



2012 CAMPUS FACILITIES MASTER PLAN

Northwestern Michigan College
Traverse City, Michigan

October, 2012





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1. Introduction



Northwestern Michigan College commissioned TowerPinkster to develop this Facilities Master Plan in late 2011 to define and direct the development of NMC's facilities vision for the future. This plan is intended to guide the physical development of the College in ways that respect the environment, maximize existing assets, and reflect its mission and vision for the future. It further reflects established priorities at NMC as it strives toward excellence in educational opportunity for all.

We appreciate and acknowledge the assistance of the NMC Administration for their contributions to this Plan, including their time, interest, advice and constructive thoughts. In particular, the guidance and organization of President Tim Nelson, and Vice President Vicki Cook were most appreciated during the entire study process.

TowerPinkster

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2. Summary



The Summary for this Facilities Master Plan report includes the following:

- A. **Background / Purpose of Master Plan**
- B. **Planning Goals**
- C. **Planning Process**
- D. **Recommendations**



2. Summary (continued)



A. Background / Purpose of Master Plan

Northwestern Michigan College is comprised of four campus locations, over 25 buildings, and several additional properties and buildings. The facilities total over 795,000 SF, with a total current replacement value estimated at over \$160 million.

In order to continue to look forward in the strategic interest of meeting the needs of students for course offerings and facilities, NMC commissioned this Master Plan in December, 2011.

The goal of this Master Plan is to provide Northwestern Michigan College with a more comprehensive roadmap for meeting facilities and deferred maintenance issues over the next 10 years. It should be stated that the recommendations documented in this section (Section 2) are presented without prioritization for each building / facility at NMC. Selected projects and accompanying costs are presented in Sections 5 and 6. Prioritized projects are presented in Section 7: Implementation Strategy

Just as change has created the need for this facilities master plan, future changes will continue to make the planning process dynamic. While this master plan report makes recommendations to retain and enhance an attractive, serviceable physical environment that is responsive to the changing needs of NMC, it is not rigid or static. To be an effective consensus-building and decision-making tool, this facilities master plan should be seen as a flexible document, able to be periodically evaluated and revised as new ideas and opportunities emerge.



2. Summary

(continued)

B. Planning Goals & Areas of Focus

Goals:

This plan includes the following specific goals:

1. Define the future vision of NMC facilities.
2. Identify sites for new construction or expansion.
3. Address traffic patterns and parking facilities.
4. Maximize the value of existing physical assets.
5. Respond to emerging and changing physical needs as they relate to updated academic offerings.
6. Maintain stewardship of the natural environment; evaluate environmental impact of proposed construction.
7. Establish priorities and cost estimates for a ten-year Master Plan.
8. Align with the Strategic Plan, Academic Plan, and other existing plans NMC has in place.



2. **Summary** (continued)

Areas of Focus:

1. Utilization of the Eastern Avenue Property
2. Physical Education Building
3. Housing – Resident Life / Apartments
4. Appel Property
5. Observatory
6. Denno Museum Center
7. Multi-disciplinary Student Learning Center



2. **Summary** (continued)

C. **Strategic Context**

NMC's recent strategic planning process yielded several points of interest that formed the backdrop for the Planning Team:

- . NMC should not function merely as a regional operation serving Grand Traverse County and surrounding counties. Offer programs for training of positions outside the service area.
- . NMC may not be able to own all assets necessary to compete. NMC must explore private-sector partnerships that could assist in sponsoring non-traditional education experiences.
- . NMC is exploring expansion from two-year programs to four-year programs in select areas.
- . The education industry is trending from a time-based system to a competency-based system.
- . NMC must have access to programs from anywhere, and cannot be limited to a traditional classroom setting.
- . NMC wants to offer an international experience.
- . The Eastern Avenue property holds the potential to offer specialty programs.
- . Parsons Stulen could expand as a research facility and/or offer expanded programming.



2. Summary

(continued)

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- . NMC recognizes the trend to simulation-based opportunities for areas such as the medical industry. It already has simulation facilities for the aero and maritime programs.
 - . NMC is committed to “green” design and sustainability.
 - . NMC’s four campus locations need to act as a single community. Improved transportation links are needed.
 - . Need access to technology anytime, anywhere.
 - . There is a growing need for more student study space, as well as common student spaces.



2. **Summary** (continued)

D. Planning Process

The Planning Team began its work with data collection and review of existing documents and reports, including site surveys, building plans, condition assessment reports, and utility reports. This was supplemented by College-provided data on enrollment history and trends, room utilization, parking counts, land use, NMC Strategic Plan, and previous capital outlay requests. Primary sources of background data were individual strategic plan documents prepared by College departments.

The Planning Team subsequently met with the President's Council and NMC Leadership Team to gather additional input and insight into the existing documents and direction for the future.

The Team toured each NMC building and site to gain a deeper understanding of the content and costs represented in the FCAP Report; become familiar with campus layouts, facility functions, infrastructure, circulation patterns and general building conditions; and better understand the background of facilities and programs, as well as future intent and strategic direction.

These tours were followed by meetings with each department to review the strategic planning documents and clarify specific points in the context of existing facilities and future direction. Each department received advance questions from the Planning Team as preparation for each meeting.

Following this input, the Team prepared a series of optional ideas, with conceptual costs, for consideration and feedback by the President's Council and ultimately by the Board of Trustees prior to refinement into a final Master Plan document.



2. **Summary** *(continued)*

E. Recommendations

Based upon observations of site and building features, as well as an analysis of gathered information, recommendations are presented in the following categories:

1. Site Recommendations for each campus
2. Building Recommendations for selected buildings
3. Recommendations for off-campus facilities

A more full discussion of analysis and recommendations is found in Section 4: Facility Analysis, and Section 5: Master Plan.



2. **Summary** (continued)

1. **Site Recommendations**

A. **Main Campus**

1. **Safeguard and enhance the unique NMC outdoor environment.**

Preservation of the unique and environmentally sensitive outdoor quality of Northwestern Michigan College is a guiding priority for all changes, improvements, expansion, and development within the main College campus. It is a community asset for its beauty and environmental benefits to the College's service area and region.

More specifically, NMC should continue to manage its natural resources for the sustained health of the environment, and for the benefit of NMC course offerings, affiliated community programs, and collaborative efforts of local organizations and individuals by means of the following:

- . Development of a formal management plan for the sustainable and continued health of the existing forested areas of the campus;
- . Monitoring of the existing campus to identify trees and other plant materials to be removed and indigenous species to be enhanced;
- . Development and maintenance of campus nature trails and interpretive programs;
- . Development of enhanced programming and community use of the existing wetland areas at the north edge of the main campus.



2. **Summary** *(continued)*

2. **Redevelop the existing recreation fields.**

The College should pursue options to shape and/or fill this area to create positive drainage and directing the surface water to the north side of College Drive.

Combined with drainage improvements, the redevelopment of the existing fields will enhance student-life opportunities, recreation options, programming opportunities, and expanded club sports for all students.

3. **Relocate a portion of College Drive to create additional space for building sites and parking options within the ring road.**

As the College grows, additional space inside the ring road will provide room for new and/or expanded buildings, parking, and safe pedestrian ways.

4. **Expand selected parking lots to provide dispersed options across the campus.**

The expansion of the Aspen, Birch, Cedar, Juniper, Pine and Tamarack parking lots creates more options across a broader area on campus.



2. Summary

(continued)

5. Explore the acquisition of additional property to expand the main campus.

Additional property located on high ground west of the existing City of Traverse City Water Treatment facility could be used for future student housing.

Additional property controlled by neighboring hotel/motel property owners, south of the Denmos Center, could be used for future building and parking sites.

B. Aero Park Campus

1. Redevelop the parking area at the Aviation Building as part of an expansion of the Aviation hangar facility.

Expansion of the parking area at Parsons Stulen, adjacent to an expanded Aviation Building, will benefit both buildings and enhance convenience for students using both buildings.

2. Enhance the visual continuity of the campus by means of consistent materials, colors, and signage as buildings and sites are expanded or modified.



2. Summary

(continued)

C. University Center Campus

- 1. Provide a second means of vehicular egress from the site for emergency use.**

Creation of a drive from the parking area south to Wysong Road will provide a safe alternate route for vehicles in the case of emergencies.

- 2. Provide access to Boardman Lake for the benefit of the Fresh Water Studies program.**

Creation of a walk, stairs, platform and dock facilities will link the lake with the labs inside the University Center building in support of the Fresh Water Studies program.

- 3. Designate space for the continuation of the public bike trail around Boardman Lake.**

D. Eastern Avenue Property

- 1. Athletic fields**
- 2. Value-added agri-business facilities / classrooms**
- 3. Student housing / visiting professor housing**

E. Rogers Observatory

- 1. Provide a new barrier-free access walk from the parking lot to the Observatory building.**



2. Summary

(continued)

Building Recommendations – Main Campus

A. Apartments

Raze the existing three on-site apartment buildings and construct new apartment buildings with 300 beds on-campus. There are several potential options for apartment site locations.

B. Biederman Building

Renovate space on the main floor for use as teaching space, following the relocation of student health services and the marketing department.

C. Denno Museum Center

Add 400 SF of storage space at the west loading dock. Widen the loading dock and entry drive. Carry forward previous gallery expansion plans for future private funding.

D. Fine Arts Building

Renovate 9,000 SF of existing music studio and support spaces, and add 6,500 SF of new rehearsal, office, and support space.

E. Osterlin Building

Renovate the main floor (approx. 32,500 SF) to expand Center for Learning, expand the capacity for testing services, consolidate library space, enhance circulation, reorganize existing spaces for more efficient function, and provide space for student study space and for future programming.



2. **Summary** (continued)

F. Power Building

Renovate the existing building to accept new gas-fired co-generation turbines for more efficient, cost-effective energy operations, as well as to augment future programming in alternative energy studies.

G. Physical Education Building

Renovate 28,000 SF of the existing building and add 9,000 SF of new space for fitness center, expanded PE programming, student activity space, entry and public space.

H. Tanis Building

Renovate the upper level (7,200 SF) to consolidate Administration offices for NMC President, Vice Presidents, and support positions.

I. West Hall

Renovate the existing building (33,450 SF) and expand the building by 40,000 SF to provide expanded food service opportunities, relocated bookstore, expanded student-life and student organization space, consolidated student services (one-stop concept), new student health service space, teaching space, and docking location for mobile simulation lab. The building will be relabeled as the Student Learning Center.



2. **Summary** *(continued)*

J. Community Learning Center*

This is an optional recommendation that combines Student Services, Food Service, Bookstore, Fitness/wellness and library services in a new 150,000 SF center. The preferred location for this center would be at the West Hall site.



2. **Summary** *(continued)*

Building Recommendations – Aero Park Campus

K. Auto Technology Building

Add 4,000 SF of new space for new programming, and reskin the existing building for improved energy performance and to complement the exterior appearance of other Aero Park facilities.

L. Aviation Building

Add 11,000 SF for additional hangar storage, and 3,000 SF for additional classroom and support space.

Building Recommendations – University Center Campus

M. University Center

Renovate 2,260 SF of existing space for use as lab facilities for the Fresh Water Studies program and for general use by university partners.

Building Recommendations – Rogers Observatory

N. Rogers Observatory

Add 1,000 SF to Rogers Observatory for classroom expansion, storage, and expanded mechanical room.



4. Facility Analysis

Overview

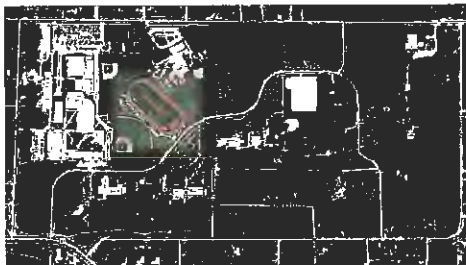


Northwestern Michigan College lies within Traverse City, Michigan, within a large, multi-county service area in northwest lower Michigan. In the context of a market-driven economy for higher education programs and services, the college has sustained and grown its services and programming to students and constituent communities. Through the development of multiple campus locations in Traverse City, technology-based resources, and strategic modifications to existing facilities, NMC is positioned as the center of education, culture, and opportunity for the region and beyond.

The College has stated its intent to reach out beyond its geographic service area for students, with a goal of achieving 5% of its enrollment from international students. Total current enrollment is approximately 5,200 students across all campus locations.

Main Campus

Site



The main campus is 90.3 acres in size, located at 1701 East Front Street in the City of Traverse City. The campus is east of Milliken Drive, south of Eastern Avenue, west of East Bay Boulevard North, and north of Front Street.

Neighboring properties include Traverse City Central High School, Eastern Elementary School, City of Traverse City water plant, several single-family residential neighborhoods, motel/hotel commercial area, and the Traverse City Civic Center.

The main campus is zoned NMC-2, University District. A detailed description of the zoning requirements are presented in Section 8: Appendix.



4. Facility Analysis (continued)



The campus contains natural areas of deciduous and pine forests, designated wetlands at the north and east edges of the campus, and open areas for recreation and passive use near the center of campus. In addition to natural, native plantings, there are several areas of groomed landscaping.



The main campus site is accessible by vehicles from two entry locations on Front Street (with the main entry at US 31 / M-72) and one entry location on Eastern Avenue. College Drive provides vehicular circulation within the site and connects all three entry locations. Thirteen paved, named parking lots provide a total of 1,545 parking spaces on campus. All but two buildings (Oleson Center and Facilities Building) are located inboard of the ring road (College Drive).



For stormwater management, the main campus is served by a combination of dry wells and underground storm sewer. The dry wells have historically been a maintenance issue for the College. The storm sewer runs primarily from west to east in the area of the existing fire lane. On the eastern side of main campus, the storm sewer runs north to south beneath College Avenue and ties into the existing City of Traverse City storm sewer located beneath Front Street. Storm water from this line flows east and discharges into East Grand Traverse Bay.

For domestic water, the main campus is served entirely by municipal water providing potable water, fire protection and irrigation. Most of the structures are served by a series of 6" public water mains. Similar to the storm sewer, the water main is located primarily in the existing fire lane that runs west to east through main campus. In addition there are several connections along Front Street. The City's water plant is located adjacent to the northeast corner of campus. A 30" water main passes through campus, which should meet the demand for new construction on the main campus.



4. Facility Analysis (continued)

The sanitary sewer for the main campus is provided entirely by municipal sewer service. Most of the structures are served by 8" public sewer mains located in the fire lane, with several connections along Front Street. The existing system appears to have adequate carrying capacity for new construction on main campus.

Heating for buildings is provided by a steam generation system located at the Power House and distributed by means of an underground tunnel system. Outlying buildings are heated via stand-alone systems within each building.

Underground fiber cable links all main campus buildings. Overhead fiber links the main campus with the other campus locations.

Observations:



The main entry to campus is at the curving intersection of Front Street, Munson Avenue and Fair Street, where there is a four-way stop light to control traffic. The entry to campus is marked by two sign monuments, set back from the road enough that drivers may miss them as they drive through the intersection at the curve. Further, the Dennon Museum and related landscaped berms represent a visual barrier to the rest of campus, so that the body of the main campus is hidden as drivers pass the entry point to campus.

Once on site, drivers first view the south side of the adjacent high school, which reduces the positive first impression to campus. Creating a visual screen barrier by means of landscaping improvements would strengthen the initial impression of NMC. It should be noted that the wooded area between the entry drive and Milliken Drive is permanently protected from development, except for a small easement adjacent to the high school property. The area at the Cedar Lot is also open to the adjacent high



4. Facility Analysis (continued)

school, separated by a chain-link fence. Stronger landscaping could provide attractive separation, yet safe, and accessible separation that could benefit both the College and the high school with safe accessibility between the properties.



Traffic congestion and “lack of parking” were consistently mentioned as issues across campus. The Cedar Parking Lot appears to be the predominant choice for most student drivers because of its close proximity and convenience to buildings at the center of campus. Drivers appear to choose to wait for a spot to open up in Cedar before seeking a more remote lot with open spaces. The perceived lack of parking on campus appears to be related to distribution of parking, rather than parking capacity.

Also, the lack of parking capacity of the Aspen Lot (currently at 127 spaces), adjacent to Denno Museum Center and its Milliken Hall (capacity of about 400 persons), was mentioned as an inconvenience for Denno patrons. Combined with the need for possible additional parking required by the proposed high school expansion, the expansion of the Aspen Lot should be considered.

The addition of parking capacity to the main campus has practical limitations imposed by local zoning ordinance, as well as philosophical limits as to future extent NMC wishes to go to provide paved surface lots for vehicles. Multi-level parking structures as a way to increase parking capacity within existing parking lot footprints (or reduced footprint) should be considered for long-term solutions. However, there appears to be sufficient space on-site to meet the anticipated needs under this master plan without exceeding the zoning ordinance limits.



4. Facility Analysis (continued)



The open field area between East Hall and the Physical Education Building is a popular recreation area, but is often partially covered (and therefore unusable) by standing water from seasonal snowmelt or rain runoff. A high groundwater table contributes to this issue. A permanent solution to this problem would enhance student life activities and physical education / fitness programming.

Because the Oleson Center lies outside the College Drive ring road, the pedestrian pathway from the main campus to this building is important for safe access. The existing pedestrian walk from Founders Hall east to the student apartments ends abruptly in a parking lot, producing a confusing, weak link to the crosswalk to Oleson. Strengthening this connection would improve safety and produce a more direct path to Oleson.



The natural stands of pines along Front Street have been the enduring visual image of NMC for students and visitors. The annual barbecue celebrates in this area. Over time, however, the ground has become compacted, the grass thinner, and some trees have been replaced. The long-term health and sustainability of the forested areas, as well as the on-site wetlands, are important parts of NMC's identity. They are assets to be engaged, enjoyed, and integrated with the entire community. A campus-wide management plan for these natural areas would result in improved health for the entire main campus environment.



4. Facility Analysis (continued)



Apartments

There are three, three-story apartment buildings (Apartment A, Apartment B, and Apartment C) on the main campus, each built in 1973 and located adjacent to each other in the eastern portion of the site, between the Oleson Building and the Beckett Building. Each building includes twelve apartment units (four/floor). The total area of each building is 12,750 SF. The condition of each apartment building, according to the FCAP Report, is listed as “poor”. They have a combined current replacement value of \$4,607,400 (\$120/SF). Associated parking totaling 60 spaces is located adjacent to each apartment building in Pine Lots I and II.

The College has stated a strategic goal of increasing student housing capacity to meet the anticipated future enrollment growth and of increasing the proportion of international students (to 5% of overall enrollment), who typically seek on-campus or near-campus housing options. It also notes that existing NMC apartment layouts do not consistently meet the evolving needs of NMC students in terms of bedroom, bathroom, and common space configuration.



Assuming an existing capacity of 138 beds (total of all three apartment buildings), the desired capacity for the future should be approximately 300 apartment beds, in varying configurations for single, double, quadruple and family style options. If all apartment beds are located on the main campus, the required area would be more than double the existing area. Parking capacity would need to expand to at least 120 spaces, depending on lease terms and College policy.

Combined with the existing capacity of East Hall at 208 students, the total resident population for NMC would be over 500 beds.



4. **Facility Analysis** (continued)

Given the age, condition, and location of the existing apartment buildings, there are several areas of exploration to achieve the housing goal:

1. Renovate the existing apartment buildings in place and add new buildings to meet the goal capacity.

The renovation of the existing apartments represents an investment almost as large as new construction, and the existing location of the apartments does not support good pedestrian circulation. The configuration of the existing apartments would have limited appeal to new students when compared to the new apartment options.

New apartment buildings could be located adjacent to the existing buildings or could be located elsewhere on NMC property.

2. Raze the existing buildings and construct new apartment units to meet the goal capacity.

New units could be located in several optional locations:

- a. In the approximate same location as the existing apartments
- b. On property adjacent to the Eastern Avenue entry to the main campus (this would require property acquisition)
- c. On the Eastern Avenue property.

A location on the main campus would seem to be preferred, given the proximity to NMC services, classes, food service, recreation opportunities, and student-life activities.

3. Partner with local property owners to provide apartment units immediately off-campus. It is noted that a number of current NMC student occupy private apartment buildings adjacent to and near campus.

In all cases, NMC has the option to develop, own, and manage the apartments itself, or to partner with private partners.



4. Facility Analysis (continued)

Beckett Building



The Beckett Building was built in 1996 and includes 34,269 SF of classroom, office, and related support spaces over two stories. It is located at the east end of the campus, adjacent to the apartment buildings and private residential neighborhoods.

The condition of the building, according to the FCAP Report, is listed as “good”. It has a current replacement value of \$7,121,200 (\$208/SF). Associated parking totaling 10 spaces is located adjacent to the building in the Poplar Lot.



The Beckett Building is used primarily for business-related programs, offices, and support spaces, and does not appear to require modification or improvement beyond normal deferred maintenance items for the life of this master plan.

Biederman Building



The Biederman Building was built in 1976, renovated in 2002, and includes 29,025 SF of classroom, office, and related support services over three stories. It is located in the center of campus, directly connected to the Tanis Building to the west and the Health and Science Building to the east. The Biederman Building contains a large atrium space that serves as a major entry/exit for students and staff. This is located at grade level (middle level).

The condition of the Building, according to the FCAP Report, is listed as “good”. It has a current replacement value of \$6,734,035 (\$232/SF).



The Biederman Building is currently used primarily for science and math classrooms, offices, health services, computer labs, and the PR and Marketing Department. With the goal of consolidating student services, including the health center, at an expanded West Hall, and relocating PR and Marketing to the Tanis Building, there is an opportunity to repurpose some rooms for teaching use.



4. Facility Analysis (continued)

Dennos Museum Center



The Dennos Museum Center was built in 1991 and includes 45,180 SF of gallery, auditorium, gift shop, classroom, office, and storage space on one floor. It is located at the west end of main campus, adjacent to the main entry drive from Front Street. It is adjacent to Scholars Hall to the north, a dedicated wooded area to the west, and wooded area to the east.



The condition of the building, according to the FCAP Report, is listed as “good”. It has a current replacement value of \$11,387,600 (252/SF). Associated parking totaling 127 spaces is located adjacent to the building in the Aspen Lot. This capacity has been noted as inadequate.

The Dennos Museum Center is an auxiliary of NMC, supported by NMC only for utilities and building maintenance. Gallery additions totaling 8,000 SF were master planned for the Center. However, funding for those additions would be by private donations. No classes are currently taught at Dennos, though instructors occasionally bring students to see an exhibit or watch a film.



Milliken auditorium (seating cap. 400) is used for speakers, recitals, and musical presentations. It appears that seating capacity could be expanded (perhaps to reach a capacity of 650 seats) by re-raking the floor and re-spacing the seats. It is possible to use Milliken Auditorium while the remainder of the building is secured.

Currently, there are no back-stage areas. In the future, Milliken will be used increasingly for rehearsal space. Additional space for musical equipment storage is needed. Also, the width of the loading dock approach drive is too narrow and is often damaged by delivery vehicles.

Air-handling equipment is an issue at Milliken, in that patrons can hear air movement. The roof also does not fully mitigate sound from the outside.



4. Facility Analysis

(continued)



East Hall

East Hall was built in 1965, renovated in 1999 and 2002, and includes 46,700 SF of dormitory rooms, offices, and related support services over four stories. It is located in the center of campus, adjacent to West Hall on the west and the Fine Arts Building on the east.

The condition of East Hall, according to the FCAP Report, is listed as “fair”. It has a current replacement value of \$10,240,200 (\$219/SF). Associated parking spaces are available at the Chestnut Lot (56 spaces) and the Dogwood Lot (107 spaces).

East Hall is currently used for student dormitory-style housing, as well as for student activities and NMC computer center. It does not appear to require modification or improvement beyond normal deferred maintenance items for the life of this master plan.

Facilities Building

The Facilities Building is a pre-engineered, metal structure built in 2001 on the east edge of campus, between the Oleson Center to the south and the City of Traverse City Water Plant to the north. It includes 12,000 SF of office, maintenance and storage space in support of NMC campus facilities, sites, and systems.

The condition of the Facilities Building, according to the FCAP Report, is listed as “excellent”. It has a current replacement value of \$877,400 (\$73). The building is adjacent to the Oak/Maple parking lots, totaling 329 spaces.

The Facilities Building does not appear to require modification or improvement beyond normal deferred maintenance items for the life of this master plan.



4. Facility Analysis (continued)



Fine Arts Building

The Fine Arts Center was built in 1971 and renovated in 2004. It includes 19,600 SF of classrooms, lecture spaces, studios, offices, rehearsal spaces, and support spaces. It is located on the east side of campus, between the Beckett Building to the south, the Physical Education Building to the north, and East Hall to the west.

The condition of the Fine Arts Building, according to the FCAP Report, is listed as “fair”. It has a current replacement value of \$4,123,200 (\$210/SF). There is no parking immediately adjacent to the building.



The Fine Arts Building is unique on NMC's main campus as the only wood-frame academic building (all other academic buildings are constructed of masonry and/or stone). Its architectural style is distinctive and suitable for creative open studio spaces with abundant natural light, particularly in a north woods setting. The natural wood exterior, however, requires regular maintenance and replacement of elements.

Originally, the Fine Arts Center was planned to receive a performance auditorium addition at the north end of the building. However, the development of the Dennis Museum Center, with its Milliken Auditorium, removed the need for this addition. The music wing of the Fine Arts Center has always lacked acoustical separation between classrooms, which has limited its usefulness. Storage for musical equipment is lacking – currently most musical instruments are stored at Oleson Center and transported to Milliken Auditorium for musical performances. Studio space for the growing audio-tech program is limited, as is office space and private practice rooms.



4. Facility Analysis (continued)

Recently, the music program has grown in terms of ensembles and large groups that need to rehearse in larger spaces. The existing building is limited to one large space for this function. The lack of acoustic separation from space to space is problematic during these heavy-use periods. Expanding the building to the north could provide the key rehearsal spaces and storage space to accommodate the growing need. Treatment of the original building to provide acoustical separation would also enhance the usefulness and opportunities for expanded programming in the future.

Founders Hall



Founders Hall was built in 1976, renovated in 2003, and includes 4,850 SF of offices, conference, and related support services on one level. It is located in the center of campus, east of the Health & Science Center and north of private residential neighborhoods.

The condition of Founders Hall, according to the FCAP Report, is listed as “fair”. It has a current replacement value of \$1,016,100 (\$210/SF). There is no parking immediately adjacent to the building.

Founders Hall is currently used for Resource Development offices and the NMC Foundation. These entities require frequent interaction with potential donors and the community. The lack of convenient parking is a drawback for donors, particularly in poor weather. The location of Founders Hall is difficult to describe to first-time visitors in terms of parking location and walkways to the building. Better wayfinding and parking options are needed.



4. Facility Analysis (continued)



Health and Science Building

The Health and Science Building was built in 2002 as a three-story building, and it includes 57,477 SF of classrooms, science labs, offices, and NMC Welcome Center. It is directly connected to the Biederman Building to the west and it is located south of West Hall.

The condition of the Health and Science Building, according to the FCAP Report, is listed as “excellent”. It has a current replacement value of \$16,198,581 (\$282/SF). Directly south of the building is the Tamarack Lot, with 57 parking spaces.

This building does not appear to require modification or improvement beyond normal deferred maintenance items for the life of this master plan.



Oleson Center

The Oleson Center was built in 1978 and renovated in 2000 and 2006. It includes 9,925 SF of space, including classrooms, multi-purpose spaces, instructional kitchens, and offices. It is located at the east edge of campus, outside the ring road (College Drive). Oleson Center lies in a natural, wooded area, bordered by College Drive on the west and the Maple and Oak parking lots to the north. East of the Oleson Center is land designated as wetlands. South of the Center is a private residential neighborhood.



The condition of Oleson Center, according to the FCAP Report, is listed as “excellent”. It has a current replacement value of \$2,136,400 (\$215/SF). Parking is adjacent to the north at the Maple Lot (329 spaces).

This building does not appear to require modification or improvement beyond normal deferred maintenance items for the life of this master plan.



4. Facility Analysis (continued)

Osterlin Building



The Osterlin Building was built in 1961, expanded in 1984 and renovated in 2007. It includes 46,000 SF on three floors, consisting of classrooms, library, student service space, offices, study areas, Student Learning Center, Tutoring Center, and computer labs. It lies between the Tanis Building to the east and Scholars Hall to the west. The Power House is northeast of the Osterlin Building.

The condition of the Osterlin Building, according to the FCAP Report, is listed as “good”. It has a current replacement value of \$10,469,500 (\$228/SF). Adjacent parking is available in the Birch Lot (42 spaces).



The Osterlin Building is centrally-located on campus and is a heavily-used facility by virtue of its function as the campus library, testing center, learning center and primary open computer lab. The upper level classrooms are disconnected from the body of the building – access is through stairs that most students enter directly from the outside.



This building appears to have developed over time in response to needs of the moment. Suites of offices have been developed as departments expand and change in response to student needs. Simultaneously, technology has reduced the need for hard-cover volumes in the library and outdated volumes are retired from service. Consolidation of library resources could potentially help meet the growing demand for student study space, testing center services, student services, and Learning Center capacity. A holistic approach to space use at Osterlin is needed to right-size departments and spaces for future improved efficiency and effectiveness.



4. **Facility Analysis** (continued)



Power House

The Power House was built in 1962, and it includes 3,625 SF of mechanical space devoted to generating steam for most of the buildings in the central part of the main campus. It lies northeast of the Osterlin Building and northwest of the Tanis Building.

The condition of the Power House, according to the FCAP Report, is listed as “poor”. It has a current replacement value of \$1,854,200 (\$511/SF, including mechanical equipment).

NMC is studying the potential to convert the heating source for the College from a steam-generation system to a natural gas turbine co-generation process. This will require replacement of mechanical equipment within the Power House.

Because of the central location of this building, it is highly visible by drivers and pedestrians. It is also the traditional entry point for the public during the annual barbeque, and it stands at an important pedestrian plaza between the Tanis Building and the Osterlin Building. As such, it is worthwhile to consider renovation of the building exterior to make it more consistent with newer buildings on campus, as well as to promote NMC’s growing programs in alternative energies.



4. Facility Analysis (continued)

Physical Education Building



The Physical Education Building was built in 1969, and it includes 28,000 SF of gymnasium, locker room, exercise room, fitness center, office, and storage space. The building is used for recreational purposes, as well as for education programming. This building is often used in conjunction with the outdoor athletic fields to the west of the facility. This building lies north of the Fine Arts Center, east of East Hall, and west of the Facilities Building.



The condition of the building, according to the FCAP Report, is listed as “poor”. It has a current replacement value of \$4,817,000 (\$172/SF). Directly north of the building is the Juniper Lot, with 8 parking spaces.



This building is largely unchanged since its construction 43 years ago, though some modifications have been made to create a dance studio from storage space, and a second-floor space has been converted to a fitness center. However, the building lacks the size, flexibility and amenities to respond to educational programming needs, student-life needs, and recreation / fitness needs required to attract and retain students, particularly in view of NMC’s strategic goal to expand on-campus housing. The creation of additional basketball and volleyball courts, running track, wellness/fitness area, student gathering space, improved locker space, climbing wall, etc. will move NMC forward in this important area.



4. Facility Analysis

(continued)



Scholars Hall

Scholars Hall was built in 1962, expanded in 1965 and renovated in 1995 and 2003. It includes 58,450 SF of classrooms, lecture halls, offices, student study spaces, and support spaces. The building lies west of the Osterlin Building and northeast of the Dennon Museum Center on the west side of the main campus.

The condition of the building, according to the FCAP Report, is listed as “excellent”. It has a current replacement value of \$13,394,400 (\$229/SF). Scholars Hall is adjacent to the Birch Lot (42 parking spaces) and the Aspen Lot (127 spaces).

This building does not appear to require modification or improvement beyond normal deferred maintenance items for the life of this master plan.



Tanis Building

The Tanis Building was built in 1957 and renovated in 1998. It includes 14,300 SF of office space on two floors. The building is directly connected to the Biederman Building to the east and lies southeast of the Power House and east of the Osterlin Building.

The condition of the Tanis Building, according to the FCAP Report, is listed as “poor”. It has a current replacement value of \$3,421,048 (\$239/SF). The nearest parking is at the Cedar Lot (185 spaces).

The Tanis Building was built as open, clear-span space well suited for multiple uses, including classrooms and offices. For many years, the building has been used as administration offices, student service offices, and departmental offices. With the goal of consolidating student services at an expanded West Hall, there is now an opportunity to also consolidate administration offices (now found in multiple locations on campus) in order to share staff resources.



4. Facility Analysis (continued)



West Hall

West Hall was built in 1965 as a student dormitory and renovated in 1998 and 2002 (student rooms were removed at this time). It contains 33,450 SF on three floors, comprised of food service, bookstore, student organizations, radio station, offices, and storage. The building lies north of the Health and Science Center and west of East Hall.

The condition of West Hall, according to the FCAP Report, is listed as “good”. It has a current replacement value of \$8,185,200 (\$245/SF). Adjacent parking is available at the Cedar Lot (185 spaces), the Conifer Lot (13 spaces), and the Chestnut Lot (56 spaces).



With food service, bookstore and student organizations located here, West Hall is already a center of student activity. It is centrally-located on campus and it links the east and west sides of campus. NMC’s goal is to renovate and expand this building to become NMC’s Student Learning Center. It will expand food service options and capacity to meet the needs of a growing enrollment and resident population. It will include a relocated and expanded bookstore at ground level. It envisions the location of consolidated student services (One-Stop concept) for student convenience and efficiency (Enrollment Management and Student Services staff are currently located in four different buildings (East Hall, West Hall, Osterlin, and Tanis).



The new center will be the location of expanded space for student organizations (currently about 40 active student groups and organizations) and student life, as well as for the relocated student health services (currently located in the Biederman Building). This could also be the location for the Student and Faculty Exchange Office, the Veteran’s Services Office, and a Welcome Center.



4. **Facility Analysis** *(continued)*

The expanded West Hall will also include three flexible teaching spaces, and it will house the docking facility for NMC's new mobile simulation lab. It will include informal gathering space as well as spaces for individual and group study.

The new Student Learning Center will be centrally-located on campus and adjacent to large parking lots, including the Cedar Lot, Cherry Lot, and Chestnut Lot.



4. Facility Analysis (continued)

Eastern Avenue Property

Site



The Eastern Avenue property is located at 2005 Eastern Avenue in the City of Traverse City. The property is approximately 55 acres in size. It lies just north of the main campus on the north side of Eastern Avenue, between Quail Ridge Drive and Leeward Court.

The property is zoned NMC-1, University District. Any activities requiring a land use permit will need to be in compliance with NMC's Master Plan. A detailed description of the zoning requirements are presented in Section 8: Appendix.

With the exception of a few outbuildings, the Eastern Avenue property is unimproved and no storm sewer is present. Enclosed storm sewer is not present along Eastern Avenue, and this area is served by ditches.

No water utilities are present on the site. The Traverse City Water Plant is located on the south side of Eastern Avenue, and it appears there is adequate capacity to service development on this property.

No sanitary sewer utilities are present on the site. An existing sanitary sewer main is located along Eastern Avenue that would appear to be adequate to support development on the property.



4. Facility Analysis (continued)

Observations:



This property has been referred to as a “pearl” in terms of its potential. It is a large parcel with exceptionally varied topography, with highlands at the north and lower areas to the south, along Eastern Avenue. There is a steep grade between the two parts of the site. The property is bounded on the east, north, and west by single-family residential development, and there are street access points on the east and west sides of the highland portion of the site.



The property is partially wooded and is criss-crossed with walking paths. From the high part of the site, there are exceptional views of East Grand Traverse Bay and NMC's main campus.



A portion of the lower part of the site is currently being used by the Facilities Department for site storage.



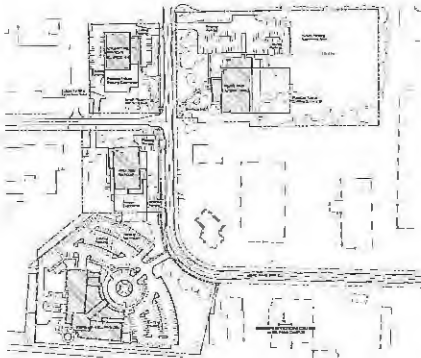
4. Facility Analysis (continued)

Aero Park Campus

Site



Aero Park Campus is comprised of five separate parcels located on Aero Park Drive in the City of Traverse City. Aero Park Drive runs from Parsons Road to the north to Three Mile Road to the east. Located on the five parcels are the Automotive Service Technology Center, the Aviation Building, the Parsons Stulen Building, the Aero Park Laboratories, and Shipping and Receiving. Each has an entry drive and associated parking area.



Neighboring properties include other manufacturing or light industrial businesses and related buildings. All five parcels are zoned I-Industrial District. A detailed description of the zoning requirements are presented in Section 8: Appendix.

Aero Park is served by an underground storm sewer system beneath the streets. Additional development of these properties would require storm water controls to comply with the current City storm water design requirements.

A municipal water main existing beneath Aero Park streets and is adequately sized to service future development.

Municipal sanitary sewer exists beneath the Aero Park streets and is adequately sized to service future development.

Heating and cooling for buildings at the Aero Park campus are provided by stand-alone systems within each building.

Observations:

The Aero Park Campus lies within an existing industrial park that has retained some of the natural attributes of the original property, such as trees, landscaped areas, and buildings set back from the road. Three buildings are on the west side of Aero Park Drive.



4. **Facility Analysis** (continued)

Parsons Stulen and the Aviation Building are adjacent to each other and they both abut Cherry Capital Airport property.

Most buildings in this industrial park are constructed of pre-engineered metal buildings, with a masonry office portion along the street façade. Colors vary from building to building.

NMC has made signage improvements to identify the facilities with consistent, standardized sign strategies to add unity to the overall Aero Park campus. The construction of the Parsons Stulen Building, and the recent improvements at the Aero Park Laboratories (APL) have improved landscaping and pedestrian pathway consistency. Differences remain, however, with two existing metal buildings. Improvements at these buildings should be consistent with Parsons Stulen and/or APL to add continuity and convenience for students and visitors as they pass from building to building.

Parking capacity appears to be adequate, but expansion or modification to existing buildings will result in reconfigured or relocated parking areas. Specifically, improvements at the Aviation Building will likely trigger changes to the configuration and traffic flow at the Parsons Stulen lot, as well as some landscape redesign to handle increased storm water drainage.



4. Facility Analysis (continued)

Aero Park Laboratories

Aero Park Laboratories (APL) was built in 1980 and renovated in 2011 when it was purchased by NMC. It includes 29,600 SF of classrooms, offices, and instructional lab spaces on one floor level.

The condition of the Aero Park Laboratories, according to the FCAP Report, is listed as “excellent”. It has a current replacement value of \$3,289,800 (\$111/SF). Adequate parking is available adjacent to the building.

The building was built as an industrial building and converted for use by NMC. There is plentiful land available to develop on the east side of the site to add new space and new parking area. As renovated, the APL contains large, open, adaptable, modular, flexible spaces for large-scale projects. It holds potential to respond to new and changing programming quickly and efficiently. As the building becomes fully engaged in the future, it can be readily expanded to the east.

The APL is envisioned as a logical location to house a portion of the emerging Engineering Technology Program. These would include lab spaces for electronics and robotics.





4. Facility Analysis (continued)

Automotive Technology Building



The Automotive Technology Building was built in 1990 and renovated in 2001 when it was purchased by NMC. It contains 18,309 SF of open labs, classrooms, storage, and support spaces related to automotive technology, all on one level.

The condition of the Automotive Technology Building, according to the FCAP Report, is listed as “good”. It has a current replacement value of \$2,807,700 (\$153/SF). Adequate parking is available adjacent to the building.



This building is well suited for the teaching of automotive technology. Large, open, interior spaces are being used for training in engines, auto repair, and hybrid technology. The addition of diesel automotive technology training space could be accommodated on the existing site. Classroom space should be added and upgraded, as well as student amenities for informal gathering and student study space.

To reinforce the visual continuity of the four buildings on this campus into a single entity, this building should take on an upgraded exterior treatment that is similar to the APL and/or Parson Stulen. This includes walks, drives, landscaping and signage.



4. Facility Analysis (continued)



Aviation Building

The Aviation Building was built in 1977 and remodeled in 2003. It includes 22,100 SF of aircraft repair lab space, aircraft hangar space, classroom space, flight simulation area, unmanned aircraft training area, offices, storage and support spaces, all on one level.

The condition of the Aviation Building, according to the FCAP Report, is listed as “fair”. It has a current replacement value of \$2,018,600 (\$91/SF). Adequate parking is available adjacent to the building.

The aviation program is growing, and NMC needs to add aircraft to its fleet in order to meet anticipated enrollment growth. The existing structure includes a heated aircraft repair bay, as well as an unheated aircraft indoor storage area, which is filled to capacity with the existing fleet. To increase the fleet size, NMC will need to increase its indoor storage capacity, i.e., a hangar expansion, or assign apron area to store additional aircraft outside. Space is available on site to expand the existing building for hangar storage and additional classrooms and student gathering space at the Aviation Building. Parking lots would need to be reconfigured and perhaps linked to the adjacent parking lot at Parsons Stulen. This represents an opportunity for the Aviation Building and Parsons Stulen to be physically closer to each other and to encourage more pedestrian traffic from building to building for flexible programming.



4. Facility Analysis (continued)

Parsons Stulen Building

The Parsons Stulen Building was built in 1999 and includes 65,000 SF of classroom, laboratory, computer room, office, conference, and support space on two levels.

The condition of Parsons Stulen, according to the FCAP Report, is listed as “good”. It has a current replacement value of \$12,952,400 (\$199/SF). Adequate parking is available adjacent to the building.

This building was designed to be open, flexible and adaptable to changing programming and technologies. It possesses raised floor systems in several locations to accommodate changing computer needs, and it has high bay space in key areas for labs with large equipment requirements. As the Engineering Technology programming develops, spaces in Parsons Stulen, as well as APL, will accommodate the needed space and access to required infrastructure.





4. Facility Analysis (continued)

University Center Campus

Site



The University Center Campus is located at 2200 Dendrin Drive in Garfield Township. The property is 26.32 acres in size. It lies east of Cass Road, south of Fairway Hills Drive, North of Sybrandt Road, on the west shore of Boardman Lake. The property has a single point of entry from the drive at Cass Road.

The property is zoned MUIBD-G, Mixed Use Industrial Business District. This zoning designation recognizes the shift from a manufacturing-based economy to a service-based economy by accommodating the demand for retail and office spaces while not precluding traditional industrial uses. As such, this is a flexible zoning district, permitting a variety of compatible uses within particular sites and between neighboring parcels. Non-industrial uses are permitted, but the intent is to remain industrial in nature. Potential impacts from surrounding properties such as noise, dust, or vibration should be kept in mind.

A detailed description of the zoning requirements are presented in Section 8: Appendix.

The storm water management of this site consists entirely of at grade storm water retention basins. As this facility was built in the 1980's, the storm water controls appear to be designed to meet requirements in place at that time. Subsequent changes to storm water codes would require existing controls to be brought into compliance with current, more restrictive requirements if modifications include additional impervious surface.



4. Facility Analysis (continued)



According to design drawings for the facility, the site is serviced by a private 6' water main for potable water and fire suppression. The water main is connected to a public water main that exists along the Cass Road corridor. Also, the site is serviced by a private 3' sanitary sewer forcemain that discharges effluent to a public sanitary sewer that exists along the Cass Road corridor.

The Traverse Area Recreation and Transportation Trails, Inc. (TART) and the City of Traverse City have long contemplated and continue to pursue a trail system that will encircle Boardman Lake. It is anticipated that the west side of the lake would parallel the existing railroad corridor that lies west of the developed portions of this property.

Observations:

The entry drive at Cass Road is a winding route leading east across the railroad tracks and through stands of trees to the University Center facility, which was built as a corporate headquarters. The drive, the site, and the building retain the characteristics of commercial office space, with a setting on a high bluff overlooking Boardman Lake. The treed portions of the site partially shield surrounding industrial buildings from view. The open areas of surface parking and the absence of adjacent buildings resemble more suburban office developments.

The proximity of the building to Boardman Lake invites engagement with the water for educational programming. The site already includes some fitness and walking paths.

A drawback to the existing site is its lack of secondary means of egress for vehicles in the case of an emergency. Recent power outages and fallen trees at the existing drive are reminders of this need. Access appears to be available from the property to Wysong Road without crossing the railroad track. Also, the single drive access to Cass Road from the parking lots causes traffic



4. Facility Analysis (continued)

backups when parking lots empty simultaneously following class sessions.

Because of the location on the lake, the proximity to educational space, and the natural treed environment south of the facility, this site holds the potential for future development as a setting for an executive retreat, or location for weekend professional programming and training.

University Center Building

The University Center was built in 1986 as a private corporate headquarters and renovated in 1989, 1995, and 2000. It includes 71,600 SF of classrooms, offices, labs, and support spaces on three floors to meet the needs of University partners, as well as NMC departments.

The condition of the University Center, according to the FCAP Report, is listed as “good”. It has a current replacement value of \$11,525,300 (\$161/SF). Adequate parking is available adjacent to the building.

This building contains space suitable for use as NMC offices (Accounting and Human Resources), classrooms, and lab space. It is also flexible and well suited for University partners.

The site offers plentiful parking and natural views across Boardman Lake that enhance learning. Direct access to the lake also benefits the Fresh Water Studies program.

While the interior spaces and systems can be modified quickly, the structure itself may need to be enhanced to support excessive floor loads, noise transfer between floors and spaces, and vibration from mechanical equipment. Adjustments will be made specific to programming.





4. Facility Analysis (continued)

Great Lakes Campus

Site



The Great Lakes Campus is located at 715 East Front Street in the City of Traverse City. The property measures 4.6 acres in size. It lies on the north side of Front Street and fronts West Grand Traverse Bay to the north.

The property is zoned the same as the Main Campus: NMC-2. The property is bordered by a City park on the west and a senior center on the east. A detailed description of the zoning requirements are presented in Section 8: Appendix.

When the Great Lakes Campus was constructed, the storm sewer system that was installed includes storm water clarifying structures prior to discharging to West Grand Traverse Bay.

The site is serviced by a City of Traverse City domestic water and fire service lines that enter the westerly side of the building. The lines are fed from a water main along the west property line shared with the City park.



A sanitary sewer service discharges to a manhole connected to the City of Traverse City sanitary sewer beneath Front Street.



4. Facility Analysis (continued)

Observations:



The Great Lakes Campus was built in 2004 and includes 75,233 SF on two levels, comprised of classrooms, labs, offices, computer labs, simulation labs, culinary arts labs, restaurant, and conferencing facilities.

The condition of the Great Lakes Campus, according to the FCAP Report, is listed as "excellent". It has a current replacement value of \$18,790,500 (\$250/SF).

The west half of the building is dedicated to the Great Lakes Maritime Academy, and the east half is dedicated to the Hagerty Conference Center and including culinary arts spaces. This building does not appear to require modification or improvement beyond normal deferred maintenance items for the life of this master plan.



4. Facility Analysis

(continued)

Rogers Observatory

Site



Rogers Observatory is located at 1753 Birmley Road in Garfield Township, east of Keystone Road a situated south of Birmley Road, fronting on Birmley Road. The property is approximately five acres in size and it has split zoning. The eastern half is zoned A-1, Agricultural, and the westerly half is zoned MUIBD-G (Mixed Use Industrial Business District – General). A detailed description of the zoning requirements are presented in Section 8: Appendix.



There are no known storm water facilities at this site.

The site is serviced by an on-site drinking water well, installed in 1980. The well is a pitless style well with a submersible pump.

The site is serviced by a septic system, consisting of a 1,200 gallon septic tank, a 500-gallon septic tank, and a drainfield measuring 600 SF that receives waste water from the Observatory. The system was installed in 1979 and would require improvements if any improvements are made to the facility.



Observations:

This site lacks barrier-free access from the parking lot to the observatory building. It also lacks ADA accessibility from the main floor to the observatory telescope.



4. Facility Analysis (continued)



Rogers Observatory

Rogers Observatory was built in 1981 and includes 1,425 SF of classroom space, mechanical and storage on the main level and a two-story observatory element.

The condition of the Observatory, according to the FCAP Report, is listed as “poor”. It has a current replacement value of \$335,500 (\$235/SF). Adequate parking is available, but the pedestrian walk from the parking lot to the observatory is not currently barrier-free, due to the steep slope.

All spaces in this building are undersized, limiting their value as programming evolves.





4. Facility Analysis

(continued)

B. Population and Enrollment

Population Size (U.S. Census)

	2000	2010	2011
Antrim	23,110	23,580	23,316
Benzie	15,998	17,525	17,443
Gr. Traverse	77,654	86,986	88,349
Kalkaska	16,571	17,153	17,160
Leelanau	21,119	21,708	21,459
Wexford	<u>30,484</u>	<u>32,735</u>	<u>32,718</u>
Total	184,936	199,687	200,445

Population Age Profile, by Percent (2010 U.S. Census)

Age	MI	Ant	Ben	GT	Kal	Lee	Wex
0-17		21.1	21.0	22.1	22.7	19.5	24.3
18-19		1.9	2.1	2.5	2.3	2.2	2.4
20-24		3.9	3.9	5.5	4.8	3.6	5.3
25-34		8.6	9.3	12.1	10.4	7.1	11.3
35-49		18.3	20.0	20.4	20.3	17.2	19.7
50-64		24.1	23.1	22.4	23.0	27.0	21.1
65+		22.1	20.6	15.0	16.5	23.4	15.9

Unemployment, by Percent

	MI	Ant	Ben	GT	Kal	Lee	Wex
2009	13.3	15.0	13.3	11.0	14.3	8.5	16.2
2010	12.5	13.9	13.3	11.1	12.8	9.0	15.4
2011	10.0	11.8	11.3	9.6	11.3	7.7	12.8
2012	9.4	11.0	10.2	7.8	9.7	7.4	10.9



4. Facility Analysis

(continued)

NMC Enrollment History

2007
2008
2009
2010
2011
2012

Educational Attainment in 2011, by Percent

(People, age 25 and older, with Bachelor Degree or higher)

US	MI	Ant	Ben	GT	Kal	Lee	Wex
29.9	26.6						



4. **Facility Analysis** (continued)

C. **Space Utilization**

A goal of this master plan is to identify the need for remodeling or expansion of existing physical assets.

To assess the need for additional classroom and associated space, we reviewed class schedules for one-week time periods in three consecutive semesters, as “typical” for each semester for analysis purposes.

For each teaching space, we documented class hours scheduled for each space over the course of a typical week. In the campus plans that follow, composite classroom utilizations are identified. The utilization category for each is an average of the three weeks noted above. Each space was placed in one of the following categories:

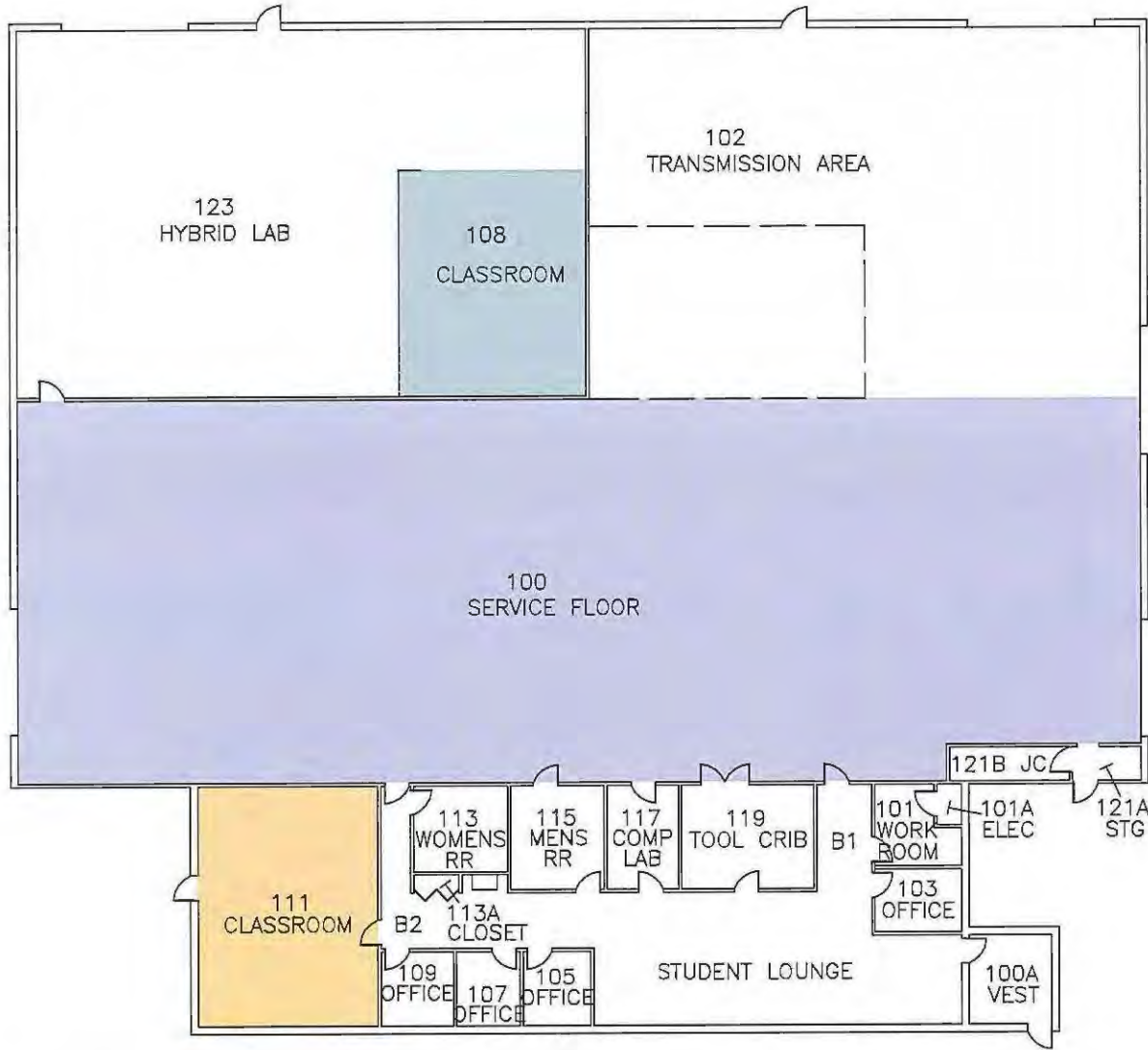
0-9	hours of scheduled class time per week
10-19	hours of scheduled class time per week
20-29	hours of scheduled class time per week
30-39	hours of scheduled class time per week
40+	hours of scheduled class time per week

The number of scheduled hours for the selected weeks was similar from semester to semester within each building. General consensus for classroom utilization is that general classroom spaces scheduled more than 25-30 hours/week or more would be considered fully utilized. For lab spaces, this number would be 18-22 hours/week. Specialized spaces, such as art studios and automotive labs may indicate relatively low scheduled use, but are often open for student use on an unscheduled basis for individual or independent work.



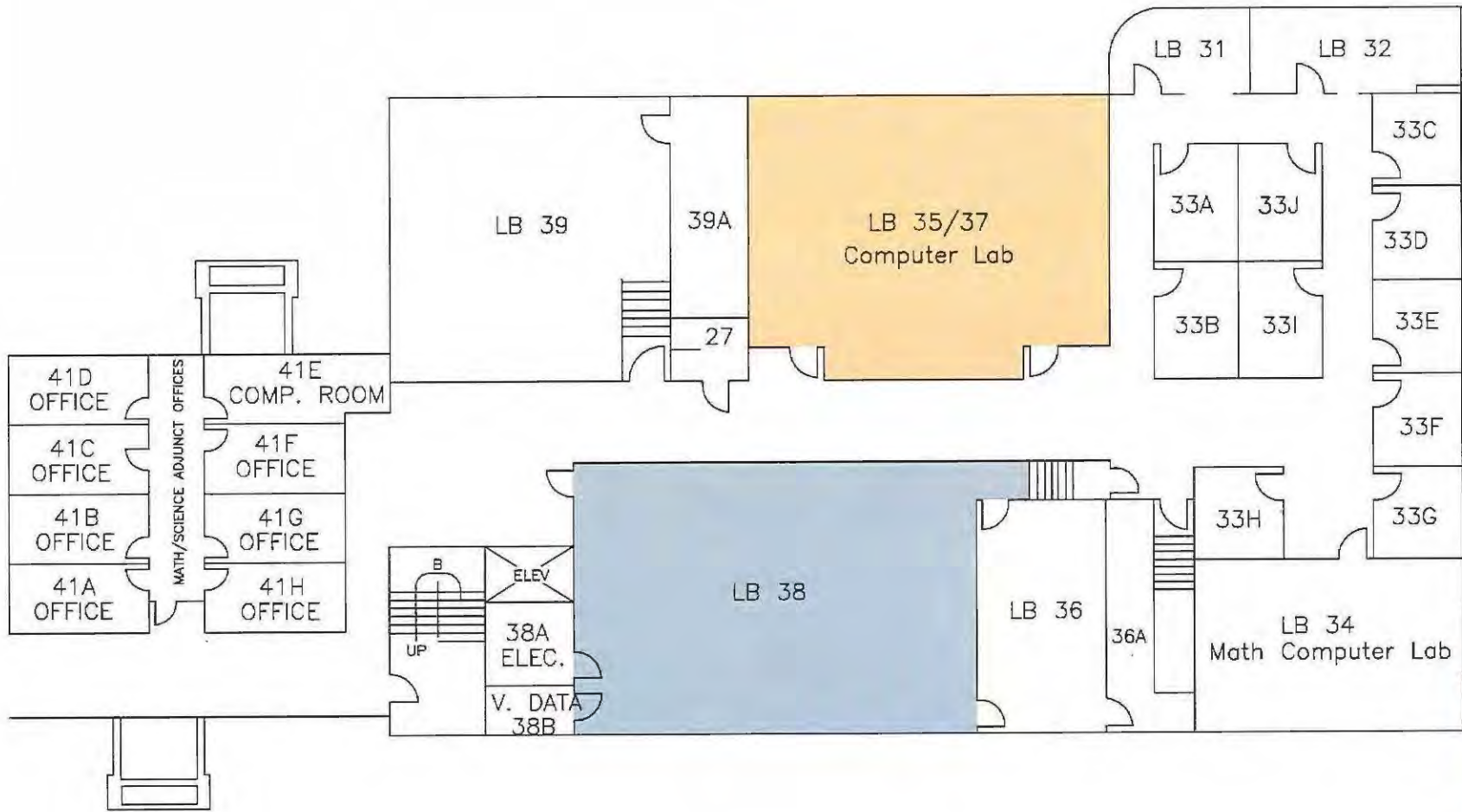
LEGEND

- 40+ hours/ week
- 30-39 hours/ week
- 20-29 hours/ week
- 10-19 hours/ week
- 0-9 hours/ week



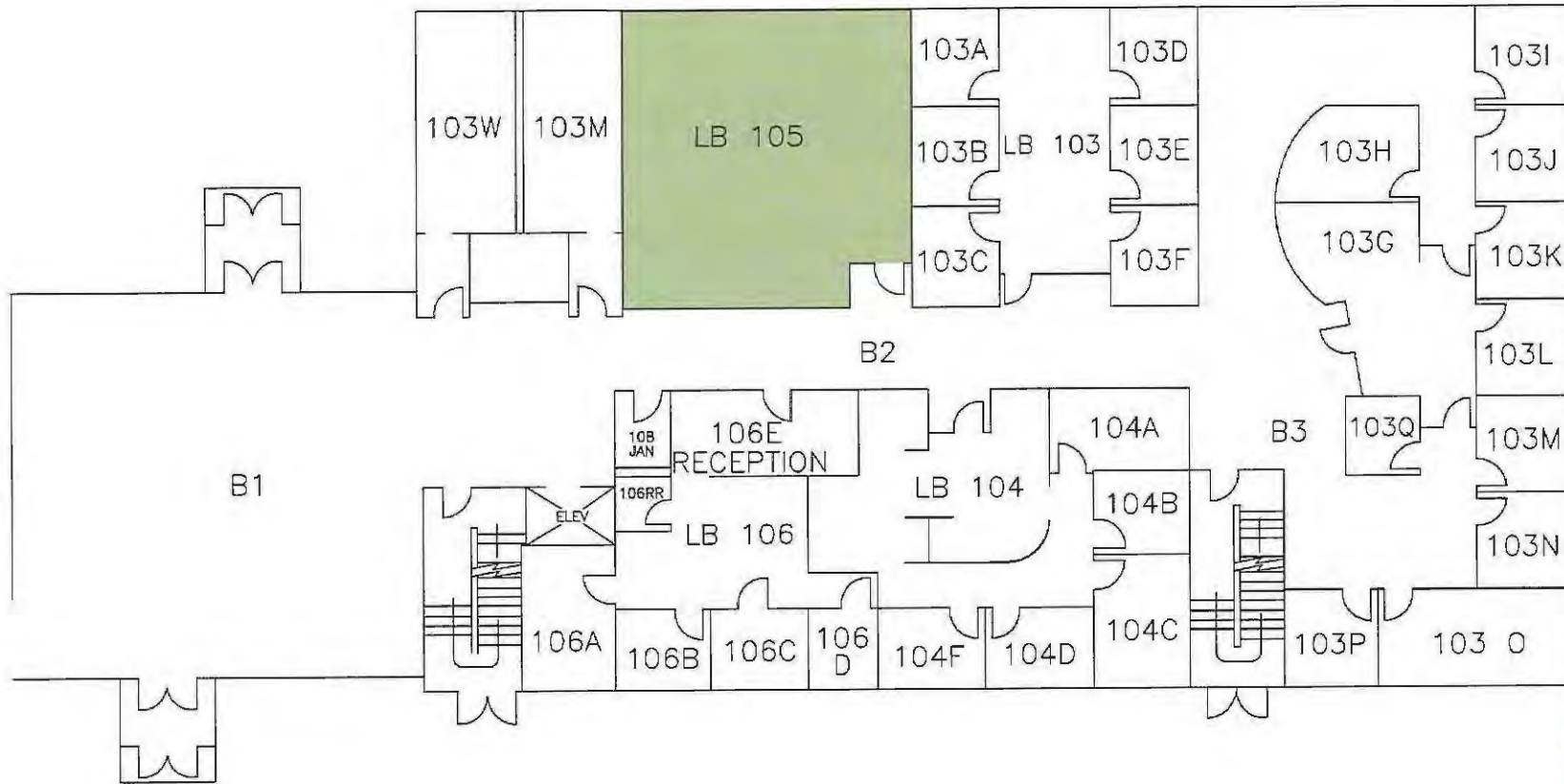
LEGEND

- 40+ hours/ week
- 30-39 hours/ week
- 20-29 hours/ week
- 10-19 hours/ week
- 0-9 hours/ week



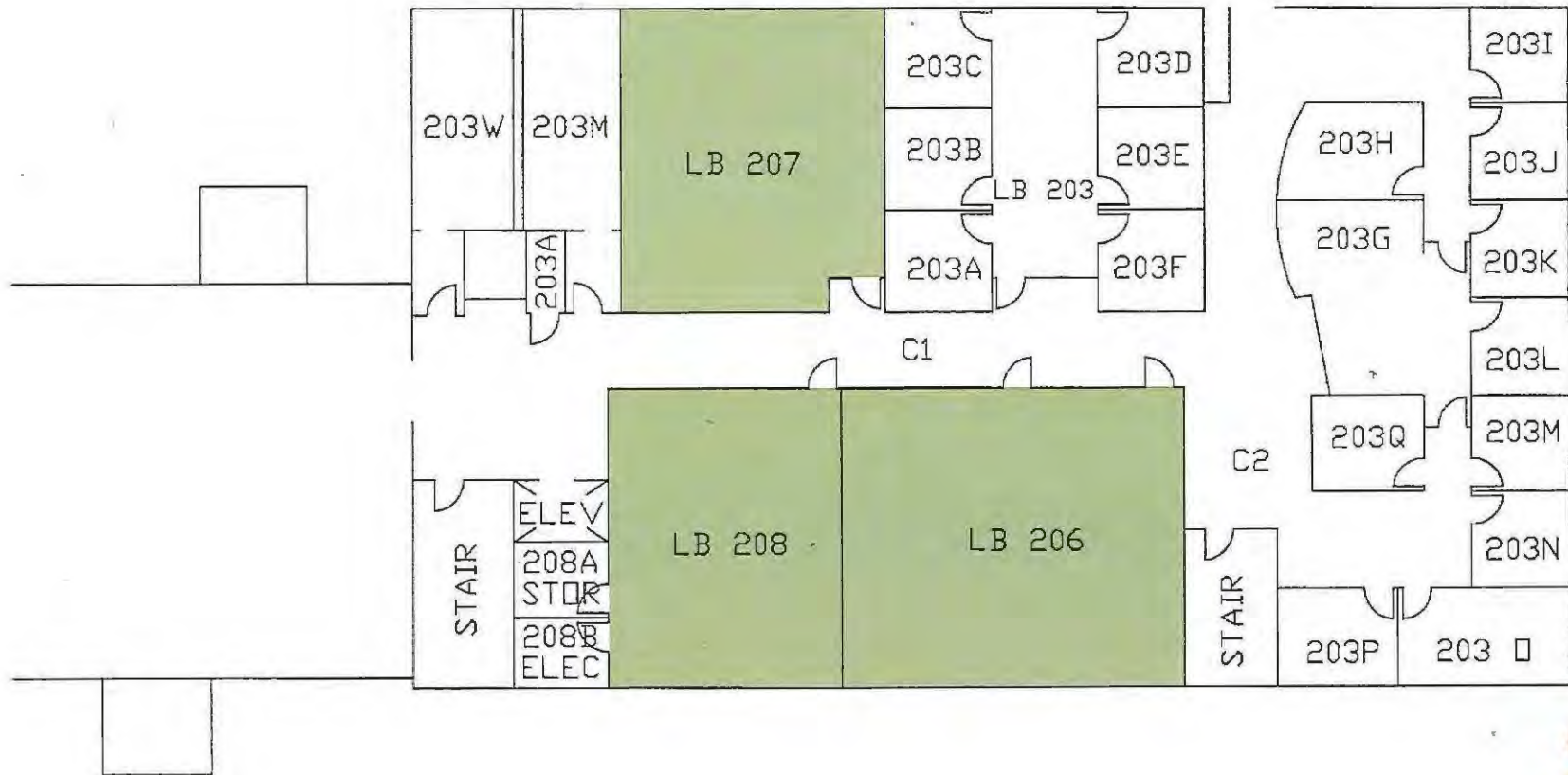
LEGEND

	40+ hours/ week
	30-39 hours/ week
	20-29 hours/ week
	10-19 hours/ week
	0-9 hours/ week



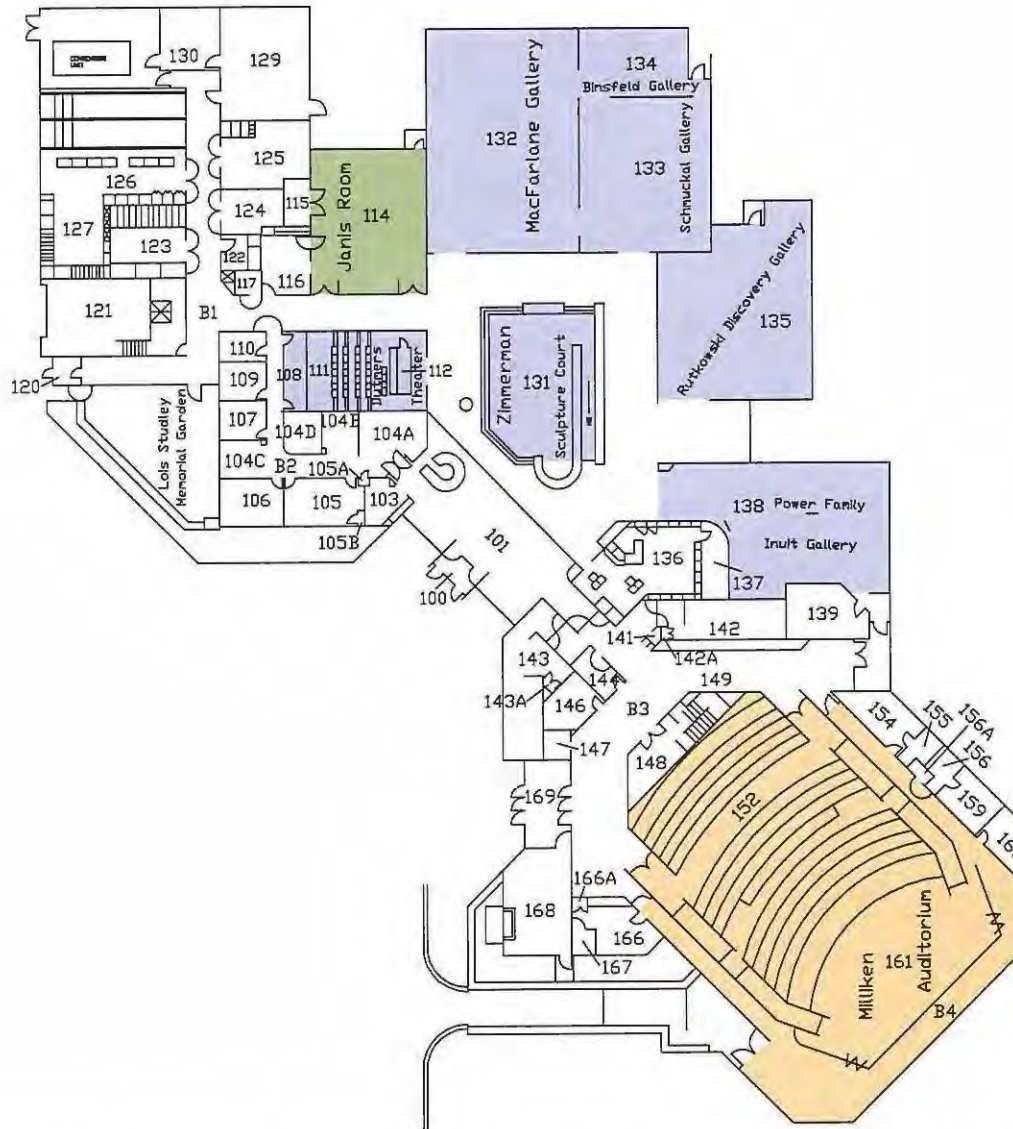
LEGEND

- 40+ hours/ week
- 30-39 hours/ week
- 20-29 hours/ week
- 10-19 hours/ week
- 0-9 hours/ week



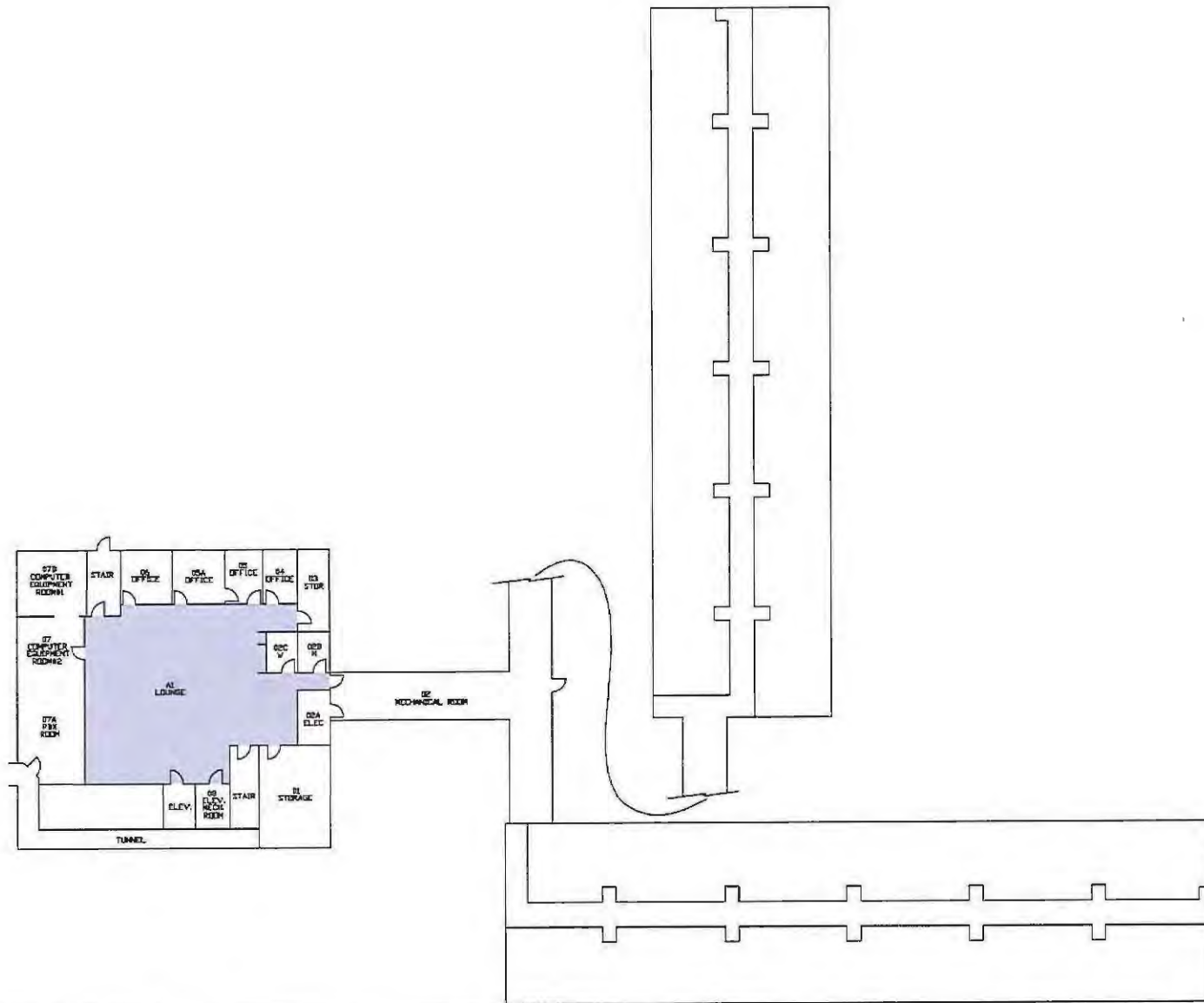
LEGEND

- 40+ hours/ week
- 30-39 hours/ week
- 20-29 hours/ week
- 10-19 hours/ week
- 0-9 hours/ week



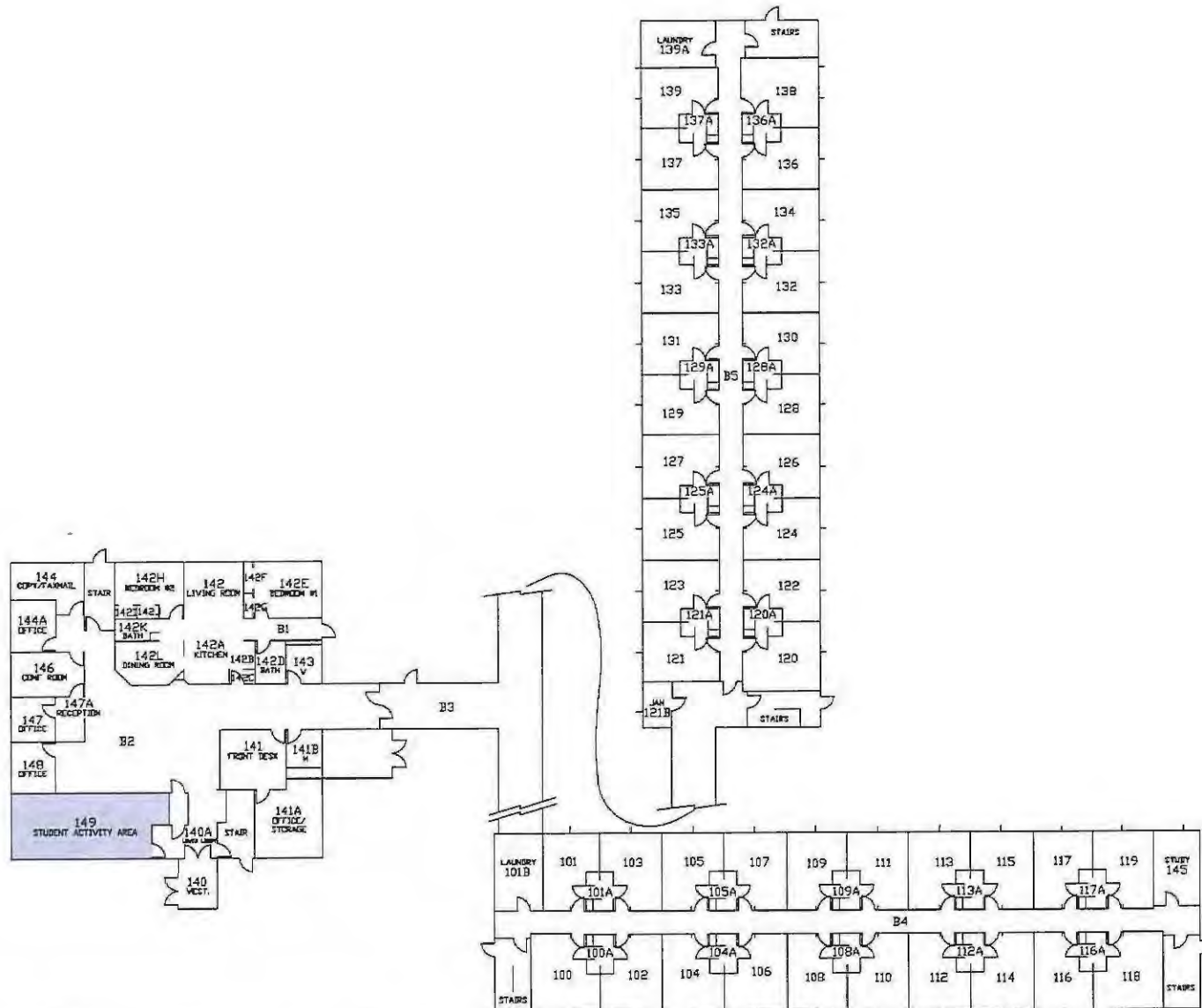
LEGEND

- 40+ hours/ week
- 30-39 hours/ week
- 20-29 hours/ week
- 10-19 hours/ week
- 0-9 hours/ week



LEGEND

- 40+ hours/ week
- 30-39 hours/ week
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- 10-19 hours/ week
- 0-9 hours/ week



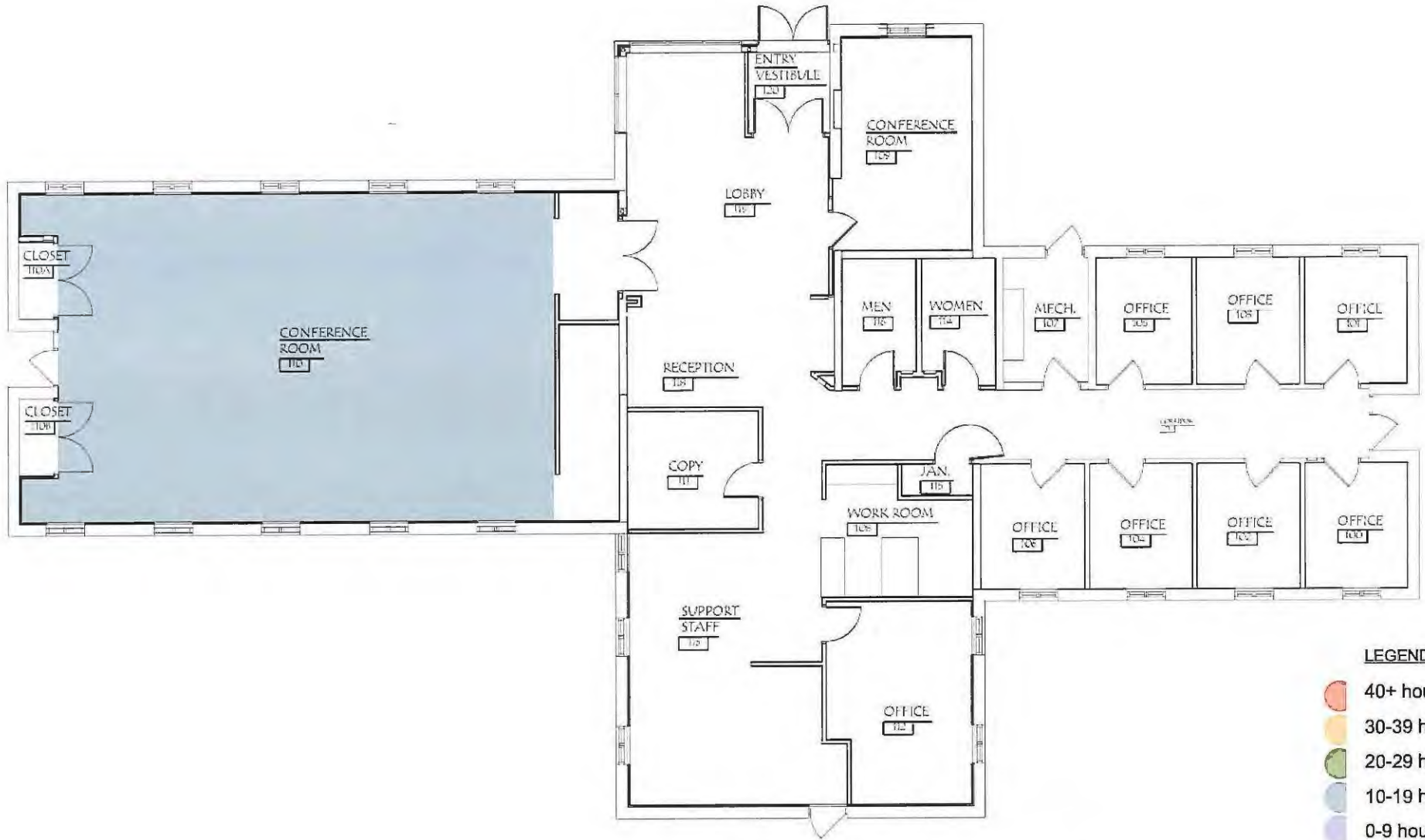
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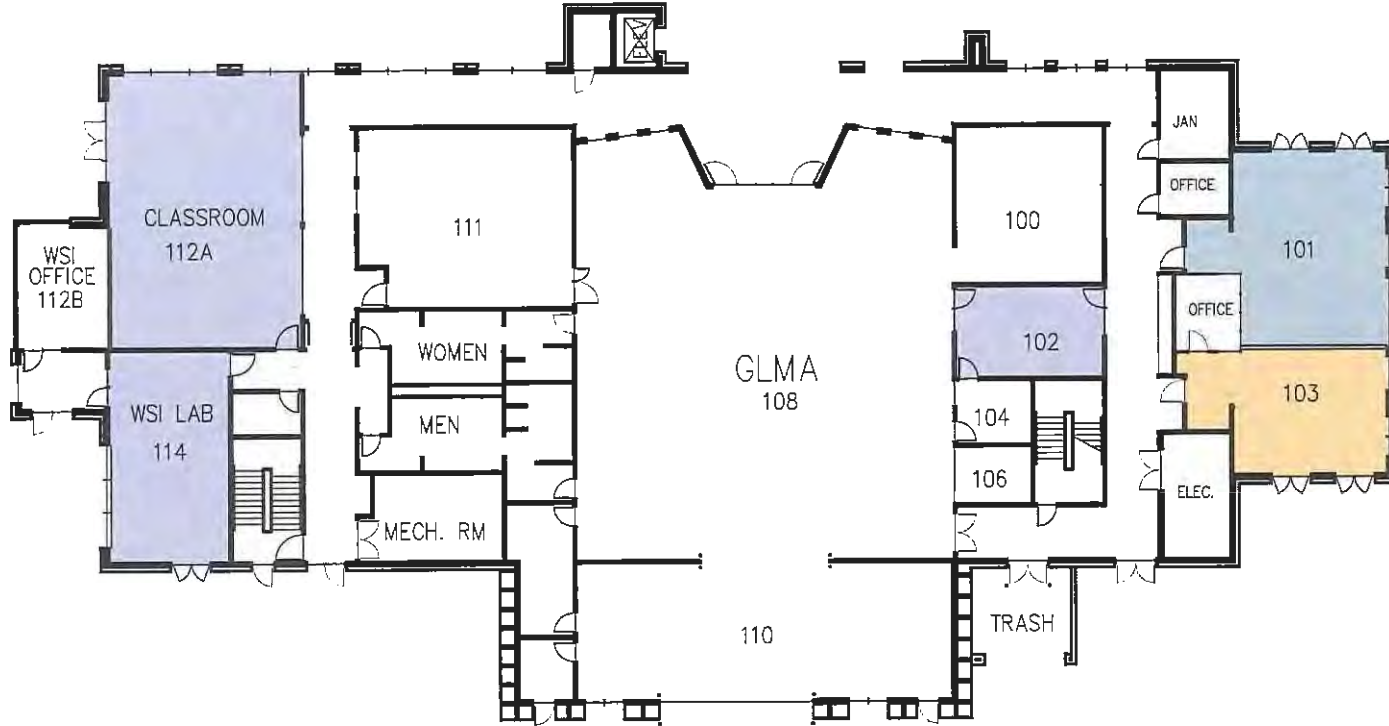
- 40+ hours/ week
- 30-39 hours/ week
- 20-29 hours/ week
- 10-19 hours/ week
- 0-9 hours/ week



LEGEND

	40+ hours/ week
	30-39 hours/ week
	20-29 hours/ week
	10-19 hours/ week
	0-9 hours/ week





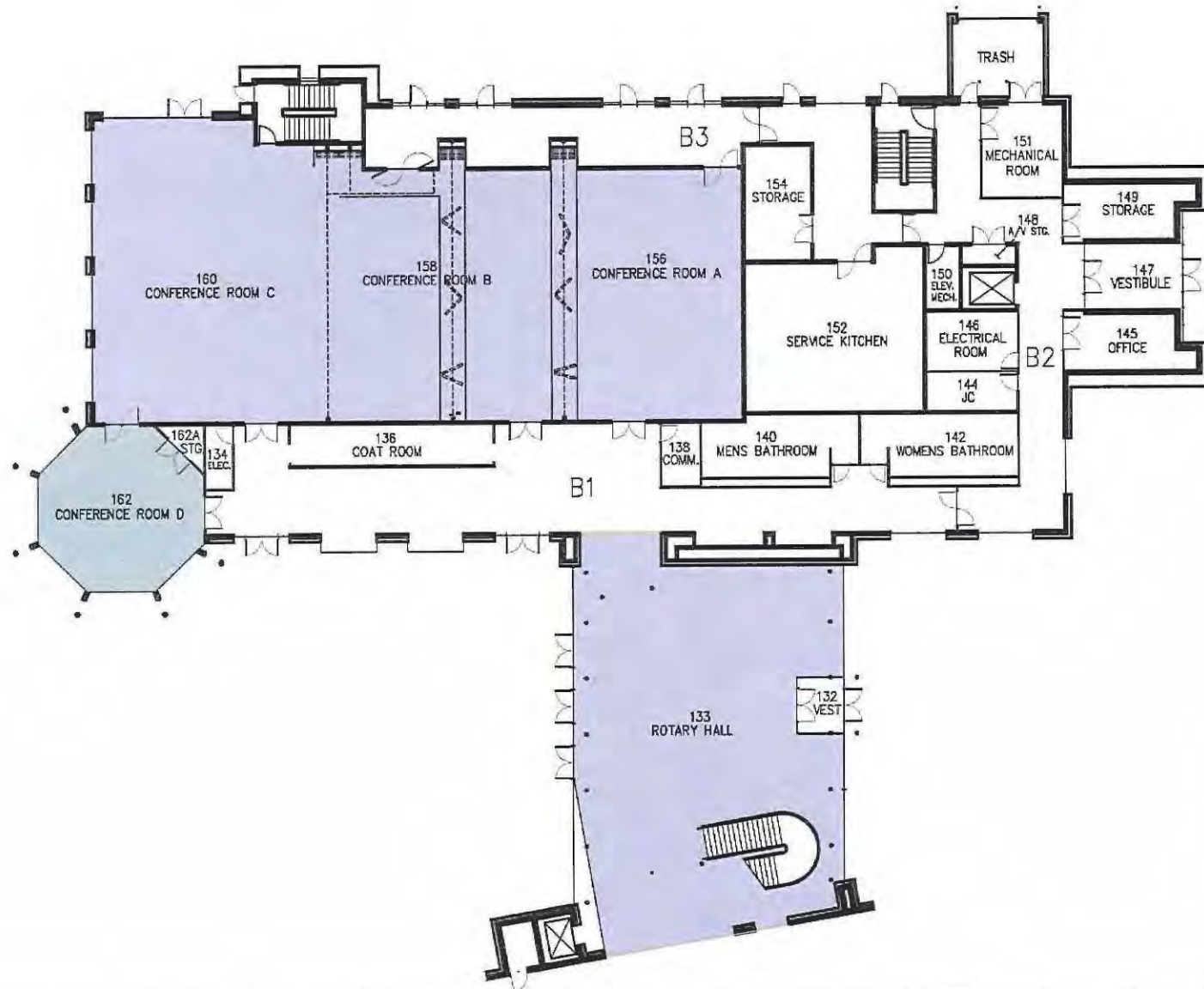
LEGEND

- 40+ hours/ week
- 30-39 hours/ week
- 20-29 hours/ week
- 10-19 hours/ week
- 0-9 hours/ week



LEGEND

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- 30-39 hours/ week
- 20-29 hours/ week
- 10-19 hours/ week
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LEGEND

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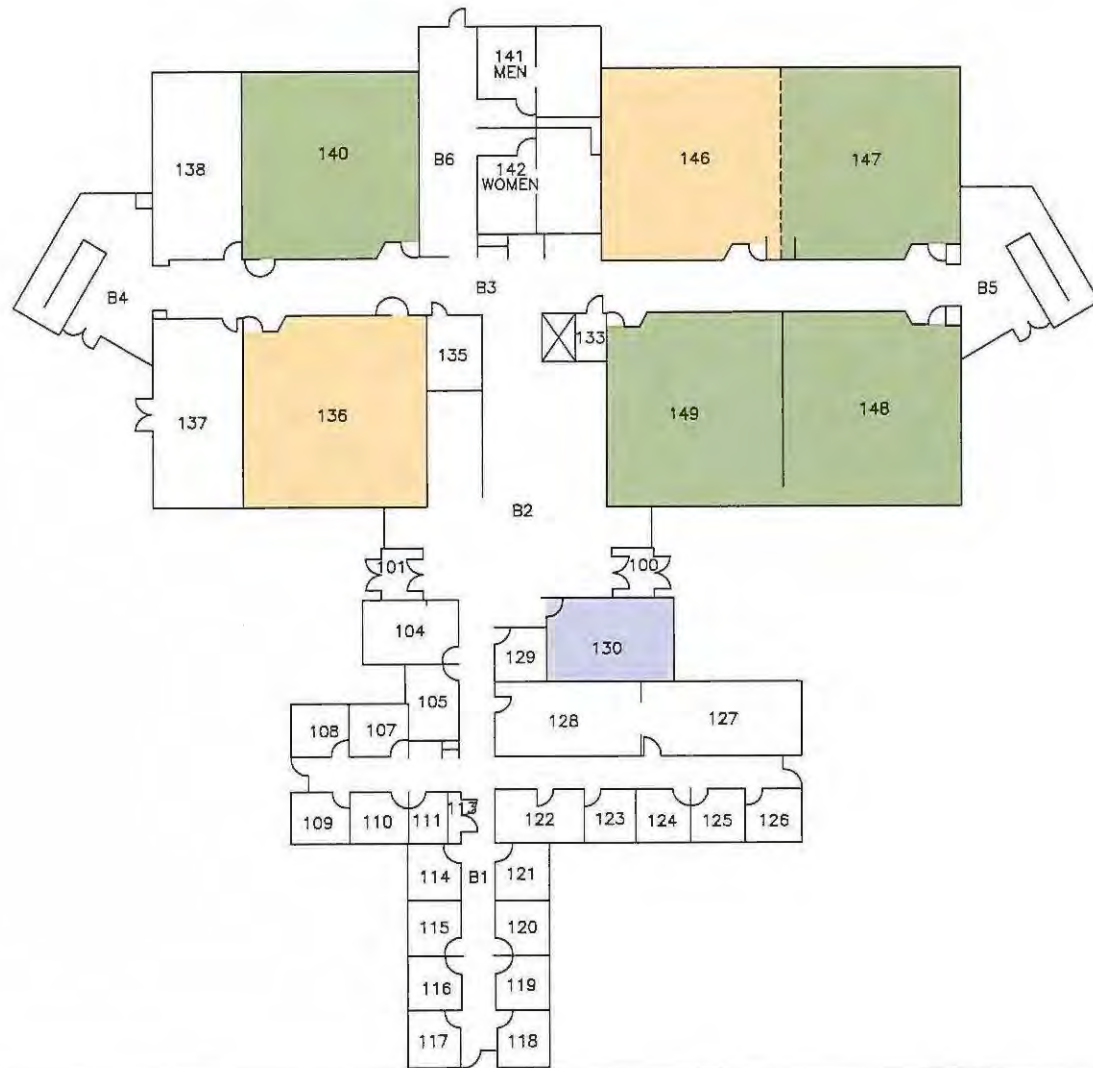
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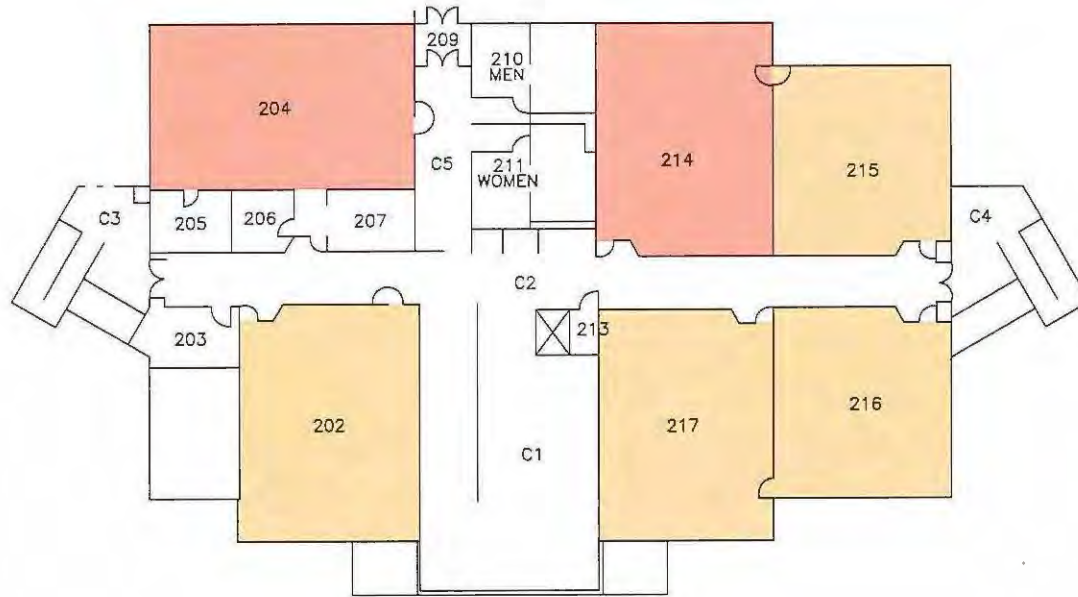
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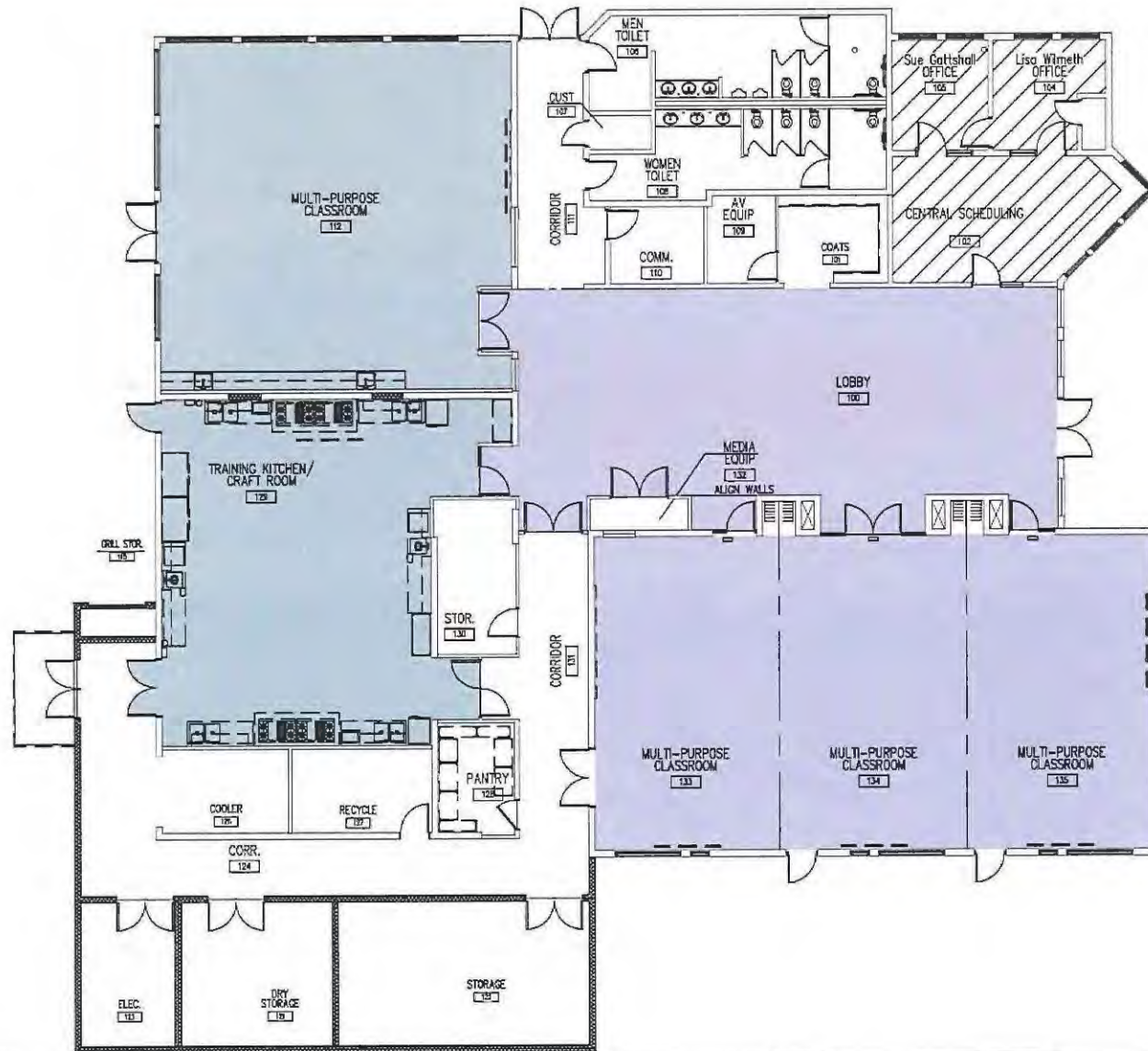
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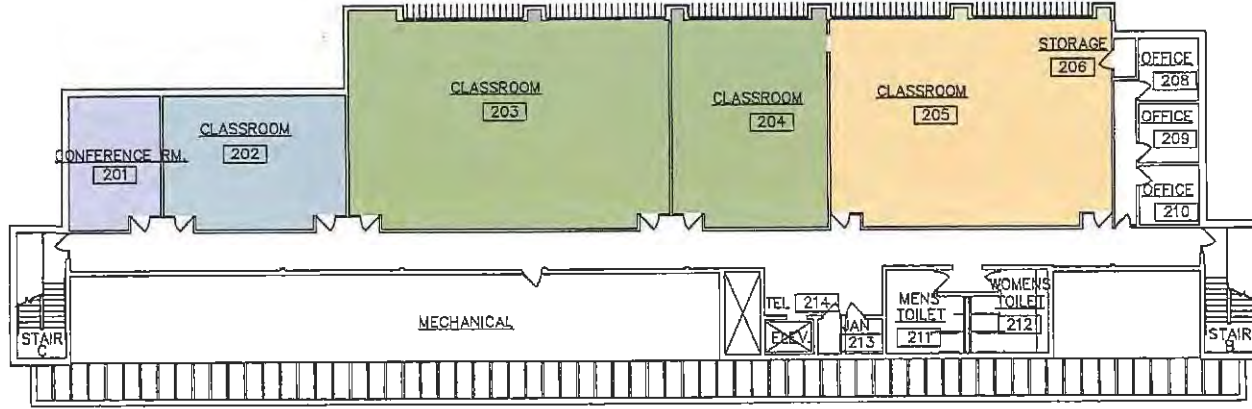
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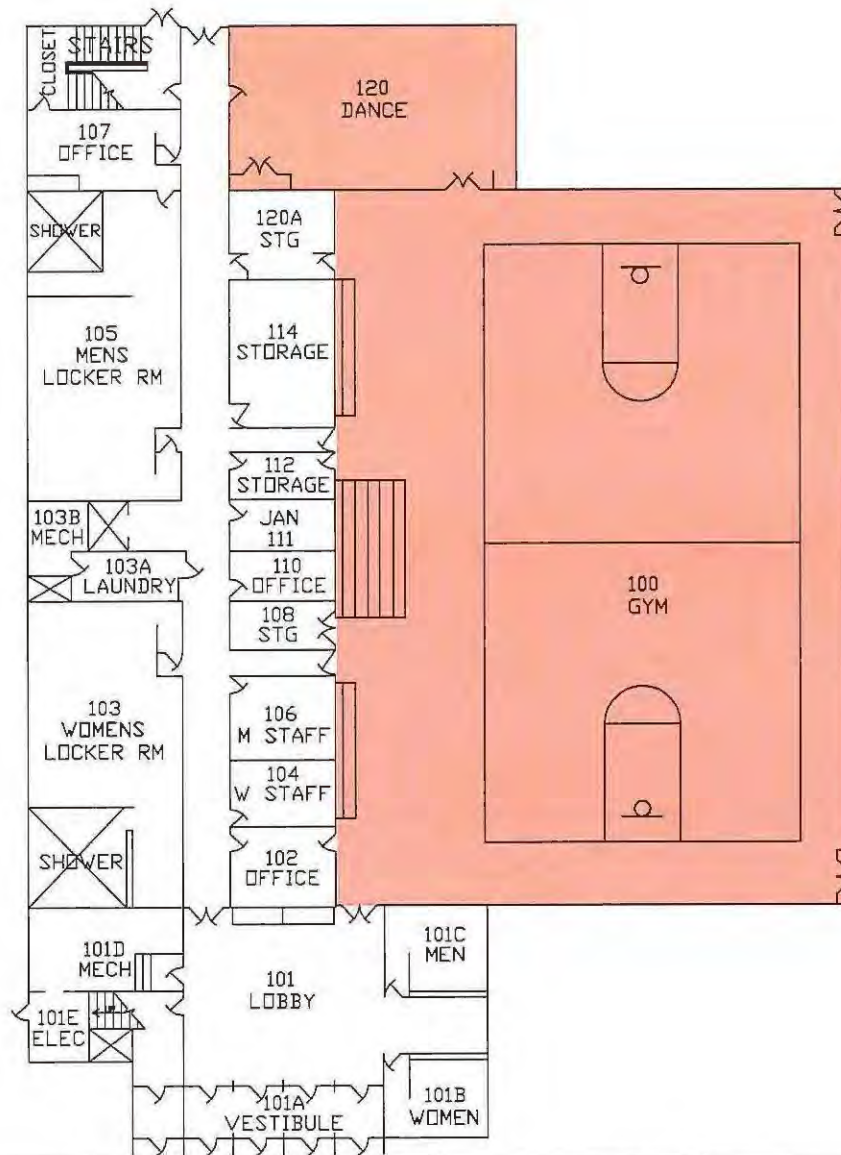


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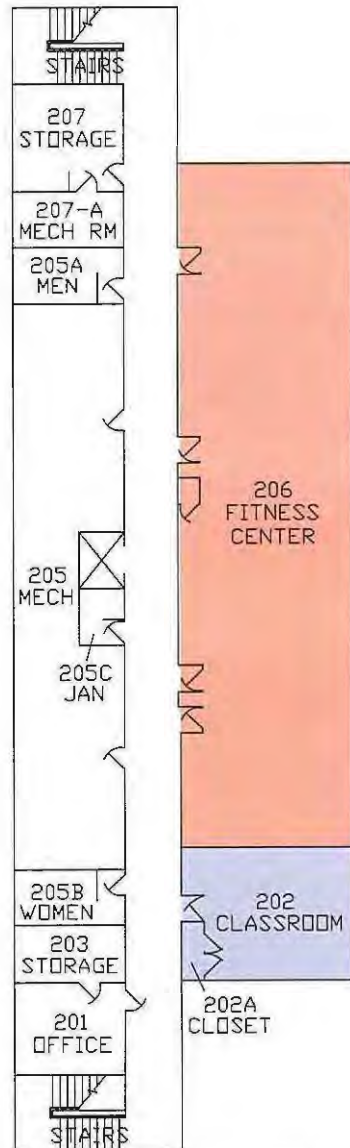






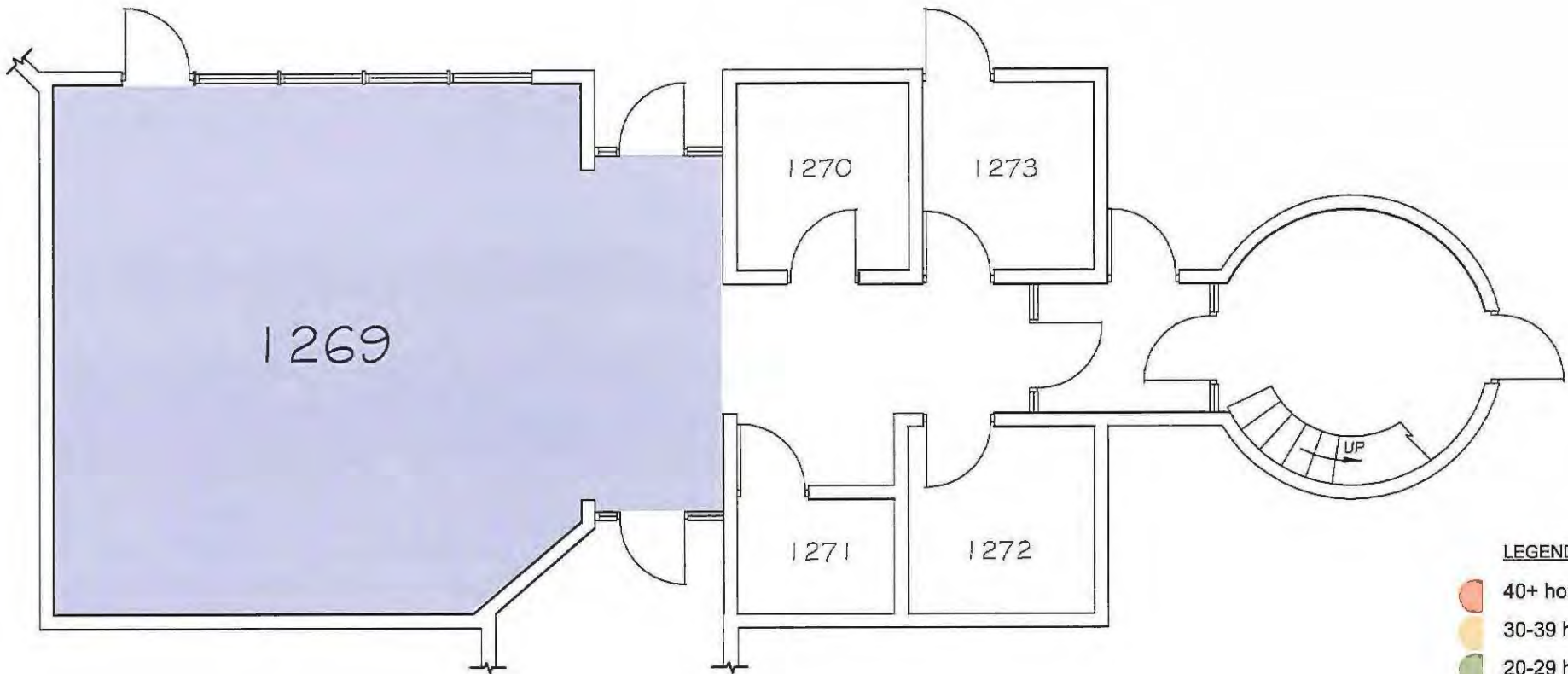
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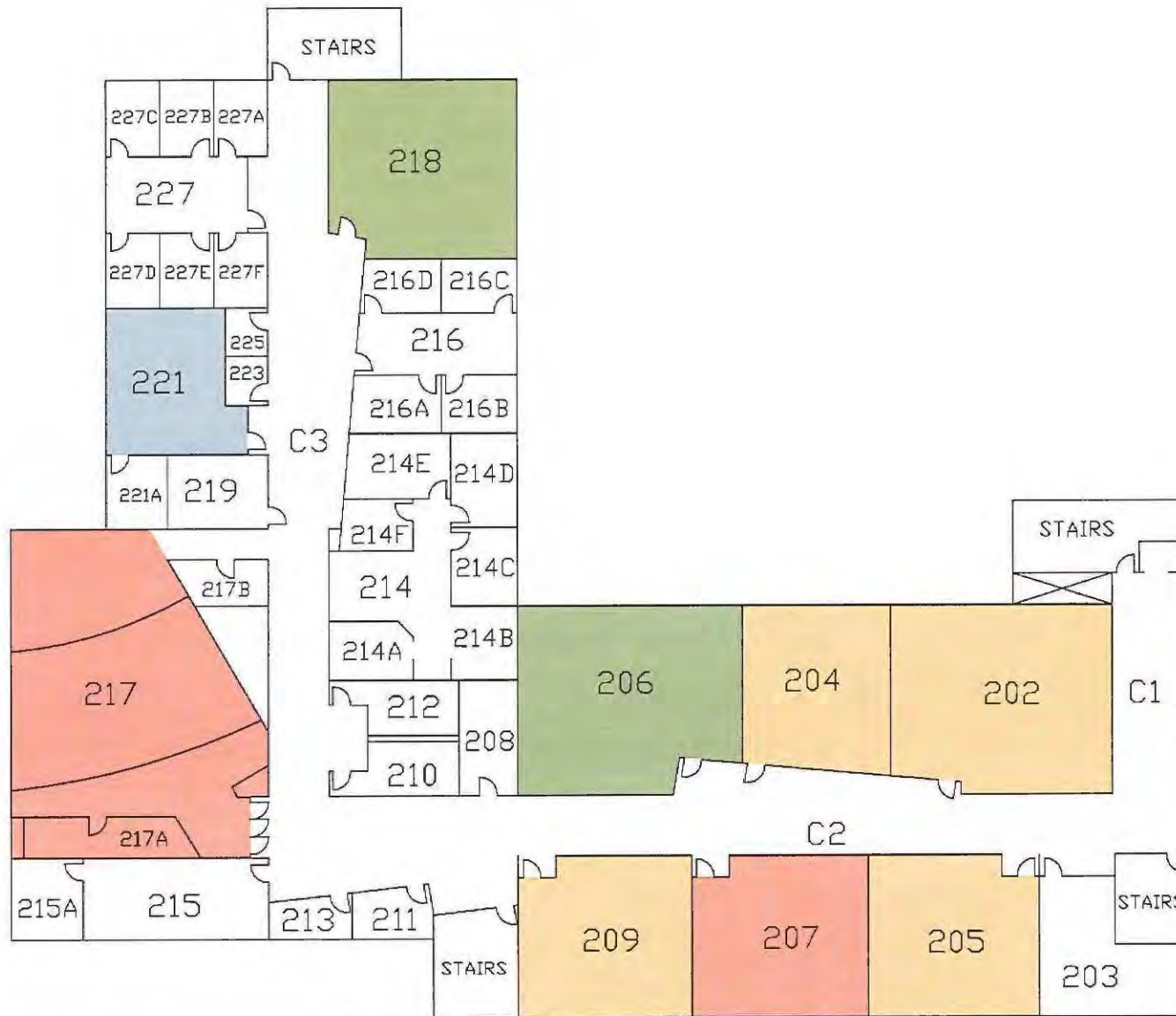
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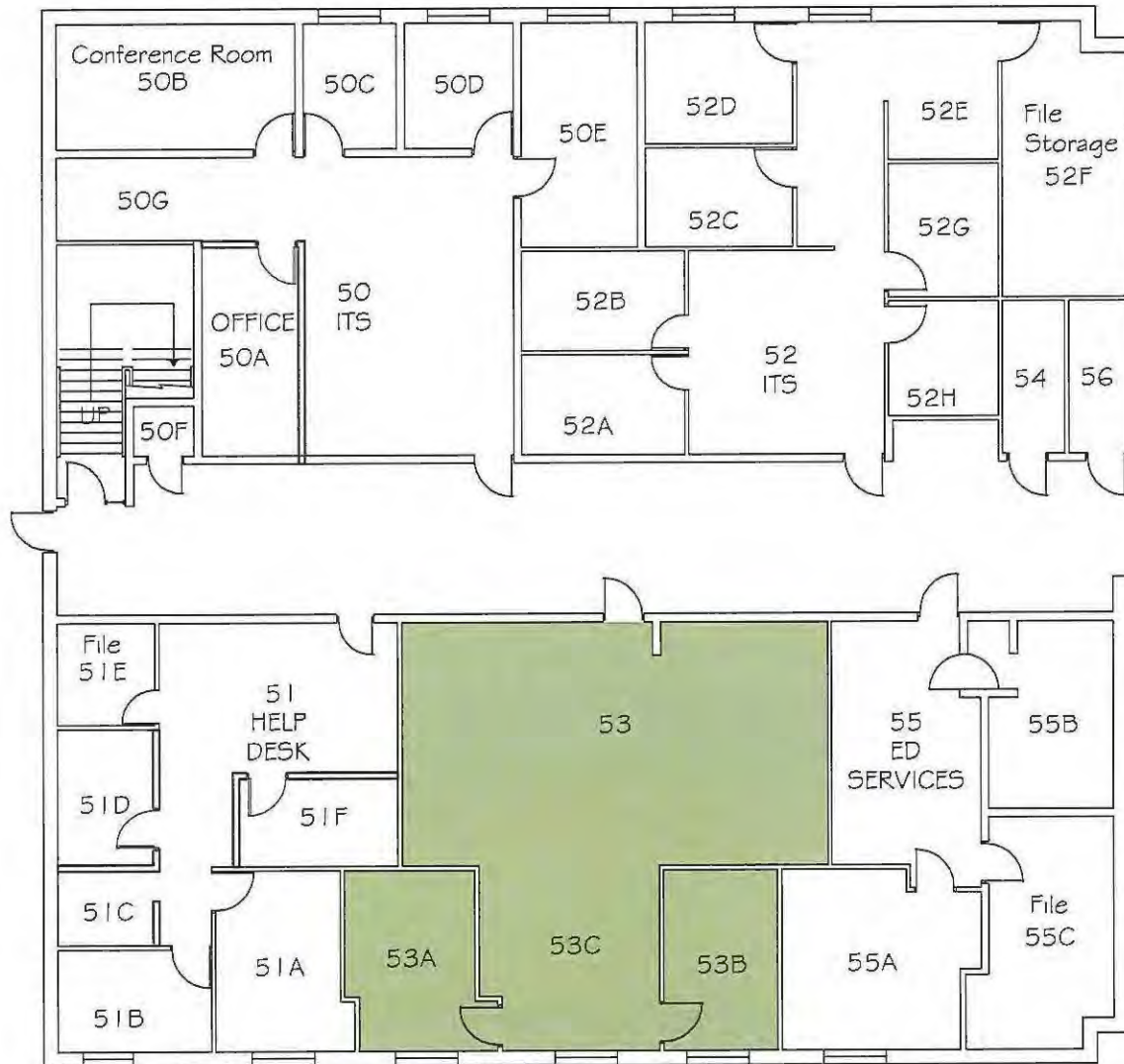
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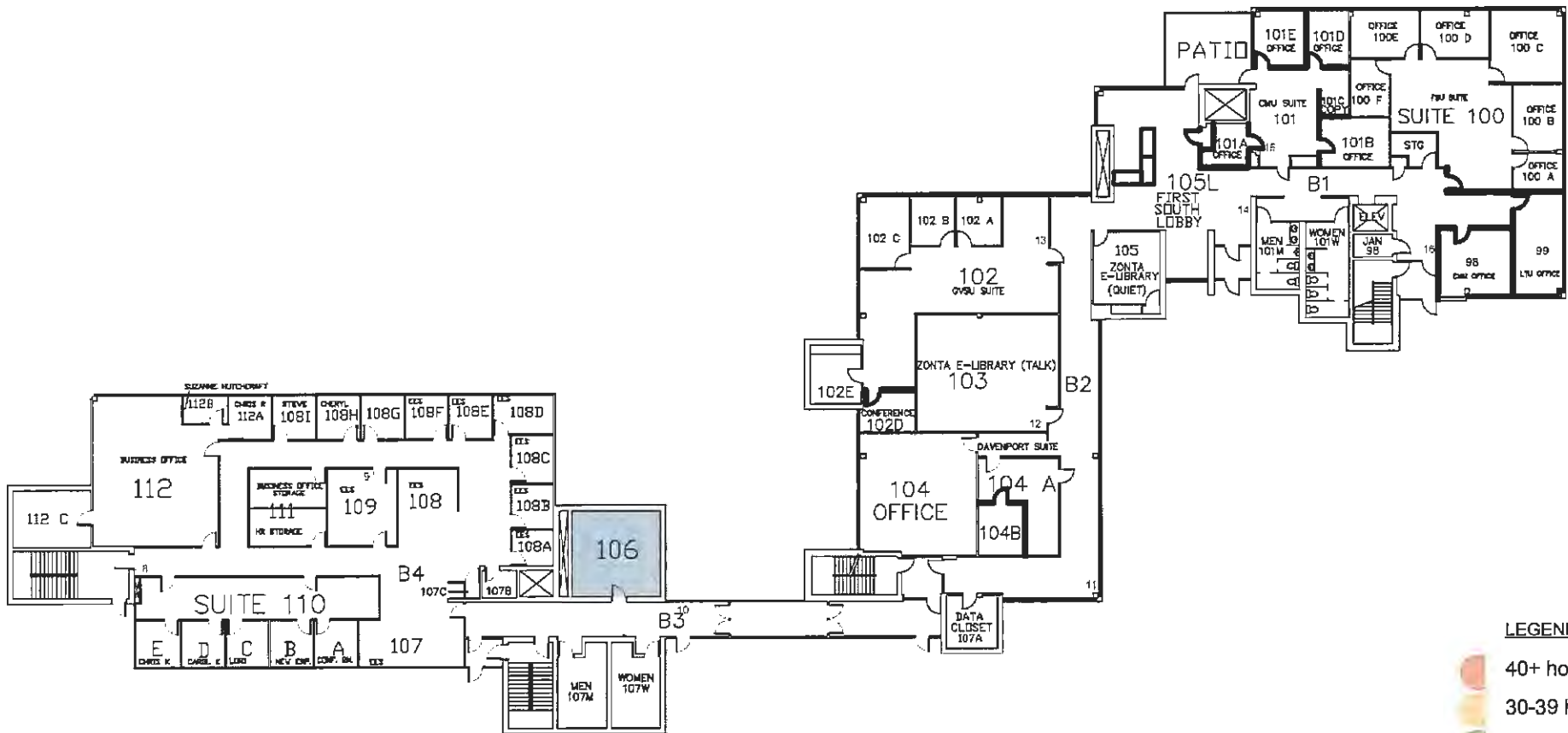
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LEGEND

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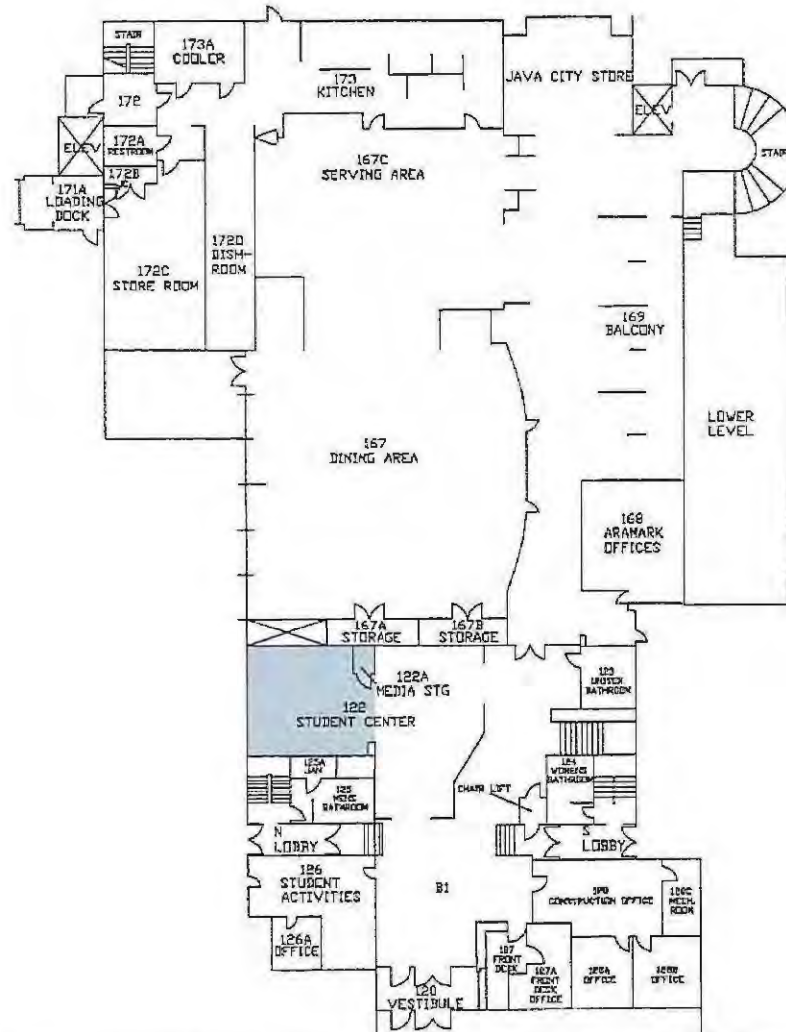
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5. *Master Plan*

Overview

The Master Plan combines the vision of Northwestern Michigan College with the input of stakeholders, data from the assessment of existing facilities and sites, and strategic plans to identify opportunities to maximize physical assets. The Master Plan supports the College's strategic plan by offering tangible facility recommendations that give structure and direction for the future development of NMC.

The Master Plan also organizes new, expanded, and renovated facilities and site projects together in a single vision for the future. This assures that any single project will be implemented within an integrated framework that anticipates infrastructure needed to support the project.

The plans that follow illustrate existing facilities, followed by a description of recommended projects. More detailed individual project descriptions are keyed to the site plan. Section 6 includes the cost summaries for each project. Section 7 describes the implementation strategy to achieve these projects.



5. **Master Plan** (continued)

A. Main Campus

Site

Environmental Stewardship

Projects related to the existing NMC main campus (indeed, all NMC campuses and sites) should retain NMC's core value of stewardship and enhancement of the natural environment. All projects affecting the site and individual buildings should complement the natural environment and enhance its quality to benefit the College, the community, and the region.

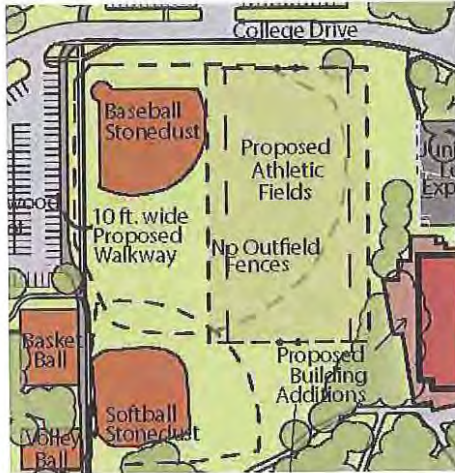
The College will be enhanced through management of the wooded and wetland ecosystems to enhance programming opportunities and to improve user comfort, convenience, and safety. The development and implementation of a comprehensive campus site management plan will improve and sustain the health of the entire natural environment on the main campus.

The management plan should include an ongoing process to monitor existing trees, plant materials and support systems to identify trees to be removed to improve safety and security. The plan should also address the development, maintenance, and future growth of campus nature trails and interpretive programs, such as the sculpture walk and potential formal wetland trails for use as a community-wide asset.

This plan can also be used to strengthen existing and future programming related to the natural environment.



5. *Master Plan* (continued)



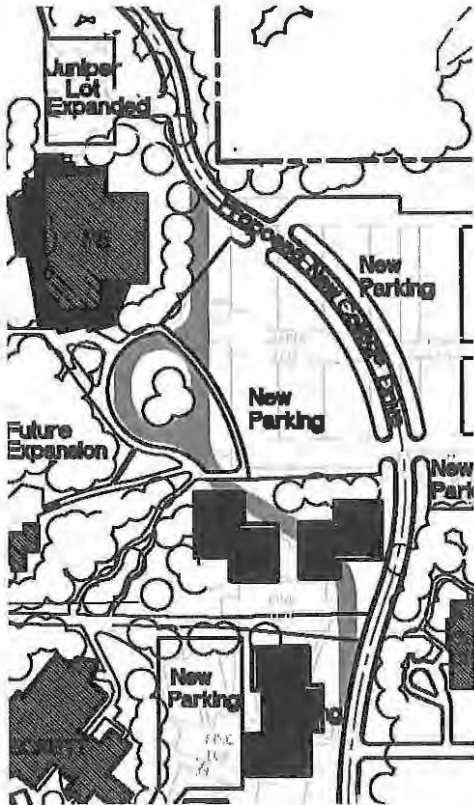
Redevelopment of Recreation / Athletic Fields

The existing recreation / athletic fields are major student amenities that contribute to the quality of student life and wellness. Located adjacent to East Hall, they are easily accessible by resident students. With the growing popularity of sports such as soccer, lacrosse, and rugby, the fields should be redefined and established to encourage recreational use, use by NMC sport clubs, and use for enhanced physical education and fitness programming. This will better define the footprint of the fields on the main campus site within the bounds of existing drives and walks.

To maximize the effective use of this common asset, the athletic fields also should be engineered to eliminate standing water from seasonal snowmelt and rain runoff. This will require a combination of additional fill to raise the level of the fields, along with the development of appropriate site under-drainage to direct groundwater away from the fields to the wetland area north of College Drive.



5. Master Plan (continued)



Relocation of a portion of College Drive

The College has appropriately developed building sites and pedestrian walks largely within the bounds of a perimeter ring road (College Drive) that has two entry points on Front Street, and one entry point on Eastern Avenue. With the exception of the recreation fields, there is little available land area remaining for potential future building sites as the College expands and changes.

The existing drive location is shown in gray tone at left.

The relocation of a portion of College Drive on the east side of campus will maximize the land area found within the ring road and increase the potential for the development of new and expanded buildings for academic use and student housing. The redevelopment of the Maple Lot will place a significant portion of the lot on the inboard side of the road, thereby increasing safety

for more commuters who will no longer need to cross College Drive to reach a destination on campus. This also holds the potential to create a stronger, more direct and clear pedestrian path from the center of campus to the Oleson Building, east of College Drive.



5. *Master Plan* (continued)



Expansion of selected parking lots

As noted in the facility analysis, the issue of traffic congestion and parking capacity is largely related to the distribution of parking opportunities across campus. As existing buildings are expanded and new buildings are constructed across campus, the demand for parking will be dispersed over a larger area. In combination with the recommendations for specific building changes, this plan calls for the expansion of selected parking lots (Aspen, Birch, Cedar, Juniper, Pine, and Tamarack) to add more than 240 new spaces. These additional spaces would bring the total main campus count to approximately 1,785, within the limits of the zoning ordinance for this zoning district.

Although not a formal recommendation for this master plan, the option exists of developing a multi-level parking structure on campus that could address the parking need on a smaller footprint in favor of retaining existing natural ground area. Further, a parking structure could help meet a wider need by partnering with TCAPS and BATA to share parking resources on a wider community basis. The specific size, location, cost and financing terms of a parking structure would be critical to maximize the benefit to NMC, its students, and its patrons. Visually, any parking structure should consider existing sight lines across campus and not obstruct views from College Drive toward campus. The most likely locations for a structure maximizing shared use would be the Aspen Lot and/or the Cherry Lot.



5. Master Plan (continued)



Property Acquisition

Property acquisition should also be considered a tool to maximize the potential of the main campus for the future. Specifically, two areas, if added to the existing main campus, would enhance the usability of existing land.

First, the area between the north entry of College Drive and the City of Traverse City water plant, if acquired, would result in an area large enough and suitable for student housing. Housing located here would be convenient for residents, and it would not take up land within the ring road that could be used for future academic buildings. Acquisition of this property appears to have no negative impact to the City of Traverse City water plant operation.



Second, property south of Front Street, currently controlled by Cambria Suites owners, could be acquired to expand the area south and east of Dennis Museum Center to provide opportunities for student housing or future welcome center / administration center for students and visitors. The success of this acquisition would be contingent on moving the entrance to Front Street further southeast to make the acquired property contiguous with the main campus.

MAIN CAMPUS NORTHWESTERN MICHIGAN COLLEGE





5. **Master Plan** (continued)

Main Campus - Buildings

Based upon the facility assessments, strategic plans and stakeholder input for future NMC needs, following is a description of recommended projects. For all projects and building improvements, Northwestern Michigan College is committed to environmental stewardship through sustainability practices and recycling efforts in the planning, design, construction and operation phases.

It is worth stating here that addressing deferred maintenance issues is an important ongoing activity at NMC. With buildings dating back to the 1950's, it is important to maintain this ongoing effort. Each year, NMC budgets for various improvements across each campus location and the expectation is that the College will continue to fund the repair and replacement of existing systems as necessary to sustain proper function and to avoid exponentially higher costs in the future.

Examples of deferred maintenance items are:

- . HVAC system upgrades
- . ADA improvements
- . Roof replacement / repairs
- . Insulation / carpet replacement
- . Window / door replacement
- . Landscaping
- . Furniture / equipment replacement
- . Athletic field repairs / upgrades
- . Parking lot resurfacing, repair, restriping



5. Master Plan (continued)



1. Apartments

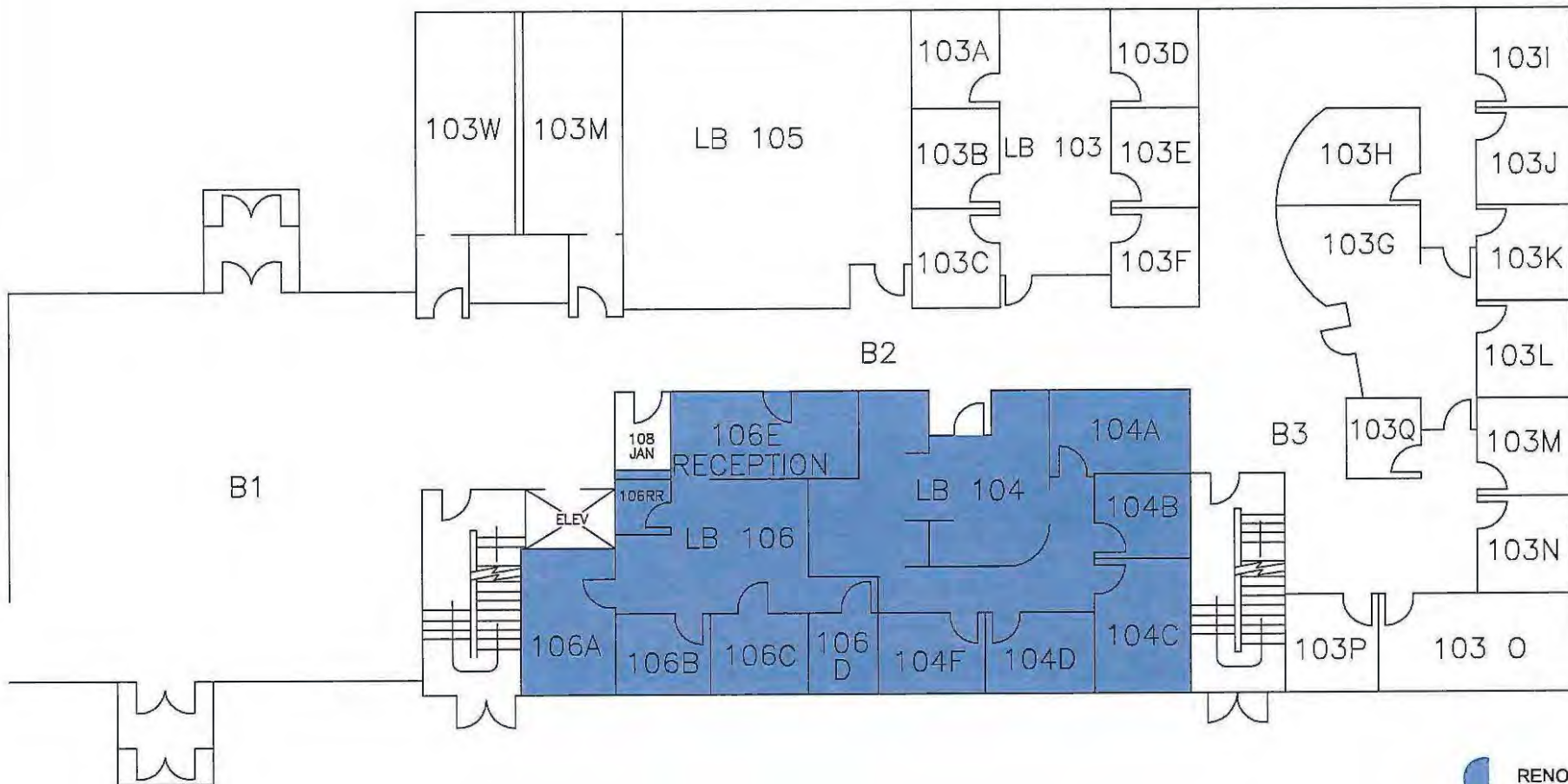
Consistent with NMC's goal of providing resident housing for a total of approximately 500 students, and assuming the continued use of East Hall for dormitory-style housing for 200+ students, there is a need for about 300 apartment-style beds on campus. This Plan recommends the razing of the existing three apartment buildings and the development of new housing units on the east and/or north sides of campus. These units are conceived as primarily apartment / townhouses that also could incorporate academic space and accommodation for visiting professors, resident fellows, etc.

The east campus location would be along the relocated College Drive. The north location would be on acquired property between College Drive and the City of Traverse City Water Plant. An alternative location would be on the Eastern Avenue property.

The financing, development, management, and operation of these new units is anticipated to be with a private partner.

2. Biederman Building

With the recommended relocation of health services to West Hall, and the anticipated move of PR and Marketing to the Tanis Building, the vacated spaces within the Biederman Building should be returned to instructional spaces and/or student study spaces.



- RENOVATION
- NEW CONSTRUCTION



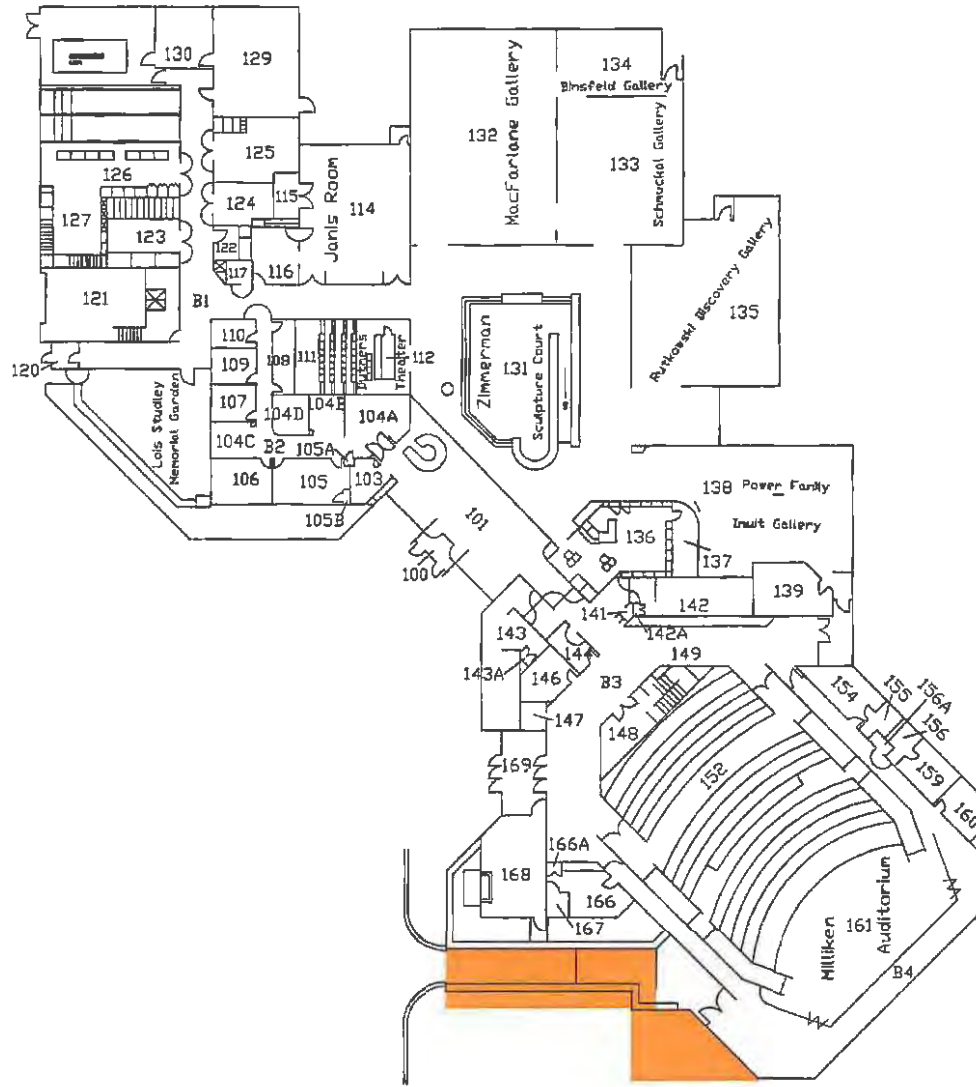
5. Master Plan (continued)



3. Denmos Museum Center

Gallery expansions totaling approximately 8,000 SF at the south and east exposures of Denmos Museum Center have been documented under previous planning efforts. These additions would be achieved through private donations.

This plan recommends the addition of 400 SF of storage space and loading dock revisions on the northwest corner of the building to accommodate storage of musical equipment often used at Milliken Auditorium. It also calls for the widening of the loading dock and access ramp to eliminate consistent damage by delivery trucks.



- RENOVATION
- NEW CONSTRUCTION



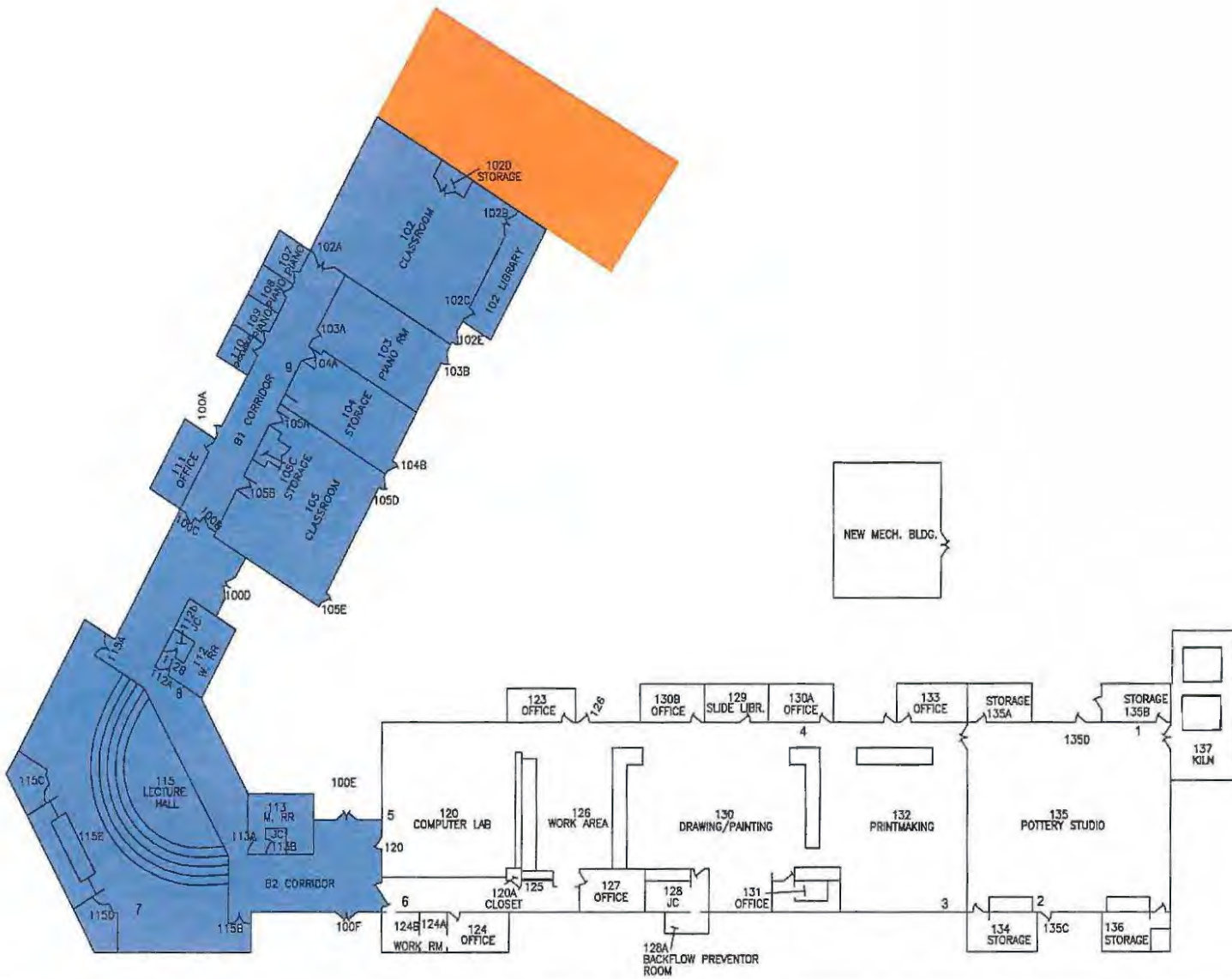
5. Master Plan (continued)



4. Fine Arts Building

In response to new and expanding programming in audio technology, as well as increased use by multiple, large ensemble musical groups, this Plan recommends the addition of 6,000 SF of new space, directly connected to the music wing, for the purpose of rehearsal, office, and storage space. The plan envisions at least two new large rehearsal spaces, with common office and storage between them. The addition should complement the character of the existing structure.

In addition, this plan recommends the interior renovation of the entire music wing of the Fine Arts Center (approximately 9,000 SF), including the large lecture / rehearsal hall, classrooms, offices, private rehearsal spaces and storage space with appropriate acoustic separation for enhanced utilization.



- RENOVATION
- NEW CONSTRUCTION



5. Master Plan *(continued)*

5. Osterlin Building

The Osterlin Building meets multiple needs for NMC as the campus library, study area, testing center, tutoring center and location of core student services, professional learning services, and classrooms. The evolution and change in programming and services over time has led to the recommendation in this plan that the main floor of Osterlin (approximately 32,500 SF) be renovated and “reset”, resulting in improved organization of more flexible space, better use of shared resources, creation of additional student study spaces, and enhanced service for students.



5. *Master Plan* (continued)

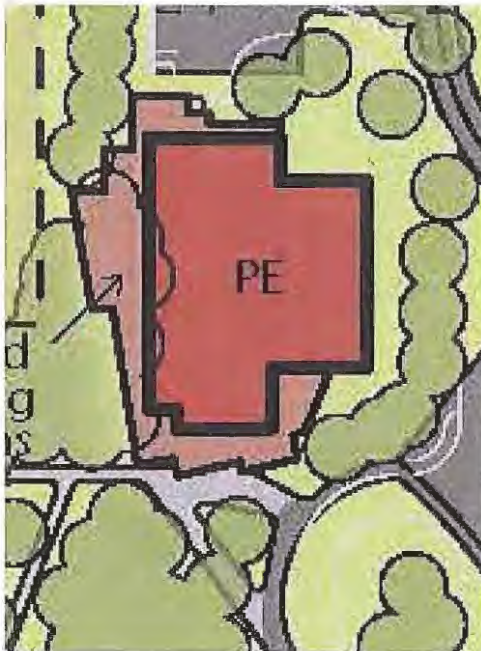
6. Power House

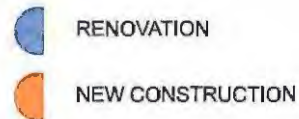
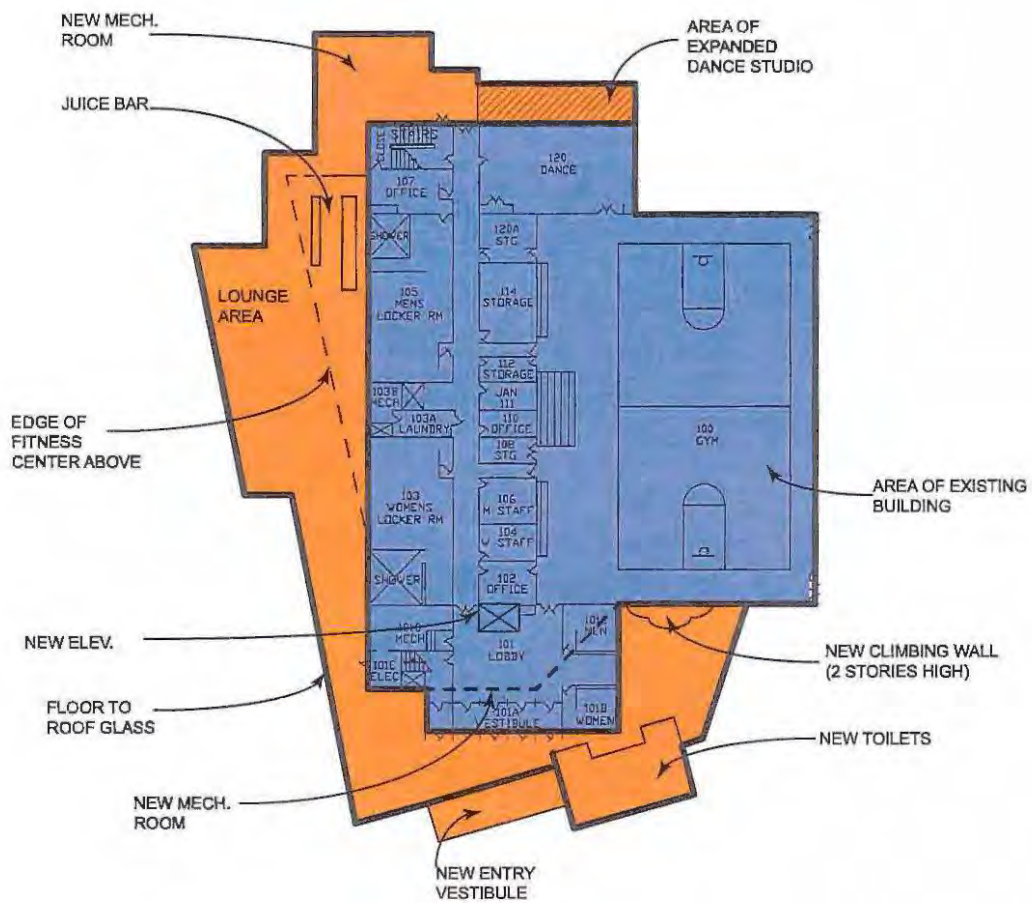
Because of its central location and high visibility on campus, this plan recommends the renovation of the Power House exterior to better reflect major interior changes and to support new programming in alternative energy studies.

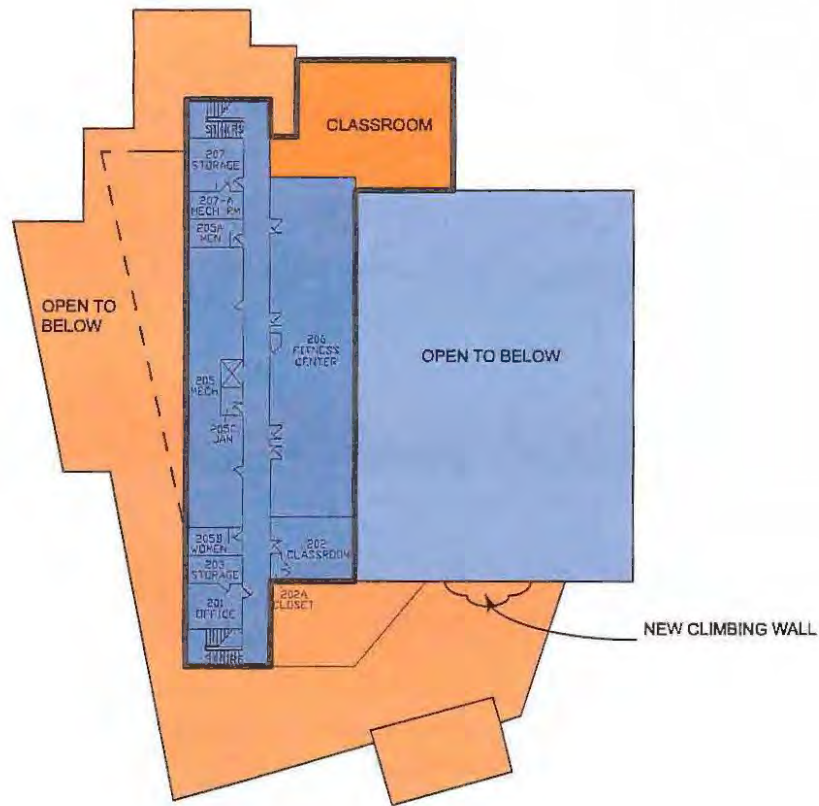
7. Physical Education Building



As a critical ingredient to successful student-life activities and organizations, and in order to expand and enhance programming for health, wellness, fitness, and athletic training, this plan recommends the complete renovation of the existing (28,000 SF) building, as well as an addition of 9,000 SF of new space for an expanded fitness center, expanded multi-purpose space, expanded instructional space, and new student activity space, including a new entry.

An alternative recommendation is to create a new 40,000 SF fitness/wellness/recreation center south of the existing building and raze the existing building.







-  RENOVATION
-  NEW CONSTRUCTION

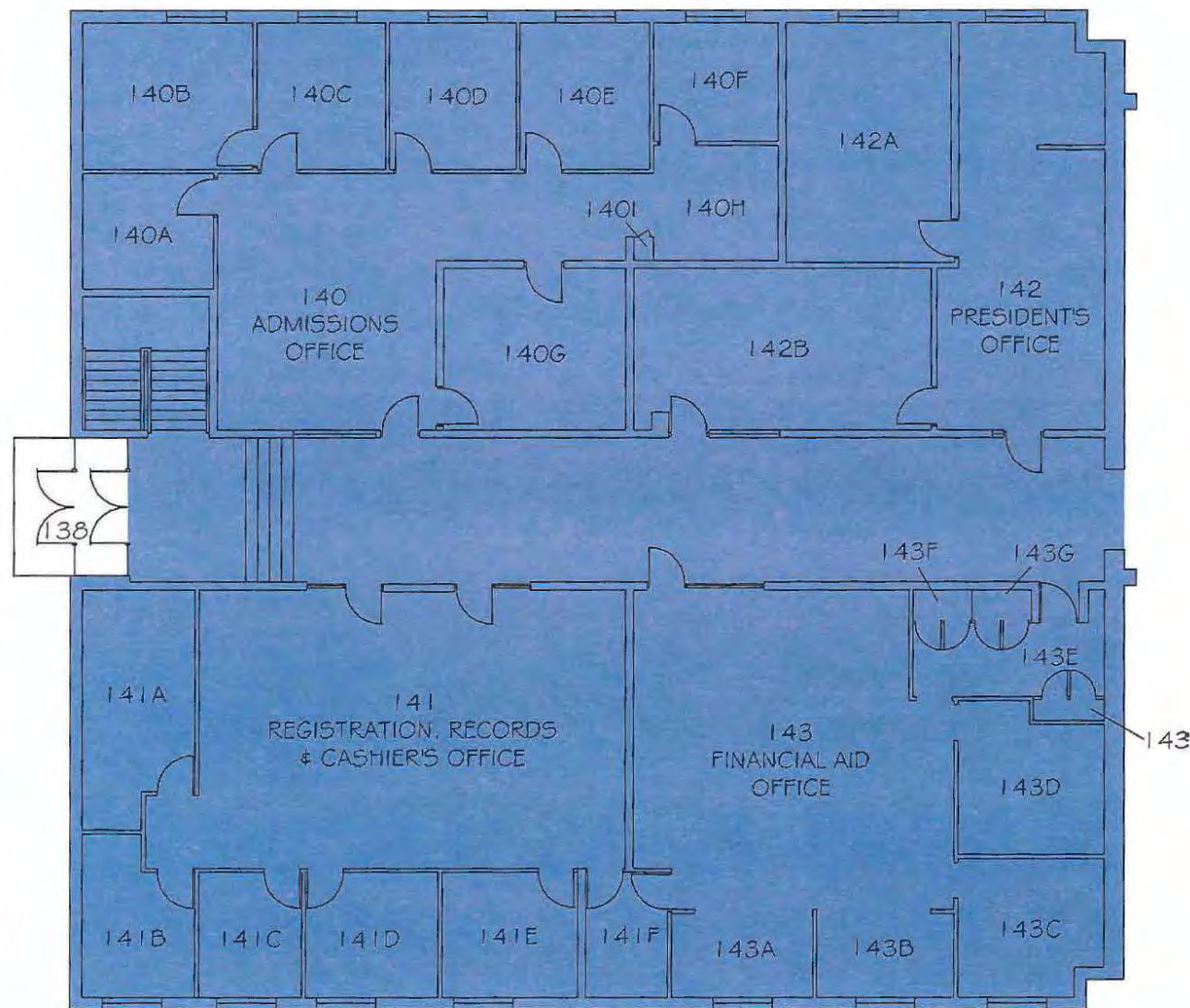


5. **Master Plan** (continued)

8. **Tanis Building**

With the relocation of student services to West Hall, this plan recommends that the Tanis Building serve as a consolidated administration location, with offices for the NMC Presidents and Vice Presidents on the upper floor (renovation of 7,200 SF) in order to share resources and enhance communication.

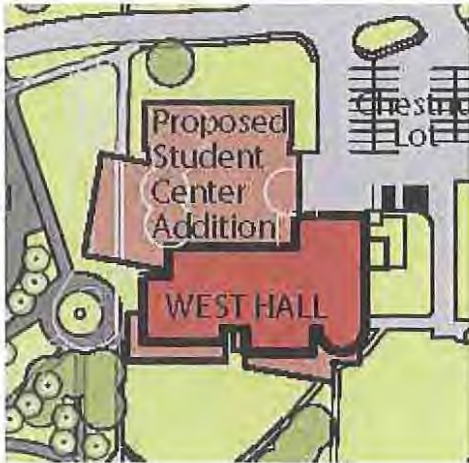
Lower level functions and spaces would remain.



- RENOVATION
- NEW CONSTRUCTION



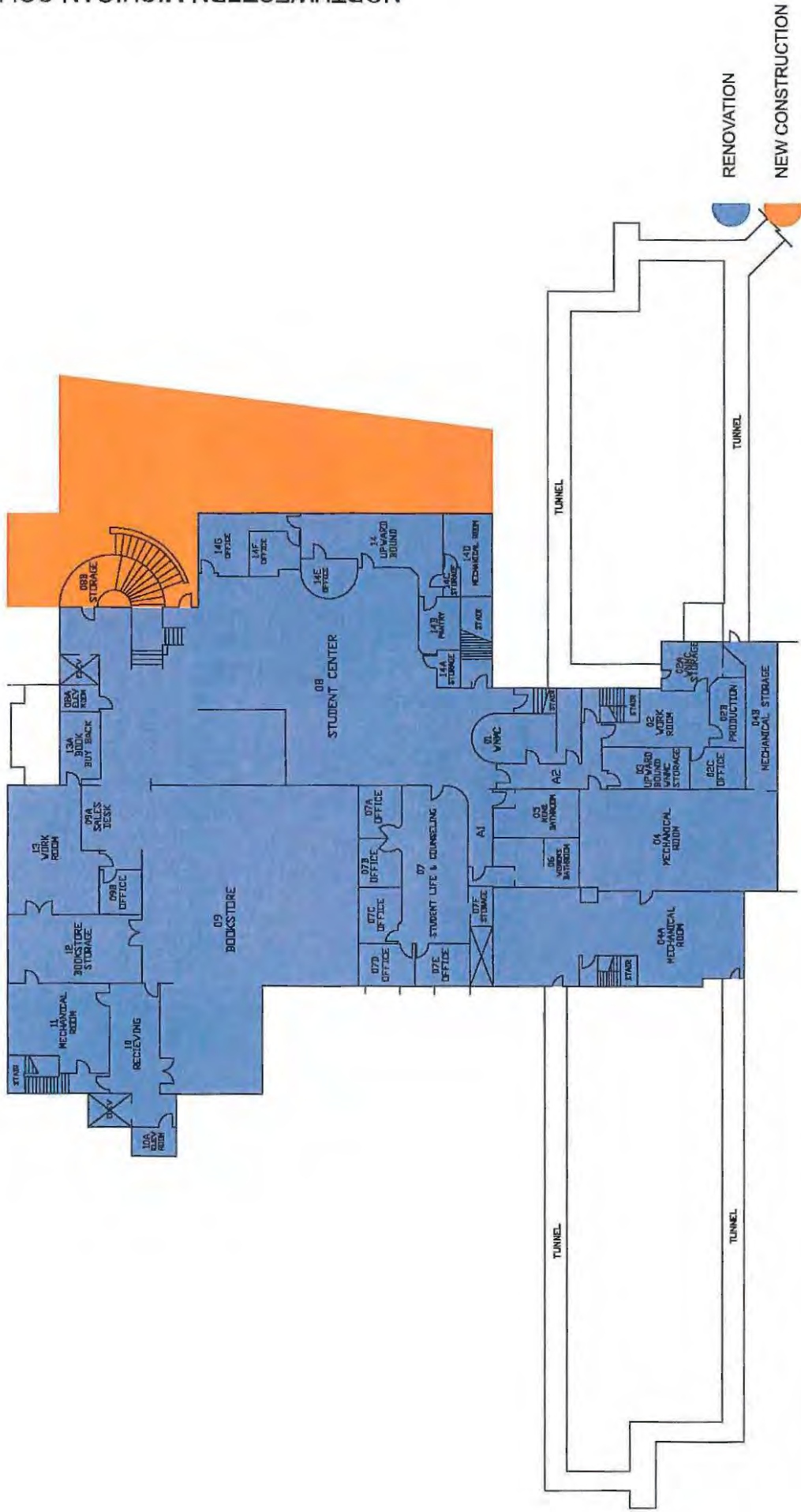
5. **Master Plan** (continued)



9. **West Hall**

As the new Student Learning Center for NMC, this plan recommends the renovation of the existing West Hall (33,450 SF), and a major addition of 40,000 SF to achieve the following:

- . Expanded food service capacity
- . Expanded and relocated bookstore
- . Additional student gathering and study spaces
- . Expanded student-life and student organization space
- . Relocated and streamlined student services
- . Relocated student health services
- . Teaching classrooms
- . Docking facilities for new mobile simulation laboratory.



RENOVATION
NEW CONSTRUCTION



WEST HALL
LOWER LEVEL

TowerPinkster
ARCHITECTURE



5. **Master Plan** (continued)

B. Aero Park Campus

Site

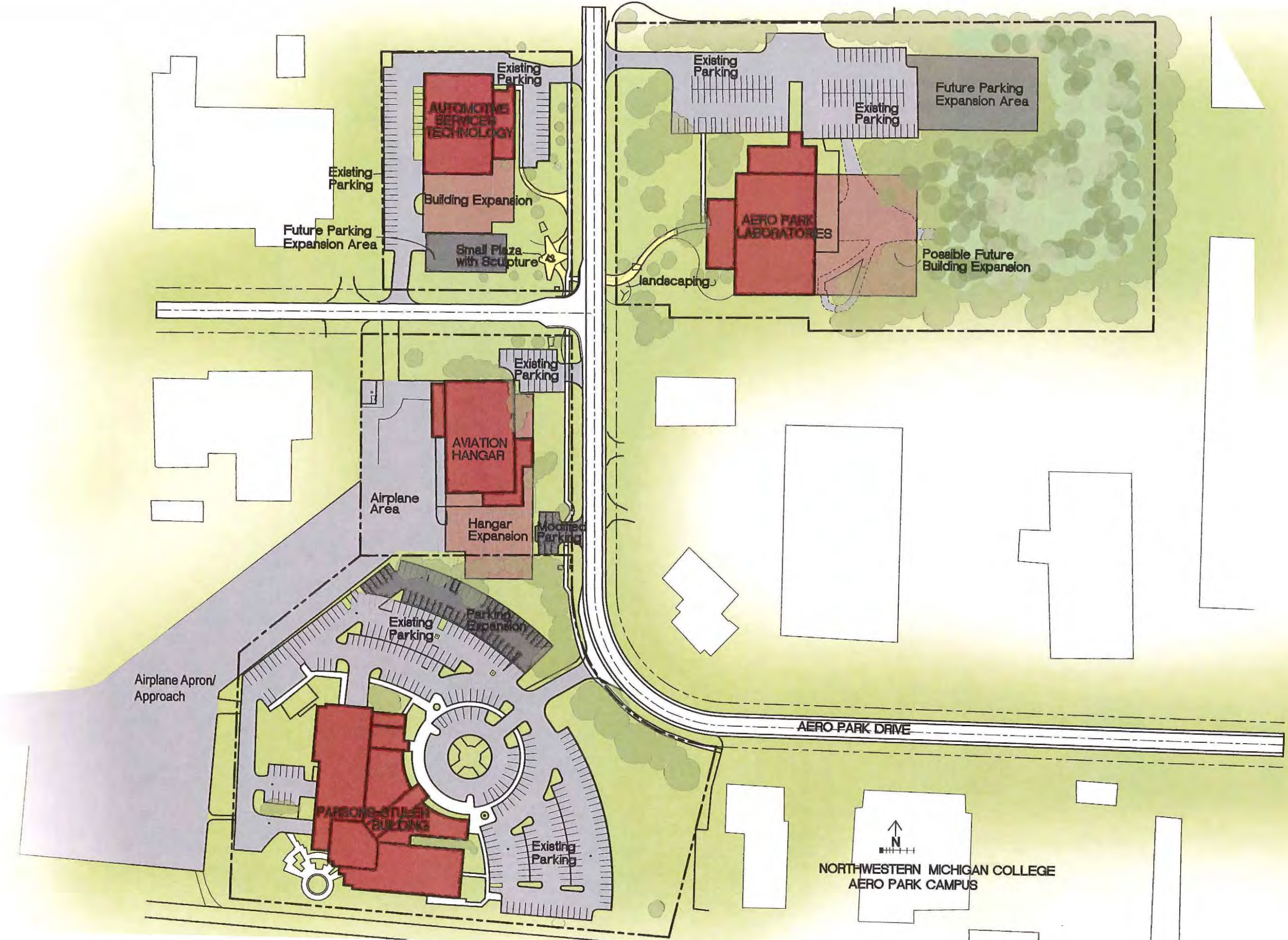
Establishing a single campus identity in the context of an existing industrial park comprised of individual businesses and buildings requires an ongoing commitment to incremental steps to achieve this goal. That each of the four buildings on this campus are contiguous or across a street from each other is a benefit.

The recommendations for building modifications below carry the understanding that exterior materials, massing, colors, landscaping treatments, walks, and signage will be standardized across all four buildings and sites to the extent possible. The ability for students to safely walk from building to building should be maximized.

The Parsons Stulen Building represents the largest and strongest visual contributor to the campus, and its geographic location on Aero Park Drive establishes it as an anchor for the campus. The recent acquisition and upgrade of the APL provides a complementary counterpoint to Parsons Stulen and should be used as a guide for future improvements at the Automotive Technology Center and the Aviation Building.

The aviation program currently utilizes the aviation building and spaces within the Parsons Stulen Building. Expansion of the Aviation Building, and the resulting reconfiguration of vehicle parking should have the impact of drawing these two buildings physically closer and making it easier and more convenient for students to walk between buildings.







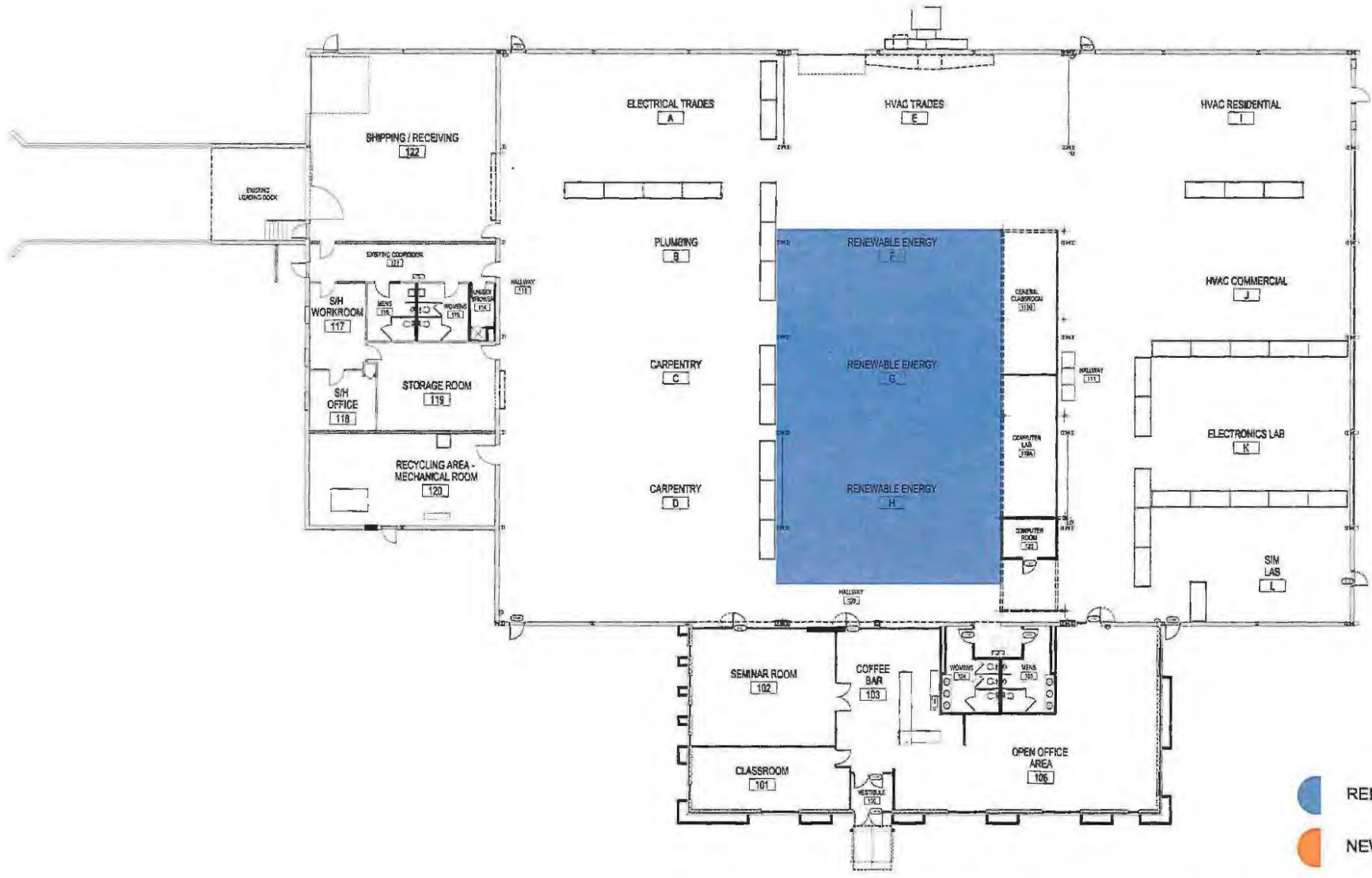
5. Master Plan (continued)

Buildings

1. Aero Park Laboratories

As the APL is comprised of open, flexible-use spaces, this plan recommends that the developing programming in robotics and automation systems be located here, accessible to and in affinity with the electronics lab already at APL.

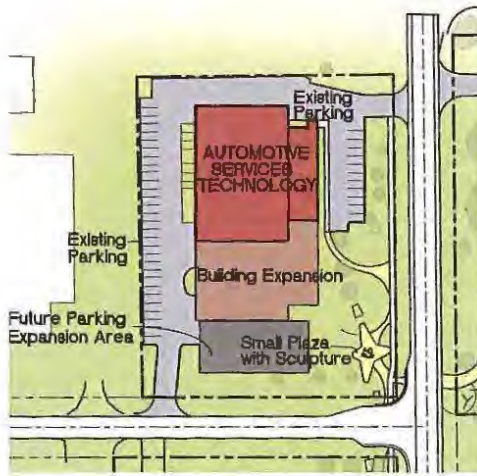




- RENOVATION
- NEW CONSTRUCTION



5. Master Plan (continued)



2. Automotive Technology Building

This plan recommends a 4,000 SF expansion of the building to accommodate diesel automotive training and expansion of hybrid and electric technology training for the automotive industry. The building would also be reskinned for better energy performance and to enhance visual continuity from building to building at the Aero Park Campus. The building expansion also results in reconfigured parking on site.



3. Aviation Building

In response to the strategic goals of the aviation program, this plan calls for a 14,000 SF addition to the existing building. This is comprised of an 11,000 SF hangar addition for the storage of additional aircraft, as well as 3,000 SF for addition instructional and office space. Parking will be reconfigured and coordinated with the parking for the Parsons Stulen Building





5. **Master Plan** (continued)



4. **Parsons Stulen**

This plan recommends the renovation of approximately 4,000 SF in the west wing of the Parsons Stulen Building to accommodate the anticipated needs of an emerging Engineering Technology program. This program is comprised of remote-operated vehicle lab space, remote-operated vehicle lab, unmanned aerial systems, robotics, hydraulics lab, machine shop, metallurgy lab, automation lab, photonics lab and support classroom and computer lab spaces.



-  RENOVATION
-  NEW CONSTRUCTION



5. Master Plan (continued)

C. University Center Campus

Site

The University Center site will be enhanced by means of several improvements recommended under this Plan.

Campus Entry

For the purpose of improved identity and for the safety and convenience of students, staff and visitors, the entry drive at Cass Road should be redeveloped to a boulevard entrance adding a center lane in Cass Road for turning into the property, as well as right and left turn lane options in the exiting lane.

Building Entry

The main entry to the building should be enhanced for visual clarity by renovating the entry pedestrian plaza and drop-off area, with new landscaping and additional wayfinding signage.

Emergency Egress

For safety and emergencies, NMC should develop a secondary vehicular drive from the property to Wysong Road. This would be intended as a controlled entry/exit and used only as needed.

Access to Boardman Lake

Two of the strongest attributes of this site are the view of and physical access to Boardman Lake. To enhance the programming for Fresh Water Studies, NMC should develop walks, stairs, platforms, and docking facilities for direct, safe access for students to the lake.

Public Bike Trail

NMC should designate a path through its property for the continuation of the TART bike trail around Boardman Lake as a public amenity. We anticipate that the recommended location would be along the railroad right-of-way west of the University Center parking lots.







5. *Master Plan* (continued)



University Center Building

In support of the Fresh Water Studies program, as well as general lab spaces required for use by NMC's university partners, this plan recommends the renovation of two spaces (2,260 SF) for conversion to science lab spaces. These spaces are located at ground level, with direct access to walks and stairs to Boardman Lake.



- LEGEND**
- WOODED AREA
 - PROPOSED ASPHALT ROADS AND PARKING LOTS
 - PROPOSED CONCRETE SIDEWALKS
 - PROPOSED BUILDINGS
 - PROPOSED MAINTAINED GRASS/TURF AREAS
 - PROPOSED INFIELD AND TRACK SURFACES

DATE	BY	DESCRIPTION

**NORTHWESTERN MICHIGAN COLLEGE
 EASTERN AVENUE PARCEL - OPTION 5
 CONCEPTUAL SITE PLAN
 SECTION 1, T27N-R11W,
 CITY OF TRAVERSE CITY, GRAND TRAVERSE COUNTY, MICHIGAN**



5. Master Plan (continued)

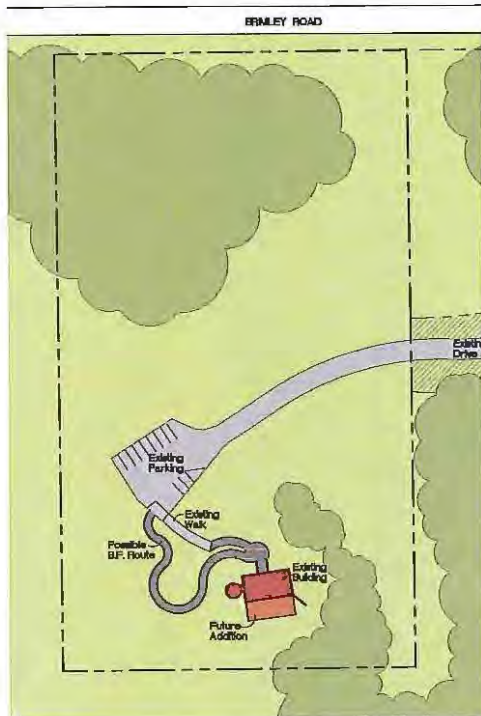
E. Rogers Observatory

Site

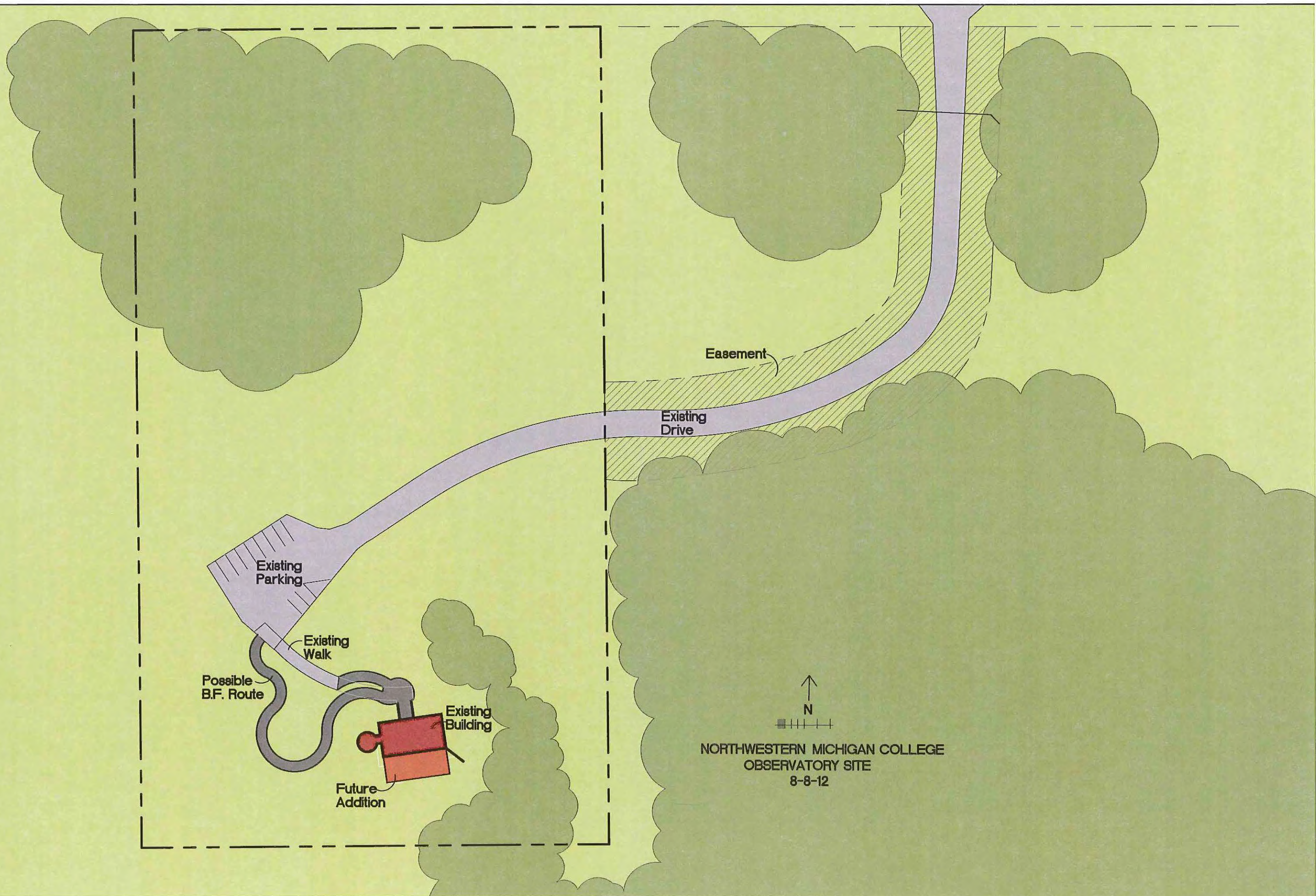
This plan calls for the creation of a new ADA-compliant barrier-free access walk from the parking lot to the Observatory building.

Observatory Building

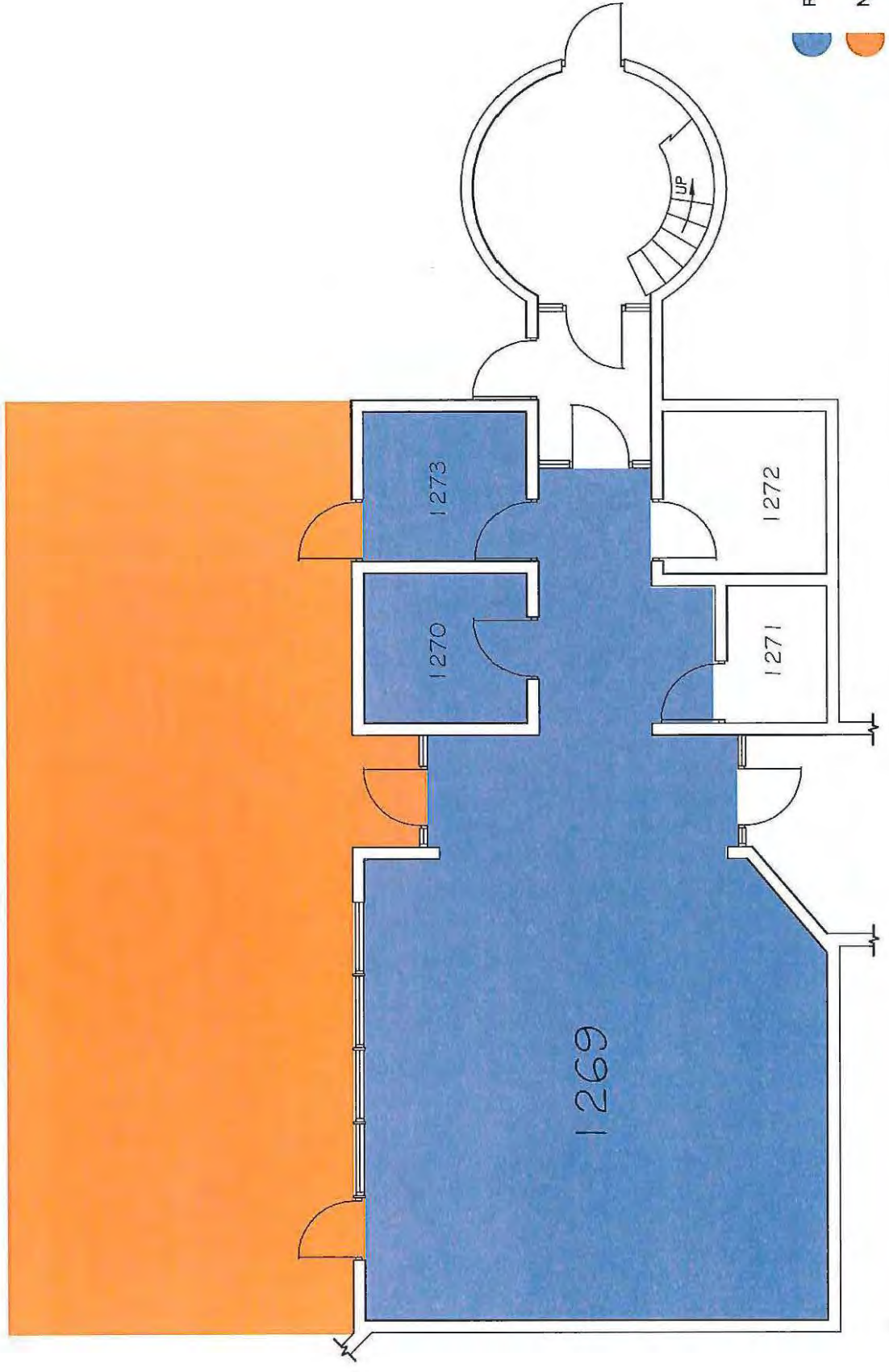
The plan also calls for a 1,000 SF addition to Rogers Observatory to expand the existing classroom, storage space, and mechanical space.



BRIMLEY ROAD



N
NORTHWESTERN MICHIGAN COLLEGE
OBSERVATORY SITE
8-8-12



ROGERS OBSERVATORY
MAIN LEVEL



6. *Cost Summaries*

For each NMC building and site, the following pages contain cost information related to the specific recommendations identified in Section 2. The first spreadsheet summarizes the construction costs and project costs for each building and site. They are listed alphabetically. Each individual sheet includes a brief description of the work to be done under the budget.

The Construction Cost is the cost one would expect to receive when soliciting competitive bids for construction from general contractors or construction managers. It includes the cost of materials and labor to install the materials, as well as a reasonable factor for contractor overhead and profit.

The Project Cost includes the Construction Cost and other costs required to complete the project for use by the College. These include budgets for professional design fees and reimbursable expenses, plan review fees, material and construction testing services, movable furniture, moveable equipment, technology systems and a contingency. For fiscal planning by NMC, the Project Costs should be used.

It should be stated that the costs for on-campus technology systems are presented as a component of each building / facility budget.

Costs for deferred maintenance items, capital renewal items, and capital improvement items are contained in the NMC FCAP Report and are not repeated here.

NMC Master Plan
10/22/12

Work Summary

Facility	Year	Age	GSF	SF - Renov.	SF - Add.	Renovation	Addition	TOTAL
Aero Park Laboratories	1980	32	29,600	2,500	-	\$ 125,000	\$ -	\$ 125,000
Apartment A	1973	39	12,750			\$ -	\$ -	\$ -
Apartment B	1973	39	12,750			\$ -	\$ -	\$ -
Apartment C	1973	39	12,750			\$ -	\$ -	\$ -
Appel Property	1954	58	1,200			\$ -	\$ -	\$ -
Athletic Fields	1976	36	-	-	-	\$ -	\$ -	\$ -
Automotive Technology	1990	22	18,309	4,000	4,000	\$ 824,071	\$ 876,120	\$ 1,700,191
Aviation	1977	35	22,100		14,000	\$ -	\$ 1,736,181	\$ 1,736,181
Beckett	1996	16	34,269			\$ -	\$ -	\$ -
Biederman	1976	36	29,025	2,000		\$ 145,200	\$ -	\$ 145,200
Campus General	1976	36	-			\$ 1,796,000	\$ 910,000	\$ 2,706,000
Clock Tower	1984	28	-			\$ -	\$ -	\$ -
Dennos Museum Center	1991	21	45,180		400	\$ -	\$ 213,188	\$ 213,188
East Hall	1965	47	46,700			\$ -	\$ -	\$ -
Facilities Maintenance	2001	11	12,000			\$ -	\$ -	\$ -
Fine Arts	1971	41	19,600	9,000	6,500	\$ 1,001,880	\$ 2,064,563	\$ 3,066,443
Founders Hall	1976	36	4,850			\$ -	\$ -	\$ -
Great Lakes	2004	8	75,233			\$ -	\$ -	\$ -
Health / Science	2002	10	57,477			\$ -	\$ -	\$ -
Oleson	1978	34	9,925			\$ -	\$ -	\$ -
Osterlin	1961	51	46,000	32,500	-	\$ 2,457,813	\$ -	\$ 2,457,813
Parsons Stufen	1999	13	65,000	4,000		\$ 760,000	\$ -	\$ 760,000
Power House	1962	50	3,625			\$ -	\$ -	\$ -
Rajkovich PE	1969	43	28,000	28,000	9,000	\$ 4,235,000	\$ 3,961,238	\$ 8,196,238
Rogers Observatory	1981	31	1,425		1,000	\$ -	\$ 265,986	\$ 265,986
Scholars Hall	1962	50	58,450			\$ -	\$ -	\$ -
Tanis	1957	55	14,300	7,200		\$ 836,352	\$ -	\$ 836,352
University Center	1986	26	71,600	2,260		\$ 947,067	\$ -	\$ 947,067
West Hall	1965	47	33,450	33,450	40,000	\$ 6,324,141	\$ 11,795,080	\$ 18,119,221
New Student Housing (300)					129,000		\$ 26,566,518	\$ 26,566,518
Eastern Ave. Development					67,400		\$ 19,003,728	\$ 19,003,728
TOTAL			765,568	124,910	271,300	\$ 19,452,524	\$ 67,392,502	\$ 86,845,126

Northwestern Michigan College

Master Plan

10/22/12

Work List for

Aero Park Laboratories

Built: 1980
Renovated: 2011
Area: 29,600 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes the interior renovation of 2,500 SF to accommodate the Robotics area of the Engineering Technology Program.					
1	Renovate portion of existing building	2,500	\$ -	\$ 125,000	\$ 125,000
2	Addition to existing building	-	\$ -	\$ -	\$ -
TOTAL		2,500		\$ 125,000	\$ 125,000

Northwestern Michigan College

Master Plan

10/22/12

Work List for

Automotive Technology Building

Built: 1990

Renovated: 2001

Area: 18,309 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes the reskinning of the existing high bay space for energy-efficiency, the renovation of 4,000 SF of interior classroom and support space, and the addition of 4,000 SF of new space for diesel automotive technology programming.					
1	Renovate existing building		\$ -	\$ -	\$ 824,071
	a. Re-skin high bay building	7,300		\$ 340,071	
	b. Interior space	4,000		\$ 484,000	
2	Addition to existing building		\$ -	\$ -	\$ 876,120
	a. Building	4,000		\$ 756,000	
	b. Site	4,000		\$ 33,000	
	c. Parking			\$ 87,120	
TOTAL				\$ 1,700,191	\$ 1,700,191

Northwestern Michigan College

Master Plan

10/22/12

**Work List for
Aviation Building**

Built: 1977
Renovated:
Area: 22,100 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes 11,000 SF of new hangar space and 3,000 SF of new classroom and support space.					
1	Renovate portion of existing building	-	\$ -	\$ -	\$ -
2	Addition to existing building				\$ 1,736,181
	a. Building addition	14,000	\$ 116	\$ 1,626,240	
	b. Parking			\$ 76,666	
	c. Retention			\$ 33,275	
TOTAL		14,000		\$ 1,736,181	\$ 1,736,181

Northwestern Michigan College

Master Plan

10/22/12

**Work List for
Biederman Building**

Built: 1976

Renovated: 2002

Area: 29,025 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes the interior renovation of 2,000 SF to convert offices to classroom space.					
1	Renovate existing building	2,000	\$ -	\$ 145,200	\$ 145,200
TOTAL		2,000		\$ 145,200	\$ 145,200

Northwestern Michigan College

Master Plan

10/22/12

**Work List for
Campus General**

Built: 1976

Renovated:

Area:

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes improvements to the athletic fields, relocation of a portion of College Drive, and the expansion/reconfiguration of selected parking lots.					
1	Renovation work	-	\$ -	\$ -	\$ 1,796,000
	a. Recreation field improvements			\$ 900,000	
	b. Raise and drain athletic fields			\$ 500,000	
	c. Rework Maple/Oak parking lots			\$ 216,000	
	d. Relocate portion of College Drive			\$ 150,000	
	e. Add storm water clarifying structure			\$ 30,000	
2	Additions work	-	\$ -	\$ -	\$ 910,000
	a. Expand Aspen lot by 75 spaces			\$ 200,000	
	b. Expand Birch lot by 32 spaces			\$ 80,000	
	c. Expand Cedar lot by 50 spaces			\$ 125,000	
	d. Expand Juniper lot by 15 spaces			\$ 40,000	
	e. New Pine lot at 120 spaces			\$ 300,000	
	f. Expand Tamarack lot by 25 spaces			\$ 65,000	
	g. New wetland trails / outlook structures			\$ 100,000	
	h. Landscaping improvements				
TOTAL		-		\$ 2,706,000	\$ 2,706,000

Northwestern Michigan College

Master Plan

10/22/12

Work List for

Dennos Museum Center

Built: 1991
 Renovated:
 Area: 45,180 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes the addition of 400 SF of storage space and the widening of the west loading drive/ramp.					
1	Equipment Storage addition	400		\$ 130,000	\$ 130,000
2	Widen loading drive / replace wall			\$ 83,188	\$ 83,188
TOTAL		400		\$ 213,188	\$ 213,188

Northwestern Michigan College

Master Plan

10/22/12

**Work List for
Fine Arts Building**

Built: 1971
Renovated: 2004
Area: 19,600 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes thje renovation of 9,000 SF of the music wing and 6,500 SF of new area for rehearsal and support space.					
1	Renovate portion of existing building	9,000	\$ -	\$ 1,001,880	\$ 1,001,880
2	Addition to existing building	6,500	\$ -	\$ 2,064,563	\$ 2,064,563
TOTAL		15,500		\$ 3,066,443	\$ 3,066,443

Northwestern Michigan College

Master Plan

10/22/12

**Work List for
Osterlin Building**

Built: 1961
Renovated: 1984, 2004
Area: 46,600 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes the repurposing and reconfiguration of the first floor of the building.					
1	Renovate portion of existing building	32,500	\$ -	\$ 2,457,813	\$ 2,457,813
TOTAL		32,500		\$ 2,457,813	\$ 2,457,813

Northwestern Michigan College

Master Plan

10/22/12

**Work List for
Parsons Stulen**

Built: 1999

Renovated:

Area: 65,000 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes 4,000 SF of renovated space on the first floor for Engineering Technology programming.					
1	Renovate portion of existing building	4,000	\$ -	\$ 760,000	\$ 760,000
2	Addition to existing building	-	\$ -	\$ -	\$ -
TOTAL		4,000		\$ 760,000	\$ 760,000

Northwestern Michigan College

Master Plan

10/22/12

Work List for

Rajkovich Physical Education Building

Built: 1969

Renovated:

Area: 28,000 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes renovation of the entire existing building (28,000 SF) and the addition of 9,000 SF to expand the fitness center, add new lobby, classroom, and toilets, as well as student gathering/lounge space.					
1	Renovate portion of existing building	28,000	\$ -	\$ 4,235,000	\$ 4,235,000
2	Addition to existing building	9,000	\$ -	\$ 3,961,238	\$ 3,961,238
TOTAL		37,000		\$ 8,196,238	\$ 8,196,238

Northwestern Michigan College

Master Plan

10/22/12

**Work List for
Rogers Observatory**

Built: 1981
Renovated:
Area: 1,425 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes 1,000 SF of additional space to the existing building and provides a barrier-free access walk from the parking lot to the Observatory Building.					
1	ADA ramp from parking lot	2,700	\$ -	\$ 23,139	\$ 23,139
2	Addition to existing building	1,000	\$ -	\$ 242,847	\$ 242,847
TOTAL		3,700		\$ 265,986	\$ 265,986

Northwestern Michigan College

Master Plan

10/22/12

**Work List for
Tanis Building**

Built: 1957
Renovated: 1998
Area: 14,300 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes the renovation of the entire upper floor for conversion to Administration Offices.					
1	Renovate existing building - first floor	7,200	\$ -	\$ 836,352	\$ 836,352
TOTAL		7,200		\$ 836,352	\$ 836,352

Northwestern Michigan College

Master Plan

10/22/12

**Work List for
University Center**

Built: 1986

Renovated: 2001

Area: 71,600 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
This project includes conversion of two classrooms to science spaces, as well as a new exit drive for emergency use, and access to Boardman Lake for Fresh Water Studies.					
1	Renovate portion of existing building	2,260	\$ -	\$ 328,152	\$ 328,152
2	Site Work	-		\$ 618,915	\$ 618,915
TOTAL		2,260		\$ 947,067	\$ 947,067

Northwestern Michigan College

Master Plan

10/22/12

**Work List for
West Hall**

Built: 1965
Renovated: 1998, 2003
Area: 33,450 SF

Item	Description	Area (SF)	Cost/SF	Line Cost	Total Cost
<p>This project includes the renovation of the existing West Hall, plus new space for expanded dining, expanded and relocated bookstore, consolidated student services, student study space, classrooms, and docking station for mobile simulation lab.</p>					
1	Renovate portion of existing building	33,450	\$ -	\$ 6,324,141	\$ 6,324,141
2	Addition to existing building	40,000	\$ -	\$ 11,795,080	\$ 11,795,080
TOTAL		73,450		\$ 18,119,221	\$ 18,119,221



7. *Implementation Strategy*

Moving forward, based upon the recommendations and the information gathered during this master plan, we believe the following represents an appropriate implementation strategy for Northwestern Michigan College. It should be stated that, though these are listed in prioritized order, the actual implementation of a specific priority may occur in a different order, depending on funding opportunities and programs not yet known.

Priority 1:

Priority 2:

Priority 3:

Priority 4:

Priority 5:

Priority 6:



8. *Appendix*



Northwestern Michigan College Master Plan Zoning and Utility Summary

The following paragraphs have been prepared to present a zoning and utility summary for the various properties owned by Northwestern Michigan College (NMC). This effort was completed as part of a Master Plan prepared for NMC.

MAIN CAMPUS

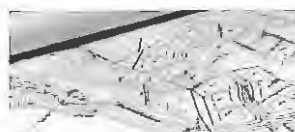
The Main Campus is located at 1701 East Front Street in the City of Traverse City. The property has four separate tax parcel numbers 28-51-101-001-00, 28-51-101-007-00, 28-51-101-090-00 and 28-51-101-004-00. The Assessor's records indicate the parcel measures 90.3 acres in size. The parcel is east of Milliken Drive, south of Eastern Avenue, west of East Bay Boulevard North and north of Front Street.

Zoning Summary:

The property is zoned NMC-2, University District. Any activities requiring a land use permit will need to be in compliance with NMC's Master Site and Facilities Plan. It is our understanding that the last time the City approved a Master Site and Facilities plan was in 2010 when NMC approached the City about constructing a temporary parking lot in the sport field's area. The only other change proposed to the existing conditions on Main Campus was an expansion on West Hall to create a Student Learning Center. Therefore, any changes contemplated on Main Campus would require a new Master Site and Facilities Plan be presented to, and approved by, the City.

NMC-2 District Standards

1. Uses allowed by right in the NMC-2 District includes the following:
 - a) OS district uses.
 - i. Airport clear zones.
 - ii. Golf courses.
 - iii. Athletic fields.
 - iv. Marinas.
 - v. Boat houses.
 - vi. Outdoor public swimming pools.
 - vii. Boat liveries.



- viii. Parks.
 - ix. Cultural facilities.
 - x. Playgrounds.
 - xi. Community Gardens.
 - xii. Recreational facilities.
 - xiii. Essential services without buildings.
 - xiv. Buildings 3,000 square feet or larger in gross floor area for allowed uses (requires a special land use permit).
 - xv. Essential services buildings (requires a special land use permit).
- b) R-29 district uses.
- i. Adult foster care family home and small group home.
 - ii. Art galleries in non-residential buildings built prior to October 16, 2003, provided they are located on an arterial or collector street and provided the building is not expanded other than for barrier free access requirements.
 - iii. Athletic fields.
 - iv. Boat houses if they are an accessory use, if they are designed for housing a boat, if provisions are made for routing of any boardwalk, and if proper State and federal permits are obtained.
 - v. Coffee houses and family or fine food restaurants in non-residential buildings built prior to October 16, 2003, provided they are located on an arterial or collector street and provided the building is not expanded other than for barrier free access requirements.
 - vi. Community Gardens.
 - vii. Dwellings, single family.
 - viii. Dwellings, two-family.
 - ix. Dwellings, multiple family.
 - x. Essential services.
 - xi. Golf courses.
 - xii. Home occupations subject to certain conditions.
 - xiii. Medical Marihuana Cultivation on a Parcel containing one Single Family Dwelling subject to certain requirements.
 - xiv. Medical Marihuana Cultivation on a Parcel containing a more than one Single Family Dwelling, a Two Family Dwelling, or a Multiple Family Dwelling subject to certain requirements.
 - xv. Offices in nonresidential buildings built prior to [the date of the ordinance] provided they are located on an arterial or

collector street and provided the building is not expanded except as necessary to meet barrier free access requirements.

- xvi. Parks.
 - xvii. Playgrounds.
 - xviii. Private clubs, lodges, fraternities or sororities, if located on an arterial or collector street.
 - xix. Rooming houses.
 - xx. Tourist homes maintaining a City tourist home license.
 - xxi. Other similar uses as approved by the Planning Commission if such uses will generate similar traffic and parking, are compatible with adjacent land uses, and will not generate excessive noise, lighting, fumes or other nuisances.
 - xxii. Essential services buildings (requires a special land use permit).
 - xxiii. Group day care homes (requires a special land use permit).
 - xxiv. Places of worship (requires a special land use permit).
 - xxv. Residential care & treatment facilities (requires a special land use permit).
 - xxvi. Schools (requires a special land use permit).
 - xxvii. Theaters, live, and performance art centers (requires a special land use permit).
- c) NMC-1 district uses, without the gross square foot limitations.
- i. OS district uses (see above).
 - ii. R-15 district uses (see above R-29 uses which are the same as the R-15 uses, but with a reduced dwelling unit density).
 - iii. Clustered single family dwellings.
 - iv. The following, provided buildings are no larger than 10,000 square feet gross floor area Universities, colleges and theological schools including the buildings used for administrative and faculty offices, classrooms, laboratories, chapels, auditoriums, museums, lecture halls, libraries, student and faculty centers, athletic facilities, dormitories, fraternities and sororities, but not including colleges or trade schools operated for profit and not including the use of any building, stadium or other facility for primarily commercial purposes.
- d) Bookstores.
- e) Cultural facilities if parking facilities are not visible from a residential district.

- f) Essential services and essential services with buildings.
 - g) Group day care homes.
 - h) Institutional headquarters.
 - i) Marinas and maritime operations associated with the college and its partners.
 - j) Meeting facilities and convention centers.
 - k) Places of worship.
 - l) Public administration.
 - m) Schools.
 - n) Theatrical producers, bands, orchestras and entertainers.
2. Uses allowed by a Special Use Permit includes the following:
- a) Communication towers.
 - b) Taller buildings in an NMC-2 district except buildings located on Grand Traverse Bay are limited to three stories and 50 feet.
3. Lots within the NMC-2 District have no minimum lot area, must have a minimum width of 20 feet, a maximum density of 29 dwelling units per acre, a maximum impervious area of 50%, and the surface parking area shall not exceed fifteen percent (15%) of the total area of any lot over ten acres.
4. Buildings are subject to the following minimum requirements:
- a) Front yard 100 feet or as shown on the approved Master Site and Facilities Plan allowing a lesser setback.
 - b) Side yard 0 feet.
 - c) Rear yard 5 feet, except 20 feet if abutting or across an alley from an R-District.
 - d) Waterside 50 feet inland from the ordinary high water mark of Grand Traverse Bay except marina buildings up to 3,000 square feet gross floor area may be located at the water's edge.
 - e) Maximum Height 90 feet, except buildings on Grand Traverse Bay are restricted to 50'.

5. Parking areas are subject to the following minimum requirements:
 - a) Front yard
Behind or to the side of the principal building and set back a distance equal to the setback of the principal building or 25 feet, whichever is greater, except in the NMC-2 District on Grand Traverse Bay, parking in front of the building is allowed provided that certain conditions are met. For through lots, parking may be provided streetward of the principal building on the street that carries less traffic, but no closer than 25 feet from the front property line.
 - b) Side yard
5 feet minimum, except 10 feet if abutting or adjacent to an R-District. If shared parking is developed, these setbacks would affect only the perimeter of the combined parcels.
 - c) Rear yard
5 feet, except 20 feet if abutting or across an alley from an R-District.

6. Parking, Loading and Driveway standards for the NMC-1 District are detailed in the City Zoning Ordinance, Chapter 1374. In addition, athletic fields may provide up to 50% of the required number of organized parking on an area developed in turf grasses. Grassed parking areas are considered as providing one parking space for every 350 square feet of continuous turf-covered area. All grassed parking areas shall be maintained in a healthy, vigorous growing condition and shall not be used more than 12 times per calendar year. When use requires more frequent parking, an impervious surface or approved pervious hard surface parking area shall be developed.

Some pertinent highlights of Chapter 1374 follow:

- a) All developments except for one and two-family dwellings, shall provide clearly defined pedestrian travelways from the public sidewalk to main entrances of the buildings or uses of the land.
- b) Sidewalks are to be a minimum of 5 feet wide.
- c) Pedestrian Travelways shall be physically separate from parking areas except at crossings.
- d) Whenever full off-street parking compliance is required, a minimum of one bicycle rack is required and shall be located within 50 feet of the main entrance of a building or inside a building in a location that is easily accessible by bicyclists. For sites requiring more than 25 motor vehicle spaces, the ratio is one rack for every 25 motor vehicle spaces.
- e) Compliance with City Zoning Code requirements is required for motor vehicle parking. The following activities require full compliance.
 - i. New Building Construction.
 - ii. Enlargement.
 - iii. Change in Use.
 - iv. Parking Area Construction and Expansion.
- f) Land Use Permits and Improvement Guarantees are required for parking area construction or expansion.
- g) For any parking construction or expansion, a plan shall be submitted to and approved by the City Engineer prior to the commencement of construction.
- h) The number of parking spaces required are per the following uses:

Institutional	
i. High schools, Colleges:	3 per 10 students.
ii. All other schools:	1.5 per classroom.
iii. Places of worship:	1 per 4 seats in main area of Worship.
iv. Government Offices:	1 per 400 square feet.
v. Auditoriums:	1 per three seats.
- i) Buildings less than 500 square feet gross floor area for non-residential uses are exempt from parking space requirements.
- j) No new driveways are permitted on a new primary or new arterial collector street.

Comments:

As detailed above, the uses allowed within the NMC-2, University District provide for a large range of uses complimentary to the existing main campus activities. Similarly, the zoning would appear to compliment those activities being contemplated on main campus.

The only limitation identified in the review of the zoning for main campus is that requirement that restricts the amount of surface area parking to 15% of the parcel size. In 2010 the City of Traverse City approved a Master Plan presented by NMC for main campus that featured the construction of a temporary parking lot measuring 68,878 square feet. The construction of this lot raised the area of surface parking to 14.97% of the total parcel size.

The parking lot was removed and the area restored recently. So a parking area of a similar size could be constructed that would keep the total parcel parking to less than 15%. If additional parking is desired beyond this size, a zoning variance or text amendment to the City zoning ordinance would be required to allow for this. As a general rule, local units of government tend to discourage amendments for self created hardships. It would seem to be a reasonable request on the part of NMC regarding a text amendment that could allow for something greater than 15%.

It should be noted that the new buildings and building additions shown on the Main Campus conceptual plan add approximately 80,380 square feet of impervious surface to the total site. Previous Master Plan materials list the total existing impervious surface as being at 28.2%. The building additions bring this figure up to approximately 30.1%, well below the maximum allowable 50%. It would be wise to continue to track this statistic.

Utility Summary:

1. Storm Sewer: Main campus is served by a combination of dry wells and underground storm sewer. The dry wells have historically been a maintenance issue for NMC. The storm sewer primarily runs from west to east in the area of the existing fire lane. On the eastern side of main campus, the line runs north to south beneath College Avenue and ties into the existing City storm sewer located beneath Front Street. Storm water from this line continues to flow to the east and discharges into East Grand Traverse Bay.

Only a small portion of the existing storm sewer shows up on the historic City storm sewer maps. We contacted the City regarding ownership of the storm sewer and the City reported that historically, they have viewed the historic portions of the storm sewer system as public, City owned infrastructure.

There may be an opportunity to expand the existing storm sewer network to provide an outlet for surface water that stands in the area of the sports fields in the spring. This area is one of the few remaining areas that could be developed in the future on main campus.

We contacted the City to inquire as to the feasibility of directing the surface water from this area to the public City storm water system. We were advised that the City would oppose this approach as they have been trying to reduce contributions to their system, particularly in this area as the storm outlets into East Grand Traverse Bay at the East Bay Park. High levels of E. Coli in this area have resulted in beach closures and the City is currently working on a plan to try and reduce E. Coli in this area.

Another opportunity could be realized by shaping/filling this area to create positive drainage and directing the surface water via new storm sewer to the north side of College Drive and into the existing low area that exists between the Elm parking lot and North College Drive.

2. **Water:** Main campus is served entirely by municipal water providing potable water, fire protection and irrigation. Most of the structures are served by a series of 6" public water mains. Similar to the storm sewer, the water main is located primarily in the existing fire lane that runs west to east through main campus. In addition there are several connections along Front Street.

The City's water plant is located on a parcel adjacent to the northeast corner of main campus. A 30" water main passes through campus so adequate water supply should exist for any projects planned on main campus.

3. **Sanitary Sewer:** Main campus is served entirely by municipal sewer service. Most of the structures are served by an 8" public sewer mains also located primarily in the existing fire lane that runs west to east

through main campus. In addition there are several connections along Front Street.

When interviewed, Staff from the Traverse City Engineering Department reported that the sanitary sewer in this part of town appears to have adequate carrying capacity. Given the low flow nature of typical education related facilities, a service problem would not be anticipated on main campus.

Proposed Building Activities:

As discussed above, a revised Master Site and Facilities Plan would need to first be approved by the City. Once this has been accomplished, the various buildings being contemplated for construction, or expansion, on main campus as part of the Master Plan undertaken for NMC would all be considered an allowed use per the requirement of the Ordinance.

With the recent removal of the temporary parking lots, the additional parking areas would result in an equivalent amount of surface parking nearing the 15% maximum coverage allowed by the Ordinance.

EASTERN AVENUE PROPERTY

NMC's Eastern Avenue Parcel is located at 2005 Eastern Avenue. The property is just north of main campus on the north side of Eastern Avenue, between Quail Ridge Drive and Leeward Court. The tax parcel number is 28-51-101-095-00. The parcel size measures approximately 55 acres.

In addition to the road frontage on Eastern Avenue, the road right of way for Huron Drive passes through the northwest corner of the parcel. The Kewaunee Drive road right of way passes through the northeast corner of the parcel. Lastly, there is also road access along the east property line via a road called Aspen Drive which terminates at an undeveloped, but platted road named East Bay Boulevard which consists of a 33' road right of way that runs north and south along a portion of the east edge of the property. It appears this was done to accommodate a road network that was never realized. All of these roads are public roads

Zoning Summary:

The property is zoned NMC-1, University District. Any activities requiring a land use permit will need to be in compliance with NMC's Master Site and Facilities Plan. It is our understanding that the last time the City approved a Master Site

and Facilities plan was in 2010 when NMC approached the City about constructing a temporary parking lot in the sport field's area. No proposed activities were shown for this parcel at that time. Therefore, any changes contemplated on this parcel would require a Master Site and Facilities Plan be presented to, and approved by, the City.

NMC-1 District Standards

1. Uses allowed by right in the NMC-1 District includes the following:
 - a) OS district uses.
 - i. Airport clear zones.
 - ii. Golf courses.
 - iii. Athletic fields.
 - iv. Marinas.
 - v. Boat houses.
 - vi. Outdoor public swimming pools.
 - vii. Boat liveries.
 - viii. Parks.
 - ix. Cultural facilities.
 - x. Playgrounds.
 - xi. Community Gardens.
 - xii. Recreational facilities.
 - xiii. Essential services without buildings.
 - xiv. Buildings 3,000 square feet or larger in gross floor area for allowed uses (requires a special land use permit).
 - xv. Essential services buildings (requires a special land use permit).
 - b) R-15 District uses.
 - i. Adult foster care family home and small group home.
 - ii. Art galleries in non-residential buildings built prior to October 16, 2003, provided they are located on an arterial or collector street and provided the building is not expanded other than for barrier free access requirements.
 - iii. Athletic fields.
 - iv. Boat houses if they are an accessory use, if they are designed for housing a boat, if provisions are made for routing of any boardwalk, and if proper State and federal permits are obtained.
 - v. Coffee houses and family or fine food restaurants in non-residential buildings built prior to October 16, 2003, provided

they are located on an arterial or collector street and provided the building is not expanded other than for barrier free access requirements.

- vi. Community Gardens.
 - vii. Dwellings, single family.
 - viii. Dwellings, two-family.
 - ix. Dwellings, multiple family.
 - x. Essential services.
 - xi. Golf courses.
 - xii. Home occupations subject to certain conditions.
 - xiii. Medical Marihuana Cultivation on a Parcel containing one Single Family Dwelling subject to certain requirements.
 - xiv. Medical Marihuana Cultivation on a Parcel containing a more than one Single Family Dwelling, a Two Family Dwelling, or a Multiple Family Dwelling subject to certain requirements.
 - xv. Offices in nonresidential buildings built prior to [the date of the ordinance] provided they are located on an arterial or collector street and provided the building is not expanded except as necessary to meet barrier free access requirements.
 - xvi. Parks.
 - xvii. Playgrounds.
 - xviii. Private clubs, lodges, fraternities or sororities, if located on an arterial or collector street.
 - xix. Rooming houses.
 - xx. Tourist homes maintaining a City tourist home license.
 - xxi. Other similar uses as approved by the Planning Commission if such uses will generate similar traffic and parking, are compatible with adjacent land uses, and will not generate excessive noise, lighting, fumes or other nuisances.
 - xxii. Essential services buildings (requires a special land use permit).
 - xxiii. Group day care homes (requires a special land use permit).
 - xxiv. Places of worship (requires a special land use permit).
 - xxv. Residential care & treatment facilities (requires a special land use permit).
 - xxvi. Schools (requires a special land use permit).
 - xxvii. Theaters, live, and performance art centers (requires a special land use permit).
- c) Clustered Single Family Dwellings

- d) The following, provided buildings are no larger than 10,000 square feet gross floor area Universities, colleges and theological schools including the buildings used for administrative and faculty offices, classrooms, laboratories, chapels, auditoriums, museums, lecture halls, libraries, student and faculty centers, athletic facilities, dormitories, fraternities and sororities, but not including colleges or trade schools operated for profit and not including the use of any building, stadium or other facility for primarily commercial purposes.
2. Uses allowed by a Special Use Permit includes the following:
 - a) Communication towers.
 - b) Essential Services buildings.
 3. Lots within the NMC-1 District have no minimum lot area, must have a minimum width of 20 feet, a maximum density of 15 dwelling units per acre, a maximum impervious area of 30%, and the surface parking area shall not exceed fifteen percent (15%) of the total area of any lot over ten acres.
 4. Buildings are subject to the following minimum requirements:

a) Front yard	100 feet or as shown on the approved Master Site and Facilities Plan allowing a lesser setback.
b) Side yard	0 feet.
c) Rear yard	5 feet, except 20 feet if abutting or across an alley from an R-District.
d) Waterside	50 feet inland from the ordinary high water mark of Grand Traverse Bay except marina buildings up to 3,000 square feet gross floor area may be located at the water's edge.
e) Maximum Height	45 feet
 5. Parking areas are subject to the following minimum requirements:
 - a) Front yardBehind or to the side of the principal building and set back a distance equal to the setback of

Utility Summary:

1. Storm Sewer: With the exception of a few outbuildings, the Eastern Avenue property is unimproved and no storm sewer is present on the site. Enclosed storm sewer is not present along Eastern Avenue and this area is served by ditches.
2. Water: No water utilities are present on the site. The Traverse City water plant is located on the south side of Eastern Avenue and it would appear there is adequate capacity to service development on this property.
3. Sanitary Sewer: No sanitary sewer utilities are present on the site. An existing sanitary sewer main is located along Eastern Avenue that would appear adequate to service development on this property.

GREAT LAKES CAMPUS

The Great Lakes Campus is located at 715 East Front Street in the City of Traverse City. The property is on the north side of Front Street and fronting on West Grand Traverse Bay to the north. The tax parcel number is 28-51-642-007-00. The Assessor's records indicate the parcel measures 4.6 acres in size.

Zoning Summary:

The Great Lakes Campus has the same zoning as Main Campus, NMC-2. See above for a summary for this zoning district.

Comments:

It is our understanding from Staff interviews that the Great Lakes Campus is essentially completely developed with no alterations anticipated in the near future.

Utility Summary:

1. Storm Sewer: Plans provided by NMC from when the Great Lakes Campus was reconstructed, demonstrate that storm sewer was installed that includes storm water clarifying structures prior to discharging to West Grand Traverse Bay.
2. Water: Domestic water and fire service lines enter the westerly side of the building. These lines are fed from a water main that exists along the west property line shared with the City park parcel.

3. Sanitary Sewer: A sanitary sewer service discharges to a manhole that is then connected to the City sanitary sewer that exists beneath Front Street.

UNIVERSITY CENTER CAMPUS

The University Center Campus is located at 2200 Dendinos Drive in Garfield Township. The property tax number is 28-05-015-071-00. The County records indicate the parcel measures 26.32 acres in size. The parcel is east of Cass Road, south of Fairway Hills Drive, North of Sybrandt Road, on the west shore of Boardman Lake.

Zoning Summary:

The property is zoned MUIBD-G, General Mixed Use Industrial Business District. The intent of the General Mixed-Use Industrial Business District (MUIBD-G) is to recognize the shift from a manufacturing-based economy to a service-based economy by accommodating the demand for retail and office spaces while not precluding traditional industrial uses. Accordingly, this District has been developed in place of a traditional industrial district as a flexible zoning district, which permits a variety of compatible uses within particular sites and between neighboring parcels.

Non-industrial uses may be permitted in the district, but the principal intent of the district is to remain industrial in nature. Potential industrial impacts from surrounding properties such as noise, dust, or vibration should be kept in mind as potential impacts on the property. The General MUIBD is intended to permit a variety of limited retail, office, and light industrial uses. In this district, non-industrial uses such as an office or retail are generally envisioned as accessory or complementary to existing and future industrial uses in the district.

General Mixed Use Industrial Business District Standards

1. There is no minimum lot size in the MUIBD District, however, the minimum lot width is 150 feet.
2. Uses allowed by right in the MUIBD-G District includes the following:
 - a) Accessory Buildings.
 - b) Accessory Uses, including retail sales of products warehoused or produced on the premises.
 - c) Auto Service, including:
 - i. Mechanics.
 - ii. Body Shops.
 - iii. Detailing.

- d) Central Dry Cleaning Plant (no retail customer contact).
 - e) Contractor's Establishment.
 - f) Data Centers and Computer Operations.
 - g) Manufacturing (Light).
 - h) Medical Marihuana Cultivation Facility provided certain conditions are met.
 - i) Photographic reproduction, blueprinting, or related trades and arts.
 - j) Public Utility Structures.
 - k) Public Areas, Public Parks, and Public and Private Conservation Areas.
 - l) Recreational Facility, including:
 - i. Bowling Alley.
 - ii. Billiard Hall.
 - iii. Indoor Archery Range.
 - iv. Indoor Skating Rink.
 - v. Indoor Soccer.
 - vi. Miniature Golf.
 - vii. Physical Fitness Facility.
 - viii. Skate/Bike Park.
 - m) Research and Design, provided there is no use of materials having high toxicity radioactivity, or explosive properties, including but not limited to:
 - i. Engineering.
 - ii. High Tech Research.
 - iii. Trade or Industrial Schools.
 - iv. Business Colleges.
 - v. Industrial, Research, or Business Park.
 - n) Veterinary hospitals/
 - o) Warehouses, including, but not limited to:
 - i. Storage facilities for sand, gravel, stone, and contractor's equipment.
 - ii. Small warehousing establishments, with totally enclosed storage.
 - iii. Wholesale Operations.
 - iv. Distribution Centers.
3. Uses permitted by Special Use Permit in the General Mixed Use industrial Business district are:
- a) Animal Kennels.
 - b) Auto Service, including:

- i. Automobile Laundries
 - ii. Oil Change Facilities
 - iii. Tire Sales and Service
 - c) Child Care Organization.
 - d) Funeral Home/Mortuary.
 - e) Mechanical Amusement Arcades.
 - f) Medical Clinics.
 - g) Millwork Operations.
 - h) Motel.
 - i) Offices for business, professional, governmental, or institutional purposes.
 - j) Outdoor storage as principal use.
 - k) Parking Facility (i.e. ramp; accessory to principal use).
 - l) Passenger Terminals.
 - m) Printing and publishing establishment (i.e. newspaper).
 - n) Processing Operations.
 - o) Professional Studios.
 - p) Residential units accessory to office.
 - q) Retail, including:
 - i. Building Supply/Equipment Store.
 - ii. Contractor's Motorized Equipment Sales and Service.
 - iii. Furniture Store.
 - iv. Low-Volume Retail.
 - v. Open-air Business.
 - vi. Pet Shop.
 - vii. Retail Dry Cleaning Operation (including direct retail customer pickup).
 - viii. Vehicle Showrooms and Dealerships
 - r) Truck or Rail Freight Terminal.
4. Buildings are subject to the following minimum requirements:
- a) Front yard 40 feet
 - b) Side yard 15 feet
 - c) Rear yard 5 feet
 - d) Maximum Height 40 feet (Permitted Exceptions, Business and Industrial Districts: In any business or industrial district, any principal building may be erected to a height in excess of that specified for the district, PROVIDED each front, side and rear yard minimum is increased one (1) foot for each one (1) foot of additional height above the district maximum.)

5. Setback from Lakes, Rivers and Streams:
 - a) Every building hereafter erected having frontage on Silver and Boardman Lakes shall set back at least fifty (50) feet from the water mark.
 - b) Storm water retention or detention ponds, with the exception of customary release structures including pipe, swales and ditches shall be set back fifty (50) feet from a natural lake or normal stream bank.
 - c) Roads and access drives other than where they intersect lakes or streams and for such a distance as is required to cross a lake or stream shall be set back fifty (50) feet from a watermark or normal stream bank.

6. Easement to Water Front:

In the event any land having water frontage is used for group easement or beach purposes, it shall have a minimum frontage on the water of not less than fifty (50) feet, measured at the water mark, and shall contain an additional five (5) feet for each family unit having easement or use privileges. Individual docks, boat hoists and related installations shall not exceed one unit per fifty (50) feet of shoreline, measured at the water mark. Group docking, hoist and other related facilities shall be subject to review and approval by the Zoning Board of Appeals.

7. Filling and Grading within 200 Feet of the Water Mark or Normal Stream Bank: The following rules shall apply to any filling, grading or any other earth movement within 200 feet of the water park or normal stream bank of any lake, river, stream, or other body of water to prevent harmful erosion and related sedimentation:
 - a) The smallest amount of bare ground shall be exposed for a short a time as feasible.
 - b) Temporary ground cover such as mulch must be used as soon as possible and permanent cover such as sod be planted.
 - c) Diversions, silting basins, terraces and other methods must be used to trap any sediment.
 - d) Fill must be stabilized according to accepted engineering practices.

8. A vegetated buffer strip shall parallel and extend thirty-five (35) feet inland from all points along the water mark of a lake-stream shoreline or normal stream bank, with the exception of on-site storm water ponds and artificial

water bodies created as a part of site landscape treatment which does not flow or overflow into a natural lake-stream. The general standards for the buffer strip are as follows:

- a) The buffer strip shall consist of native trees, shrubs and other vegetation. Dead, diseased, unsafe or fallen trees and noxious plants and shrubs, including poison ivy, poison sumac and poison oak, may be removed. Trees and shrubs shall not be removed but may be pruned for a filtered view of the lake-stream, however, clear cutting shall be prohibited.
- b) Subject to (a) above; ground cover vegetation shall be left in a natural state and shall not be removed. Chemical control and/or fertilization of vegetation shall be prohibited.
- c) Footpaths, bicycle paths and hiking paths as well as fences, walls and stairways may be constructed under the following conditions:
 - i. All hiking trails or walking paths must be constructed of a permeable material.
 - ii. All paths and stairways must be constructed in a location and manner to avoid soil and slope failure.
 - iii. Construction shall avoid removal of existing trees, shrubs and any other vegetation whenever feasible.
- d) Whenever a buffer strip contains an area of soil erosion or lawn, the planting of native trees, shrubs, or ground covers will be required.
- e) Reduction of Buffer Area: In the event that the application of the vegetated buffer strip standards of this paragraph, together with any other dimensional restrictions applicable under this Ordinance, results in a legal parcel that cannot be reasonably developed for permitted land uses in the district within which the property is located, the Zoning Board of Appeals may approve a reduction of the buffer area upon a finding that the proposed site plan provides the maximum possible buffer strip, while permitting a reasonable use of the property.

9. Off-Street Parking and Loading Regulations:

- a) Location of residential off-street parking spaces may be within a rear yard or side yard. Off street parking shall not be permitted within a minimum front yard setback.
- b) Location of off-street parking for other than residential use shall be either on the same lot or within three hundred (300) feet of the building it is intended to serve.

- c) Joint use of off-street parking areas may be provided collectively by two or more buildings or uses, PROVIDED, the total number of parking spaces shall not be less than the sum of the requirements of the space requirements computed separately.
- d) Parking Lot Setback and Design Adjacent to Water Bodies:
 - i. Every parking lot or parking area shall be setback at least seventy-five (75) feet from the high watermark or normal stream bank of any lake, river, stream or tributary and shall be so constructed that no surface water shall shed into or towards such body of water unless such surface water is first treated or filtered to remove silt, grease, oil or other matter which would deteriorate the water quality of said water body. Parking areas adjacent to lake or stream setbacks shall be provided with curbing or parking bumpers to restrain vehicles within the parking area. Minimum treatment shall consist of retention or detention facilities as required by the Grand Traverse County Drain Commissioner.
- e) Number of parking spaces required by use:
 - i. Institutional (Senior High Schools – for example): One (1) for each teacher, administrator or other employee, and one (1) for each ten students, in addition to the requirements of the auditorium (if present).
 - ii. Auditoriums: One (1) for each three seats plus one (1) for each two (2) employees.
- f) All parking spaces shall be provided access by means of maneuvering lanes. Backing directly onto a street shall be prohibited.
- g) All parking areas including parking spaces and maneuvering lanes shall be surfaced with seal coat, black top, or other similar material that shall provide a durable, smooth, and dustless surface, and shall be graded and drained to dispose of all collected surface water, unless such parking areas are designed specifically to retain runoff as part of a storm water retention plan.
- h) All parking areas with a capacity of four (4) or more vehicles shall provide adequate lighting throughout the hours when the parking area is in operation. All lighting shall be so installed as to be confined within and directed into the parking area only.

- i) All parking areas containing 2,700 square feet or more of parking area, including access drives thereto, shall be effectively landscaped with planting strips on all sides adjacent to or visible from surrounding properties and on all sides of a public street.
- j) Snow Storage: Whenever a development requiring off street parking has parking areas containing 2,700 square feet or more, provisions shall be made for on-site snow storage area in addition to the required parking area.
- k) Loading and Unloading Requirements:
 - i. A loading or unloading space is to be 12 feet wide and 25 feet long, with 14 feet of overhead clearance.
 - ii. Schools, clubs, or other assembly buildings require one (1) loading/unloading space per building.

Comments:

The Conceptual Plan for this property indicates two areas of "Possible Housing Development". It should be noted that the Ordinance does not appear to allow for this use of the property by-right. However, the ordinance does allow for Residential Units Accessory to Offices (for business, professional, governmental or institutional purposes) to be permitted as Special Uses. The approval for a Special Use requires additional information be submitted as part of the review process. The Ordinance does not appear to specifically address the proposed additional access drive.

The proposed stairway and dock on Boardman Lake appear to be acceptable uses under the Ordinance, provided they avoid soil and slope failure and minimize impacts on existing vegetation within a 35 foot wide buffer strip adjacent to the water mark of the lake.

The Traverse Area Recreation and Transportation Trails, Inc. (TART) and the City have long contemplated and continue to pursue a trail system that will encircle Boardman Lake. The leg along the west side of the lake would parallel the existing railroad corridor that is situated west of the developed portions of this property.

Utility Summary:

1. Water: According to the design drawings for the facility, the site is serviced by a private 6" water main that provided potable water and fire suppression for the facility. The water main is connected to a public water main that exists along the Cass Road corridor.

2. **Sanitary Sewer:** According to the design drawings for the facility, the site is serviced by a private 3" sanitary sewer forcemain that discharges effluent to a public sanitary sewer that exists along the Cass Road corridor.
3. **Storm Water:** The storm water management for this site consists entirely of at grade storm water retention basins. The facility was constructed in the mid 1980's. The storm water controls appear to have been designed to satisfy the storm water requirements that were in place at that time. Subsequent changes to the storm water codes would require the existing storm water controls to be brought into compliance with the current, more restrictive storm sewer requirements if alterations to the site are made resulting in additional impervious surface.

AERO PARK CAMPUS

Aero Park Campus is comprised of five separate parcels located on Aero Park Drive, in the City of Traverse City. Aero Park Drive runs from Parsons Road to the north to Three Mile Road to the east. Located on the five parcels is the Automotive Service Technology Program (Tax ID#28-51-850-004-00, 2510 Aero Park Drive), the Aviation Hangar (Tax ID#28-51-850-013-00, 2550 Aero Park Drive), the Parsons-Stulen Building (Tax ID#28-51-850-014-00, 2600 Aero Park Drive), and the Aero Park Laboratories (Tax ID#28-51-850-034-02, 2525 Aero Park Drive), Shipping and Receiving (Tax ID#28-51-850-034-10, 2525 Aero Park Drive), respectively. All five of the parcels are zoned I - Industrial District.

Zoning Summary:

The following uses are allowed in the Industrial District:

1. GP – Government/Public District uses of land and buildings, together with accessory uses allowed:
 - a) Administration of economic programs
 - b) Administration of human resource programs
 - c) Athletic fields
 - d) Auditoriums
 - e) Cemeteries
 - f) Community gardens
 - g) Cultural facilities
 - h) Electrical, combination electric and gas and other utility services, water supply, sewage systems (except gas storage and refuse)
 - i) Environmental quality and housing program administration

- j) Essential services and essential services with buildings
- k) Executive, legislative and general government uses except correctional institutions
- l) Finance, taxation, and monetary services (public)
- m) Health services except hospitals, sales and rentals
- n) Libraries
- o) National security and international affairs
- p) Parking structures, public or private, subject to the following standards:
 - i. Parking structures shall be designed to have horizontal versus stepped or sloping levels at areas of public view. All ramping shall be concealed from public view.
 - ii. Openings shall not exceed 60 percent of the total wall surface. The shape of the openings shall be vertical or square.
 - iii. Materials for parking structures shall follow the same restrictions as buildings.
 - iv. Sloped roofs are not required for parking decks, however:
 - The upper and lowest level of parking shall incorporate sufficient screening to shield cars from public view.
 - Parapet treatment is required to terminate the deck and give proper architectural finish to the structure. Cornices, overhangs, and other devices which are consistent with the language of historical buildings may be employed.
 - v. The design of parking decks shall be consistent with the design of historical buildings in the area.
- q) Parks
- r) Places of worship
- s) Playgrounds
- t) Public works facilities
- u) Recreational facilities
- v) Social services
- w) Transitional housing
- x) United States Postal Service

2. C-2 district uses, including:
 - a) C-1 district uses, including:
 - i. R-29 district uses (discussed above in the NMC-2 District section).
 - ii. Art galleries
 - iii. Business Services
 - iv. Educational services, except schools
 - v. Engineering, Accounting, Research, Management & related services except Testing and Laboratory services
 - vi. Finance, Insurance, and Real Estate Services
 - vii. Funeral services, exempting crematories
 - viii. Health services, except Hospitals, Sales, and Rentals
 - ix. Legal services
 - x. Mailing services
 - xi. Membership organizations
 - xii. Offices
 - xiii. Personal services, including walk-in laundry and dry cleaning pick-up stations, but laundry cleaning and garment services are not allowed and without drive-throughs
 - xiv. Places of Worship
 - xv. Public Administration, except Correctional Institutions
 - xvi. Repair services – watch, clock, and jewelry
 - xvii. Repair services – reupholstery and furniture
 - xviii. Security services exclusive of sales and installation
 - xix. Social services
 - xx. Vacation Home Rentals maintaining a City Vacation Home Rental License
 - xxi. Veterinary services, without outdoor runs
 - b) Boat liveries
 - c) Brew pubs
 - d) Convenience stores
 - e) Day care facilities
 - f) Drinking places without entertainment
 - g) Drinking places with entertainment if the use is not likely to create a noise disturbance under City ordinances and if the building is provided with a central air conditioning system
 - h) Florists

- i) Fruit and vegetable markets, but not public or municipal markets
 - j) Grocery stores
 - k) Hardware stores
 - l) Laundromats
 - m) Marinas
 - n) Movie Rental Stores
 - o) New dealers and news stands
 - p) Parcel packing services
 - q) Pet grooming services without outdoor runs or kennels
 - r) Preschools
 - s) Radio, Television and consumer electronics stores
 - t) Restaurants, family, fine, and fast, except drive-through and drive-ins
 - u) Service stations and repair stations with no more than 2 bays; with or without fuel dispensing
 - v) Stores, retail, miscellaneous
 - w) Theatrical producers, entertainers, bands and orchestras
 - x) Parking areas, public, subject to the following standards
 - i. Access shall be limited to one driveway per public street or two driveways per site, whichever is less.
 - ii. All parking areas which abut a public street shall be set back a minimum of eight feet from the property line along said street and shall provide in this setback area appropriate screening with plant materials or a combination of plant materials, berming and decorative screenwalls to a minimum of three feet
 - iii. Pedestrian Travel Routes within the parking area shall be provided, clearly defined and approved by the Planning Director
 - iv. Unless varied, the Landscaping and Site Development Chapter of the City Ordinance shall apply
3. Auto Repair
 4. Communications establishments
 5. Construction, special trades
 6. Contractors
 7. Contractors, heavy construction
 8. Cutting plastics, leather, etc...
 9. Equipment rental and leasing, miscellaneous
 10. Fuel dealers
 11. Gas systems

12. Kennels for boarding provided that no building, open kennel or exercise runway shall be located closer than 200 feet from any R-District
13. Lumber yards – retail
14. Manufacturing or processing of the following:
 - a) Apparel and other finished products made from fabrics and similar materials
 - b) Bakery products
 - c) Beverages
 - d) Canned, frozen and preserved fruits, vegetables and food specialties
 - e) Dairy products
 - f) Electronic and other electrical equipment and components
 - g) Fabricated metal products, except machinery and transportation equipment and except ordnance and accessories
 - h) Food preparations and kindred products – miscellaneous
 - i) Furniture and fixtures
 - j) Grain mill products
 - k) Industrial and commercial machinery and computer equipment
 - l) Leather and leather products (finished), except leather tanning and finishing
 - m) Lumber and wood products, except furniture, wood preserving and reconstituted wood products
 - n) Manufacturing industries – miscellaneous
 - o) Measuring, analyzing, and controlling instruments, photographic, medical and optical goods, matches and clocks
 - p) Printing, publishing and allied industries
 - q) Stone, clay, glass and concrete products, except asbestos products
 - r) Sugar and confectionary products
 - s) Medical Marijuana Cultivation Facility meeting certain requirements
 - t) Metal slitting or shearing
 - u) Motor freight transportation and warehousing
 - v) Nurseries – retail
 - w) Offices – general – up to 5,000 square foot gross floor area on any site and/or building
 - x) Offices primarily serving industry in the district which clearly establish support services for permitted industries in the district
 - y) Parcel packing services

- z) Pet boarding or pet grooming services, provided that no building, open kennel or exercise runway is closer than 200 feet from an R-district
- aa) Places of Worship
- bb) Postal and delivery service
- cc) Pressure container filling
- dd) Primary metal industries, including smelting, forging similar operations, subject to the following conditions:
 - i. The maximum lot size is 14 acres
 - ii. No odors, smoke, or noise from the use are likely to create a disturbance on neighboring public or private property
- ee) Retail outlets, if accessory to manufacturing
- ff) Salvaging damaged merchandise not engaged in sales
- gg) Scrap steel cutting
- hh) Sign painting and lettering shops
- ii) Solvents recovery services
- jj) Tape slitting for trade
- kk) Testing and laboratory services
- ll) Veterinary services for animal specialties provided no building, open kennel or exercise runway shall be no closer than 200 feet from any R-district
- mm) Vocational schools
- nn) Warehousing
- oo) Weighing foods and other commodities
- pp) Wholesale trade – durable goods
- qq) Wholesale trade – non-durable goods except livestock and wholesale live animals

The following uses are allowed by Special Use Permit in the Industrial District:

1. Communication towers

The following are dimensional and density requirements for the Industrial District:

1. Lot Width (minimum): 100 feet
2. Lot Area (minimum): No minimum
3. Density (maximum): No maximum
4. Impervious Surface: 80% maximum
5. Front Setbacks:
 - a) Buildings: 25 feet minimum
 - b) Parking Areas: Behind or to the side of the principal building and set back a distance equal to the setback of the principal building or

25 feet, whichever is greater. For through lots, parking may be provided streetward of the principal building on the street that carries less traffic, but in no case closer than 25 feet from the front property line.

6. Side Setbacks (minimum):
 - a) Building: None
 - b) Parking Area: If contiguous to an R-district, a minimum of 10 feet. Otherwise, 5 feet.
7. Rear Setbacks:
 - a) Building: 15 feet minimum
 - b) Parking Area: 5 feet, except 20 feet if abutting, adjacent to, or across a public alley from an R-district.
8. Corner lots and through lots having frontage on two streets shall provide the required front setback on both streets.
9. The maximum allowed building height is 60 feet
10. Public utility buildings may be erected to a height not exceeding 100 feet.
11. Accessory Buildings shall:
 - a) Not be located in the front yard except accessory buildings may be located streetward of the principal building on the less traveled street on through lots
 - b) Be no closer than 15 feet to any rear property line. Boat houses up to square feet gross floor area, may be built up to the water's edge.

Circulation and Parking Standards for the Industrial District are detailed in the City Zoning Ordinance, Chapter 1374. A few perhaps pertinent highlights are as follows:

1. All developments except for one and two-family dwellings, shall provide clearly defined pedestrian travelways from the public sidewalk to main entrances of the buildings or uses of the land.
2. Sidewalks are to be a minimum of 5 feet wide.
3. Pedestrian Travelways shall be physically separate from parking areas except at crossings.
4. Whenever full off-street parking compliance is required, a minimum of one bicycle rack is required and shall be located within 50 feet of the main entrance of a building or inside a building in a location that is easily accessible by bicyclists. For sites requiring more than 25 motor vehicle spaces, the ratio is one rack for every 25 motor vehicle spaces.

5. Compliance with City Zoning Code requirements is required for motor vehicle parking. The following activities require full compliance.
 - a) New Building Construction
 - b) Enlargement
 - c) Change in Use
 - d) Parking Area Construction and Expansion
6. Land Use Permits and Improvement Guarantees are required for parking area construction or expansion.
7. For any parking construction or expansion, a plan shall be submitted to and approved by the City Engineer prior to the commencement of construction.
8. The number of parking spaces required are per the following uses:
 - a) Institutional
 - i. High schools, Colleges: 3 per 10 students
 - ii. All other schools: 1.5 per classroom
 - b) Places of worship: 1 per 4 seats in main area of worship
 - c) Government Offices: 1 per 400 square feet
 - d) Auditoriums: 1 per three seats
9. Buildings less than 500 square feet gross floor area for non-residential uses are exempt from parking space requirements.
10. No new driveways are permitted on a new primary or new arterial collector street.
11. Special Requirements:
 - a) Curbing is required only for that portion of a parking area including the approach driveways and parking lot facing the street.

Comments:

The zoning district allows for a variety of uses and provides a tremendous range of choice in terms of uses complimentary of the building expansions conceptualized for the Aero Park properties.

Utility Summary:

1. Storm Sewer: Aero Park is served by underground storm sewer that exists beneath the streets. Any development of these properties in the City would require storm water controls be added to comply with the current City storm water design requirements.
2. Water: Municipal water main exists beneath the Aero Park streets and is adequately sized to service future development in this area.

3. Sanitary Sewer: Municipal sanitary sewer exists beneath the Aero Park streets and is adequately sized to service future development in this area.

OBSERVATORY

The Observatory Property is located at 1753 Birmley Road in Garfield Township. The property is situated south of Birmley Road and east of Keystone Road, fronting on Birmley Road. The tax identification number is 28-05-026-015-10. The parcel size is approximately five acres and is has spilt zoning districts. The approximate westerly half is zoned MUIBD-G (Mixed Use Industrial Business District-General) and the approximate easterly half is zoned A1 (Agricultural).

Access to the property is gained from Birmley road via an ingress/egress easement on the parcel situated to the east of the parcel. The neighboring parcel measures approximately 10 acres in size and is zoned A1. The observatory is located on the easterly half of the property owned by NMC which is zoned A1. Observatory parking is located in both the westerly and easterly halves of the property.

Zoning Summary:

As stated above, the property is split-zoned. MUIBD-G zoning is summarized for the University Center Campus in this document. Zoning characteristics for the A1 zoning include:

A1 – Agricultural Zoning Uses Permitted by Right are:

1. One-family detached dwellings.
2. Field crop, fruit farming, truck gardening, horticulture, aviaries, hatcheries, apiaries, green houses, tree nurseries, and similar agricultural enterprises along with accessory uses incidental to the above.
3. Raising and keeping small animals such as poultry, rabbits, goats.
4. Raising and keeping livestock such as cattle, hogs, horses, sheep ONLY on lots having an area of at least 10 acres.
5. Cemeteries, public or private.
6. Tenant house as part of farm property for full-time farm employees associated with the principal use and subject to the same height and setback requirements as the principal dwelling.
7. Public Areas and Public Parks.
8. Public and Private Conservation Areas and associated structures.
9. Supplementary Uses being customary accessory uses and buildings incidental to the permitted principal use of the premises.

10. Horses may be kept on parcels having an area of at least 5 acres with a maximum of 3 horses at a time allowed.
11. Medical Marijuana Residential Cultivation.

A1 – Agricultural Zoning Uses Permitted Under Special Conditions are:

1. Customary Home Occupations as specified for R-1A Districts.
2. Roadside stands selling products grown by the owner of the property on which the stand is located, PROVIDED that contiguous space for the parking of customer's vehicles is furnished off the public right-of-way at a ratio of one (1) parking space for each fifteen (15) square feet of roadside stand floor area.

A1 – Agricultural Zoning Uses Permitted by Special Use Permit are:

1. Special open space uses, such as public beaches, bath houses, private resorts, recreational camps, and other open space uses operated for profit within the A-1, Agricultural District.
2. Travel Trailer Parks subject to certain requirements.
3. Institutional Structures subject to certain requirements.
 - a) Permitted Institutional Structures:
 - i. Religious Institutions
 - ii. Educational and Social Institutions (non-profit)
 - iii. Public Buildings and Service Installations
 - iv. Institutions for Human Care (Hospitals, Nursing Homes, etc.)
 - b) Institutions specifically prohibited:
 - i. Institutions for the mentally retarded and physically handicapped, drug or alcoholic patients.
 - ii. Camps or Correctional Facilities.
4. Green Houses and Nurseries.
5. Riding Stables.
6. Raising of fur bearing animals.
7. Game or hunting preserves.
8. Veterinary Hospitals.
9. Sawmills.
10. Public buildings.
11. Incinerators and sanitary fills, sewage treatment and disposal facilities, subject to certain requirements.
12. Airports and Airfields.
13. Sand and Gravel pits.
14. Drive-in Theaters.

15. Boarding Residences.

16. Roadside Farm Markets with the following conditions:

- a) Maximum floor area: 2,500 square feet.
- b) Parking shall be provided in accord with certain standards (see MUIBD-G zoning for westerly half of parcel).
- c) Outside sales shall be temporary and restricted to the above mentioned products.

17. Child Care Organization.

18. Bed and Breakfast.

19. Recreational Facilities with additional provisions as follows:

- a) The recreational facility shall be accessed from a major thoroughfare as classified on the Comprehensive Development Plan of Garfield Township.
- b) A minimum parcel size of 10 acres shall apply.
- c) All buildings and uses, including outdoor recreational fields and sports courts, shall comply with the setbacks of the underlying zoning district.
- d) When adjacent to any residential zoning district or residential use, a minimum setback of 40 feet shall apply and a buffer yard, in compliance with the Ordinance, shall be provided and maintained.

A1 – Agricultural Zoning Density and Dimensional Requirements are as follows:

1. Minimum zoning lot or land use size per dwelling unit: 1 acre.
 - a) Planned Unit Development provides for flexibility and lot reduction options.
 - b) An agricultural operation which includes the raising and keeping of livestock for profit shall have a lot area of not less than 10 acres.
 - c) Individual lot areas in plats recorded subsequent to the date of this amendment may be less than the required minimum PROVIDED the average lot size in the recorded plat is not less than the required minimum and PROVIDED FURTHER that any required lot size is not less than seventy percent (70%) of the required lot area. Provision for reduced lots shall be stated on the recorded plat such that minimum average lot sizes will be maintained in the event of any subsequent amendments to the plat. No more than ten percent (10%) of the total lots in the plat shall contain less than the required minimum lot area.
2. Minimum Lot Width: 110 feet.
3. Maximum Height of Structures: 2 ½ stories or 35 feet.
4. Minimum Yard Setbacks:

- a) Front: 30 feet.
 - b) Side (each): 20 feet.
 - c) Rear: 35 feet.
- 5. Maximum Lot Coverage (%): 20%.
 - 6. Minimum Cross Section (Road?): 24 feet.

Comments:

The zoning for this property allows for a variety of uses in conjunction with the property's current use for educational facilities. The improvements planned for this parcel are complimented by the zoning Ordinance.

Utility Summary:

- 1. Water: The site is serviced by an on site drinking water well. The Grand Traverse County Health Department records indicate it was installed in 1980. The records indicate the well is a pitless style well with a submersible pump.
- 2. Sanitary Sewer: According to the Health Department records, the site is serviced by a septic system. This consists of a 1,200 gallon septic tank, a 500 gallon septic tank, and a drainfield measuring 600 square feet that receives the wastewater from the Observatory. The system was constructed in 1979. Any improvements to this facility would likely require improvements to this system.
- 3. Storm Water: No storm water facilities are known to exist on this property.

APPEL PROPERTY

This parcel is located on Sarns Road in Blair Township and has frontage on the Boardman River. The Assessor's records indicate the parcel measures 38.0 acres in size. Sarns Road bisects the property. The majority of the property exists west of Sarns Road and north of the Boardman River. A small portion of the parcel exists east of Sarns Road and west of the Boardman River. There is a cottage style structure on the property bounded by Sarns Road and the Boardman River.

Zoning Summary:

There are two separate zoning districts on this parcel. The property adjacent to the Boardman River is zoned BV, Boardman Valley District. This district follows the river alignment and includes all land within 400 feet of the Boardman River.

The remainder of the property, not adjacent to the river, is zoned RN, Residential Neighborhood District.

BV District Standards

7. Uses allowed by right in the BV District includes the following:
 - a) Standard single-family detached dwelling units.
 - b) Forest preserves, game refuges, and parks.
 - c) Home occupations.
 - d) State licensed residential facility.
 - e) Family and group daycare.
 - f) Places of worship.
 - g) Accessory dwellings.
 - h) Accessory buildings and uses, customarily incidental to any of the above.

8. Uses permitted with Special Conditions includes the following:
 - a) Boat docks subject to approval by the Michigan Department of Environmental Quality (MDEQ) and/or the Michigan Department of Natural Resources (MDNR).
 - b) Bridges subject to approval by the MDEQ and/or the MDNR.

9. Lots within the BV District must have a minimum of forty thousand (40,000) square feet and have a minimum width of 200 feet and a minimum lot depth of 200 feet.

10. Buildings are subject to the following minimum requirements:
 - a) Front yard 25 feet.
 - b) Side yard 15 feet.
 - c) Street side yard 25 feet.
 - d) Rear yard 25 feet.
 - e) Waterside 100 feet from high water mark.
(also applies to septic system) 50 feet from crest of a bluff.
 - f) Maximum height 25 feet.

11. Maximum lot coverage by buildings is 10%.

12. A 50 feet natural vegetative buffer applies inland from the high water mark, within which vegetative removal and pruning are limited.

13. Stream alteration is only permitted through Planning Commission and MDNR approval processes.
14. Mineral extraction is prohibited with the exception of potable groundwater.
15. As the single structure on the parcel exists within close proximity to the Boardman River, it would appear that this structure is nonconforming with the standards of the Zoning Ordinance. Nonconforming structures are subject to the following standards:
 - a) Routine or normal repair and maintenance work to keep a legal non-conforming structure or use, such as a roadway, in sound condition is permitted. Remodeling of non-conforming structures within the confines of the existing foundation and elevations is permitted if the nonconformity is not increased.
 - b) The ground floor area of any legal non-conforming structure may be increased by up to 50% of the existing enclosed ground floor living area cumulative from the date of nonconformance or to the minimum extent necessary to comply with minimum dwelling unit size standards.
 - c) Any enlargement of a legal non-conforming structure shall comply, to the greatest extent possible with all setback and other building requirements, and is subject to the following conditions:
 - i. The land on which the nonconforming structure is sited is not subject to flooding.
 - ii. The enlargement or expansion of the nonconforming building or structure will not lead to accelerated bank erosion or other material degradation of the river resource, and the enlargement or expansion of the building or structure is approved by the local soil erosion and sedimentation control enforcement agency.
 - d) Approval from the Zoning Board of Appeals is required for the restoration of a nonconforming building or structure that is damaged or destroyed by more than 50% of its value due to flood, fire, or other means. A request for a permit to restore a nonconforming building or structure damaged or destroyed by more than 50% of its value shall be approved if all of the following conditions exist:
 - i. The land on which the building or structure is situated is not subject to flooding (100 year floodplain).

- ii. The use of a nonconforming building or structure will not lead to accelerated bank erosion or other material degradation of the river resource, and the use of the building or structure is approved by the local soil erosion and sedimentation control enforcement agency.
 - iii. Restoration of a damaged building or structure, if approved by the Zoning Board of Appeals, shall be started within one (1) year from the time of approval.
- e) A nonconforming use may be changed to a use of a likeness or similar character if the new use more closely conforms the zoning requirements of the Boardman Valley District.
 - f) If a nonconforming use is discontinued for twelve (12) consecutive months, any future use shall conform to the zoning requirements of the Boardman Valley District. A property owner may request the Zoning Board of Appeals to certify the existence of a prior nonconforming use on the owner's property.
 - g) A previously established manicured lawn in an area subject to native vegetation buffer standards is considered a nonconforming use.

RN District Standards

- 1. Uses allowed by right in the BV District includes the following:
 - a) Standard single-family detached dwelling units.
 - b) Home occupations.
 - c) State licensed residential facility.
 - d) Family and group daycare.
 - e) Places of worship.
 - f) Two-family dwelling unit.
 - g) Parks, trails and greenways.
 - h) Farms of ten acres or more.
 - i) Accessory dwellings.
 - j) Daycare centers and nursery schools.
 - k) Places of worship.
 - l) Accessory buildings and uses, customarily incidental to any of the above.
 - m) Keeping of horses.
 - n) Small wind energy system 35 feet in height or less.
 - o) Co-location of wireless communication antenna(s).
 - p) Top soil extraction.

2. The following uses of land and buildings are allowed in the RN District, provided the Planning Commission finds that the proposed use satisfies all of the requirements of the Zoning Ordinance:
 - a) Public utility buildings, telephone exchange buildings, electric transformer stations and substations, or gas regulator stations (but not including service or storage yards) when operating requirements necessitate location of such facilities within the district. All buildings and structures shall meet the required setbacks.
 - b) Publicly owned and operated municipal buildings, libraries, and recreation facilities.
 - c) Public, parochial, and private elementary, intermediate and/or secondary schools offering courses in general education.
 - d) Cluster developments.
 - e) Communication Towers.

3. The RN District permits the following uses of land and buildings subject to a Special Use Permit provided the Township Planning Commission finds that the proposed use complies with the special standards and satisfies all the requirements of the Zoning Ordinance:
 - a) Foster care group home.
 - b) Convalescent and nursing homes, congregate care facilities.
 - c) Standard restaurants.
 - d) Small retail operations.
 - e) Clubs and fraternal organizations not exceeding 11,999 square feet.
 - f) Planned unit development.
 - g) Multiple-family residential developments.
 - h) Elderly housing developments.
 - i) Small personal service establishments such as hair salons, tailor shops, photographic studios, and barber shops.
 - j) Health/athletic clubs not exceeding 11,999 square feet.
 - k) Medical clinics. Veterinary clinics, except clinics having outdoor runs.
 - l) Community center.
 - m) Consulting-type business related to executive, administrative, or professional occupations, including, but not limited to, offices of a lawyer, accountant, insurance/real estate agent, architect,

- engineer, and similar occupation not exceeding gross floor area of 2,500 square feet.
- n) Business service establishment such photocopying services, quick-printing establishments, office supply stores, and similar establishments, not exceeding 2,500 square feet.
 - o) Bed and breakfast.
 - p) Riding stables and kennels.
 - q) Golf courses and golf driving ranges.
 - r) Cemetery.
 - s) Small Wind Energy System over 35 feet in height.
 - t) Large Wind Energy System.
4. Lots within a platted subdivision or in a site condominium subdivision have no minimum lot width. Metes and bounds lots must have a minimum width of 60 feet.
5. Buildings are subject to the following minimum requirements:
- a) Front yard 20 feet.
 - b) Side yard 10 feet for residential uses, 25 feet for commercial.
 - c) Street side yard 20 feet.
 - d) Rear yard 25 feet.
 - e) Maximum height 35 feet.
6. Maximum lot coverage by impervious area is 66%.
7. One and two unit dwellings must have a minimum of 600 square feet of livable area, with a minimum dwelling dimension of 20 feet wide by 20 feet long. No standards are established for multiple family dwelling units.

Comments:

Although no improvements are anticipated at this time for this parcel, the RN District that applies to a portion of this site is very flexible. It provides tremendous range of choice in terms of land use and land regulations.

The BV District is somewhat more restrictive, but does permit 40,000 square foot lots having minimum dimensions of 200 feet by 200 feet. Aside from increased setbacks and minor vegetative buffer requirements, little additional restrictions apply within this district.

Utility Summary:

1. Water: The site is serviced by an on site drinking water well. No records are on file from the installation of the well with the Grand Traverse County Health Department. Included on a record for the sanitary sewer system is a note indicating that there is a 1 ¼" shallow well on the site which would suggest the well is rather old.
2. Sanitary Sewer: According to the Health Department records, three, 1,200 gallon holding tanks receive the wastewater from the cottage. This waste is pumped and hauled to a disposal facility. Any improvements to this facility would likely require improvements to this system.
3. Storm Water: No storm water facilities are known to exist on this property.

Municipal sewer and water is not available within several miles of this parcel and unlikely to be extended to this area within the next ten years.

During our Stakeholder interviews it was related that community colleges may not be subject to local zoning ordinances. If activities are planned for any of the NMC properties that would conflict with what is currently allowed by the local unit of government ordinances, NMC's legal counsel should be consulted and a legal opinion requested.

The above information was prepared using the current zoning ordinances from the various local units of government. These documents change from time to time and current versions should be consulted for accuracy in the future.

I hope you find this summary helpful. Should you have any questions or comments relating to the above information, please do not hesitate to call on me.

Sincerely,

GOURDIE-FRASER, INC.

A handwritten signature in black ink, appearing to read "Dan Wagner".

Dan Wagner, P.E.
Project Manager

Attachments City of Traverse City Zoning Map
Garfield Township Zoning Map
Blair Township Zoning Map

T:\Projects\12021\Documents\Communication\2012-10-22 zoning and utility summary.doc

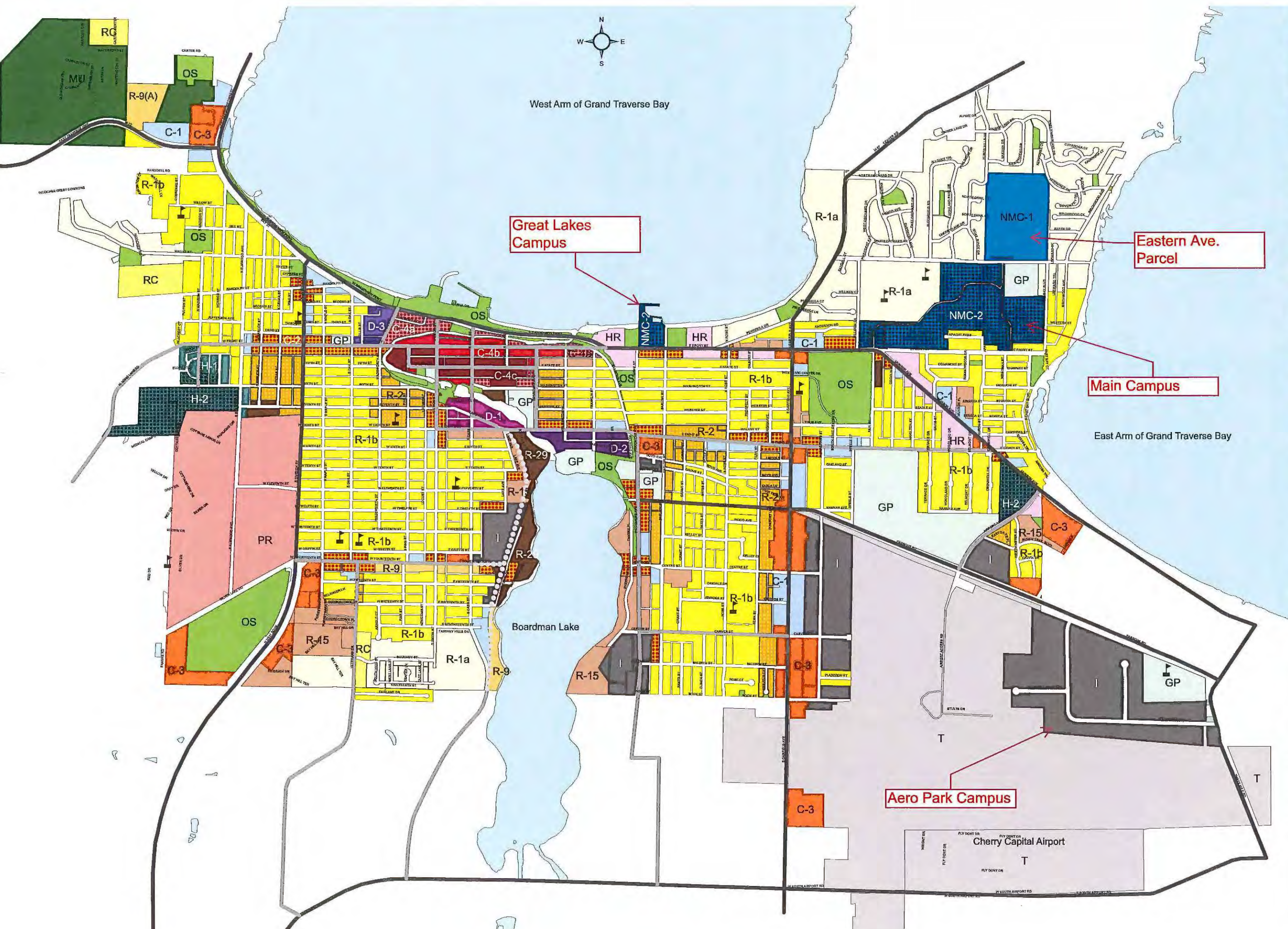
City of Traverse City Zoning Map

- Zoning Index**
- OS Open Space District
 - RC Residential Conservation District
 - R-1a Single Family Dwelling District
 - R-1b Single Family Dwelling District
 - R-2 Two Family Dwelling District
 - R-9 Multiple Family Dwelling District
 - R-15 Multiple Family Dwelling District
 - R-29 Multiple Family Dwelling District
 - HR Hotel Resort District
 - C-1 Office Service District
 - C-2 Neighborhood Center District
 - C-3 Community Center District
 - C-4a Regional Center District
 - C-4b Regional Center District
 - C-4c Regional Center District
 - T Transportation District
 - I Industrial District
 - GP Government/ Public District
 - PR Planned Redevelopment District
 - NMC-1 University District
 - NMC-2 University District
 - H-1 Hospital District
 - H-2 Hospital District
 - D-1 Development District
 - D-2 Development District
 - D-3 Development District
 - R-1b / Mixed Use PUD - Morgan Farm Area
- (A) Zoning Agreement

ZONING ORDINANCE ADOPTED 7/6/99			
REVISIONS			
Change	Amendment	Adopted	District
1	499	5-15-00	C-1 and R-15 to HR
2	500	5-15-00	C-1 to HR
3	501	5-15-00	R-9 to C-2
4	504	7-17-00	R-1b to C-1
5	515A	10-2-00	R-29 to C-1
6	515	11-6-00	T to I
7	516	11-6-00	R-29 to C-1
8	525	2-19-01	NMC-1 to NMC-2
9	532	6-4-01	R-9 to R-2
10	533	12-3-01	R-29 to GP
11	567	7-1-02	H-1 to H-2
12	571	8-19-02	R-1b to R-2
13	572	8-19-02	C-2 to R-1b
14	605	7-7-03	R-1b to R-29
15	660	1-3-05	T to I
16	673	3-21-05	OS to HR
17	678	5-2-05	I to R-1b
18	690	10-17-05	GP to H2
19	695	2-6-06	I to C3
20	703	6-19-06	R-1b to C3
21	712	10-12-06	R-15 to C3
22	800	6-16-08	R-1a to OS
23	802	6-16-08	C2 to D1
24	833	5-18-09	C1 to OS
25	834	5-18-09	R2 to OS
26	835	5-18-09	OS to T
27	838	6-15-09	R-1a to OS
28	915	5-16-11	MU to R9-(A)

5/24/2011

This map is based on digital databases from the City of Traverse City. Traverse City cannot accept any responsibility for errors, omissions or positional accuracy.



Great Lakes Campus

Eastern Ave. Parcel

Main Campus

Aero Park Campus

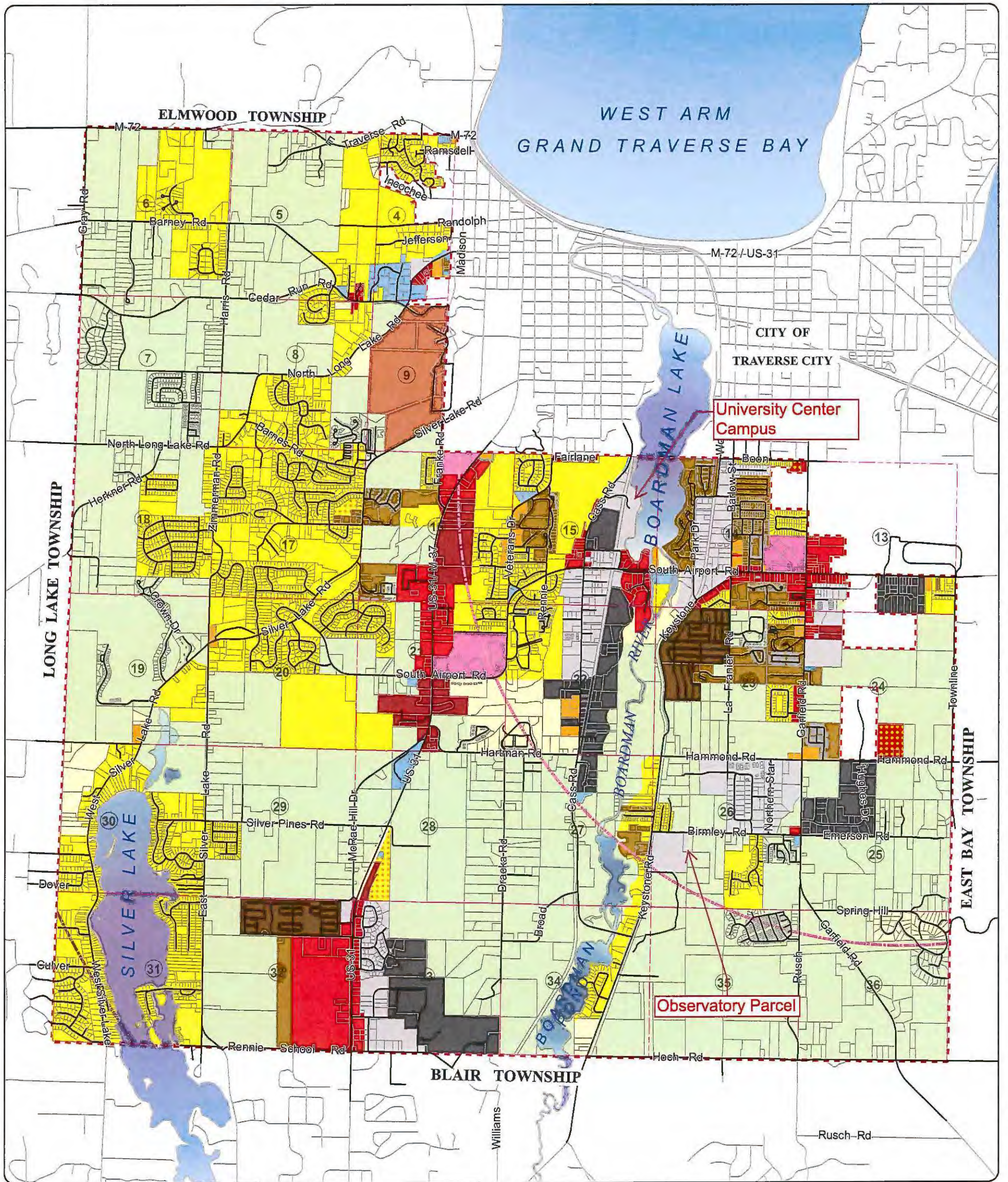
West Arm of Grand Traverse Bay

East Arm of Grand Traverse Bay

Boardman Lake

Cherry Capital Airport





Legend

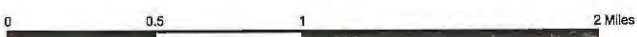
- Inner Airport Overlay Zone
- Outer Airport Overlay Zone
- C10 - Office
- C2 - General Business
- A1 - Agricultural
- R1A - Rural Residential
- R1B - Single Family Res
- R1C - 1 & 2 Family Res
- R1M - Multi Family
- R1MH - Mobile Home
- C1 - Local Business
- C2 - Conditional Zoning
- C3 - Highway Service
- C4 - Planned Shopping
- PRD - Planned Redevelopment
- P1 - Vehicle Parking
- MUIBD-G - Mixed Use
- MUIBD-L - Mixed Use

Zoning Map

Current as of: 7/25/2011

Charter Township of Garfield Grand Traverse County, MI

Garfield Charter Township
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Fax: 231.941.1688
www.garfield-twp.com



NOT A LEGAL SURVEY