

Confederation College

CAMPUS MASTER PLAN
March 2010



COHOS EVAMY
i n t e g r a t e d d e s i g n

March 31, 2010

Patricia Lang
President
Confederation College
1450 Nakina Drive, P.O. Box 398
Thunder Bay, Ontario, P7C 4W1

Dear Ms. Lang:

Re: Confederation College Campus Master Plan - Updated

We are pleased to submit an updated Campus Master Plan Report that incorporates the comments we received from your team. We believe that its contents reflect your college's vision.

Cohos Evamy and the entire consultant design and planning team would like to express our sincere appreciation to you and your team for your invaluable contributions to the Campus Master Plan. The cooperation and guidance that the consultant team has received from the Leadership Team, the stakeholders, the staff, and the students has been generous, thoughtful and is illustrative of the College's passion for this project.

We look forward to assisting you and your team in future phases of the campus development process in the years to come.

Respectfully,
Cohos Evamy Ontario Inc.



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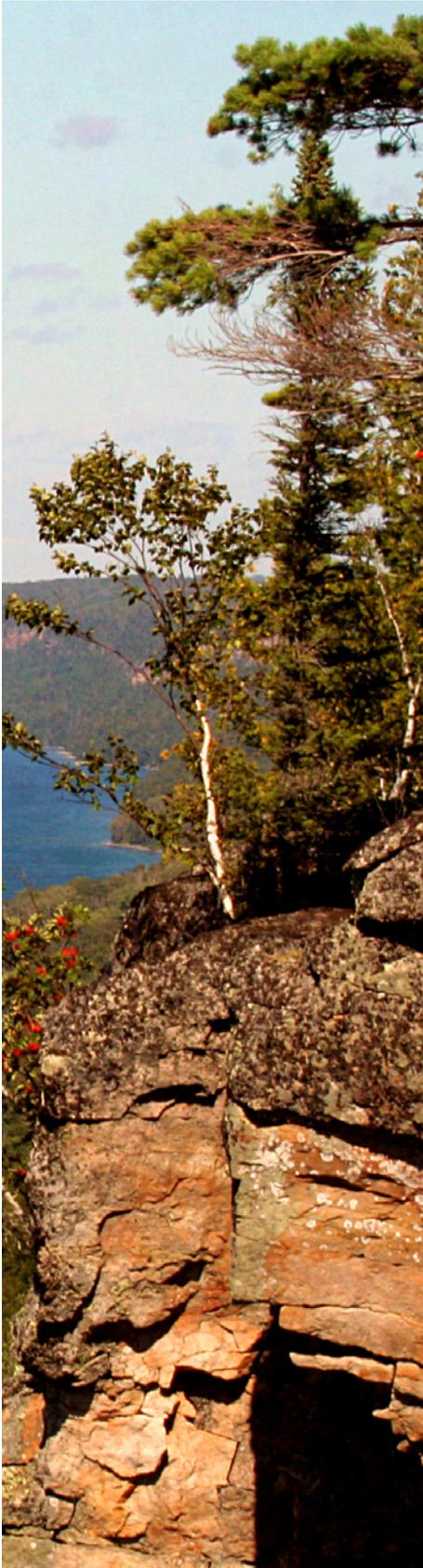
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1.0

INTRODUCTION & BACKGROUND





1.1 President’s Vision

At the outset of the master planning process the President of Confederation College, Patricia Lang, set out the following vision for the purpose and intent of the Campus Master Plan:

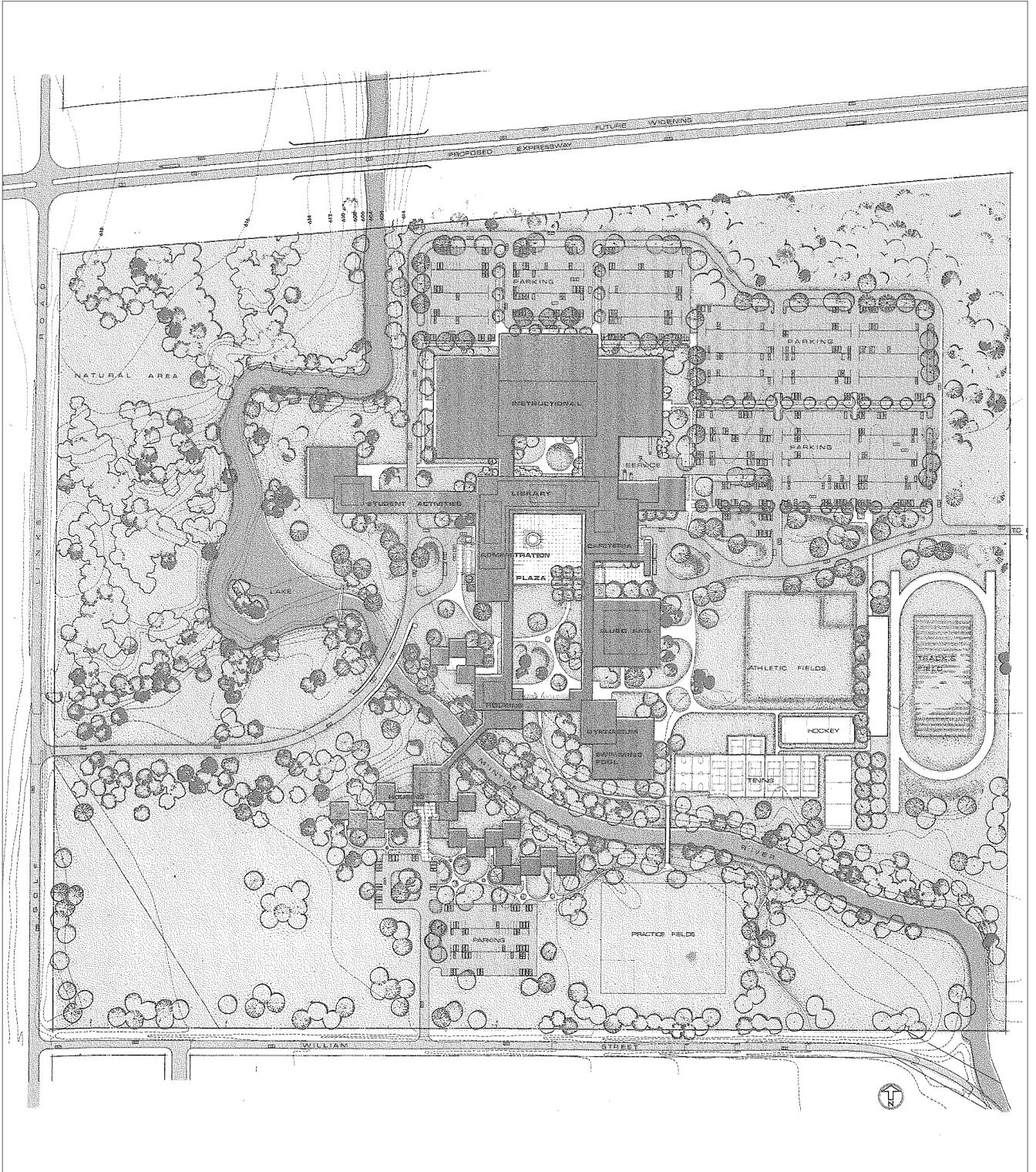
“The overall vision of the Master Plan should guide the development of the College as an inspirational campus that celebrates the beauty of its natural setting - rooted in a diversity of ethnicity, cultures and the northern environment. The College envisions a unified campus image – public spaces, framed by buildings, shaped and connected through clearly articulated pedestrian paths. The campus will demonstrate, through policies and practices, an excellence in environmental stewardship. Sustainable practices will become an integral part of campus management and operations – protecting and incorporating the environment in all campus spaces.

The College campus is envisioned as a place where everyone is encouraged to dream, gain knowledge and attain – providing an exceptional experience for students from admission through the ongoing advancement of their professional careers. Both students and educators will be engaged in a stimulating academic environment – guaranteed opportunities to use technology as a vital educational component. Confederation College will be built on a model of partnerships with other institutions, employers, and community agencies. It will become a highly accessible educational centre providing both on-campus and distance education. As a “Beacon of Hope”, Confederation College hopes to become a strategic resource, attracting the best students, faculty and partners.”

1.2 Introduction

Confederation College is a publicly funded, post-secondary institution serving educational needs in Northwestern Ontario and beyond. It is one of 24 colleges operating over 150 campuses in both urban and rural settings throughout Ontario.

Established in 1967, Confederation College now serves an area exceeding 550,000 square kilometres from the main campus in Thunder Bay and area campuses located in Dryden, Fort Frances, Geraldton, Kenora, Marathon and Sioux Lookout. In addition to these campuses, the college is active in over 50 remote communities most of which are First Nations. Confederation College provides educational services to roughly 4,000 full-time postsecondary students and 8,000 part-time students annually. The College’s operating budget is \$60 million. The College offers a full range of programs and educational services throughout the region: full-time postsecondary programs, part-time credit and non-credit courses, speciality programs for business and industry, pre-employment and skills training programs, apprenticeship programs and co-operative/workplace training programs. The college employs a workforce of approximately 424 full-time and 335 part-time employees.



ORIGINAL MASTER PLAN, 1966 BY SMITH CARTER SEARLE AND W.L. WARDROP & ASSOCIATES

The Thunder Bay campus consists of the main campus situated on 173 acres of property in the heart of Thunder Bay, and three smaller properties, located adjacent to the Thunder Bay International Airport, approximately 10 minutes south of the main campus.

The Main College campus located at 1450 Nakina Drive, Thunder Bay, Ontario consists of three main academic buildings: the Shuniah Building, the Dorion Building, the McIntyre Building. Additionally, the College operates Sibley Hall Residence, the Fitness Centre, the Children and Family Centre, the Forestry Centre, and the Conmee Building. The construction period of the buildings varies from 1967 to present day. The campus buildings house office space, classrooms, lecture halls, laboratories, library, residences, kitchens, automotive facilities, multimedia and television studios, a fitness centre and construction trades facilities.

1.3 Need for a Campus Master Plan

Confederation College is a dynamic and innovative institution providing high quality learning and services to a diversity of students. In order to continue this mission well into the future, the College undertook the development this future Campus Master Plan. The focus of this plan was to produce a framework to guide the physical development and utilization of the campus as it evolves over the next 10-20 years.

The Campus Master Plan was intended to address such issues as new potential building sites, maximizing the utilization of facilities and aligning the planning of future facilities with academic programs, parking, traffic and pedestrian circulation routes, campus green spaces, campus gateways, as well as interface with the surrounding community to ensure that these projects contribute to a strong sense of place and an enhanced environment. It also takes into account the needs for campus services, campus housing, recreation and athletic facilities.

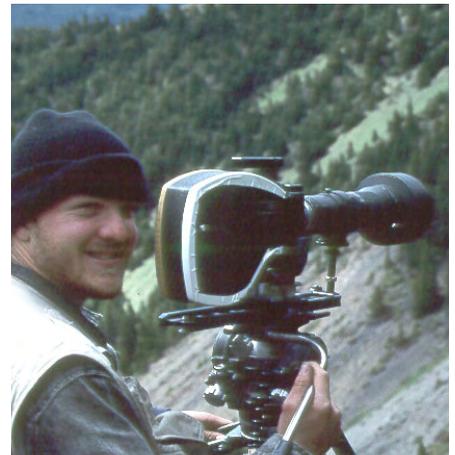
1.4 Previous Campus Master Plans

The original campus master plan was completed in 1966 by Smith Carter Searle and W.L. Wardrop & Associates; associated architects and engineering consultants. Man Taylot Muret provided landscape and site plan consulting. Until now, there have been no new or revised Campus Master Plans, and as a direct consequence, new buildings and additions to date have been developed on the campus in an ad hoc manner.

1.5 Campus Master Plan Objectives

The purpose of this Campus Master Plan is to provide a flexible planning framework to guide physical adaptation and development of Confederation College campus plan that responds directly to the College's changing academic and operational needs in the future. The objectives of the Campus Master Plan are intended to:

- Support the College Mission and College Values.
- Act as a guide for future decisions regarding the long-range physical development of the College campus and facilities.
- Maximize and balance the appropriate use of built, natural and landscaped environments.
- Address the diverse academic and social needs of the College community.
- Provide flexibility when responding to the changing needs of the institution.
- Provide a framework for the ongoing management and development of campus facilities and resources.



Confederation College, serving a diversity of learners, develops citizens who will be positioned for success in their lives and careers

1.5.1 College Mission

Confederation College, serving a diversity of learners, develops citizens who will be positioned for success in their lives and careers. The college provides a workforce relevant to the communities of Northwestern Ontario and beyond.

Further, Confederation College exists to ensure the following:



SUCCESSFUL LEARNERS WITH DIVERSE LEARNING PATHWAYS

Diverse learners have knowledge, skills, and attitudes for life-long learning and career success.

- Learners have access to personal learning pathways with appropriate support for individual success.
- Learners have access to flexible delivery models that are effective in responding to their needs.
- Learners meet or exceed recognized performance indicators of knowledge, skills, and attitudes.

PRODUCTIVE EMPLOYEES AND EMPLOYERS

Businesses, industries, and organizations have a productive, adaptable, ethical workforce enabling them to compete in a rapidly changing environment.

- Employees and employers have access to flexible training, education, and applied research, that meets their diverse learning and unique geographic needs.
- Employers are satisfied that graduates meet or exceed recognized performance indicators.



COMMUNITY DEVELOPMENT AND CAPACITY

Our diverse communities experience socioeconomic well-being as a result of our contributions.

- Northwestern Ontario is sustainable and healthy.
- Indigenous communities are autonomous and self-reliant.
- Global communities are enhanced.





1.5.2 College Values

DIVERSITY

We celebrate our learners, employers, communities and college employees, in all their diversity.

RESPECT, CARING, OPENNESS

We value each other as individuals and we act with integrity. We expect active and honest sharing of information and ideas, listening carefully and respecting the opinions of others. Working together, we achieve our mission through our values, attitudes and actions.

LEARNING AND LEADING

We prepare our learners to live, work, and lead, in Northwestern Ontario and beyond.

EXCELLENCE

We strive for excellence in all elements of our work including our consultative, collaborative and responsible decision-making processes. We build on our historical strengths of innovation, reasoned risk-taking, and responsiveness.

1.5.3 Long-Range Campus Development

It is intended that this Campus Master Plan provide a framework for both incremental growth, as well as for substantially increasing the program density of the campus should it be required at some point in the future. According to OCAS projection enrolments, Confederation College is expected to experience gradual growth in the next two years and no anticipated growth after that. If this projection is accurate, a conservative building growth strategy is appropriate. If enrolment increases substantially, a comparable-sized building expansion would be required.

1.5.4 Built, Landscaped, and Natural Environments

The existing site is approximately 173 total acres (525,000 square metres). Of this, 34,000 square metres are occupied by building footprint and 55,000 square metres are taken up by parking. The majority of the site is covered by natural landscape including open space, forested area, and the McIntyre River. The portion of the site that banks along the McIntyre River is classified as an environmentally protected area by the Lakehead Region Conservation Authority, and as such, cannot be built on.

1.5.5 College Community

The college community is aptly described as a ‘mosaic’ community, one that is made up of a broad diversity of students. Students include recently completed high school students, making up 37% of the student population and adults

looking for a change of career or skills upgrading, making up 34% of the student population. There is a large Aboriginal student community which is integral part of the student community who come from rural settings making up 16% of the student population.

1.5.6 Diverse Needs

While the significant diversity of the college community is a source of inspiration, and a reason for celebration, it also requires that special attention be given to meet the specific, and very different, needs of each of the students. The College therefore provides a wide range of services to an equally wide range of current and prospective students.

1.5.7 Campus Facilities and Resources

The campus facilities and resources currently consist of three main educational buildings – the Shuniah Building, the Dorion Building, the McIntyre Building – as well as several other facilities including Sibley Hall Residence, the Fitness Centre, the Children and Family Centre, the Forestry Centre, and the Conmee Building.

The Shuniah Building is the largest building on campus with a gross floor area of approximately 31,000 square metres on three floors. It is home to Indigenous Studies, Business, Community Services, Health Sciences, Hospitality, Media Production, and Access & Upgrading programs. These programs vary between one and four years in length. The building also houses Student Services, the Student Union, Job Connect, College Administration, the library, the bookstore, and the cafeteria.



The Dorion Building, located at the east side of the campus, is occupied by the skilled trade programs. These programs include Forest Operations, Mechanical Techniques, Mining Techniques, Motive Power Techniques, Power Engineering Technician, and Welding Techniques. These programs are typically 36 weeks in length with the exception of Power Engineering Technician which lasts 2 years. The gross floor area of the building is approximately 7,100 square metres on two floors.

The McIntyre Building houses Engineering Technology and Protective Services programs. Program length varies between one and three years. This facility is located on the south side of the McIntyre River near the southwest corner of the property and has a gross building area of approximately 6,900 square metres.

Sibley Hall Residence provides on-campus dormitory-style living accommodation for 229 students in single and double rooms. It is located on along the south bank of the McIntyre River. Students can walk to class from the residence using a footbridge to cross the river and pedestrian paths. The building gross floor area is approximately 9,000 square metres.

The Fitness Centre is a 6,200-square metre facility that the College currently shares with the local community. It consists of a running track, two fitness rooms, tennis courts, three squash courts, one badminton court, six tennis courts, four volleyball courts (three indoor and one beach), and a health centre.

1.6 Acknowledgements

Cohos Evamy wishes to express our appreciation and gratitude for the cooperation and guidance of all of the stakeholders who have been involved in the intensive consultations and planning that have been required to develop the Campus Master Plan Report. Stakeholder participation and feedback is



absolutely essential for the success of this process to ensure that the final report reflects the unique goals of Confederation College. This process has been exceptionally helpful, enjoyable and rewarding.

We thank all those individuals that have participated in the process to date and would like to particularly recognize the following people who have sacrificed countless hours to provide the effective leadership, guidance, and oversight throughout the Master Planning process:

Patricia Lang – President

Bob Backstrom – Vice President, Corporate Services

Judi Maundrell – Vice President, Academic & Student Services

Mark Wright – Director, Resource Development

Ron Vopni – Director, Facilities Services

Kathleen Lynch – Dean, School of Health & Community Services

Brian Campbell – Executive Director of Government Relations

Michael Dorval – Architectural / Engineering Office

Brenda Small – Dean, Negahneewin College of Academic and Community Development

Stewart Kallio – Associate Dean, Negahneewin College of Academic and Community Development

Kathleen Lynch – Dean, School of Health & Community Services

Gail Murdock – Dean, School of Business, Hospitality & Media Arts

Jose Vieira – Dean, School of Engineering Technology

Joseph Cordeiro – Associate Dean, Health & Community Services

John Kantola – Associate Dean Engineering Technology & Trades

Christine Bates – Director, Human Resources Services

Don Bernosky – Executive Director, Innovation & Skills Development

Ron Fearon – Manager, Fitness & Recreation

Mike Gallagher – Director, Financial Services

Tim Kerbashian – Director, International Education Centre

Vince Stilla – Director, Centre for Continuing Education

Laraine Tapak – Director, Learning & Resources

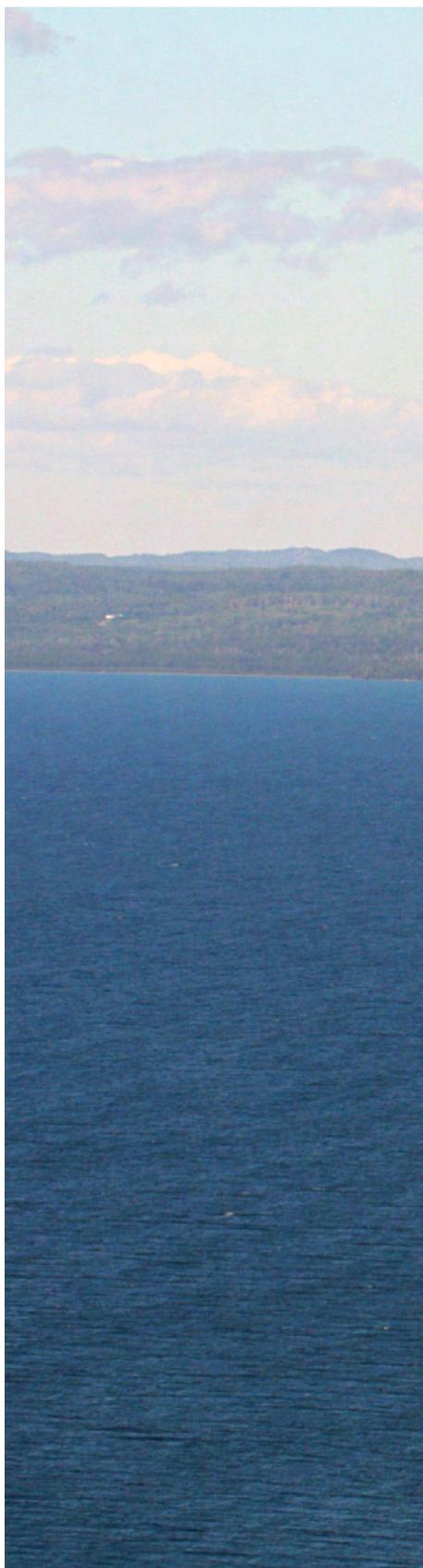
Robert Griffiths – Manager, Career Services (Recruitment)

Kathy Kimpton – Director, Student Services

We wish to thank those that prepared the Academic Plan 2003-2006 and the Confederation College website – www.confederationc.on.ca – for providing images that were included in this report.

2.0 PROCESS





2.1 Consultative Process

An important component of the Campus Master Plan process was consultation and dialogue with the College Community (faculty, support staff, students, alumni and administration) as well as the broader municipal community. This consultation process was critical to ensure that the stakeholders contributed to the identification of needs, issues, opportunities and ideas that should be incorporated into the College’s Campus Master Planning for the next 10-20 years.

2.1.1 Stakeholder Group Sessions

A series of dynamic and intensive sessions took place from January 7th to 9th, 2009, in which stakeholders met and discussed pertinent topics relating to the planning and development at Confederation College with the purpose of collectively generating a “planning vision” for the campus. In attendance were representatives from:

- Honeywell & Sustainability Group
- SUCCI / OASA
- Negahneewin College of Academic & Community Development
- Community Stakeholders
- School of Health & Community Services; Children and Family Centre
- School of Business, Hospitality & Media Arts
- School of Engineering Technology and Trades
- School of Aviation
- Student Success / Registrar; Library, Residence; Fitness Centre
- Confederation College – Senior Team

Each of the groups, during the ten two-hour focus sessions, were asked similar questions. This ensured that all stakeholder responses would be empirically comparable between the groups. Some of the important questions that were explored during the stakeholder meetings included:

- What are the key goals for the project, and how will we be able to confirm that we have reached them?
- What are the “Guiding Principles” for the Campus Master Plan and subsequent planning phases of this project?
- What is the time frame for planning (eg. 5, 10 and 20 years)?
- What source for population projections (and demographics) should be used? What are the limitations?
- Overall, what constraints and influences on project development should be considered?
- What are the stakeholder directions and implications for Confederation College?

- What changes should be considered to address community needs?
- What opportunities to demonstrate innovative leadership should be incorporated in the planning?
- What are the “burning platforms”/compelling arguments that will appease all stakeholders?

A comparative post interview review of the responses to these questions indicated a recurring set of core issues. The consultant team called these “Consolidated Insights” which became important items to consider in the subsequent phases of planning and development. The Consolidated Insights were:

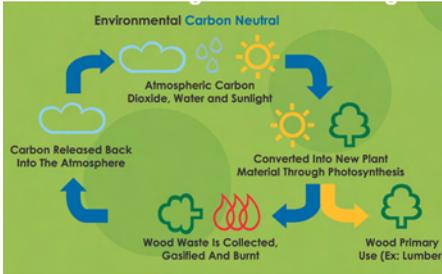
1. The importance of the Negahnween College’s “Vision”.
2. Protection of Confederation College’s grounds.
3. Innovation is considered a core principle.
4. Future consideration needs to be given to whether the College should implement an “inward strategy” or and “outward strategy” with respect to its growth.
5. Confederation College should plan for incremental growth.
6. The “Branding Philosophy” needs to be clarified: The College in relation to the various Schools in relation to the offered Programs.

2.1.2 Coordination with On-Going Planning Initiatives and Studies

Throughout the master planning process, it was essential to integrate current program and facility initiatives into the master planning process in order to develop a consistent overall planning vision for the College. Considered initiatives were:

REACH (Regional Research & Education Alliance for Community Health) – a current program initiative that has received provincial funding for state-of-the-art simulation and innovative technologies to connect the College to northern communities. The new space design will accommodate sophisticated lab equipment and the implementation of advanced, interprofessional teaching methodologies to create a vibrant and dynamic learning environment. This up-to-date knowledge, practical experience and training will better prepare Confederation College graduates with skills and sound judgement necessary for occupations in health, community services and related fields. REACH will create workers for the specialized needs of our Lakehead Region, as well as support the research needs of private and public groups.

The exact program scope and size for REACH at the time of this Campus Master Plan was yet to be determined, though at the time of the Master Plan, the facility’s functional space program was projected as either a 8,700-square metre stand-alone building or a 5,400-square foot building addition.



BIOMASS CENTRE ENVIRONMENTAL CYCLE



IMAGE OF BIOMASS FUEL

Biomass Learning and Research Centre – This program initiative seeks to be a leader across northwestern Ontario by creating a highly efficient cleantech plant providing opportunity for learning and research about integrated renewable solutions and innovative technologies. Its program elements consist of a “living lab” and a small-scale biomass research facility. The key element is a biomass (waste wood) hot water boiler which will displace over 80% of the existing natural gas-fuelled boilers that heat the Shuniah Building.

2.2 Summary

The stakeholder discussions helped the Consultants develop an understanding of the College’s objectives and core needs. These discussions provided the Consultants with the necessary understanding of the College’s current and longer-term needs. Overall, there was significant pride and enthusiasm across all stakeholder groups and a good understanding of college-wide opportunities and challenges. The stakeholders had consensus on many fundamental issues, including: community connections, the greater College community, establishing an Aboriginal/Canadian student dialogue, and sustainability issues. There was a strong desire to grow and innovate in the many programs that Confederation had to offer. This desire for excellence was seen as outpacing the ability for the College to react and address this desire. Overall the stakeholders did have some concerns regarding macro-economic and demographic trends and constraints – which would apply pressure on certain key programs and services. These concerns did not affect program pride of ownership which was a significant driver of satisfaction. Confederation College had no shortage of opportunity. In developing the Campus Master Plan, the Consultants used this understanding to:

- **Develop:** A campus master plan to assist the College in planning future change on campus. The Campus Master Plan provides guidelines for making decisions about the built environment on campus, ranging from large-scale decisions (such as where to locate major new academic facilities and) to smaller-scale decisions (such as a coordinated branding strategy).



EARLY CONCEPT RENDERING FOR REACH FACILITY



PROPOSAL RENDERING FOR BIOMASS LEARNING AND RESEARCH CENTRE

- **Create:** A tool that assists the College in setting campus priorities. Facing undeniable academic and institutional needs but finite resources, what should be addressed first? The Campus Master Plan provides an objective snapshot of the campus facilities that map out anticipated projects for the next 10-20 years. In such a manner the Campus Master Plan becomes a mechanism for review and renewal - ensuring that future projects that are not anticipated in today's plan can still remain compatible with the long-term development of the College campus.
- **Define:** An approach that assists the College in targeting investment. Where can campus funds best be spent to produce the most significant results? Can comparable projects be consolidated to achieve the required net results at a lower cost? It also becomes a way to produce synergies among departments and programs. Facilities' needs can be leveraged to serve as catalysts for academic change and excellence.



3.0

OBSERVATIONS & ANALYSIS





Projected Enrolment for Confederation College

2009–10	3350 students
2010–11	3248 students
2011–12	3400 students
2012–13	3400 students

3.1 Background Issues

Through the process of meetings and interviews with College students, staff, administration, and community stakeholders, a number of key themes emerged relating to future planning and development at Confederation College. These were:

- The importance of Campus Grounds
- The importance of Innovation
- School/Program Location Strategy
- Growth Management
- The need for a Campus Development Strategy
- Negahneewin College
- Space Allocation and Utilization
- Branding Strategy
- Sustainability

Discussions with Stakeholders provided invaluable insights on each of these topics about both their present conditions and ongoing initiatives. This input is documented in the following section as part of the Observations and Analysis.

3.1.1 Growth Management

Stakeholders generally agreed that any future growth at the College should focus on maintaining a balance between its existing constituent parts and when experiencing growth in a localized area, it will be important to be conscious about how the growth affects all other parts of the College. For example, if a new academic addition is to be built, the College would need to have an understanding of associated implications including increased parking requirements, higher volumes of localized traffic, added pedestrian flow, site environmental effects, increased demand for student accommodations, less open/natural space, etc. The main points regarding growth management were:

- Most growth in the future will be incremental.
- Incremental growth can be accommodated through expansion of existing buildings (to accommodate growth within existing programs).
- Maintain program flexibility and adaptability.

3.1.2 Campus Grounds

The campus grounds have a tremendous impact on how staff and students experience the College. The treatment of the grounds can also have significant environmental impacts – both good and bad. Key concerns and opportunities relating to the campus grounds included:

- Maintain natural park-like quality of the campus.
- Grounds should be natural, but attractive.
- Include natural indigenous plants.

- Eliminate the “weeds” and replace with indigenous perennials.
- Grow low bush cedars, sweetgrass, and sage.
- Incorporate informative signage about growing plants.
- Provide solar lighting in parking area.

3.1.3 Innovation

Many of the stakeholders expressed their desire that the College continue to be innovative in both its programs and how the College campus is planned. Main points relating to innovation are:

- Comprehensive innovation in programs and classrooms, and targeted innovation on strategic initiatives like REACH.
- Innovation in the support of the College vision.
- Innovation in the classroom in terms of program delivery.
- Continually build and renew programs.
- Use cost-conscious means to employ innovation, where possible.
- Target select programs for innovation (eg. environmental and sustainability).
- Innovation with regards to the Aboriginal community and evoking positive change.

3.1.4 School/Program Location Strategy

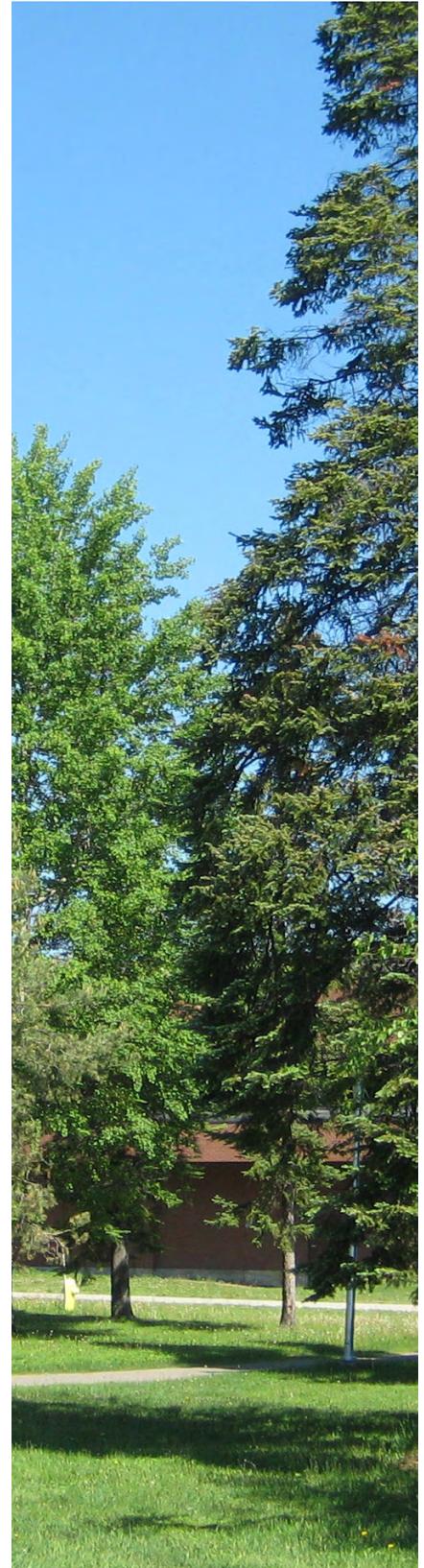
Though stakeholders generally thought that the existing placement of programs and buildings on the site was workable and serviceable, it was generally thought that there should be a comprehensive discussion of the pros and cons associated with location of programs, including:

- The REACH Facility should be located on the North side of academic wing.
- A campus plan should take advantage of the McIntyre River and the outdoors.
- New programs and facilities should be located to enhance interdisciplinary relationships between programs, and be located to provide shared amenities between programs.

3.1.5 Campus Development Strategy

In the stakeholder discussion about development strategies, a number of key questions were asked including:

- How does the College want to grow?
- What are the guiding principles and how does the College go about achieving them?
- How does the College Mission and Values get translated into a development strategy?





The main points that emerged were:

- Energy efficiency and savings is core to College goals.
- Indoor (and outdoor) air quality is very important.
- Enhancements to existing buildings should be considered.
- New buildings should be located so as to have a positive effect on existing buildings.
- Develop links between buildings to provide weather protection.
- Both campus and building planning should be supportive of aboriginal culture.

3.1.6 Negahneewin College

A couple of key points emerged in stakeholder discussions about Negahneewin College. They are:

- Protect College grounds.
- Support Aboriginal students.

3.1.7 Space Allocation and Utilization

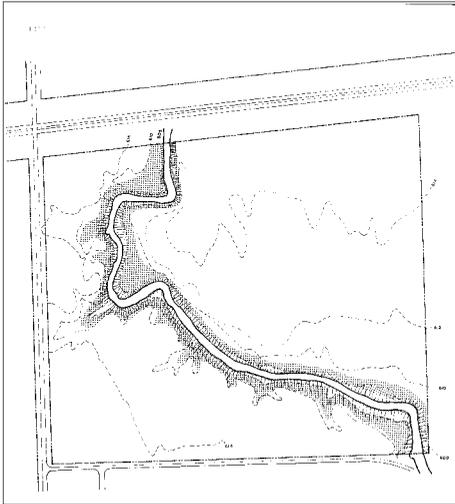
In stakeholder discussions regarding space allocation and space utilization, three key issues were raised:

- Expansion of student services
- Provision of child care services
- Student residence expansion and diversification

3.1.8 Branding Strategy

There was strong consensus among the stakeholders that there is a need for re-branding at Confederation College. This relates to how the College is perceived by the local community at a distance; how students, staff, and visitors perceive the College up-close and first-hand; and how the overall perception of the College aligns with the College Mission and Values. The main points relating to developing a branding strategy were:

- Improve perception of the College as a first choice for learning, not a second choice.
- Improve signage and wayfinding both in buildings and on the campus.
- Develop community feel – depart from an institutional feel.
- Construct a new icon for the College – the icon should be a source of pride and contribute towards a sense of place.
- Needs to be “true to the North”.



ORIGINAL BOUNDARIES ANALYSIS, 1966

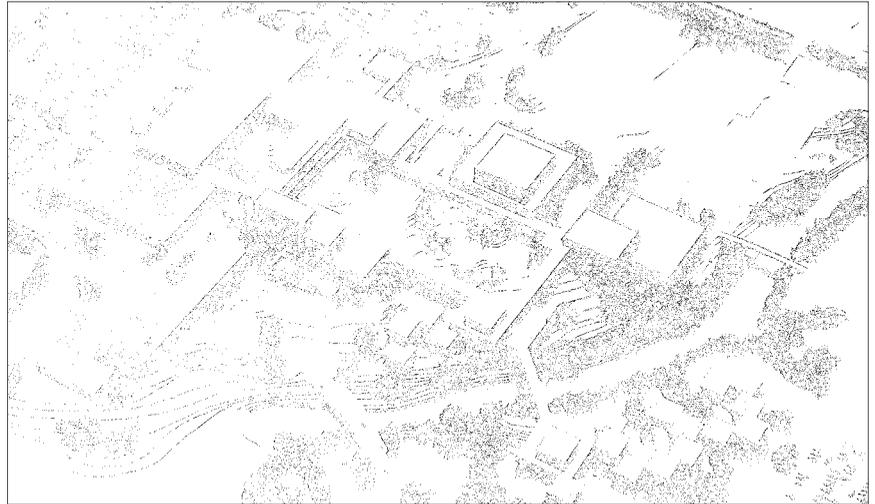
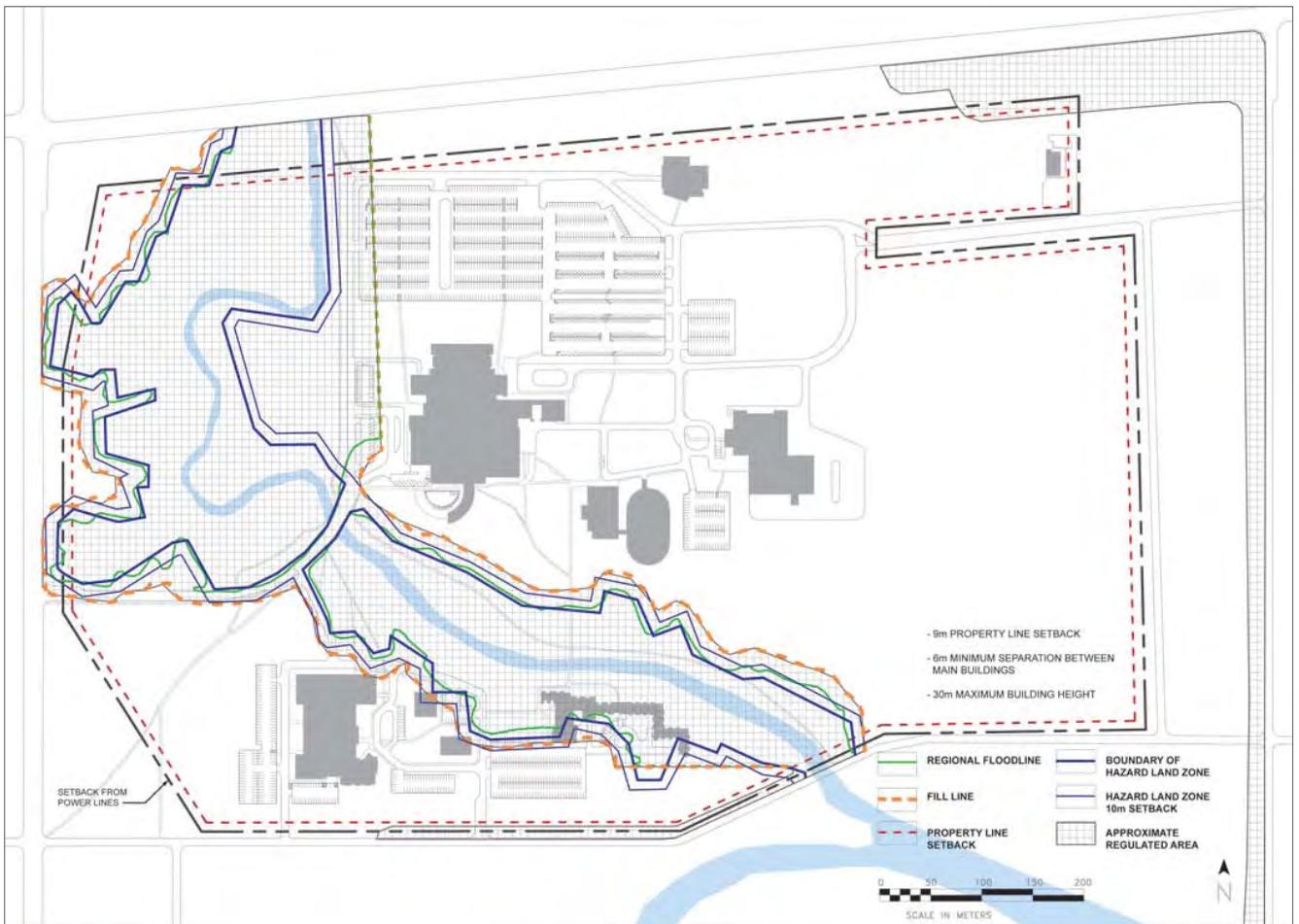


IMAGE OF BUILT FORM INITIALLY PROPOSED IN 1966



SITE ANALYSIS – BOUNDARIES AND ZONING



VIEW OF PEDESTRIAN PATH LINKING THE SHUNIAH BUILDING TO THE FITNESS CENTRE

3.1.9` Sustainability

The College has committed to being carbon neutral. We are reviewing our target and most likely will have a percentage of targets by specific dates over a longer period of time. Stakeholders generally agreed that the following key points were important:

- Achieve Carbon Neutrality.
- Be a leader among Ontario colleges.
- Aim to be a biomass generation leader in Ontario.
- Increase natural lighting.
- Create an environment where sustainability is prevalent, accessible, and pervasive.

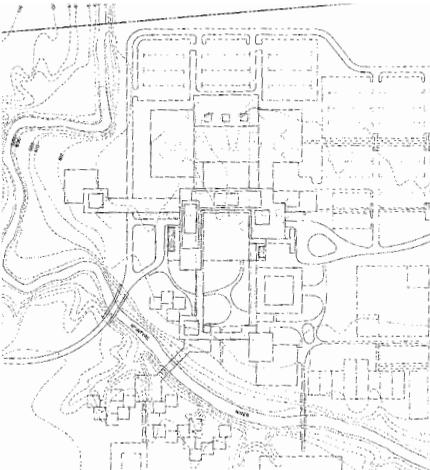
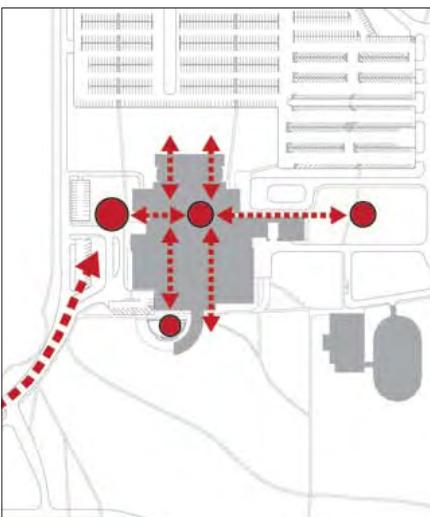


DIAGRAM SHOWING CIRCULATION IDEAS FROM THE 1966 MASTER PLAN



CURRENT DIAGRAM SHOWING MAJOR CIRCULATION AXIS OF THE SHUNIAH BUILDING THAT ARE CONSISTENT WITH IDEAS SET FORTH IN THE 1966 MP..

3.2 Campus Site Analysis

The existing campus site was analyzed to provide a physical understanding of the campus, and a basis for exploring master site plan options. This analysis included the locations of built form, boundaries and zoning, sun paths and prevailing winds, open space, major axia and nodes, circulation, and parking. The findings of this analysis are outlined in this section.

3.2.1 Built Form

The existing campus buildings consist of the Shuniah Building, the Dorion Building, the McIntyre Building, Sibley Hall Residence, the Fitness Centre, the Children and Family Centre, the Forestry Centre, and the Conmee Building. These buildings range from one to three storeys in building height. Materials mainly consist of a brown brick exterior cladding with strip windows in select locations.

The Shuniah Building, Dorion Building, and Fitness Centre are located on the north side of the McIntyre River. Sibley Hall Residence, the McIntyre Building, the Conmee Building, the Forestry Centre, and the Children and Family Centre are located to the south of the river. The physical distance between these two groups and McIntyre River creates a distinct physical barrier, with two pedestrian bridges linking the two sides.

Moving forward, considerations should be made as to whether the College should develop each side of the river independently, focus development primarily on one side or the other, or makes efforts to consolidate the two parts into a more unified campus.

Below are the current restrictions/limitations extracted from the Thunder Bay Municipal Zoning By-laws that pertain to future buildings at Confederation College.

Minimum Front Yard	9.0 m
Minimum Rear Yard	9.0 m
Minimum Exterior Side Yard	9.0 m
<i>Note: According to the Draft Zoning By-law created in 2009 that is yet to take effect, the minimum will become 6.0 m</i>	
Minimum Interior Side Yard	3.0 m
<i>Note: According to the Draft Zoning By-law created in 2009 that is yet to take effect, the minimum will become 6.0 m</i>	
Minimum Separation between Main Buildings	9.0 m
Maximum Building Height	30.0 m



VIEW OF THE FRONT ENTRANCE OF THE SHUNIAH BUILDING



VIEW OF THE POWERHOUSE THAT IS LINKED TO THE SHUNIAH BUILDING



EXTERIOR VIEW OF THE SHUNIAH BUILDING CAFETERIA



VIEW OF THE MAJOR AXIAL ROAD LINKING THE SHUNIAH AND DORION BUILDINGS



VIEW OF THE THE BACK ENTRANCE "DROP-OFF" AT THE SHUNIAH BUILDING



VIEW OF PUBLIC TRANSIT "DROP-OFF" AT THE MAIN ENTRANCE OF THE SHUNIAH BUILDING

3.2.2 Open Space and Natural Systems

Open Space

Confederation College features large areas of green space. To the east, most of the open space is forest.

The McIntyre River which runs diagonally through the site from the northwest to the southeast is a valuable natural feature. Aside from crossing over it when entering along Atikokan Drive, its visual presence on the campus is very limited. In the future, it would be possible for the river to become a more prominent feature, and it could be made more visible from a number of places on campus, or perhaps become programmed for outdoor activities. Pedestrian paths along the river could also be improved and expanded upon to accentuate the river's unique qualities. Initiatives like these have strong potential to engage the local community of Thunder Bay.

Sun Path

There is a large seasonal variance for the sun path at Confederation College. In summer, the solar azimuth is a maximum of 67.1 degrees and daylight lasts a maximum of approximately sixteen hours a day. In winter, the solar azimuth is 20.3 degrees at its smallest angle and daylight has a minimum span of approximately eight hours. Prevailing winds come from the southwest.

Throughout all seasons of the year, especially the winter, it is important to consider how to harness maximum energy from the sun to heat the buildings and to provide as much natural daylighting as possible. These objectives can be best met by orienting new buildings to face south with ample glazing along this face. For spaces unable to achieve direct southern exposure, the use of skylights to channel light is a potential alternate method of natural lighting.

According to the Draft Zoning By-law created in 2009 that is yet to take effect, there will be a new minimum landscaping requirement which is:

Landscaped Open Space being 15% of the lot area which includes: landscape open space in the form of a 6.0m wide strip along all lot lines abutting a Residential Zone and landscape open space in the form of a 3.0m wide strip along all lot lines abutting a street line.

3.2.3 Regional and Community Linkages

St. Joseph's Hospital Balmoral Centre is located at the northeast corner of the Confederation College campus off of Sibley Drive in a fairly isolated location from the rest of the campus. The Centre serves the Thunder Bay community providing services related to addiction and mental health.

The Thunder Bay Art Gallery is located northeast of the main parking lot on campus. It is Northwestern Ontario's largest public art gallery. It exhibits the work of contemporary First Nations artists and hosts travelling exhibitions from other art galleries and museums.

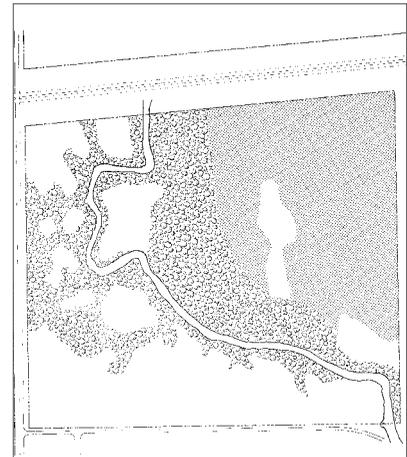
3.2.4 Streets

The campus streets are generally in good condition and show no immediate needs for repair. Asphalt road ways typically require resurfacing and localized maintenance or repairs on a fifteen to twenty year cycle. Based on the appearance of the streets and our local knowledge of the area, the main streets have not yet reached the end of this cycle. Localized repairs and maintenance can aid in prolonging the need for overall resurfacing.

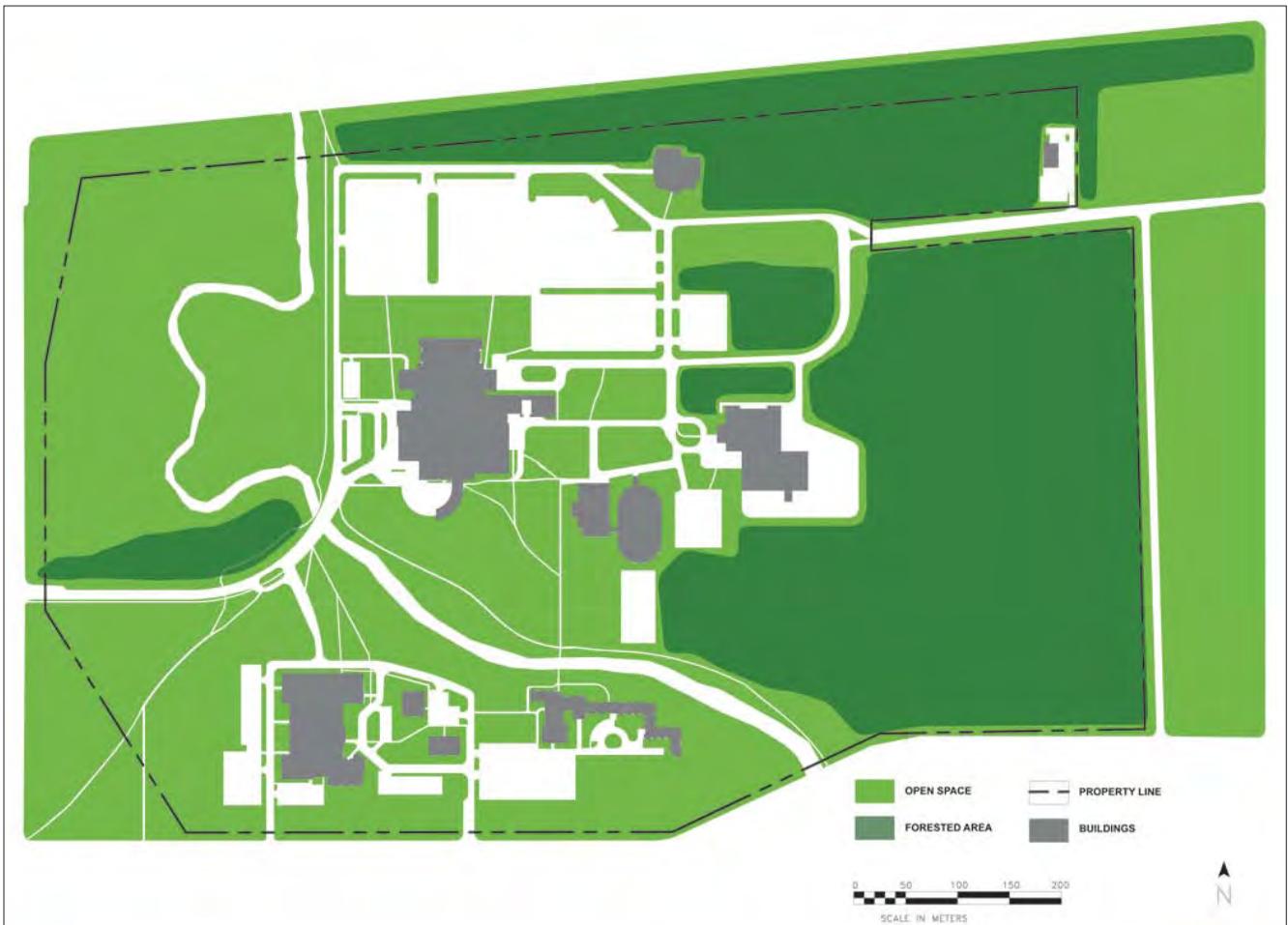
3.2.5 Vehicular Circulation

The College is accessible by two main entrances. The front entrance is located off of Golf Links Road on the west side of the campus. The service entrance is located at the east side of the site off of Sibley Drive. There are tertiary entrances along the south edge of the site coming off of William Street which provide access to the buildings south of the McIntyre River.

Vehicular circulation employs drop-off circles at the two main entrances of the Shuniah Building (both east and west) and at the front of all other main



ORIGINAL VEGETATION PLAN, 1966



SITE ANALYSIS - OPEN SPACE



FORESTED AREA ON THE NORTH SIDE OF THE SHUNIAH BUILDING

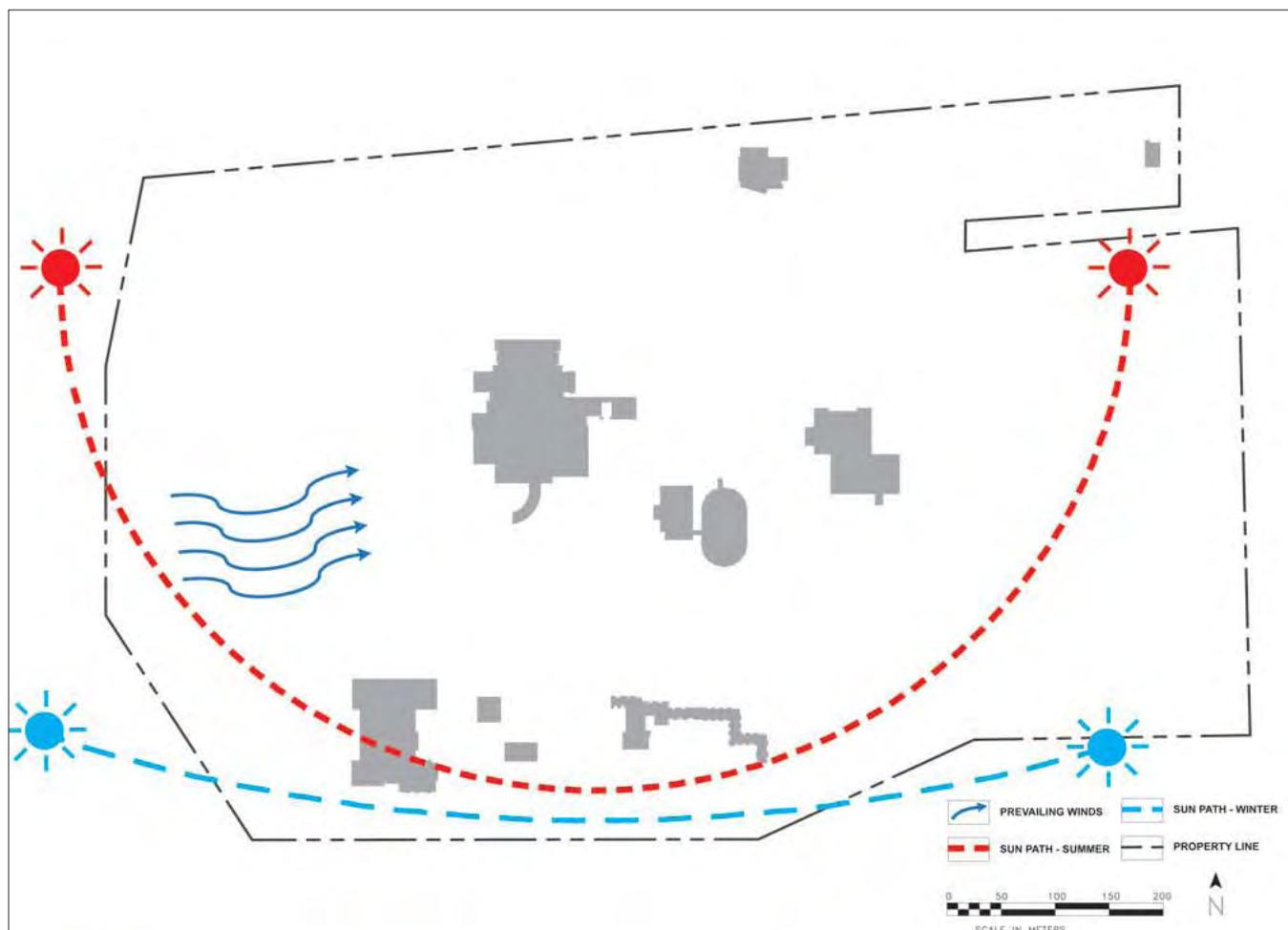
buildings on campus. Circulation connects to the bulk of the parking at the north side of the Shuniah Building. Service circulation for the Shuniah Building, Dorion Building, and Fitness Centre is contained within a shared central service courtyard. Service for the McIntye Building and Sibley Residences is provided off of Nipigon Road.

The front entrance on the west side of the Shuniah Building and the back entrance on the east side are considered equivalent entrances. This tends to be a source of confusion for multiple users and needs to be addressed.

For first-time visitors to the campus, there is a general lack of clarity for vehicular circulation. There is a need for the development of clear signage and wayfinding strategies so that these individuals can navigate to and from their desired location on campus with ease.

3.2.6 Public Transit

Currently, the College is serviced directly by three public transit routes. The Crosstown route travels back-and-forth between the Water Street Terminal and



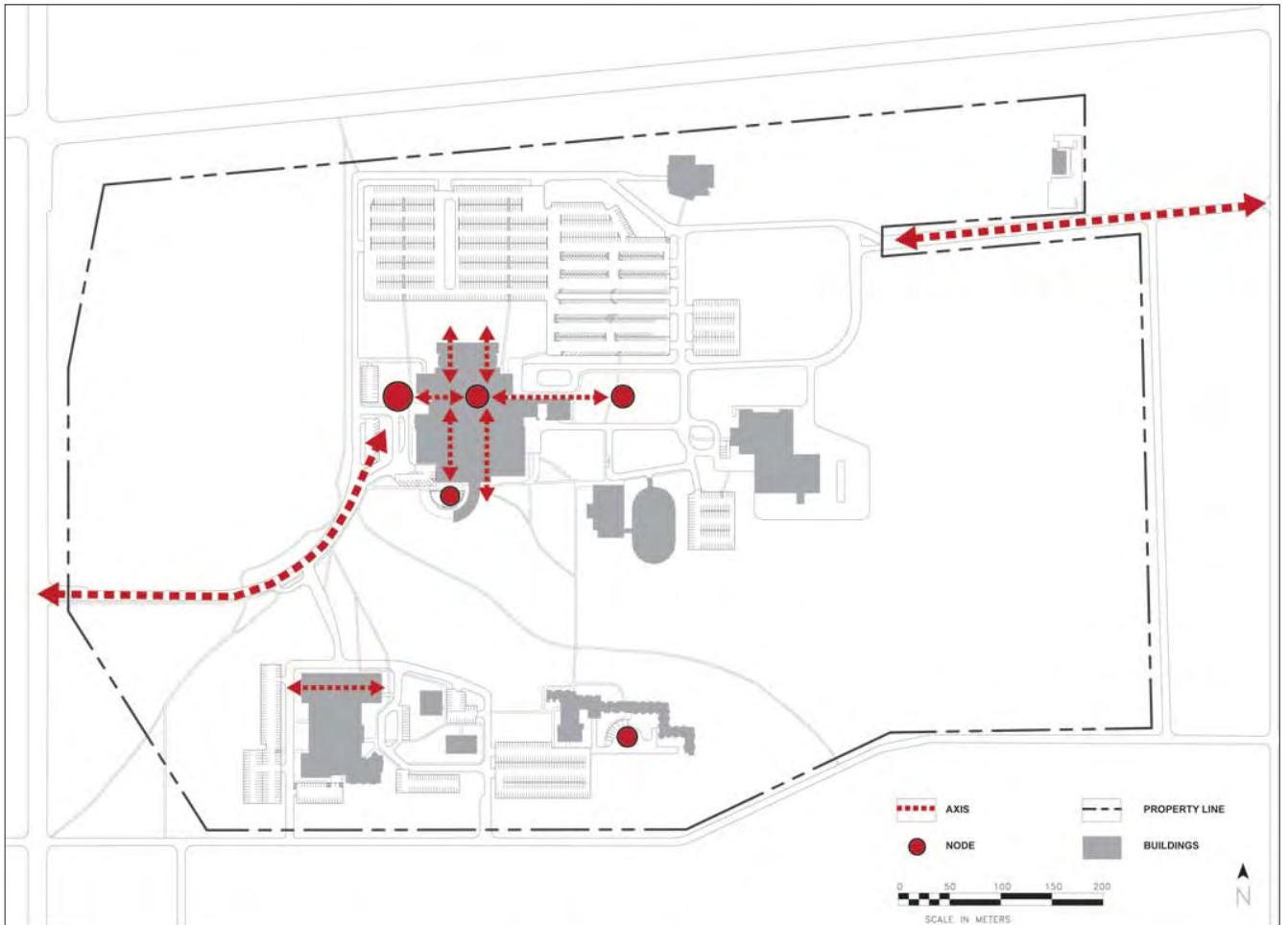
SITE ANALYSIS – PREVAILING WINDS & SUN PATHS



ORIGINAL AXIS PLAN, 1966



VIEW OF THE SHUNIAH BUILDING MAIN ENTRANCE



SITE ANALYSIS – MAJOR AXIS AND NODES

the Brodie Street Terminal with a highest frequency of every 15 minutes during peak times and a low frequency of every 40 minutes at non-peak times. The bus route circles at the Shuniah Building Front Entrance and passes in front of the McIntyre Building. Service begins at 6:15 AM and ends at 12:25 AM daily, except Sundays when the hours are between 8:55 AM to 11:05 PM.

The Northwood route begins at the Brodie Street Terminal and commutes to Confederation College in twenty minutes then returns to the Brodie Street Terminal along the same route. Its frequency ranges from every thirty to every forty minutes. Service is provided from 6:35 AM to 12:00 AM regularly and 8:40 AM to 10:40 PM on Sundays.

The James bus route circulates between the Brodie Street Terminal and the Intercity Mall passing through Confederation College each way. Frequency of service is every thirty to forty minutes. Service is provided between 6:40 AM and 12:00 AM from Monday to Saturday and 8:40 AM to 10:40 PM on Sundays.

The catchment for the current bus routes is limited to the Thunder Bay downtown core and only specific parts of it. Using a transfer from other bus route, most of the downtown area can access the campus via bus, though due to extended travel times, commuting by bus is not a desirable method of transportation for most staff and students.

3.2.7 Bicycle Routes

There are no designated cycling pathways on campus. Currently, bicycle routes are either shared vehicular circulation routes or city recreational trails. Limited bicycle storage is available on campus. The development of bicycle-only pathways and additional city recreational trails in the future could promote sustainability, outdoor physical activity, and further engage the surrounding community.

3.2.8 Pedestrian Circulation

Walkways at Confederation College are asphalt, concrete pavers, and gravel in different areas. There are no major issues with their current condition.

The outdoor circulation routes mainly provide pedestrian access to the campus, connect parking lots to campus buildings, and provide circulation between campus buildings.

The internal circulation of the main buildings is organized in a way that permits future additions to link directly onto existing circulation. This is one aspect of the original campus master plan that has been maintained to date and will be an important factor in determining optimal locations for future building additions.

A recreational pedestrian path presently runs along the north bank of the McIntyre River, on the west side of Nakina Drive, and from Nakina Drive to the corner of William Street and Golf Links Road. The path has potential to grow and expand in ways that would address initiatives for the college to engage better with the outdoors.



VIEW OF PEDESTRIAN PATH WITH LIGHTING FOR SAFE PASSAGE AT NIGHTTIME



PEDESTRIAN PATHS LINED WITH ADEQUATE SAFETY LIGHTING



REAR "DROP-OFF" AT SHUNIAH BUILDING

3.2.9 Parking

Confederation College has 1642 parking stalls, 31 of them which are barrier-free. The current cost of parking is \$3.75 per day, \$85-\$95 for a four month pass, or \$160-\$185 for a twelve month pass.

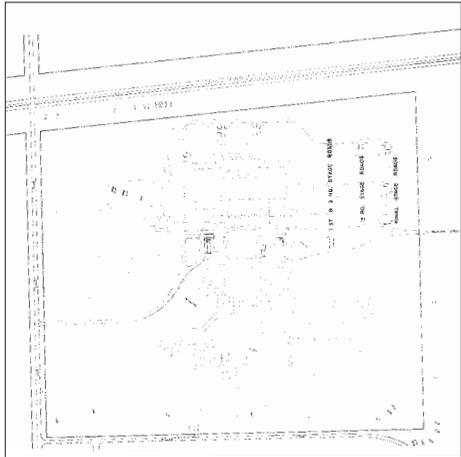
Due to staff and students commuting to the College from great distances, driving is the only viable method of transportation for most students. The campus parking permits draw considerable income for the College. These are the two key points of contention against the College achieving more environmentally-friendly transportation methods for its users. Future planning and development at the college should address this issue.

In accordance with Municipal Zoning By-laws:

- a) Every lot shall have one or more unobstructed driveways not exceeding 9.0 metres in width, provided that no lot shall have more than two (2) driveways for the first 30.0 metres of street line thereof plus one (1) driveway for each additional 30.0 metres of street line.
- b) The width of a driveway leading to any parking area shall be a minimum width of not less than 3.0 metres for one-way traffic, and a minimum width of 6.0 metres for two-way traffic except in the case of a driveway for a double duplex dwelling, in which case the minimum width of a driveway leading to any parking area shall be a minimum width of not less than 3.0 metres for one-way or two-way traffic.
- c) Except for a cottage dwelling, a duplex dwelling, a mobile home double wide or single wide, a residential care unit Type I or Type II dwelling, a semi-detached dwelling, a single detached dwelling, and a street townhouse, where a parking area is required to contain three or more parking spaces, such parking areas shall have unobstructed access to an aisle leading to a driveway.
- d) Aisles leading to parking spaces and providing unobstructed access from each parking space to a driveway or street shall be established on the following basis:

Angle of Parking	Min. Aisle Width
(i) up to and including 45 degrees	4.6 metres
(ii) over 45 degrees up to and including 70 degrees	5.2 metres
(iii) over 70 degrees up to and including 80 degrees	6.1 metres
(iv) over 80 degrees up to and including 90 degrees	6.7 metres

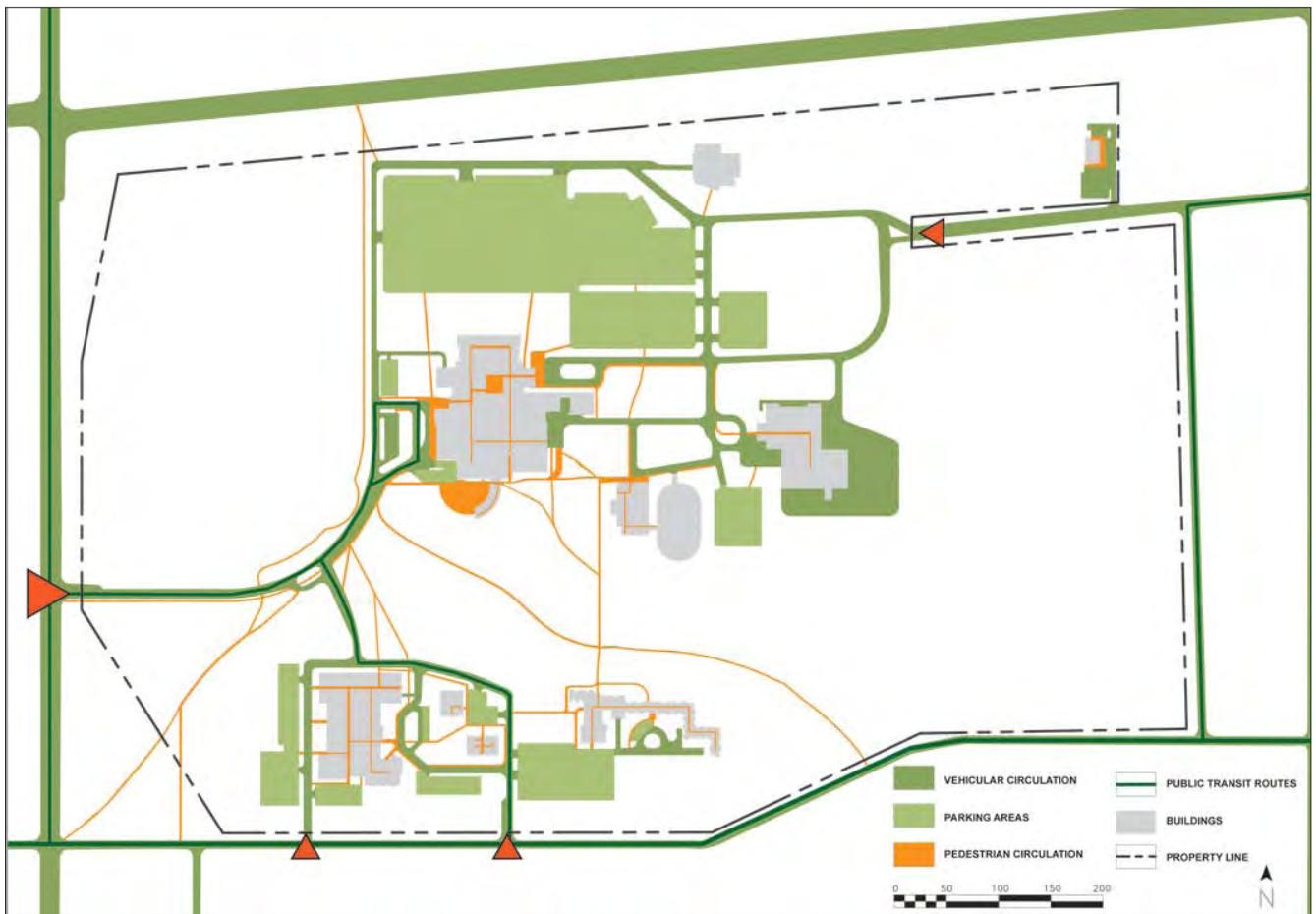
- e) Any lights used for the illumination of the parking facilities shall be so arranged as to divert light away from the adjacent lots.



ORIGINAL VEHICULAR CIRCULATION PLAN, 1966



PEDESTRIAN PATHWAY FROM PARKING TO SHUNIAH FRONT ENTRANCE



SITE ANALYSIS – CIRCULATION



Addition to Existing Use

Where a building or structure or use has insufficient parking spaces, and insufficient lot area to provide sufficient parking spaces on the effective date of this By-law, this By-law shall not be interpreted to require that the deficiency be made up prior to the construction of any addition or a change of use, provided however, that any additional parking spaces required by this Bylaw for such addition or change of use are provided in accordance with all regulations hereof respecting parking spaces and parking areas.

Calculation of Spaces

- a) If the calculation of the required parking spaces results in a fraction, the required parking spaces shall be the next higher whole number;
- b) Where a building or structure or lot accommodates more than one use, the total parking space requirement for such building, structure or lot shall be the sum of the requirements for each separate use except that in the case of a shopping centre or an industrial centre, the parking space requirement for a shopping centre or industrial centre shall apply regardless of the uses within the centre;
- c) Parking spaces required in accordance with this By-law shall not include any parking spaces used or intended to be used for the storage or parking of vehicles for hire or gain, display, or sale;
- d) Where seating is provided in the form of fixed benches or pews, then 0.6 metres of each such bench or pew shall be considered as equalling one seat.

Dimensions of Parking Spaces

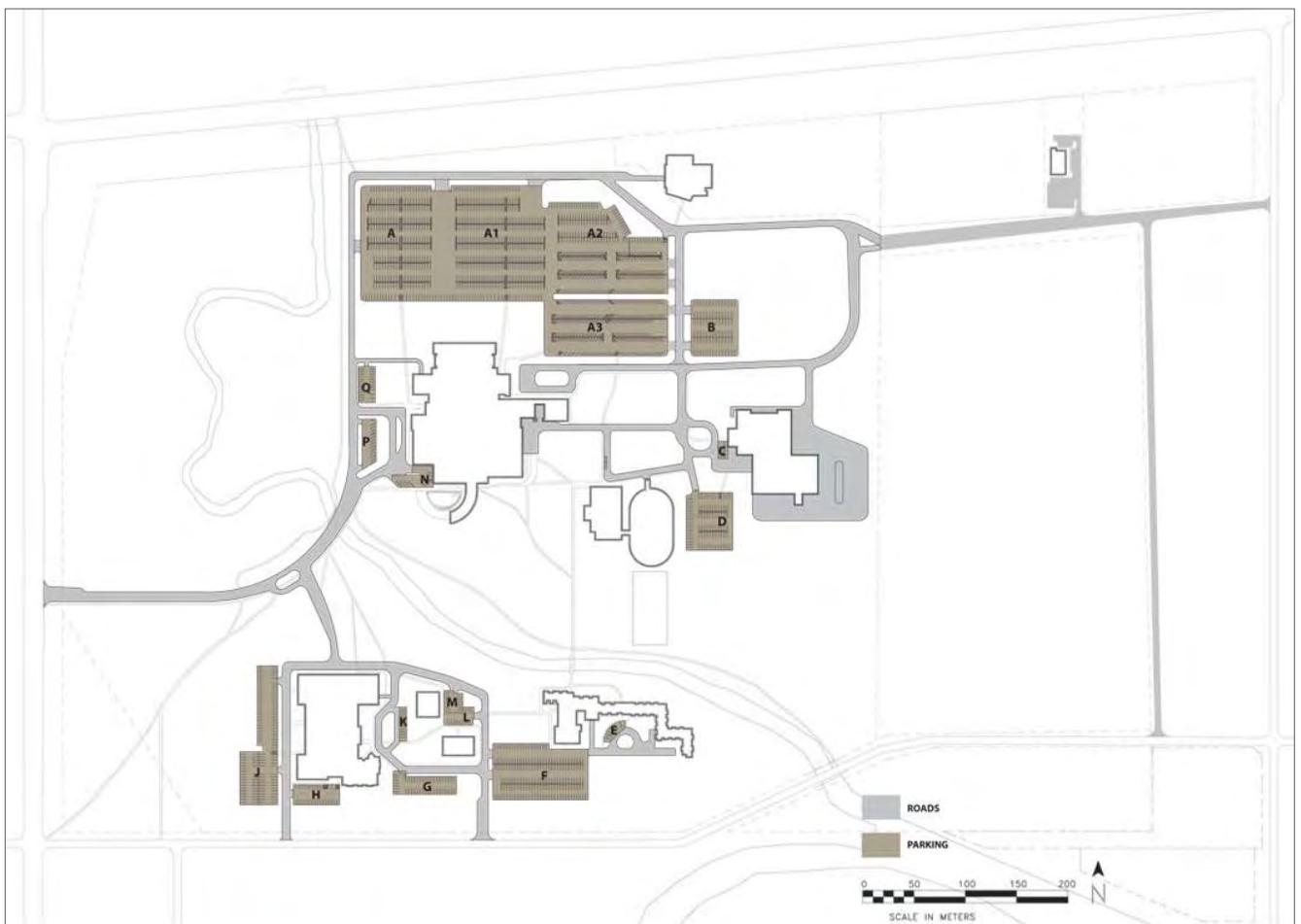
A parking space required hereby shall have minimum rectangular dimensions of 2.8 metres by 6.0 metres, except that:

- a) notwithstanding any other regulation hereof to the contrary, the minimum width of a parking space accessory to a single or semi-detached dwelling shall be 2.4 metres;
- b) where the principal access to a parking space is provided on the longest dimension of such parking space, the minimum dimensions of the said parking space shall be 2.4 metres by 6.7 metres;
- c) where the side of a parking space abuts a wall, a column, a pillar, a fence, a pole, or other obstruction or part thereof, the minimum width of the said parking space shall be 3.0 metres;
- d) where the length of a parking space abuts an area of landscaped open space or a pedestrian walkway greater than 1.0 metres in width, the minimum width of the said parking space shall be 2.4 metres.

Parking Spaces Required

Educational Institution parking – 1.25 spaces for every classroom plus an additional three spaces for every classroom in a secondary school, college or university.

PARKING AREA	TOTAL PARKING SPACES	BARRIER-FREE PARKING SPACES
A	249	4
A1	337	4
A2	268	0
B	82	0
C	5	1
D	82	2
E	7	3
F	176	1
G	44	1
H	30	2
J	122	0
K	12	1
L	14	1
M	15	0
N	10	2
P	13	1
Q	26	3
TOTAL	1682	31



SITE ANALYSIS – PARKING



According to the Draft Zoning By-law created in 2009 that is yet to take effect, the required number of classroom parking for a post secondary educational institution changes to 5 spaces for every classroom, laboratory room or any room used for class instruction.

Student Residence parking – 1.5 spaces per unit

3.2.10 Loading

In accordance with Thunder Bay Municipal Zoning By-laws, where a loading space is required, the following requirements and restrictions apply:

Size of Loading Spaces

- a) A loading space shall be a rectangular area measuring not less than 3.66 metres in width and 9.0 metres in length.
- b) Each loading space shall have a minimum vertical clearance of 4.3 metres.

Location

- a) No loading space shall be provided within the required front yard or within the required exterior side yard of the lot.
- b) No loading space shall be upon or partly upon any street allowance or lane.
- c) No loading space shall occupy any required parking space.

Access

- a) Each loading space shall have an unobstructed ingress and egress of not less than 6.0 metres in width to and from a street or lane.
- b) Each loading space shall be accessible from a street or lane by means of driveways, aisle manoeuvring, or similar areas, no part of which shall be used for the parking or temporary storage of motor vehicles.

Number of Loading Spaces Required Use	Min. Number of Loading Spaces
Educational Building	
less than 500 square metres of GFA	zero spaces
500-2,500 square metres of GFA	one space
2,500 to 10,000 square metres of GFA	two spaces
10,000+ square metres of GFA	two spaces + one additional space for every 10,000 square metres of GFA of part thereof
Student Residence	one space

3.3 Sustainability Considerations

The core goal of the College relating to sustainability is to be carbon neutral which refers to achieving a “net-zero” carbon footprint. A net-zero campus is a campus with zero net energy consumption or zero carbon emissions annually. A net-zero campus must be made up of net-zero buildings. Zero energy buildings produce excess electricity during the summer months that is exported to the municipal electricity grid. During the winter months when photo-voltaic systems are less efficient, net zero buildings typically use energy from the local power utility. The power produced over the entire year must meet or exceed the building power requirements in order for the building to be considered net zero. This design principle is gaining considerable interest as renewable energy is a means to cut greenhouse gas emissions. An effective approach to achieving net-zero is outlined below.

1. Define the Location

- Building features can vary significantly between buildings in different climate zones. A Vancouver Code compliant building has 26% lower emissions than a Toronto Code compliant building.
- Choose the building orientation to maximize solar gains. Prevailing winds, and both current and potential future surrounding buildings should be considered.
- Local incentives can change project economics significantly. (82.2¢ for PV in Ontario).
- Staff and student culture is important. A positive occupant attitude and their participation is important in reducing plug, lighting and HVAC loads to meet the net zero objective.

2. Design to Optimize Building Envelope and Structure

- Optimizing the building envelope to balance marketing needs, economics and the net zero goal is the real net zero challenge.
- High thermal mass structures are typical to assist in regulating interior temperatures.
- Insulation levels must be increased significantly in most climates.
- Multiple daylighting strategies should be considered to lower electricity consumption – windows, skylights, borrowed light conditions.

3. Design to Optimize the HVAC System

- Decouple heating and cooling from ventilation through the use of radiant floors, ceilings or panels.
- Consider natural ventilation to lower ventilation energy consumption.
- Recover heat from exhaust air and waste water.
- Consider solar thermal air and water systems. The economics are typically better than the other renewable energy technologies.
- Generally, the most efficient HVAC equipment should be used for any equipment that has significant use.



FIGURE 1



FIGURE 2



FIGURE 3

- Combined heat and power systems can boost energy efficiency and provide additional emergency power generation.

4. Design for Renewable Energy System to become Net Zero

- Once energy efficiency has been maximized, a renewable energy system must be designed to meet the net zero objective.
- Solar cells are the most typical solution; however, wind turbines could be more economically viable in the right location.
- To cope with fluctuations in demand, zero energy buildings are generally connected to the electricity grid, exporting electricity to the grid when there is a surplus, and drawing electricity when not enough electricity is being produced.

5. Pay Attention to the Details

- A high efficiency lighting design can provide the necessary night time lighting with advanced occupancy and daylighting sensors to maximize efficiency when daylight is adequate.
- Water heating loads can be lowered using water conservation fixtures.
- Efficient appliances are necessary to minimize standby power consumption.
- Exterior landscaping can provide seasonal shading.

6. Consider other Sustainability Opportunities

- Although net zero specifically refers to energy, it is generally considered appropriate to showcase sustainable site, water efficiency and appropriate material selection.

3.4 Building Systems Assessment

3.4.1 Mechanical Systems

The site review of the mechanical systems at Confederation College included brief review of existing drawings and cursory visual review of the mechanical systems in the buildings. The college was originally designed to have a central heating cooling plant as indicated in 2.10.5. This concept has changed over the years to a more de-centralized concept. The plant has been downsized on the cooling side to roughly half the original installed capacity and now serves only the Shuniah building. There are a variety of different HVAC system types on the campus varying from rooftop gas or electric heat with or without DX cooling to indoor built-up units with water heating and cooling coils. These systems are generally well maintained but in several cases are now nearing the end of their useful lifespan. The College partnered with Honeywell implementing an energy retrofit upgrade program over the past few years. Honeywell remains the site wide BMS/controls contractor. Sprinkler fire protection is limited to a few buildings. Plumbing piping and fixtures are generally in good shape and DHW's are being replaced as they fail. The mechanical systems in the west side of Sibley Hall (Residences) is nearing the end of useful life and should be considered as part of overall upgrade of that space in the near future.

3.4.1.1 Site Services

The information following represents review of existing site services “As Built” drawings dated Jan/Feb 2007. Condition of individual piping below ground was not reviewed.

Water

The campus north of the McIntyre River is supplied by a 12” water main entering the northeast corner of the site off Sibley Drive. This water main is metered centrally as it enters the site. A second 6” water main supplies the buildings south of the McIntyre River off William Street. These buildings are separately metered. The condition of the pipes was not reviewed but it was reported that replacement of some waterlines with PVC is scheduled/taking place.

Sanitary

The 10” sanitary line for the campus buildings north of the McIntyre River leaves the site east on Sibley Drive. The 8” line from McIntyre, Connee and Forestry leaves the site southward to William Street. The 10” from Sibley Hall leaves southward to William Street.

The following are the pipe sizes indicated for each building:

- Shuniah : 1@ 8” and 2@ 6”
- Neebing : 1@ 4”, 1@ 6”
- Dorion : 1@ 6”, 1@ 8”
- Sibley : 1@ 6”, 1@ 8”
- Forestry : 1@ 4”
- Connee : 1@ 4”
- McIntyre : 1@ 6”, 1@ 8”

Storm

The campus has a system of catch basins and underground piping that directs storm water run-off down into the McIntyre River. The buildings north of the river have storm water connections to the underground mains. The buildings south of the river splash water to grade where it is directed to swales with outfalls into the river.

Natural Gas

Natural gas service to the College is provided by Union Gas. A 2” 50 psig line enters the site from the west off Golf Links Road. Another service enters the site from the south off Williams Street. There are separate natural gas meters regulators and relief vents installed on the property. Based on this information, it is reasonable to expect that there is sufficient natural gas capacity to accommodate future growth on site.

Diesel Storage Tanks

There are above-ground diesel fuel oil storage tanks located on Campus. The diesel fuel oil storage tanks are typically used for the diesel generators.



FIGURE 4



FIGURE 5



FIGURE 6



FIGURE 7



FIGURE 8



FIGURE 9



FIGURE 10

3.4.1.2 Plumbing

The plumbing systems observed during the cursory site review were generally in good condition.

Domestic Cold Water

The domestic cold water is connected to the various buildings as indicated under site services.

- Cold water plumbing is connected to:
- Plumbing fixtures
- Domestic hot water heaters
- Fire standpipe
- Fire sprinkler system
- Service connections

The domestic cold water piping was not reviewed due to the concealed nature of the piping. No significant issues were observed or reported at the time of the site visit.

Domestic Hot Water

Domestic hot water heating systems located on Campus were a mixture of natural gas fired DHW heaters and electric DHW heaters. In some cases like the Shuniah and Neebing there was a combination of natural gas fired DHW and glass lines storage tanks. All systems were fully operational. Some of the heaters are aged and will require replacement in the future.

Refer to Figures 1 to 3 on previous page.

Sanitary

Most of the sanitary piping is concealed and was not reviewed in detail. No significant issues were observed or reported at the time of the site visit.

Storm

Buildings north of the river have roof drains piped to underground piping. Buildings south of the river splash water to grade. No major problems observed.

Natural Gas

Natural gas is provided to the site by Union Gas. This utility is connected to a number of gas meters and shutoff locations. No issues with capacity or pressures was observed or noted at the time of the site visit. Typical meter set is indicated in Figure 4.

Plumbing Fixtures

The plumbing fixtures are generally in fair to good condition with few problems identified during the site visit.

3.4.1.3 Fire Protection

Fire protection on the campus consists of a combination of sprinkler and standpipe systems. The Shuniah and Dorian are sprinklered (partially). Typical sprinkler tree assembly indicated in Figures 5 and 6 on the previous page.

Fire extinguishers were located in cabinets in hallways throughout the campus. In the mechanical rooms, fire extinguishers were found to be mounted on the walls near the doors. In general, the fire extinguishers appear to be in good condition and inspection tags reveal that they have been inspected on a regular basis, as required by law.

3.4.1.4 HVAC

A variety of heating, ventilation, and air-conditioning systems have been provided for the different buildings on site.

Heating

The campus was originally designed to be supplied heating in a central plant configuration with a main plant located adjacent to the Shuniah building. Over time the heating concept evolved to a de-centralized configuration with separate heating provided in the individual buildings on site and with the original plant serving only the Shuniah building.

- Shuniah Building: Three (3) natural gas fired hot water heating boilers 6000 mbh capacity are provided. They are approximately 20 years old should be replaced within the next 5 to 10 years. Refer to figure 8 below.
- Neebing Building (Fitness Centre): Natural gas fired hot water heating boilers provided, 4modules.
- Dorion Building: Most of the building is gas fired heating either through RTU's or through unit heaters. One small hot water boiler supplies the area near the entrance.
- Sibley Hall (Residences): Heating in the west side is electric baseboard. Heating in the east side is hot water baseboard radiation fin and cabinet.
- Forestry Centre: Heating is electric baseboard.
- Conmee Building: Heating is electric baseboard.
- McIntyre Building: Heating is electric baseboard.

It was indicated during the site visit that a new boiler is scheduled to be added to the existing central plan (refer to Figure 7). This boiler is intended to be fired on wood chips and would be part of the overall increased sustainability of the campus.

Cooling

The campus was originally designed to be supplied chilled water in a central plant configuration similar to the heating systems. Two (2) electric water chillers were planned with total capacity of some 1800 tons. A single 900 ton R-11 centrifugal machine was installed originally. This unit was twice the capacity needed at that time and was replaced with a new smaller chiller a few years ago. New chiller uses R-134a and complies with new legislation with respect to refrigerants (refer to Figure 10 at left).

Most of the other buildings other than the Shuniah Building utilize DX (direct expansion) cooling in the ventilation air handling units.



FIGURE 11



FIGURE 12



FIGURE 13

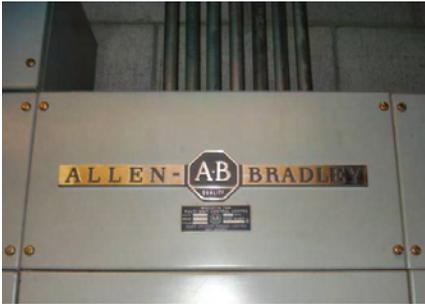


FIGURE 14



FIGURE 15



FIGURE 16



FIGURE 17

Air Handling Systems

There are a variety of air handling systems used throughout the various buildings on campus.

- Shuniah Building: A number of indoor built-up air systems are provided. These units have chilled water coils, glycol heating coils and axial supply and return fans. At the time of the site review protective guards were being installed on the inlets of the axial fans.
- Neebing Building: Six (6) new RTU's gas fired DX type have been added. The dome is provided with one (1) gas fired unit.
- Dorion Building: This building is provided with a variety of units. Some of the shops are gas fired preheat and others are glycol. Some classrooms are glycol preheat and DX cooling, 2nd floor is glycol preheat and electric reheat. A VAV type RTU with DX cooling has been added recently. The welding shop has a new recirculation type exhaust unit provided, now in full operation.
- Sibley Hall: Three RTU's are provided on the west side. Common space unit has DX cooling. Three RTU's are provided on the east side, gas fired no cooling.
- Forestry Centre: One RTU with electric pre-heat and DX cooling is provided.
- Conmee Building: Two indoor air handlers are provided each with electric pre-heat.
- McIntyre Building: Five RTU's are provided each with glycol pre-heat coils. An additional gas fired DX unit is being added.

Generally the air systems are in reasonable condition but are showing their age. The wide variety of system type will continue to be a maintenance challenge as time passes. Typical rooftop equipment shown in Figure 11 at left.

3.4.1.5 Controls and Automation System

The campus has a Honeywell building automation system (BAS) that covers much of the site. The system has evolved over time and consists of a number of different types Excel , Delta. The upgrades over time have not always been transparent. A combination of basic electric and pneumatic controls also exists throughout much of the Shuniah building.

3.4.2 Electrical Systems

The electrical systems are generally very well maintained but showing signs of age. The main buried feeds will require replacement in the near future due to corrosion. Some of this work has started already. Most of the switchgear is old and now problematic getting replacement parts.

Much of the parking lot lighting requires replacement. The light poles are leaning and the underground cabling between the poles is compromised. The energy upgrades with Honeywell over the past few years has upgraded the lighting in most of the buildings.

3.4.2.1 Electrical Power

Campus is supplied three-phase power by Thunder Bay Hydro at 25 kV. The main feed comes down Harbour Expressway, runs south across the parking lot then into the transformer location adjacent to the Shuniah Building. Two transformers are provided. From this location one feed is supplied to the Dorion Building and one feed is provided to Sibley Hall and McIntyre Building. The campus has limited diesel fired generators that handle only basic life safety systems.

3.4.2.2 Voice & Data Communications

Limited time was spent observing the communications systems for the main campus. No major issues were reported at the time.

3.4.2.3 Fire Alarm System

Every building has fire alarm system. Systems are addressable in Shuniah, Dorion, Neebling, McIntyre, and both sides of Sibley Hall. Signal via radio goes to the Security station and to main annunciator station.

3.4.2.4 Lighting Systems

Lighting consists of a combination of incandescent and fluorescent. Recent energy upgrades have changed to more efficient fixtures. No significant problems observed during the site visit. The parking lot light poles are settling and most are leaning thereby compromising the underground cables feeding them. Refer to Figures 21, 22 and 23. Upgrade will be necessary in the near future.

3.4.2.5 Maintenance

The main electrical equipment should have an infrared (IR) inspection performed on an annual basis. To facilitate this work and reduce the long-term cost of maintenance, the installation of infrared viewing ports should be considered to allow the scanning to be done without the use of high level personal protective equipment. The good maintenance to date has extended much of the electrical equipment well beyond it's normal life span.



FIGURE 18



FIGURE 19



FIGURE 20



FIGURE 22



FIGURE 23



FIGURE 21

4.0

CONCEPT DEVELOPMENT





STEERING COMMITTEE EVALUATION OF CONFEDERATION COLLEGE'S PLANNING PRINCIPLES

4.1 Planning Principles

The Confederation College Steering Committee, in conjunction with Stakeholders' input, generated a number of principles, to guide the future development of the Campus Master Plan. Each principle was determined to be either a Primary Principle, a Secondary Principle, or a Tertiary Principle. These principles are listed below.

Primary Principles

- Learning Environments that are Central to the Heart of the Campus and Buildings – High Quality Spaces and Environments
- Attraction and Retention of Students & Staff
- Carbon Neutrality, Sustainable and Environmental Sensitivity – Cost Efficient and Energy Efficient Operations

Secondary Principles

- Celebration of Northern Spirit and Heritage – Unity with Nature
- Provide for Adaptability and Flexibility
- Integrated and Collaborative Learning Environments
- Technology Driven
- Connect and Be Open to the Community

Tertiary Principles

- Clarity of Image
- Clear Orientation on Campus / Way-Finding
- Safety and Security
- Expression of Inclusivity
- Student and Staff Wellness
- Barrier-Free Accessibility
- Create a Gateway and Sense of Arrival
- Accountability
- Provide Direct Linkages Between Buildings
- Provide for Adaptation from Rural Life to College Campus Life

4.2 Primary Planning Principles

4.2.1 Learning Environments Central to the Heart of the Campus and Buildings – High Quality Spaces and Environments

Future planning and development of the campus should focus on the creation of high quality space and learning environments. Learning environments include classrooms, laboratory spaces, libraries, computer commons, and informal indoor and outdoor study spaces. Contributing factors towards high quality spaces include:

- Access to daylight
- Acoustical performance
- Air quality
- Equipment
- Furniture selection and layout
- Proportions of space
- Room scale
- Sight lines
- Surfaces and finishes

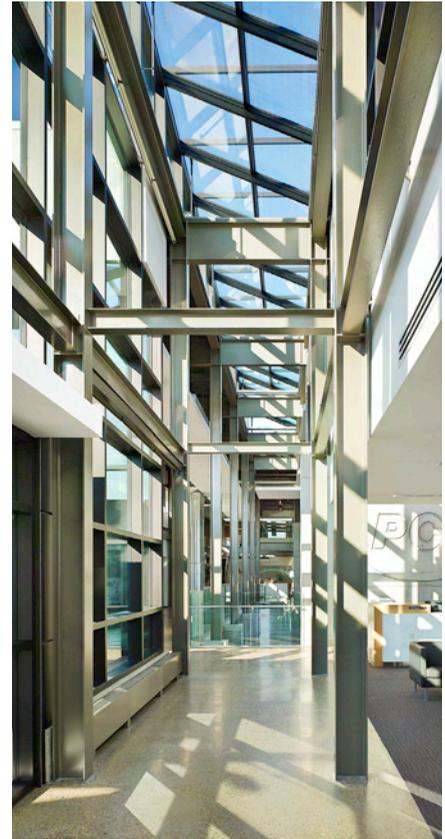
4.2.2 Attraction and Retention of Students and Staff

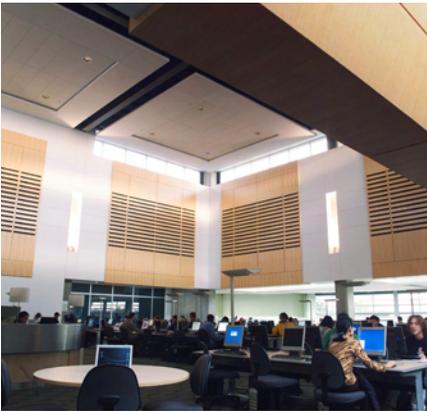
Future planning and development of the campus should create an environment that is attractive to students and that will assist in recruitment and retention. This planning principle requires analysis of the college environment to determine what the contributing factors and limiting factors are towards staff and student retention. In future, the college should seek to optimize the contributing factors while reducing or eliminating the limiting ones. Contributing factors include:

- Ability to meet individual needs
- Affordability
- Living accommodations
- Program and course offerings
- Sense of accomplishment
- Sense of community
- Sense of pride

4.2.3 Carbon Neutrality, Sustainable and Environmental Sensitivity – Cost Efficient and Energy Efficient Operations

Future planning and development of the campus should address Confederation College's desire to create cost and energy efficient buildings and sustainable environments and to be an example in the community in terms of minimizing environmental impacts. The College should employ initiatives to reduce





its carbon footprint and look into possibilities of creating carbon offsets. Sustainable strategies should be used in the design of new buildings. Materials and components going into new construction should be considered from a life-cycle perspective. It would be beneficial if renovation work could be done on existing buildings to improve upon their overall performance. Contributing factors towards environmental sustainability include:

- Building envelop performance
- Use of renewable energy resources
- Recycling
- Energy efficient transportation
- Protection of environmentally sensitive areas

4.3 Secondary Planning Principles

4.3.1 Celebration of Northern Spirit and Heritage, Unity with Nature

Future planning and development of the campus should be true to its northern heritage by celebrating the community heritage and natural environment.

4.3.2 Provide for Adaptability and Flexibility

Future planning and development of the campus should focus on providing adaptable and flexible spaces that respond to the changing and diverse community needs.

4.3.3 Integrated and Collaborative Learning Environments

Future planning and development of the campus should integrate various learning environments and provide collaborative opportunities for students. The College should maintain close proximities for related programs in the future as well as provide shared informal working spaces to encourage collaborative learning. These recommendations foster forward-thinking cross- and interdisciplinary learning at the College.

4.3.4 Technology Driven

Future campus development should be technology driven, providing support for educational and social opportunities for the students.

4.3.5 Connect and Be Open to the Community

Future planning and development of the campus should reinforce the open connection of the Campus to the public. It should invite the surrounding community to enter the campus grounds and engage in activities and events. The college should explore the potential to collaborate with related community or business initiatives to create mutually beneficial partnerships.

4.4 Tertiary Planning Principles

Clear Orientation on Campus/Way-Finding

Future planning and development of the campus should provide clear orientation and wayfinding on campus for its users.

Safety and Security

Future planning and development of the campus should create an environment in which students and staff are safe and secure.

Expression of Inclusivity

Future planning and development of the campus should address Confederation College's commitment to be inclusive of all the users.

Student and Staff Wellness

Future planning and development of the campus should be committed to staff and student wellness of mind, body, and spirit.

Barrier-Free Accessibility

Future planning and development of the campus should be physically accessible to all users.

Create a Gateway and Sense of Arrival

Future planning and development of the campus should include a gateway that communicates a sense of arrival to its users upon arriving at the College.

Accountability

Future planning and development of the campus should proceed with developments only if they are viewed as responsible to college, local, and global communities.

Provide Direct Linkages Between Buildings

Future planning and development of the campus should provide direct circulation linkages between buildings, thereby eliminating undesirable external travel distances.

Provide for Adaptation from Rural Life to College Campus Life

Future planning and development of the campus should provide for a smooth transition for new students who come from rural areas and are susceptible to culture shock upon arriving at Confederation College for the first time. The aim is to employ means and methods of reducing stress for these individuals and making them feel comfortable while adapting to campus life.



5 5.0

PROPOSED CAMPUS MASTER PLAN



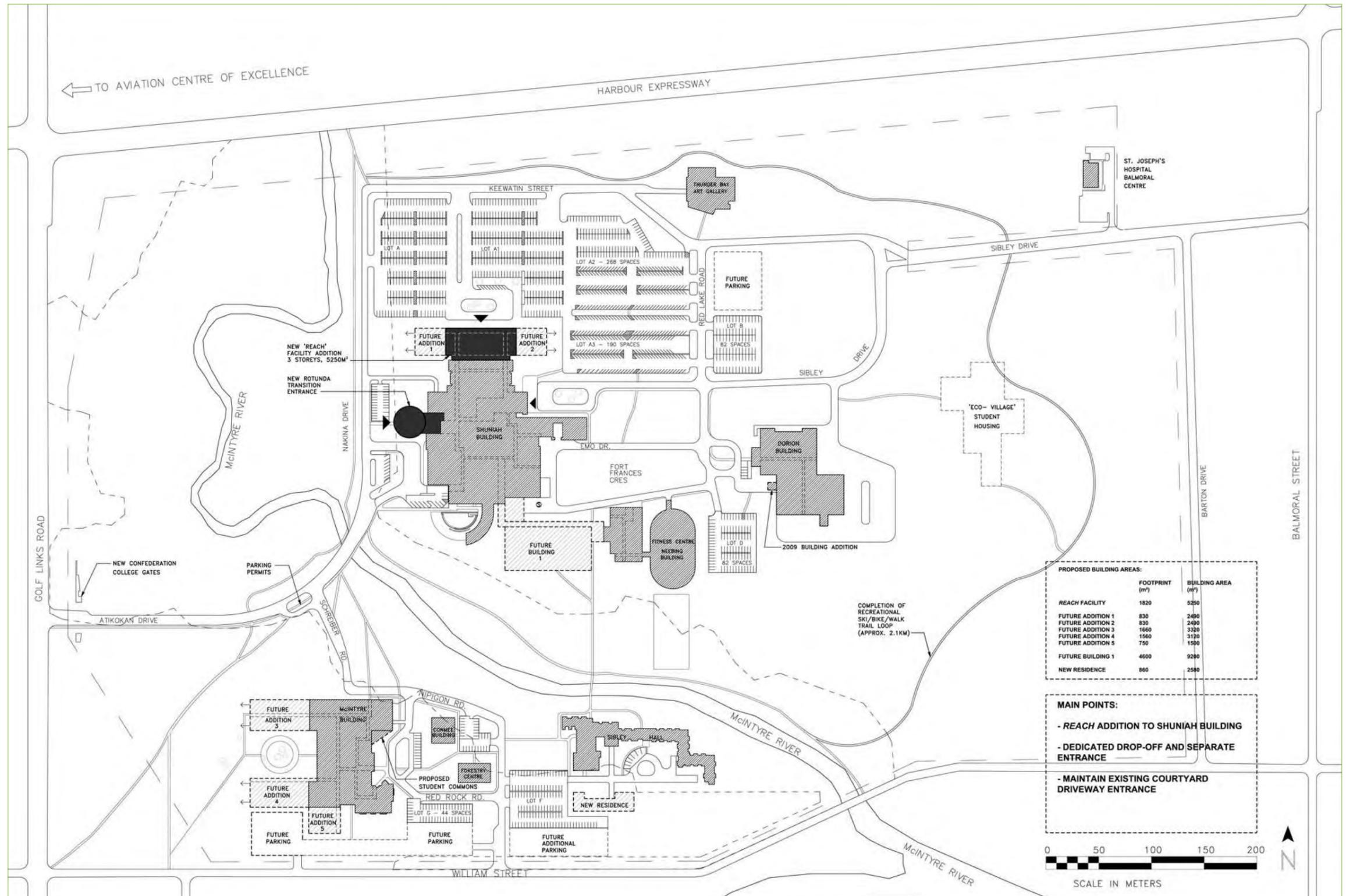
5.1 Campus Master Plan Options

Based on the feedback provided in the stakeholder group sessions and knowledge gained through an intensive site analysis, seven comprehensive Campus Master Plan options were developed. “Nicknames” were assigned to each of the options providing a lense through which to see the principal ideas behind each option and a quick way of referring to the different options in the charrette process.

5.1.1 Option 1 – “Saddlebags” A

This option explored incremental additions linking to existing internal circulation points of the Shuniah and McIntyre Buildings. A future addition is proposed in between the Shuniah Building and Fitness Centre which would be the two buildings internally.

The REACH facility in this scenario would allow for a three-storey addition at the north side of the Shuniah Building with future expansions extending outwards from it on both sides. This option creates a dedicated drop-off and separate entrance for patients of the REACH clinic.

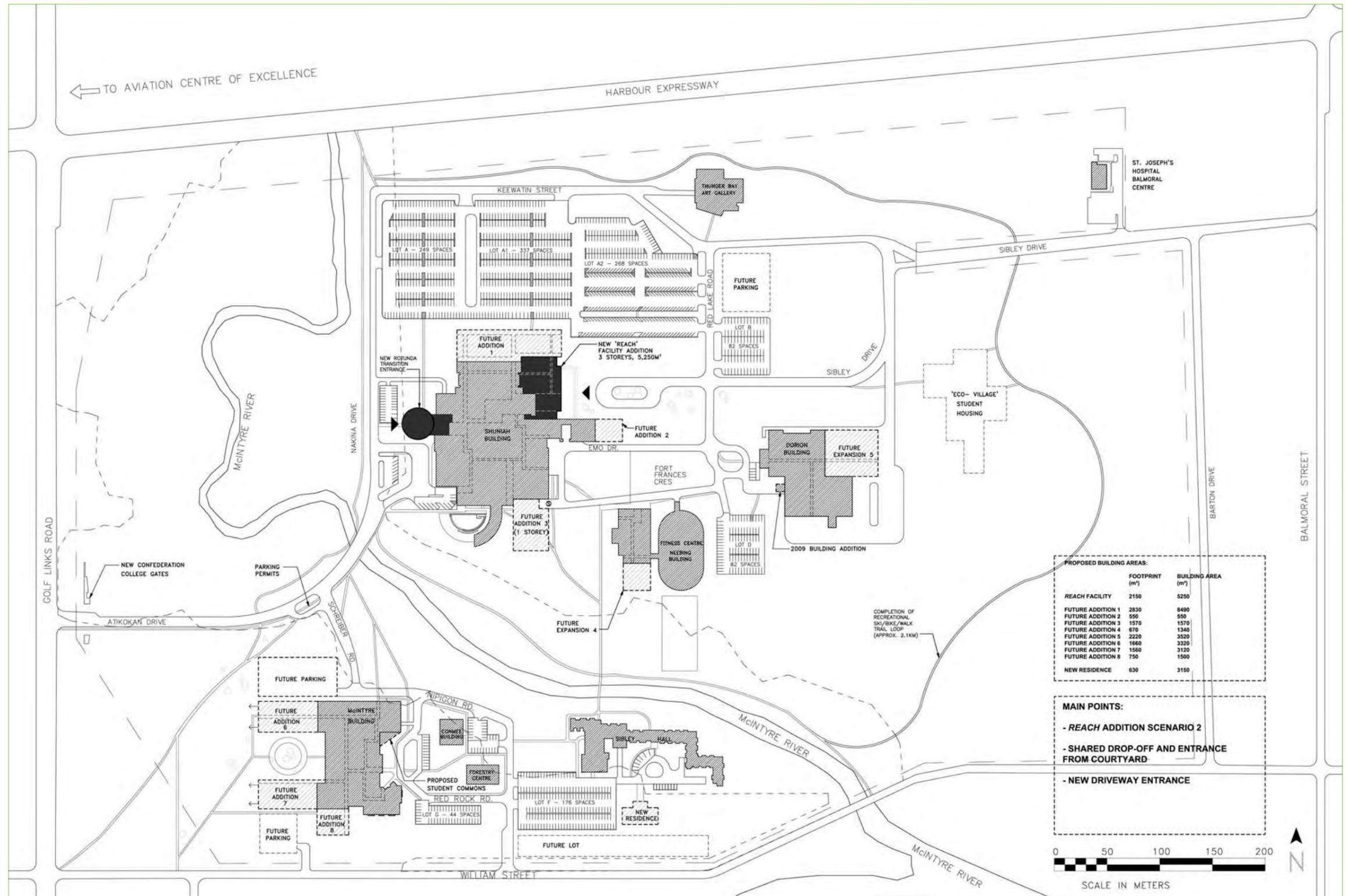


OPTION 1 – “SADDLEBAGS” A

5.1.2 Option 2 – “Saddlebags” B

This option features an alternate massing for the incremental additions linking onto the circulation of the Shuniah Building and McIntyre Building. It also proposes incremental addition onto the Dorion Building and Fitness Centre. The option focuses on maintaining the distinct character of each of the existing buildings and developing them independently.

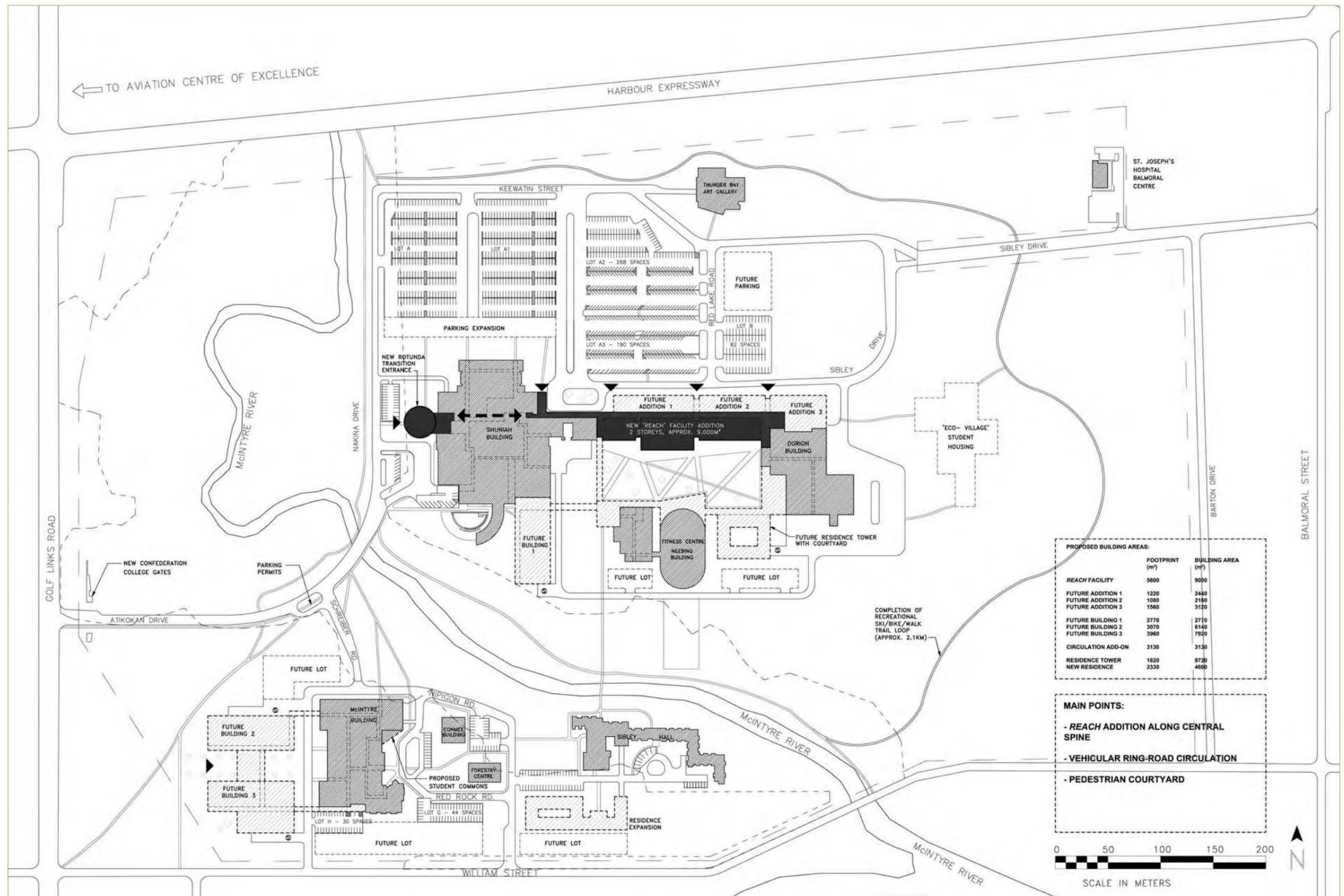
In this scheme, a three-storey REACH facility would be located onto the east side of the Shuniah Building. This would create a new shared drop-off and entrance for the students and clinic users. Further expansion of health science programs in the future is proposed along the north side of the Shuniah Building.



5.1.3 Option 3 – “Double-Spine”

The primary driver for this option is a strong east-west spine extending across the campus from the Shuniah Building to the Dorion Building. Future building additions and expansions would be implemented along the spine creating a more dense campus core. A pedestrian courtyard is proposed at the heart of the campus. Vehicular circulation and service access is provided in a ring-road circulation route along the outer edge of the buildings.

This option features the REACH facility as a two-storey building in a prominent location at the heart of the campus along a central east-west spine. It features excellent southern exposure while linking the previously disconnected Shuniah and Dorion Buildings.

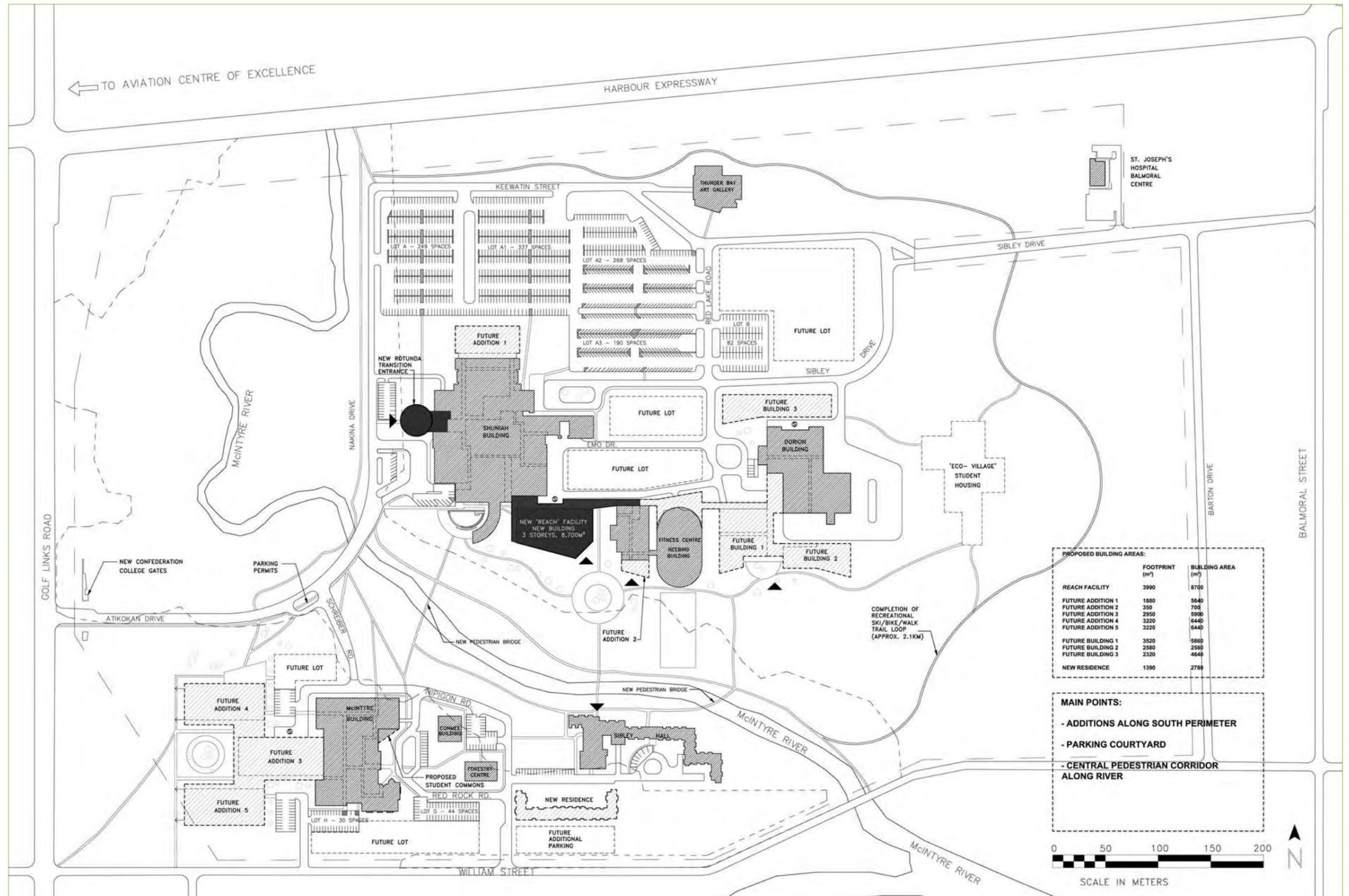


OPTION 3 – “DOUBLE-SPINE”

5.1.4 Option 4 – The “Retail Plaza”

This option is an inverse scheme to the “Double Spine”. Rather than a centralized pedestrian courtyard, parking lots and service access are centrally located. Building additions and expansions are proposed to be oriented along the McIntyre River offering well-framed views of the rugged natural landscape.

The REACH facility is proposed between the Shuniah Building and the Fitness Centre facing south towards the McIntyre River. The building is proposed to connect internally to both adjacent buildings. Clinical “drop-off” is provided at the north side of the building, while pedestrian access is located at the south side.



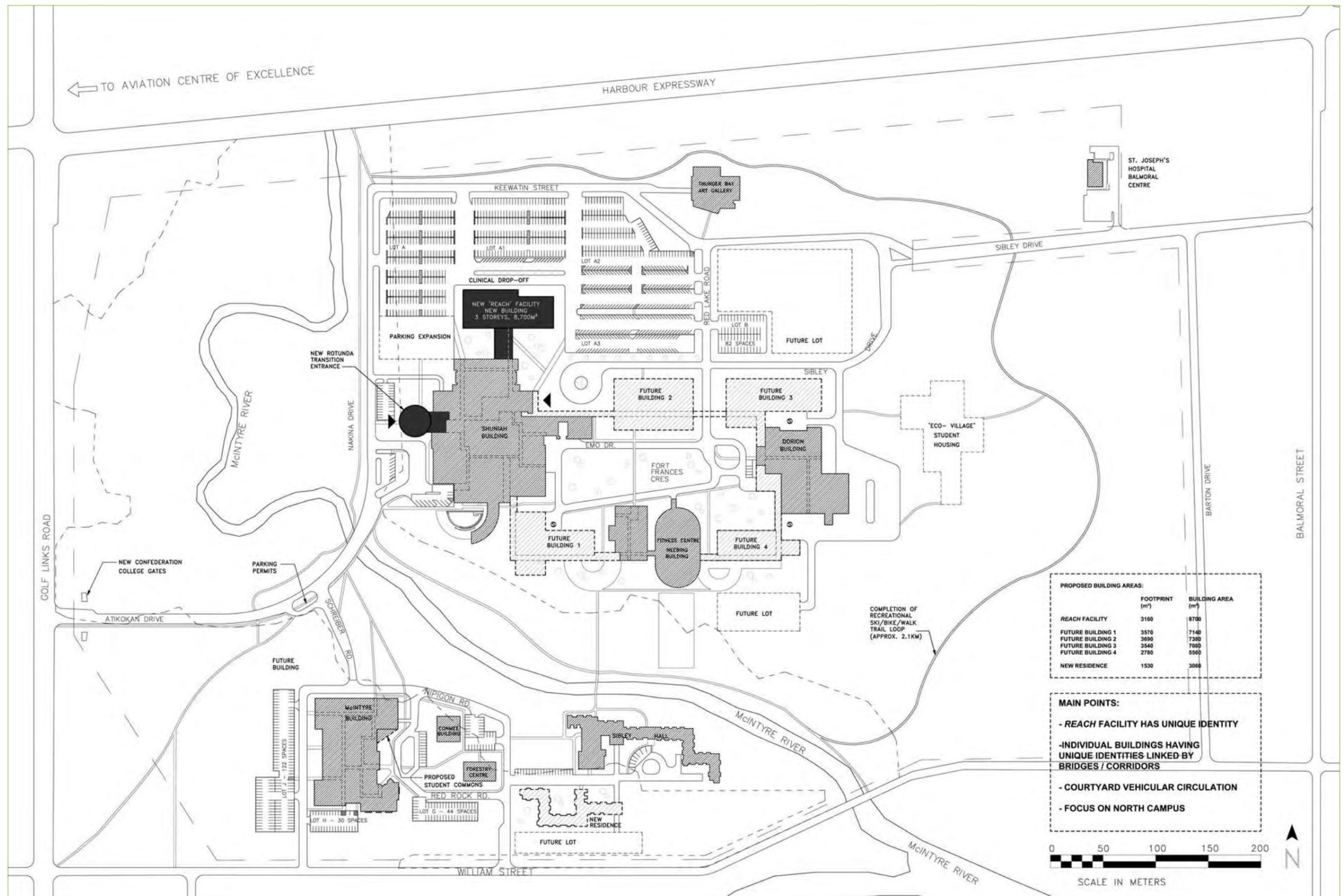
OPTION 4 – THE “RETAIL PLAZA”

5.1.5 Option 5 – The “Necklace”

This option proposes that each expansion is conceived as a new stand-alone building that bridges to other buildings on campus through a loop network of “Plus-15”* corridors. Vehicular circulation moves freely beneath the raised pedestrian linkages. Future additions and expansions in this scheme are focussed on the north campus.

The REACH facility is proposed as a three-storey, stand-alone building to the north side of the Shuniah Building. It is located at a setback distance from the existing buildings so that it will appear entirely distinct, while still maintaining the benefits of close proximity to existing related health care programs.

* “Plus-15” refers to a pedestrian skywalk system that is so named because the skywalks are approximately 15 feet above street level. This height is used because it is adequate for vehicular traffic to bypass below.

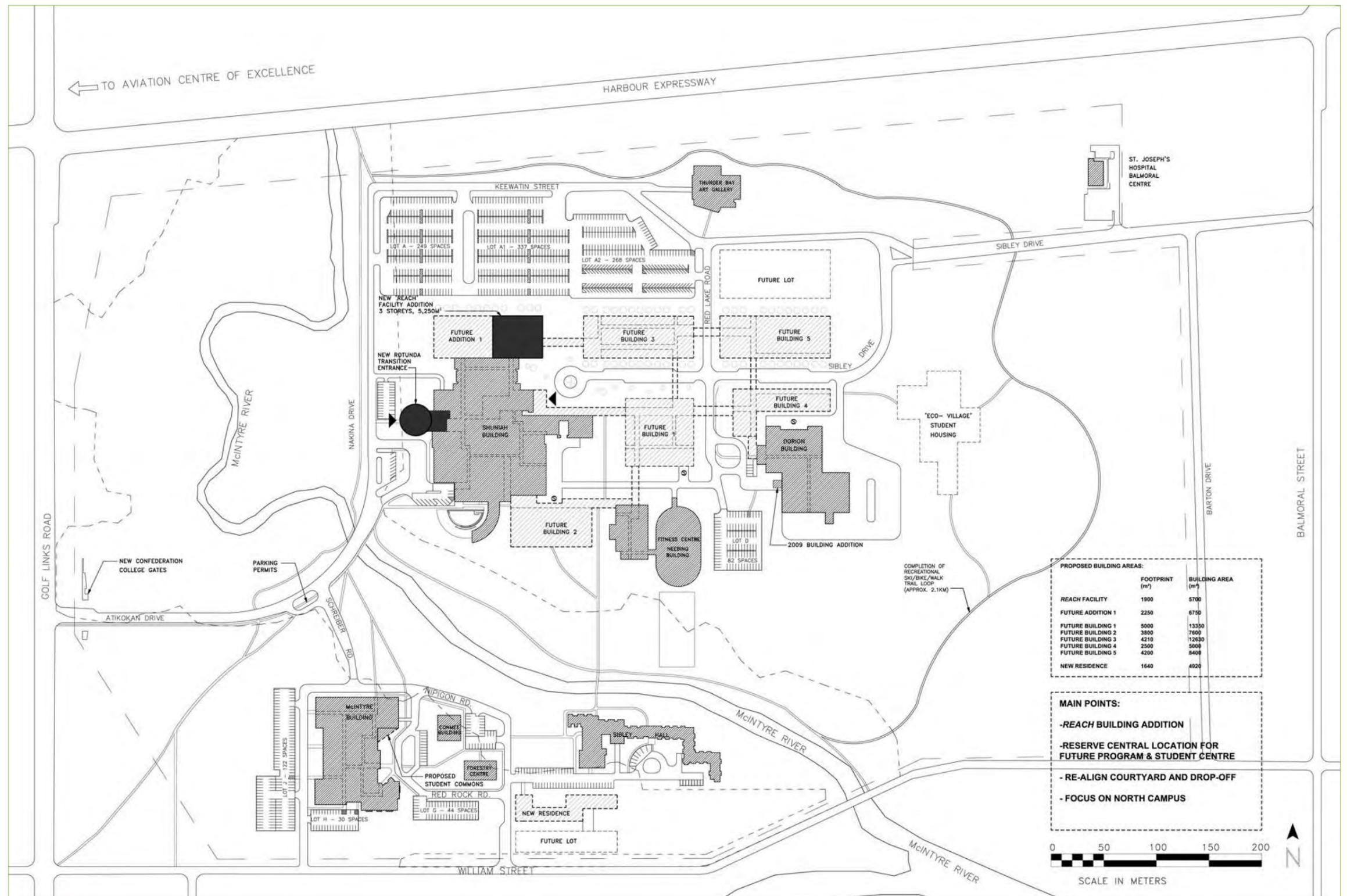


OPTION 5 – THE “NECKLACE”

5.1.6 Option 6 – “Hub and Spoke” A

Like the “Necklace”, this option links a set of stand-alone buildings by a network of Plus-15 pedestrian bridges. Rather than a “loop” configuration, however, this option is envisioned as a central “hub” building around which other buildings branch from in all directions.

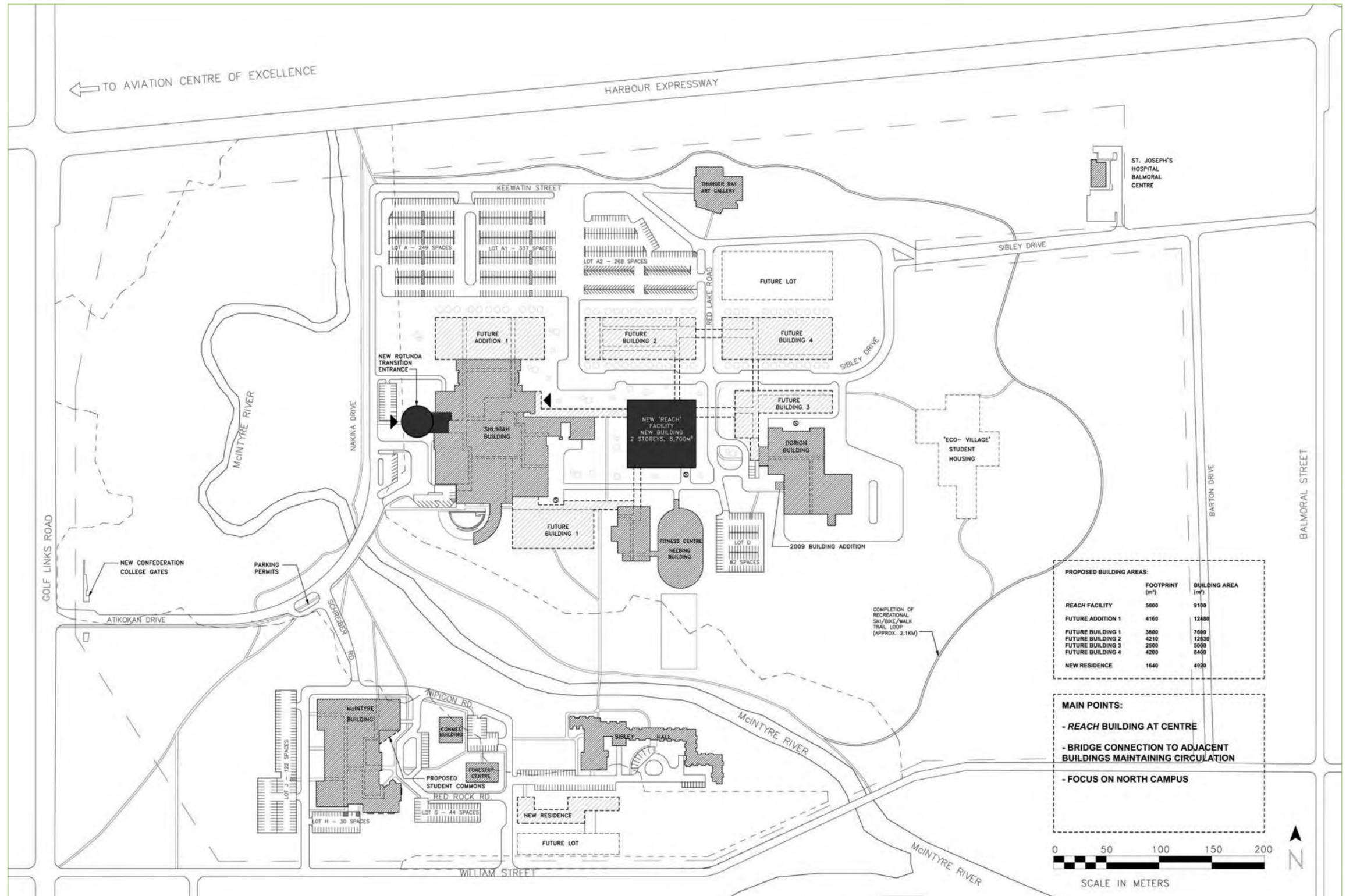
The REACH facility is proposed at the north side of the Shuniah Building in close proximity to existing Health Science programs. It represents a smaller initial step to facilitate for the larger “Hub and Spoke” configuration to be realized in the future.



5.1.7 Option 7 – “Hub and Spoke” B

This option is a variation on “Hub and Spoke” A. The overall system and proposed building massing is consistent with the previous option, though the difference lies in the phasing strategy.

In this option, the REACH facility is proposed as a major first step of establishing a “hub” building around which all other buildings will branch off from in the future. The building is envisioned as a low two-storey building so as to not obstruct views on campus, but still high enough to accommodate the Plus-15 pedestrian network at the second floor level.



OPTION 7 – “HUB AND SPOKE” B

5.2 Master Plan: Recommendations

Based on the consultants meetings with the stakeholders and a review of the seven Campus Master Plan Options, a final Campus Master Plan Option that synthesized the desired attributes of the options explored was review and approved by the leadership team on June 22, 2009.

The key campus master planning recommendations associated with that plan are as follows:

- **Make future additions onto existing buildings rather than creating new stand-alone buildings.** There are increasing tendencies towards related and inter-disciplinary academic programs. Building additions will provide for new classroom, laboratory, workshop, and lecture hall space while maintaining close proximity to pre-existing related programs. Related program adjacency allows for smooth adaptability and flexibility to meet changing space demands for evolving programs in the future. The “add-on” approach permits sharing of student lounge and study space space which would inspire a better sense of community. Certain service requirements can be consolidated which would improve overall cost and energy efficiency.
- **Align new building additions along internal circulation routes of existing buildings.** Extending circulation from existing buildings into new additions is essential to providing seamless integration of old and new. This strategy enables ease of orientation and clarity with regards to wayfinding.
- **Locate additions where they will contribute to reducing external travel distances between constituent campus buildings.** Substantial outdoor travel distances currently exist between the Shuniah, Dorion, and McIntyre buildings as well as Sibley Hall Residence. Additions that reduce these outdoor travel distances will increase comfort for pedestrians trekking between these buildings in the harsh winter months and at the same time contribute towards the goal for a more “close-knit” College community.
- **For each addition, allocate a portion of resources towards improving existing buildings where needed.** When adding new state-of-the-art facilities, the College becomes highly susceptible to segregating its students to “first- and second-classes” based on the high variance in quality of environment. Sufficient resources should be allocated to improve existing facilities in order to maintain a well-balanced campus whole.

5.4 Campus Master Plan Components

College Gates

A set of gates is proposed at the Golf Links Road entrance into the campus which is considered the ceremonial entrance to the College. This would provide a public face for the college to the surrounding community. The gates would differentiate the Golf Links Road entrance and the Balmoral Drive entrance. These gates are envisioned as a one-of-a-kind iconic element that would not only indicate the location of Confederation College, but also convey a sense of the College Values through form and materiality. The gates would offer a strong first impression of the College to new students and first-time visitors.

Rotunda Transition Entrance

After having passed through the College Gates for the first time, new students and first-time visitors would ascend Atikokan Drive which would lead directly to the rotunda transition entrance. This element would speak to the northern spirit and Aboriginal heritage that is integral to the College. It would celebrate the diversity of the students who make Confederation College the place that it is.

Courtyard Heart

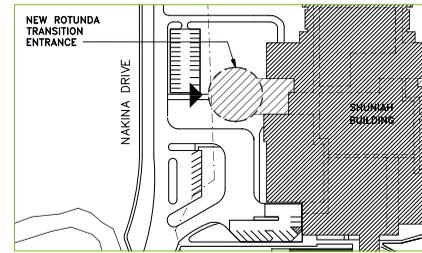
The Campus Master Plan proposes a pedestrian-only courtyard at the heart of the campus. This will not only provide pathways connecting encompassing buildings, but will also act as a central gathering location for a variety of events and activities. It is a space that all users – students, visitors, faculty, and staff – can share. It should be highly visible, easy to access/find, and have indoor and outdoor components. It has the potential to communicate unity with nature, celebrate of the Northern spirit and heritage, provide a vibrant learning environment, and encourage openness to the community.

New Residence

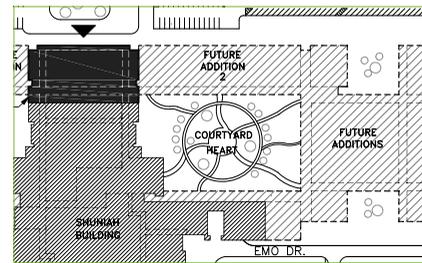
Creating increased living accommodations for students on campus would reduce the College's carbon footprint by lessening the percentage of daily student commuters. This residence would be a dormitory-style living accommodation lying adjacent to the existing Sibley Hall Residence Building in a location that avoids infringing on the nearby environmentally protected area. By including amenities such as dining areas and common rooms, this initiative has enormous potential to contribute towards improving campus life.

Future Additions

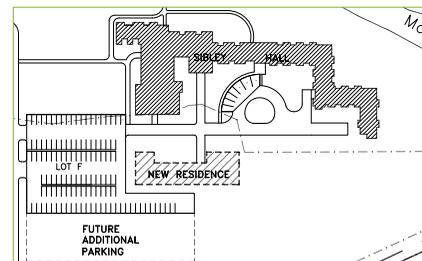
Though the timing of these initiatives is primarily dependant on greatly increased enrolment demands and substantial provision of funding, the circulation planning and massing layout of these additions marks the final expansion required to enclose the campus heart. Programs housed within these buildings should relate to their neighbouring buildings allowing for future flexibility and adaptability.



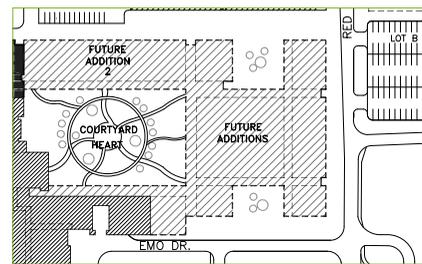
ROTUNDA TRANSITION ENTRANCE



COURTYARD HEART



NEW RESIDENCE



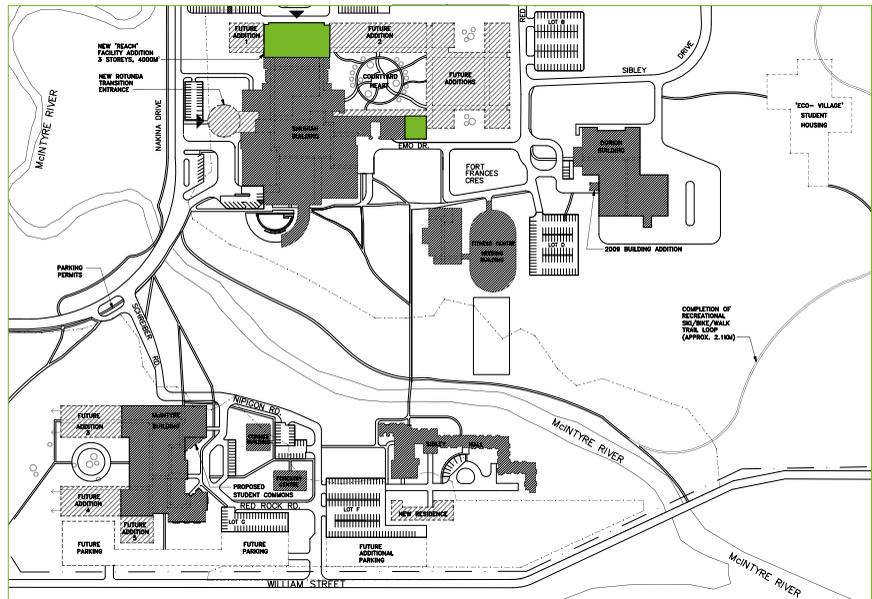
FUTURE ADDITIONS

5.5 Campus Master Plan: Phasing

Phasing for Confederation College consists of a flexible framework that is designed to satisfy two possible growth scenarios in the future. They are:

Incremental Approach

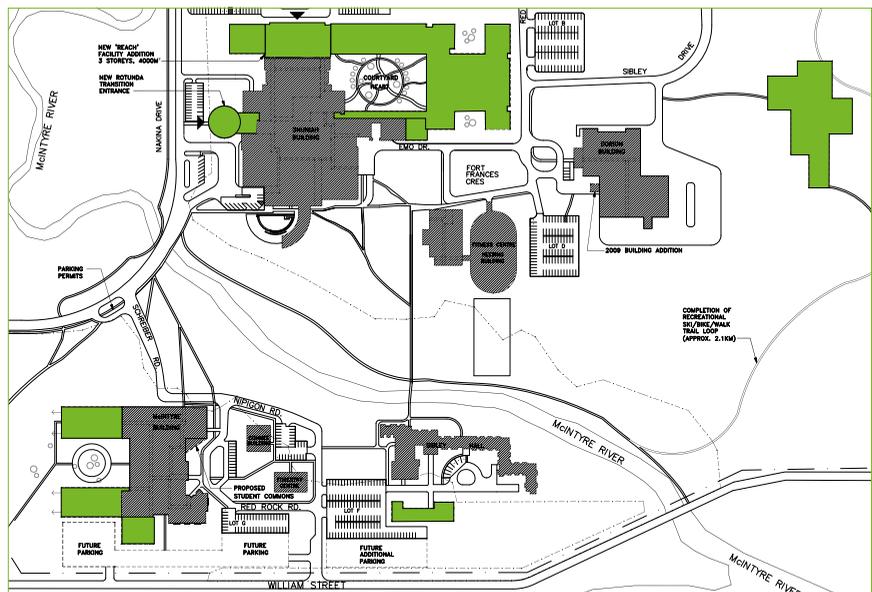
New buildings and additions are to be added one step at a time in order to accommodate the gradual increases in demand for the various programs as well as available funding. Over the next 20 years, a series of additive steps would accommodate the growth and change with regards to programs/services offered and enrolment capacity. Each of these steps are laid out within this Campus Master Plan with an aim to ensure consistency with the overall vision of the College and to remain in line with the existing College Mission and Values.



CAMPUS MASTER PLAN SHOWING INCREMENTAL APPROACH WITH CURRENT INITIATIVES IN GREEN AND FUTURE ADDITIONS IN A LIGHT HATCH

Substantial Increase Approach

If the College were to experience a sudden spike in demand and needed to significantly expand its resources to meet the increased requirements imposed on the College by the community, a substantial increase approach would take effect. This increase would be envisioned as the cumulative of the otherwise incremental additions.



CAMPUS MASTER PLAN SHOWING SUBSTANTIAL INCREASE APPROACH WITH MULTIPLE INITIATIVES TAKING SHAPE SIMULTANEOUSLY.

5.6. Future Projects

5.6.1. REACH

The REACH building addition is proposed to be located at the north side of the Shuniah Building. It would link directly to the existing internal circulation of the Shuniah Building and is three storeys in building height. The health science addition is to be located in immediate proximity to existing health science programs, thereby permitting future adaptability and flexibility among these related programs.

A triple-height circulation space is to be featured within the addition that is naturally lit from above and would provide borrowed natural light to the adjacent classroom and laboratory spaces. This element will contribute towards reducing the carbon footprint of the building while also contributing to the well-being of those using these spaces.

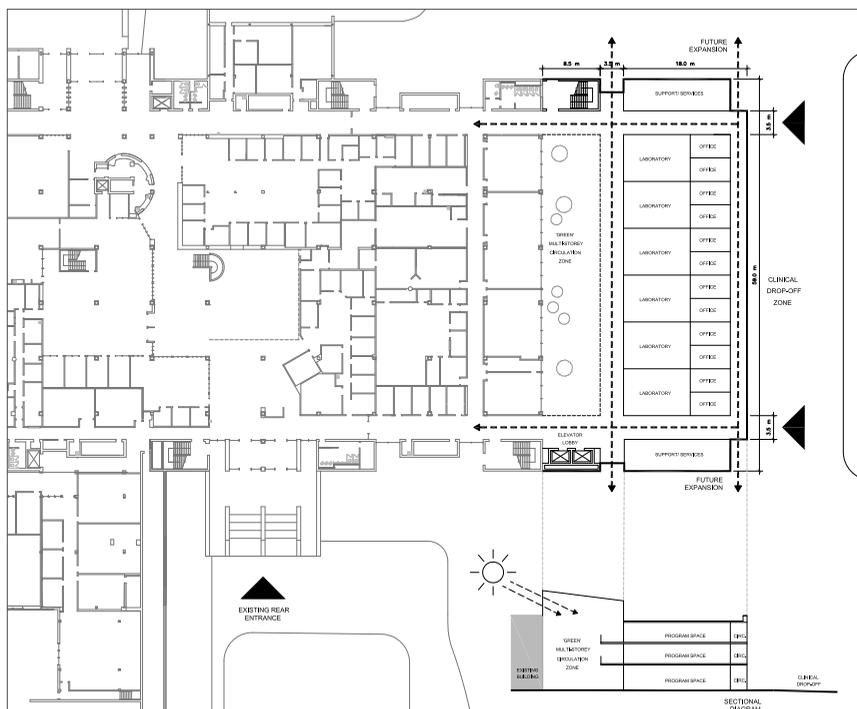
Through local material usage, such as stone and wood, the design of the atrium space has the potential to communicate the true spirit of the north in a prime location that will be shared by all who inhabit the building.

The circulation space would be lined by informal study spaces which would be an integral component to creating a collaborative learning environment. Research has shown that much learning at the post-secondary level is done outside of the classroom through interaction between peers.

Elevators would service both the addition itself and the existing building as well, thus incorporating efficient and cost effective operations.



ATRIUM SPACE CONCEPT SKETCH

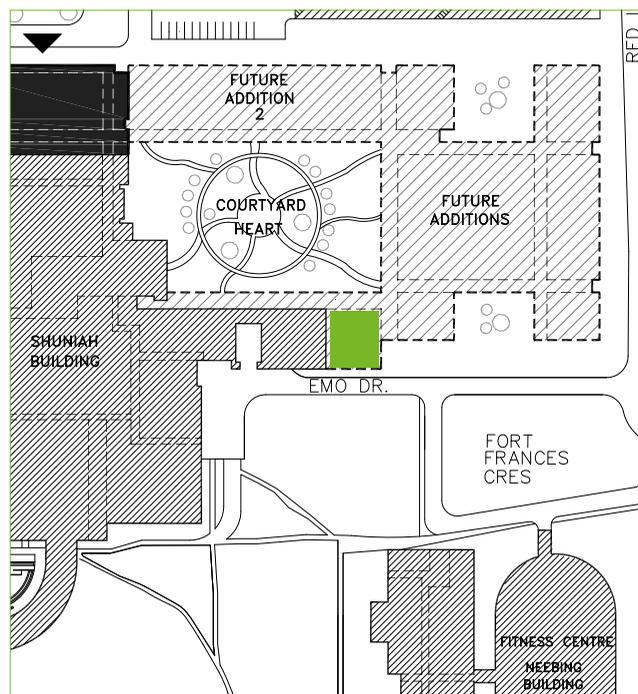


DIAGRAMMATIC GROUND FLOOR PLAN & SECTION OF THE REACH ADDITION ON THE NORTH SIDE OF THE SHUNIAH BUILDING

5.6.2 Biomass Learning and Research Centre

This addition is proposed to be located on the east side of the Shuniah Building adjacent to the powerhouse. It will provide convenient accessibility for trucks to deliver biomass fuel to the plant on a regular basis. It will also be connected to main pedestrian circulation routes to establish a physical presence on campus and provide accessibility for the campus users.

This initiative is pivotal in establishing carbon neutrality at Confederation College and offers the potential to practice and “preach” environmental sustainability. The proposed central location for the facility on campus would be ideal for displaying its green initiatives to all campus users. The biomass centre would have the potential to stimulate related programs and initiatives on the campus grounds in the future while setting a precedent for sustainability in northwestern Ontario and beyond.



THE FOOTPRINT OF THE PROPOSED BIOMASS RESEARCH AND LEARNING CENTRE IS INDICATED WITHIN THE CAMPUS MASTER PLAN

6.0

LANDSCAPE MASTER PLAN





EXISTING SIGNAGE



EXPANSIVE LAWN ON CAMPUS



DE-STABILIZED RIVERBANK

“The Confederation College campus represents a unique opportunity for the application of environmental and landscape development principles as an integral and on-going component to its sustainable development initiatives.”

Confederation College is fortunate to possess sufficient land resources for the establishment and maintenance of environmental initiatives for carbon neutrality, LEED® qualification, heritage and conservation education and community recognition.

6.1 Landscape Analysis

A site visit to the Confederation College campus and productive discussions with administration staff contributed towards identifying the following landscape analysis issues:

Corporate Identification

Nine (9) existing and proposed locations for improved corporate campus identification signage are proposed. These are important elements in assisting with the integration of the college into the broader community, as well as enhancing the college’s image by students, staff and the general public. Present locations for signage are in need of redesign and remedial site improvement work.

Natural Remediation

The college’s operations program presently maintains a large expanse of lawn on the campus. While intense maintenance of some areas is important for campus appearance and public perception, there are substantial amounts of grass which need not be mown. Instead, these campus lands represent a strategic opportunity for on-going environmental sustainability initiatives such as land naturalization and regeneration for improved carbon neutralization, habitat renewal and the increased public image of the campus as an environmentally aware institution.

Riverbank Conditions

There is a short portion along the south bank of the McIntyre River which is presently experiencing erosion and becoming de-stabilized. This degradation is due to the natural flow and

alignment of the river and requires immediate steps to further assess the condition and potential remediation of this portion of the river.

Future Parkland Development

The campus possesses an exceptional piece of park-like open space immediately to the west of the main building entrance, and bordered on three sides by the McIntyre River. This open space is capable of accommodating an increased number of campus activities related to student and public events which would improve daily park usage by students, staff and the general public.

Exterior Pedestrian Circulation

The upgrading of existing primary pedestrian corridors on the campus should be considered. Paving, lighting and amenities such as benches, trash receptacles, and wayfinding require redesign to improve the comfort and safety of the users. The development of new pedestrian corridors would improve internal campus connections and access to the adjacent community. Connections are particularly lacking along Sibley Drive east towards the adjacent commercial businesses along Balmoral Street.

View Cone Opportunities

There are two areas where the opportunity for improved views into the campus may be considered as indicated on the Landscape Analysis Plan. This would enhance the public’s perception of the campus and help to integrate it into the community.

Visual Campus Landscape Improvement

It appears that no substantial landscape improvements have been undertaken since the initial development of the Confederation College campus. The present campus would benefit from a landscape development program to address issues related to features such as site lighting, boulevard tree plantings, building entrance enhancements, parking lot screening, exterior courtyards or pedestrian corridor upgrades.



PARK-LIKE OPEN SPACE



PRIMARY PEDESTRIAN CORRIDOR



OPPORTUNITY FOR IMPROVED VIEW



LACK OF EXISTING LANDSCAPING

6.1.1 Landscape Analysis Plan

LEGEND:

COORPORATE ENTRANCE IDENTIFICATION



RIVERBANK EROSION RESTORATION



PRIMARY CONNECTOR PEDESTRIAN PATHWAYS



SECONDARY CONNECTOR PEDESTRIAN PATHWAYS



ENHANCED LANDSCAPE AREAS



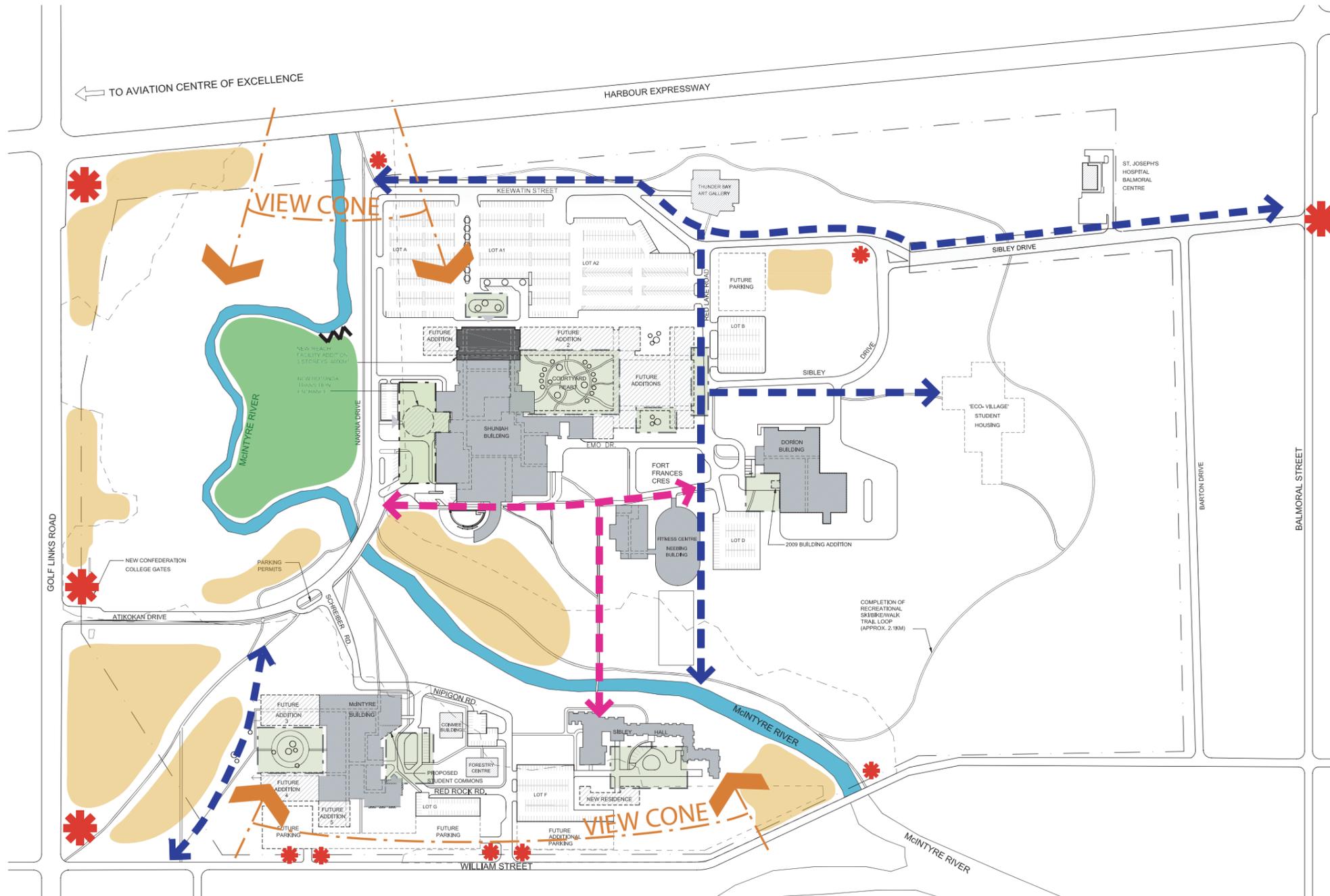
NATURAL REMEDIATION AREAS



PARKLAND



VIEW CONE



6.2 Landscape Master Plan Recommendations

The proposed plan recognizes a campus with potential opportunities for environmental landscape development in the following four areas:

1. Natural Environmental Site Remediation
2. College Corporate Identification
3. Pedestrian Movement and Connection Improvement
4. Campus Landscape Improvement

Towards achieving the landscape objectives of the Campus Master Plan, the following recommendations are proposed. These should be considered when planning for future campus landscape development initiatives.

Corporate Identification

Main Entrance Gates

It is recommended that the College consider the design and construction of new and updated main campus entrance gates at Golf Links Road and Atikokan Drive. These signs should be designed to emphasize the name of the College and highlight the importance of the campus in the community, as well as serving to locate the main campus entrances.

Campus Corporate Signage

It is further recommended that the College consider upgrading or introducing new and coordinated corporate identification signage at the Balmoral Street and Sibley Drive entrances, at the two south roadway entrances along William Street, at the intersections of the Harbour Expressway and Golf Links Road, at the junction of Sibley Drive with Keewatin Street and at the pedestrian/bike entrances to the campus from the north at the Harbour Expressway Bridge and from the south at the Williams Street Bridge. Although these signs should be coordinated in appearance the scale should vary as appropriate to the importance of the entrance.

Sustainable Landscape Mitigation Measures

Riverbank Protection

It is strongly recommended that the College immediately investigate the river bank erosion occurring on the south bank of the McIntyre River, as located on the Landscape Analysis Plan, and take the appropriate measures to stabilize the bank.

Carbon Neutralization

It is recommended that the College convert some currently mowed lands, as located on the Landscape Analysis Plan, for the purpose of remedial natural reforestation to assist in the reduction of both its carbon footprint and on-going grounds maintenance costs.

LEED® Certification

It is recommended that future campus landscape development implement LEED® (Leadership in Energy and Environmental Design) requirements on an individual project basis for landscape plant materials, landscape irrigation, exterior paving materials and landscape lighting.

Sustainable Landscape Development Initiatives

It is recommended that future landscape development projects initiate sustainable practices related to the following:

- Natural Indigenous Reforestation
- Water Management, Conservation and Renewal
- Increase of Natural Habitat Areas
- LEED® Certification

Landscape Heritage Initiatives

Construction Materials

The practice of using local indigenous construction materials for landscape construction where applicable should be encouraged (eg Stone, wood).

Local Area Regeneration

The campus is fortunate to have substantial areas of both natural and developed land within its campus property boundaries. Landscape practices related to designated areas of natural regeneration and the more formalized landscapes associated with traditional campus landscape design should be encouraged in an effort to improve both the aesthetic and environmental capabilities of the campus.

Student Collaboration

Volunteer Participation

It is recommended that the assistance of the students and College staff members be utilized where feasible to assist with the future develop of campus lands as potential opportunities occur. (eg. Natural area reforestation, campus clean up measures etc.).

Campus/Community Connections

Enhanced Landscape Connections

It is recommended that principal roadway and pedestrian pathway connectors between the campus and surrounding properties be strengthened to encourage the physical integration between the two communities using landscape design enhancement solutions. (eg. Boulevard Tree Plantings, landscape lighting, etc.).

Landscape Design Solutions

It is recommended that future landscape design solutions recognize the need for increased sight visibility, enhanced lighting coverage, EMB locations, proper way finding signage and elimination of potential concealed hiding areas close to pedestrian corridors and building entrances.

Barrier Free Accessibility

Pedestrian Pathway Systems/Parking Lots

It is recommended that future pedestrian pathway design and construction adhere to ORC guidelines for pathway/street connections, building ramp entrances, grade separations, lighting, and parking lot/handicapped space accessibility.

Site Design Adaptability

Material Re-use

It is recommended that proposed campus landscape construction development consider the use of construction materials with the capabilities for their recycled content and potential for re-use (eg. Paving stones, lighting features, seating etc).

Design Flexibility

It is recommended that any proposed landscape design and construction consider the possibilities of future changes in use and user group.

Maintenance Operations

It is recommended that proposed campus landscape design and construction be coordinated with maintenance operations to minimize the required maintenance, associated costs and environmental impacts.

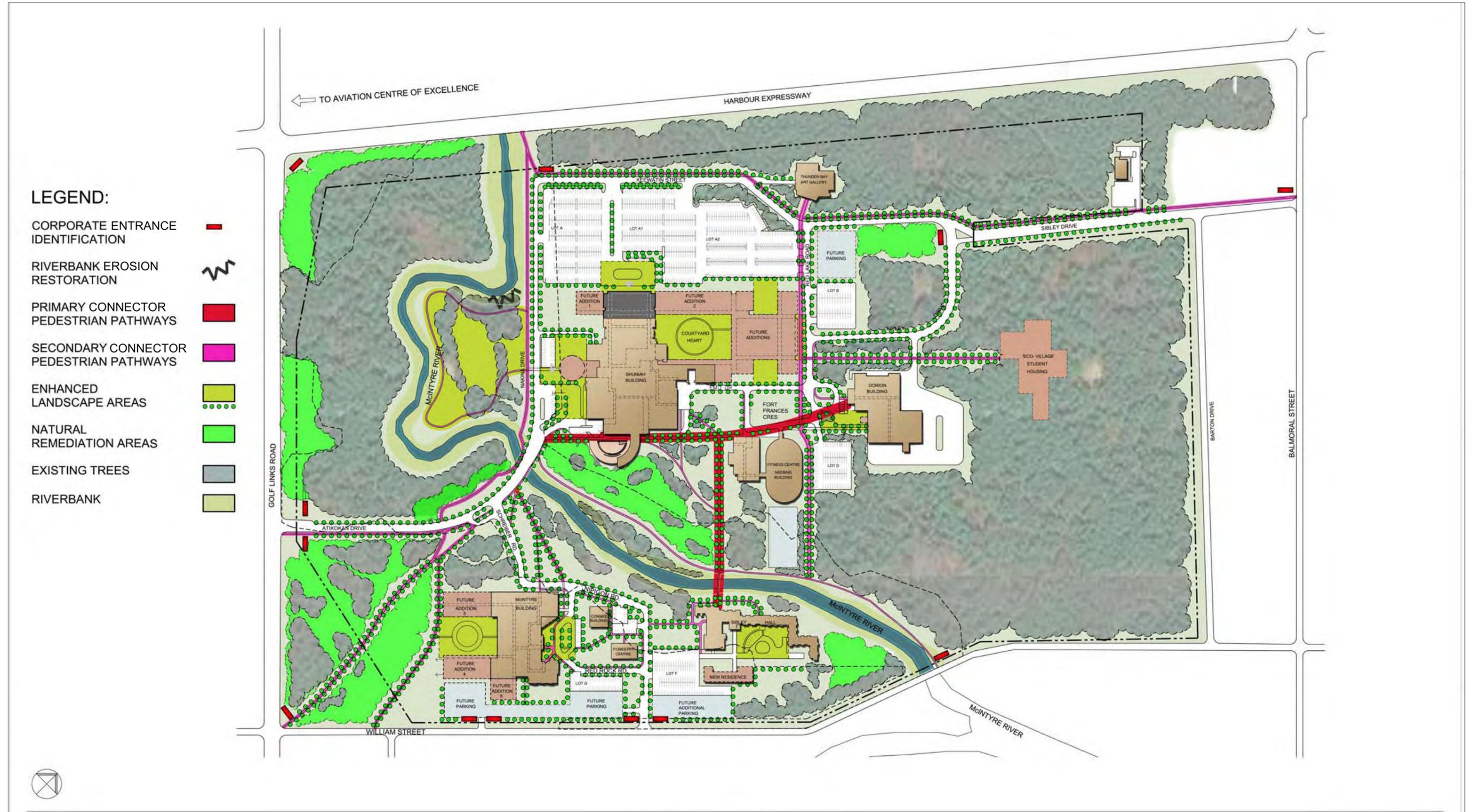
6.3 Landscape Master Plan Development Priorities

It is further recommended that as funding for landscape improvements become available, the following ten (10) primary landscape development recommendations be implemented in order of priority.

1. The naturalization and reforestation of designated lawn areas.
2. Riverbank erosion control measures.
3. Improvements and additions to the proposed campus corporate signage and locations.
4. Landscape planting improvements to the Atikokan Drive entrance into the campus.
5. Landscape planting improvements along William Street.
6. Landscape planting improvements to main building entrances
7. Strengthening of the main pedestrian pathway corridor running north-south between Sibley Hall and the Shuniah Building
8. Strengthening of the main pedestrian pathway corridor running east-west between the Shuniah Building and the Dorion Building.
9. Development of new pedestrian pathway corridors, including:
 - The first, north-south from the existing pedestrian bikeway trail beside the McIntyre River, north adjacent on the east side of the Fitness Building and continuing along Red Lake Road to the Thunder Bay Art Gallery.

- The second, from the existing pedestrian bike-way entrance to the campus at the Harbour Expressway Bridge, along Keewatin Street and continuing east along Sibley Drive to Balmoral Street.
10. Landscape planting improvements to the general campus for building entrances, streetscapes, walkways, courtyards, parking lots and parkland spaces.

6.4 Landscape Master Plan



LEGEND:

- CORPORATE ENTRANCE IDENTIFICATION
- RIVERBANK EROSION RESTORATION
- PRIMARY CONNECTOR PEDESTRIAN PATHWAYS
- SECONDARY CONNECTOR PEDESTRIAN PATHWAYS
- ENHANCED LANDSCAPE AREAS
- NATURAL REMEDIATION AREAS
- EXISTING TREES
- RIVERBANK

THUNDER BAY
Confederation College

Landscape Master Plan

Project No.: 09-364 Dwg. No.: L0
Scale: - Date: September 2009



7.0 SUMMARY STATEMENT



7.1 Summary Statement

The Consultants would like to thank the team who contributed countless hours to the success of this Campus Master Plan. The input provided by the Stakeholders, staff, and students throughout the duration of this process have immensely helped the report respond best to the needs of Confederation College as seen by those who inhabit it, and also in keeping it with the College Mission and Values. Extensive site analysis and assessment of the current condition of the campus has lead us to create what we feel is a Campus Master Plan with the potential to best match the needs of the campus and serve as a flexible framework for guiding future decisions pertaining to planning and development initiatives at the College over the next 10 to 20 years.

7.2 Priority Areas and Next Steps

REACH project

Biomass Learning and Research Centre project

McIntyre Building upgrade

Future of Fitness Centre and Residence

Long Range Landscaping Plan

Entrance gates with Campus identification signs

Study of Land Development Opportunities



