2020 Vision: A Community Concept for the Michigan State University Campus

Campus Master Plan Report

Prepared for
Michigan State University Board of Trustees

Prepared by
The Campus Master Plan Work Team and Sasaki Associates, Inc.

December 7, 2001
# TABLE OF CONTENTS

**Foreword by President**

I. Introduction

II. Existing Conditions
   A. Project Area ......................................................... 4-5
   B. History of Campus Development ............................... 6-15
   C. Land Use ................................................................. 16-17
   D. Building Use ............................................................. 18
   E. Open Space ............................................................... 18-29
   F. Circulation ................................................................. 30-32
   G. Parking ................................................................. 33-37

III. Master Plan Objectives
   A. Planning Objectives ................................................. 38
   B. Planning Issues ..................................................... 38-42

IV. Facilities Program
   A. Program Summary .................................................. 43-47
   B. Timeframe ................................................................. 48
   C. Student Housing ..................................................... 48
   D. Renovation ................................................................. 48-50

V. Planning Principles
   A. General Principles .................................................. 51
   B. Land Use and Facilities ......................................... 51-52
   C. Campus Environment ............................................. 52
   D. Open Space ................................................................. 52-53
   E. Parking ................................................................. 53
   F. Transportation ............................................................... 53-54

VI. Master Plan Recommendations
   A. Campus Land Use .................................................. 55-58
   B. Campus Landscape Structure ...................................... 59-66
   C. Campus Circulation ............................................. 67-69
   D. Parking ................................................................. 70-73
   E. North Campus Open Space, Facilities Accommodation and Circulation Improvements ................................................................. 73-78
   F. Central Campus Open Space, Facilities Accommodation and Circulation Improvements ................................................................. 78-83
   G. Facilities Accommodation and Circulation Improvements for the Areas Outside the North and Central Campuses ................................................................. 83-85
H. Long-Term Campus Growth.............................................................. 85-86
I. Campus Zoning Ordinance .............................................................. 87

Appendices
A. Definition of a Park-like Setting
B. List of Interviews and Forums
C. Arguments Against Sprawl
D. Facilities Program Description
E. Revised Zoning Ordinance
F. Parking Analysis
## LIST OF FIGURES

### Existing Conditions

1. Regional Context ........................................................................................................ 5  
2. Master Plan Study Area ............................................................................................. 5  
3. Opening Day Campus – 1857 .................................................................................... 7  
4. Map of the Campus – 1899 ..................................................................................... 9  
5. Proposed Plan by the Olmsted Brothers – 1915 .................................................... 11  
7. Campus Plan – 1945 .................................................................................................. 13  
8. Campus Plan – 1948 .................................................................................................. 15  
10. Existing Zoning Land Use Areas .......................................................................... 17  
11. Existing Use by Building ......................................................................................... 19  
12. Existing Open Space Structure .............................................................................. 20  
13. Campus Roads and Average Daily Volumes .......................................................... 31  
14. Existing Bicycle Facilities ....................................................................................... 32  
15. Existing Parking Distribution .................................................................................. 34  
16. Existing Parking Ratios ............................................................................................ 37  
17. New Building Space Added Every Ten Years ........................................................ 47  
18. Renovation Needs and Potential Demolitions ....................................................... 50  

### Master Plan Recommendations

19. Proposed Campus Districts ....................................................................................... 56  
20. Proposed Use by Building ....................................................................................... 57  
21. Housing and Food Service Issues ......................................................................... 58  
22. Proposed Open Space Structure ............................................................................ 61  
23. Protected Landscape Areas ..................................................................................... 63  
24. Road Issues for Future Consideration ................................................................... 68  
25. Proposed Bicycle Facilities and Phasing ............................................................... 69  
26. Alternative Future Sites for Additional Faculty and Staff Parking ....................... 72  
27. Proposed Plan – North Campus ............................................................................ 74  
28. Proposed Plan – Central Campus ........................................................................... 79  
29. Student Center Option Plan ................................................................................... 82  
30. Program Accommodation ....................................................................................... 84  
31. Campus Building Capacity Beyond 2020 ............................................................. 86
LIST OF TABLES

Existing Conditions
1. Existing Parking Allocation for All Surface and Ramps Spaces
   North of Mount Hope Road................................................................. 35
2. Parking Allocation within Parking Ramps....................................... 36

Facilities Program
3. Facilities Program Summary.......................................................... 45
4. Summary of Renovation Needs....................................................... 49
FOREWORD

From the time of its founding in 1855, the quality and appearance of the Michigan State University campus has been a high priority. The beautiful, park-like landscape is considered by many to be among the finest in the country. As one surveys the university campus, the vision and principles of those who came before us is apparent. This is particularly evident in the north campus circle, perhaps one of the most beautiful and memorable aspects of the campus environment.

Since that time and through subsequent planning efforts the campus has continued to grow and develop. The current planning endeavor sought to address not only campus development over the next twenty years but to continue and expand upon the very best traditions of the past.

This master plan, *2020 Vision: A Community Concept for the MSU Campus*, was developed with the recognition that the campus, in its entirety, is more than the mere functional arrangement of buildings, roads, walkways, parking lots and landscapes. It has the potential to define a collective experience of place and community, which is an essential part of the teaching and learning experience for students, faculty, and staff. At its best, the campus can be a rich expression of tradition and history, a fundamental resource to the current educational enterprise, and an invaluable reference point in helping to define the future.

Perhaps more than any other single aspect of the University, the physical environment has the power to embody and express the purpose and mission of Michigan State University.

Presented to and approved by the Board of Trustees on December 7, 2001, the master plan provides a robust framework for addressing the growth and development of the campus over the next twenty years. Among its significant features, the plan provides the University with a blueprint for systematically accommodating a potential growth in facilities, ensures for the careful and planned use of our finite land resources, extends the park-like quality of the campus landscape more than any planning exercise in the past 100 years, enhances the pedestrian environment while simultaneously addressing parking and transit needs, and sets in motion a plan that provides for future development that is environmentally sensitive.

The Master Plan is the first step in identifying a comprehensive approach to future campus improvements. Carrying out this plan will necessarily occur in phases over time. A hallmark of the planning process was its highly participatory focus. Accordingly, it will require continuing discussion within the campus community and further investigation of many aspects of the plan to ensure that the campus planning principles are attained. We are all challenged by the vision of this master plan and welcome the guidance it will provide for the future of Michigan State University.

M. Peter McPherson
President
Michigan State University
Section I – Introduction
I. INTRODUCTION

Purpose
The purpose of the Campus Master Plan is to guide the long-term development of the Michigan State University campus. Its emphasis is on the overall organization and character of campus land use, buildings, circulation systems and open space. The plan depicts a pattern of growth that anticipates facilities expansion for the next twenty years and thus will enable planners and administrators to view each proposed change to the campus in the full context of all other expected changes. The plan will likely require adjustment and refinement as the details of specific projects become apparent in the years to come, and from time to time the master plan may require comprehensive updates. The master plan is the result of a comprehensive decision-making process and a useful guide to the ongoing planning that is critical to the orderly development of the campus.

Process
The master planning process for the Michigan State University Campus began in 1999 with the 2020 Vision Component I study prepared by the Division of Campus Park and Planning. The Component I study focused on parking, transportation and open space issues. It identified the fundamental principles that should guide the planning of parking, transportation and open space systems, and set forth concepts for improvements to these systems. The Board of Trustees approved the Component I planning principles in March 2000.

In the fall of 2000, the Component II study began. In Component II, the Master Plan Work Team has identified additional planning principles related to future campus facilities, land use and environment, and has formulated recommendations that integrate the findings of Component I and II into a comprehensive master plan. That plan is in this report.

The Planning process has involved many individuals from the campus community. Representatives of all the colleges and operational units of the University were interviewed early in the process to establish a broad based understanding of key planning issues and the University’s facilities needs. As the plan developed, the Master Plan Advisory Committee provided review at key milestones, and feedback was obtained through campus wide open house sessions. Senior administrators and the University Board of Trustees have also provided direction to the planning team throughout the process. The following list identifies the primary participants in the master planning process.
Master Plan Participants

Board of Trustees:
The Honorable Delores M. Cook
The Honorable Joel I. Ferguson
The Honorable Dorothy V. Gonzales
The Honorable Colleen M. McNamara, Chairperson
The Honorable Donald W. Nugent, Vice Chairperson
The Honorable David L. Porteous
The Honorable G. Scott Romney
The Honorable Robert E. Weiss

University Administration:
M. Peter McPherson, President
Nancy H. Pogel, Secretary to the Board of Trustees and Executive Assistant to the President
Fred L. Poston, Vice President for Finance and Operations
Lou Anna K. Simon, Provost and Vice President for Academic Affairs

Master Plan Work Team:
Ronald T. Flinn, Assistant Vice President for Physical Plant
Charles M. Gagliano, Assistant Vice President for the Division of Housing and Food Services
Joseph A. Hibbard, Principal, Sasaki Associates Consultant
Jeffery R. Kacos, Executive Director of Campus Park and Planning
William J. Latta, Assistant Director of Planning and Budgets, and Director of Facilities
Planning and Space Management
Kathryn Lindahl, Assistant Vice President for Finance and Operations
Charles J. Reid, Director of Land Management
Christine Teike, Associate, Sasaki Associates Consultant

Master Plan Advisory Committee:
Debra Alexander, Director of Strategic Management, Capital Area Transportation Authority
Elizabeth Alexander, University Physician
Ann Beaujean, Government Affairs Assistant
William R. Beekman, Assistant Dean, College of Human Medicine
David S. Byelich, Assistant Vice President and Director for the Office of Planning and Budgets
Matt Clayson, Chairperson, Academic Assembly (ASMSU)
Ronald T. Flinn, Assistant Vice President for Physical Plant
Janie M. Fouke, Dean, College of Engineering
Charles M. Gagliano, Assistant Vice President for the Division of Housing and Food Services
Paulette Granberry-Russell, Senior Advisor to the President for Diversity, Director of Affirmative Action, Compliance and Monitoring
Clifford H. Haka, Director of Libraries
Cynthia K. Helman, Acting Director for Residence Life
2020 Vision: A Community Concept for the Michigan State University Campus

CAMPUS MASTER PLAN REPORT

Robert S. Holm, Associate Professor of Pediatrics
Samuel Howerton, President, Council of Graduate Students
Gregory P. Ianni, Associate Director of Intercollegiate Athletics
Jeffery R. Kacos, Executive Director of Campus Park and Planning
Nicholas Kovacic, President, Residence Hall Association
Nancy Q. Lange, Associate Director, Department of Residential Life
Dennis E. Lantzy, Physical Plant
William J. Latta, Assistant Director of Planning and Budgets, and Director of Facilities
Planning and Space Management
George E. Leroi, Dean, College of Natural Science
John L. Lewis, Executive Director of University Services Division
Kathryn Lindahl, Assistant Vice President for Finance and Operations
Terry P. Link, Director of Sustainable Campus
Patricia Lowrie, Director of the Women’s Resource Center
Cordell M. Overby, Assistant Vice President of Research and Graduate Studies
Charles J. Reid, Director of Land Management
James Spaniolo, Dean, College of Communication Arts and Sciences
Linda O. Stanford, Registrar and Professor, College of Arts and Letters
Dozier Thornton, Dean, College of Urban Affairs
William Wardwell, Department of Police and Public Safety
Scott G. Witter, Chairperson, Department of Resource Development
Quinn Wright, Chairperson, Student Assembly (ASMSU)
Section II – Existing Conditions
II. EXISTING CONDITIONS

A. Project Area

Regional Context

Michigan State University’s campus is situated on a total of approximately 5,200 acres of land, and is located approximately four miles east of downtown Lansing. The campus location affords easy access from both Interstate 96 and Interstate 496/US Route 127. See Figure 1: Regional Context.

Campus Land Use Overview

There are approximately 2,090 acres of University owned land north of Mount Hope Road. This total is made up of 2,000 acres of core campus area, 45 acres of agricultural research land, and 44 acres of land leased to the Michigan State Police. South of Mount Hope Road, the land area totals approximately 3,100 acres. Land used for crop production and pasture totals over 1,460 acres and research land accounts for more than 830 acres. In addition, the Forest Akers Golf Courses total 325 acres, while roads, buildings, and natural areas total nearly 400 acres. WKAR TV/Radio and the Department of Police and Public Safety occupy 50 acres, and 45 acres of land are currently leased to others.

Master Plan Project Area

The Master Plan project area includes University owned land north of Mount Hope Road, between I-496/US Route 127 to the west and Hagadorn Road to the east. See Figure 2: Master Plan Project Area. This area totals more than 2,000 acres of land and includes the entirety of the main academic campus of Michigan State University. The agricultural land south of Mount Hope, although not included in the Master Plan project area, was given careful consideration as an important part of the overall campus. Major landscape divisions in this area are defined by the Red Cedar River, which runs east-west through the northern portion of the campus, and two east-west railroads that pass through the campus north of Mount Hope Road. The Grand Trunk Railroad runs east-west and just north of, and parallel to, Service Road. The CSX Railroad runs diagonally through the site, just south of the Grand Trunk Railroad.
Figure 1: Regional Context

Figure 2: Master Plan Project Area
B. History of Campus Development

The fundamental question that a master plan seeks to answer is how the physical campus of the University should grow. In other words, what physical patterns should it adopt to best fulfill its purposes and serve its mission. It is appropriate, therefore, that master planning begin with an understanding of how the campus has evolved to its present form. The following is a summary that traces the University’s planning and growth from its founding in 1855 to the present day campus.

Founding of the College

In February of 1855, the Michigan Legislature passed an enabling act to establish a State Agricultural College. The Act mandated that the site be within ten miles of Lansing, be between 500 and 1000 acres in size, and that the land be purchased at a price not to exceed 15 dollars per acre. In those days, the latter restriction would only allow for the purchase of uncleared, forested land. Although this would pose an immediate problem with respect to quickly establishing the College as an experimental farm, it would later prove to be invaluable in the establishment of the park-like campus landscape.

By July of 1855, a site of approximately 677 acres was recommended to the State Board of Education. It was reported that, except for an occasional opening, the property was densely covered in hardwood timber and had a picturesque river flowing through the northern portion of the property. See Figure 3: Opening Day Campus – 1857.

1855-1913

During this period of development, the design and evolution of the campus plan was strongly influenced by the literature of the time regarding how to lay out a campus. The plan was a direct and skillful expression of the ideas of Andrew Jackson Downing and Frederick Law Olmsted. Two major campus planning themes were emphasized. The first was the idea of creating a cohesive academic community where no building exceeded a comfortable walking distance. The second driving idea was that of enhancing the natural beauty of the existing landscape. The creation of pastoral scenery was intended to elicit emotions of tranquility in order to improve the mental and physical health of the members of the community.

In 1871, President Abbott proposed that the Board of Trustees “take steps to provide for the proper layout of the college grounds, planting of trees, location of buildings, etc., by a competent landscape gardener, as soon as means can be spared.” Within one year, Adam Oliver, a practicing landscape gardener, was hired. During his tenure from 1872-1887, he was responsible for the layout of walks and drives and the siting of numerous buildings, including Linton Hall in 1881. He was responsible for the closed roadway system, an altered form of which remains today as West Circle Drive, and was also responsible for the informal arrangement of campus buildings. The character of the campus is described in President Abbott’s 1882 report to the Board as follows:

“There are in the park no straight rows of buildings or of trees, but its…buildings…are separated by undulating lawns, shallow ravines, and groups of trees.”
The early campus park consisted of undulating lawns and groups of trees.
The 1899 plan illustrates the results of campus planning in the first fifty years of the campus’ existence. See Figure 4: Map of the Campus – 1899. The simple plan consisted of a central park, with a winding, circumferential road. Faculty homes were sited along the northernmost road and academic buildings were sited on high ground in the clearings within the wooded grove of the park. Land to the east had been cleared for agricultural use and contained a number of barns and farm-related buildings.

In 1906 the College hired O. C. Simonds, a well-known prairie school landscape architect. Simonds’ planning contributions included simplifying the roadway system by reducing the total number of roads in the park and the planning of walks and planting areas. He was also instrumental in reaffirming the informal naturalistic landscape ideal as the underlying landscape style for the campus. It was Simonds who labeled the campus parkland as a “sacred space” from which all buildings must forever be excluded. In a 1906 letter to the Board, Simonds described the campus park in the following manner:

“This area is, I am sure, that feature of the College which is most pleasantly and affectionately remembered by the students after they leave their Alma Mater, and I doubt if any instruction given has a greater effect upon their lives.”

This advice crystallized the idea of preserving and protecting the campus park of undulating lawns and stately trees.

1914-1922

In 1914, the college hired Frederick L. Olmsted Jr., one of the premier landscape architects of the time. In 1915 the office of Olmsted Brothers issued a plan and report with regard to the future development of the grounds. See Figure 5: Proposed Plan by the Olmsted Brothers – 1915. The Olmsted Brothers were dealing with several issues. Firstly they needed to resolve the preservation of the existing campus landscape character. Secondly, they were struggling with the creation of an efficient pattern of new and larger buildings that needed to be closely related in order to minimize walking distances. They recognized the need for compactness and sought to replace the old campus form with a new spatial framework of quadrangles. Although the plan was clear, Olmsted was presenting the College with a new and revolutionary concept for the future growth of the campus. It came under intense scrutiny and criticism, from both students and alumni. Most were arguing for the preservation of the “sacred space” and an extension of its informal and naturalistic style. After eight years of consulting and advice that resulted in very little physical change on the campus, the last recorded collaboration with the Olmsted Brothers was in 1922.
Figure 4: Map of the Campus – 1899

A “sacred place” from which buildings must forever be excluded.
Circle Campus – circa 1895
1923-1945

In 1923, T. Glenn Phillips was employed as the campus landscape architect. In his plan of 1926, he envisioned the comprehensive use of all of the land north of the river for academic expansion, and dedicated the land south of the river to athletics and agricultural use. See Figure 6: Proposed Plan by T. Glenn Phillips – 1926. Following on the heels of Olmsted’s controversial plan, the most saleable aspect of Phillips’ plan was his informal and spacious placement of buildings. He retained O.C. Simonds’ “sacred space” and extended the concept of the original campus eastward, connecting groups of buildings together with a curvilinear road system. The plan opened up ways in which the campus could be expanded, yet did not require a drastic parting with the college’s past. For these reasons, his plan was embraced and became the guiding vision for the next 25 years. Yet, Phillips’ plan lacked the clarity of the original campus. One can see that this plan does not use buildings to define spaces, but rather the buildings are loosely ordered in a random way. It is important to recall that the space east of the original campus had been previously cleared for agricultural use and therefore lacked the interesting terrain and groves of trees that made the sacred space so successful.

Using Phillips’ 1926 plan as a guide, additional roads were built on east campus. See Figure 7: Campus Plan – 1945. At the same time, several things were happening that deepened the ambiguity of the newly developing east campus. Both the demand for larger buildings and the increased use of the automobile consumed space available for open lawns and trees. The landscape was reduced to irregular fragments between buildings and parking lots. It was apparent, even before the campus moved south of the river, that there were two different campuses in terms of form. The original campus was a delightful park and the new east campus was developing on cleared agricultural land and trying to make sense of large new buildings arranged along a roadway framework that had been laid out 25 years previously.

1946-Present

The push of development south of the river was hastened by the returning GIs after WWII. Temporary GI housing and academic buildings were built. See Figure 8: Campus Plan – 1948. At this point, it is evident that the campus plan was no longer guided by an open space idea. The original 19th century campus was intact, but no new ordering idea was following development southward. Largely because of the increased emphasis on the automobile, the campus form was no longer restricted by pedestrian walking distances. The Capital Improvement Plan of 1958 clearly illustrates that a new ordering idea of streets and parking lots had emerged. See Figure 9: Proposed Capital Improvement Plan – 1958. The street grid that had been established for the agricultural campus was amplified by a new enthusiasm for the automobile. By today’s standards, the south campus expansion sacrificed human scale, landscape aesthetics, and the virtues of compactness in a period when the emphasis was on rapid growth and convenient automobile access.
Figure 5: Proposed Plan by the Olmsted Brothers – 1915

Figure 6: Proposed Plan by T. Glenn Phillips – 1926
Buildings frame the “sacred place.” Linton Hall can be seen in the center of the photograph – circa 1920

O. C. Simonds was responsible for simplifying the roadway system on the Circle Campus. The tower of Linton Hall is visible above the trees in the right half of the photograph – circa 1925
The formal axis of Farm Lane connected the North and South Campuses – circa 1910
Larger building footprints and parking lots consumed space available for landscape. Visible are Natural Science, Physics & Astronomy, and Giltner – 1950

Increased use of the automobile in the 1950s affected campus growth
Figure 8: Campus Plan – 1948

Figure 9: Proposed Capital Improvement Plan – 1958
C. Land Use

The existing land use pattern at Michigan State University is shown in Figure 10: Existing Zoning Land Use Areas. The pattern is logical and consists of centralized academic zones, with all other uses arranged around these academic cores. Athletic uses are generally consolidated west of the academic core. Recreation fields are appropriately adjacent to Residence Halls, and land reserved for both dormitory and apartment housing is fairly evenly distributed around the perimeter of the campus. Service functions are clustered west of Red Cedar Road and south of the Grand Trunk Railroad.

A critical concern with regard to future land use at Michigan State University is the limited availability of undeveloped land. Opportunities to acquire more land adjacent to the existing campus are very limited and constrained by high land costs. The continued encroachment of the built campus on agricultural research areas is undesirable and a serious threat to the long-term availability of agricultural research land.

A defining characteristic of the existing campus land use is the abundance of natural parks and open space areas, especially on the northern portion of the campus. The Red Cedar River is a natural boundary between the North and Central Campuses, while serving as an amenity that people from everywhere on campus are drawn to. Additionally, forests such as the Sanford Natural Area and Baker Woodlot are natural land use areas that are valued for teaching and research, and cherished as an integral part of the campus environment.
D. Building Use
The existing building uses at Michigan State University are shown in Figure 11: Existing Use by Building. As discussed in the previous section on land use, the University has a centralized academic zone, with other uses logically built around this core. IM/recreation facilities and residential dormitories and apartments are located peripheral to the academic core, while common and administrative buildings are interspersed among the academic buildings. Parking ramps are also fairly evenly distributed across the Central Campus, thus providing a high concentration of parking spaces within an acceptable walking distance in most areas.

The most significant anomaly with regard to building use patterns on campus is the presence of University Support Facilities on the western edge of the Central Academic Campus. This would include buildings such as the Central Services Building, the vacant Steam Plant and the Reservoir Building. In addition, the area southwest of the intersection of Red Cedar Road and Wilson Road, where the Grounds Maintenance, Physical Plant and DPPS Buildings are located may prove to be better suited for research and teaching uses in the long-term future.

E. Open Space
The existing organization of landscape types and open space on the campus is shown in Figure 12: Existing Open Space Structure. The quality of open space varies significantly from one part of the campus to another. The older areas of the North Campus and the Red Cedar River corridor consist of beautiful, naturalistic landscapes, while large areas south of the river are not attractive and lack a unifying character and spatial order. The entire campus landscape is considered an arboretum with educational as well as aesthetic value. Following is a discussion of six different types of open spaces that exist on the campus.

Park Landscape
The campus landscape of Michigan State University historically developed around the wooded park landscape of the original Circle Campus and the Red Cedar River corridor. Today, these two mature landscapes are still the most beautiful and defining landscape features of the campus. The trees and undulating lawns of the original campus were recognized by O.C. Simonds, the campus landscape architect in the early 20th century, as a “sacred space.” The prairie school concept of “sun openings” is well developed along the river and in the Circle Campus. This idea consists of creating alternating areas of deep shade and bright, sunlit lawns that are reminiscent of the indigenous savanna that once covered much of the northern Midwest. These areas of campus are still recognized and admired as an integral part of the University today. They are areas that offer peaceful tranquility in an otherwise developed environment. The visual strength of this landscape is attributable to the nearly complete subordination of all buildings, paths, roads and other elements to the dominant character-defining features consisting of gently rolling topography, mature trees and lawns. A summary of the defining features of the park landscape at MSU is shown in Appendix A.
Rolling topography, mature trees and lawns are the character defining features of the park landscape.

Bright “sun openings” alternating with shade is a prairie school concept employed in the Circle Campus area.
The park landscape along the Red Cedar River offers tranquility in contrast to the developed urban environment.

In the park landscape, buildings are visually subordinate to the landscape elements.
Natural Areas
Core campus natural areas are typically native woodlands that have a natural forest floor of leaf litter and only minimal trails and access roads. These areas are important to the campus in that they provide a valuable resource for teaching and research, serve as parks for people and as native habitats for plants and animals.

There are three designated natural areas located north of Mount Hope Road within the master plan study area. The Red Cedar Natural Area is located at the northwest corner of the campus, along the Red Cedar River and flanking Kalamazoo Street. This natural area is located at the terminus of the Lansing River Trail and easily accessed by the surrounding community. The Sanford Natural Area is located along the south side of Red Cedar River, east of Bogue Street and west of Hagadorn Road and serves as a significant campus edge between the East Shaw Lane residence halls and City of East Lansing. Baker Woodlot is one of Michigan State’s largest natural areas and defines the southern limit of the built campus between Farm Lane and Bogue Street. All three of the natural areas mentioned are managed by the Campus Natural Areas Committee at the highest level of protection and the lowest level of usage.

In addition to the designated natural areas managed by the Campus Natural Areas Committee, the Existing Open Space Structure Map indicates a number of natural areas that are not officially designated, but which comprise areas of natural vegetation. These occur along the Red Cedar River at the corner of Harrison Road and Michigan Avenue, along the Trowbridge Road corridor, at locations along the railroad corridors, and at a few locations surrounding the Clinical Center site. These undesignated natural areas are not as unified and valuable as the three designated areas, but they are meaningful for the localized visual quality and environmental benefits they provide.

Old East Campus
The old east campus does not possess the beauty and clarity of the Circle Campus. With the exception of the Old Horticulture Gardens, its outdoor spaces are not well defined nor continuously linked to yield a coherent landscape experience. This part of campus lacks a clear organization for buildings and plantings, and the presence of on-street parking and many surface parking lots tends to fragment the landscape. Buildings, rather than landscape, often dominate the visual setting of the east campus.
Buildings often dominate the east campus landscape.

Parking lots interrupt landscape areas on the east campus.
Building-Defined Courtyards and Campus Gardens
Campus gardens introduce an additional level of sensory richness and horticultural interest to the campus. Their presence communicates the University’s concern and support for landscape beauty, husbandry and enrichment of the public experience of the campus. These open spaces include extensive informal gardens such as the W. J. Beal Botanical Garden as well as small courtyards and meeting spaces that are typically framed by buildings. These spaces are desirable because they are conducive to the social interaction that fosters face-to-face collegiality. Successful examples of building-defined courtyards on campus are the Old Horticulture Garden, the small courtyard space within South Kedzie Hall, the courtyard formed by the Engineering buildings, and the new courtyard just east of the Biomedical and Physical Sciences Building. There are several areas that are highly manicured and called out specifically as gardens. These include Beal Garden, the Old Horticulture Garden, the Horticultural Demonstration Garden, and the Clarence E. Lewis Landscape Arboretum.

Street Landscapes
Campus streets constitute a major category of outdoor campus spaces that are experienced daily by high volumes of drivers and walkers. Among the most memorable campus streets is the segment of Auditorium Road immediately south of Kedzie Hall. This streetscape is characterized by an active, transparent building edge on the north, generous sidewalks and attractive tree plantings. The trees foster visual unity and create a pleasant pedestrian scale. Most other campus streets are, however, less well defined. North and old east campus streets suffer from extensive head-in parking. Streets south of the river, particularly those with straight rather than curving alignments, tend to be daunting in scale for the pedestrian, weakly defined by buildings and landscape, and visually uninteresting.

Intramural and Athletic Fields
These areas add to the total amount of visual green space that exists on campus, and add to the vitality of the campus by bringing students and activity together in visible public settings.
An attractive courtyard at the Horticultural Demonstration Gardens.

The old Horticulture Gardens offer a place for study, social interaction and relaxation.
Mature trees enrich the pedestrian experience of campus streets.

The street landscape at South Kedzie Hall is an example of a street sized and designed for pedestrians. The transparent façade of Kedzie Hall enhances the quality of the space.
The Central Campus street landscape often lacks pedestrian scale and interest.

Typical Central Campus street spaces are not sized for pedestrian comfort.
Buildings and pavement are visually dominant on the Central Campus. Lawns and trees are visually subordinate.

The width and uninterrupted length of the Central Campus streets destroy pedestrian interest.
F. Circulation

Figure 13: Existing Average Daily Vehicular Trips illustrates the existing roadway network serving the campus and average daily traffic volumes. Historically, the road system has been adequate to meet the demand for efficient service, however, with the increased use of the campus for events, evening and weekend classes and the increased student use of cars on campus, many campus roads experience high traffic volumes and periodic congestion. For example, Shaw Lane between Red Cedar Road and Farm Lane experiences average daily traffic volumes of 20,000 trips. High volumes of vehicular traffic have created significant safety problems and vehicle conflicts with bicycles and pedestrians, particularly in the central area. Accident and injury rates are much higher than in cities of comparable size.

Two major railroads presently divide the campus. There are 63 trains per day moving through the campus on these tracks. The number and length of trains is projected to increase in the future. The trains create a serious conflict with other forms of transportation, resulting in operational, accessibility, safety and time issues. Designs for railroad underpasses are being studied as a means of alleviating railroad conflicts with vehicles and pedestrians.

For pedestrians, the mere size of the campus presents problems with regard to ease of movement across it. Although no use is prohibitively remote, certain distances are predictably too great for most people to consider walking. A walk from Berkey Hall on the North Academic Campus to Natural Resources on the southern edge of the Central Academic Campus could take up to 15 minutes. Similarly, a walk from Hubbard Residence Hall to Bessey Hall could take up to 20 minutes. For these reasons, the use of the inter-campus transportation system is increasingly popular and there is a heavy reliance on bicycles in the warmer months.

The University’s partnership with CATA has opened opportunities for solving transportation problems and providing a convenient alternative to the use of private automobiles for commuting and intra-campus travel.

Figure 14: Existing Bicycle Facilities illustrates the existing extent of bicycle paths on campus. The system is fragmented and incomplete, which results in bicycles and pedestrians sharing the walkway system over most of the campus. Campus streets typically do not have demarked bicycle lanes, and the intensity of vehicular traffic discourages cyclists from using the street instead of pedestrian walkways. Modern bicycles allow for higher travel speeds, putting pedestrians and cyclists at risk. The ability to expand designated bike lanes in existing streets is limited by narrow pavement cross sections on most Central Campus streets.
G. Parking

There are currently 22,867 University parking spaces distributed on the campus north of Mount Hope Road. Parking is provided in both surface lots and parking ramps, with the latter comprising nearly 20 percent of the total parking supply. See Table 1: Existing Parking Allocation and Table 2: Parking Allocation within Parking Ramps. Parking is provided for Faculty/Staff, Graduate Assistants, Visitors, Commuting Students, and Resident Students. In addition, parking is provided for persons with disabilities and University Service vehicles as needed across campus. See Figure 15: Existing Parking Distribution.

There are approximately 10,400 spaces reserved for faculty and staff employees, of which about 4 percent are leased and assigned spaces. Faculty/Staff spaces are fairly evenly distributed across campus in both surface lots and parking ramps, with a greater concentration of spaces available in the north and central academic campus areas.

Visitors are accommodated in both metered spaces and specifically designated Visitor Spaces. In most parking ramps a percentage of spaces are available for visitors and gated pay-per-hour visitor lots are located at the periphery of the core academic areas. The gated pay-per-hour lots are heavily used by commuter students who choose to pay a higher fee for close proximity parking rather than use the more distant commuter student lots at Mount Hope Road and Farm Lane.

There are over 4,600 parking spaces provided for residents of campus housing. These spaces are located in the Brody Residential Complex, at Cherry Lane Apartments, and in University and Spartan Villages. Student Vehicle storage is provided for in two lots, both on the north side of Service Road.

The current student commuter lot is located at the intersection of Farm Lane and Mount Hope Road. The lot holds over 2,300 cars and is served by a shuttle bus that runs at regular intervals between the academic campus and the commuter lot.
Even though the existing overall parking supply for faculty, staff and visitors is adequate, the demand exceeds overall supply in lots and ramps most proximate to core academic areas. The combination of an “open” parking system (as opposed to an assigned lot system) and the reluctance of faculty, staff and graduate assistants to park at distances five to ten-minute walks from their core campus destinations puts extreme pressure on close-in faculty staff spaces. Faculty-staff who leave the core campus during the day and attempt to return and park in a close-in location are thwarted by the lack of sufficient close-in parking supply. This results in high levels of unnecessary intra-campus traffic generated by those who would prefer to “cruise” for ten to twenty minutes searching for a close-in parking space than park at available perimeter lots and walk for ten minutes. The issuance of faculty staff lot permits to graduate assistants south of the Red Cedar River further pressures close-in parking space demand. The shortage of close-in spaces is further complicated by student drivers who regularly use visitor parking spaces and sometimes illegally use faculty staff spaces. Visitors and constituent groups with official business at the University seeking close-in spaces are often frustrated because of the high level of student competition for available spaces that are intended for visitors. The existing ratios of faculty staff to parking space for the campus districts are shown in Figure 16.

Existing campus parking also presents safety and aesthetic problems. On the North Campus, head-in angle parking along all the major roadways presents a safety problem for vehicles backing blindly into high-speed through traffic. In general, parking close to the academic core creates a higher incidence of vehicular-pedestrian conflicts than parking that is more peripheral to the academic core. On both the North and South Campuses, large areas devoted to surface parking detract from the visual quality of the campus landscape and emphasize vehicle dominance over a pedestrian scaled campus.

Table 1: Existing Parking Allocation for All Surface and Ramp Spaces North of Mount Hope Road

<table>
<thead>
<tr>
<th>Designated Use</th>
<th>Number of Spaces</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty/Staff</td>
<td>10,038</td>
<td>44</td>
</tr>
<tr>
<td>Apt/Residence Hall</td>
<td>4,629</td>
<td>20</td>
</tr>
<tr>
<td>Visitor</td>
<td>4,528</td>
<td>20</td>
</tr>
<tr>
<td>Commuter</td>
<td>1,617</td>
<td>7</td>
</tr>
<tr>
<td>Parking Meters</td>
<td>897</td>
<td>4</td>
</tr>
<tr>
<td>Service Vehicles</td>
<td>455</td>
<td>2</td>
</tr>
<tr>
<td>Leased</td>
<td>380</td>
<td>2</td>
</tr>
<tr>
<td>Disabled</td>
<td>323</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22,867</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
### Table 2: Parking Allocation within Parking Ramps

<table>
<thead>
<tr>
<th></th>
<th>F/S</th>
<th>Leased</th>
<th>Visitor</th>
<th>Student*</th>
<th>Other**</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramp 1</td>
<td>399</td>
<td>25</td>
<td>353</td>
<td>201</td>
<td>4</td>
<td>982</td>
</tr>
<tr>
<td>Ramp 2</td>
<td>513</td>
<td>41</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>572</td>
</tr>
<tr>
<td>Ramp 3</td>
<td>342</td>
<td>0</td>
<td>594</td>
<td>0</td>
<td>14</td>
<td>950</td>
</tr>
<tr>
<td>Ramp 4</td>
<td>0</td>
<td>0</td>
<td>938</td>
<td>0</td>
<td>12</td>
<td>950</td>
</tr>
<tr>
<td>Ramp 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,000</td>
</tr>
</tbody>
</table>

* Resident Students  
** Disabled Spaces and University Service Vehicles

\[ \text{Total} = 4,454 \]
Section III – Master Plan Objectives
III. MASTER PLAN OBJECTIVES
The campus master plan for Michigan State University is a response to several planning objectives and a number of significant issues that were identified during Components I and II of the master planning process. A summary of planning issues follows.

A. Planning Objectives
The objectives addressed in the master plan include the following:

1. To identify future facility needs and the capacity of the campus for additional growth.

2. To formulate an overall design framework that facilitates the mission of the University, enhances campus land use organization, circulation systems and open space, and preserves MSU’s rich heritage.

3. To develop planning principles related to Land Use, Facilities, Campus Environment, Open Space, Transportation and Parking that will support and guide decision-making as the campus changes and growth occurs.

4. To revise the campus Zoning Ordinance and district map to ensure that they are consistent with the master plan recommendations and future desired growth patterns for the campus.

5. To improve the University’s ability to respond to State requirements for Five-Year Capital Outlay Request Planning.

B. Planning Issues
During the planning process, interviews with over forty groups representing the administration, faculty, staff, students and trustees were conducted. Open forums were also conducted to obtain comments from the campus community. See Appendix B for a list of interviews and forums. Based on the interviews and public sessions, a list of key planning issues emerged. The issues, summarized below, defined the themes addressed in the master plan and served as the basis for developing the planning principles that are presented in Section V of this report.

Adequacy of the Amount of Land
It is apparent that undeveloped land areas are limited. New building sites and green spaces have become scarce. There is a concern that future development, relative to program growth, makes careful and efficient use of land resources. Encroachment of built facilities in the agricultural research areas constitutes a threat to the long-term availability of contiguous agricultural land available for research in close proximity to the core campus. Facilities requiring land in the future include new academic and laboratory facilities, parking, recreation/athletic fields, support service buildings, agricultural research, and the possible Rare Isotope Accelerator, among others.
Historically, the campus has grown by expanding horizontally in a low-density pattern. Campus sprawl has led to dispersal of programs, consumption of valuable land resources, diminished sense of campus unity and heightened competition for land. Appendix C includes a summary of the arguments against continued campus sprawl.

**Expanding Research**

Michigan State University has put forth a clear agenda for expanding research activity over the course of the next two decades. This projected expansion will create a need for new laboratory facilities, additional office space to accommodate new research faculty and staff, and an increased dependence on graduate assistants in almost every College. There is an anticipated need to provide wet and specialized laboratory space in order to serve existing programs such as Engineering, the Cyclotron, Nuclear Physics, Natural Sciences, and Agriculture and Natural Resources. In addition, the Michigan Life Sciences Corridor may drive the need to expand both wet and dry research laboratory spaces at the University.

**Adequacy of Building Space**

There is currently an insufficient amount of building space that is properly configured to support some programs and/or to accommodate future growth. Examples include Psychology, Epidemiology, Music, Student Center, and Biological and Physical Sciences. There seems to be an adequate amount of general classroom space on campus, although there is concern regarding the utilization and availability of classrooms, particularly in the range of 150-300 seat capacity.

**Condition of Space**

There is a need to improve the quality and functionality of selected aspects of space for departments that occupy outmoded or inadequate space. For example, IM West and IM Circle, Chittenden Hall, Marshall and Old Botany Halls, Natural Science Building, portions of Giltner Hall, Chemistry Building, Biochemistry Building, Food Science Building, and the Health Colleges in Fee Hall. The quality of departmental teaching laboratory space is mixed with some being in very good condition, while others are deteriorating. Consideration should be given to razing selected facilities where the cost benefit to renovate the building is questionable (e.g., Morrill Hall, Paolucci Building, Shaw Lane Power Plant, Urban Planning & Landscape Architecture Building).

**Separation and Dispersal**

It is important to strike an appropriate balance between consolidation and dispersal within and among academic and operational units. There is a desire to consolidate units in order to improve overall operating effectiveness. Those programs noted that have dispersal issues to the point of affecting operating effectiveness are as follows: Psychology, Social Science, Engineering, Natural Sciences, Nursing, Osteopathic Medicine and Human Medicine.
Community Building
There is a high demand to create and enhance social spaces, meeting places, and areas for informal encounter that foster face-to-face collegiality. Meeting places such as the Union, Library and International Center serve as current campus gathering places. The Union is somewhat less successful for some functions such as student organizations because of its edge location, removed from major pedestrian travel routes.

Interdisciplinary Activity
Interdisciplinary activity and strategic partnerships for funded research is highly encouraged at MSU and are expanding, especially at the research level. Faculty joint appointments are common in the MSU culture, and it is desirable to have informal interdisciplinary communications. In other words, there are “low boundaries” between disciplines. Examples of where interdisciplinary work is emphasized can be found in Natural and Life Sciences, Engineering-Business-Natural Sciences, Social Sciences-Arts and Letters-Agriculture, to name a few.

Undergraduate Teaching and Research Linkage
There is a tradition and continued desire to involve undergraduates in, and expose them to, research activity. It is desirable to maintain close proximity of undergraduates to laboratory facilities. Integration of laboratories and instructional space is important. Faculty that are expected to maintain research and teaching roles need to be located close to both laboratories and undergraduate teaching space. Teaching space needs to be flexibly configured in traditional classrooms to support more interactive and varied teaching styles. Proximity of classrooms to research laboratories facilitates faculty-student lab visits which enhances the learning experience. Teaching laboratories will need to model the work place more closely encouraging work teams, and design-build-test approaches. Many existing teaching labs are in need of updating and renovation. There is increasing emphasis on supporting undergraduate research experiences.

Locational Appropriateness
The geographic and population centers of the campus have shifted south of the Red Cedar River, yet no major gathering space is available to students, staff and faculty who work there. Functions located in facilities such as the Union, Student Services, and the Administration Building (i.e., Admissions) are not located to best serve students and other user groups. Some programs are landlocked in their present locations, (i.e., the Cyclotron), and to a lesser degree Engineering, Education, and International Programs. The contiguity of Agricultural Research facilities and land areas to the core campus is critical. The North Campus is an appropriate location to focus consolidation of Arts & Letters programs and the Social Sciences, while the South Campus should be planned to further support biological and physical sciences as well as professional programs.
Quality of Campus Environment
There is a universal desire to preserve and protect the park-like character of the Red Cedar River Corridor and North Circle Campus landscapes. Many people admire the beauty of the North Circle Campus. South of the Red Cedar River there are few green spaces, and those that do exist are scattered and lack connectivity with each other.

Environmental Impact
Concern was expressed for the prudent use of campus natural resources. Watershed management of university properties must seek ways to protect the quality of the groundwater and Red Cedar River watershed.

Public Access and Vehicular Traffic
In general, the use of the campus during evening and weekends is increasing. The University hosts over 500 special events each year. Many programs and facilities require good public access and visibility because they are regularly hosting visitors for activities such as medical care, recruiting, training, public events, and industry relations. Some examples include, but are not limited to:

- Agriculture and Natural Resources
- Athletics (Munn, Jenison and Spartan Stadium)
- Auditorium/Fairchild Theater
- Business
- Breslin Center
- Education
- Engineering
- Human Medicine
- Kellogg Conference Center
- Planetarium
- Social Science
- Student Affairs
- Veterinary Medicine
- Wharton Center

The increased use of the campus, plus greater access by students to personal discretionary transportation than ever before, has driven traffic volumes to all time highs.
**Intra- and Off-Campus Movement**

High levels of interdisciplinary activity and relationships with off campus institutions and industry demand equally high levels of daily mobility for faculty. This currently creates serious parking and access problems at peak hours in high demand areas in the core areas of campus. Programs that are experiencing this problem include but are not limited to Agriculture, Biological and Physical Sciences, Education, Engineering and International Studies. Additionally, student drivers compete with faculty for high demand parking spaces. This is especially a problem when individuals return to the core campus from offsite locations during the day.

**Railroads**

Two major railroads divide the campus and create serious conflict with other forms of University transportation resulting in operational, accessibility, safety and time issues. The number and length of trains is projected to increase in the future.

**Safety**

Pedestrians and bicyclists share the same path system, putting cyclists and pedestrians at risk. Together with high vehicle volumes, significant safety problems exist. Accident and injury rates are much higher than in cities of comparable size.

**Transit**

The University’s partnership with CATA has opened opportunities for solving transportation problems. More efficient and convenient travel through campus is now possible, but a change in attitudes towards transit will be required for this resource to be fruitful.

**Parking**

While the overall campus-wide supply of parking spaces for faculty, staff and visitors is numerically adequate, the lack of proximity of many spaces to the core campus area presents a problem. In high demand core campus areas north and south of the Red Cedar River, there is a deficit of about 1,200 faculty-staff spaces. Increased demand for proximate parking by students, visitors and graduate assistants has compounded core campus parking and automobile congestion problems. Parking lots at the center of campus generate enormous traffic volumes by those drivers seeking high demand, short supply, close proximity spaces. Solutions need to weigh the affects of new parking on land coverage as well as debt loads borne by the parking system.
Section IV – Facilities Program
IV. FACILITIES PROGRAM

The master plan facilities program is a statement of anticipated additional space needs for the next twenty years. These needs may be satisfied by building new facilities or possibly through renovations and the reallocation of existing facilities. For the purposes of the master plan, the program does not explicitly account for renovation and possible reassignments of existing facilities; rather it emphasizes those facilities most likely to require new construction or additions to existing buildings.

A. Program Summary

The proposed 20-year facilities program totals approximately 3.6 million gross square feet of space. This represents an addition of 17 percent to the existing space inventory of approximately 21 million square feet. Table 3: Facilities Program Summary is a summary of the program items by time frame and the estimated gross square feet of building area. A more detailed description of the Facilities Program is in Appendix D. The program is a response to five factors:

1. Robust growth in funded scientific research, requiring large amounts of durable, but flexible space that can be adapted to unforeseen changes. Research space represents between 40 and 45 percent of the total program. The range allows for the imprecise distinction between pure research space and the academic and support space that is typically associated with research.

2. Selective and qualitative change in academic teaching programs. Even if undergraduate enrollment remains relatively stable at MSU, the teaching environment will need to respond to changes in pedagogy, technology and curricula that invariably spur some growth in space. New teaching space represents approximately 10 to 15 percent of the program. Here again, the range represents the complementary, and thus imprecise, relationship between academic and research space.

3. Enhancement of the common facilities that enrich campus life and the sense of community. Cultural, social, recreational and community amenities will continue to be key resources for recruitment and retention, and the elements that are necessary to undergird the academic life of the University. Such facilities make up about 10 to 12 percent of the program.

4. Consolidating and upgrading operational support facilities. Facilities ranging from power plants to maintenance yards and storage functions have to be accommodated in more efficient ways as they are displaced by academic and other uses in the campus core, and as limited campus land resources call for more prudent utilization of land-consuming functions. Relocation and consolidation of support functions constitutes approximately seven percent of the program.
5. Greater reliance on perimeter parking and/or parking structures to meet the demand for parking proximity while conserving campus land. Most large institutions are anticipating continued investment in structures as part of the response to growing parking demand, recognizing that reliance on surface parking consumes land that needs to be allocated to other uses. Structure parking represents approximately 24 percent of the facilities program.

If the entirety of the facilities program were to materialize over the 20-year planning horizon, the annual average rate of space growth would be about 180,000 gross square feet, or nearly 0.9 percent. This rate of growth is slightly less than the average rate of 200,000 gross square feet that the University has experienced over the past twenty years. See Figure 17: New Building Space Added Every Ten Years.
Table 3: Facilities Program Summary

**Near Term Program (0-5 Years)**

<table>
<thead>
<tr>
<th>Program Item</th>
<th>Area in GSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Greenhouse Complex</td>
<td>40,000</td>
</tr>
<tr>
<td>Research Laboratories</td>
<td>50,000</td>
</tr>
<tr>
<td>Automotive Research Experiment Station</td>
<td>41,000</td>
</tr>
<tr>
<td>Rare Isotope Accelerator</td>
<td>166,000</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>17,000</td>
</tr>
<tr>
<td>Career Development Center for Agriculture, Engineering, Comm. Arts</td>
<td>12,000</td>
</tr>
<tr>
<td>International Center Addition</td>
<td>10,000</td>
</tr>
<tr>
<td>Housing and Food Services Support Facility</td>
<td>20,000</td>
</tr>
<tr>
<td>Food Stores Expansion</td>
<td>6,000</td>
</tr>
<tr>
<td>Power Plant Expansion</td>
<td>75,000</td>
</tr>
<tr>
<td>Recycle Facility</td>
<td>15,000</td>
</tr>
<tr>
<td>Physical Plant Expansion</td>
<td>6,000</td>
</tr>
<tr>
<td>Spartan Child Development Center</td>
<td>15,000</td>
</tr>
<tr>
<td>Student Newspaper / State News</td>
<td>26,000</td>
</tr>
<tr>
<td>Breslin Center Addition</td>
<td>31,000</td>
</tr>
<tr>
<td>Jenison Field House Addition</td>
<td>3,000</td>
</tr>
<tr>
<td>Shaw Parking and Transit Ramp Addition</td>
<td>70,000</td>
</tr>
<tr>
<td><strong>Near Term Program Subtotal</strong></td>
<td><strong>603,000</strong></td>
</tr>
</tbody>
</table>

**Long Term Program (5-20 Years)**

<table>
<thead>
<tr>
<th>Program Item</th>
<th>Area in GSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Laboratories</td>
<td>650,000</td>
</tr>
<tr>
<td>R&amp;D Incubator Facility</td>
<td>25,000</td>
</tr>
<tr>
<td>Cyclotron Complex Expansion</td>
<td>130,000</td>
</tr>
<tr>
<td>Veterinary Medicine Hospital Addition</td>
<td>18,000</td>
</tr>
<tr>
<td>Veterinary Medicine Oncology Center</td>
<td>23,000</td>
</tr>
<tr>
<td>Plant Biology Laboratory Addition</td>
<td>100,000</td>
</tr>
<tr>
<td>Engineering Laboratory Expansion</td>
<td>30,000</td>
</tr>
<tr>
<td>Human Ecology Expansion</td>
<td>30,000</td>
</tr>
<tr>
<td>Psychology Consolidation</td>
<td>90,000</td>
</tr>
</tbody>
</table>
### Long Term Program (5-20 Years) (continued)

<table>
<thead>
<tr>
<th>Program Item</th>
<th>Area in GSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erickson Hall (Education) Addition</td>
<td>55,000</td>
</tr>
<tr>
<td>Residential College Academic Space</td>
<td>44,000</td>
</tr>
<tr>
<td>Music Building</td>
<td>150,000</td>
</tr>
<tr>
<td>Human Medicine, Osteopathic Medicine and Nursing Consolidation</td>
<td>350,000</td>
</tr>
<tr>
<td>Business College Addition</td>
<td>25,000</td>
</tr>
<tr>
<td>Library Stack Expansion</td>
<td>40,000</td>
</tr>
<tr>
<td>Contemplation Greenhouse</td>
<td>3,000</td>
</tr>
<tr>
<td>Garden Education Center</td>
<td>38,000</td>
</tr>
<tr>
<td>Varsity Baseball, Softball and Soccer Game/Practice Fields</td>
<td>10-12 acres</td>
</tr>
<tr>
<td>Visitor Welcome Center</td>
<td>5,000</td>
</tr>
<tr>
<td>Student Activity Center</td>
<td>80,000</td>
</tr>
<tr>
<td>Alumni Center</td>
<td>10,000</td>
</tr>
<tr>
<td>MSU Museum Collections Storage</td>
<td>60,000</td>
</tr>
<tr>
<td>Art Museum Expansion</td>
<td>36,000</td>
</tr>
<tr>
<td>Stadium Expansion</td>
<td>100,000</td>
</tr>
<tr>
<td>Child Development / Daycare Center</td>
<td>20,000</td>
</tr>
<tr>
<td>Kellogg Center Addition</td>
<td>43,000</td>
</tr>
<tr>
<td>Transportation Services / Telecom Replacement</td>
<td>12,000</td>
</tr>
<tr>
<td>Operations / Support Building (i.e. Print Shop)</td>
<td>32,000</td>
</tr>
<tr>
<td>Central and Unit Self-Storage</td>
<td>30,000</td>
</tr>
<tr>
<td>Surplus and Storage Relocation</td>
<td>12 acres</td>
</tr>
<tr>
<td>North Campus Parking Ramp</td>
<td>165,000</td>
</tr>
<tr>
<td>Parking Ramp 2 Addition</td>
<td>40,000</td>
</tr>
<tr>
<td>Stadium Parking Ramp</td>
<td>260,000</td>
</tr>
<tr>
<td>South Campus Parking Ramp</td>
<td>325,000</td>
</tr>
<tr>
<td><strong>Long Term Program Subtotal</strong></td>
<td><strong>3,019,000</strong></td>
</tr>
</tbody>
</table>

*Total Estimated Near-Term and Long-term Program for 2020 Planning*  

3,622,000
Figure 17: New Building Space Added Every Ten Years
B. Timeframe

The actual rate and magnitude of facilities growth will be a function of needs, resources and external factors that grow less predictable as one moves further into the future. The facilities program has been organized into two time frames. The first is made up of projects currently in planning that would likely be implemented in a near-term period of up to five years. The second time frame consists of future projects that have been identified as long-term needs or goals over the next 20 years and beyond. The near-term projects reflect various stages of tangible programming, planning and demonstrated need, while the long-term program encompasses facilities that are subject to further programming and evaluation to establish firmer dimensions, feasibility and sequencing.

The details of the program will surely change over time for both the near-term and long-term elements, due to internal and external considerations that cannot be foreseen. However, the program is a sound conceptual resource upon which to develop the framework elements of the master plan, such as land use, density, spatial organization and circulation patterns.

C. Student Housing

Student housing is not listed here as a quantified program element. However, it is anticipated that student housing will undergo renovation and possible selective redevelopment during the 20-year planning period, in accordance with physical needs, the University’s financial resources and the market demand for housing. It is assumed, for planning purposes, that the current magnitude of the housing stock (capacity of approximately 19,000 beds) will remain roughly constant during the period, and that any redevelopment or replacement of older facilities with new facilities will take place within the areas of the campus currently accommodating housing. It is also anticipated that ancillary facilities such as food commons for various housing regions will be added or replaced within existing housing clusters according to needs and resources.

D. Renovation

In addition to the facilities program growth, there will be abundant renovation projects occurring over the next twenty-year horizon. These renovations are due to the need to upgrade the aging building stock and to achieve more effective organization and use of the University’s building resources. Building renovations could potentially influence the location of some new facilities. For example, the consolidation of a given academic program in renovated space could cause future expansion of that program to occur in the vicinity of the area of the consolidation. It is estimated that approximately 2.4 million gross square feet of building space (or about 11 percent of the current total building area) should be renovated to make needed life cycle upgrades and to accommodate academic and other programs more efficiently. See Table 4 Summary of Renovation Needs, and Figure 18: Renovation Needs and Potential Demolitions. Therefore, the total of anticipated new building space plus renovated building space for the next twenty years is approximately 6 million gross square feet. It is also important to note that some of the program items may ultimately be accommodated through renovation or adaptive reuse of existing facilities, rather than new construction.
### Table 4: Summary Of Renovation Needs

<table>
<thead>
<tr>
<th>Building</th>
<th>Area in GSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture Hall (west wing only)</td>
<td>73,500</td>
</tr>
<tr>
<td>Auditorium / Fairchild Theatre</td>
<td>138,261</td>
</tr>
<tr>
<td>Chittenden</td>
<td>13,440</td>
</tr>
<tr>
<td>Cook</td>
<td>11,612</td>
</tr>
<tr>
<td>Demonstration Hall</td>
<td>86,627</td>
</tr>
<tr>
<td>Farrall Hall – Agricultural Engineering</td>
<td>70,425</td>
</tr>
<tr>
<td>Fee Hall</td>
<td>419,722</td>
</tr>
<tr>
<td>IM Sports Circle</td>
<td>179,956</td>
</tr>
<tr>
<td>IM Sports West</td>
<td>233,049</td>
</tr>
<tr>
<td>Jenison Fieldhouse</td>
<td>201,207</td>
</tr>
<tr>
<td>Linton Hall</td>
<td>33,468</td>
</tr>
<tr>
<td>Marshall</td>
<td>19,895</td>
</tr>
<tr>
<td>Museum</td>
<td>56,363</td>
</tr>
<tr>
<td>Music Building</td>
<td>58,410</td>
</tr>
<tr>
<td>Music Practice Building</td>
<td>44,497</td>
</tr>
<tr>
<td>Natural Science</td>
<td>257,690</td>
</tr>
<tr>
<td>Old Botany (west wing only)</td>
<td>5,000</td>
</tr>
<tr>
<td>Olds Hall</td>
<td>76,293</td>
</tr>
<tr>
<td>Pesticide Research Center Headhouse</td>
<td>15,144</td>
</tr>
<tr>
<td>Physics/Astronomy</td>
<td>130,154</td>
</tr>
<tr>
<td>Psychology Research</td>
<td>41,504</td>
</tr>
<tr>
<td>Shaw Residence Hall</td>
<td>258,943</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,425,160</strong></td>
</tr>
</tbody>
</table>
Section V – Planning Principles
V. PLANNING PRINCIPLES

Given the program for new facilities and the assessment of existing conditions, the following planning principles were developed to describe the intention of the master plan and to guide future planning at the University. Appendix B contains a working memorandum developed during the master planning process that defines the planning issues that served as the basis for developing the planning principles. The principles are organized in the following categories: General Principles, Land Use and Facilities, Campus Environment, Open Space, Parking, and Transportation.

A. General Principles

• The MSU campus should be arranged to vigorously reinforce the vibrant synergy of academic and research intensity, aesthetic beauty and environmental responsibility valued by its faculty, students, staff and visitors.

• The campus plan should be developed to maximize its function as a living-learning resource environment, offering a broad range of experiences that are both integral to the University mission and memorable in their aesthetic and intellectual appeal.

B. Planning Principles Related to Land Use and Facilities

• The campus should be organized in logical districts determined by compatible use relationships.

• Implement compact campus development to achieve the following benefits:
  – Protect natural systems
  – Conserve land
  – Protect agricultural research land
  – Encourage social interactions and vitality
  – Encourage interdisciplinary connections
  – Reinforce ties between research and undergraduate teaching
  – Allow for flexible partnering over time on interdisciplinary projects
  – Control infrastructure costs
  – Control transportation and parking infrastructure costs
  – Enhance functional efficiencies

• Maintain existing housing areas to retain capacity and flexibility for renovation and redevelopment of campus housing.

• Protect existing agricultural research land south of Mt. Hope Road to retain the present capacity and contiguity of agricultural research land.

• Favor building reuse, renovation and refurbishing before disposal. A building’s historic significance and integrity, programmatic value, service to the University mission, and locational importance will be considered and balanced with economic factors. Consideration should be given to razing buildings when the cost of their renovations exceeds their replacement cost.
Alterations and additions to existing facilities and removal of older structures will protect open space and preserve outdoor gathering spaces in order to enhance the experience of the campus.

The arrangement and design of campus buildings and exterior spaces should be organized to encourage human interaction and foster a sense of shared community among the University’s diverse population.

Future planning should recognize historically significant aspects of the campus and the heritage of the campus as a park and demonstration model.

Planning of facilities will acknowledge and reinforce that the campus is part of the larger surrounding community.

C. Planning Principles Related to Campus Environment

Enhance the integrity of natural systems through creating and maintaining large block natural areas and improving their interconnections.

The campus landscape plan should be developed to capitalize on opportunities for teaching, research and service.

The environmental impacts of new construction and renovations will be minimized.

Building design and renovations should incorporate energy saving technology to achieve prudent energy usage for heating, cooling, lighting and water usage.

Resources should be conserved through waste reduction, waste recycling, composting programs, and by favoring products produced from recycled materials and recyclable components.

Promote use of renewable, non-polluting resources and energy systems.

Consider life cycle impacts of planning and design decisions.

The requirements of the Watershed Management Plan and the University Well Head Protection Plan will be incorporated when planning for new facilities.

Minimize negative impacts on the water quality of the Red Cedar River Watershed.

D. Planning Principles Related to Open Space

Protect and extend the park-like character of the historic Circle Campus.
• New buildings and renovations should be designed to be architecturally compatible with the best features of existing buildings and to be harmonious with their immediate surroundings.

• Preserve flexibility in future decisions through efficient land use.

• Reinforce the University’s distinctive physical identity.

• Continue to use the campus arboretum to support teaching and outreach.

• Provide opportunities for academic and social interaction.

• Site buildings to define outdoor spaces.

• Preserve and protect existing natural areas.

• Prioritize opportunities to create new green spaces.

• Provide access to transportation systems from open spaces when and where appropriate.

E. Planning Principles Related to Parking
• Safely and efficiently meet the parking needs of faculty, staff, students and visitors.

• Aesthetically integrate parking facilities into the campus setting.

• Place greater emphasis on perimeter parking, recognizing that some central parking will always be needed.

• Reclaim surface lots for green space and future building sites when appropriate.

• Assure that the parking system remains self-supporting and generates sufficient revenue to support University parking and transportation needs.

• Relocate parking that contributes to unsafe traffic and pedestrian conditions.

• Connect campus transit system to parking.

• Manage parking to discourage illegal use.

F. Planning Principles Related to Transportation
• Provide a safe, efficient and effective transportation network, which enhances the overall quality of life on the campus.

• Establish a more pedestrian oriented character for the academic core of the campus and include the special needs of persons with disabilities.
• Reduce vehicular traffic in the academic core.

• Acknowledge the University’s integration with the regional transportation system.

• Develop a transportation system that is fiscally viable relative to capital and operating resources.

• Transportation priorities are:
  – Pedestrians
  – Bicycles and other forms of non-motorized transportation
  – Mass transit and service vehicles
  – Private vehicles

• Provide safe, dedicated pathways for bicycles.

• Use public transit to assist in accomplishing master planning objectives.

• Coordinate with Transit Provider to assure that roadway improvements compliment transit.

• Consider personal safety when developing transportation facilities.
VI. MASTER PLAN RECOMMENDATIONS

The master plan accommodates the facilities program and addresses the planning objectives and issues established during the planning process. It establishes a physical framework that is both flexible in its ability to accommodate future growth and compelling in the forms it prescribes to bring unity, coherence and amenity to the campus.

A. Campus Land Use

It is recommended that the existing general land use pattern of the campus be reinforced by consolidating compatible uses around existing concentrations of academic, service, athletic, recreational, residential, agricultural and natural area uses. Figure 19: Proposed Campus Districts illustrates the recommended land use pattern for the campus and Figure 20: Proposed Use by Building illustrates the accommodation of the Master Plan Facilities Program consistent with the Districts Map. The maps embody the following key ideas:

- Academic functions are consolidated into three contiguous North, Central and South Academic Districts.

- Existing residential areas are reserved as residential districts in which future residential uses will be located.

- Campus service functions are concentrated south of the Grand Trunk Railroad between Harrison Road and Farm Lane.

- Athletics and recreation uses are concentrated around existing athletic facilities west of the academic core.

- Most of the land south of Mount Hope Road is reserved for Agricultural and Natural Resources teaching, research and outreach.

- Important campus natural areas are protected in a natural areas district.

Figure 21: Housing and Food Service Issues depicts a residential facilities analysis that will support future detailed market and facilities studies related to campus housing and food services.
Proposed Campus Districts
B. Campus Landscape Structure

It is recommended that the overall campus landscape structure be improved by extending the park-like character of the North Campus and Red Cedar River corridor into the South Campus. This involves two major projects: a new Center Park and Landscape Corridors. See Figure 22: Proposed Open Space Structure.

**Center Park**

It is proposed that the area immediately south of the Red Cedar River at Farm Lane be transformed from multiple parking lots to a new Center Park to serve the South Campus. Development of the park will require removal of North Shaw Lane. Ideally, the south shop wing and chiller building associated with Erikson Hall would be removed and the new park will connect directly to the existing open space between Erikson Hall and Wells Hall. The character of the park should be informal and naturalistic, with a mixture of evergreen and deciduous trees arranged to blend with the adjacent open spaces along the Red Cedar River. Plantings should be denser on the east side of Farm Lane and a large open lawn should be developed on the west side. The more densely planted areas east of Farm Lane should mimic the character of the existing open space between Wells Hall and Erikson Hall where the tree canopy is open and high enough to avoid security concerns. The planting at the edges of the park and surrounding the large lawn should consist of large trees capable of partially concealing the surrounding buildings so that they become less visually prominent than the landscape. It is recommended that the northeast quadrant of the Center Park be developed in part as a stormwater detention or infiltration area to improve the quality of stormwater runoff from surrounding areas before it enters the Red Cedar River. The existing east-west oriented parking bay that is stepped into the slope offers a ready topographic opportunity for creating a stormwater catchment area. The potential of piping stormwater from the new Shaw Ramp to this area should be explored.
The proposed Center Park along Farm Lane, south of the Red Cedar River.
PROPOSED OPEN SPACE STRUCTURE

MICHIGAN STATE UNIVERSITY

FIGURE 22
Landscape Corridors

Three planting corridors are proposed along Bogue Street, Red Cedar Road and Birch Road. Together, these three corridors comprise over 50 acres of turf grass area that is proposed for transformation into open woodlands similar in character to existing woodlands at the Beal Plantation at the intersection of Michigan Avenue and Grand River Avenue, or the woodland immediately north of the Wharton Center Ramp. The new landscape corridors will connect the landscape along the Red Cedar River with the Trowbridge Road parkway corridor, the Clarence E. Lewis Landscape Arboretum and the Baker Woodlot. This will have a visually unifying effect on the campus as a whole. It will extend the natural landscape character of the North Campus and river corridor landscapes to the south, reduce stormwater runoff, and provide a more biodiverse habitat that will link existing natural areas. The illustrations on pages 64 and 65 show an example of the proposed reforestation along Bogue Street. At planting time, the lawns would remain, however, as the tree canopy matures, some areas may be converted to natural woodland mulch. Herbaceous perennials, ferns and bulbs may eventually be planted in these areas to add seasonal interest and additional educational value. The forest corridors should be developed as an extension of the campus arboretum to maximize their teaching and research potential.

In addition to the extension of the campus park-like character, it is proposed that protected landscape areas be established to maintain the quality landscapes of the campus as an enduring framework that will ensure that the quality of the landscape remains a defining feature of the campus while future building growth and parking needs are accommodated. Figure 23: Protected Landscape Areas shows the recommended protected landscape areas.
The proposed forest corridors will be similar in character to existing plantings at the Beal Plantation at Michigan Avenue and Grand River Avenue.

The existing woodland at the Wharton Ramp is another model for the proposed Forest Corridors.
Bogue Street today, looking north to the College of Business.

Bogue Street looking north to the College of Business, five years after planting.
Bogue Street looking north to the College of Business, thirty years after planting.
C. Campus Circulation

Figure 24 shows recommended improvements to the campus vehicular road system that were identified in the Component I process. The most critical improvements are the grade separations at the intersections of Farm Lane and the Grand Trunk Railroad and CSX Railroad. These projects are critical to the University’s ability to ensure reliable and predictable connections between the core campus and parking, service and academic facilities located south of the railroads. Other important improvements shown in Figure 24: Road Issues for Future Consideration are described in subsequent sections related to North and Central Campus improvements.

In addition to roadway improvements, it is recommended that the University partnership with the Capital Area Transit Authority (CATA) be continued and that bus transportation continue to be developed and enhanced as an alternative to private automobiles for both commuting and intra-campus travel.

It is recommended that a detailed plan be developed to separate bicycle traffic from pedestrian walkways, and that regulations be established and enforced to prevent bicycle use on pedestrian sidewalks. The bicycle plan should be coordinated with the Campus Master Plan and the Red Cedar Greenway Master Plan. Figure 25: Proposed Bicycle Facilities and Phasing illustrates the proposed general routes for bicycles with most bicycle paths consisting of designated bike lanes within vehicular roadways. Phase 1 improvements include Circle Drive bicycle lanes and off-street bike paths crossing the Circle Campus area and along the Red Cedar River. Phase 2 and 3 improvements include bicycle lanes in streets within the core academic areas and perimeter areas of the campus. Most Phase 2 and 3 improvements will require roadway widening and, therefore, should be coordinated with scheduled resurfacing and roadway reconstruction projects. Development of the bicycle path system should include the use of appropriate standard AASHTO regulatory signs to designate the bicycle lanes and paths and to govern bicyclist and driver behavior.
D. Parking

The following recommendations pertain to faculty and staff (including graduate students) parking, and assume that visitor parking, resident student storage parking and commuter parking will remain generally as they are today. The recommendations are intended to provide a general faculty and staff parking concept that prescribes alternative parking locations and the appropriate amount of spaces to keep pace with changes in population and demand. It is expected that a detailed campus-wide parking study will need to be conducted in order to provide specific solutions and a sequence for their phased implementation.

It is recommended that parking for faculty and staff be supplied at an overall ratio of 0.90 parking spaces per employee. This ratio is derived from a comparison with other institutions of similar size and experience with actual parking demands at MSU.

Changes in Parking Supply

There are several factors that will affect the supply of parking spaces over the next 20 years. The first is the existing deficit of approximately 1,200 faculty and staff spaces in the academic core area of the campus. This deficit is the number of spaces that would be needed today to meet faculty and staff demand at a 0.9 ratio in the academic core area. The second factor affecting the supply of parking spaces is the removal of surface parking in the core academic areas to improve pedestrian safety and to increase the amount and quality of campus open space. It is recommended that approximately 130 head-in parking spaces be removed from West Circle Drive, and that about 250 on-street spaces be removed from other campus roads north of the Red Cedar River. South of the river, it is recommended that approximately 950 parking spaces be removed from the large lots at intersection of Farm Lane and North and South Shaw Lanes.

The third factor that will affect future parking supply is the loss of surface parking lots as new buildings are built. The two most significant impacts on North Campus will be the loss of the parking lot south of Giltner and the displacement of the lot between Human Ecology and the Olin Health Center. On the central academic campus, the most significant losses of lots to new buildings will be the lot south of the International Center, and the lots near the Plant and Soil Sciences building and Greenhouses. In total, approximately 650 parking spaces would be displaced on North Campus and up to 950 spaces on the central academic campus as buildings are constructed over the course of the next 20 years.

Changes in Parking Demand

In addition to changes in parking supply, it is anticipated that there will be significant changes in parking demand in the next 20 years. As existing buildings are renovated and new buildings come online, employees and programs will inevitably shift in order to consolidate or better accommodate their space needs. Although this will not result in an overall net change with respect to parking, it does mean a change in demand on certain parts of campus. It is estimated that there will be an increased demand for approximately 150 parking spaces on the central academic campus, due largely to the shift of employees into the new Bio-Physical Sciences Building. In addition, the south academic campus will experience an increased demand for approximately 175 parking spaces when employees in Fee Hall shift to
the Life Sciences Area. The aforementioned space shifts will also cause a decrease in demand in the areas that the employees are vacating.

In addition to employees shifting within existing buildings, the construction of new buildings will also generate a need for new employees, thus generating an increased demand for parking. Based upon the projected facilities program, it is estimated that there will be an increased demand for 35 additional spaces on North Campus, and up to 765 spaces on the Central Campus. The large demand on the central academic campus is primarily due to the increase in research laboratory space. The estimated campus-wide increase in demand due to new employees is approximately 885 parking spaces.

Appendix F contains data and maps related to the anticipated changes in supply and demand for faculty-staff parking.

Parking Solutions
The combined effect of the existing deficit, changes in parking supply and changes in demand would, if nothing were done over a twenty-year period, result in a deficit of 4,500 parking spaces in the core academic area. This assumes the completion of the Shaw Ramp (1,200 spaces) and the reconstruction of Ramp Two (700 spaces) on the North Campus. To remedy the anticipated deficit and to obtain the benefits of reduced core area traffic congestion, fewer pedestrian-vehicle conflicts and improved landscape quality, it is recommended that faculty and staff parking for the core campus be provided in perimeter surface lots and ramps. It is anticipated that some amount of surface spaces will remain in the core campus to serve visitors, service vehicles, persons with disabilities and faculty and staff, however, the majority of faculty and staff parking will be provided in perimeter locations in surface lots or new parking garages. Further planning addressing transit requirements, land conservation requirements and financial analysis will be required over time to evaluate the pros and cons of accommodating required parking in perimeter garages or perimeter surface lots.

Figure 26: Alternative Future Sites for Additional Faculty and Staff Parking identifies alternative locations for perimeter surface parking and possible locations for three additional parking garages. Figure 26 identifies a total of 8,309 spaces that could potentially be developed to satisfy the 4,500 space long-term deficit. Perimeter surface parking may include existing surplus spaces east and west of the academic core area as well as newly constructed spaces. Locations for large new surface perimeter lots include the Agricultural Expo site, the northeast corner of Farm Lane and Mount Hope Road, and the State Police Post site. The use of the police site presumes the relocation of the existing police facilities.
Possible parking ramp locations include a 600-car North Campus parking ramp on the existing surface parking lot east of Human Ecology and west of the Olin Health Center on Grand River Avenue. A second 800-car parking ramp site is located east of the Stadium, on the current Central Services Building site. This ramp will predominantly serve the southern edge of the north academic campus. Finally, a 1,000-car Central Campus parking ramp site is located on the southwest corner of the intersection of Shaw Lane and Red Cedar Road. These three locations are recommended because of their distribution and proximity to core campus areas, making them available to a broad number of parking users. If all three garages are built, they would satisfy the future faculty and staff demand for parking. Graduate assistant parking will be accommodated in the perimeter surface lots.

E. North Campus Open Space, Facilities Accommodation and Circulation Improvements

Figure 27 illustrates the Proposed North Campus Plan. The principal organizing ideas for this part of campus are as follows:

Open Space:

- The tradition of quality pedestrian open space and the informal park-like character of the north campus are enhanced by removing head-in, roadside parking, roads and unnecessary walkways. The resulting new landscape spaces will be planted with trees and lawns and will serve to unify the north campus environment, reinforce the pedestrian experience of the University and expand the concept of the University as an arboretum. The areas include the segment of East Circle Drive between Farm Lane and West Circle Drive and numerous areas along East Circle Drive, West Circle Drive, Physics Road and Auditorium Road where head-in parking will be removed. New roadside planting layouts should be informal in the west circle area where space is more generous. Along Farm Lane, Physics Road, Auditorium Road and East Circle Drive where available planting space is limited, plantings should be in regular street tree rows.

- It is recommended that the open space immediately north of the Administration Building be redesigned to remove excess pavement and modify the character of the landscape so that it is more in keeping with the pastoral quality of the Circle Campus area. New tree plantings should be employed to frame a new informal lawn and partially screen the façade of the Administration Building. A small plaza space for gatherings at the entrance of the Administration Building should be included.

- It is proposed that unused, narrow bicycle paths that cross the Circle Campus be removed and the areas restored to grass.
In the event that Morrill Hall is removed and a new structure is built between Human Ecology and the Olin Health Center along Grand River Avenue, the space between West Circle Drive and the new structure should be heavily planted with trees and predominantly conifers. The conifers will lessen the visual affect of a new structure on the Circle landscape and they will harmonize with existing groups of conifers in the Circle to the immediate south.

It is proposed that the historic alignment of Farm Lane be reestablished northward to Berkey Hall as a pedestrian mall that will create a strong landscape and pedestrian linkage between major classroom centers. The historic horticulture gardens will be expanded west of the new mall and will include a contemplation greenhouse.

**Facilities Accommodation**

- New facilities for the Music program and the Art Museum will be located along Auditorium Road to consolidate arts activities in an “Arts District.” The site north of Auditorium Road will permit the development of a performance hall in addition to the instructional and office space required in the Music Building program. It is recommended that the Music Building and the Art Museum addition be arranged to create a plaza space between themselves and the Auditorium. The plaza will serve as a public gathering place and for planned events related to the Arts.

- A site for a new academic building that may facilitate capacity space for the Social Sciences or Arts and Letter programs is identified on the new Farm Lane pedestrian mall. This building is centrally located and ideal for future academic use. Its design should compliment the Natural Science Building as a framing elements of the new pedestrian mall.

- A strategy for infilling and building additions is employed to accommodate the expansion needs for the Library, Human Ecology and The State News. Future academic space related to Mason-Abbot Residence Halls is provided in the event that a new residential college is developed at this site.

- It is recommended that the Paolucci Building be removed. Options are available for locating a new Alumni Center and Development Office building or new surface parking on the site of the Paolucci Building. An alternative location for the Alumni Center would be to remain in the Union Building. The Union Building alternative is particularly appealing if a new parking ramp is developed on Grand River Avenue. This site also serves as an alternate location for the State News building.

- Sites for possible new parking structures for faculty, staff and visitors are proposed at perimeter locations along Grand River Avenue, on the site of existing Ramp 2 between Bessey Hall and the Computer Center, and east of Spartan Stadium. The stadium ramp would serve both north and South Campus populations.
Existing conditions at the Collingwood entrance are defined by parked cars.

Proposed changes at the Collingwood entrance will include the removal of unsafe head-in parking and the development of new roadside planting.
The existing view south from the east side of Old Horticulture. The Natural Science Building is on the left.

The same view with the proposed pedestrian mall extension of Farm Lane. A new academic building on the right, together with the Natural Science Building on the left will frame the space.
Circulation

- It is recommended that several intersections be redesigned to improve traffic safety. These include Kalamazoo and Beal Street, West Circle Drive and Auditorium Boulevard, Physics Road and Dormitory Road, and the Collingwood entrance and Physics Road intersection.

- To improve pedestrian safety and to calm traffic on the North Campus, it is proposed that the pedestrian right-of-way at designated crosswalks be established through the installation of signs requiring motorists to yield to pedestrians.

- A bicycle lane is proposed for the length of the West Circle Drive. This will include elimination of a vehicular travel lane, which in turn will improve vehicular safety. The bicycle lane should be developed as part of a campus-wide bicycle path plan.

- As mentioned above under Open Space Recommendations, it is proposed that on-street head-in parking be removed from most North Campus streets. This will improve traffic safety as well as improve the visual quality of the landscape.

- It is recommended that the Red Cedar River pedestrian bridges at the Library and at the Computer Center be widened to improve pedestrian and bicycle capacity and safety.

F. Central Campus Open Space, Facilities Accommodation and Circulation Improvements

Figure 28 illustrates the Proposed Central Campus Plan. The principal organizing ideas for this part of the campus are as follows:

Open Space

- The Bogue Street, Red Cedar Road and Birch Road corridors are proposed for reforestation to enhance the overall visual and environmental quality of the South Campus area. The intent is to bring these corridors up to the landscape quality of areas such as the Red Cedar River corridor or the Beal Plantation area. The major street corridors other than Bogue Street, Red Cedar Road and Birch Road will be planted with trees intended to improve the pedestrian scale of the sidewalk zones as well as the streetscape as seen by motorists. Double rows of trees flanking the sidewalks are recommended. This proposal builds on the South Campus beautification project begun in 1999.
Existing Central Campus streets lack pedestrian scale and interest.

Proposed planting along Central Campus streets will improve the pedestrian scale of the sidewalk zone. Double rows of trees flanking the sidewalks are recommended.
A large Center Park is proposed immediately south of the Red Cedar River at Farm Lane. This proposal is consistent with the concept presented for improving this area in Component I. In addition to the campus park, smaller courtyard spaces are proposed as an integral part of new building projects. An example is the courtyard at the new Biophysical Sciences Building. The space is inward oriented, protected from the streets, offering a pedestrian oasis in one of the most urban areas of campus.

Facilities Accommodation

- New laboratory facilities will be concentrated in the area south of Shaw Lane and east of Farm Lane, reinforcing the existing pattern of scientific laboratories in this area. Greenhouse expansion is proposed within the existing greenhouse complex and in close proximity to Plant Science laboratories.

- It is proposed that infill buildings at Engineering, Veterinary Medicine, the International Center and Business will logically associate new teaching facilities with existing space for these units.

- Optional locations are offered for College of Education facilities and a new Student Center. The options allow for the consolidation and growth of College of Education facilities and a central location for the Student Center. The first option, shown in Figure 28, proposes that Erickson Hall be converted to a student center. The conversion may include removal of the south wing of Erickson Hall and the development of new common space on the south side of Erickson Hall fronting on the new Center Park. This option also recommends the development of a new College of Education Building between North Shaw Lane and South Shaw Lane just south of the International Center. This location for the College of Education would provide appropriate accessibility, visibility and parking to serve the College’s many outside constituents. A second option for accommodating future requirements of the College of Education and the Student Center, shown in Figure 29: Student Center Option Plan, is to expand Erickson Hall to meet the expansion and consolidation needs of the College of Education. The second option proposes that the Student Center be developed above the east wing of the existing International Center. In this scenario, the area south of the International Center would be reserved for a future academic building.

- New parking structures for faculty, staff and visitors are proposed on the west side of Red Cedar Road east of the Stadium and south of Shaw Lane.
Circulation

- It is proposed that North Shaw Lane be closed between the International Center and Shaw Residence Hall. The ultimate removal of large parking lots along this section of North Shaw Lane to create the new Center Park will eliminate the need for this road segment. It is also recommended that South Shaw Lane remain open, but possibly be limited to transit, service and emergency access during daytime and evening class hours. Limiting automobile traffic during class hours will reduce pedestrian and vehicle conflicts and improve pedestrian safety.

- It is recommended that several Central Campus intersections be redesigned to improve traffic safety. These include Bogue Street and Wilson Road, Farm Lane and Wilson Road, and Red Cedar Road at Wilson Road. Road improvements are also recommended for Farm Lane between the Red Cedar River and Mount Hope Road. Farm Lane improvements should include widening to accommodate bicycle lanes in both directions, and widening to four vehicle lanes between the Trowbridge extension and Mount Hope Road.

- Planned improvements to Central Campus transit should be carried forward, including the development of a new transit center at the reconstructed Shaw Lane ramp.

G. Facilities Accommodation and Circulation Improvements for the Areas outside the North and Central Campus Core Areas:

Figure 30: Program Accommodation illustrates the locations for all of the facilities in the 20-year facilities program, including facilities located outside of the North and Central Campus areas already discussed. The principal organizing ideas for the campus areas outside of the North and South Campus are as follows:

Facilities Accommodation

- The Colleges of Nursing, Human Medicine and Osteopathic Medicine are consolidated in existing buildings and new academic buildings near the Clinical Center south of the Service Road. The proposed facilities provide for consolidation of existing space plus new space required for expansion.

- A site is identified near the Engineering Research Complex for the Automotive Research Experiment Station or future laboratories related to Engineering.

- The large triangle of land between Harrison Road, Farm Lane and the two railroads is devoted to campus support services, including the power plant expansion, warehouse facilities, the central services garage, the recycle center, campus housing and food services building, and open yard space related to physical plant and grounds maintenance operations. In the event that an intercity passenger rail station is developed on University land west of Harrison Road, existing service facilities would be relocated to the services area east of Harrison Road.
• Childcare centers are provided on the east and west sides of campus. One is located at Spartan Village and the other near the Clinical Center.

• Building expansions are provided in logical association with existing facilities at the Kellogg Center, Breslin Center, the Clarence E. Lewis Landscape Arboretum, Campus Food Stores, and the Physical Plant Building.

• Additional intramural play fields are provided on open sites at campus edges near Spartan Village and near the Clinical Center.

Circulation

• As noted previously in Section C, roadway underpasses are recommended to improve traffic movement at Farm Lane and the Grand Trunk Railroad and the CSX Railroad, and at Bogue Street and the Grand Trunk Railroad. Pedestrian underpasses at the Grand Trunk Railroad are proposed at two locations to improve pedestrian safety. Given the significant cost of building railroad underpasses and the possibility that all of the recommended underpasses may not be affordable in a timely way, it is recommended that priority be given to the tunnels at Farm Lane.

H. Long-Term Campus Growth

Figure 31: Campus Building Capacity Beyond 2020 illustrates the general capacity of the campus for growth beyond the 2020 Master Plan Program. Future capacity is calculated presuming that new buildings will be four stories. The plan indicates limited expansion capacity of 300,000 gross square feet north of the Red Cedar River. The expansion presumes the removal of Giltner Hall and the Paolucci Building, and reuse of their sites with new facilities. In the Central Campus area between the Red Cedar River and the Grand Trunk Railroad, approximately 2.7 million additional square feet would be possible. The Central Campus expansion assumes the removal and replacement of low-density facilities, including the old power plant, the planetarium, the Cyclotron Complex (this also presumes the development of the Rare Isotope Accelerator project and the consolidation of Nuclear Physics programs at a remote site), the Urban Planning and Landscape Architecture Building, Grounds Maintenance, the Police and Public Safety Building, the Physical Plant Building, and the Oyer Speech and Hearing Clinic.

South of the Grand Trunk Railroad, the Agriculture Expo and the South Campus area at the corner of Hagadorn Road and Mount Hope Road could accommodate an additional 350,000 gross square feet if developed at a floor area ratio of 0.25. If these areas were to be developed at a floor area ratio of 0.65, which is the average for the existing North and Central Campuses, the capacity of the Agriculture Expo site and South Campus area is approximately 900,000 gross square feet.
I. Campus Zoning Ordinance

The Campus Zoning District Map and Ordinance have been revised to reflect the proposals of the Master Plan. The Zoning District Map is shown in Figure 19. The key changes include the simplification of the district lines to create consolidated, logical planning units; and the establishment of a Natural Areas District for the protection of campus natural areas. In addition, the Ordinance establishes “Protected Landscape Areas” (Figure 23) within the campus districts for the preservation of key campus landscapes, defines setbacks, defines building coverage limits, height limits, and regulates the uses permitted in each district. A copy of the revised Zoning Ordinance is in Appendix E.