.

Administrative Services
In aggregate, very little additional space is required in Administrative Services.

Assembly & Exhibition
Currently, the assembly facilities at the College are limited to the sizeable multipurpose conference facility on the second floor of Chapman Hall. The assessment adds a second assembly space in the form of a small auditorium/theater.

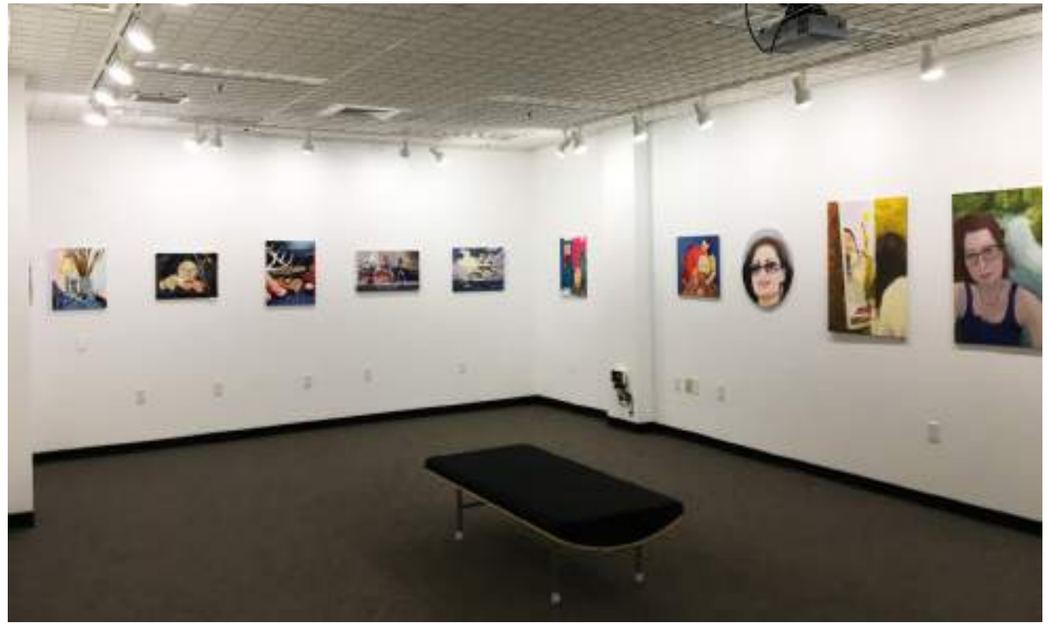
Campus Services
Campus Services is currently located both in Chapman Hall, Founders Hall, and the Maintenance Building. Given the size of the College, the Campus Services are quite modest. Campus Services is one of several areas contributing to the current and projected shortfall of Support Space at Middlesex Community College.

Library
Currently, the Library occupies almost 12,000 ASF. The projected need driven by student space and not collection space is slightly over 12,000 ASF. This total does not include expanding Academic Support functions currently located in the Library. The Library is located in Chapman Hall.

Student Activities
The Student Activities Space at the College is in all buildings, with the exception of the Maintenance Building. This category is both inadequate in the primary location, Founders Hall, and in the secondary locations within the academic buildings.

Student Services
Student Services are housed entirely within Founders Hall. Occupying slightly over 5,000 ASF, the subcategory requires an additional 2,000 ASF to accommodate the related programs and staff adequately.

Technology
The Information Technology Services, which has gone through a period of system centralization, still need expanded space on campus to manage hardware, maintain the network, and provide user support to the College. The expansion required is roughly 100% above the current allocation.



CONCLUSIONS

Raising MXCC to relative parity with the smaller sized Connecticut Community Colleges will require a substantive increase of space at the College. With currently 85,649 ASF, the College needs to add 50,991 ASF. Of this expansion, 85% is required to meet current deficits. The total new construction space required to accommodate the roughly 51,000 ASF additional need is approximately 102,000 GSF. The total additional need is equal to 85% of the current campus.

The following chart illustrates the total current and projected need by 2029.



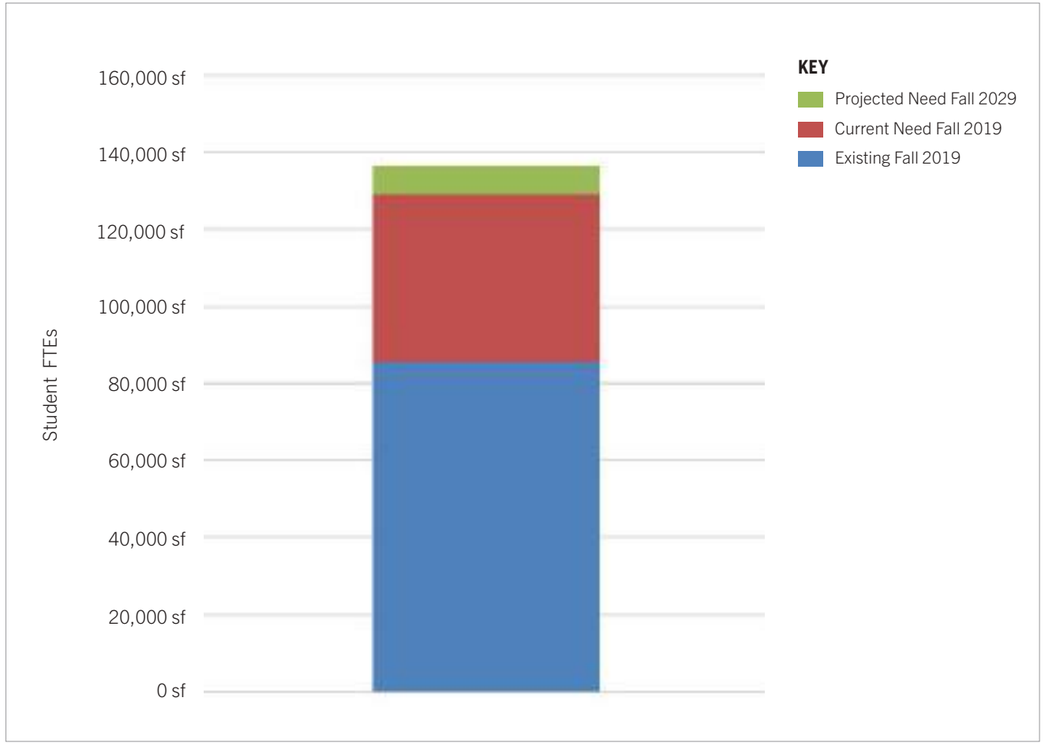


FIGURE 03.12 Existing, Current Need & Projected Need in ASF

REVISED BENCHMARKING

The following chart illustrates both the current and proposed Middlesex Community College benchmarked against the system. Constructing the deficit as defined by the Space Needs Assessment will not place Middlesex Community College at parity with any other community college in the System. While that should be the long-term goal of the College and the System, the SNA is focused on those deficits that are most critical to the immediate and near-term success of Middlesex Community College.

Parity would have required an assessment above 100 ASF per student FTE. While that type of assessment would be useful as a political tool, it would conflate secondary and tertiary needs with the College's primary needs. The goal of this assessment is to provide the College, through the options proposed by the FMP Team, a meaningful, practical path through the next ten years.



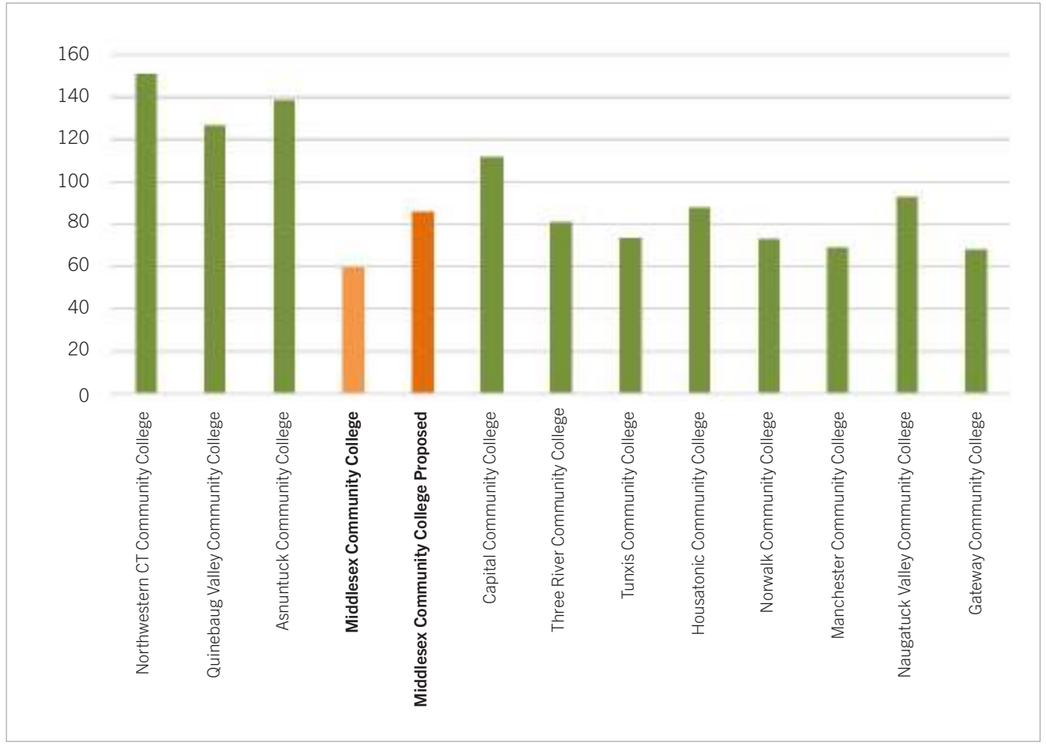


FIGURE 03.13 Benchmarking Across the Connecticut Community Colleges

The following table represents the current and projected needs of Middlesex Community College.

Category	Existing Fall 2019	Current Need Fall 2019	Projected Need Fall 2024	Projected Need Fall 2029
Academic Space				
Classroom	13,300 sf	16,402 sf	17,649 sf	18,545 sf
Computer Lab	4,709 sf	5,437 sf	5,895 sf	6,278 sf
Business & Hospitality	935 sf	1,584 sf	1,345 sf	1,456 sf
Humanities & Creative Arts	6,154 sf	9,239 sf	9,239 sf	9,239 sf
English	1,259 sf	2,722 sf	2,862 sf	2,970 sf
Health Careers	2,695 sf	5,300 sf	5,300 sf	5,300 sf
Mathematics	685 sf	2,725 sf	2,858 sf	2,879 sf
Social Sciences	1,702 sf	1,923 sf	2,063 sf	2,188 sf
STEM	6,137 sf	13,625 sf	16,775 sf	16,925 sf
Total Academic Space	**37,576 sf**	**58,956 sf**	**63,986 sf**	**65,780 sf**
ASF per Student FTE	*26.6 sf*	*41.7sf*	*41.8 sf*	*41.2 sf*
Support Space				
Academic Support	2,093 sf	2,996 sf	2,996 sf	2,996 sf
Administrative Services	5,279 sf	6,264 sf	6,264 sf	6,264 sf
Assembly & Exhibition	5,405 sf	11,805 sf	11,805 sf	11,805 sf
Campus Services	6,010 sf	9,648 sf	9,648 sf	9,648 sf
Library	11,932 sf	12,345 sf	12,345 sf	12,345 sf
Student Activities	9,545 sf	15,900 sf	16,200 sf	16,500 sf
Student Services	5,252 sf	7,152 sf	7,152 sf	7,152 sf
Technology	2,193 sf	4,150 sf	4,150 sf	4,150 sf
Total Support Space	**47,709 sf**	**70,260 sf**	**70,560 sf**	**70,860 sf**
ASF per Student FTE	*33.8 sf*	*49.7 sf*	*46.1 sf*	*44.4 sf*
Vacant Space	*364 sf*	*0 sf*	*0 sf*	*0 sf*
Total Assignable Square Feet	**85,649 sf**	**129,216 sf**	**134,546 sf**	**136,640 sf**
ASF per Student FTE	*61 sf*	*91 sf*	*88 sf*	*86 sf*
Student FTEs	*1,412.87*	*1,412.87*	*1,530.00*	*1,595.00*

TABLE 03.1 Summary Space Table

PARKING NEEDS

After thorough consultation with College stakeholders and analysis of parking conditions across the 2019 Fall semester, it became clear that Middlesex has no need for additional parking. At the start of each semester, lots are nearing capacity, but spaces are always available. Later in the semester, parking demand reduces somewhat. While some growth in enrollment is expected in the next 10 years, the level would be consistent with prior years when parking supply was sufficient.

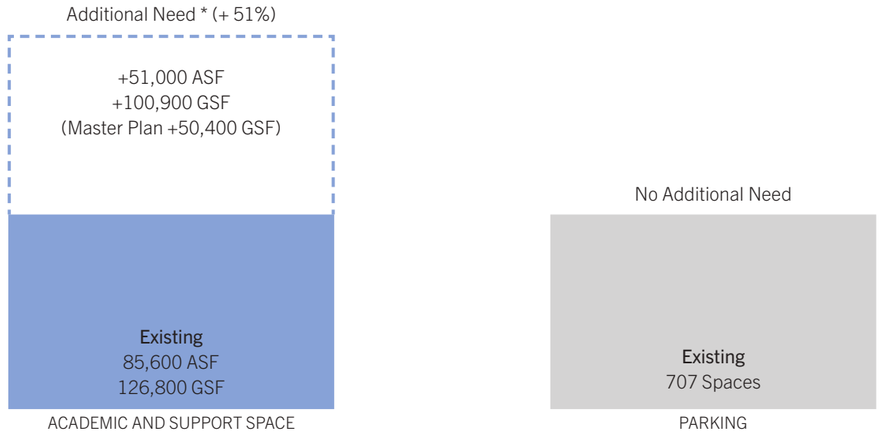
Parking distribution can be a source of concern on campus. At times, the upper lot reaches full capacity. This is because it is in higher demand by students accessing Snow and Wheaton Halls which contain the majority of academic spaces. But when the upper lot is full, the lower lot is not. The extra 5-minute walk from the lower lot to Snow may be seen as an inconvenience by some. But it is not justification for investment in expanded parking.

Long term, if some of the parking area were used as a building site, replacement parking would be needed to maintain sufficient capacity.





NEEDS SUMMARY



**Near + Long Term*

FIGURE 03.14 Space Needs Summary

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4 RECOMMENDATIONS

INTRODUCTION

PLANNING PRINCIPLES + STRATEGY

MASTER PLAN SUMMARY

- MASTER PLAN RECOMMENDATIONS
- ACCESS
- LAND USE

BUILDING PROJECTS

- SNOW-WHEATON RENOVATION & STEM ADDITION
- FOUNDERS RENOVATION & ADDITION
- MAINTENANCE BUILDING

OPEN SPACE + INFRASTRUCTURE PROJECTS

- SNOW-WHEATON STEM SITE IMPROVEMENTS
- FOUNDERS ADDITION ENTRY PLAZA AND LOWER LOT IMPROVEMENTS

MEP INFRASTRUCTURE PROJECTS

- ENERGY MASTER PLAN
- MASTER PLAN MEP RECOMMENDATIONS

GUIDELINES

- ARCHITECTURAL CHARACTER
- SUSTAINABILITY

IMPLEMENTATION AND COST

- PROJECT PRIORITIES
- PHASING AND PROJECT SEQUENCING
- COST ESTIMATES

LONG-TERM FRAMEWORK

CONCLUSION

MASTER PLAN TEAM

INTRODUCTION

INTRODUCTION

Twenty-eight years after the completion of the last buildings at Middlesex with Chapman Hall and the Maintenance Building in 1992, the campus is due for a Master Plan Update.

Compared to its peers, MxCC has a significant space deficit. This master plan takes steps to cure this deficit, and to address the College's other facility needs. The 2020 Master Plan Update reflects a comprehensive analysis of the College's current site and building conditions and space requirements. The Plan envisions transformative renovations and additions to improve identity, connectivity and function.

While some of the Master Plan recommended plans have specific rooms indicated, it is important to note that they are concepts. The final space program and design will follow after the Master Plan when implemented. Additional study, analysis and consultation are needed before the floor plans are finalized.



Existing Aerial View of MxCC

PLANNING STRATEGY + PRINCIPLES

The Master Plan Team synthesized the following Planning Principles from analysis of the College and input from the CMPAC and other stakeholders. The Plan Strategy emerged over the course of the project, responding to priorities, projected resources and a singular opportunity. Together, these frame the nature and approach of the Master Plan recommended projects.

Plan Strategy

1. Optimize the use of existing facilities through select renovation / addition projects to address MxCC's high priority needs.

2. In the long term, expand facilities incrementally and sustainably to support MxCC's academic and student needs to create a more unified campus, and to provide facilities comparable to its peers.

Planning Principles

- Renew older facilities to improve function and appearance
- Use additions as swing space to enable renovations
- Make better use of MxCC's beautiful campus setting
- Expand facilities and property over time to strengthen sense of place and create a cohesive campus
- Prioritize facility improvements that will support student recruitment and retention



MASTER PLAN SUMMARY

MASTER PLAN RECOMMENDATIONS

The site plan below illustrates the projects recommended in the 10-year Master Plan Update for Middlesex Community College. They reflect a mix of projects for buildings, open space and infrastructure. The following sections describe each project in more detail.

The overall first impression may be that there is minimal change to the campus. Circulation and open spaces in most areas remain largely as they are today. There are no new, large free-standing buildings. The reality is that the Master Plan will have significant impact. Major needs are met by renovation and incremental expansion through strategically-placed additions. The site is transformed at the campus entry and core with new building entries. The apparent modest nature of the Plan reflects the need to do more with less during a period of constrained funding. The Plan also lays the path for further transformation in coming years as resources come available.



KEY

A1 Snow-Wheaton STEM Addition / Renovation Phase 1
A2 Snow-Wheaton STEM Addition / Renovation Phase 2
B Founders Addition / Renovation
C Maintenance Building Renovation
D Lower Lot Site Improvements
E Relocated Veterans Garden
F Long-term Property Acquisition
* Miscellaneous MEP Infrastructure Upgrades

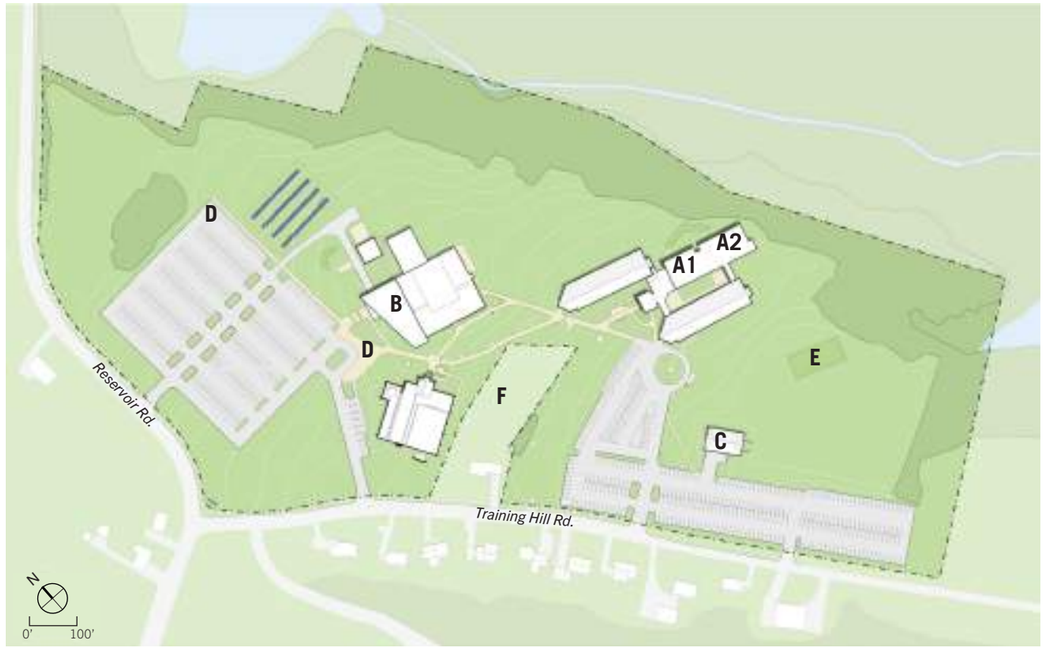


FIGURE 04.1 10-Year Master Plan Recommendations

ACCESS

Campus access is unchanged, with some refinements to vehicle circulation inside the property. The main entrance off Training Hill Road, which leads to the lower parking lot, remains. (The following section Open Space and Infrastructure / Circulation describes refinements to this entry drive and drop off.) The upper lot entries off Training Hill Road likewise remain unchanged.

The Plan recommends one small, but impactful improvement for access related to campus signage. Today the campus entry sign is invisible when driving up Reservoir Road toward the campus, since it is set back from the view (see photo at right). The sign should be moved so approaching visitors can identify the College.

Ideally, the sign would be replaced with a more attractive, larger sign whose primary purpose is to identify the College and secondarily to direct traffic to the right to the main campus entry.

KEY

- Main Campus Entry
- Secondary Campus Entry
- Main Route
- Campus Drive
- Secondary Route
- S Service/ Loading



View coming up from Reservoir Rd. towards Training Hill Rd.



View of MxCC Sign

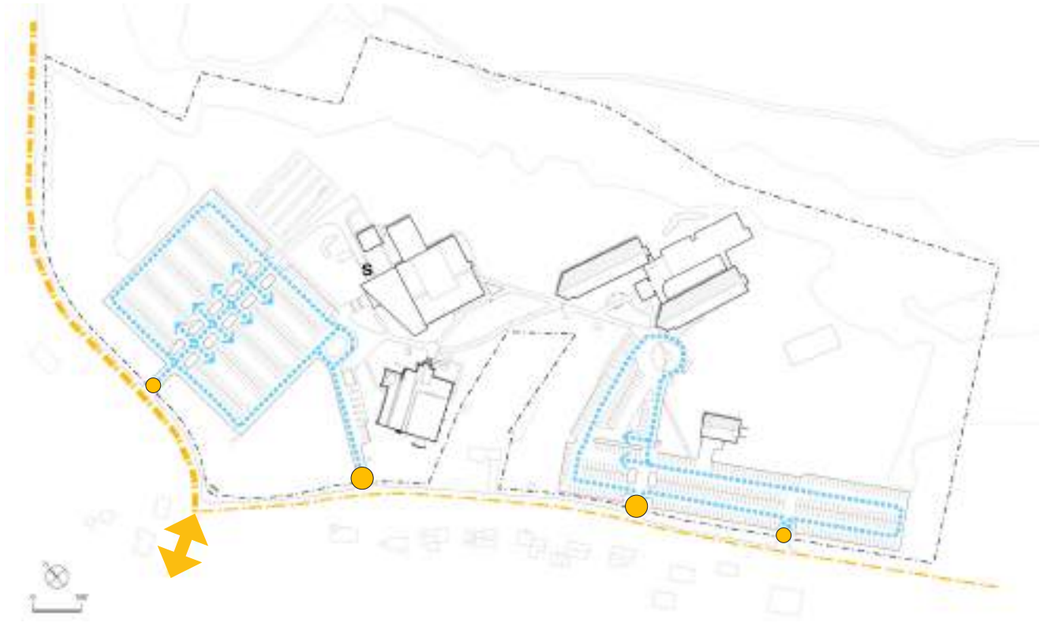


FIGURE 04.2 Campus Access Diagram



Aerial view of other property



Street view of 72 Training Hill Rd. property

LAND USE

The Master Plan recommends modest, but high-impact improvements to campus land use.

By Founders Hall facing the lower lot, land used for service is transformed into campus core by relocating the loading dock. The net effect is expanding the campus core so the arrival experience is linked to the heart of the campus, rather than to a view of the loading dock.

The Campus Core is also expanded to the northeast, reflecting the addition connecting Snow and Wheaton Halls.

Eventually, when CSCU is able to acquire the residential property that intrudes into the center of campus, the core can be unified, unlocking multiple opportunities for decades to come.

KEY

- Parking
- Buildings
- Open Space
- Academic Core
- Support / Service



FIGURE 04.3 Campus Land Use Diagram

BUILDING PROJECTS

The site plan below illustrates the extent of the proposed building projects – renovations and additions. These projects reflect the planning strategy and principles. The comprehensive renovations proposed for Founders, Snow and Wheaton reflect the fact that these facilities have not had comprehensive upgrades since they opened 47 years ago.

The total floor area provided in these additions reflects about half the total need for MxCC to address its current and projected space deficit. (See the section below Long-Term Framework for additional information on program and expansion.)



Existing exterior view of Founders Hall



Existing exterior elevation of Wheaton Hall

KEY

A1 Snow-Wheaton STEM Addition / Renovation Phase 1
A2 Snow-Wheaton STEM Addition / Renovation Phase 2
B Founders Addition / Renovation
C Maintenance Building Renovation
New Construction
Comprehensive Renovation
Minor Renovation

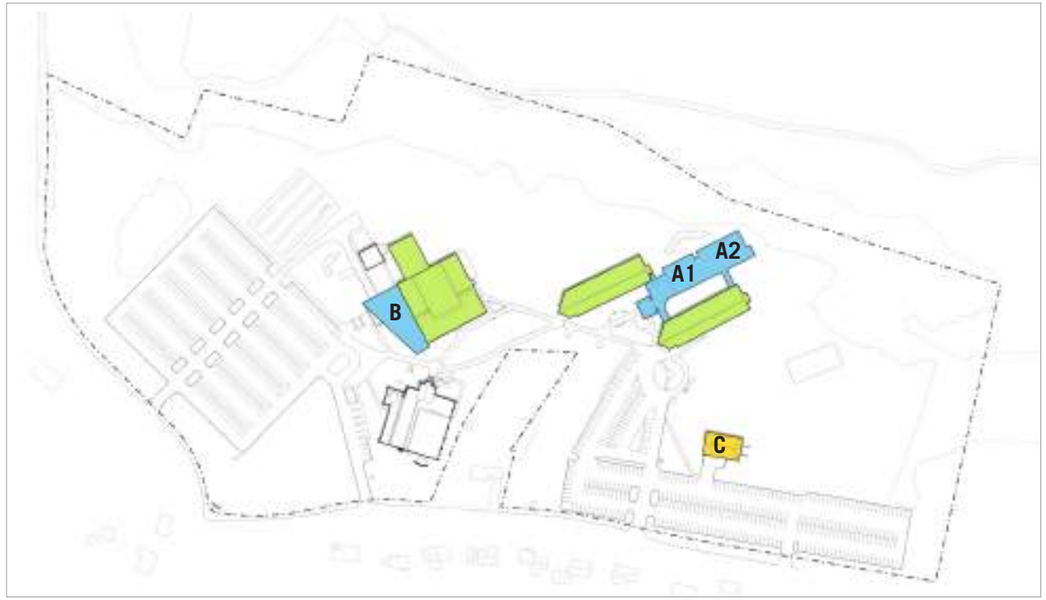


FIGURE 04.4 Building Projects Diagram

SNOW - WHEATON RENOVATION & STEM ADDITION

As the College's two main academic buildings, Snow and Wheaton are out of date and undersized relative to the programmatic need. This project addresses multiple needs in an integrated approach. It connects the buildings so they can function as an effective whole. It provides expansion for STEM labs so these functions can have the footprint infrastructure to meet best practice. Finally, the project allows for the overdue comprehensive renovation of the 1970's era Snow and Wheaton and creates a new entrance.

Connecting two buildings set on a sloping site is a challenge. A connector parallel to Campus Walk would be problematic since it would necessitate expensive utility relocation and have a high percentage of circulation. Instead, the Plan recommends an addition in the middle, to connect in the most direct and economic manner. This connector also acts as a new main entrance, serving the STEM addition beyond and the two flanking buildings. The yellow arrows in the concept diagram below represent enclosed hallways linking to Snow and Wheaton. The dashed line of the STEM addition illustrates how the project could be done in phases if needed based on available funding.

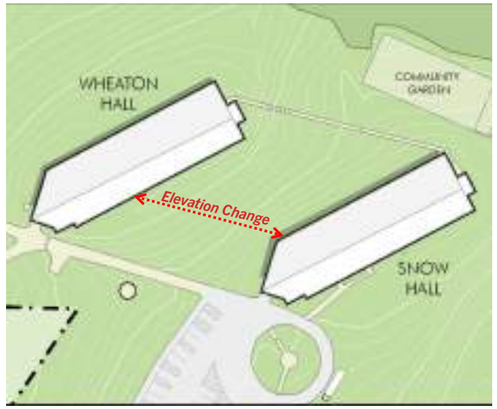


FIGURE 04.5 Existing Snow-Wheaton Site Plan

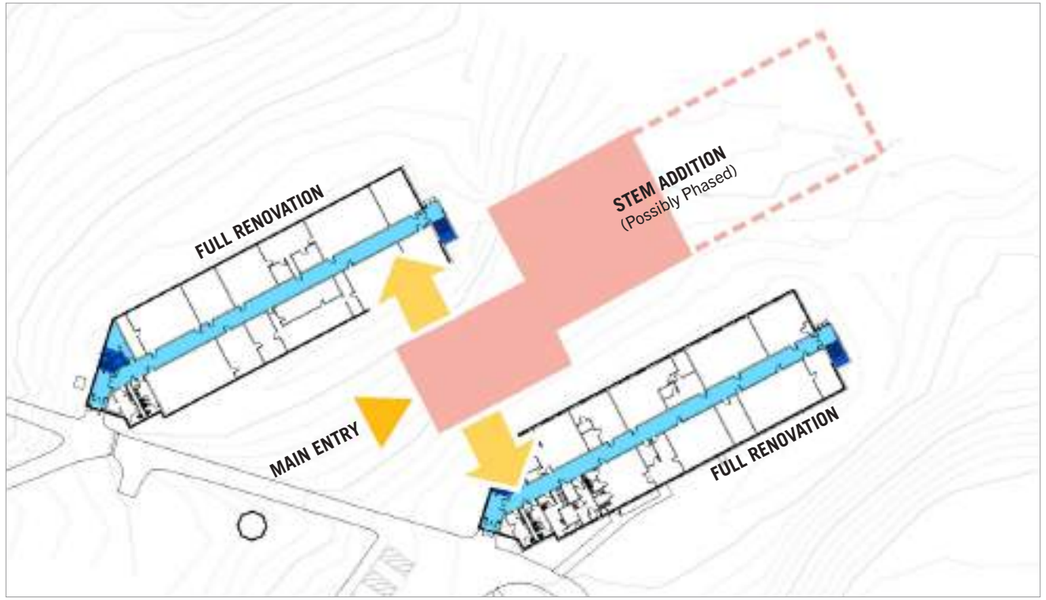


FIGURE 04.6 Snow-Wheaton Addition Concept



Existing conditions between Snow & Wheaton



FIGURE 04.7 Existing Snow - Wheaton Section

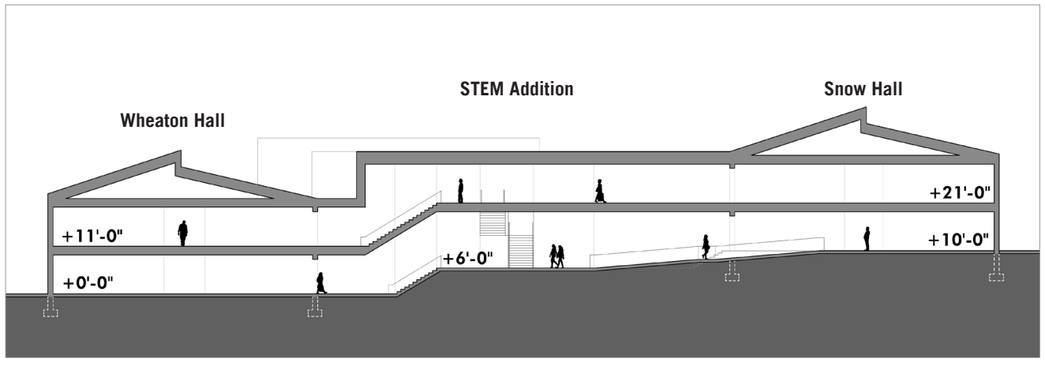


FIGURE 04.8 Proposed Snow - Wheaton STEM Addition Section

The section drawings and photo on the facing page illustrate the current gently sloping site between Snow and Wheaton and the proposed link. The slope is graded to create a terrace at the entry level. An ADA compliant ramp connects the addition to Snow above; stairs and an elevator connect to Wheaton below. The second floor of the addition is set to align with the second floor of Snow, 15 feet above the first floor of the addition. This clearance works well for labs. The second floor of the addition connector is set be below the roof eave of Snow. The addition second floor is higher at the labs for sufficient clearance.

The site plan shows how the new entrance is centered between Wheaton and Snow. The addition then sets back about 43 feet from Snow to form a courtyard for light and air between these structures. The site plan illustrates the entry walk, outdoor terraces and seating and rain garden, described more in the following section on open space projects.



Existing exterior view of Snow Hall and Wheaton Hall

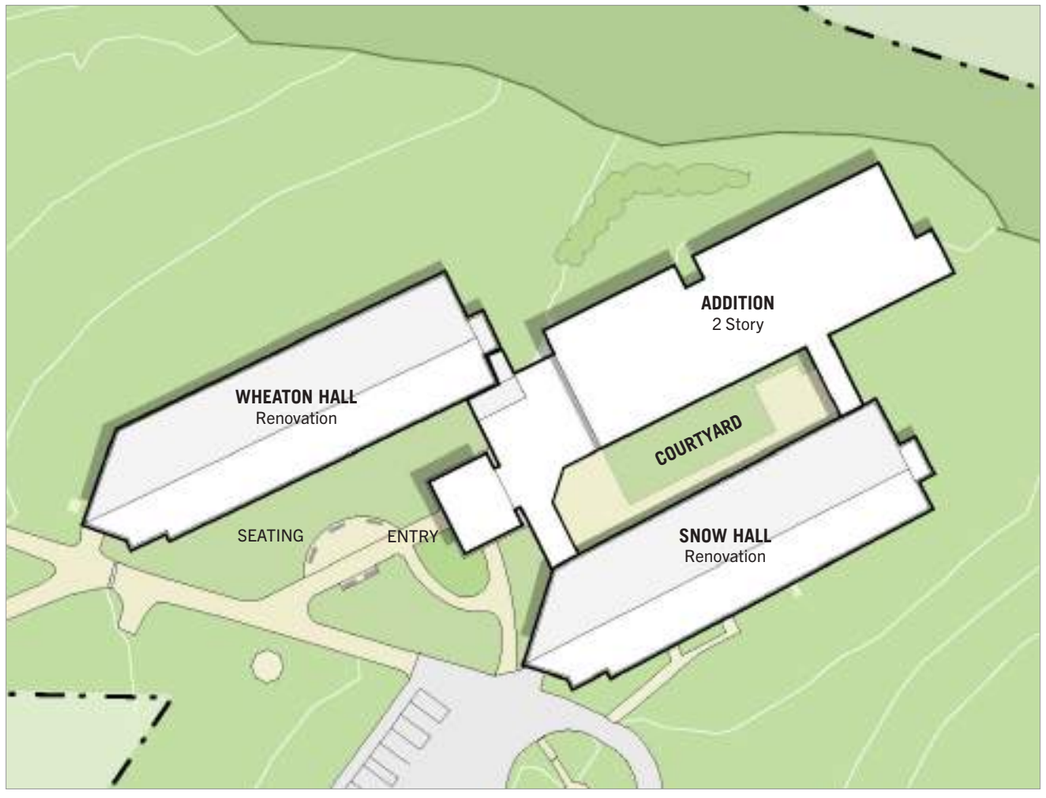


FIGURE 04.9 Proposed STEM Addition Roof Plan

The floor plan below represents the concept for the new and renovated areas at final build out. The new entry leads to a main lobby and views to the courtyard and labs beyond. Labs occupy one side of the hall, with faculty offices on the other side facing the courtyard. Labs, which have greater facility requirements, are relocated from Wheaton and Snow to the new construction. Some labs are new. Space in the original buildings is repurposed to less demanding functions such as classrooms, offices and dry labs (art studios as an example). The long hallways will be upgraded with areas of vision glass so views open up in areas to functions on either side.

The proposed second floor below illustrates the balance of the labs to meet MxCC's STEM program needs. The Student Lounge located in the center marks the main entrance below and serves as an essential amenity for students. Snow and Wheaton have severely undersized lounges today and no food after hours for evening students. The proposed lounge has ample space and a vending wall. This program element provides much needed space to support student well being, collaboration and retention.

PRECEDENTS: NORWALK COMMUNITY COLLEGE SCIENCE LABS





Proposed 1st Floor Plan

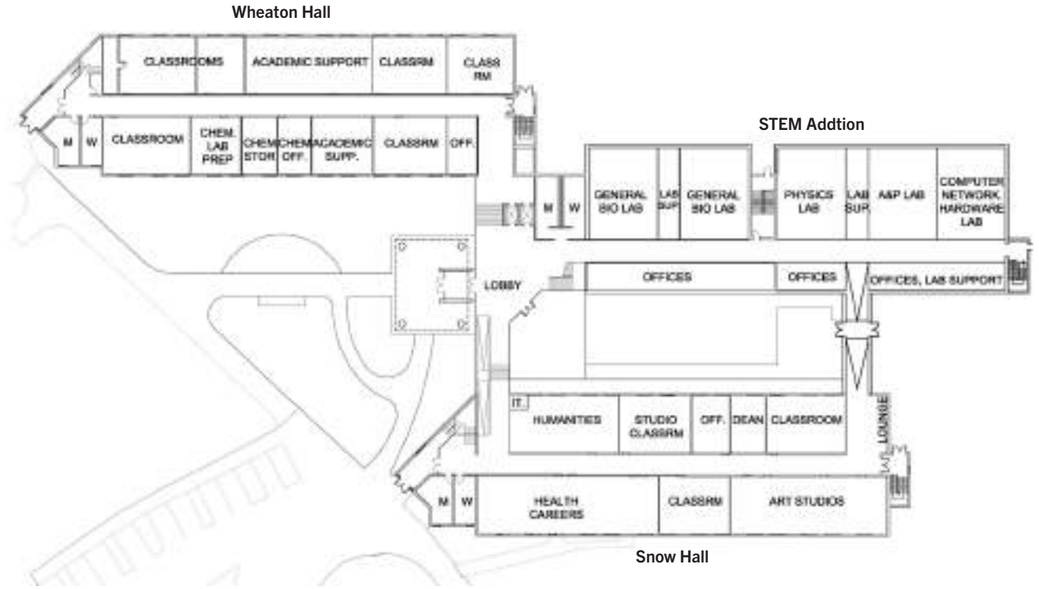


FIGURE 04.10 Proposed Snow - Wheaton STEM Addition 1st Floor Plan

Proposed 2nd Floor Plan

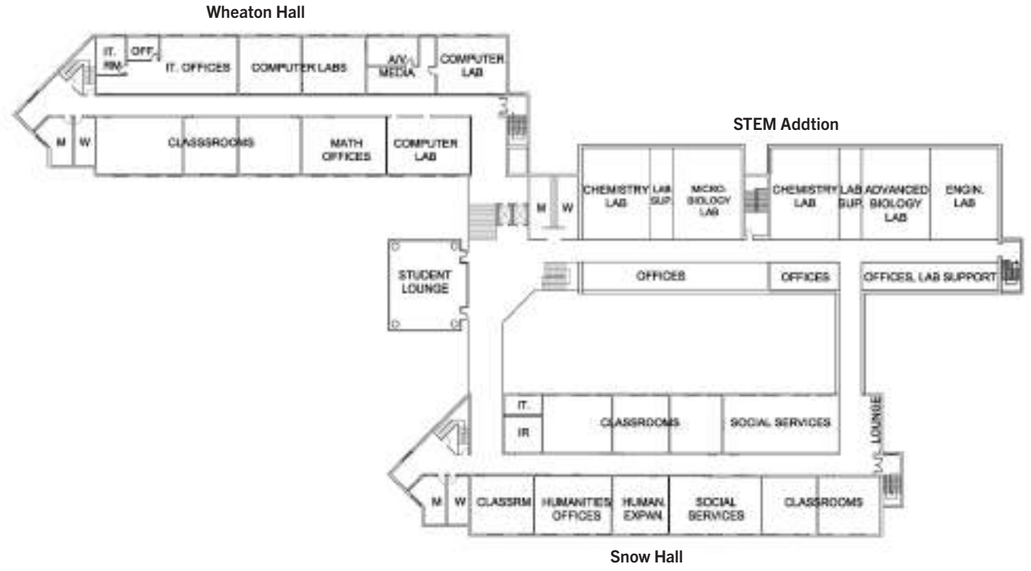
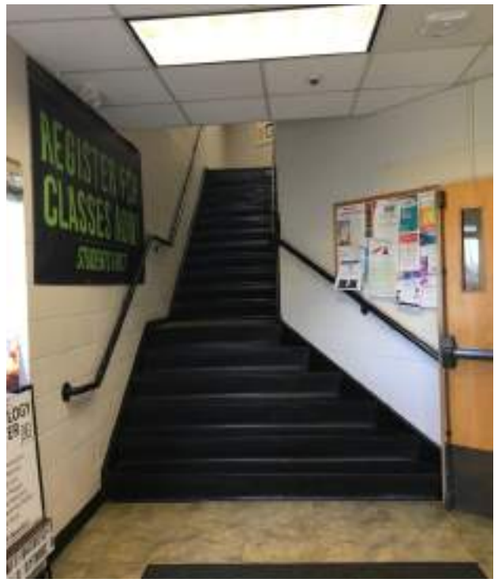


FIGURE 04.11 Proposed Snow - Wheaton STEM Addition 2nd Floor Plan

PHASING CONCEPT

Given MxCC's significant space deficit relative to its current enrollment, the College would like the entire project to be built at one time if funding permits. If sufficient funding were not available, however, the Plan shows how the design concept could be successfully phased in two parts. Phase 1 is illustrated on the opposite page. Phase 2 is essentially the overall plan on the preceding pages. In phase 1, the most needed new labs are built first in the expansion. The core in phase 1 serves phase 2 (plus a new fire stair). Not all areas in Snow and Wheaton need to be gut renovated in phase 1. The light green areas are refurbished, pending more comprehensive renovation later in phase 2.

Since the College has no swing space opportunities, even phase 1 would need to be staged. The diagrams below illustrate how the work could be done in parts to minimize disruption. Stage 1 builds the addition, linking Snow and Wheaton. Stage 2 renovates half of Wheaton, and Stage 3 the balance. Stage 4 and 5 renovate Snow.



Existing entrance staircase in Snow Hall

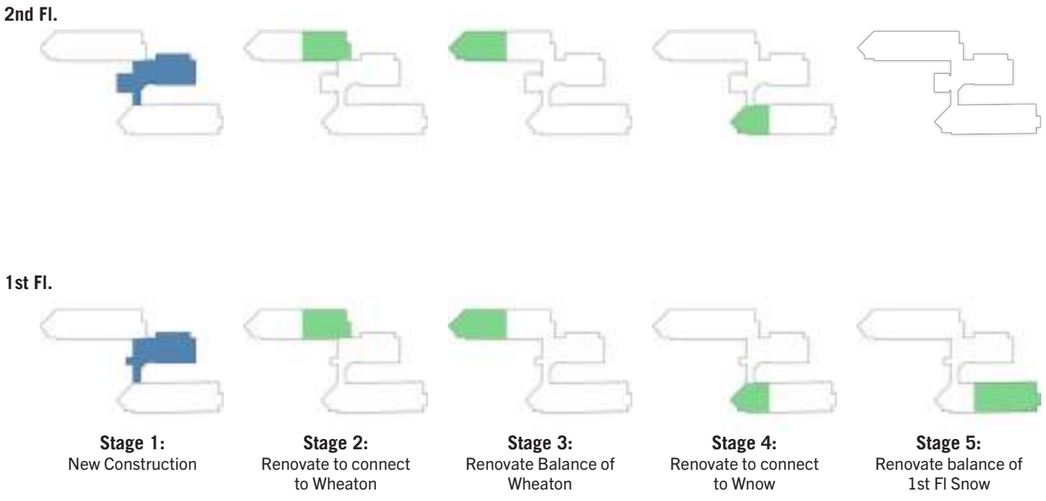
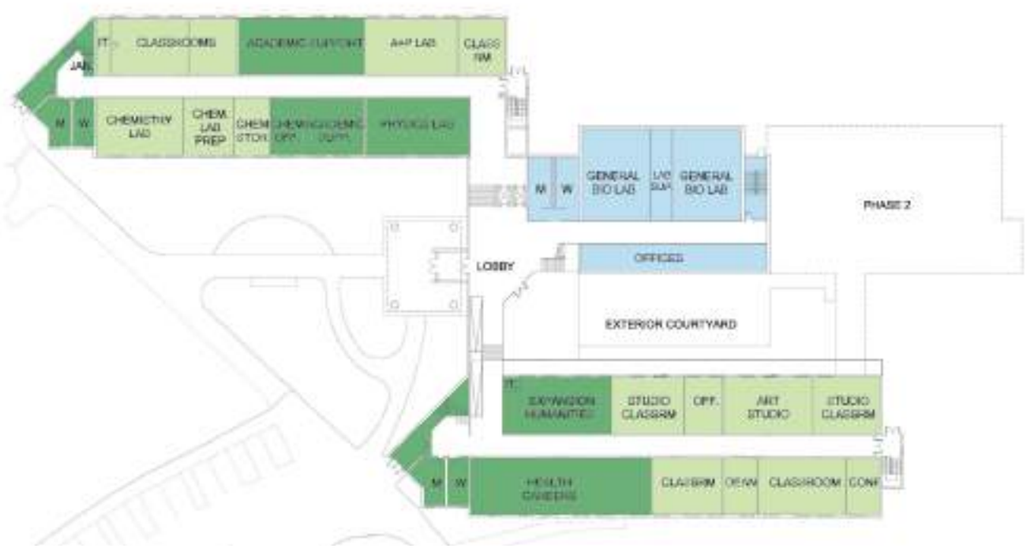


FIGURE 04.12 Snow-Wheaton STEM Addition Staging Diagram

Proposed 2nd Floor Plan - Phase 1



Proposed 1st Floor Plan - Phase 1



KEY
New Construction | Refurbished Area (Light Reno) | Renovation Area (Gut Reno)

FIGURE 04.13 Snow-Wheaton STEM Addition Phase 1 Diagram



Proposed Snow-Wheaton STEM Addition Rendering





Snow - Wheaton Existing Conditions



Proposed Concept Sketch

The concept rendering at left illustrates how the challenge of renewing and linking two outdated buildings can become an opportunity to reimagine the upper campus a vibrant academic hub. The glazed entrance and student lounge above will act as a beacon in the evening. The older buildings can serve as wings to frame the center. Old energy inefficient windows are replaced, but the brick can remain, as it is in good condition. Activity will animate the interior and exterior. The effect will be reframing MxCC's academic facilities to be both functional and inspirational.

FOUNDERS RENOVATION & ADDITION

This project addresses multiple needs and transforms the lower campus to be a more welcoming and attractive setting. The Plan recommends a 2-story addition at Founders to provide a new front entrance to Founders, facing the lower lot, as well as much needed space for student services and support functions. By relocating the loading dock to face north, it largely will screen this service function so it is not a first impression for visitors. The scale of the addition will provide suitable presence and scale as a main entrance. A concept diagram for the addition is illustrated below, and the site plan concept at lower right. The section shows how the 2-story addition connects to the Founders' single level. The upper floor has a good view to the Connecticut River Valley and downtown Middletown.



Existing Founders Hall Loading Dock

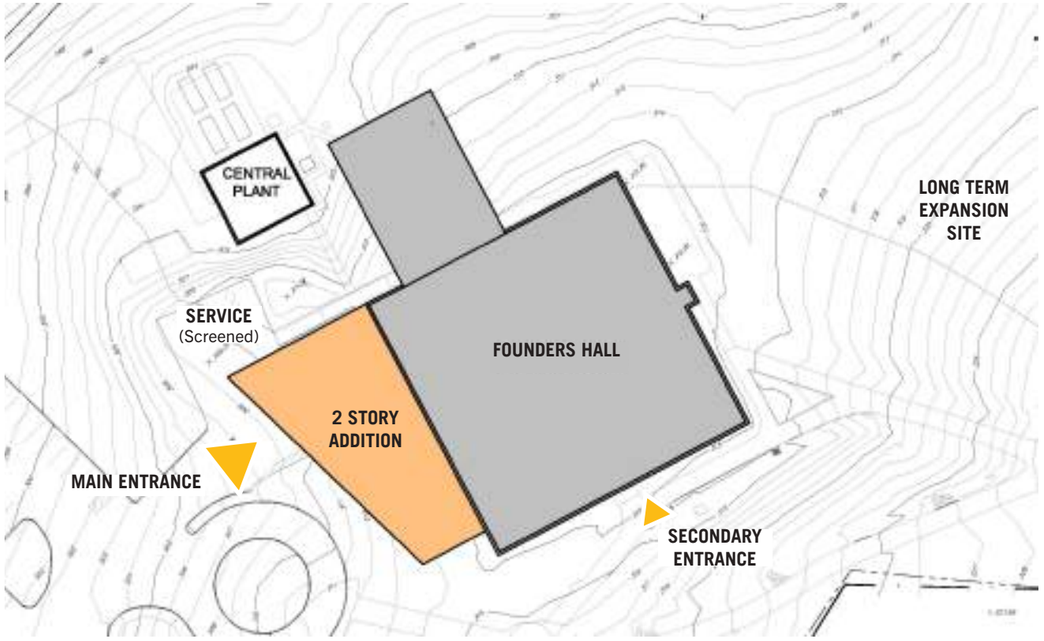


FIGURE 04.14 Founders Hall Addition Concept Diagram

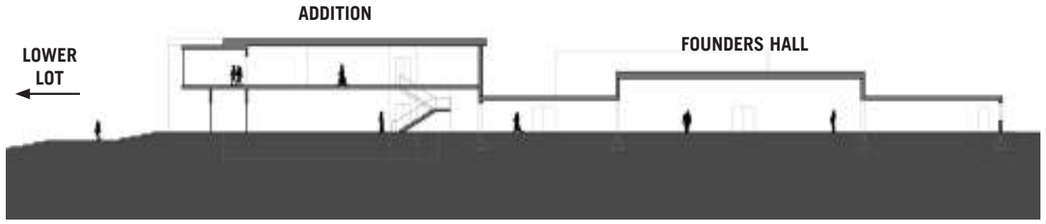


FIGURE 04.15 Founders Hall Addition Section

KEY

A Founders Hall
B Founders Hall Addition
C The Pavilion
D Central Plant
E Main Entrance
F Secondary Entrance
G Reconfigured Drop Off, Plaza
H New Walk
I Rain Garden
J Expanded Drive
K Fuel Tank (Below Grade)
L Relocated Elec. Service



FIGURE 04.16 Proposed Founders Hall Addition Site Plan

Proposed 1st Floor Plan

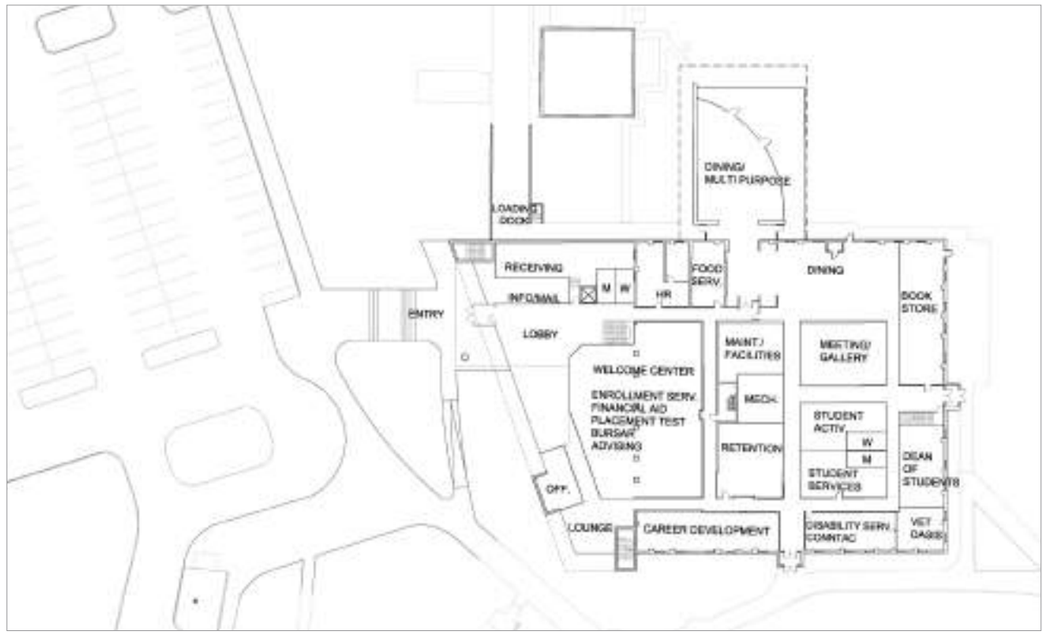


FIGURE 04.17 Proposed Founders Hall Addition 1st Floor Plan

The first floor concept plan above reflects how the main functions could be organized between the addition and the fully renovated Founders. On entering into a new main lobby, the Plan recommends an information desk and a Welcome Center, which can act as a One Stop facility to support recruitment. This area would include departments that interact with prospective students, as shown in the plan. The space needed for these offices would likely need to span between the addition and back into part of the existing building. An open stair facing the entry would lead to the second floor, along with an elevator that can double for passengers and occasional freight use. The receiving area would be set down from the level of the main lobby, to coordinate with the loading dock elevation.

Except for the new Pavilion, the Plan comprehensively renovates the rest of Founders. This will allow not only to replace obsolete finishes and building systems, but also allow a clearer circulation system and a functional reorganization to right-size departments and put them in the most effective location.

The second floor provides a signature space – a student lounge / multipurpose space, overlooking the lower campus. There are adjacent support areas, restrooms and student activity offices. The College's administrative offices will also occupy this level. The current Founder's mezzanine level, with the food pantry and records storage, will be linked to this new floor, providing ADA access for the first time.

Proposed 2nd Floor Plan



FIGURE 04.18 Proposed Founders Hall Addition 2nd Floor Plan

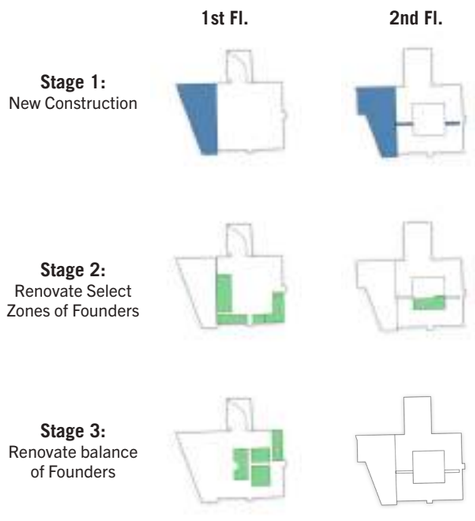


FIGURE 04.19 Founders Hall Addition Staging Concept Diagram

STAGING CONCEPT

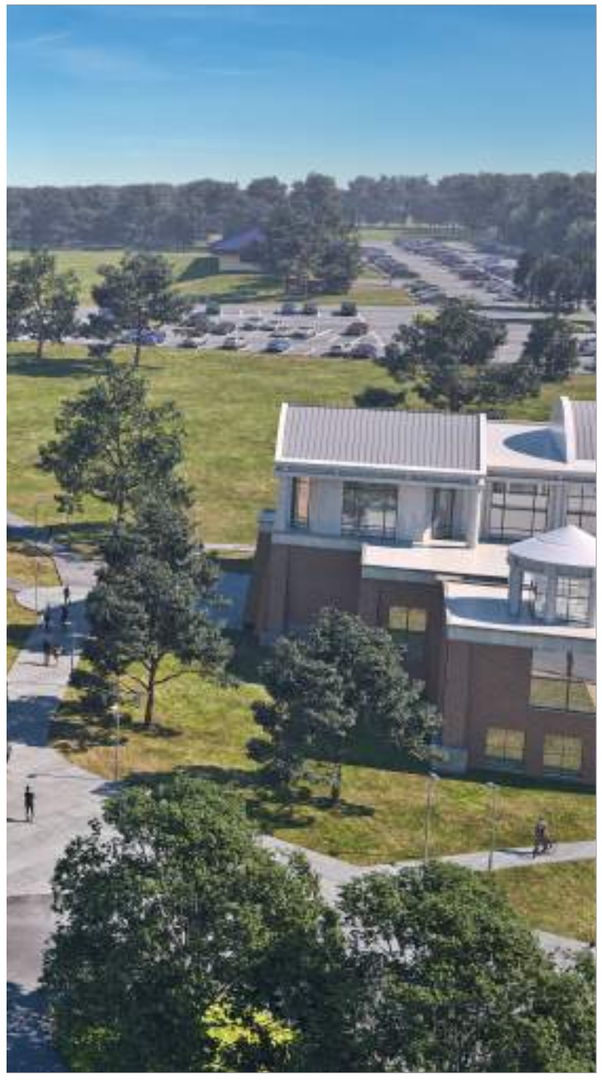
Since there is not sufficient swing space for MxCC to be able to vacate all of Founders and do the entire renovation at once, staging will be necessary. The diagram at left illustrates a possible staging sequence. First, the utilities and loading dock would be relocated and the addition built. Second, some of the existing Founders areas would be renovated, including breaking through the wall to connect new and old. Finally, the balance of Founders areas would be renovated.

KEY

New Construction Refurbished Area



Proposed Founders Addition Rendering





Existing Aerial View

The concept rendering at left illustrates how the Founders Addition could be realized. The exterior wall of the addition is set at an angle in order to leave sufficient space between it and Chapman to create a comfortable threshold into the campus core. The angle of the cantilevered student lounge springs from the geometry of Founders Hall beyond. The expanse of energy efficient glazing will create a welcoming and dynamic appearance, in contrast to the dull brick of Founders today and its loading dock. The brick wall of the new addition can act as a frame for the glazing and relate to Chapman Hall opposite and to Founders behind. (See the following section for more information on the open space recommendations in this area).

MAINTENANCE BUILDING

This service facility needs minor upgrades for energy efficiency, code compliance and operations. Insulation will be installed in the roof, which lacks any now. Obsolete overhead doors will be replaced. In the office area, new LED lighting will be installed and heating and cooling provided.



Existing back view of Maintenance Building



Interior view of existing Maintenance Building



Existing Maintenance Building Entrance

OPEN SPACE + INFRASTRUCTURE PROJECTS

The site plan below illustrates the extent of proposed improvements to campus drives, drop offs, pathways, open space and landscape.

To make space for the STEM addition between Snow and Wheaton, the Veterans Garden will be relocated to the former playing field to the south (A). This area has ample sunlight and space for this amenity, with plenty of room to spare.

The open space facing Campus Walk between Snow and Wheaton will change from an unused lawn to a new entrance plaza with seating, a terrace and landscaping (B).

The area between Snow Hall and the new, 2-story STEM addition will be a landscaped courtyard, accessible for use by the building's occupants and grounds keeping staff (C). The area north the STEM addition will have a rain garden sized to manage the storm water runoff from the new building (D).

The area now occupied by the Founders Hall loading dock will become a new entrance plaza to the Founders Addition (E). As described earlier, the loading dock is relocated to face north, away from the lower lot to enhance the appearance at this campus threshold. These projects are described more on the following pages.



Existing Community / Veterans Garden

KEY

A Relocated Veterans Garden
B New Snow-Wheaton Entrance Plaza
C New STEM Addition Courtyard
D New Rain Garden
E New Entrace Plaza / Relocated Loading Dock

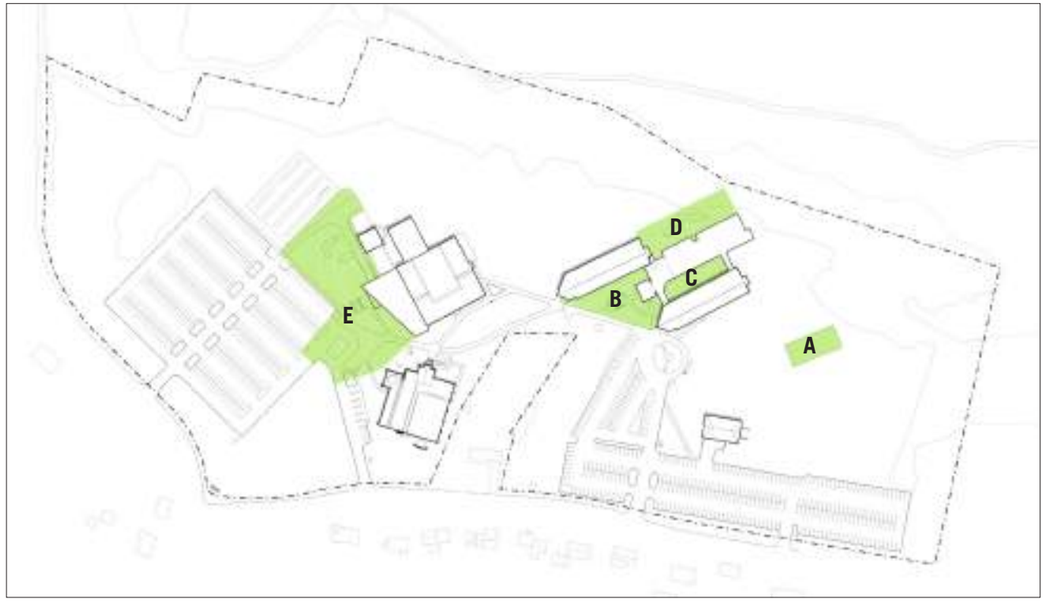


FIGURE 04.20 Open Space + Infrastructure Projects Diagram

SNOW-WHEATON STEM SITE IMPROVEMENTS

Students mentioned Middlesex lacks outdoor space for gathering during nice weather. The STEM addition project is an opportunity to address this in the design of its entrance area. The concept design reflects not only a path to the building entry but also seating areas and terraces to either side. The sloping site is graded so it is level in the center. The resulting sloped area could be planted with low-maintenance ground cover, like pachysandra (with edge treatment to stop spreading). This will both stabilize the slope and provide greenery. Gardens or other planting areas can be near the entrance, if the projected upkeep costs were considered feasible.

The resulting courtyard between Snow Hall and the new STEM Addition is an opportunity for a new usable space to view and to use. The concept reflects a 43-foot wide space, on two levels. A level main area abuts a low retaining wall and upper grass area along Snow Hall. Doors from the main lobby would connect to a terrace with seating at the west end of this courtyard. A path could extend to the east end, with another seating area. If any trees are planted in this courtyard, they should be species that are small at maturity. The College requested that this courtyard have exterior access for grounds keeping. This can be done by a pair of double doors which can both open to allow a small buggy to pass.



Proposed Snow-Wheaton STEM Addition Entrance - Rendering

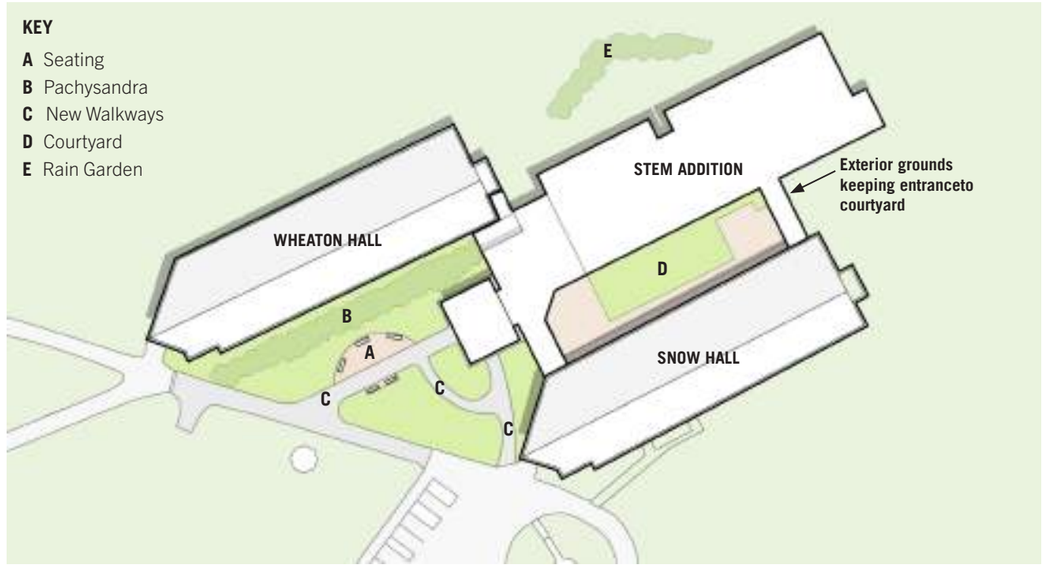


FIGURE 04.21 Snow-Wheaton STEM Addition Open Space Projects

To filter and detain storm water, the STEM Addition includes a site feature to the north, a rain garden. This will need to be engineered once final capacity and soil conditions are determined during the later design phase. This feature would be landscaped with low-maintenance plantings and can act as a design feature in the landscape.

The Veterans Garden would be relocated to the former athletic field to the north, once this area is needed for the STEM addition.

The Plan recommends retaining the Food Pantry in permanent space on the second floor of Founders (now with ADA access) and removing the Magic Bus from the drive near Snow.



Existing Community/Veterans Garden



Existing Magic Bus - to be removed



Existing gazebo near Snow & Wheaton Halls



Existing Athletic Field where Community/Veterans Garden is to be relocated

FOUNDERS ADDITION ENTRY PLAZA AND LOWER LOT IMPROVEMENTS

The Plan recommends reconfiguring the part of the entry drive that connects to the lower lot. Today, this is misaligned – it does not direct vehicles into a travel bay. In future, the access drive will meet the parking lot at a 90-degree angle, directed into the center of the second parking bay. If desired, additional tree pits could be added to the lower lot to green this large paved area more.

The large asphalt drop off today occupies valuable space at the doorstep into the main campus. The Plan provides a reconfigured drop off, more proximate to the parking lot. This allows the area now occupied by the large traffic circle to be used for people and plants- to make a more attractive and welcoming first impression.

The new entry plaza for the Founders Addition, as noted earlier, transforms the campus entry to be more welcoming and attractive. An existing electrical transformer is relocated, along with the loading dock and approach drive. In its place, there will be an entry plaza leading to the new front door of Founders. An ADA compliant ramp, plus a short stairway lead to this door. Improve gardens and plantings can be added near the entrance.



Proposed Founders Hall Addition Site Improvements - Rendering



Existing Founders Hall Loading Dock



View of Existing Entry Drive and Drop-off Area

To collect people from the lower lot, the Plan recommends adding a wide sidewalk with trees along the east edge of the lower lot. This path would extend to the new Founders entrance, then past the new drop off and onward to the center of campus, unifying the site more. Any trees along the north end of this walk would have to be selected so they do not grow high enough to block the solar panels.

To relocate the loading dock, new features are added to ones that exist today. The asphalt drive which extends from the lower lot past the solar field to the Central Plant will be retained and its end expanded to allow delivery trucks to enter and then back into a new loading dock facing north. The dock apron will be partially recessed into the slope with retaining walls. The underground fuel tank will remain with the dock next to it.

A rain garden will be provided, clear of the new electrical service, to manage storm water from the roof of the addition. Plantings can be introduced to provide visual screening.

KEY

A New Traffic Circle
B Entry Plaza
C New Lower Lot walkway
D ADA entrance ramp
E Rain Garden
F New Service Drive
G New Loading Dock
H Tree Pits / Grass

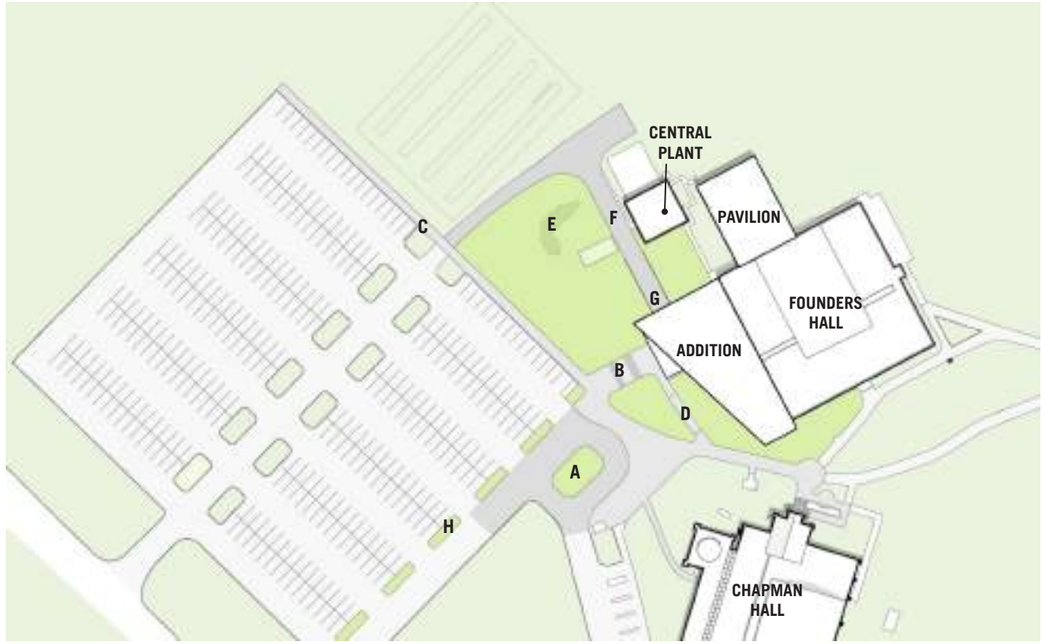


FIGURE 04.21 Founders Hall Addition Open Space + Infrastructure Projects

MEP INFRASTRUCTURE PROJECTS

ENERGY MASTER PLAN

An Energy Master Plan was conducted for Middlesex in 2016. The EMP includes both system-wide and site-specific recommendations for energy conservation measures (ECMs), procurement, renewable energy and policies. The Energy Master Plan chapter for MxCC with its detailed findings and recommendations is included in the Technical Appendix. It includes sixteen Energy Conservation Measure (ECM) recommendations.

MxCC's Energy Use Intensity (EUI) at it site was 117 kbtu/sf. This is slightly higher than the Northeast median for colleges and universities, 104 kbtu/sf. At that time, MxCC had the third highest energy use per square foot of CSCU community colleges. This may be in part because most of the College's buildings date to the early 1970's. MxCC's energy cost per square foot at $3.65 kbtu/sf/yr, significantly higher than the CSCU college average of $2.49. Since then, the CSCU has installed a PV array at MxCC through a power purchase agreement (PPA). Energy costs should be lower as a result.

MxCC uses fuel oil for heating. Conversion to lower carbon natural gas should be considered if feasible.

MASTER PLAN MEP RECOMMENDATIONS

The scope for HVAC, electrical, plumbing and fire protection can be understood in two parts. The first is changes to distribution to coordinate with planned renovations that reconfigure layouts. The second is infrastructure upgrades.

MEP/FP Project Scope

Snow Wheaton STEM, Phase 1

The new lab building will be served by hot and chilled water from the Central Plant, linked to rooftop air handling units which will be enclosed in weather resistant enclosures. Variable Air Volume (VAV) boxes will be used for the 6 building zones. The existing Central Plant has sufficient boiler capacity for Phase 1 and Phase 2. Additional chiller capacity is needed at the Central Plant, as included in the cost estimate. New construction will have full fire protection. The new HVAC equipment and electrical service will serve the renovated Snow and Wheaton wings. Existing restrooms will be gut renovated with all new fixtures and finishes and to be ADA compliant. New fire protection would be extended from the existing water storage tank to provide sprinkler coverage for the new addition as well as be routed through Snow and Wheaton to provide coverage for those buildings.

Snow Wheaton STEM, Phase 2

The scope for the second phase will be similar to Phase 1, with ongoing renovations to Snow and Wheaton and new equipment for the extended addition. For additional technical information on MEP scope, refer to the separate Technical Appendix.

Founders Hall Addition Renovation

This project requires the relocation of the existing pad mounted electrical transformer away from the planned new entrance to the north and new main electrical distribution panel. Inside the building, all new fire alarm appliances are needed, new receptacles and new HVAC controls. To serve the addition, a new roof mounted air handling unit will be provided with energy recovery. The existing Central Plant has sufficient capacity to serve this addition, following the capacity upgrades for the STEM addition. For additional technical information on MEP scope, refer to the separate Technical Appendix.

Maintenance Building

MEP upgrades to this 1992 building include adding a new 2-ton split system to serve the occupied office space and new LED lights.

Infrastructure Upgrades

Founders Hall Air Handling Units

The 8 indoor Air Handling Units (AHUs) at Founders are near end of life and need replacement. The new equipment units will be provided with chilled water cooling coils and hot water preheat coils. The units and sizes are as follows: AHU-1: 2,550 CFM; AHU-2: 1,500 CFM; AHU-3: 2,000 CFM; AHU-4: 4,500 CFM; AHU-5: 2,300 CFM; AHU-6: 2,300 CFM; AHU-7: 4,500 CFM; AHU-8: 4,500 CFM.

Fire Protection Service

A new 4" diameter water line for fire protection is needed to serve Wheaton, Snow and Founders. This must connect to the main campus fire pump and tank. Fire protection for Snow and Wheaton could be installed as part of the new addition.

Chapman Hall

Chapman is not served by the Central Plant chillers, but rather has its own cooling plant. A part of this, its cooling tower, is near end of life and requires replacement. A new 120-ton low profile unit is needed.



View of Existing Central Plant



View of Existing PV Array

GUIDELINES

ARCHITECTURAL CHARACTER

Since Middlesex does not have a defining architectural style today, the Master Plan does not recommend that one apply to the two proposed additions. Rather each addition should respond to its site and campus context in its massing and materials. In this way, the buildings and campus will have more visual cohesion and harmony.

The front of the STEM Addition should be distinctive and welcoming. As an infill addition that creates a new entrance, it should be open and dynamic - not opaque brick. A transparent center will be a positive counterpoint to the prosaic older wings on either side. High-efficiency glazing at the entry, student lounge and connecting corridors will visually activate the entry court, as suggested in the rendering. The building's base and terraces should be brick, as a reference to the existing campus buildings.

The rear areas of the STEM addition (not shown in the rendering) can have far less glazing, to be more energy-efficient and cost effective. Ribbon or punched windows could provide light and views for lab and office spaces. Insulated metal panels could comprise the rest of the walls, possibly in a color to compliment the nearby brick of Snow and Wheaton.

The Founders Hall addition entry should also have ample high-efficiency glazing to provide a more transparent, welcoming appearance facing the arrival area with dynamic interior views. In the evening, this will act as a beacon when seen from the lower lot, marking the new "front door" to Middlesex. The Master Plan recommends brick for the rest of the addition exterior, rather than the panels used on the Pavilion. The new Founders and Chapman should appear as a cohesive ensemble at the threshold into the campus. By using brick, it will visually tie these two buildings together, even though their architectural styles will be distinct.



Existing Wheaton Hall - Exterior Brick



Existing Founders Hall - Exterior Brick



Existing Founders Hall Pavilion

SUSTAINABILITY

The graphic below summarizes how the Master Plan Update for MxCC integrates sustainable design throughout the planning. As each recommended concept project is implemented, more specific goals and metrics can be set and measured. The planning team encourages a level of sustainability in new construction that "aims high" to exceed minimum energy requirements. This is especially important for science labs which are significant energy users. By taking a proactive approach to managing energy use in the STEM addition from the outset in design, it will serve the College well in coming years by reducing the increase in operating costs.



Building:
CT High Performance Building Standards

Reuse existing buildings



Land:
Compact development
Minimize sprawl
Retain woodland and open space



Stormwater:
Rain gardens with additions to manage stormwater quanitity and quality



Landscape:
Retain woodland and open space
Decrease impervious area at entry to core
Increase usable open spaces



Transportation:
Encourage continued bus access
Explore viability of shuttle to MxCC @ Platt



Energy:
Continue to implement CSCU Energy Master Plan recommendations
High efficiency gas-fired boilers at Central Plant
Potential PV array expansion long term

IMPLEMENTATION AND COST

PROJECT PRIORITIES

It was challenging to assign priorities for Middlesex since the College's needs span across many areas. After review of the needs and consultation with the College Master Plan Advisory Committee, the consultant team assigned needs into Priority 1 and Priority 2 categories, as listed below.

Priority 1 projects are essential needs that should have the most positive impact on recruitment and retention. They are embodied in the Snow Wheaton STEM project. Priority 2 projects are largely addressed in the Founders Hall project.

Priority 1

- STEM
- Health Careers
- Student Lounge / Activity
- Classrooms
- Faculty Offices
- Student Services

Priority 2

- Student Activities
- Food Services
- Bookstore
- Maintenance
- Gallery



PHASING AND PROJECT SEQUENCING

The Snow Wheaton STEM project is the most important project to implement first, since it addresses the highest priority needs. If the entire project cannot be funded at once, it can be phased on two parts, as shown earlier, and as framed in the cost estimate which follows in the next section.

The Founders Hall addition renovation, also addressed key needs, but is secondary in priority.

Other, lower cost projects for infrastructure upgrades can be implemented as funding comes available. Their sequence is more flexible.

KEY

1 Snow-Wheaton STEM Addition Phase 1
2 Snow-Wheaton STEM Addition Phase 2
3 Founders Hall Addtion

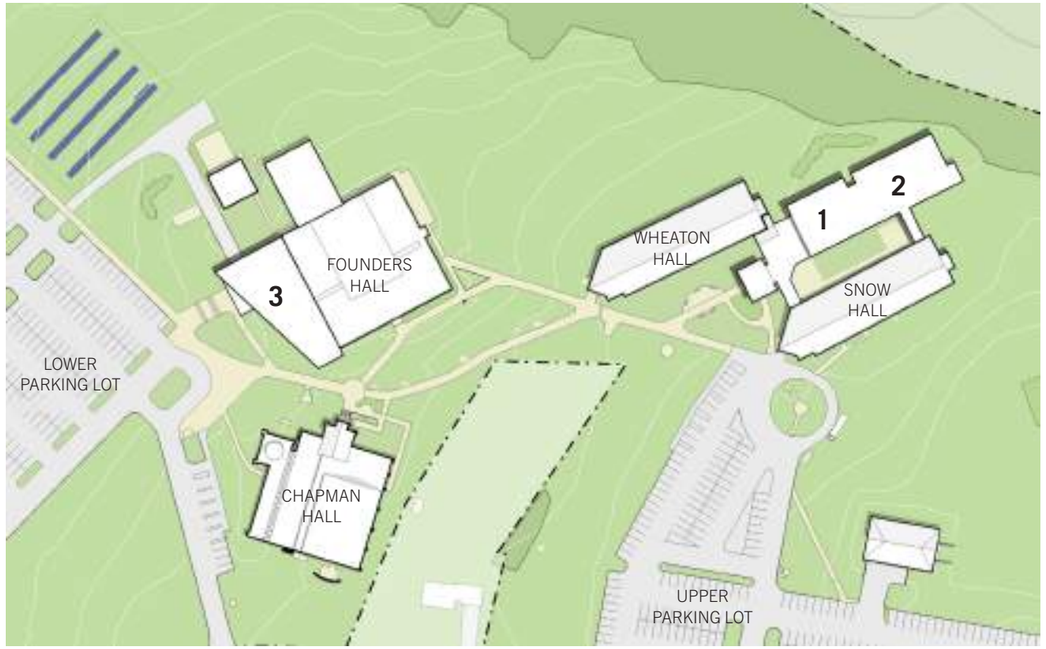


FIGURE 04.22 MxCC Project Phasing & Sequencing Site Plan

COST ESTIMATES

The Planning Team prepared order-of-magnitude cost estimates for the Master Plan recommended projects. The estimates were based on the space program and conceptual site, building and renovation projects noted above. The basis of the estimate reflects the following approach/ assumptions at right. Given the broad, preliminary scope of Master Plan projects, and the fact that needs, conditions, and priorities can change over time, it is important to review and refine program and budget assumptions prior to implementation.

Assumptions

- Project Cost
  - 45% : New Construction and Renovations
  - 30% : Roads / Parking / Open Space
  - 30% : Infrastructure
- Labor costs included at local union rates
- Long lead items can be purchased to meet schedule requirements
- Figures reflect 2020 Bid Date
- Once project bid date known, budget figures to be escalated to reflect inflation

Markups

General Conditions, General Requirements, Insurance & Bond, Permits	15%
Construction Manager Fee	4%
Construction Contingency	Excluded
Escalation	Excluded
Project Cost markup on Construction Cost	45% (per CSCU Guidelines)
FFE, Technology and Equipment	5-15% (Included in Project Cost Markup)

Cost Estimate

Projects	GSF	Construction Cost	Project Cost
Snow Wheaton STEM Addition, Phase 1			
Addition / New Construction	18,900	$10,173,700	$14,751,865
Wheaton Interior Renovation, Floors 1+2	24,140	$7,453,425	$10,807,466
Snow Interior Renovation , Floor 1, partial 2	12,370	$4,119,192	$5,972,828
Sitework and Landscape	NA	$463,525	$672,111
Snow and Wheaton widow replacement	NA	$252,000	$327,600
Chiller Plant Upgrade	NA	$295,000	$383,500
Subtotal S/W Phase 1	55,410	$22,756,842	$32,915,371
Snow Wheaton STEM Addition, Phase 2			
Addition / New Construction	14,860	$8,387,580	$12,161,991
Snow Interior Renovation , Floor 2	11,770	$3,661,460	$5,309,117
Subtotal S/W Phase 2	26,630	$12,049,040	$17,471,108
Founders Addition / Renovation			
Addition / New Construction	16,600	$7,835,600	$11,361,620
Founders Hall Renovation (excl. Pavilion)	22,950	$6,303,308	$9,139,796
Relocate Electrical Service, Transformer	NA	$135,000	$195,750
Building Entry Plaza, Relocated Loading Dock, Sitework and Landscape	NA	$242,235	$314,906
Subtotal Founders	39,550	$14,516,143	$21,012,071
Maintenance Building Energy and Door Upgrades			
Insulation, HVAC, Replace overhead doors		$142,500	$206,625
Open Space and Infrastructure Projects			
Reconfigued Lower Lot Drop off, Entry Plaza , walkway and landscaping	NA	$805,795	$1,047,534
Replace Air Handling Units, Foundars Hall (8)	NA	$225,000	$292,500
Add new 4-inch Fire Protection Services to Founders, Snow	NA	$125,000	$162,500
Cooling Tower Replacement, Chapman Hall	NA	$495,000	$643,500
Subtotal	NA	$1,650,795	$2,146,034
Total / 10-Year Projects		**$51,115,320**	**$73,751,209**

LONG-TERM FRAMEWORK

While the timeframe for this Master Plan is 2020 to 2030, it is important to consider how long-term opportunities might influence near term site and building development. In this way, proposed projects can set the stage for later improvements, and integrate with a larger vision for the campus. We summarize two long-term frameworks: development and open space. A framework in its nature is more flexible and less prescriptive than a master plan. In this way, it is more flexible to address future unknowns.

Development

The table below summarizes the expansion included in the STEM Addition and Founders Addition projects. It is notable that another 49,000 GSF approximately is needed to meet the recommended total in the space needs assessment. Another building or buildings are needed to meet this need eventually.

	ASF	GSF	ASF/GSF
Existing Area	85,600	126,800	68%
Projected Need	136,600	227,700	60%
Expansion Need	51,000	100,900	51%

	GSF
Snow-Wheaton Addition Ph.1	12,700
Snow-Wheaton Addition Ph.2	21,300
Founders Addition	18,000
Long-Term Project	48,900
Total	100,900

Middlesex is fortunate to have plenty of land to locate another large building, even without the acquisition of the residential property that intrudes into the campus core. But new buildings must be located in the right place for them to function well. A site that is integrated into the campus is far preferable to one at the fringe that is disconnected. For this reason, the Plan recommends the site just north of the Maintenance Building for the next free standing building. This site has several advantages. It is not necessary to acquire more property. It has minimal parking impact. Most importantly, it sets frames the central campus open space which some day can act as a defining iconic campus quad.

Open Space

MxCC's campus has never had a clear vision. Its buildings were sited in a pragmatic way, where the parts do not make a greater whole in terms of a "public realm". As the College evolves in coming years, the opportunity should not be missed to create a more cohesive, attractive campus. This can be done by a more intentional approach to locating buildings to frame open space – a hallmark of memorable college campuses. A new central quadrangle, surrounded by attractive buildings, can be Middlesex's iconic space. This can be achieved once the residential property is eventually acquired. Parking is relocated from the center of the campus to the south field. A variety of building sites are possible. Creating a central quad can only happen, however, if each new building is conceived with this larger vision in mind.

KEY

A New Campus Quad
B Long Term Project
C Relocated Parking
D Potential Future Building Sites

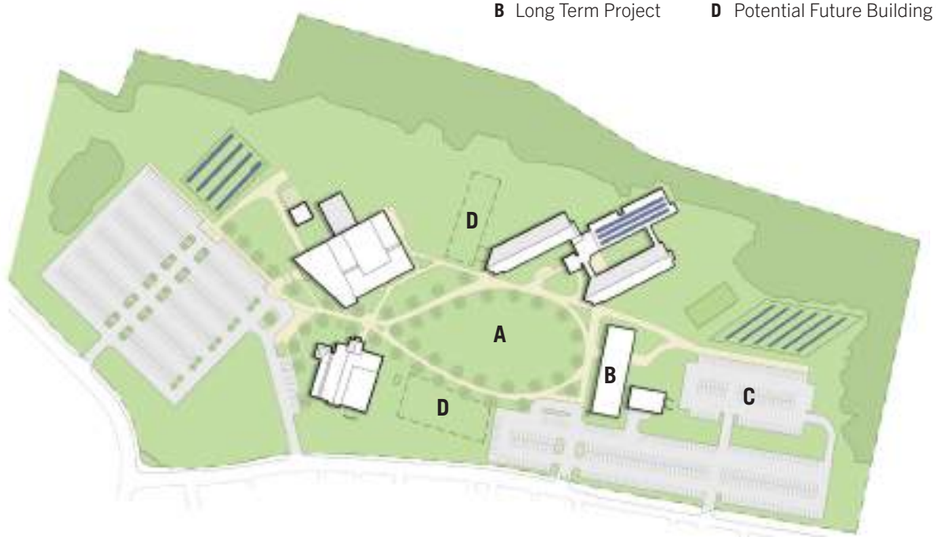


FIGURE 04.23 MxCC Long-Term Site Plan

CONCLUSION

The 2020 Master Plan Update for Middlesex identifies high-impact projects to renew the College's older buildings and address a significant space deficit. MxCC has distinctly less space per student than comparable CSCU colleges relative to the current enrollment. The modest 10-year projected increase in enrollment results in minimal incremental expansion need.

To get closer to parity with its similar-sized CSCU peers, MxCC needs more space for instruction, student services and necessary support functions. Comprehensive renovations of its three original buildings that have not had significant investment in almost 50 years, it also needed to improve the quality of space to meet current standards.

Recognizing the constrained funding outlook, this 10-year Plan includes some but not all of the projects needed to get MxCC to parity in overall space. The two strategically located additions reflect about half the total incremental need. The Snow Wheaton and Founders Hall projects will make a significant and positive impact, however. The net effect will be not only to transform these buildings, but also to greatly enhance the College's setting and identity. All the projects will support MxCCs mission by strengthening recruitment and retention, and improving the student experience in multiple ways.

The Plan has the necessary flexibility to be realized in phases as funding permits. Most importantly, the 2020-2030 Master Plan Update provides CSCU and the College with a road map for capital investment over the next decade, so Middlesex becomes an even more vital resource for its regional community and for the State.



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