

Greater Fredericton Region Aquatics Facility Feasibility Study

Final Report, November 2020



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Technical Compendium (provided under separate cover)

- A: Stakeholder Workshop Outcomes
- B: Public Survey Questions
- C: 2017 FIP Analysis
- D: Hard Construction Cost Estimates

Acknowledgements

The Greater Fredericton Region Aquatics Facility Feasibility Study is the culmination of significant input from community members within the Greater Fredericton Region, regulatory and affected stakeholders, municipal staff from the City of Fredericton, Village of New Maryland, and Hanwell Rural Community, and the Aquatics Facility Working Group members. These efforts drove the outcomes and recommendations of this Feasibility Study.

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Executive Summary

Project Background & Purpose

The University of New Brunswick (UNB) has announced its intention to close its aquatic facility, Sir Max Aitken (SMA) Pool. The UNB pool has served as an important aquatics venue for the community since its construction in 1967. In response to this announcement, Regional Service Commission 11 (RSC 11) is undertaking a community needs analysis, financial feasibility assessment and indicative business plan for a prospective new regional aquatic facility.

The basis for the development project, as announced by the City of Fredericton in the spring of 2019, includes:

- Establishing design, location and costing for an aquatics centre that is cost-effective and meets the needs of the region;
- Securing major funding partners such as provincial and federal government, local governments and surrounding LSDs, as well as universities;
- Establishing an appropriate facility ownership and operating model;
- Driving a community-focused capital campaign; and,
- Transitioning the project into its next phase: design and construction.

The study identifies the optimal site characteristics, locational attributes and potential synergies with other recreational

assets that should underpin the choice of location for the proposed facility.

As part of this study, the opportunity to add other uses has been considered to date. The body of the report addresses the inclusion of a multi-use space as a modular addition that can be developed either in conjunction with the aquatics centre or as a future addition.

Study Process & Engagement Activities

The study was undertaken through a linear work plan focused on:



Consultation and engagement related to a new aquatics facility has been undertaken in a range of forms, including:

- One (1) stakeholder workshop for aquatic users;
- Online Public Survey, which garnered 1581 responses);
- Internal and external stakeholder interviews and meetings (e.g. City of Fredericton, YMCA, UNB, Government of New Brunswick, etc.); and

- Meetings with the Project Steering Committee comprised of various municipal stakeholders and community representatives.

Site Options

As part of this study, the RSC11 has identified two locations for developing concepts for a new aquatics facility for the Greater Fredericton Region. This report addresses the comparative costs and benefits of the options for development:

Option 1: Expansion to the Grant Harvey Centre

The initial option investigated sites the aquatics centre as an addition to the Grant Harvey Centre, connected through the development of a common gathering and support space.

The Grant Harvey Centre is located on Fredericton's growing south side. The facility currently houses 2 ice pads, walking track, meeting spaces, changerooms, and other ancillary uses. The Abony Family Tennis Centre is located directly to the north of the Arena, which is sited between Vanier Highway and Knowledge park Drive, with existing access off of Knowledge Park Drive.

Option 2: UNB Endowment Lands

The second option investigated site the aquatics centre on part of a large endowment land holding owned by the University and located off Knowledge Park Drive in the vicinity of the Grant Harvey Centre site and Abony Family Tennis Centre.

The land is a greenfield at present with surrounding lands, also owned by UNB, currently being developed as a Research and Technology Business Park. The original plan for the business park lands identified a recreation facility to be located there.

Order of Magnitude Capital Costs

The costs provided are order of magnitude in nature and should not be seen as definitive project costs – While this study includes an articulated functional space program as a basis for concept planning and cost estimation, the concept design still represents a basic design assessment of scale, functional program and adjacencies resulting in an indicative floor plan and estimation of net and gross floor area.

The following provides the total project cost estimates associated with the development of the proposed aquatics centre based on the concepts established in Options 1 and 2. The costs include the following for each option:

- Estimated site development costs associated with the development at the Grant Harvey Centre (Option 1) and UNB Endowment Lands (Option 2);
- Building costs for the aquatics centre under Option 1 and Option 2. It should be noted that the building program is specific to the aquatics function and related ancillary program spaces including smaller scale multi-purpose meetings rooms;

All construction costs are subject to the addition of necessary soft costs and the inclusion of cost contingencies to account for risk at this initial level of planning.

The use of contingencies in capital cost estimation is part of an overall approach to understanding and mitigating risk – these are not additional costs that are necessarily expected to be confirmed, as required, later in the design process; they are costs which are added at the outset of the project design and implementation process to account for the range of design, site, construction cost and other uncertainties that exist at that time. As the project advances, the need for contingency is lowered as a percentage of overall costs. The closer the project gets to full design, there is greater certainty with regard to all aspects of cost, whether that results in cost increases or decreases.

	Option 1	Option 2
Construction Costs, Soft Costs, Site Development Costs	\$30,427,250	\$33,238,000
Contingencies for Class D Estimate	\$8,063,221	\$8,808,070
Estimated Total Project Cost	\$38,480,471	\$42,046,070

Immediate Next Steps

There are a number of next steps associated with pursuing either of the options outlined in this assessment. These are listed below:

1. Develop a Funding Plan

Fulfilling a future funding commitment on the part of both the University and the City to part fund the project is conditional on securing an overall funding plan which includes the exploration and justification of, and ultimately agreement on, a range of sources including levels of government and the municipal sector as well as potential non-profit partners and the education sector. This plan then becomes the backbone for a plan of step by step implementation of the project. Each of the steps outlined below will help identify and answer questions which can be expected to directly impact the willingness of funding partners to collaborate and achieve consensus on the choice of site, design, and operational model.

2. Develop a Process for Establishing Commitment to Capital and Operating Cost-Sharing amongst Municipal and LSD partners

Cost sharing for future capital costs and operating costs requires a framework that is based on demonstrated regional function of facilities. A new aquatics facility transferred from the University's jurisdiction to the municipality (or another agency) creates a de facto argument for extending the current regional cost sharing to a) include a new aquatics centre and b) consider whether there is a broader service district for this facility – all commensurate on demonstrating need, demand and opportunity.

This report has demonstrated the needs, opportunities and regionality of aquatics services. It has also made clear that

other facility needs of some of the communities in proximity to the City, as well as the City itself, can be met by the development of an Aquatics PLUS facility – namely, the development of a gymnasium and ancillary community centre function.

3. Establish a New Regional Service Area Agreement (in Principle) for the Recommended Facility

Concurrent with the establishment of cost-sharing arrangements, most significantly in terms of the sharing of annual operating deficits, is the recrafting/redrafting of a new regional service area agreement that specifically addresses the regional aquatics centre. This is where ongoing design and costing information is critical to scoping the overall envelop of capital and operational costs which are central to any quantification of impact on the parties to a service area agreement.

This is not easy work and will require the establishment of a committee of municipal representatives to work collaboratively to arrive at a range of solutions and financial projections associated with different models. The details of the cost-sharing model will be further informed by the ongoing business planning that will be required for this project.

Whether the service area agreement is specific only to this facility, is split into separate agreements for initial capital versus lifecycle capital and operational costs, or is a new multi-facility agreement, are all matters that should be weighed.

4. Site Assessments

Our recommendations for a preferred site and option are contained below. Should the regional partners agree that a single preferred option is appropriate as a result of this work, the following site assessment recommendation pertains to the preferred site only.

As an immediate next step, the City should obtain all necessary site assessments to include geotechnical investigation and environmental assessment for the preferred site. Notwithstanding our recommendations, if the preferred site selected by the region is Option 1, this includes the required work to delineate the wetland near the Grant Harvey Centre.

This work is required to verify the appropriateness of the site for development, inform the footprint location and design of the facility on the site, and provide necessary input for the capital cost and design solutions for site servicing and building construction.

The environmental assessment would include not only a Phase 1 ESA, but Phase 2 ESA as is expected to occur. Depending on the outcome, additional planning and contingencies may be required to factor in any remediation work or extra-ordinary development costs that may be likely. At that point, the project may require placing the commissioning of more detailed design on hold until or if resolution of the environmental and / or geotechnical issues can be achieved in a cost-effective manner.

5. Design Progression

Assuming that the project does not generate insurmountable challenges as a result of the required initial due diligence, the City can move into design and engineering as follows:

1. Develop the program to a detailed level.
2. Initial Schematic Design (typically this equates to about 12.5% of the total architectural fees to completion).
3. Design Development (typically takes the project to 25% of the total architectural fees to completion completion). As part of design development, the City should expect to receive a capital costing estimate equivalent to a Class B level of estimation.

The City and partners will need to determine the expected cost associated with these design services and the extent to which it is covered by existing or proposed budgets for this purpose. This is because this level of design work is likely to be necessary to accurately inform the development of funding plans and cost sharing formulas. Only when both the design is progressed and a funding plan is in place, would the project move actively into an implementation and delivery stage which involves a choice of how to complete the design and construction of the facility.

Recommended Aquatic Facility Option

Based on the full scope of the work undertaken as part of this planning exercise, the preferred option for the delivery of an

indoor aquatics facility is Option 2 – development at the UNB Endowment Lands. In summary this site and program offers the following improvements over the Grant Harvey Addition Option (Option 1):

- The program development is not demonstrably different between the two sites but the efficiency of the design is more apparent in Option 2.
- The capital cost differential, when viewed over the long term, is marginal.
- Operating efficiencies at the Grant Harvey site will require further investigation to provide a more robust picture of possible savings. However, we caution against over-estimating such savings. While our analysis has established a potential quantum for annual operational savings for Option 1 over Option 2, this alone is not a sufficient reason in our view to favour Option 1. Over time such savings represent a significant dollar amount but it is also true that unless operated continuously in such a way as to maximize these efficiencies – particularly in staffing terms - it is not a given that such savings will materialize.
- The contributions of the University toward land supply provide a funding source to Option 2 explicitly. While the land is also free at the Grant Harvey Centre it is unknown at this time whether the commitment of the University could be converted from a contribution in-kind to an actual capital funding contribution.

- The site circulation and overall site planning constraints imposed on the Grant Harvey Centre /Abony Family Tennis Centre campus are significant in our view and do not represent best practice.
- The future expansion of the Grant Harvey site for any use is highly constrained. While the pool complex can be expanded to include a gymnasium, there is a level of conflict with existing uses, loss of parking and resulting insufficiency of parking. The only solution would be yet more incursion into wetland and provision of parking some distance from building entrances.
- Option 2 provides maximum flexibility (within the limits of potential competing demand for development on adjacent sites in the business park) to enable in-situ expansion of the building over time to accommodate other community functions.

There are questions of cost confirmation for site development, willingness of partners to commit to a larger project, and fundamental questions around whether the University commitment to fund is based on the UNB Endowment Lands site. The City and partners may, in their discretion, seek further clarification on these matters before determining their preferred option and its inclusions. However, at this time and based on the limitations of the work to date, Option 2 is recommended for further detailed assessment and as a basis for the development of a funding plan.

1 Introduction

1.1 Project Background & Purpose

The University of New Brunswick (UNB) has announced its intention to close its aquatic facility, Sir Max Aitken (SMA) Pool. The UNB pool has served as an important aquatics venue for the community since its construction in 1967. In response to this announcement, Regional Service Commission 11 (RSC 11) is undertaking a community needs analysis, financial feasibility assessment and indicative business plan for a prospective new regional aquatic facility.

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- Driving a community-focused capital campaign; and,
- Transitioning the project into its next phase: design and construction.

The study identifies the optimal site characteristics, locational attributes and potential synergies with other recreational assets that should underpin the choice of location for the proposed facility.

As part of this study, the opportunity to add other uses has been considered to date. The body of the report addresses the inclusion of a multi-use space as a modular addition that can be developed either in conjunction with the aquatics centre or as a future addition.

Some initial financial feasibility work undertaken by Hemson Consulting indicates the potential (under the correct circumstances) for the gymnasium to be revenue neutral or revenue positive operationally¹. There is a need to ensure

¹ In direct operational cost terms, programming of a gymnasium has the potential to be revenue neutral or positive assuming staff and program costs are managed. Direct cost recovery of a gymnasium is not the issue – a realistic measure is the allocation of indirect operating costs (building-related) and whether, in an overall sense, this additional use in the aquatics centre represents a modest extension of operational costs for the facility as a whole while providing for much valued multi-purpose space.

Typically, the decision point rests with the scale of extra capital costs necessary to include the gymnasium. It should also be noted that there is a considerable difference between a double gymnasium and a larger field house (equivalent or larger than a mid-sized adult community soccer pitch) in terms of capacity to achieve a positive annual operating position. Managed correctly based on a range of uses, rental and pricing arrangements and demising of rental space, a field house has greater

that the final composition of uses does not serve one or two interest groups, to the exclusion of others, but represents a partnership-based approach to the determination of activity components, the capital funding, operating model and the creation of multi-generational recreational space for the community.

1.2 Previous Work Undertaken

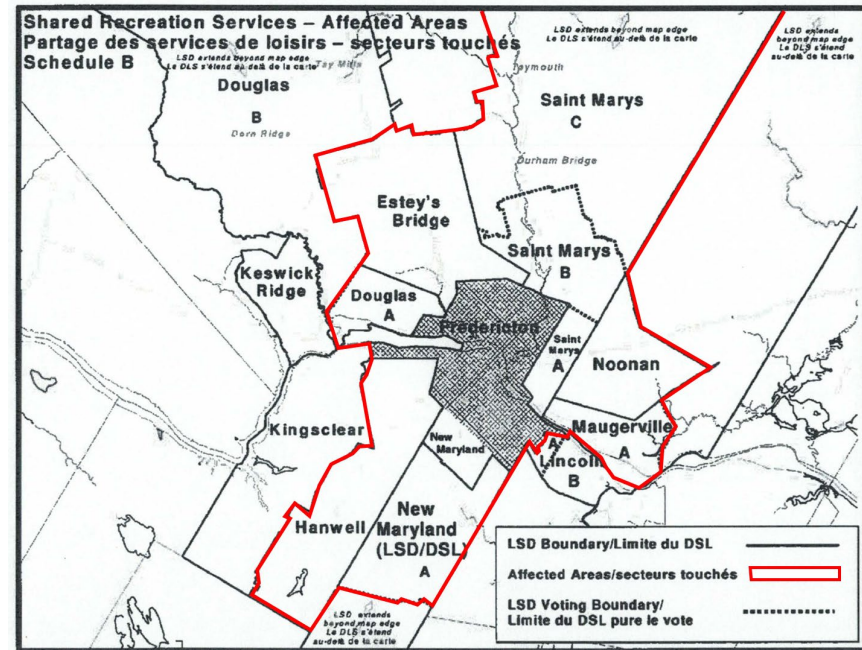
The City of Fredericton completed a Feasibility Study for an Indoor Aquatics Facility in 2013, with consultants dma Planning & Management Services Inc. and WGD Architects Inc. The Study identified 3 options, with the preferred option being a three-tank aquatic facility with a 25 metre 8-lane tank with a separate leisure pool and small therapy pool. Approximately 10,000 square feet of ancillary space was also accommodated within the building design for general and multi-purpose uses. Two options for siting the aquatics building, both in the general area of the Grant Harvey Centre, were contemplated. This location provides the basis for this study's analysis.

1.3 Regionality of the Facility

A Recreational Service Agreement between the City of Fredericton and participating municipalities and Local Service Districts (LSDs) within RSC11 is currently in place that allows residents of the participating LSDs to have access to the same

potential to generate revenue. Accordingly, there is often a more attractive for-profit business model associated with field houses, especially

Exhibit 1: Participating Municipalities for Shared Recreation Services



Sources: City - LSDs Shared Recreation Service Agreement, 2008.

recreational services provided to the residents of the City without payment of non-resident user fees.

This study, and its analysis, is based on the assumption that the development of a regional aquatics facility will serve the broader communities, beyond the City of Fredericton, that comprise the existing service area agreement. However, it is

if this is comprised in an air-supported bubble. A field house is not considered as part of this feasibility report.

recognized that regional services, such as a new aquatics facility, extend beyond the existing service area boundaries, which therefore may need to expand as a result of the development and desire of non-service area municipalities to be part of the new service area agreement.

At present, the participating municipalities and LSDs include the Village of New Maryland, Rural Community of Hanwell, and LSDs of Douglas, Estey's Bridge, Maugerville, Saint Marys, New Maryland, and Noonan, as shown in Exhibit 1. It should be noted that while the Town of Oromocto is not part of the existing service agreement, it is a key stakeholder in this study's process.

It is understood that the existing service area agreement is up for renewal in 2027 and that a new infrastructure project, such as an aquatics facility, would necessitate an amendment to the service agreement to include it. Further details of the existing cost sharing agreement are provided in Section 2.3.4.

1.4 Limitations of Analysis

The contents of this Report and the analysis herein is based, in part, upon a range of primary analyses and secondary sources of information, supplemented where required by investigative discussions with municipal staff, community organizations as well as public consultations. While every effort is taken to ensure the accuracy of secondary sources of information, neither Sierra Planning and Management, nor its sub-consultants, can warranty the accuracy of this information. In the event that secondary source information is inaccurate or

incomplete, Sierra Planning and Management will not be held liable for original errors in data.

This feasibility report is presented on the condition that the recommended additional studies and analysis outlined in the report are undertaken as part of the next steps toward realization of the Fredericton Region Aquatics Facility. Accordingly, the reader is advised that final decisions regarding the commitment of capital dollars to the construction of the facility should be based on further design, site planning and costing as recommended in this report.

The report and the information contained within it, is prepared specifically for the purposes as laid out in this report. Reliance on information and opinion contained in this report for other purposes, or extracted in part from the entire report, is not permitted.

The financial feasibility analysis is undertaken as a baseline assessment of costs and revenues under normalised operating conditions after a period of 1 or 2 years of ramp-up in both costs and revenues to operate at maximum utilization. The capital costs identified in this report represent an order of magnitude assessment based on a Class D estimate of costs and include an elemental cost breakdown.

1.5 Study Process

The study was undertaken through a linear work plan focused on:



1.6 Report Outline

The report is comprised of seven sections, and includes the following information:

Section 2: summarizes the growth dynamics of the market area (City and broader communities); summarizes the policy framework in which the facility is being planned; provides a review of the form, function and utilization of the existing pool facilities; summarizes the community's anticipated indoor recreation needs which this plan should, in part, aim to fulfill.

Section 3: reviews how engagement activities have helped to develop the functional program and concept design.

Section 4: addresses the option for a 50m pool, and provides considerations related to sports tourism.

Section 5: provides an overview of the two options which comprise the location analysis, details the development opportunities and challenges for each.

Section 6: provides an overview of the analysis completed as part of a 2017 study related to the expansion of the Fredericton Indoor Pool (FIP), for comparative purposes.

Section 7: details the rationale and design considerations of the concept designs for the two options and provides the order of magnitude capital cost estimates for each concept.

Section 8: outlines the 5-year operating proforma for a new aquatics facility including details on the expected sources of revenue, anticipated expenses, and surplus/deficit to be generated by a new facility.

Section 9: addresses elements for consideration related to the implementation of the facility, specifically the capital funding and partnership options which will impact the delivery. The section concludes with key recommendations and next steps.

2 Situation Analysis

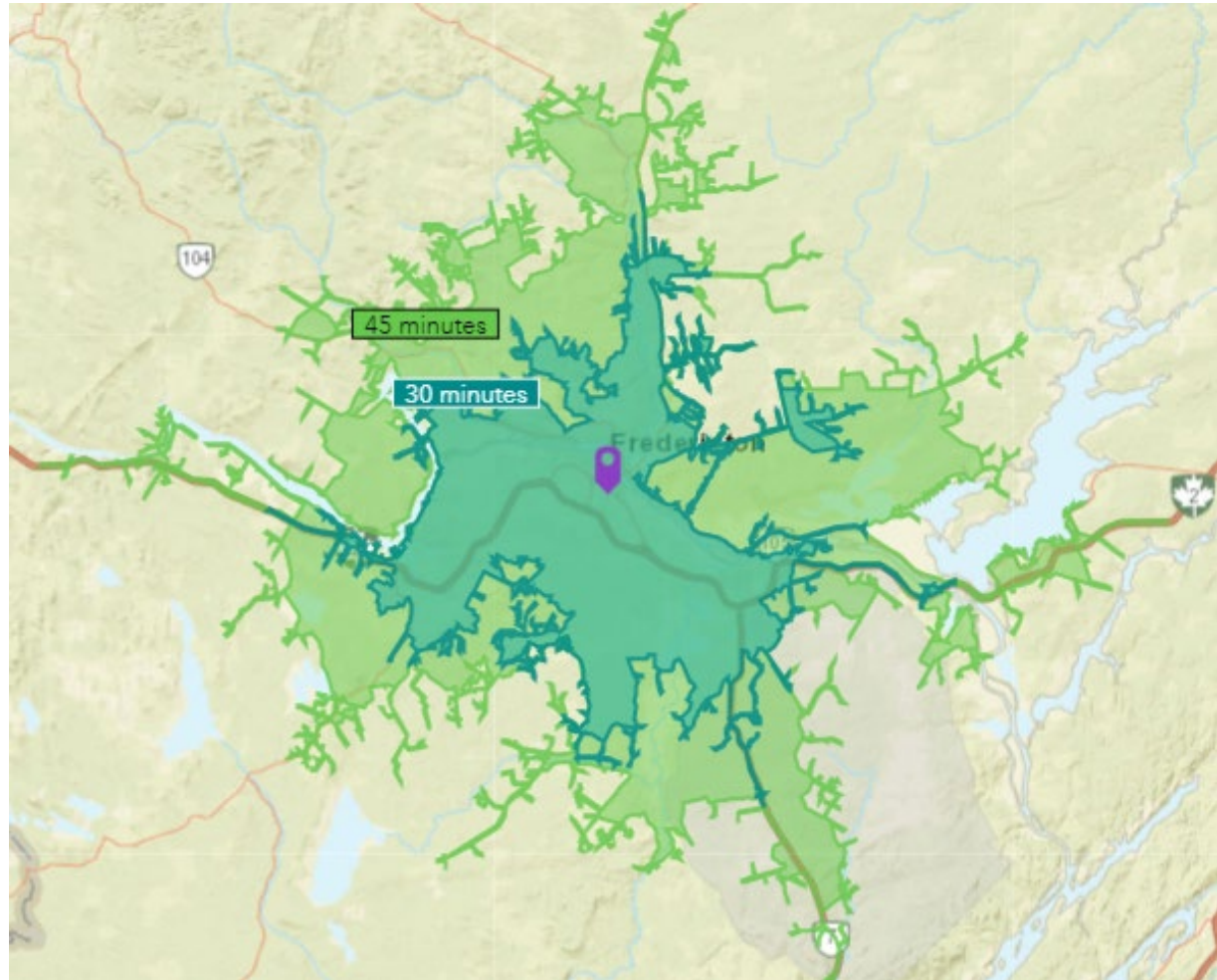
2.1 Market Area Profile

2.1.1 Definition of Market Area

Due to the regionality of use for recreation facilities centred in Fredericton, the market area for an aquatics centre has been established that encompasses the City of Fredericton and parts of the broader region that are within a reasonable drive time (30-minutes) of the proposed Grant Harvey Campus site. This totals a population of over 114,000, and includes all, or portions of, the following municipalities:

- Village of New Maryland;
- Town of Oromocto;
- Lincoln Parish; and
- Portions of Hanwell, New Maryland (LSD), Keswick Ridge, Douglas, Estey's Bridge, Saint Marys, Noonan, and Maugerville.

Exhibit 2: Market Area Definition



Source: ESRI Business Analyst, 2020.

2.2 Population Dynamics

For the purposes of analysis within this section of the report various data sources have been utilized and noted as such, including:

- RSC 11 Regional Profile (2018);
- Environics ESRI Business Analyst Data (2019);
- Small-Area Population Forecasts for New Brunswick with 2016 Census Data: Simplified Model Report, NB-ITDT; and
- City of Fredericton Growth Strategy, 2017.

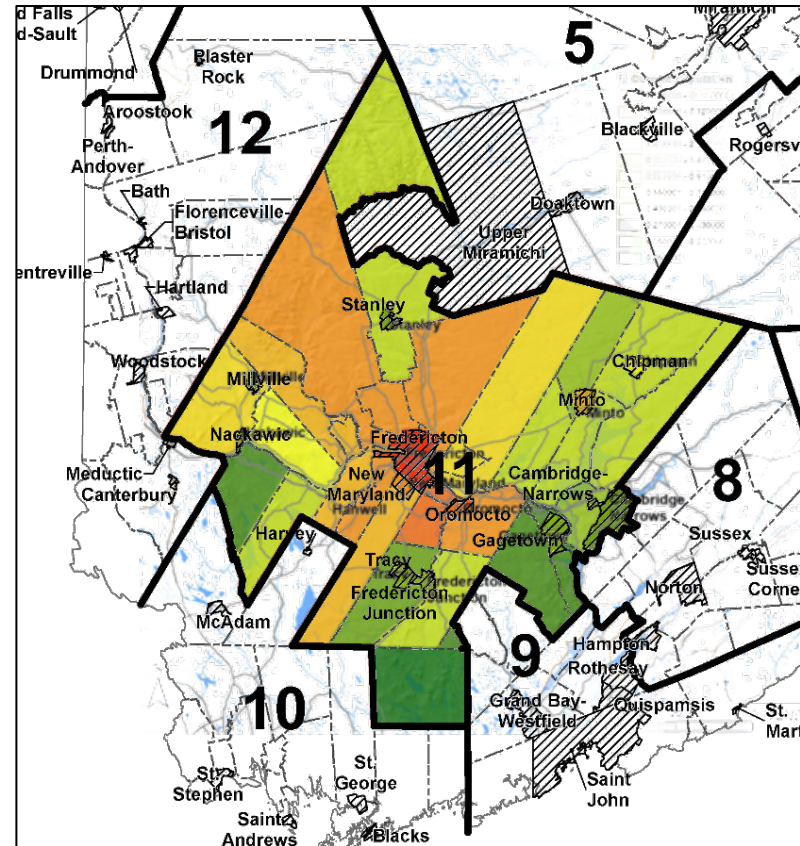
It should be noted that the RSC 11 Regional Profile provides data based on Statistics Canada Census Profiles for the years 2011 and 2016, while the data obtained from ESRI Business Analyst enables a finer level of analysis (at the Census Subdivision and Dissemination Area levels) and reflects the years 2014 and 2019, providing the most up to date information available at the time of reporting.

2.2.1 Population Growth

At a broad scale, the 2018 RSC 11 Regional Profile provides data for historic growth for all municipalities within the Regional Service Commission.

Most municipalities have grown modestly and in sync with their counterparts, however, the Village of New Maryland and some of the more rural LSDs experienced a decline between 2011 and 2016.

Exhibit 3: Map of RSC 11 Municipalities



Source: SPM based on RSC 11 Regional Profile, November 2018.

Exhibit 4: Population Growth for RSC 11 Municipalities

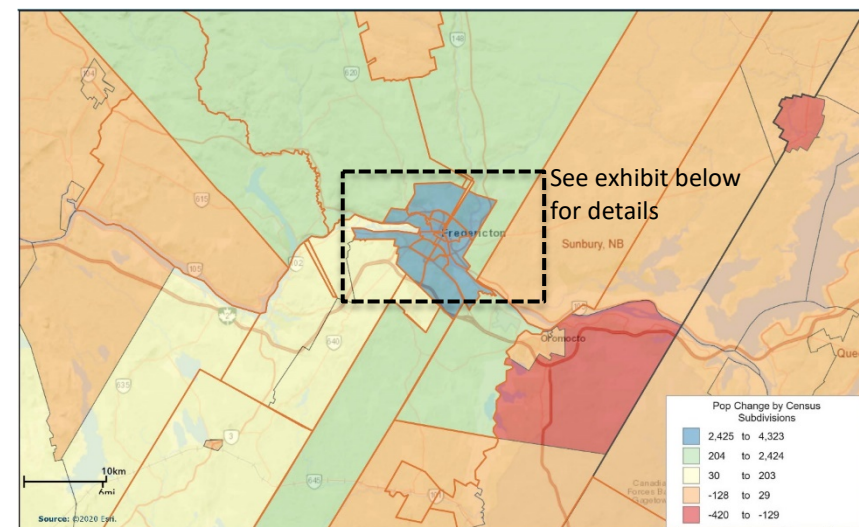
Municipality	2011		2016		5-Year Change
	Pop.	% of total	Pop.	% of total	
City of Fredericton	56,224	44.20%	58,216	44.96%	1,992
Town of Oromocto	8,932	7.02%	9,219	7.12%	287
Lincoln LSD	6,454	5.07%	7,173	5.54%	719
Douglas LSD	6,081	4.78%	6,151	4.75%	70
St. Mary's LSD	4,733	3.72%	4,843	3.74%	110
Rural Community of Hanwell	4,740	3.73%	4,752	3.67%	12
Village New Maryland	4,232	3.33%	4,169	3.22%	-63
New Maryland LSD	2,466	1.94%	2,603	2.01%	137
<i>All other areas of RSC 11</i>	<i>33,332</i>	<i>26.21%</i>	<i>32,358</i>	<i>24.99%</i>	<i>-974</i>
RSC 11 Total	127,194	100%	129,484	100%	+2,290

Source: SPM based on RSC 11 Regional Profile, November 2018.

In general, the population in the Fredericton Region has seen growth over the past 5 years. When looking at the regional context, the City of Fredericton has seen the highest growth (shown in blue on adjacent exhibit, top), followed by the New Maryland LSD, Keswick Ridge, Douglas, Estey's Bridge, Lincoln, and Saint Marys.

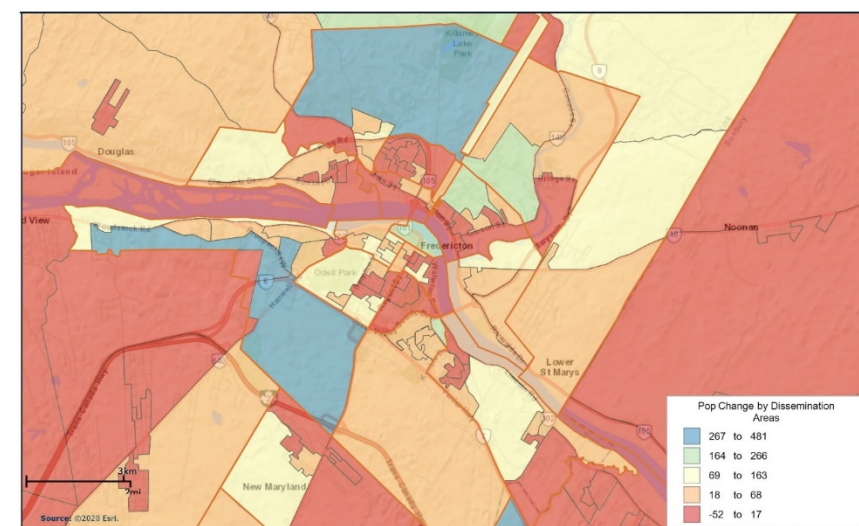
When looking more closely at growth within the City itself, areas of higher growth are concentrated in a few key neighbourhoods (shown in blue and green on adjacent exhibit, bottom), located on both sides of the river.

Exhibit 5: Population Change 2014-2019 by Census Subdivision



Source: ESRI Business Analyst, 2019.

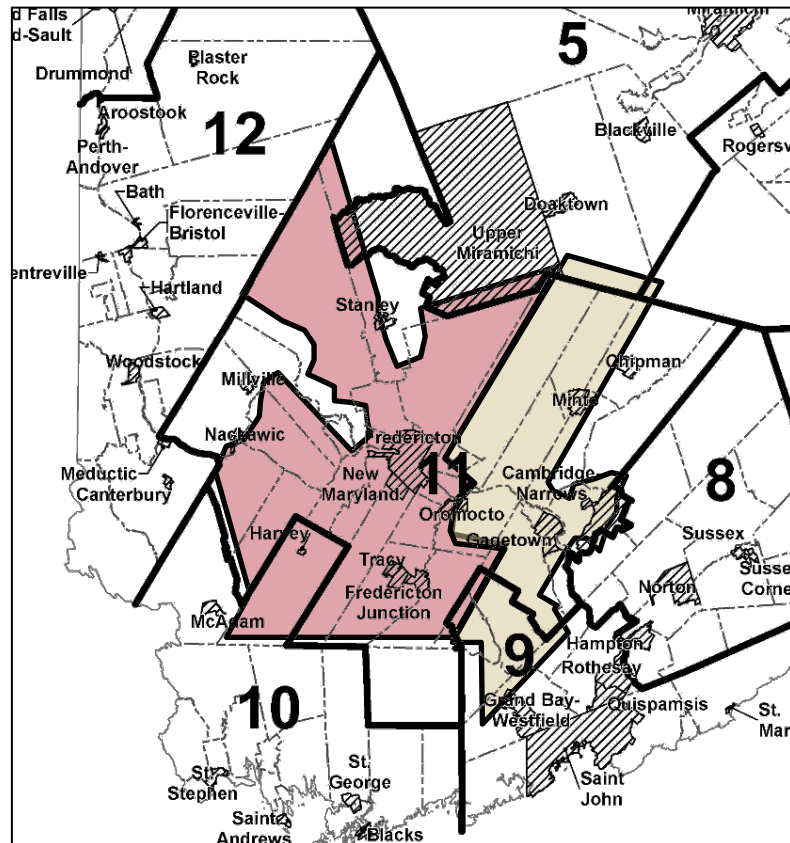
Exhibit 6: Population Change 2014-2019 by Dissemination Area



Source: ESRI Business Analyst, 2019.

Population projections for the Province of New Brunswick provide for different boundaries when considering future growth. Those sub-regions that are in the study area have been highlighted below and are considered for analysis purposes.

Exhibit 7: PETL Employment Sub-Regions Relevant to Study



Source: SPM based on Small-Area Population Forecasts for New Brunswick: Simplified Model Report, NB-ITDT

Much of the Market Area lies within the Fredericton Sub-Region as defined by the Province, however, Noonan and Maugerville lie within the Oromocto/Gagetown Sub-Region, therefore it is included here for population growth analysis purposes. Both areas are expected to experience population growth to 2036, with a majority of the growth focused in the Fredericton Sub-Region, with over 17,000 additional residents expected (a compound growth rate of 0.8% per annum).

Exhibit 8: Forecast Population Growth for PETL Employment Sub-Regions Relevant to Study

PETL Employment Sub-Region	2016		2036		20-Year Change
	Pop.	% of total	Pop.	% of total	
Fredericton	98,903	83.10%	116,099	84.99%	17,196
Oromocto/Gagetown	20,111	16.90%	20,502	15.01%	391
Total	119,014	100%	136,601	100%	+17,587

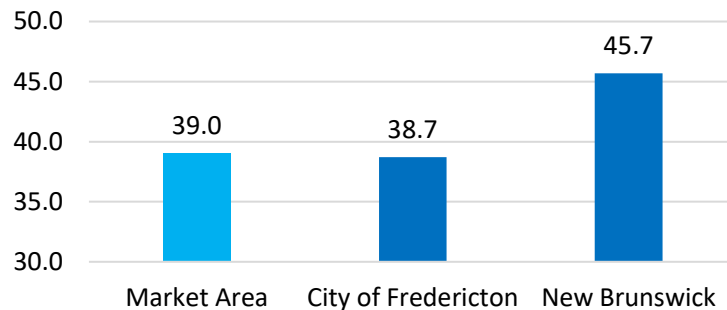
Source: SPM based on Small-Area Population Forecasts for New Brunswick with 2016 Census Data: Simplified Model Report, NB-

This is in line with population projections provided in the City's Growth Strategy (2017), which anticipates the city to grow to approximately 88,000 residents by 2036.

2.2.2 Age Profile

When considering the median age of residents, the Market Area and the City of Fredericton are comparable around 39 years. The province of New Brunswick has a higher median age at 45.7 years.

Exhibit 9: 2019 Total Population Median Age

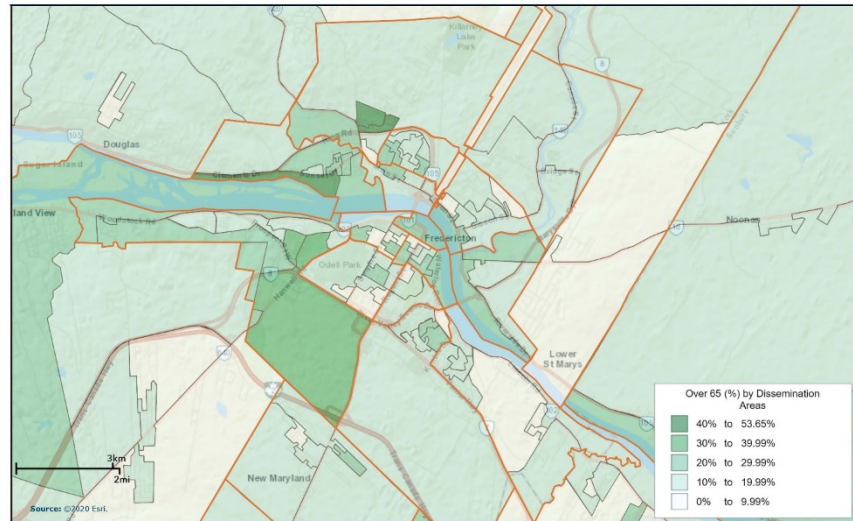


Source: SPM based on ESRI Business Analyst, 2019.

The distribution of children and youth (0-19 years), and in turn younger families, indicate that higher concentrations are found in areas outside of the city, including Hanwell on the south side of the river and Saint Marys (District A) on the north side. Based on the 2016 Census, Fredericton does have a growing 0-4 age cohort, indicating a shift back to younger families.

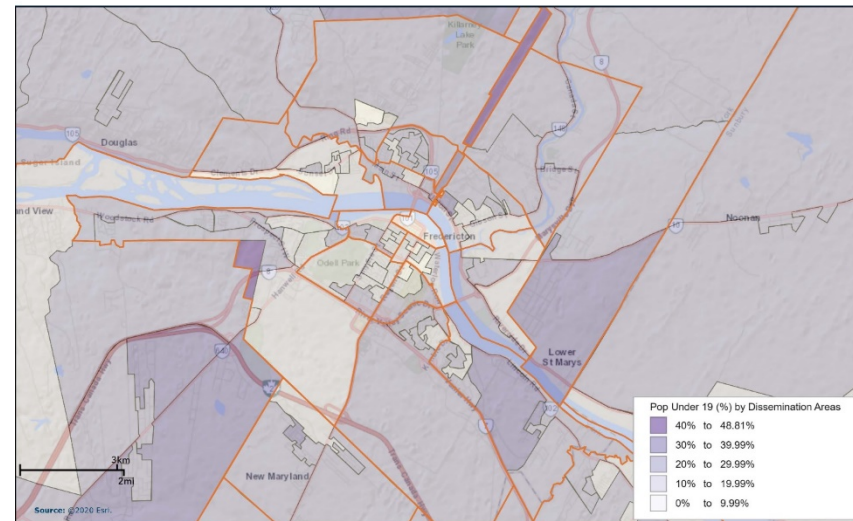
In contrast, higher concentrations of older adults (65+ years) are found in certain areas within the boundaries of the City of Fredericton. More than 30% of residents within the neighbourhoods of Garden Creek, Sunset Acres, and Brookside West are over the age of 65 years.

Exhibit 10: Population Over 65 Years of Age (%) by Dissemination Area



Source: ESRI Business Analyst, 2019.

Exhibit 11: Population Under 19 Years of Age (%) by Dissemination Area

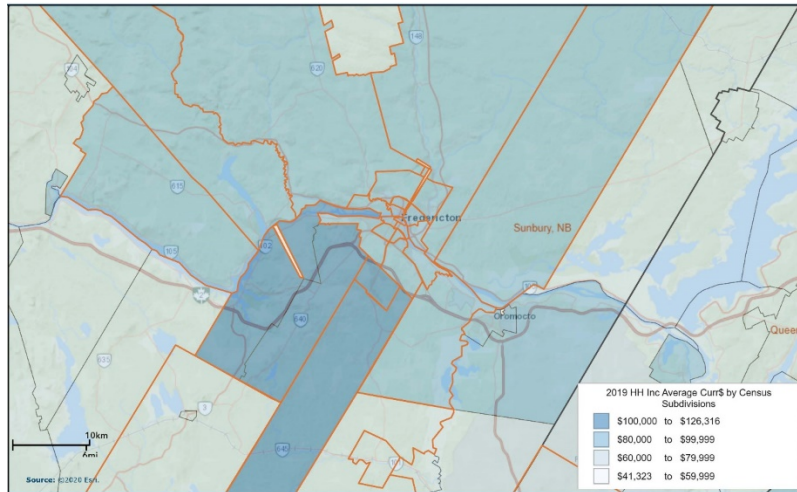


Source: ESRI Business Analyst, 2019.

2.2.3 Income Profile and Spending Patterns

2019 data derived from Business Analyst (ESRI) shows that when broken down by Census Subdivision, those areas to the south of the river, namely New Maryland and Hanwell, have average household incomes of over \$100,000.

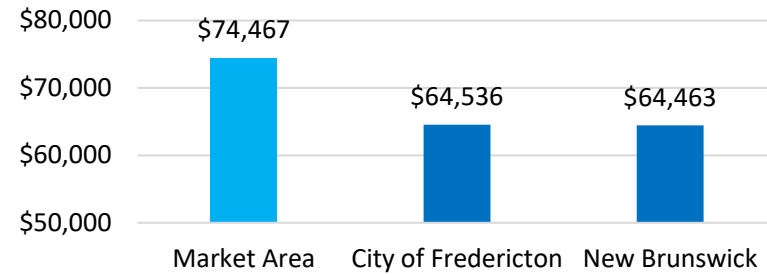
Exhibit 12: 2019 Average Income by Census Subdivision



Source: ESRI Business Analyst, 2019.

Within the Market Area the median household income is \$74,467, which is higher than in Fredericton, and the Province as a whole.

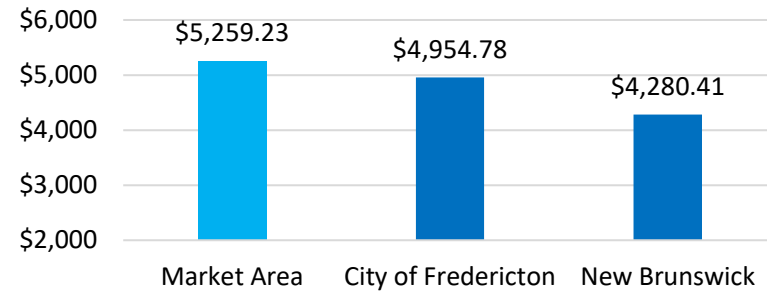
Exhibit 13: 2019 Median Household Income (After Tax) Comparison



Source: SPM based on ESRI Business Analyst, 2019.

The average household spend in the Market Area on recreation is currently \$5,259, higher than the average household spend in Fredericton and New Brunswick.

Exhibit 14: 2019 Average Household Spending on Recreation



Source: SPM based on ESRI Business Analyst, 2019.

Looking more closely at the comparative data on spending in 2019, on average, households in the Market Area spend \$679 on the use of recreation facilities annually, compared to \$389 for households within the province as a whole.

2.2.4 Conclusions of Market Profile

Based on the information presented above, several conclusions can be drawn:

- Both the City and region are growing on both sides of the river;
- The market area has a younger population profile than the province as a whole;
- The market area has a higher income profile and propensity to use recreational services than the province. This is highest in areas outside of the city limits, supporting the regional nature of the proposed facility.

2.3 Policy Context

Each community that allocates public resources, whether funding or facilities, does so with the intent to meet the public interests that are served as a result. A collaborative approach, designed to achieve efficiencies in the planning and delivery of facilities and services, can extend these resources and increase their beneficial impact. The following policy framework outlines the benefits of and supports the need for investment in recreation infrastructure.

2.3.1 National and Provincial Recreation Framework Policies

Both the Federal and Provincial (GNB) governments have created policy documents to guide investment in, and provision of, recreation facilities, programs and services:

- Federal Strategy: 'A Framework for Recreation in Canada: Pathways to Wellness' (2015)
- Provincial (GNB) Strategy: 'New Brunswick's Wellness Strategy 2014-2021: The Heart of our Future' (2014)

It should be noted that the Province of New Brunswick also has a Sport and Recreation Policy, introduced in 1994 and renewed in 2017. The policy provides a series of principles that are the foundation of the province's sport and recreation system. The new Policy Framework aligns with the Federal 'Pathways to Wellness' Strategy, and convey a set of concepts, principles and roles to guide the use and evolution of New Brunswick's recreation and sport delivery system into the next decade. It is intended to build the relationships necessary to ensure that citizens and communities fully benefit from the system's potential to enhance the quality of life and wellbeing.

The Sport and Recreation Policy stresses the important role that Regional Service Commissions play to address recreation and sport matters that are regional in nature. The RSCs encourage regional cooperation to collaborate on issues and decisions, infrastructure development, and the provision of regional services and cost sharing arrangements, among others.

Wellness and Wellbeing

Both wellness documents are based on distinct but mutually supportive definitions of wellness. Both strategies highlight the importance of municipal investment in resources that will improve residents' ability to maximize their level of wellness and wellbeing.

The frameworks are grounded in a series of principles and values to guide the continued development and provision of recreation. There is complementary overlap between the key principles and values of both the national and provincial frameworks for wellness and wellbeing. Relevant to this study, guiding principles for these frameworks comprise:

- **Focusing on Inclusiveness, Equity and Access:** Creating equal opportunities for success and participation for all. For example, the Strategic Plan (2016-2020) for the Sport and Recreation Branch of GNB identifies Inclusiveness and Access as one of its strategic goals, with 4 areas of priority: Women and girls of all backgrounds and circumstances, persons with a disability, aboriginal persons, and economically disadvantaged persons.
- **Recreation as a Public Good:** Recreation has through much of the twentieth century, been regarded as a public good – with an emphasis on accessibility for all, outreach to disadvantaged groups, and a belief in the universal benefits of recreation to the whole community. In the 1990s, this philosophy came under increasing pressure for cost recovery and revenue generation. Despite this shift, leaders in recreation have continued to stress the need for recreation as a public good, with equitable access to recreational experiences for all.
- **Lifelong Participation:** Recreation has benefits for all community members at all ages, from early childhood to old age. Accordingly, recreation providers and

community leaders must plan for the provision of recreational experiences for community members at all ages.

- **Sustainability:** Recreation must be provided through a system that is sustainable in terms of human resources, economics, and the environment.
- **Partnerships and Collaboration:** All stakeholders must be open to the formation and nurturing of effective partnerships and collaborative opportunities to grow the provision of recreation services that meet the needs of community members adhering to the above guiding principles and values. In this regard, the development of partnerships and collaborative exercises must be outcome driven.

Identified Challenges

Both documents provide guidance and direction for the provision and evolution of recreation services in the context of a series of identified challenges. There is overlap between the two documents in terms of identified challenges:

- **Demographic shifts that impact how we recreate:** Across the country, Canadian communities are experiencing a combination of aging populations, growth in ethnic diversity, rapid urbanization, and depopulation in rural and remote areas. These shifts impact how residents choose to recreate and accordingly how recreation providers must respond to community needs.

- **Health challenges:** Societal shifts have led to a rise in sedentary living and more unhealthy eating practices, which have increased the incidence of chronic diseases like diabetes and heart disease. This is paired with a rise in mental health concerns such as depression and youth suicide.
- **Rising economic inequality:** The gap between the wealthier residents and lower income community members has grown considerably over the past few years across Canadian communities. This raises unique challenges in terms of promoting equal access to recreation opportunities.
- **Social challenges** including:
 - Persistent unemployment;
 - Busy schedules;
 - Rapid development;
 - Use of social media instead of face-to-face interaction; and
 - The loss of traditional supports.

These have compounded feelings of isolation for many people, and negatively affected civic involvement, social connectedness, community engagement, and social cohesion.

- **Infrastructure deficits** in many communities that hamper access to recreation opportunities due to deficits in both quality and quantity.

- **Economic development that negatively impacts the natural environment:** This reduces the quality and quantity of high-quality outdoor spaces that Canadian can use for recreation and wellness pursuits.

2.3.2 Investing in Infrastructure

Investment in recreation infrastructure is an important part of local economic and social development, particularly in Canada's small towns and cities. Documents consulted as a part of the development of this study include:

- *FCM Canadian Infrastructure Report Card (2019);*
- *Investing in Canada Infrastructure Plan (2019); and*
- *New Brunswick Sport Plan (2008).*

The Canadian Infrastructure Report Card provides an assessment of the health of municipal infrastructure as reported by communities across the country through a voluntary survey to help decision-makers “identify cracks in the important foundation”, and guide solutions to address them. Municipalities own nearly 60% of the core infrastructure assets that are critical to quality of life in Canada, and 30% of this infrastructure is in fair, poor or very poor condition. Key findings for sport and recreation facilities are:

- One of the asset classes most in need of attention, with approximately 30-35% of the assets in fair condition or worse;
- Large proportion of some facility types are more than 50 years old; and

- Asset classes in the worst condition include indoor 25 metre pools, outdoor / wading pools, and single ice pad arenas.

In 2018, a bilateral agreement between Canada and New Brunswick was signed for long-term infrastructure projects. This agreement is set to provide more than \$673 million over the next 10 years in federal funding under the *Investing in Canada Infrastructure Program (ICIP)*. The projects supported through this agreement, which includes a community, culture and recreation infrastructure stream, will be cost-shared between the federal government, provincial government, municipalities and other partners.

These policies make a strong argument that the social, economic and quality-of-life benefits of sport to the individual, community, and province, far outweigh the economic investment required to increase participation in sport across New Brunswick. They identify, however, that the age of existing facilities, and financial constraints of communities, mean that more strategic approaches to the provision of recreation infrastructure are required. It is in this context that regional planning has a strong policy foundation.

2.3.3 Policies for Collaboration

The Government of New Brunswick (GNB) established the RSCs for the purposes of promoting regional service in the current municipal structure of the province with cost minimization and enhanced taxpayer value for money in mind. Recreation has increasingly become an issue of regional significance for the RSCs, which are mandated to promote

regionality. Therefore, the Province has developed a policy base in support of regional collaboration and its financial commitment to collaboration in recreation is focused on the funding available for recreation leadership assistance to the RSCs.

An Action Plan for a New Local Governance System in New Brunswick (2011), Objective 3: Increased Collaboration, Communication and Planning between Communities remains a work in progress. Thus far, the New Brunswick Regional Development Corporation (RDC) Guiding Principles for Recreation Infrastructure Investments gives authority to the RDC regarding provincial investments in recreation infrastructure. Municipalities, RSCs and not-for-profit corporations are eligible recipients of funding (LSDs are not). The guidelines for investment include several important tests of regional collaboration:

1. Have the support of the municipality and/or LSD and/or RSC;
2. Have a strong community and/or private sector support as demonstrated by funding and/or fundraising efforts;
3. Provide success indicators and tangible/measurable economic benefits;
4. Be in a strategic location that supports a new or existing development initiative; and
5. Leverage funding and/or investment from federal, local and/or private sources.

2.3.4 Existing Cost Sharing Agreement

Following a long process of debate and recognition of the need for a solution to the regional use of City-based facilities, in 2008, a Recreational Service Agreement between the City of Fredericton and participating municipalities and Local Service Districts (LSDs) was developed. The City owns and maintains various recreation facilities that provide benefits to the city and surrounding areas, and therefore, the agreement identifies that through taxation, residents of the participating municipalities and LSDs have access to the same recreational services provided to the residents of the city without payment of non-resident user fees. This includes indoor and outdoor facilities (e.g. FIP, arenas, youth and senior centres, sports fields and courts, trails) that were operational at the time that the agreement was created. Since this time, a number of additional facilities have been developed within the City and are therefore not included in the cost sharing calculation. Consideration for new facilities, including the development of a regional aquatics facility, will require re-examination of the terms of the agreement.

At present, the participating municipalities and LSDs includes the Village of New Maryland, Rural Community of Hanwell, and LSDs of Douglas, Estey's Bridge, Maugerville, Saint Marys, New Maryland and Noonan. As noted previously, Oromocto is not part of the existing cost sharing agreement, however, they are a partner for this study, indicating that their inclusion in future agreements is likely warranted.

The total annual contribution to be paid by each of the participating LSDs is calculated as follows:

- 50% of contribution is based on each participating LSD's share of the total tax base of all the participating LSDs for each year; and
- 50% of contribution is based on the participating LSD's share of the total number of all participating LSD ice sport and non-ice sport users of City Recreational Services (using most recent date).

The current agreement stipulates that the participating LSDs impose a tax rate cap of three cents for every one hundred dollars of property tax assessment within their jurisdiction that contributes to the shared recreational service account in order to cover the required annual contribution (four cents for every one hundred dollars of property tax assessment for the Village of New Maryland). Any variations between the calculated contribution and the tax rate cap figure are then carried forward to be used in subsequent years of the agreement. The agreement is in effect until December 31, 2027.

The closure of the Sir Max Aitken Pool and subsequent development of a new aquatics facility that is in municipal

control is ultimately a transfer of service from the University's account to that of the municipal sector (City of Fredericton). Not only does this create the need to consider its inclusion in a regional cost-sharing agreement, but it also needs to be assessed in terms of the approach to the quantum of the annual operating share, in addition to any capital share. These items will be required to be addressed as a result of the recommended plan put forward in this report. If an equitable cost-sharing solution is to be implemented, consensus will be required as to the scale of the facility, as well as the approach to addressing the operating impacts to the annual contributions from the net addition of a facility to the agreement's terms.

Exhibit 15: Participating Municipalities for Shared Recreation Services (layered on drive time mapping)



Sources: SPM based on ESRI Business Analyst, 2020; Shared Recreation Service Agreement, 2008.

2.4 Existing Sir Max Aitken Pool at UNB

The existing 25 metre, 6 lane pool was built in the late 1960s on the University of New Brunswick Campus. U.S. Senator Robert Kennedy officially opened the facility during a visit to the campus in October 1967.

The pool is housed in the Lady Beaverbrook Gymnasium building which also includes two gymnasiums, squash courts, a climbing wall, and faculty and academic spaces.

The pool is L-shaped to include a diving tank with one 3 metre diving board and two 1-metre diving boards and includes diving blocks.

2.4.1 Functional Analysis

The pool's limitations are the product of aquatics facility functional space planning from the 1960s, and generally lacks the modern requirements typical in today's planning realm for tournaments, swim meets, and general aquatics programming opportunities. Based on a visual assessment conducted by the study team, existing limitations include:

- No zero entry (access to pool is via ladder only);
- No therapy pool;
- Pool deck space is limited;
- shallow end prevents the ability to execute underwater turns in race setting; and
- 80°F temperature not ideal for leisure swimming; more suited to competitive swimming.



Existing Sir Max Aiken Pool

2.4.2 Utilization & Programming

The annual number of person pool visits by type of visitor – student drop-in/student program/external user group, etc. – is an important metric by which to determine the likelihood of compaction at the pool and the degree to which it is operating close to, at, or beyond capacity. It also enables comparison between pools in different geographic areas. This information is unavailable and may not be collected by the University given that the pool is part of the Lady Beaverbrook complex and recorded use of these and other facilities is not separated into their constituent parts. The analysis is therefore reliant on identified users and not the number of times the pool is used by each visitor.

In absence of this, estimates of the total person visit utilization have been developed. At an assumed rate of annual usage potentially in the range of 80,000 person visits, the Sir Max Aitken Pool is a well utilized pool, and its loss to the City would pressurise the existing pools in the region (FIP, YMCA and CFB Gagetown). Students and faculty make up a sizeable portion to this estimate (perhaps as high as 50%). However, we are unable to accurately predict the proportion of use by students/staff versus others and this is important because when pool services are no longer available to them as part of the campus amenities, we would anticipate some level of drop-off in demand emanating from the student and faculty/staff body. Regardless, with population growth, a new facility can expect to achieve significant utilization early on and therefore needs to be scaled appropriately for future levels of community demand.

Users Place of Residence

The majority of users at the Sir Max Aitken Pool are University of New Brunswick students, at 1,272 in 2019. There were also 670 unique drop-in/day pass users, with unknown residence. Of the remaining users, shown on Exhibit 16, 70% were from the City of Fredericton and 14% were from the other RSC 11 municipalities. Residents of the local service districts comprised 15% of these users, with the remaining 1% being from outside the RSC 11. There were five or fewer users from the following communities:

- Gagetown
- Minto
- Maugerville (LSD)
- Stanley
- Burton (LSD)
- Noonan (LSD)
- Tracy
- Queensbury (LSD)
- Dumfries (LSD)
- Upper Gagetown (LSD)
- Cambridge-Narrows

Types of Users

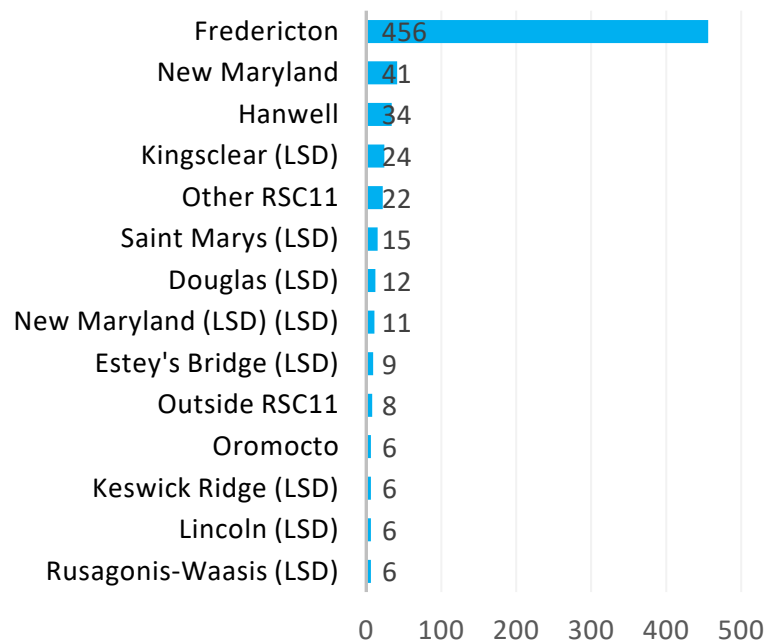
UNB students were the largest group of users, followed by unique drop-in users. Other types of users were pool members, FAST members, Silver Dolphins, synchronized swimmers, UNB Masters, UNB program users, and diving team members school users.

The University has stated that 40% of the use of their pool is university use and 60% is very broadly defined community use. It is important to distinguish these user types, as the University defines community use as including adult lap swim and that is predominantly for university faculty, staff, and students and the UNB Masters swim team which is a mix of

UNB and community members. This definition of community use is inconsistent with the needs of the municipalities and local service districts. Including the UNB Masters users as university users brings university use up to 51%. Of community users (not university), 70% of were from the City of Fredericton, 29% were from the other RSC11 communities, and 1% resided outside the RSC11.

It should also be noted that a majority of respondents to the public survey (53.7%, 635 respondents) indicated that they used the UNB pool, slightly lower than the number reporting use of the FIP.

Exhibit 16: Sir Max Aitken Pool Users by Community, 2019



Source: SPM based on data provided by UNB

2.5 Existing Fredericton Indoor Pool (FIP)

The Fredericton Indoor Pool is located on the north side of the river, in the Nashwaakis neighbourhood. It is comprised of a 25-metre 6-lane recreational pool with a water slide and tarzan rope. The facility also has a warmer temperature therapy / swirl pool and sauna. The FIP is mainly geared towards families and children for recreational uses.

The pool includes a 1 metre diving board for recreational use and mounts in the pool deck for diving blocks, however no block are current installed. Additionally, the pool offers a ramp for zero entry access.

2.5.1 Functional Analysis

In its present state, the Fredericton Indoor Pool has limitations to its functionality, as identified through the public survey.

Existing limitations include:

- Small therapy pool;
- Glassed-in viewing gallery; and
- Pool deck space is limited.

The 81-82°F temperature can accommodate a vast array of uses, including leisure, exercise, and recreational uses.



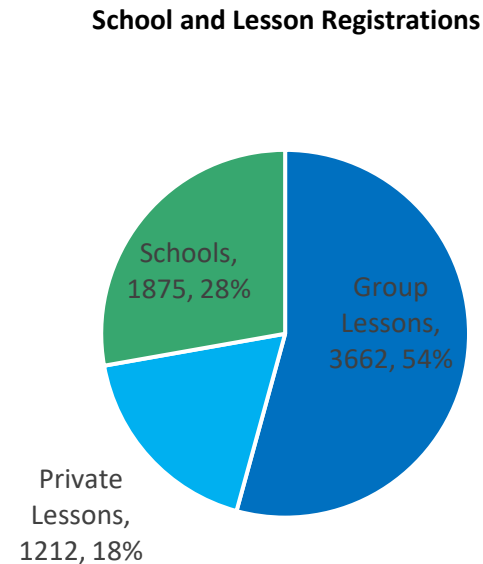
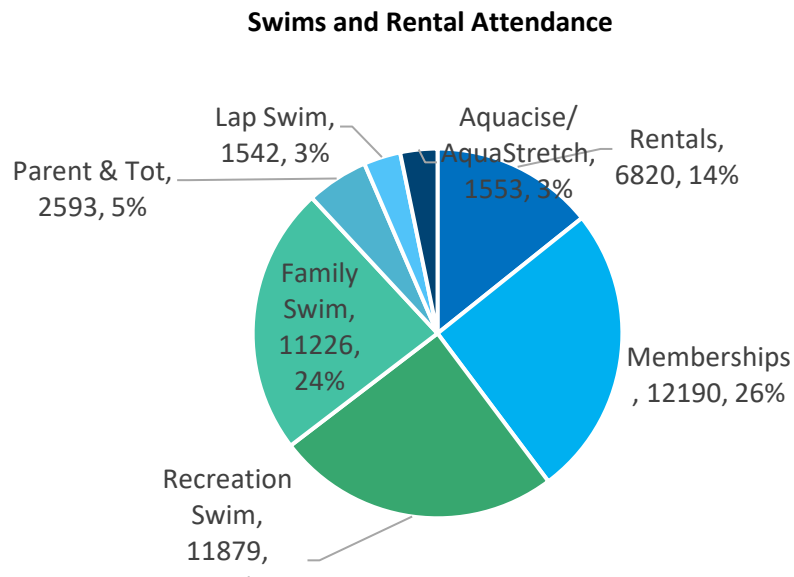
Existing Fredericton Indoor Pool

2.5.2 Utilization & Programming

Swim and rental attendance at the FIP totaled 47,803 person-visits in 2016 (the most recent year for which the data includes total visits by all classes of user). This total indicates a significant level of use based on the population of the region and consideration to some of the region's demand being met by the Sir Max Aitken Pool and YMCA pool. The largest group of users were those with memberships, those participating in family swim, and those participating in recreation swim, with rentals, and parent and tot participants comprising the majority of the remaining use.

In addition to these users there were 6,749 school and lesson registrations, representing a greater number of total visits accounting for the number of students per class and the number of classes per session (those figures are not available at this time).

Exhibit 17: FIP Total Utilization, 2016



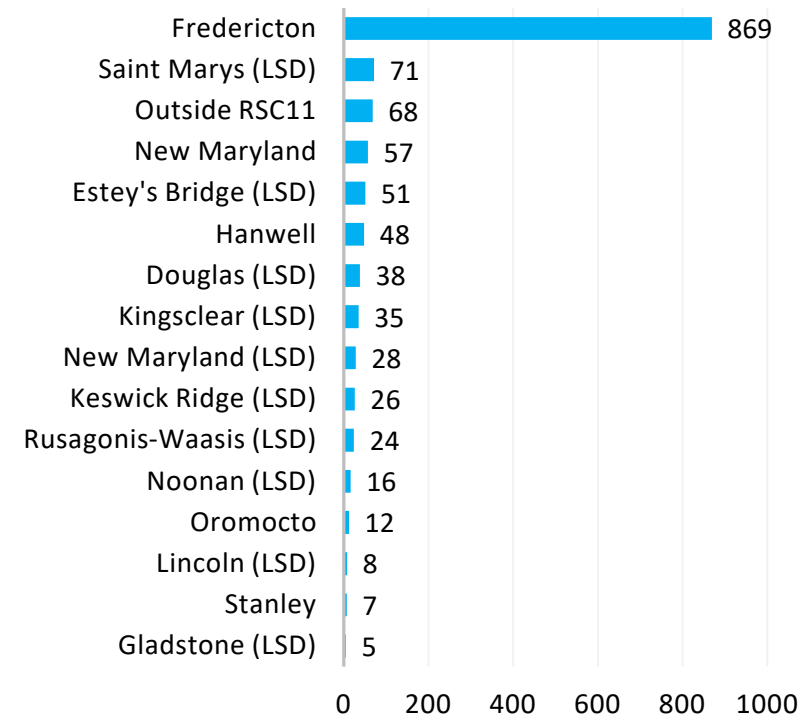
Source: SPM based on data provided by City of Fredericton

From August 2018 to September 2019 the Fredericton Indoor Pool had 8,154 unique users (this number excludes drop in users) across all types of categories other than drop in users. There is no information on municipal residence for the majority of users (83%), as these users were primarily birthday party attendees or school rental users. Of the users for whom that data is available (FIP membership and program users), 62% were residents of the City of Fredericton, and nearly a third were from the other municipalities and local service districts. 5% were from outside the RSC11 boundaries.

There were five or fewer users from the following communities:

- Gladstone (LSD)
- Maugerville (LSD)
- Bright (LSD)
- Dumfries (LSD)
- Burton (LSD)
- Cambridge-Narrows
- Tracy
- Chipman (LSD)
- Queensbury (LSD)
- Upper Gagetown (LSD)
- Gagetown
- Minto
- Prince William (LSD)

Exhibit 18: Fredericton Indoor Pool Utilization by Community, 2019



Source: SPM based on data provided by City of Fredericton

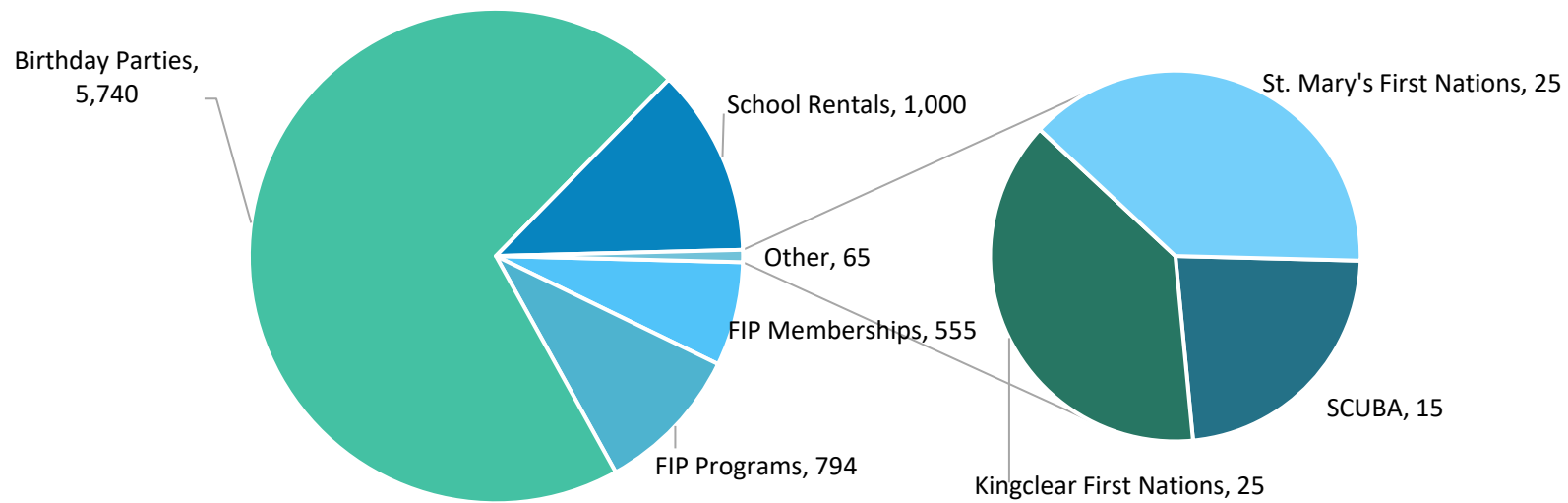
FIP drop-ins (not unique users) totaled 22,144, with the residence of those users unknown. Of unique users, the vast majority were birthday party attendees, followed by school classes and FIP programs and memberships. Note that these figures are based on the assumption that a school rental comprises 35 users on average and birthday parties comprise 25 users on average.

Results from the public survey indicate that the FIP is the most heavily used pool in the City, with 61.8% of respondents saying they used the pool. However, respondents felt that there are insufficient lap swim time slots available to adults

and for competition training, with the facility being geared more towards families and school use.

With overall annual usage above 50,000 person-visits, the FIP represents a well used facility, certainly capable of exhibiting compaction at times and with population growth, the level of service (in ratio to the population and in person-visits) can be expected to decline. This population growth-related decline in service levels, in the absence of new or expanded facilities, is further exacerbated by the functional limits of the existing building.

Exhibit 19: Fredericton Indoor Pool Usage by Type, 2019



Source: SPM based on data provided by City of Fredericton

2.6 Facility Trends & Best Practice

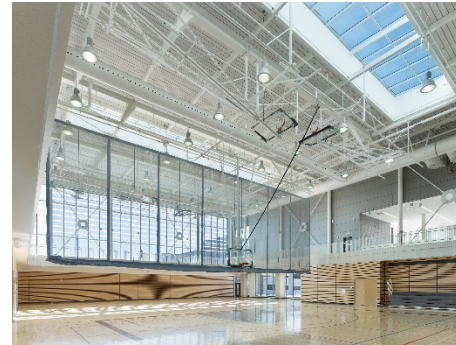
In general, aquatics facilities today are being built that function as multi-purpose community hubs – places that incorporate a number of major components where a variety of activities can occur under one roof.

A community and competitive aquatics facility, such as the one proposed in this study, is typically designed to be part of a larger recreation centre program. This affords the swim users the opportunity to augment their pool visit with access to the gym, fitness centres, multipurpose programs, group exercise rooms or libraries.

Developing multi-purpose facilities have many benefits to both the users and the municipalities developing and operating them, including:

User Benefits

- Meets current expectations of users for modern recreation facilities;
- Opportunity for a larger variety of activities to be provided; and
- Multi-generational – all family members can recreate in same facility.



Municipal Benefits

- Operational efficiencies including a reduction in staffing requirements;
- Heating and cooling offsets through redirecting energy;
- Reduced capital costs;
- Improved utilization and revenue potential; and
- Increased sport tourism potential.

These trends and benefits form the basis for the metrics of which the options for a new aquatics facility in the Greater Fredericton Region should be assessed.

Where aquatic centres are being planned as ‘stand alone’ facilities, the programming should consider some core social and fitness spaces (e.g. multi-purpose rooms, group exercise space, small program rooms, food service, etc.). The support needs will differ for the type of user; competitive, learning, leisure or therapeutic.



2.7 Anticipated Recreational Needs

When identifying the recreational needs of the community it is important to recognize that this study is not a recreation master planning exercise or update to the City's Recreation Master Plan. This study does however have a requirement to address some of the recreation needs which are compatible with and complementary to a new aquatics facility. To best understand the general recreation needs in the context of this focused study, a public survey was developed as part of the study process. Therefore, the question of whether there is merit in a bigger program of services and a bigger facility is an important one that is anticipated to follow this report as the City, in particular, seeks to confirm the option it prefers.

Additionally, there are a range of locational issues that would be relevant to meeting the needs for additional, non-aquatic uses. This study is focused on the locational needs for aquatics from a regional perspective. The potential for additional non-aquatic uses is based firmly on the benefits of compatibility and not necessarily location.

2.7.1 Municipal Recreation Plans

Three of the participating municipalities in the Recreation Service Agreement have existing recreation master plans identifying the future recreation needs of their municipality. These include the City of Fredericton Recreation Master Plan which was developed in 2008 and is in need of updating, Village of New Maryland Recreation Master Plan (2010), and the Hanwell Recreation & Leisure Master Plan (2015). The consulting team engaged with staff at the City of Fredericton

and the Village of New Maryland as part of the study process to better understand their anticipated recreational needs going forward.

The following provides discussion related to each of the existing municipal Recreation Master Plans, including the key recommendations pertaining to the provision of indoor recreation facilities.

City of Fredericton

The City's 2008 Recreation Master Plan identifies a number of recommendations related to indoor and outdoor recreational assets, parks and open space. The Plan recognizes partnerships as an integral aspect to the provision of community recreation services and identifies opportunities for partnership enhancement.

The City's facility model includes aspects of both an older model based on neighbourhood-scale facilities, as well as the newer model of multi-purpose and centralized facilities. Since 2008 the City has completed a number of major projects, including the development of the Grant Harvey Centre in 2012, while Willie O'Ree Place, a twin-pad facility, was developed on the north side in 2007. Additionally, a number of new parks have been developed which include a variety of outdoor amenities such as playgrounds, a splash pad, trails, and sports fields.

As it relates to aquatics facilities and this study in particular, the following recommendations were included in the Plan and are still relevant today:

Recommendation #45: Initiate discussion with agencies and institutions within the City regarding opportunities to collaborate and partner on development of a second indoor aquatic facility, the location of which should be on the south side of the River.

Recommendation #46: Prepare a full feasibility assessment focusing on a market assessment, business plan, and partnership assessment for an aquatic facility prior to initiating development of an aquatic facility.

Recommendation #47: Develop a second indoor aquatic facility, either alone or in partnership with an agency or institution in the City. The indoor aquatic facility should be fully accessible to the general public (e.g., not membership based). Its use should focus on recreational, instructional, fitness and therapeutic use typically found in a 25-metre pool with a leisure component in either a single or two-tank facility. The indoor aquatic facility should be developed as a component of an accessible community recreation centre not as a stand-alone facility.



Grant Harvey Centre

Village of New Maryland

The Village of New Maryland Recreation Master Plan is centred on maintaining and improving the assets and facilities that currently existing. Discussions with staff echoed this, indicating that the Village is currently focused on further developing the Athletic Park, located adjacent to the elementary school.

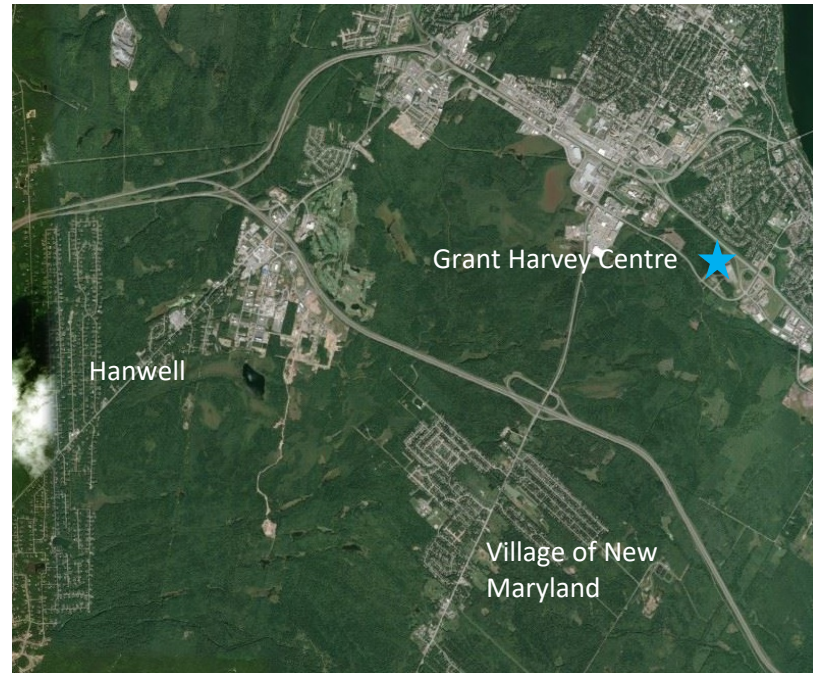
The Plan recognizes the changing delivery model with a more multi-purpose and centralized approach to facility development. Recommendation #42 speaks directly to this approach: “Assess the opportunity and community support to develop a multi-purpose, multi-generational ‘recreation hub’ to be centrally located.”

Rural Community of Hanwell

The Recreation and Leisure Master Plan for Hanwell provides direction for the development of future municipal facilities and services for the Rural Municipality. As it relates to indoor facilities, Recommendation #2 of the Plan calls for “a multi-functional community centre (social hub)” to be built.

With the Village of New Maryland and Hanwell being located directly adjacent to the City of Fredericton to the south / southwest, the development of a new aquatics facility located on the south side of the river has the potential to act as a recreation hub for their residents, albeit in a more regional context.

Exhibit 20: South Side Location Map



2.7.2 Aquatic Needs and Opportunity

Supply

There is currently 1 municipal aquatics facility within the Fredericton Region, located on the north side of the river (FIP). 3 other pools serve the residents of the region, including the pool at UNB and the YMCA – both located in the city, and the pool at Base Gagetown, located outside of city limits. Because these non-municipal facilities are prioritized for use by students, members, or military personnel, they are counted as 0.5 pool when considering the supply for public use. Therefore, the total supply of pools within the Fredericton Region is 2.5 pools.

Facility	Supply	Aquatics Amenities
Fredericton Indoor Pool (FIP)	1	25m 6-lane lap pool, therapy pool, waterslide
UNB Sir Max Aitken	0.5	25m 6-lane lap pool (L-shaped), diving tank
Fredericton YMCA	0.5	25m 4-lane lap pool, leisure pool
Base Gagetown	0.5	25m 5-lane lap pool, leisure pool with beach entry & water slide
Total	2.5	

Standards of Provision

Based on a supply of 2.0 pools in the city, the current standard of provision for the city is 1 pool per 31,326 residents (Base Gagetown Pool has been excluded when calculating the city standard). The City's 2008 Recreation Master Plan identifies a target of 1 pool per 30,000 residents.

Current Standard	City
Existing Population (2019)	63,326
Current Supply	2.0
Standard of Provision	1:31,663

Source: SPM based on ESRI Business Analyst (2019).

When considered pools on a regional basis, the current standard of provision is 1 pool per 45,780 residents based on the 30-minute drive time Market Area (calculated using 2.5 pools in the regional supply). The regional standard is expected to be lower, and like the city standard, is deemed acceptable as a basis for future planning.

Current Standard	Region
Existing Population (2019)	114,451
Current Supply	2.5
Standard of Provision	1:45,780

While the City's Recreation Master Plan is now a dated document, and due to the fact that the existing pools are not utilized at full capacity (there is room for additional use), the current standard of 1 pool per 31,663 has been deemed

appropriate to be used to estimate future needs within the city.

Based on population projections provided in the City's Growth Strategy (2017), and with no changes to the supply of pools, the standard of provision for pools would decrease over time. If the supply of pools were to increase in the future - with the closure of UNB (-0.5 pool) and the development of a new City aquatics facility (+1.0 pool) – and using the current standard of 1 pool per 31,663 residents, the future supply of pool facilities in the city, and by extension the region, would be adequate to serve the population to 2041.

Estimated Future Standard (City)	2021	2031	2041
Estimated Population	68,000	82,000	93,000
Future Supply	2.5	2.5	2.5
Standard of Provision	1:27,200	1:32,800	1:37,200
Target Standard	1 per 31,663 residents		
Surplus (Deficit)	0.1	(0.0)	(0.2)

Source: SPM based on City of Fredericton Growth Strategy (2017), approximate figures only.

Summary of Pool Utilization

Sections 2.4.2 and 2.5.2 detail the existing utilization and programming of the Sir Max Aitken (SMA) Pool and the FIP respectively. In summary, the FIP is focused more on general use by the community, while the Sir max Aitken Pool is used more by the University and aquatics-related user groups (i.e. swim teams).

The YMCA has recently conducted its own pool capacity study which may indicate, together with the FIP, as the two remaining indoor pools in the City after the UNB pool closes, there remains capacity in the City to absorb some of the demand from SMA. However, there are limits to this, and absorption of demand rather than building would ultimately result in more compaction, reasonable capacity reached sooner, and reduced levels of service as the result. When considering future population growth in the region as a whole, there is a demonstrated need to replace the SMA pool with a new build facility.

There is also the reality that as a medium-sized city serving a broader region, the City will benefit from a strategy that gives it more control in the planning and operation of recreation facilities (as per the 2008 Recreation Plan), rather than maintaining reliance on other providers. The loss of the SMA pool, as a decision made by the University, exemplifies this.

It should also be noted that the provision of a new indoor pool complex is not a reactive strategy to the University decision to close its pool, as the 2008 Recreation Plan called for the provision of a single new pool in the city.

The provision of a city pool complex will serve to meet anticipated future demand for the next 20 years. And even more than this, the standard of service will be enhanced through best practice made possible in a multi-use facility.

2.7.3 Non-Aquatic Needs and Opportunity Gymnasia

Supply & Standards of Provision

With no municipally operated gymnasium, access to gym space is provided to community groups through joint use agreements with the local school board, including the triple gym at Nashwaaksis Middle School. This, however, has limitations such as guaranteed community time each week, priority for school-related events, adequate size for adult play, etc.

In 2019, the Ministry of Education approved the closure of 4 schools in Fredericton that were aging and/or overcrowded and building 2 new ones to replace them. One of the new schools will be in Hanwell. Depending on the design of the new schools this may have an impact on the supply of gymnasiums provided within the City.



Nashwaaksis Middle School Gymnasium

Gyms	Details	Notes
Current Supply	- No municipal gym. - YMCA (1) - UNB (3) - Public schools (14)	1 gym at YMCA (membership based) - opened 2011. 2 gyms provided at UNB's Currie Centre (priority for students). - An additional (3rd) gym is located at Currie Centre but is exclusive for performance athletes and therefore not included in supply. 1 gym at UNB's Lady Beaverbrook Gym (proposed to close). - Agreements with local schools provides access to community groups.
Current Standard	1:29,110 City residents - With proposed closure of the Lady Beaverbrook gym at UNB, standard lowers to 1:38,810.	- Considering available gyms as 0.5, as they are prioritized for students and YMCA members. - Therefore, total gyms counted as 2.0 at present, with the closure of the Lady Beaverbrook Gym the supply decreases to 1.5 gyms.
Future Standard (2041)	1:62,000 City residents	Dependent on the Lady Beaverbrook Gym closing, and the remaining supply does not change.
Target Standard	1:30,000	Per 2008 Recreation Master Plan

The City's 2008 Recreation Master Plan recommended improved access to school gyms, and/or guaranteed access to one full-size gym to accommodate the high outstanding demand. The plan identifies that this could be part of a municipal facility or a facility that is in partnership with another provider. It is not clear whether the YMCA gym (built since the Plan was released) satisfies this recommendation, as the YMCA is a membership-based organization.

Utilization

The Lady Beaverbrook Gym at UNB is currently used by UNB URec programs, St. Thomas University (STU) as well as the community. The use by STU of the Lady Beaverbrook Gymnasium is an important consideration. Sierra Planning and Management understands that under the terms of its relocation agreement from Miramichi to Fredericton in the 1960s, St. Thomas University is guaranteed use of UNB's recreation infrastructure, specifically a gymnasium. We further understand that it may be argued that this requirement survives the demolition of the gymnasium. Regardless of positions regarding University obligations, with the demolition, the supply of gymnasia is reduced, and demand is unmet. For STU, the need is for a location close to its campus, which favours a location such as the Grant Harvey Centre or UNB Endowment lands.

The opportunity to meet demand with a gymnasium, as part of a new aquatic complex, has significant merit, particularly if capital funding can be sourced from non-municipal partners.

Exhibit 21: Typical Weekly Usage of Lady Beaverbrook Gymnasium

Lady Beaverbrook Gym
Week of October 27, 2019

	Sunday 27	Monday 28	Tuesday 29	Wednesday 30	Thursday 31	Friday 01	Saturday 02
6 AM			MBBCommunity St. Thomas University 37 6:00 AM - 7:30 AM				
7							
8	Zoomers On The GoFaculty of Kinesiology Academic 68 - Copy 8:00 AM - 4:30 PM FR LB Gym C210		MVBCommunity St. Thomas University 38 8:30 AM - 10:00 AM		Community UNB Masters Swim Club 01 8:00 AM - 9:30 AM		
9		MVBCommunity St. Thomas University 31 9:00 AM - 10:30 AM		STU MVBCommunity St. Thomas University 59 9:30 AM - 11:30 AM FR LB Gym			Community Special Olympics 01
10							
11						Community Atlantic College of Therapeutic	STU WVBCommunity St. Thomas University 61
12 PM				Community GO GO ASP 05 12:00 PM - 4:00 PM FR LB Gym A107			W/M vs MTA (Games @ 2/4pm)Community St. Thomas University 02 12:30 PM - 6:30 PM FR LB Gym A107, FR LB Gym C210
1		STU WVBCommunity St. Thomas	STU WVBCommunity St. Thomas		STU WVBCommunity St. Thomas	STU WVBCommunity St. Thomas	
2							
3		Community GO GO ASP 02 2:30 PM - 4:00 PM STU WVBCommunity	Community GO GO ASP 02 2:30 PM - 4:00 PM FR LB Gym		Community GO GO ASP 02 2:30 PM - 4:00 PM FR LB Gym	Community GO GO ASP 02 2:30 PM - 4:00 PM FR LB Gym	
4		STU Practices Community St. Thomas University 34 4:00 PM - 10:00 PM FR LB Gym A107	STU Practices Community St. Thomas University 41 4:00 PM - 9:00 PM FR LB Gym A107	STU Practices Community St. Thomas University 42 4:00 PM - 10:00 PM FR LB Gym A107	STU Practices Community St. Thomas University 43 4:00 PM - 10:00 PM FR LB Gym A107	STU Practices Community St. Thomas University 44 4:00 PM - 8:00 PM FR LB Gym A107	
5						STU WVBCommunity	STU BasketballCom
6	Fredericton Filipino-Canadian Basketball League2019 External Events October 05			Community Synchron			
7		Community St.	STU WVBCommunity				
8							
9							

Source: www.bookings.unb.ca

Current utilization of the Lady Beaverbrook gym includes a mix of both community and University use (UNB and STU). Based on a typical week in October, the gymnasium is used for a total of 75 hours, many of which are during prime-time hours (weekends and weekday evenings). If the facility were to close, this usage would need to be accommodated elsewhere within the City.

As a comparison, for the same typical week, the Recreation Gyms at the Currie Centre are booked for 92.5 hours in total by UNB URec programs and community use (e.g. Fredericton Pickleball uses the gym(s) for 3 hours, 5 days per week). The prime-time hours at the Currie Centre have little available capacity to accommodate any additional use.

Based on the 2020 online schedule for the YMCA gym, 19 hours are booked for registered programs per week. The gym is also used for a variety of drop-in programming offered at the facility. In addition, the YMCA is the largest user of gymnasium space within the city – it uses about 10 schools in total for its after-school programming with long-term lease agreements for some of the spaces (i.e. dedicated use after school hours).

It is also important to note that as of 2018 STU had expressed an interest in fieldhouse space as well as opportunities for sport courts in general, while the YMCA has an interest in dry land programming space.



Lady Beaverbrook Gymnasium



Fredericton YMCA Gymnasium

Multi-Purpose Space

Supply & Standard of Provision

The City's 2008 Recreation Master Plan indicates that the existing supply (at that time) was not meeting all needs identified, including:

- Inter-generational programming and youth and senior appropriate spaces.
- Growing participation in fitness programs (e.g. yoga, Pilates), and arts and culture activities.
- Increasing older adult population.

The Plan called for the provision of multi-purpose space, as a component of multi-use recreation facilities, supported by emerging program interests, identified needs and key recreation trends. This was echoed in the 2013 Aquatics Study, which planned for some meeting / multi-purpose space to complement the aquatic uses.

Respondents of the public survey indicated their preference for fitness studios as a non-aquatic amenity within a new facility.

Current best practice for multi-use facilities is to include a variety of spaces that are multi-functional and flexible for a range of uses.

Multi-Purpose Space	Details	Notes
Current Supply	• 11 meeting / community rooms at various municipal facilities. • YMCA, Boys and Girls Club, private facilities provide multi-purpose space for community use rental.	• Municipal supply includes 8 small meeting rooms and 3 community rooms.
Current Standard	• 1:5,292 City residents (based on municipal supply only)	• 2008 standard at 1:4,594
Future Standard (2041)	• 1:8,455 City residents	• If municipal supply remains constant.
Target Standard	• Not applicable - provided at varying scales, depending on community demand and/or need.	

Youth & Senior Space

Supply & Standard of Provision

The City currently provides dedicated space for both seniors and youth at the Fredericton Seniors Centre, and the Northside Youth Centre (as part of Wille O'Ree Place). Both facilities are located on the north side of the Saint John River.

The Stepping Stone Seniors Centre, located within Wilmot Park on the south side of the River, is a registered charity and governed by a board of directors.

Current trends indicate a preference away from stand-alone or dedicated facilities but rather integration of non-dedicated amenities as part of a multi-use recreation facility, with flexible space that can be used by a variety of ages and abilities for a range of programming.

Youth/Senior Space	Details	Notes
Current Supply	1 youth centre 2 senior centres (1 municipal, 1 NGO)	All are stand-alone or dedicated facilities (within a larger recreation centre).
Current Standard	1 youth centre per 6,050 youth (age 10-19) 1 senior centre per 5,250 older adults (age 65+)	Based on 2016 Census data.
Future Standard (2041)	Not available.	No age cohort breakdown available, however, with population growth in general the standard of provision will be lower in the future.
Target Standard	Not applicable - provided at varying scales, depending on community demand and/or need.	

3 Overview of Public Engagement

The public engagement plan was developed collaboratively with the Steering Committee to ensure a full suite of engagement activities were employed. The purpose of the public engagement is to firstly engage with the aquatic users to understand their needs, and secondly, engage with the broader community at large. The engagement focused on the details of components typically found in a facility of this nature and was not intended to cover the broad spectrum of community recreation needs – as previously noted, this would be a separate exercise. The process ensured that residents and municipal representatives from neighbouring municipalities were involved, and external stakeholders / partners were engaged.

3.1 Methods of Engagement

Consultation and engagement related to a new aquatics facility has been undertaken in a range of forms, including:

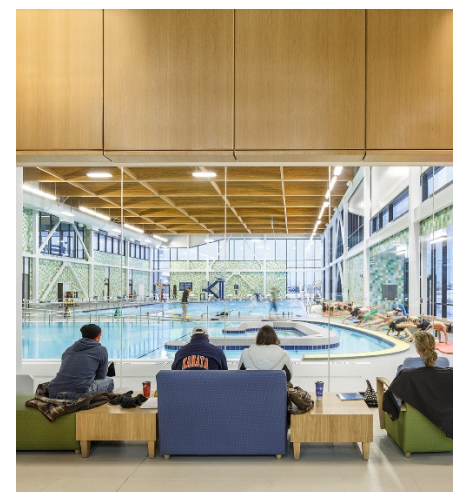
- One (1) stakeholder workshop for aquatic users;
- Online Public Survey;
- Internal and external stakeholder interviews and meetings (e.g. City of Fredericton, YMCA, UNB, Government of New Brunswick, etc.); and
- Meetings with the Project Steering Committee comprised of various municipal stakeholders and community representatives.

3.2 Summary of Stakeholder Workshop Results

A stakeholder workshop was held in February 2020, providing an opportunity for feedback from the stakeholder community on their needs and aspirations for the future aquatics facility. There were approximately 40 people in attendance at the session, including a variety of aquatic stakeholders from Fredericton and the broader region.

A number of specific questions and options were posed to the participants who were randomly organized into 6 groups. Detailed outcomes of the Stakeholder Workshop are provided in the Technical Compendium, while a high-level overview is provided below.

Topic Area	Highlights of Discussion from Stakeholder Workshop
Identity	• Diversity of community • Deep historical connections • Health, wellness and wellbeing at all stages of life • Support local community events, and accommodate Regional, Provincial, National and International events
Design Impressions	• The most popular results support design responses that are modern but integrate natural materials such as wood and stone. • The design should be mindful of functionality, efficiency and natural lighting.
Aquatic Experiences	• Strong support for competitive swimming, learn to swim and therapy/personal training, indicating the need to strike a balance between uses by the community and those by swim clubs.
Aquatic Design	• Aquatic community supports 10 lanes for ultimate flexibility. • A variety of competitive features and play features were suggested by attendees, many of which are standard within contemporary aquatic centres.
Change Room & Spectator Experiences	• There was mixed feedback related to universal change rooms. A focus on privacy and accessibility reflects societal trends. • The number of swimmers and/or spectators varies by event type. Attendees indicated anywhere from 50 to 300 swimmers, and 100 to 500 spectators.
Other Support or Recreation Experiences	• It was noted that competitions require staging space.



3.3 Summary of Public Survey Results

A public survey related to a new Aquatic Facility for the Greater Fredericton Region was available online between March 2 and March 23, 2020. The survey was available in both official languages and received comprehensive input from the community with 1,581² responses in total (1,568 in English and 13 in French). This is a very good response rate for a single-issue survey.

Survey respondents represents a broad cross-section of the community – with a contrast of responses. This includes a spread from the different municipalities within the region and a range of users (not strictly aquatics-focused).

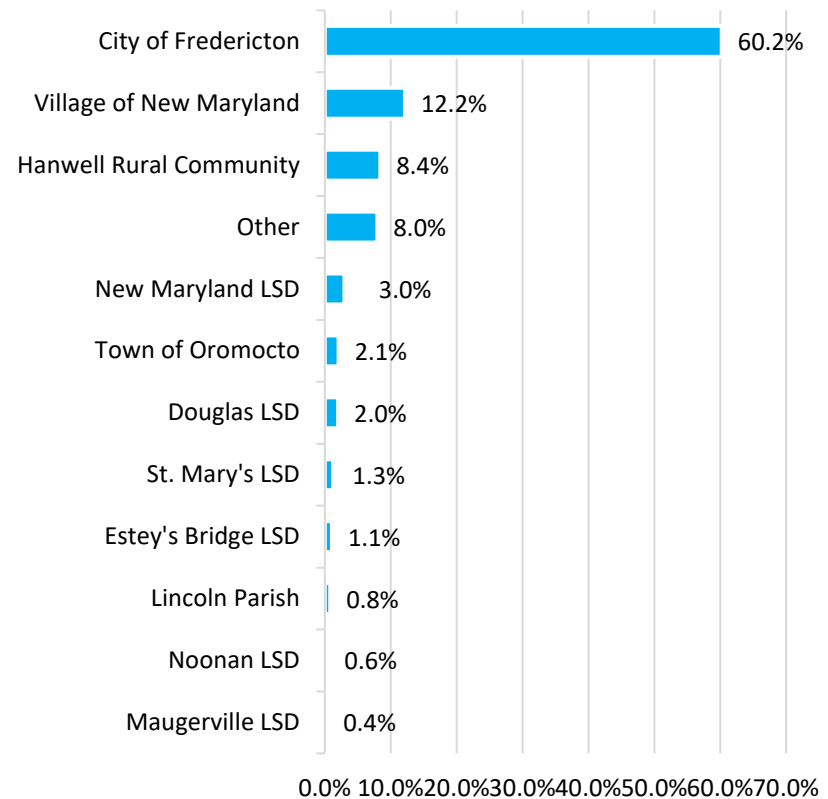
A summary of the survey outcomes is provided below. The Public Survey Questions are provided in the Technical Compendium.

3.3.1 Respondent Profile

Place of Residence

Most respondents (60%) indicated that they live in the City of Fredericton, followed by the Village of New Maryland (12%), and Hanwell (8.4%). Of those that indicated 'Other', most were from either Keswick Ridge, Kingsclear, or Rusagonis-Waasis.

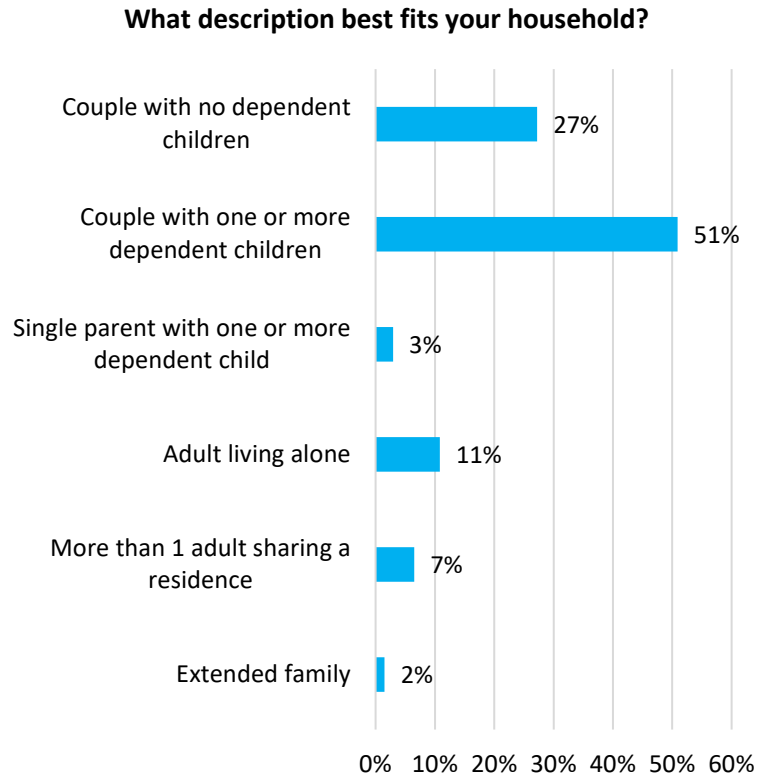
Where do you live? Please specify the municipality, local service district (LSD), or rural community in which you reside.



² The results of the survey (closed-ended questions) are reported with a confidence level of 95% with a 2.5% margin of error.

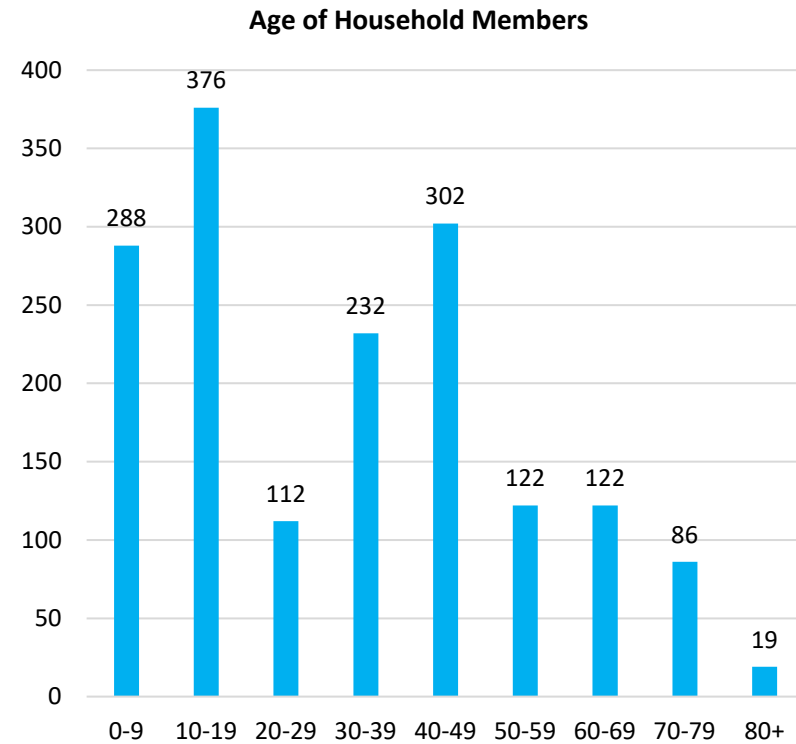
Household Composition

Just over half of respondents (51%, n=1322) chose 'Couple with one or more dependent children' to best describe their household, followed by 'Couple with no dependent children' (27%).



When considering the ages of respondent household members, children, youth, and middle age adults were the most prevalent age cohort. This corresponds with the above,

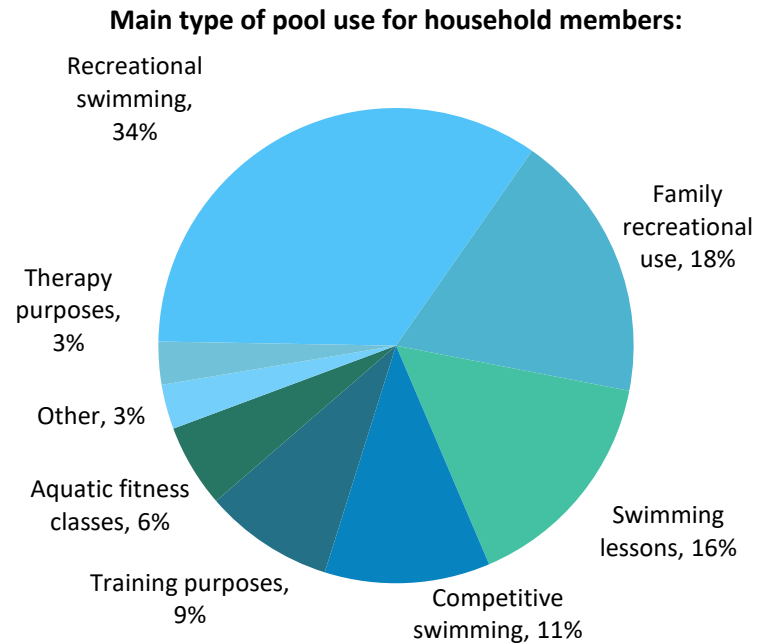
and typically reflects young families. Household members totaled 1,659 based on 1,165 responses to the question.



3.3.2 Current Pool Usage

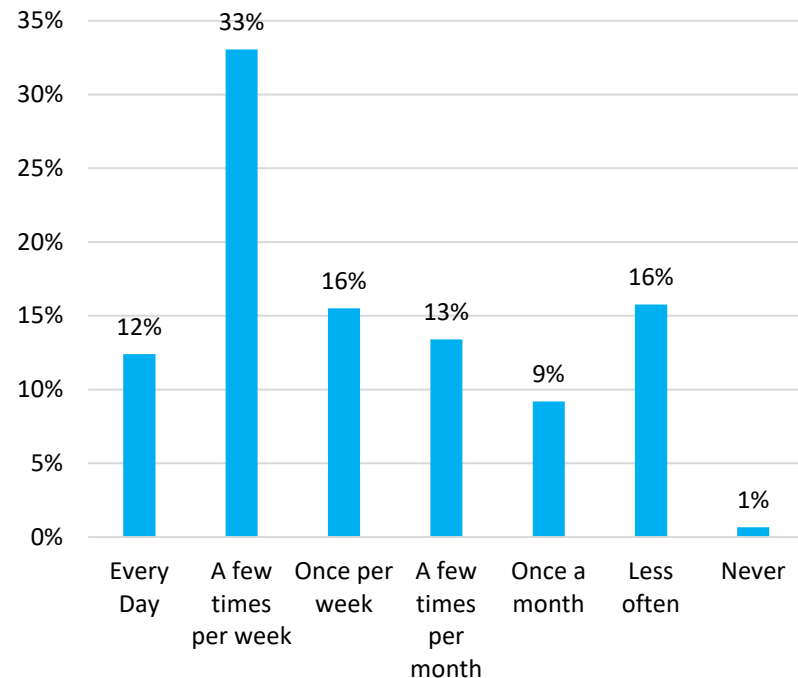
Respondents indicated that 75% of household members have used aquatics facilities in the region over the past year, with a majority using them for recreational swimming purposes

(34%). This was followed by family recreation use (18%) and swimming lessons (16%).



One third of respondents indicated that they, or members of their household, typically use these facilities a few times a week. While 12% use indoor pools everyday.

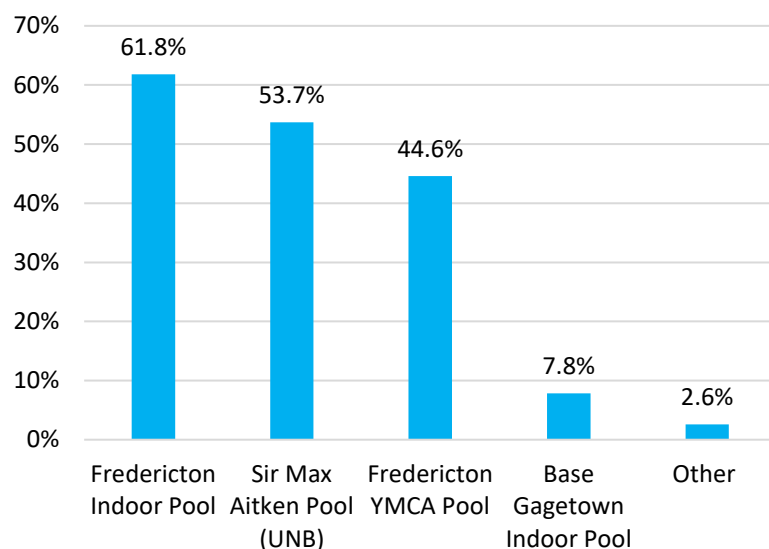
Typically over the past year, how often do you or members of your family use indoor pools in the region? (n=1186)



All 3 major indoor pools located within Fredericton are well used by the survey respondents, with the City-owned indoor pool (FIP) being used by the most respondents (61.8%), followed by UNB pool (53.7%), and the YMCA pool (44.6%). The pool at Base Gagetown was used by fewer respondents

(7.8%). Those who selected 'other' were asked to specify which ones – these mostly included hotel pools and the City's outdoor pools.

Which indoor pool facility(ies) you or a member of your family have used in Fredericton Region in the past year. Select all that apply. (n=1188)



345 respondents indicated that they, or members of their household, use other indoor pools in the province, most notably the Canada Games Aquatic Centre in Saint John (61%) and the Nutrien Civic Centre pool in Sussex (20%). In addition, the Qplex in Quispamsis, and facilities in Moncton and Edmundston are used by respondent households to some degree.

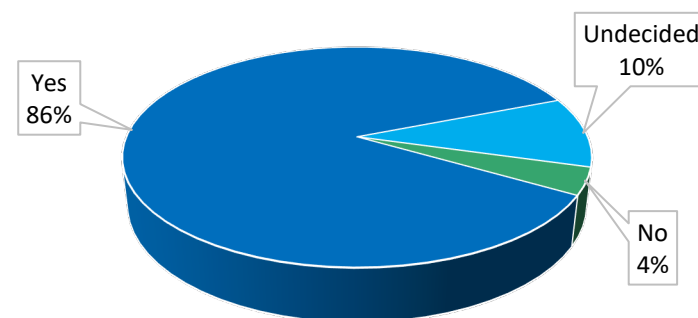
When asked "Have you or a member of your family used outdoor pools in the Fredericton Region in the past year?" one-third (33.3%) of respondents (n=1529) indicated they had, and that they mostly used the Queen Square and Royal Road facilities.

3.3.3 A New Aquatics Facility

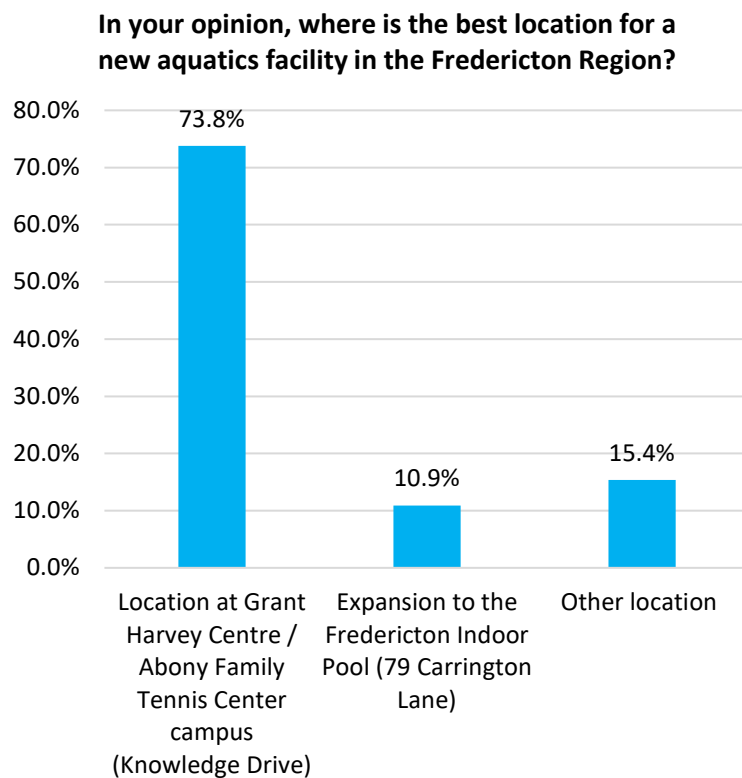
General Preferences

86% of respondents (n=1490) felt that a replacement pool is warranted if the UNB pool is to close, while 10% were undecided. 4%, or 59 respondents, did not feel that a replacement pool is warranted. If they answered 'no', respondents were asked to explain their answer, to which responses were generally equally split between the inability to pay for a new facility / facility cost / increase in taxes, and the Region has enough pools / not a necessary facility.

Assuming that UNB's Sir Max Aitken Pool will be closing in the medium term, is a replacement of the pool warranted?



When asked about the best location for a new aquatics facility, nearly three-quarters of respondents (n=1484) indicated their preference for the Grant Harvey Centre / Abony Family Tennis Centre campus. Of those who chose 'other location', 30% (68 respondents) indicated that the UNB Campus would be the best location, and 17% (38 respondents) thought the Exhibition Grounds would be the best location.



90% of respondents indicated that they would typically access a new aquatics facility by personal vehicle.

Priorities for Use

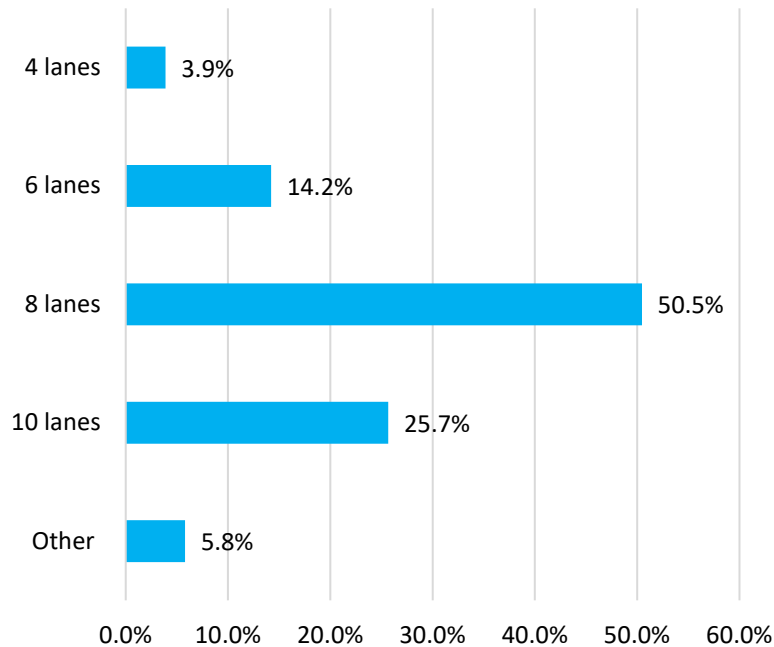
Nearly 42% of respondents identified competition purposes as their top priority for use of a new indoor pool. This was followed by recreational swimming (32.1%) and swimming lessons (28.5%).

Priority	1	2	3
Competition purposes	25%	19%	17%
Recreational swimming	19%	15%	19%
Swimming lessons	17%	19%	20%
Training purposes	15%	23%	10%
Family recreation use	14%	12%	18%
Aquatic fitness classes	7%	7%	9%
Therapy purposes	3%	4%	8%
Total	100%	100%	100%

Competition / Lane Pool Preferences

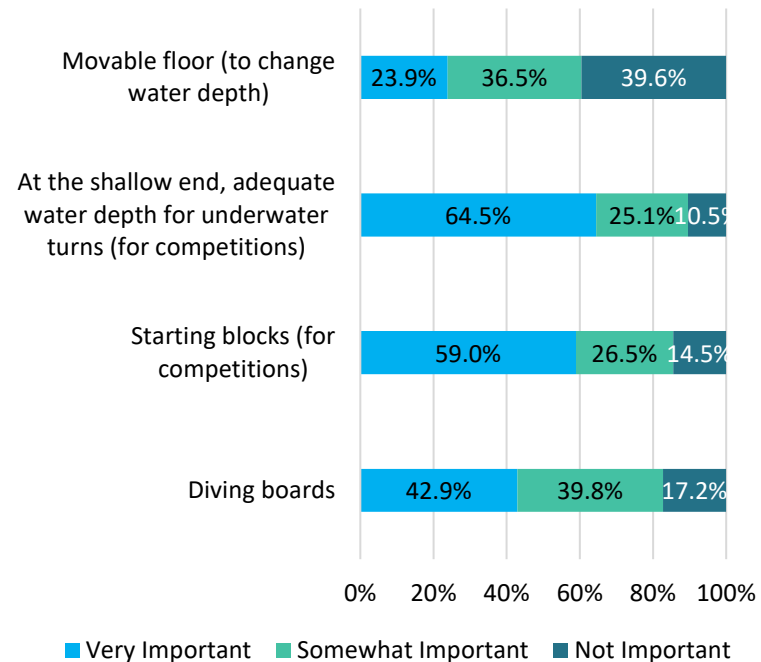
A number of questions were asked relating to the design of the competition / lane pool. Overall, an 8-lane competition / lane pool was preferred by half of question respondents (n=1415).

Indicate your preference for number of lanes in the competition / lane pool.



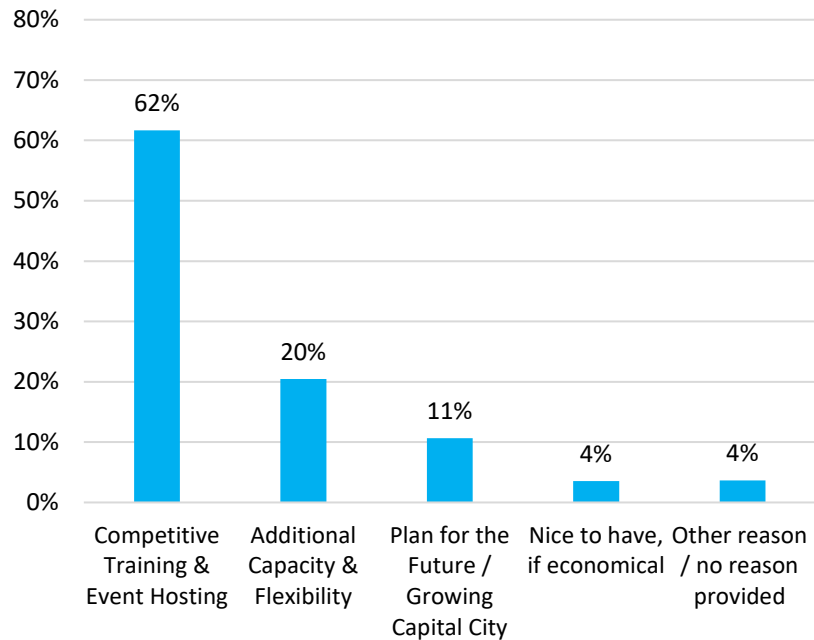
Starting blocks for competitions and having an adequate water depth for underwater turns in the shallow end were 'very important' to a majority of respondents. Nearly 40% of respondents indicated that having a movable floor was 'not important'.

**How important are the following elements in the design of the competition / lane pool to you?
(n=1419)**



In order to understand respondents' preferences related to a larger pool, the survey asked, "If you are in favour of an Olympic-size pool (typically 50m, 10 lanes), please explain why." This open-ended question garnered a wide variety of responses (n=762) that have been categorized to enable a more detailed level of analysis.

**If you are in favour of an Olympic-size (50m) pool,
please tell us why:**



A majority (62%, 470 respondents) felt that a 50m pool was necessary for improved competitive training and event hosting capabilities. Many of these respondents also mentioned sports tourism and the economic spin-offs that the City could realize. A number of respondents indicated that they often travel to Saint John to use the 50m pool there for training and competitions.

20% (156 respondents) indicated that a larger pool could allow for additional capacity and improved flexibility for use

of the space, including a variety of programming (e.g. Aquafit, lane swims, swimming lessons, etc.) to occur simultaneously.

11% (81 respondents) felt that as a growing region, and it being the capital of the Province, that a 50m facility should be located here. Planning for the future was an important consideration for many, who suggested that it would be better to build bigger now, rather than having to expand in the future.

4% (27 respondents) thought that a larger pool would be nice to have, however they were also mindful of the capital and/or operating costs associated with it.

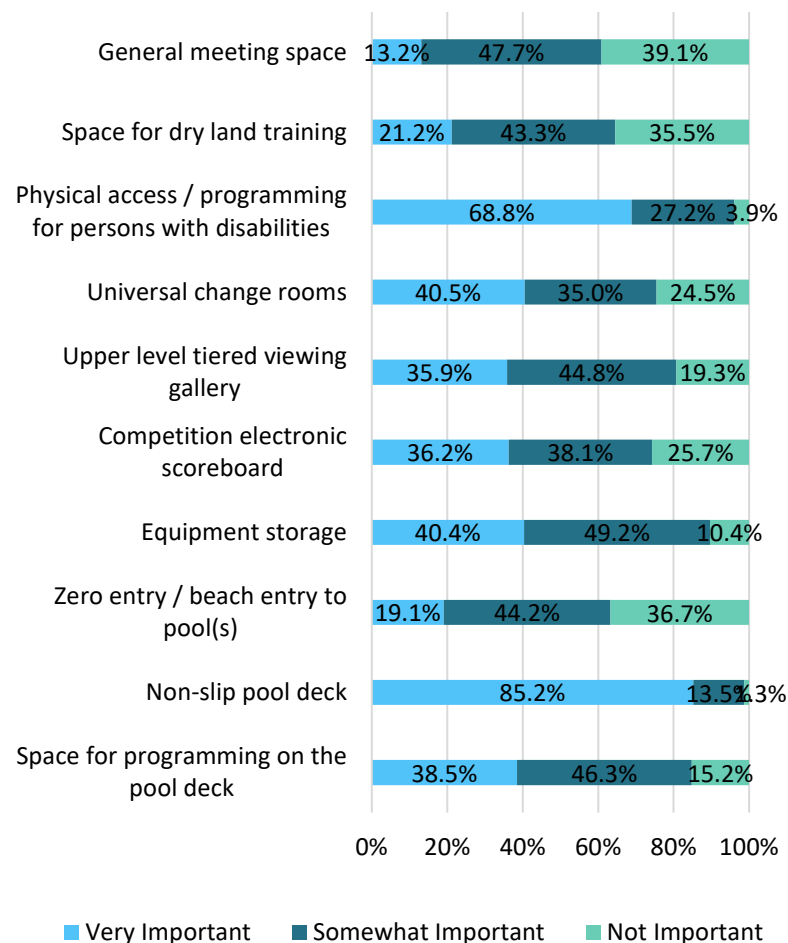
Preferences Related to Other Aquatic Elements

Respondents were asked to think about aquatic elements beyond the lane pool. When asked to identify their top 3 priorities for other aquatic elements, of those respondents who identified the top priorities were for a leisure pool for unstructured swimming and play (33%), a therapy pool (30%), and a warm up/cool down lanes (separate from lane pool) at 12%.

Priority	1	2	3
Leisure pool	33%	27%	13%
Therapy pool	30%	23%	16%
Warm-up/cool-down lanes	12%	8%	10%
Tot pool for babies/toddlers	7%	15%	21%
Waterslide	6%	11%	13%
Hot tub/whirlpool	5%	8%	14%
No other aquatic elements are needed	4%	1%	4%
Steam Room	2%	3%	5%
Dry sauna	1%	3%	4%
Total	100%	100%	100%

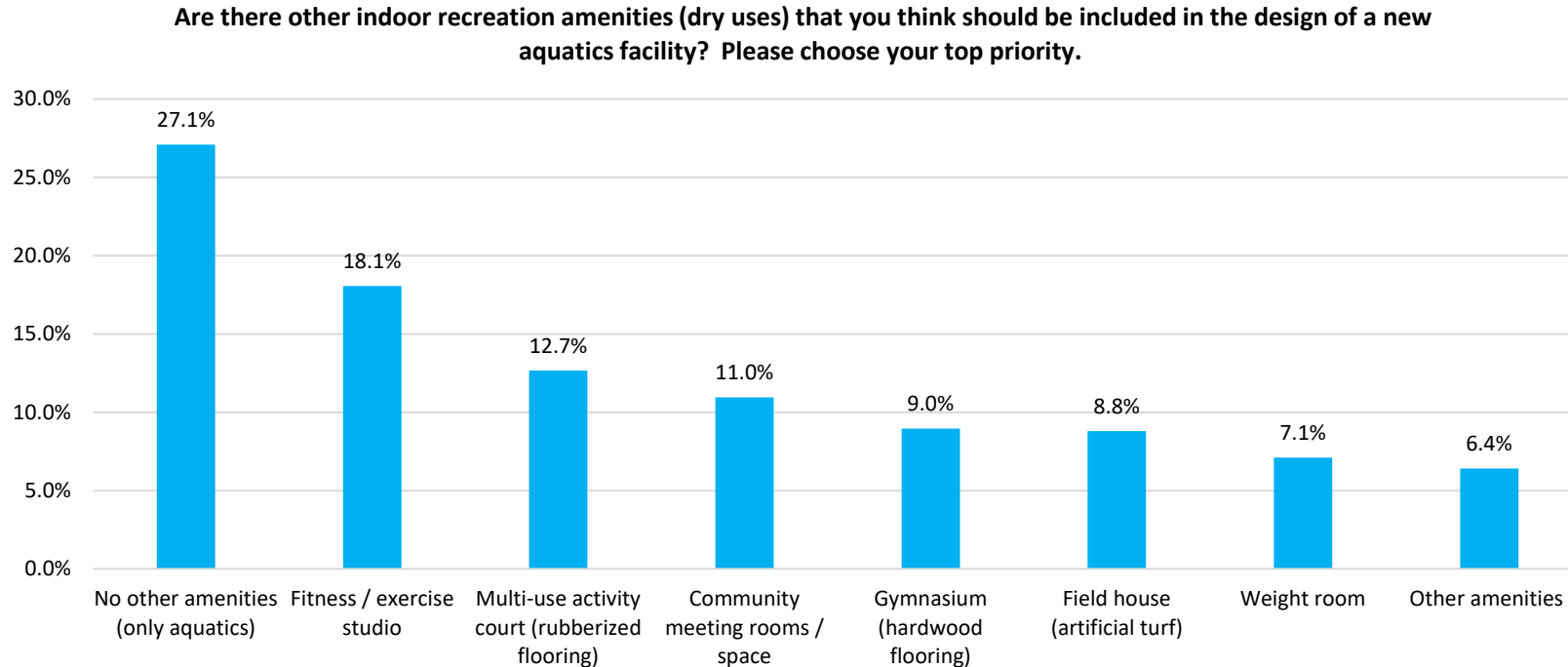
Beyond the pool, having a non-slip pool deck was 'very important' to the highest number of respondents (85.2%), followed by ensuring physical access and/or the capacity to program for persons with physical or cognitive disabilities (68.8%).

In your opinion, how important are the following elements to your experience beyond the pool?



Other Amenities

73% of respondents (n=1296) indicated that they felt that other indoor recreation amenities (dry uses) should be included in a new aquatic facility, with 48.6% wanting some type of large flexible space, such as a gymnasium, activity court, field house, or fitness studio. 18.1% of question respondents identified their preference for a fitness/exercise studio, followed by a multi-use activity court with rubberized flooring (12.7% of respondents). Of those that answered 'other', an indoor walking track was a prominent response.



3.3.4 Drill Down on Responses by Cost Sharing Agreement Status

The following analysis classifies survey responses into three categories:

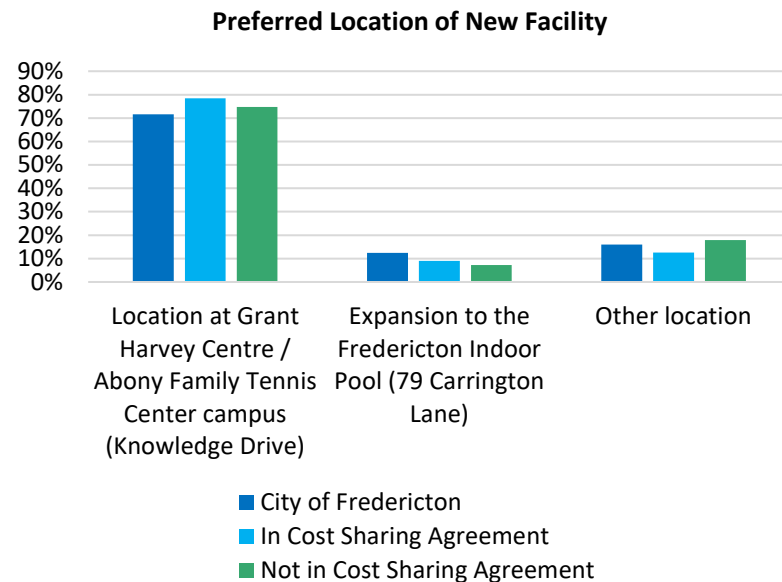
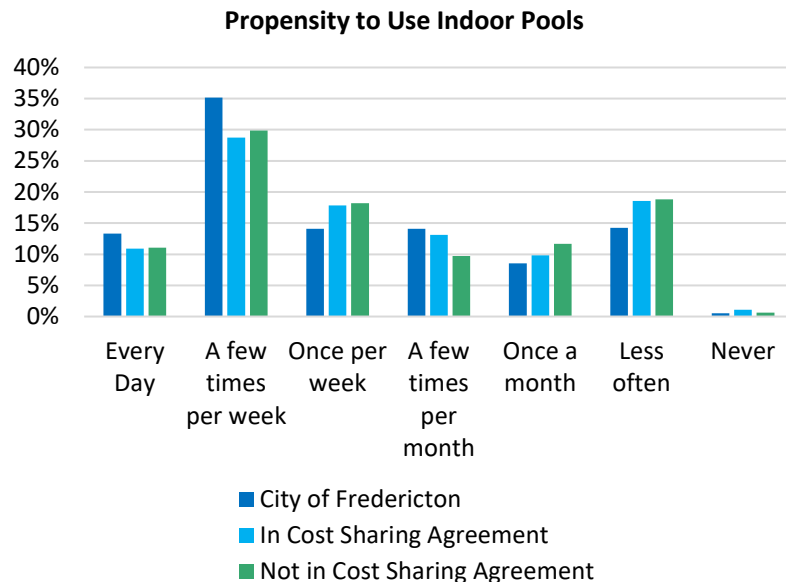
- City of Fredericton residents;
- Residents of a municipality or LSD that is part of the Cost Sharing Agreement (excluding the City); and
- Residents of a municipality or LSD that is not part of the Cost Sharing Agreement.

The public survey has revealed that frequent pool usage (at least a few visits per month) is higher among residents of the municipalities and local service districts within the Cost Sharing Agreement than among residents outside the agreement, a result that would be expected. However, very

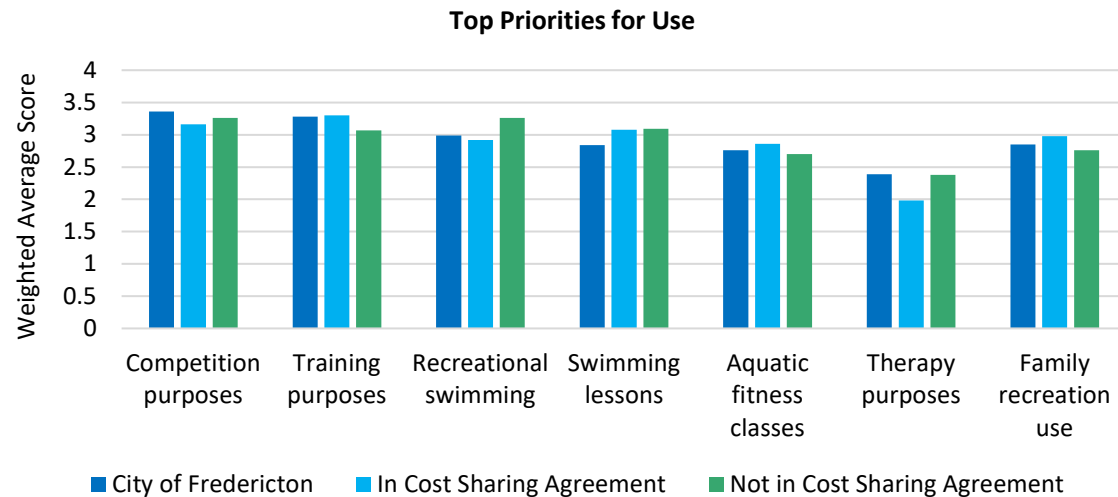
few respondents even outside the agreement area indicated that they never use the pools. Nearly 60% of respondents from communities outside the agreement still reported using the pools at least once per week.

City of Fredericton residents were more likely to use the facility daily or multiple times per week than residents of other communities.

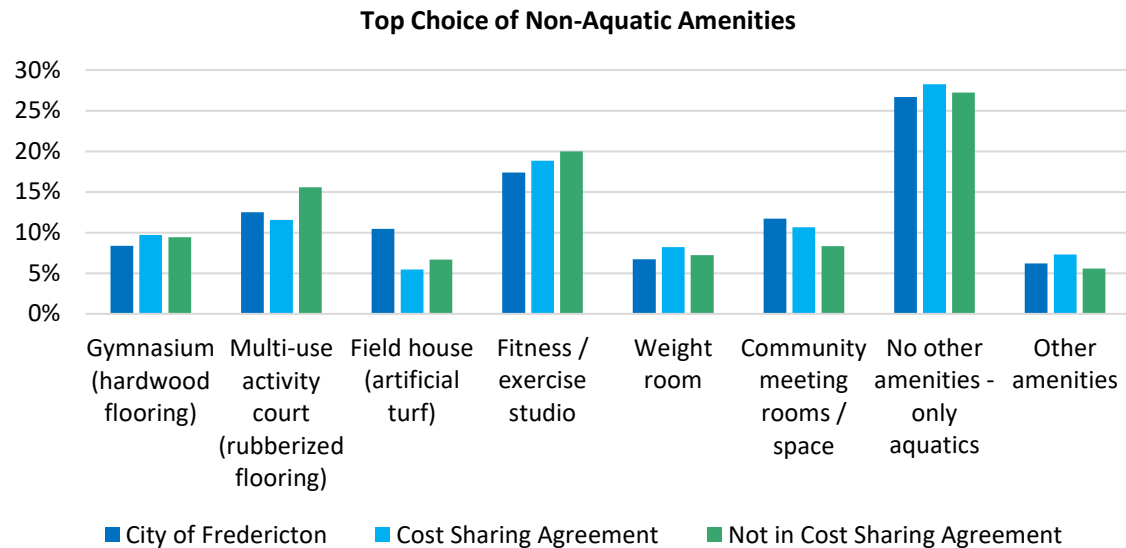
Residents in and out of the Cost Sharing Agreement area agreed overwhelmingly (72% - 78%) that the Grant Harvey Centre / Abony Family Tennis Center campus is the preferred location for a new facility. An expansion of the FIP had little support, with only 12.5% of Fredericton residents favouring this option, and even lower support outside the City.



There was little variation between the communities in top priorities for use of a new aquatics facility as measured by the weighted average score. Competition use was the highest scoring priority in Fredericton and tied with recreational swimming as the top priority outside the Cost Sharing Agreement area. Training was the second highest scoring priority for residents of Fredericton and was the top priority for other communities in the agreement.



There was significant common ground in top choice of non-aquatic amenities between Cost Sharing Agreement area residents and non-agreement area residents. 27% - 28% of respondents (a plurality) wanted no additional amenities. Among those that did want other amenities, fitness and exercise space was the most popular, followed by a multi-use activity court. Of the available options, the least popular top choice within Fredericton was a weight room, while an artificial turf field house had the least support in all other areas.



3.4 Emerging Needs for an Aquatics Facility

The 2008 Recreation Master Plan made recommendations for the development of a new aquatics facility on the City's south side, with consideration for other recreation amenities (e.g. gymnasium / field house). As it pertains to this assignment, the consulting team sought to drill down on the specifics of the functional space program for a new aquatics facility through the following:

1. Public input on the variety and nature, scale and configuration of space required within a new aquatic centre, resulting in a wish-list of community needs and wants.
2. A critical assessment of the feasibility of achieving community needs and wants weighed against the capacity and constraints of the identified locations, functional efficiencies achievable through investment in spaces including opportunities for multi-use, and potential development costs and challenges.

Based on the various engagement activities undertaken, there was a clearly expressed demand for a regional-scale facility that has the capacity to meet the needs of the local community as well as the ability to accommodate existing and new tournaments and event hosting activities.

Generally, preferences for the function and design of the facility can be broken out into two categories, as follows, and indicates the need to strike a balance between uses by the community and those by swim clubs:

- A multi-use, multi-generational facility where seniors, adults, youth and children are able to participate in aquatic and non-aquatic activities.
- A facility to accommodate competitive swimming and other recreational needs at a scale that has the capacity to meet regional market demand for sporting activities.

One of the key drivers for the development of the building program was to ensure that there is adequate pool tank combination to satisfy learning, teaching, training, therapy, and competitive programs. The major building components that emerged from the engagement activities include the following:

- 25m, 10 lane pool in keeping with competition standards;
- A leisure pool;
- A therapy pool;
- Adequate pool deck space to accommodate groups and multiple programs at one time;
- Gender-specific and universal changerooms;
- Provision of possible compatible programs such as multi-purpose rooms, fitness studios, flexible community spaces; and
- Gymnasium / multi-use activity court (to satisfy the obligations of UNB to provide use of a gymnasium to STU – refer to Section 2.7.3 for details).

4 The 50 Metre Pool Question

4.1 Addressing the Option for a 50 Metre Pool

A 50-metre pool, designed to host top-flight competition nationally, and by extension internationally, is always an option – but it is rarely chosen. There are good reasons for this, none of which cast doubt on the inherent value of an international competitive standard aquatics facility. Rather, the decision as to when not to build at this scale is always one of achieving the required balance between costs and benefits.

International standard, large volume tanks can promote the development of elite athlete performance at all ages groups through the age-related athlete development process; they can help facilitate significant sport tourism and its related positive impacts on the economy and interest in aquatic sports. Sport Canada, Community Sport Organizations (CSOs), and Provincial Sport Organizations (PSOs) alike recognize the need for infrastructure to match the opportunity to grow sport and success at the national and international level. A good recent example is the PanAm Aquatic Centre in Toronto – a major venue with significant capacity to host events and spectators, but one that also includes community-oriented uses – gymnasium, running tracks, fitness facilities, climbing wall, and a range of meeting spaces, all designed to make the facility as relevant as possible to the widest range of needs while recognizing its

core role as one of the nation’s Olympic training venues for aquatic sports.

There are examples of the infrastructure-athlete development project in other sports – a well known example is that of track cycling. The success of the British cycling team across all formats in the World, Olympic and Commonwealth competitions, and the success of Australia before them, can be directly linked to the decisions of government to invest in cycling infrastructure (Velodromes in regional cities). And in Canada, the legacy of the Canada Games has been the provision of competition-standard facilities including, historically, the development of 50-metre pools.

In recent times, of course, the approach to infrastructure planning for legacy games has changed – from temporary stadia for the Olympics repurposed and scaled down for legacy functions, down to decisions to moderate the level of investment for competitions, such as the Canada Games, and the use of smaller 25 metres length competition pools, which meet minimum standards for these events. As examples: the 1981 Thunder Bay Canada Summer Games Centre at 50 metres (plus diving tower) is part of a large 113,022 sq. ft. facility, while the 2009 Charlottetown Canada Summer Games aquatics events were held at the Bell Aliant Centre (25 metre pool).

There is always therefore a question of the balance of factors that should inform the nature and scale of the facility. Some of these considerations are itemized below.

- **Maximum Reach or Considerations of Service Area:** the decision to place investment of certain scales is often a function of population density – access to the greatest number of people in order to maximize the value of the infrastructure (in aquatics facilities, this is less a matter of minimizing deficits but ensuring the greatest use of sizeable facilities). Contrasting with that are decisions to ensure that even in lower population regions there is the potential to grow sports – in the case of aquatics that is generally achieved with smaller scale pools in regional centres, but allied to legacy games, efforts have been made to achieve larger venues. And there are hybrids – in the case of the Archie Dillon Pool, located in Timmins, Northern Ontario, this is a 37.5 metres hybrid. In the case of southern New Brunswick, the Saint John Canada Games Aquatic Centre offers the 50-metre capacity.
- **Changing Landscapes of Sustainability:** While it is in the Province’s interest to maintain a 50 metre pool capacity, the changing nature of economies and municipal fiscal pressures certainly means that long term planning for the future of aquatic sports should be taken into account in the current planning for new facilities in the province (for example both in Fredericton and in places such as Riverview that are seeking to replace its existing pool with a new multi-use aquatics and fieldhouse centre). While the City of Saint John has issued a request for proposals to lease or purchase the Aquatics Centre (it is currently operated as one of the 5 facilities under the control of

the Regional Services Commission with costs shared with surrounding municipalities), its future has a degree of uncertainty given the reality of operating deficits. The result of this process may be effective exploration of partnership opportunities to help sustain the facility. Regardless of the outcome, the existence of a 50-metre pool and any uncertainty over its future does not translate necessarily into a justifiable recommendation for building at that scale in Fredericton. The fact of challenges to the financial model for 50 metre pools (outside of major universities and national centres) is a significant driver in considering the appropriate scale at which to build in Fredericton. Added to this is the reality that with the closure of the University pool, the financial liability for operating a replacement facility – one that is also scaled to accommodate future population needs – passes to the municipal sector unless a partnership model involving government and university sectors is possible. Accordingly, a manageable scale for a facility which enables best practice in design and operation should be the primary goal.

- **Meeting the greatest need:** Modern, state of the art facilities are based on multi-tank designs. Typically, but not exclusively this includes leisure pools, along with a lane pool, and either therapeutic tanks or zero-entry learn to swim pools. Single tank facilities are built, and often when expansions to existing facilities are contemplated. Sometimes, a single tank is comprised of both a lane and leisure component for

cost savings with an agreed expectation of compromise in the nature of use between lane and leisure use.

- The reason for these configurations is to meet the greatest need – expressed in terms of the widest range of uses of the pool complex, the highest volume of visitation on a daily, weekly and seasonal basis, and thereby the greatest value for municipal operational funding support (the deficits). Unless both capital funding support and operational deficit support is provided from sources beyond the municipal tax base, maximizing the use of tax-payer dollars is one of the principal determinants of facility design and operation. It should be remembered that some of the largest facilities, such as the Toronto PanAm Aquatics Centre, are supported through legacy funding agreements with the national government to defray the higher operational deficits arising because of the scale of the facilities.
- **Culture of Use:** Just as for other facilities and services, the choice exists between catering to the peak (in this case, the preference for Olympic size pool length for competition and training) or catering to a reasonable level of demand. Whether it is ice arenas, pools, or even public parking facilities, achieving balance can also mean formalizing the culture of use. This can be translated into usage allocation priorities for different user groups versus general public access, priority for programs and training, even allocation preferences for dryland

space to ensure that overall, the needs of each user are met with an acceptable compromise. It is the same with arenas – why build more arenas in response to claims of compaction of use when this may only be at peak times and at certain venues. By regulating use into other times, addressing allocation fairly, compaction can be more accurately defined by the building operator and therefore managed.

- **Capital and Operating Costs:** The decision is generally not between a multi-tank pool complex and a single tank 50 metre pool capable of being demised into sections with bulkheads and movable floor – this is still a competition pool at its core and the building organized on that design principle. Even with a 50-metre pool, there is a need for other pools, increasing the overall capital build and cost, and deepening the operating deficit.

In capital terms, a 50 metre pool, which then necessitates additional tanks, is likely to generate capital costs well in excess of what is feasible for the prospective partners to the current project. In operational terms, the Saint John Aquatics Centre, as the regional example of a 50-metre pool, generates a deficit of about \$1 million per year (as expected). This has ranged from \$963,000 in 2019, to \$1,159,003 in 2018 and \$919, 254 in 2017. A basic 25 metre pool operation in a smaller building can typically generate deficits in the order of \$300,000 to \$500,000 and higher when additional scale is involved, such as the addition of leisure and other tanks.

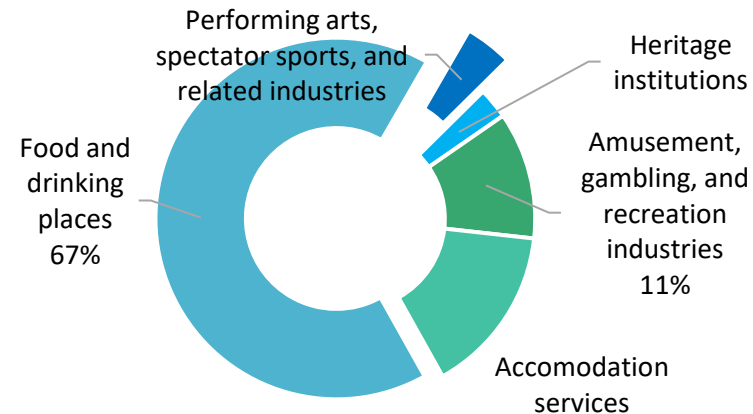
Based on the foregoing overview of issues, as well as the results of our research and engagement, the option of a 50 metre pool tank is not a supportable recommendation based on the assumed municipal funding and operating model that is likely to emerge. Nor is a focus on competition pool needs reflective of broader community needs now or projected in the future.

4.2 Sport Tourism Considerations

The New Brunswick Tourism Workforce Development Plan finds that the tourism sector (defined as the five categories in Exhibit 22) employs approximately 36,000 workers. Using that definition, the tourism workforce in Greater Fredericton is approximately 4,700.

Performing arts and spectator sports workers comprise 4% of the tourism industry workforce. As a result of COVID-19, this will likely experience decline in the short term. As recovery begins and municipalities seek to support a revival in sporting events, a new facility can be expected to contribute to sports tourism within Fredericton, especially if part of the overall campus at the Grant Harvey Centre or UNB Endowment Lands.

Exhibit 22: Tourism Industry Workforce by Sub-Sector



Source: SPM based on Statistics Canada data.

Fredericton has a solid foundation on which to expand its sports tourism sector, with a wide variety of annual events hosted as shown below.

Exhibit 23: Annual Sports Events in Fredericton

Annual Sports Events	Revenue
Scotiabank Marathon	\$465,000
Buster Harvey Memorial Tournament	\$696,000
Harold Joyce Short Track Speed Skating Meet	\$131,000
Early Bird Ringette Tournament	\$545,000
FYHA Capital Invitational	\$145,000
FDSA Wanders U12 Developmental Soccer Tournament	\$75,000
Beach Blast	\$75,000
NMBA Bantam Girls Tournament	\$149,000
NMBA Bantam Boys Tournament	\$135,000
Elite of the East Volleyball	\$115,000
YCBC Holiday Hoops	\$110,000
Speed Skating Year End Meet	\$95,000
UNB Woodsmen Competition	\$133,000

Source: SPM based on Tourism Fredericton Annual Results Report & Season Outlook, 2017.

The above table is based on data from Tourism Fredericton and illustrates the impact of annual events held in Fredericton. These events bring in revenue of nearly \$2.9 million. In addition, Fredericton hosted other non-annual sporting events that generated \$11.7 million in revenue in 2017, shown in the table below. The most popular venue for these events was Willie O'Ree Place and the Capital Winter Club.

Fredericton's success in retaining annual events as well as attracting regional and national tournaments indicates it is competitive as a destination for sports tourism. A modern aquatics facility could build on this success by making Fredericton a destination for water-based competitions.

Exhibit 24: Non-Annual Sporting Events held in Fredericton

Sport Tourism Event - 2017	Venue	Month	Duration (days)	Revenue
U Sports Men's University Cup Hockey Tournament	Aitken Centre	March	4	\$4,750,000
Canadian Senior Curling Championships	Capital Winter Club & Willie O'Ree Place	March	6	\$1,166,000
Jeux de L'Acadie	Scotiabank Park South (and more)	June/July	5	\$1,500,000
U17 Canadian Soccer Championships		October	6	\$2,188,000
Don Johnson Cup	Willie O'Ree Place	April	6	\$509,000
Atlantic Firefit Championships		August	2	\$181,000
Canadian Police Curling Championships	Capital Winter Club	April	8	\$378,000
CCBA Baseball Nationals	Royals Field	October	4	\$311,000
Little Rocks Curling	Willie O'Ree Place & Capital Winter Club	April	2	\$400,000
U14 Boys Eastern Cdn Championships				\$170,000
Canada Games Curling	Willie O'Ree Place	April	3	\$125,000

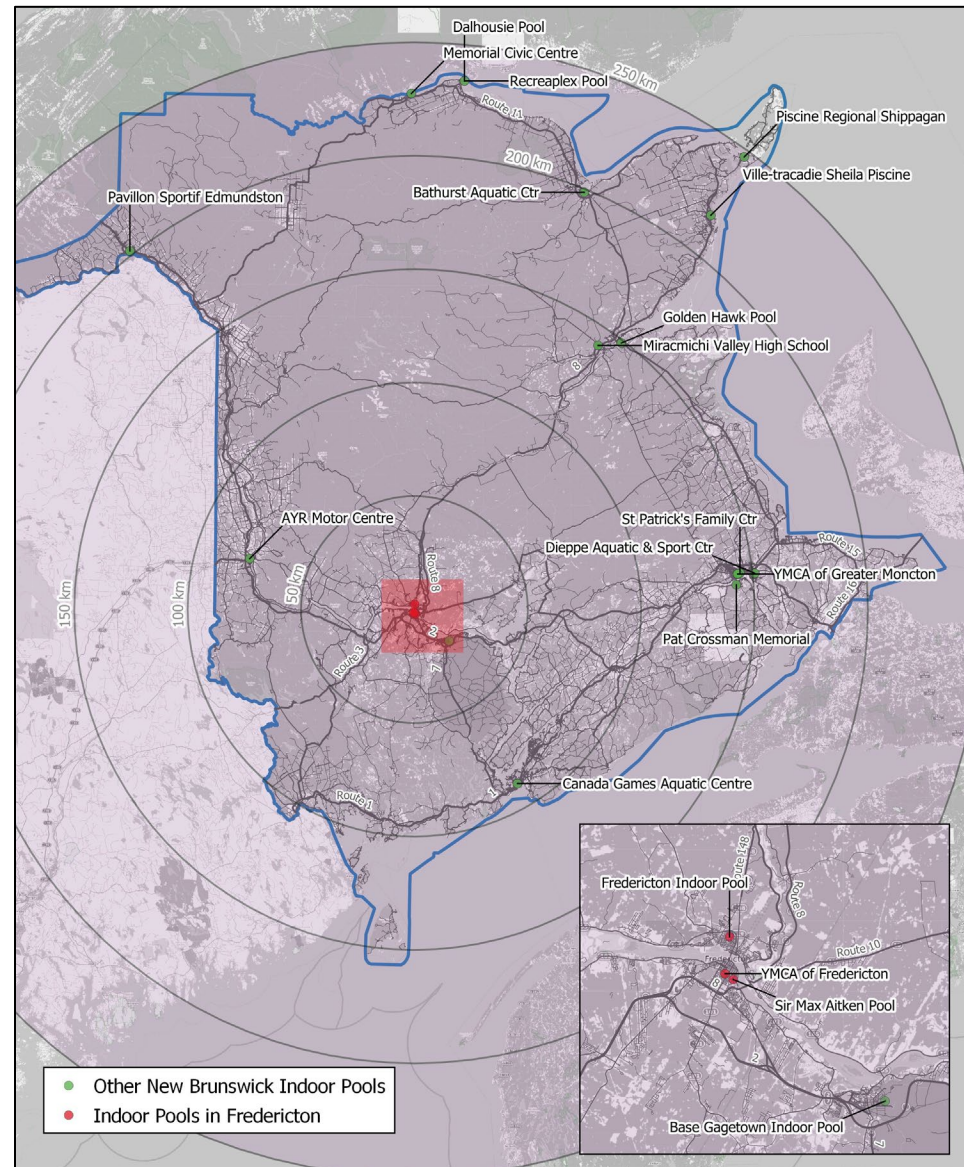
Source: SPM based on Tourism Fredericton Annual Results Report & Session Outlook, 2017.

Fredericton is a hub for regional aquatic recreation. Statistics from the New Brunswick Monthly Tourism Indicator Report indicate that hotels in the Fredericton area attracted 377,543 occupied room nights, which represents 58% occupancy. The occupied room nights increased by 14,000 compared with 2018, although the occupancy fell by 2 percentage points. This indicates that capacity in the hospitality sector has grown in keeping with growth in visitation, meaning that there is capacity for enhanced visitation that may be associated with a new recreational facility.

Fredericton is also centrally located within the province, making a new facility an ideal location for provincial events. Investment in new recreational infrastructure with capacity for tournament and events hosting can be expected to have a regional draw that will impact the local accommodations market.

It should be reiterated that while there is regional market potential for tournament venues and swim meets, the concept plan for a new aquatics facility must be developed based on overall community needs. That being said, an aquatics facility with a 25 metre pool can most certainly play a role in sport tourism in Fredericton.

Exhibit 25: Supply of Indoor Pools in New Brunswick



Source: SPM based on ESRI Business Analyst, 2019.

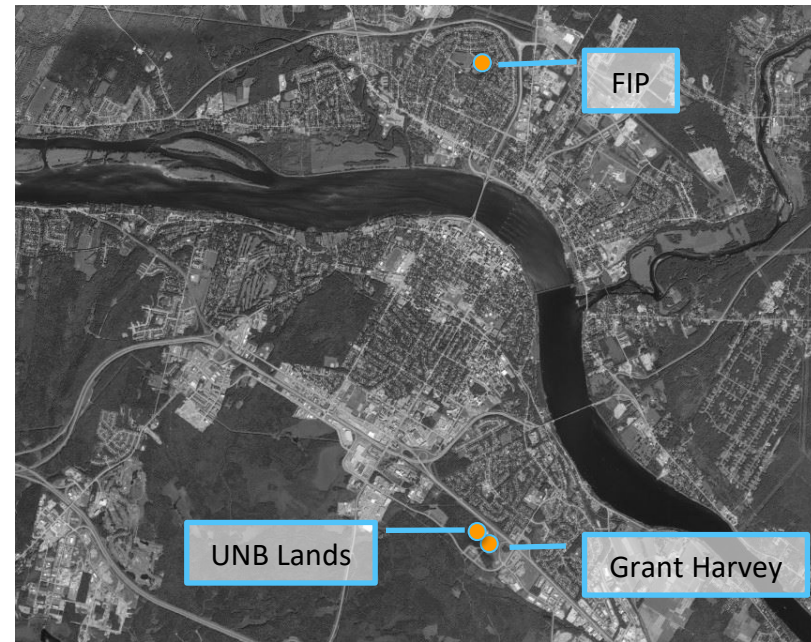
5 Locational Analysis

5.1 Site Options

As part of this study, the RSC11 has identified two locations for developing concepts for a new aquatics facility for the Greater Fredericton Region. These included:

- An expansion to the Grant Harvey Centre facility (600 Knowledge Park Drive): the site of an existing twin ice pad.
- UNB Endowment Lands: located adjacent to the Grant Harvey Centre and Abony Family Tennis Centre site. The proposition for an aquatics facility at this location would be a new build standalone building on a greenfield site.

It is important to note that other sites in the city that are not part of this assessment may be appropriate locations when measured on the basis on the criteria presented below, however for the purposes of developing a feasibility study for an implementable project – one that can be developed in the short-term, it is important to anchor this work on a chosen site (Grant Harvey Campus). A chosen site enables the testing of the site for what it can accommodate (scale of program), whether it is expandable, what the costs are and how it might operate. If other regional sites are identified, this would require a new conceptual site planning exercise, and review of costs and operations.



While a complete locational search and review is not part of the current assignment, a qualitative assessment of the two identified sites has been undertaken which outlines the required needs for an effective location below, including maximizing regional access and proximity to population.

5.2 Establishing Site Evaluation Criteria

A range of information was collected to help determine the opportunities and challenges associated with both site options. This information was used to evaluate the sites based on the following criteria:

A: Site Characteristics

The identified sites were evaluated based on a series of locational characteristics, including:

- Whether the land is in City ownership or it could be easily acquired from the existing landowner.
- Any known development constraints of the site that would limit development or require resolution prior to developing the site.
- Because this is a regional facility, site visibility and prominence are important considerations for evaluation. The level of visibility in terms of sightlines from main arterials and within the city's land use context are critical.
- The potential for colocation of services on site to reduce capital and operating costs, as well as to enhance customer access and amenity, and proximity to other municipal or public services, adjacent to, within walking distance or short drive of the site.

B: Regionality

The new aquatics facility will have a regional draw and therefore, it needs to have the capacity to accommodate regional events as well as address the day-to-day aquatic needs of the community. Metrics related to regionality, transportation and access include:

- Facility located within an appropriate drive time relative to population centres.

- Ease of access via active transportation modes, including local public transit.
- Convenient regional access by automobile with little or no impacts on local streets due to increased traffic.
- Proximity to existing or planned community sport facilities and other compatible / complementary uses.
- Parking capacity on site (City's Zoning By-law would require approximately 250 parking spaces for a facility of this size) and locational convenience.

C: Planning Objectives

The new aquatics facility should be developed in a manner that fulfills the City's current planning objectives related to recreation in Fredericton. Three key documents that have planning objectives related to recreation and growth include the Municipal Plan, Growth Strategy, and the Recreation Master Plan.

D: Economic Impacts

Other synergistic impacts of development were evaluated. Specifically, as it relates to supporting the local policy objectives, locations were evaluated on the potential benefits of a new facility on-site to positively contribute to local economic activity through likely retail/commercial and accommodations spin-offs.

The application of the above criteria to each site option, and the resulting qualitative assessment relative to each other, are summarized in the table below.

Evaluation Category and Description of Criteria	Option 1: Grant Harvey Centre	Option 2: UNB Endowment Lands
A: Site Characteristics		
1. City Owned or Easily Acquired	City owned	Easily Acquired / Long-Term Land Lease (MOU in place)
2. Existing Site Use and Surrounding Land Uses	Existing Recreation Facility	Existing Greenfield / Planned Research & Technology Business Park
3. Site Development Constraints	Encroachment on woodlot and watercourse will require authority approvals. Grading is unknown but may pose design, construction, and budget challenges.	No municipal servicing at present.
4. Site Configuration	Prevents future expansion opportunities (apart from a gymnasium – which would be sited in a poor location) and increases travel distance to west side of site (Abony Family Tennis Centre). This results in an imposition of circulation problems for the site.	Good expansion capacity, but there are limits of the land that would be provided by UNB. The land and potential for additional land in the future would have to be negotiated and the land protected – including land to the south. This could help to create a seamless campus with Grant Harvey Centre and the Scotiabank South Turf and allows for much better site circulation.
5. Site Visibility	Low visibility from Vanier Highway and Knowledge Park Drive.	High visibility from Vanier Highway.
6. Proximity to other Municipally Owned Facilities	Adjoined to Arena Facility. Adjacent to Scotiabank South Turf, Fredericton Southside Dog Park, Abony Family Tennis Centre.	Adjacent to Grant Harvey Centre, Abony Family Tennis Centre, Scotiabank South Turf, Fredericton Southside Dog Park.

Evaluation Category and Description of Criteria	Option 1: Grant Harvey Centre	Option 2: UNB Endowment Lands
B: Regionality		
7. Drive Time Population Access	South side location proximate to the broader population base when considering drive times.	South side location proximate to the broader population base when considering drive times.
8. Ease of Access via Active Transportation	Requires a 300m walk from nearest bus stop. Multi-use pathway along Knowledge Park Drive.	Requires a 300m walk from nearest bus stop. Multi-use pathway along Knowledge Park Drive.
9. Local Automobile Access	Directly off arterial road which is planned to be expanded in the future.	Directly off arterial road which is planned to be expanded in the future.
10. Regional Automobile Access	Yes, proximate to Vanier Hwy	Yes, proximate to Vanier Hwy
11. Sufficient On-site Parking	Site is unable to accommodate the required number of parking spaces as per the City's Zoning By-law.	Yes
C: Planning Objectives		
12. Municipal Plan	Would enhance economic development and encourage development in growth nodes.	Would enhance economic development and encourage development in growth nodes.
13. Growth Strategy	Location proximate to City's Uptown Growth Node.	Location proximate to City's Uptown Growth Node.
14. Recreation Master Plan - Co-location with other recreation amenities / multi-use facility - South side location	Meets objectives by achieving operational efficiency of assets as well as consumer benefits of providing multi-use space.	Meets objectives if other recreational amenities are provided (e.g. gymnasium, multi-purpose spaces, etc.).
D: Economic Impacts		
15. Potential for positive economic spin-offs & synergies	Located in area near many hotels and restaurants to support tournament hosting.	Located in area near many hotels and restaurants to support tournament hosting.

While not directly comparable in terms of building program proposed, an alternative solution was identified in 2017 - an expansion to the existing Fredericton Indoor Pool (FIP). This previous work, as detailed in Section 6, was not undertaken with the mandate of the facility being regional in nature, and therefore, the expanded aquatics program is modest. In terms of assessing the FIP as a location for a regional aquatics facility, the following is noted:

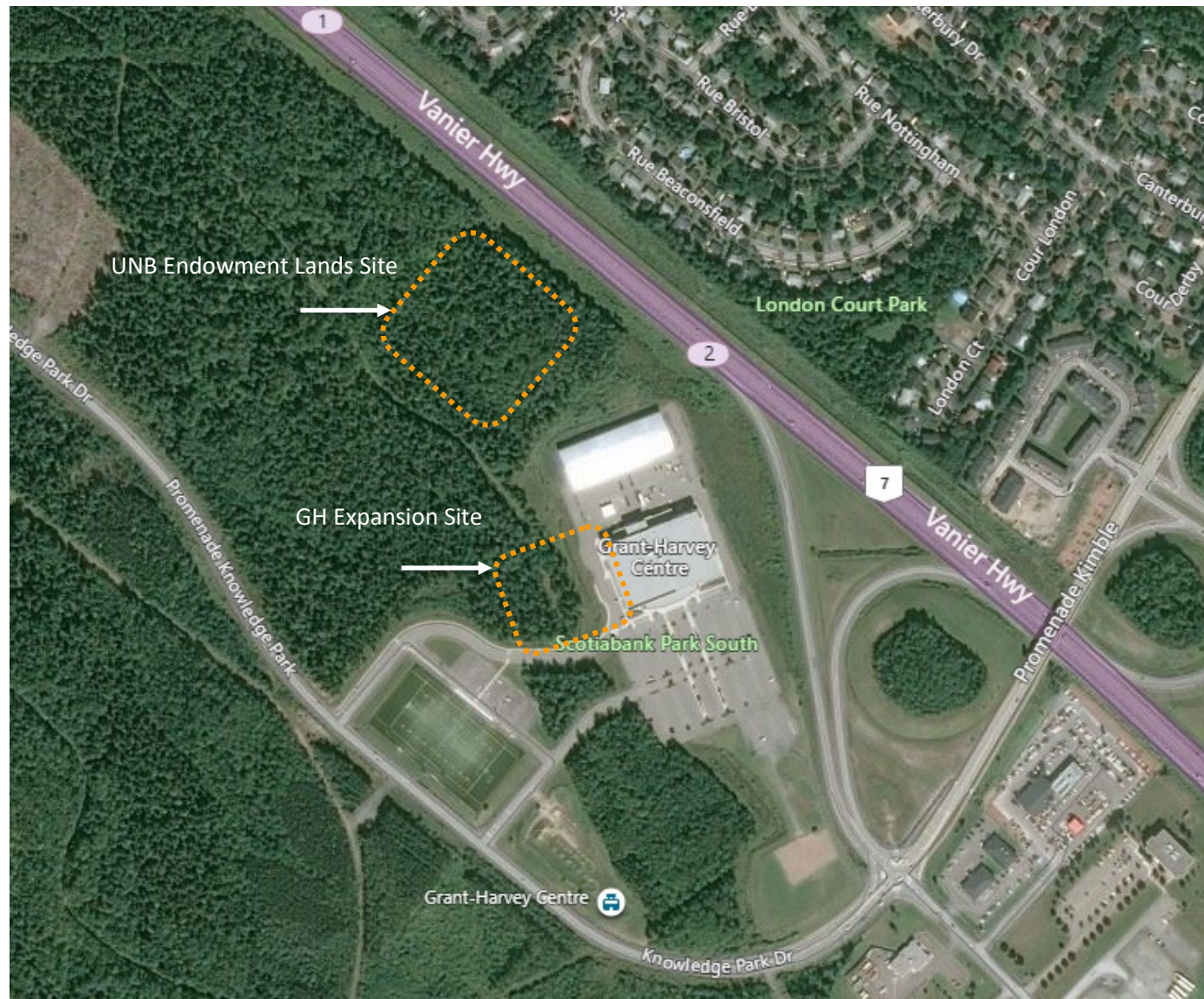
- The 2017 work assumed that there were no complexities in site development – further investigation of this would need to be completed if this scenario were to be more fully assessed.
- Any further expansion is assumed to be challenging due to site configuration.
- The FIP's north side location is farther from key areas of population compared to a south side location and does not meet the south side location criteria identified in the Recreation Master Plan.
- The site is located off of a collector road within a residential neighbourhood which does not provide the visibility and ease of access for regional users.
- The potential for positive economic spin-offs and synergies is low at this location due to the relative distance from areas of commercial land uses (e.g. restaurants, accommodations, etc.).

Consideration of the same program at the FIP was not an option, for study funding reasons as agreed to by the funding partners. However, the consulting team not only references the particulars of the FIP option but updates the capital cost associated with the pool component of that option for the benefits of providing this study with alternative context.

Based on the range of considerations, including the need for regional accessibility by the broader communities, the two Grant Harvey Campus sites are advantageous sites. However, it is important to note that the opportunities and challenges associated with each are strongly rooted in site configuration, which affects the overall design, cost, and expansion potential.

Because of the potential differences in program between the locations, our design methodology is based first on the determination of the recommended functional space program arising from our research and consultation regardless of site. Second, the design process involved applying this to each site to determine how well the program can be accommodated. This is addressed in Section 7.

Exhibit 26: Map of Grant Harvey Campus Sites



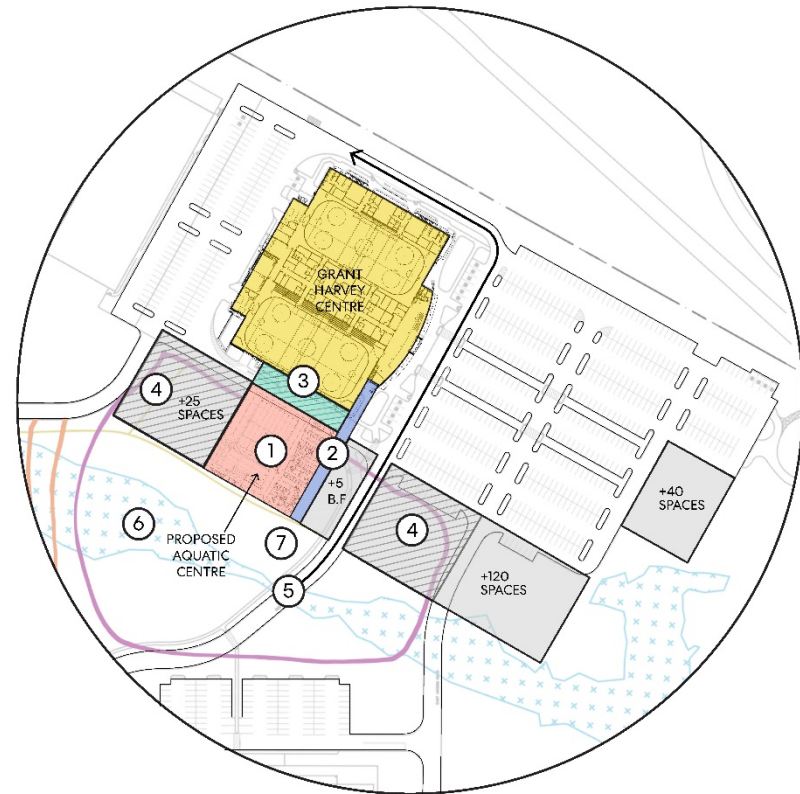
5.3 Option 1: Expansion to the Grant Harvey Centre

The Grant Harvey Centre is located on Fredericton's growing south side. The facility currently houses 2 ice pads, walking track, meeting spaces, changerooms, and other ancillary uses. The Abony Family Tennis Centre is located directly to the north of the Arena, which is sited between Vanier Highway and Knowledge Park Drive, with existing access from Knowledge Park Drive.

The initial option investigated sites the aquatics centre as an addition to the Grant Harvey Centre, connected through the development of a common gathering and support space.

An expansion to the Grant Harvey Centre site has a number of advantages as the location for an indoor aquatics facility:

- Best practice principles of achieving a multi-use facility through the development of aquatics at this location to complement the existing capability of the building would be realized;
- Shared services and operations resulting in considerable efficiencies and cost savings associated with co-locating the pool with the existing facility. This includes staff efficiencies but also a range of programming, equipment, service and building operational cost efficiencies;
- Customer satisfaction – multi-use raises the potential for a more well-rounded consumer experience – enabling opportunities for many activities at one site



- ① **PRO:** New addition integrated with existing Grant Harvey Centre.
- ② **PRO:** Internal public connection.
- ③ **PRO:** Common gathering and support space can be created.
- ④ **CON:** Parking increase is restricted.
- ⑤ **CON:** Travel distance to west side of site and access to tennis is increased.
- ⑥ **CON:** Encroachment on woodlot and watercourse will require authority approvals.
- ⑦ **CON:** Grading is unknown but may pose design, construction, and budget challenges.
- ⑧ **CON:** Ability to expand to accommodate other recreational program is very limited.

through internal public connections. Common gathering and support spaces can be created;

- Municipal services already exist on site and additional services can be achieved if necessary; and
- The potential may exist for offsetting utility costs by enabling heat exchange between the rinks and pool.

Due to the existing site configuration, an expansion would best be located on the south side of the building where the aquatics facility would back onto one of the existing rinks (and not a more sensitive area that would require external access).

While there are several advantages of this site location, there are also potential challenges that exist:

- It can not accommodate the appropriate amount of parking for a facility of its size based on the City's parking requirements identified in the Zoning By-law. This is only exacerbated if a gymnasium is to be added, displacing parking that would need to be made up elsewhere.
- The siting of the expansion increases the travel distance to the west side of the site (and access to the Abony Family Tennis Centre);
- An expansion to the Grant Harvey Centre is not able to accommodate any future building expansion due to the presence of the wetland to the south and the existing site layout. Encroachment on the wetland buffer zone would require authority approvals.

Additional information related to the wetland identification and approvals process is detailed below; and

- Existing site grading is unknown (as it relates to the wetland area) and may contribute design, construction, and budgetary challenges.

5.3.1 Summary of Required Wetland Identification and Approvals Process

Initial investigations identified that a wetland is located to the south of the existing arena building (shown in blue on the diagram above). A new aquatics facility sited in this vicinity may fall within the 30-metre buffer zone for the wetland, as determined by the New Brunswick Department of Environment and Local Government (DELG).

Through initial discussions with DELG, it is understood that the following information and confirmations would be relevant to the risks associated with any wetland incursion, either within the wetland or within the 30-metre buffer zone from the edge of the wetland. Any application for incursion into a wetland or its buffer zone will be required to follow the regulatory requirements as outlined in the DELG policy Environmental Impact Assessment Regulation – Clean Environment Act, and the GNB Environmental Assessment

(EA) process as contained in the Guide to Environmental Impact Assessment in New Brunswick³.

1. As a first step, DELG is required to verify the delineation of the wetland and its edge. DELG is attempting to move away from a static use of wetland mapping in favour of on-the-ground verification. Whether this would increase or decrease the extent of wetland is an open question and a site-specific one. Notwithstanding, wetland boundaries, once delineated by field work, are generally considered valid for decision-making for a period of 5 years.
2. The delineation field work cannot occur in winter with snow coverage – accordingly, depending on when the permitting approvals for impacting a wetland or its buffer zone are sought, there may be a seasonal delay in commencing the process. Once able to verify the boundaries, the DELG attempts to do this expeditiously.
3. If any development or site works are to occur within the 30 m buffer zone, a permit is required which will take about 4-6 weeks (seasonal issues aside).

4. If the wetland is to be developed upon, compensation for the loss of wetland is required. There are two methods to achieve this:
 - a. A consultant can prepare an option for approval; or
 - b. A third-party organization (such as Ducks Unlimited) can provide solutions.
5. The general plan is to enhance wetlands, through these funds, in general proximity to the area where the wetland is lost if possible, otherwise other actions/sites are considered.
6. There are triggers that could necessitate a Comprehensive Environmental Impact Assessment (EIA) with its associated timeline. There are some 20 triggers including scale, size of wetland, species of concern, etc.⁴
7. Other issues such as stormwater management (SWM) would be addressed through City approvals.

³ Government of New Brunswick. A Guide to Environmental Impact Assessment in New Brunswick, January 2018. Available from: <https://www2.gnb.ca/content/dam/gnb/Departments/env/pdf/EIA-EIE/GuideEnvironmentalImpactAssessment.pdf>

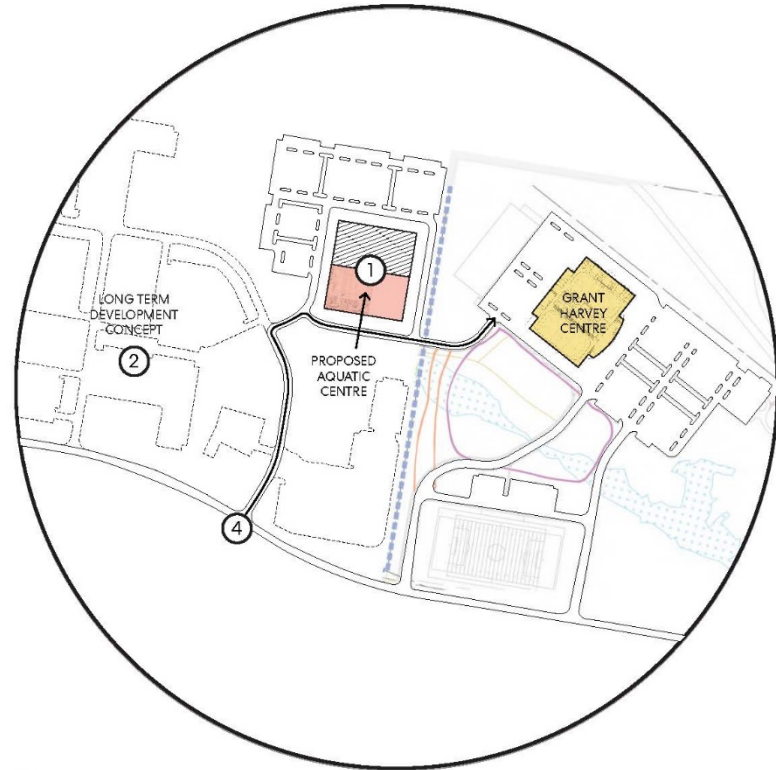
⁴ Government of New Brunswick. Projects that Must be Registered Under EIA. Available from: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/projects.html

5.4 Option 2: UNB Endowment Lands

Due to the planned closure of the Sir Max Aitken Pool at UNB, the City and UNB currently have a Memorandum of Understanding (MOU) in place where the University is open to making a contribution, by way of serviced land, for the provision of a new recreation / aquatics facility on lands currently owned by UNB.

One of these locations is within a large endowment land holding owned by the University and located off Knowledge Park Drive in the vicinity of the Grant Harvey Centre site and Abony Family Tennis Centre. The land is a greenfield at present with surrounding lands, also owned by UNB, currently being developed as a Research and Technology Business Park. The original plan for the business park lands identified a recreation facility to be located there - this is the location used for development of Option 2.

This location provides adequate space for both the building program and associated parking requirements. In addition to aquatics, the site is of an appropriate size to allow for other recreational uses (multi-use) such as a gymnasium / field house component as part of the initial development or as an expansion at a later date, however there would be no shared experience with the Grant Harvey Centre. An added benefit is that siting the facility on the UNB endowment lands could help to act as a catalyst to spur and influence future development in this area.



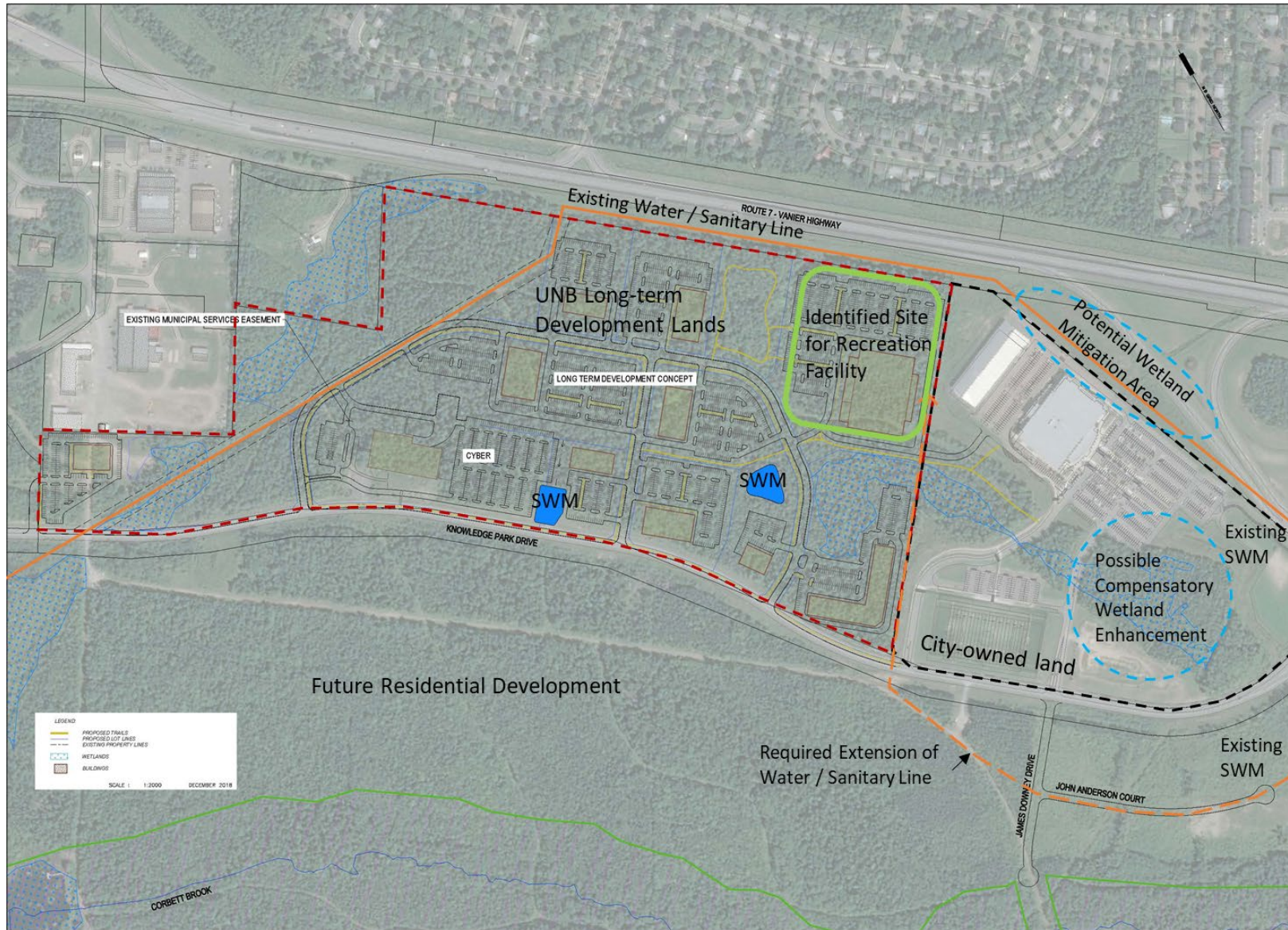
- ① **PRO:** Ample space for programming and parking.
- ② **PRO:** Ability to spur and influence future development.
- ③ **PRO:** Good expansion capacity.
- ④ **CON:** Considerable new road way entry system required.
- ⑤ **CON:** No connection or shared experience with arena.

In addition to the aquatics facility, there are other site requirements to note, including:

- With no existing servicing to the site, or along Knowledge Park Drive in general, there would be a requirement for the University to extend services from the main trunk water line that runs parallel to Vanier Highway. As indicated by the City, this connection is likely to be made through the south east corner of the development lands.
- As a greenfield site, a considerable new access roadway entry system to the new aquatics facility would be required.
- As the MoU is for the provision of serviced land, the implications of servicing on project costs are addressed in the relevant section of this report addressing site servicing.

The following exhibit provides a composite picture of the servicing requirements for the Grant Harvey Campus Area in general, overlaid on UNB's long-term development plan. The site requirements identified are based on conversations the consulting team had with various stakeholders throughout the study process.

Exhibit 27: Grant Harvey Campus Area - Potential Site Requirements



Note: The potential site requirements identified are based on conversations the consulting team had with various stakeholders.

6 Existing Analysis of an Expanded Fredericton Indoor Pool (FIP)

6.1 Distinguishing Between Studies

Members of the present study team (Sierra Planning and Management and Perkins + Will Architects) were involved in a high-level site testing, concept development, capital costing and operational financial proforma exercise for an expansion of the Fredericton Indoor Pool. This work, conducted on behalf of the City of Fredericton in the summer of 2017, was a standalone exercise unrelated to any consideration of a comprehensive regional solution to emerging recreational and competitive aquatics needs in the future. The purpose of the analysis was to determine if the City's existing pool can serve to accommodate existing needs in the community as a result of the planned closure of the UNB pool.

The analysis was therefore a reflection of current perceived needs arising from the loss of an existing facility and was not part of a structured investigation of future multi-use community recreation needs in the City of Fredericton and the surrounding communities. This, for example, is reflected in the program which calls for a single pool tank addition rather than a multi-tank pool design that provides opportunity to meet a range of growing needs over time and which offers greater operational efficiency. Whether the scope of the addition was also a reflection of the limitations

of the site, it is likely that indeed, there was a perception that this location is not suitable for a very large program of municipal recreational space. The City of Fredericton, in anticipating the need to update its 2008 recreational planning strategy, acknowledges that broader consideration of recreation needs was assumed to be a separate research and consultation project.

The current regional aquatics centre feasibility exercise is part of that broader consideration of regional recreational planning needs.

As agreed amongst the funding partners at the outset of the study, further analysis of development at the FIP to enable it to be a comparable option was excluded. Prior to the commencement of the study the funding partners agreed that considering FIP on the same basis as the program being developed in this plan, was not to be included. This was reaffirmed during the Committee proceedings over the course of the study.

The 2017 analysis of the FIP expansion is therefore not a direct comparison with the current 2 option analysis for a regional aquatics centre on or adjacent to the Grant Harvey Centre site. The FIP option from 2017 (updated as would be necessary) may be an option to consider, but it is not an option on the same basis – with the same functional space program in mind – as the current investigations. The current work involves a space program borne of the following metrics:

- Public consultation via a detailed online survey;
- Broad user group consultation;
- Community needs assessment, including regional needs; and
- A clear line of sight to providing a future-oriented aquatics solution that is likely to satisfy regional demand for a period of at least 20 years.
- Maintenance Shops in The Basement
- New Mechanical Systems
- Renovated Fitness Centre/weight room
- Upgraded 400m Running Track

6.2 Specifics of the 2017 FIP Analysis

The Fredericton Indoor Pool is an existing municipal facility attached to the Nashwaaksis Middle School. The intention of the study was to evaluate the feasibility of expanding the current facility to accommodate a new 25m competitive swim tank that could serve the community. The project was conceived as a two-phase design. The FIP analysis did include the potential for additional, non-aquatics spaces, including a district library as part of the development. The specific program under review is identified below.

The first phase comprised a new pool facility that would include:

- 4 Multi-Purpose Rooms,
- Expanded Viewing Galleries
- Small Snack Shop
- Reconfigured Universal Change Rooms
- Office Space

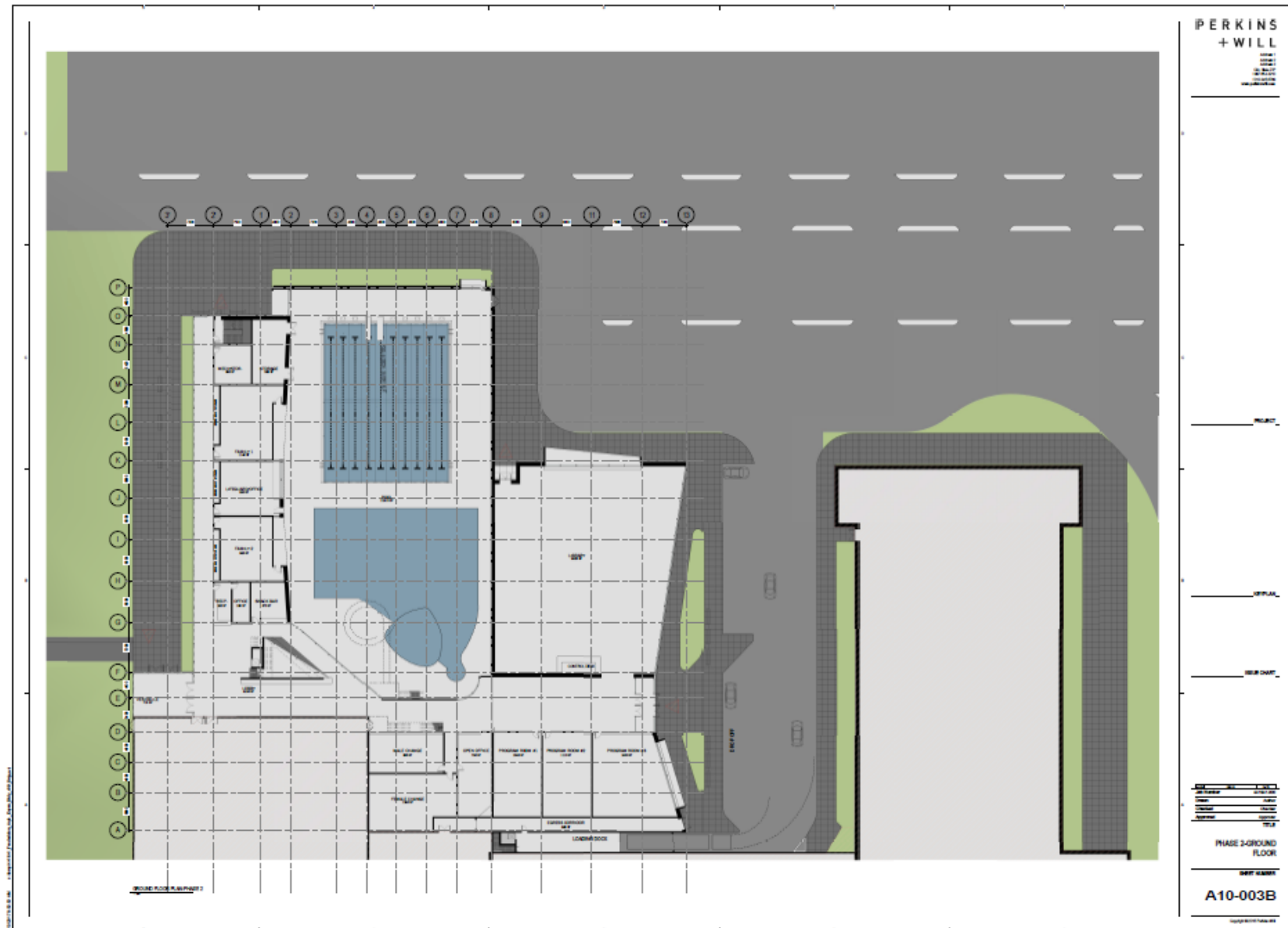
Phase Two would expand the facility further and include:

- Community Library
- Program Rooms
- Loading Dock
- Reconfigured parking/drop off zone

The proposed design retains the footprint of the existing pool facility (29,373 sq. ft) and extends the new pool facility to the north, extending towards Rosemere Drive. The project involved the renovation of the existing pool building and specifically a gut of the building for interior finishes and mechanical and electrical systems. The existing pool itself, structural components of the building and exterior cladding are not renovated or replaced.

In Phase Two, the library would infill the existing courtyard to create a new façade and entry into the community centre facility.

Exhibit 28: Concept Developed for an Expansion to FIP as part of 2017 Work



6.3 Capital Cost Estimation (2017 with 1 year of Escalation Provide For)

Capital cost estimates were provided by Turner and Townsend. The cost consulting performed in the current analysis of regional options is undertaken by Hanscomb. Both cost analyses comprise Order of Magnitude Estimates (OME) at a Class D level. As a Class D estimate of costs, these are based on unit rates for individual components of the building and site (an elemental cost breakdown) applied to the functional space program and the overall gross floor area (GFA) of the building and site. A fuller description of the inclusions and exclusions as part of the costing analysis and definition of the classes of estimates is provided in Section 7.6.

The resulting Class D costs were provided as two options for comparison:

1. Option 1 comprising the expansion and renovation of the pool in phase 1 and a phase 2 library addition;
2. Option 2 – for comparative purposes only – a cost estimation of developing the same program (expressed as gross floor area) as a completely new build on an assumed greenfield site with no extraordinary development costs.

It should be noted that neither option assumed any complications with either the existing school site or an assumed greenfield. As such, it is important to recognize that such assumptions with respect to the expansion/renovation

option (Option 1) would require verification if the decision were to actively consider development on this site.

The resulting estimates include the library. Below, is a prorated estimate for the pool and renovation to include contingencies and soft costs, as well as escalation to Fall 2020 so that it represents the project costs for the expansion and renovation save and except for the library.

Component	GFA (Sq. ft.)	Cost per Sq. Ft.	Amount
Pool Addition and Renovation	55,381	\$393	\$21,744,000
Escalation Allowance – To Fall 2020			\$1,957,066
Construction Contingency Allowance (7%)			\$1,522,080
Total Construction Costs			\$25,223,146
Soft Costs (25%)			\$6,305,786
Total Project Costs			\$31,528,932

Note that the costing assumed that there are no costs associated with land acquisition of any kind and that site development costs are part of the construction costs as shown above.

6.4 Operating Revenue and Costs

An operating assessment was conducted for Option 1 (expansion and renovation of the FIP pool) by the consulting team. This included discussions with the City of Fredericton regarding the assumptions which underpinned the analysis. Chief among these (and all are listed in the financial schedules that accompanied the analysis) are the following:

- The analysis includes only the expansion and renovated pool and excludes the operations of the future library;
- The development of two scenarios – Reference and High – the purpose of which was to reflect the potential for significant increases to the net operating costs arising from the effective relocation of the pool services (at the University) to the north side of the City and the risk that exists in achieving that revenue transfer;
- The desire to ensure that operating costs are not underestimated in an expanded aquatics operation. In order to ensure this, the High Scenario was generally based on a duplication (by a factor of 1) of the cost base of the existing pool so that the additional pool generated a doubling of certain costs, notably staffing costs. As a statement of financial risk, this was an appropriate assumption and while the Reference Scenario had a greater degree of efficiency, staffing costs were also doubled in this scenario. This did not apply to utilities and there is some significant likelihood of cost savings in the Reference Scenario;
- Because of the particular circumstances of the existing pool adjoining the school, the existing heat and hydro costs are paid for by the Province with no recourse to the City. We have assumed that this arrangement will continue and through an appropriate means the heat and hydro costs of the expansion will be to the City's account. Whether or not this is a realistic assumption will depend on the ability to separate existing from expansion-related costs given the fact of a single Mechanical and Electrical system, and the willingness of the Province and the City (and any partners) to change the approach to this cost;
- Revenues exclude variable revenues such as grants;
- Revenues exclude any significant assumptions about a growth of revenue from greater use than exists at the UNB pool at present. The revenues of the UNB pool were estimates and were transposed to the expanded FIP under this analysis. Some increase in ancillary revenues was assumed. The result, however, is that revenues are generally expected to double. Given that the FIP is not at capacity utilization, the question remains whether a new facility should be expected to exceed these revenues. The result of our estimates for a new regional facility support this expectation.

The operational assessment of costs and revenues was undertaken to identify and quantify financial risk to the City of Fredericton in providing additional aquatics services in the absence of the University. It was therefore inherent in the nature of the exercise to provide a conservative estimation of

the likely surplus/deficit. Accordingly, the existing financial position of the FIP (as of 2016) was an annual deficit of some \$537,000 and this was projected to rise under an expanded operation to between \$1.1 and \$1.3 million.

As indicated, this was a schematic exercise of the overall quantum of costs and revenues shifted to the City as a result of the close of the Sir Max Aitken Pool. A new regional facility represents a different program and has a different level of potential which can impact utilization, regional draw, and ultimately pricing and revenues. We therefore anticipate that a new south-side facility is unlikely to result in annual deficits as high as those indicated in the 2017 risk-analysis for the FIP.

A full copy of the 2017 analysis including design, capital and surplus/deficit is included in the Technical Compendium.

7 Concept Development & Costing

As part of the feasibility exercise, the consulting team developed high-level conceptual designs for each of the two site options. This includes a functional building program of space possibilities based on the desired function of an aquatics facility and site capacity. Class D Order of Magnitude cost estimates are provided for each of the concepts developed, as well as an additional assessment by the consulting team itemizing the risks and contingencies over and above the hard construction costs provided by the cost consultants.

The ideal functional space program, and resulting space adjacencies, was developed as an outcome of:

- Community need and future requirements for space;
- Best practice and design innovation;
- Public and user group consultation;
- Opportunities for multi-purpose buildings as avoidance of buildings stand-alone aquatics only facilities; and
- Consideration of future phasing opportunities for additional space.

7.1 Conceptual Design Summary

The conceptual design exploration of the new aquatics facility involved a site fit analysis of two separate sites with the utilization of the same program of spaces. The result are two options that can be assessed and compared for their relative merits and constraints.

Option 1: Locate the aquatics facility with the ability to expand to include a gym alongside the Grant Harvey Centre. This involved strategic siting that has the least impact on operations of the arena and minimizes the disruption to the existing parking and traffic circulation.

Option 2: Locate the aquatics on an unencumbered site on the UNB lands to the west of the Grant Harvey Centre. The location of the development parcel is not totally defined but there are indications from previous master plans as to where the intended recreation facility was envisioned. This location would also accommodate expansion to include a future gym.

Coupled with engagement activities that indicated a preference for an aquatics-plus facility, the existing supply, principles of multi-purpose and multi-use facilities, and STU's future needs have led the consulting team to include a gymnasium as an option in the conceptual planning. Therefore, each of the concept plans allow for the option to develop a double gymnasium adjacent to the aquatics centre, while the UNB Endowment Lands site would be able to accommodate additional programs through future expansion.

7.2 Comparison of Functional Space Program

The ideal functional space program is based on the facility being regional in nature, representing an appropriately sized aquatics facility with adequate change facilities and generous deck space for the pools, well-suited for a variety of community and training and competition uses.

Both options were generated from the ideal program of spaces, but the end results are different as they respond to unique site influences and opportunities. Therefore, the construction cost results also differ but not by a significant amount. Depending upon which option is selected, future design explorations may be able to find further planning efficiencies. In order to understand the distinctions between each option, Sections 7.3 and 7.4 provide summaries of their relative design principles, challenges and opportunities.

The matrix below identifies the ideal functional space program for the aquatics facility and provides a detailed side-by-side comparison of the proposed net building program that is applicable for each of the two options. The refined planning for each option, while still conceptual, responds to the general requirements of an aquatics facility and ancillary spaces. The option for the addition of a gymnasium is also provided separately. The matrix enables a detailed comparison for each of the discrete items proposed within each of the facilities relating to size, number, and specifications, as relevant. The functional program and allocation of space will continue to be refined as the design process progresses.

Exhibit 29: Detailed Functional Space Program Area Comparison Matrix

Division / Space Type	No.	ASM/Unit (sq. m)	ASF/Unit (sq.ft)	ASM (sq. m)	ASF (sq.ft)	Comments	Option 1: Expansion to Grant Harvey Centre	Option 2: UNB Endowment Lands
A Aquatic Centre								
Lane Pool	1	700	7535	700	7535	10 lane @2.5m x 25 m with gutter & ramp & bulkhead	625	625
Leisure Pool	1	250	2691	250	2691	12x25m teaching and leisure	300	300
Therapy Pool	1	125	1345	125	1345	therapy pool	105	105
Pool Deck Area @ Lap Pool	1	530	5705	530	5705	0.75 sm deck/1sm pool - accommodate up to 500 swimmers throughout + marshalling area at the end of the tanks	1132	1152
Pool Deck Area @ Leisure & Therapy Pool	1	406	4373	406	4373	1.25 sm deck/1sm pool - shares in accomodating 500 noted above		
Elevated Viewing Area	1	250	2691	250	2691	350 spectators	247	250
On Deck WC	1	18	194	18	194			
Pool Water Treatment	1	400	4306	400	4306		620	620
Pool HVAC Treatment	1	115	1238	115	1238	in gross up		
Pool Tunnels	1	400	4306	400	4306	in gross up	417	417
Pool Storage Area	1	100	1076	100	1076	300 sf for Leisure pool , 700 sf for lane pool		100
Pool Chemical / CO2 Storage	1	9	97	9	97			
Pool Tank/Deck / Aquatic Mon. Subtotal				2663	28667		3446	3569
Universal Needs change Room	2	150	1615	300	3229	135 sm/3.75 sm = 36 locker spaces		150
Male Change Room	1	100	1076	100	1076	115 sm/.75 sm = 152 locker spaces		100
Female Change Room	1	100	1076	100	1076	115 sm/.75 sm = 152 locker spaces	475	100
Team change / meeting rooms	2	30	323	60	646			60
Pool Instruction Room/Multipurpose	1	37	398	37	398			37
First Aid	1	10	108	10	108			10
Change Room Sub total				607	6534		475	457
Aquatic Monitor	1	45	484	45	484			45
Staff Change Room	2	9	97	18	194			18
Coaches and Officials	3	11	118	33	355			33
Aquatic Monitor WC	1	9	97	9	97			9
Aquatic Director	1	20	215	20	215			20
Admin Subtotal				125	1345		123	125
Assigned Net Area Sub-Total				3395	36546		4044	4151
Component Circulation & Walls, HVAC, Structural Allowance			15%	1019	10964			
Gross Area Total				4414	47510			

Division / Space Type	No.	ASM/Unit (sq. m)	ASF/Unit (sq.ft)	ASM (sq. m)	ASF (sq.ft)	Comments	Option 1: Expansion to Grant Harvey Centre	Option 2: UNB Endowment Lands
B Administration								
Reception Counter and support	1	40	431	40	431		81	40
Administration Office Open Workstn.	1	20	215	20	215			20
Administration Offices Enclosed	2	11	118	22	237			22
Administration Cash Room	1	11	118	11	118			11
Board Room	1	20	215	20	215			20
work Room	1	20	215	20	215		58	20
Staff Lunch Room	1	28	301	28	301			28
Program Staff- Unassigned WorkStn	4	5	0	20	215			20
Assigned Net Area Sub-Total				181	1948		139	181
Component Circulation & Walls, HVAC, Structural Allowance				20%	36	390		
Gross Area Total				217	2338			
Division / Space Type	No.	ASM/Unit (sq. m)	ASF/Unit (sq.ft)	ASM (sq. m)	ASF (sq.ft)	Comments	Option 1: Expansion to Grant Harvey Centre	Option 2: UNB Endowment Lands
C Multi Purpose								
Large Multi Purpose Room 1	1	140	1507	140	1507	divisible with movable wall	79	140
Storage	1	16	172	16	172		39	16
Group Fitness	1	110	1184	110	1184	20 participants - yoga / aerobics	84	110
Storage alcove	1	10	108	10	108		77	10
Public Meeting Room	1	40	431	40	431		41	40
Assigned Net Area Sub-Total				316	3401		320	316
Component Circulation & Walls, HVAC, Structural Allowance				20%	63	680		
Gross Area Total				379	4082			
Division / Space Type	No.	ASM/Unit (sq. m)	ASF/Unit (sq.ft)	ASM (sq. m)	ASF (sq.ft)	Comments	Option 1: Expansion to Grant Harvey Centre	Option 2: UNB Endowment Lands
D Leased Sport Group Space and Leased Concessions								
Concession	1	30	323	30	323		30	30
Sport Group Hotelling Space	1	25	269	25	269		25	25
Assigned Net Area Sub-Total				55	592		55	55
Component Circulation & Walls, HVAC, Structural Allowance				20%	11	118		
Gross Area Total				66	710			

Division / Space Type	No.	ASM/Unit (sq. m)	ASF/Unit (sq.ft)	ASM (sq. m)	ASF (sq.ft)	Comments	Option 1: Expansion to Grant Harvey Centre	Option 2: UNB Endowment Lands
E Amenity and Support								
Common Lobby	1	250	2691	250	2691			250
Public Washrooms	1	120	1292	120	1292			114
universal WC	2	9	97	18	194			18
Second floor Washrooms	1	65	700	65	700	with Accessible stall	337	65
Electrical Closets	4	3	32	12	129			12
General Storage	1	20	215	20	215		145	20
Jantiorial Supply Closet	2	6	65	12	129		51	16
Recycling/Garbage	1	50	538	50	538			50
Assigned Net Area Sub-Total				547	5888		533	545
Component Circulation & Walls, HVAC, Structural Allowance			10%	55	589			
Gross Area Total				602	6477			
Division / Space Type	No.	ASM/Unit (sq. m)	ASF/Unit (sq.ft)	ASM (sq. m)	ASF (sq.ft)	Comments	Option 1: Expansion to Grant Harvey Centre	Option 2: UNB Endowment Lands
F Gym and Team Training Centre								
Gym	1	1260	13563	1260	13563	double gym with curtain can accommodate one NBA size full court, 4 cross court basketball, volleyball and 4 to 6 badminton	1121	1260
Gym Storage	1	126	1356	126	1356		122	126
Gym change rooms and shower	2	15	161	30	323		126	121
Assigned Net Area Sub-Total				1416	15242		1369	1507
Component Circulation & Walls, HVAC, Structural Allowance			10%	142	1524			
Gross Area Total				1558	16766			
Division / Space Type		NASM (sq. m)	NASF (sq. f)	GASM (sq. m)	GASF (sq.ft)	Comments	Option 1: Expansion to Grant Harvey Centre	Option 2: UNB Endowment Lands
Net and Gross Area Totals								
Aquatic Centre		3395	36546	4,414	47,510		0	0
Administration		181	1,948	217	2,338		0	0
Multi Purpose		316	3,401	379	4,082		0	0
Leased Sport		55	592	66	710		0	0
Amenity and Support		547	5,888	602	6,477		0	0
Total Floor Area without Gym							5713	6296
Gym and Training		1,416	15,242	1,558	16,766		0	0
Total Floor Area							7482	7868

7.3 Option 1: Expansion to the Grant Harvey Centre

7.3.1 Design principles

The priority goal of Option 1 is to site the aquatic program in a manner that allows minimal disruption of the existing arena during construction but results in a relationship of spaces that provides maximum synergies between the two uses. To that end, the key principles of planning include:

- Locate the facility for maximum exposure of public spaces and opportunity to see activities within.
- Create a seamless connection of public passage from the Arena to the Aquatic Centre to maximize the benefits of the co-location.
- Shape the sequence of entry to provide clear connection to the welcome counter and then procession to the change rooms or spectator seating.
- Arrange the sequence of aquatic spaces to allow for the inclusion of a future gym.
- Minimize the footprint of the building to ensure least amount of impact on the adjacent woodlot and wetland.
- Indicate how parking areas can expand to accommodate increased parking needs.

7.3.2 Opportunities and Challenges

Exploration of this option yielded some interesting considerations. The constrained site allowed for more development than expected but the overall result is not ideal.

Opportunities

- Adjacent location to the arena will be a benefit to the users. They will be exposed to both ice sports and aquatics. There will be scheduling benefits for families with children using both facilities at the same time.
- The site does allow for good exposure of the aquatic centre off an existing driveway.

Challenges

- The site is constrained and although concept planning bears out the program fits, there are many unknowns in relation to the restrictions of building close to the woodlot and wetland.
- Building alongside the existing Grant Harvey Centre will require attention to building code separation. This will impact exiting of the arena and likely necessitate the need for fire walls, corridors, or vestibules.
- Construction of the expansion will be more complex adjacent to the existing arena.
- Parking expansion is distributed to as many available parcels as possible but only allows for about 200 spaces and is therefore not ideal. These may or may not be feasible depending upon site conditions. If a gymnasium is to be added in the future, some of the

expanded parking areas (approximately 60 spaces) would be displaced.

- Inclusion of a future gymnasium is possible but not ideal. The location is further down a long corridor. Wayfinding will be needed, and the experience of the gym and pool is separated. It is preferred that these programs operate in close proximity to each other for benefits of supervision and maximum impact.
- Inclusion of a future gymnasium will displace needed parking for the Aquatic Centre. A broader master plan approach and parking study will be needed to address how the increased parking can be provided for the gym in addition to accommodating the loss of the parking.

7.3.3 Concept Plans

The overall gross floor area (GFA) of Option 1 is 5,713 sq. m for the aquatic portion only. The concept plans for Option 1: Expansion at Grant Harvey Centre are provided on the following pages.

The addition of a gymnasium would increase the overall GFA by another 1,369 sq. m net area, or 1,768 sq. m GFA. Concept plans for Option 1 with the inclusion of a future gymnasium are also provided.

Exhibit 30: Option 1 – Conceptual Site Plan (Aquatics Only)

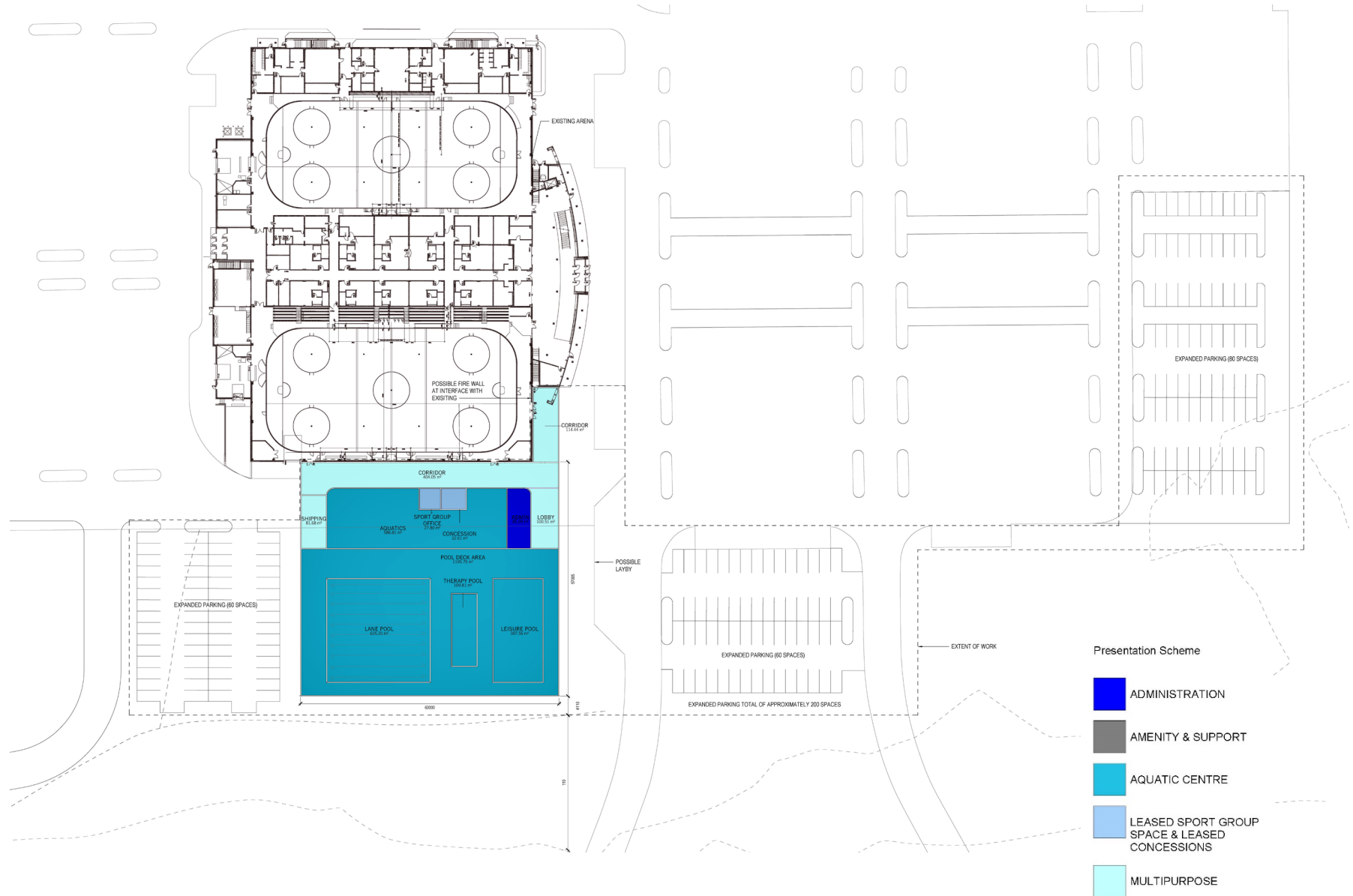


Exhibit 31: Option 1 – Main Floor Concept Plan (Aquatics Only)

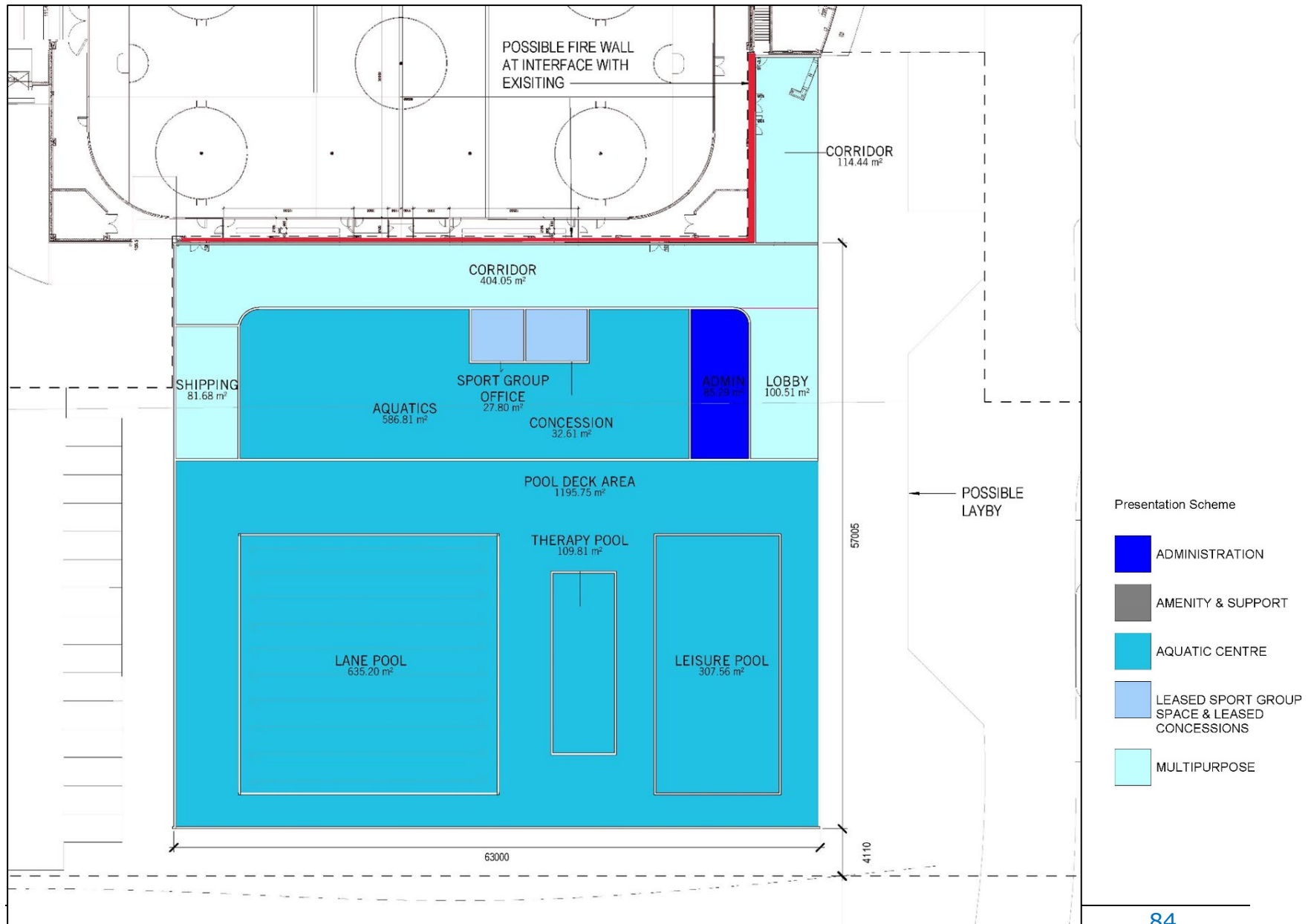
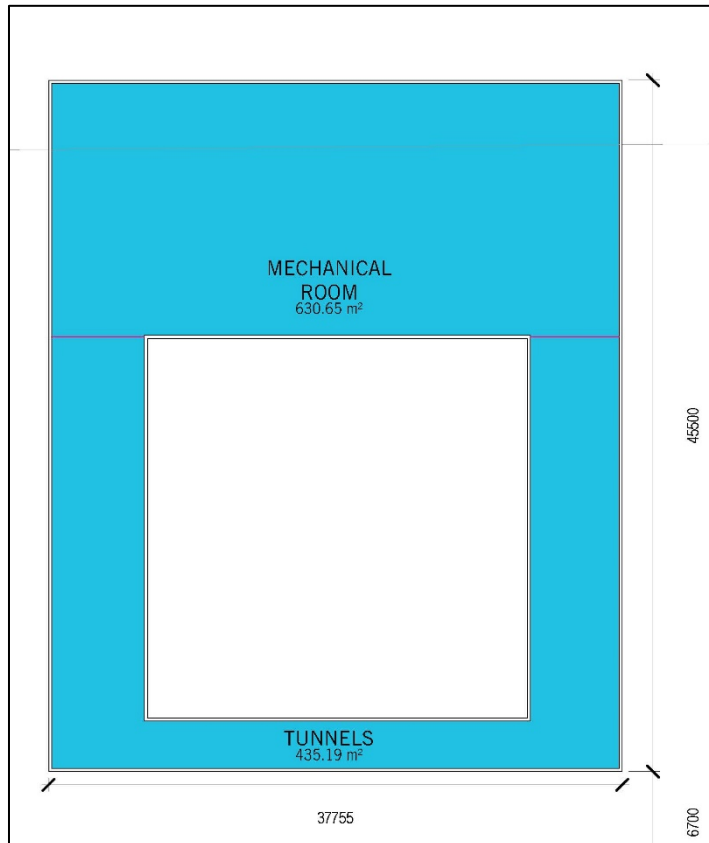


Exhibit 32: Option 1 – Basement Concept Plan



Presentation Scheme



ADMINISTRATION



AMENITY & SUPPORT



AQUATIC CENTRE



LEASED SPORT GROUP
SPACE & LEASED
CONCESSIONS



MULTIPURPOSE

Exhibit 33: Option 1 – Second Floor Concept Plan

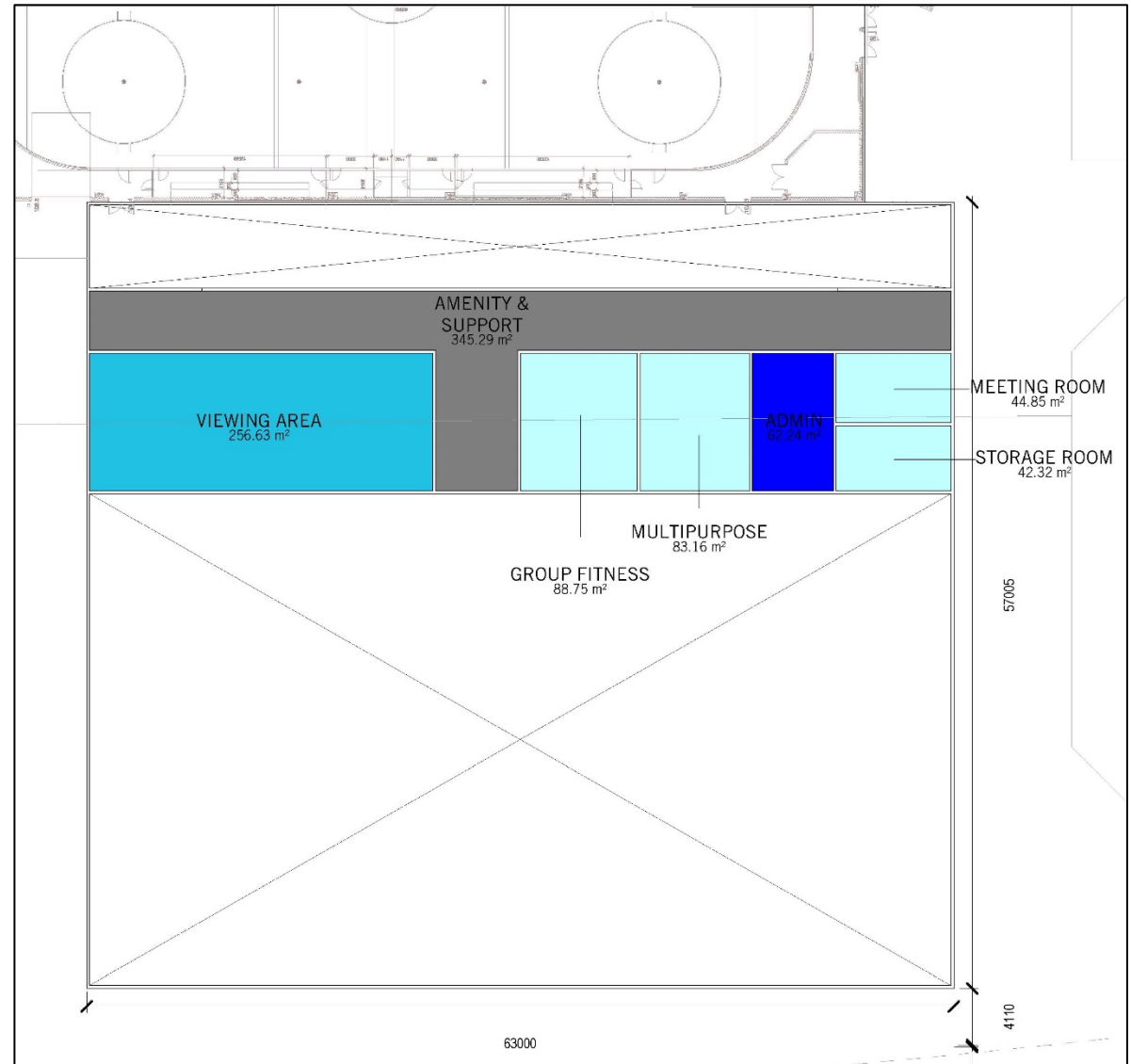


Exhibit 34: Option 1 – Conceptual Site Plan (Aquatics and Gymnasium)

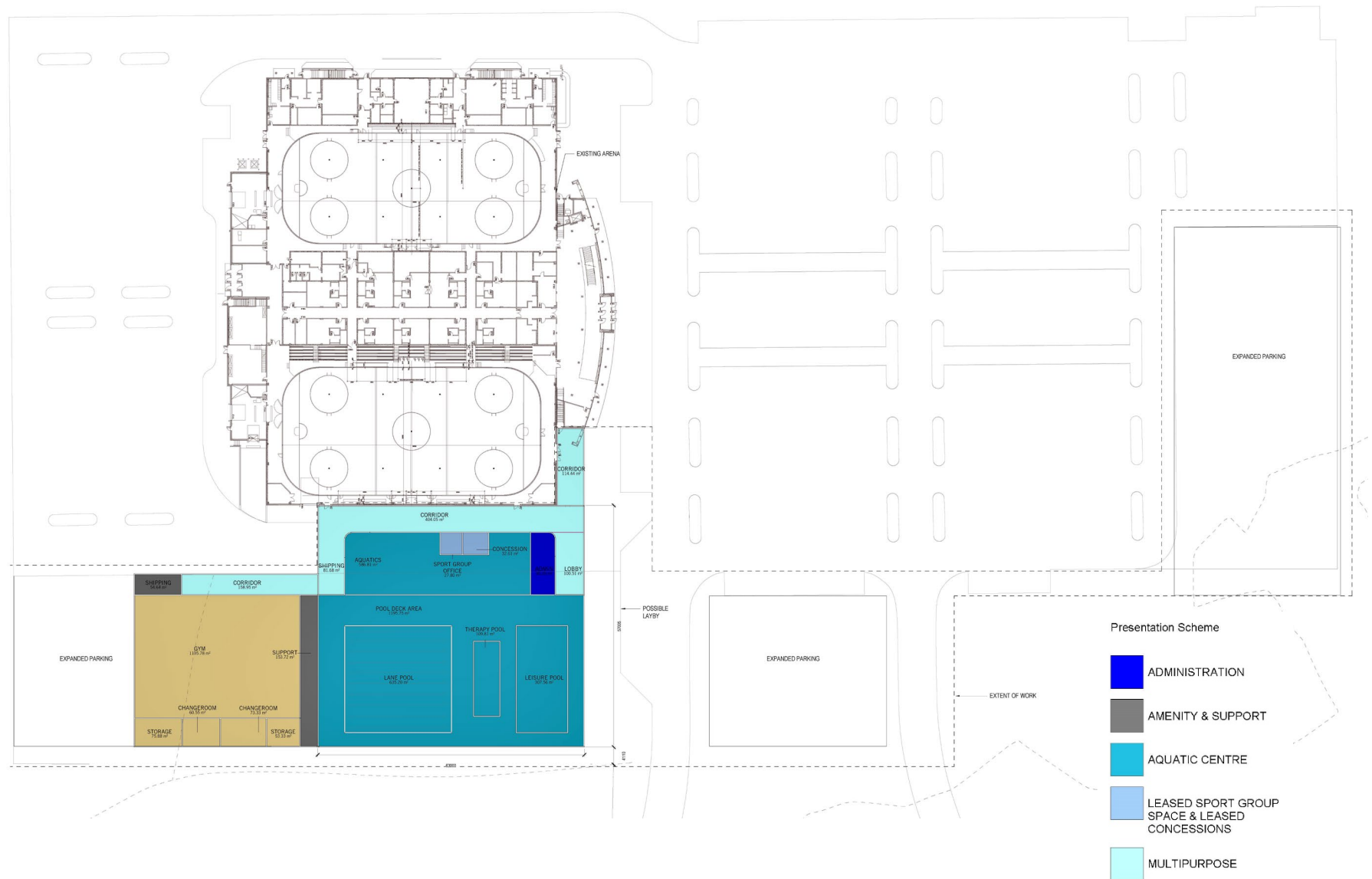
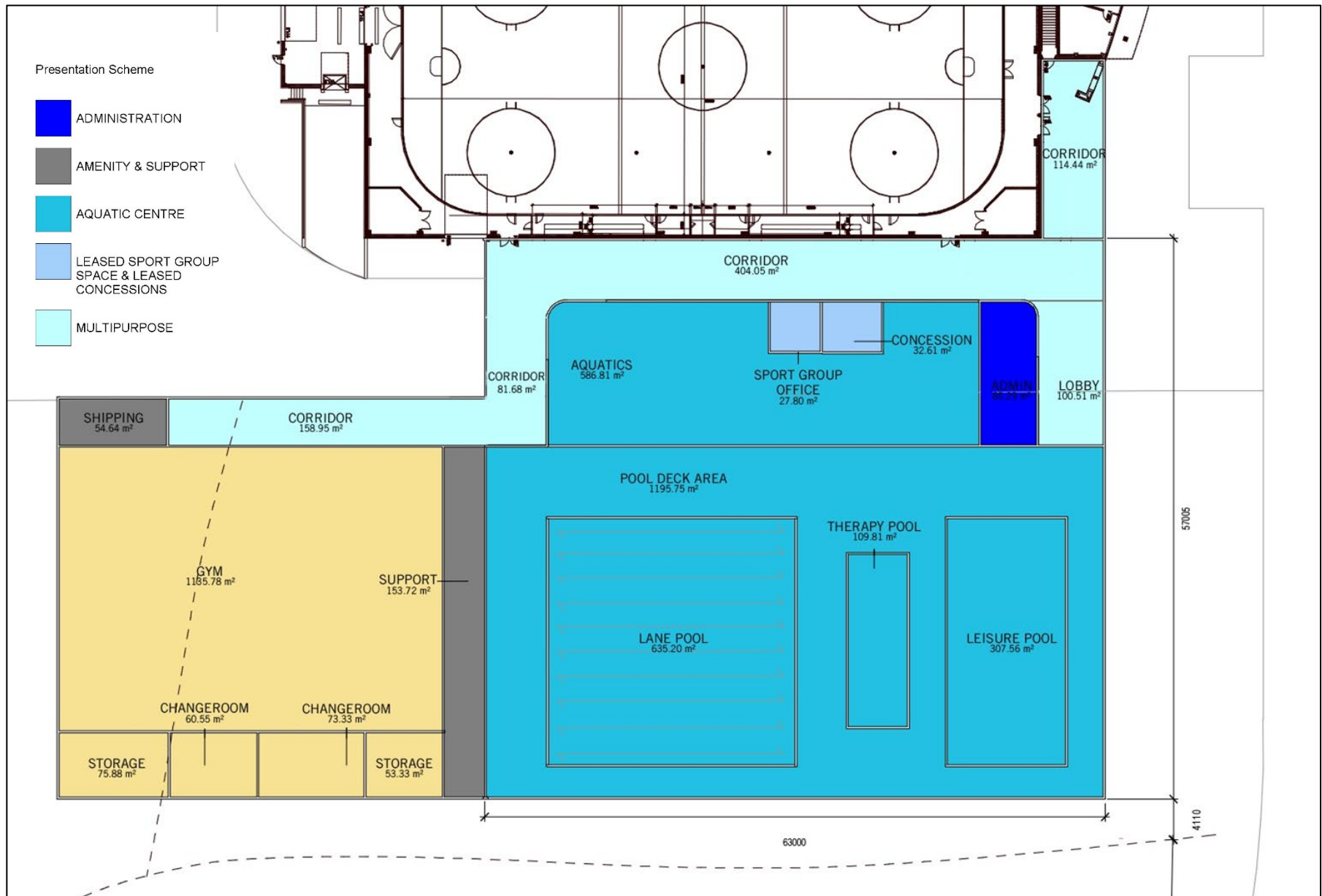


Exhibit 35: Option 1 – Main Floor Concept Plan (Aquatics and Gymnasium)



7.4 Option 2: UNB Endowment Lands

7.4.1 Design principles

In contrast to Option 1, this option has very few site constraints. It does not need to contend with any existing buildings. However, siting the building for exposure and future expansion became a critical concern. It does share some design principles with Option 1, for example, locating the facility for maximum exposure of public spaces and opportunity to see activities within. Key design principles include:

- Site the building for maximum exposure upon entry to the site from the entry road from Knowledge Park Drive or from a linking road to the Grant Harvey Centre.
- Create a distinct sense of entry into a public space.
- Shape the sequence of entry to provide clear connection to the welcome counter and then procession to the change rooms or spectator seating.
- Arrange the sequence of aquatic spaces to allow inclusion of a future gymnasium.
- Plan the potential future gymnasium to benefit from a close proximity to the aquatics to maximize synergies of use and exposure.
- Plan the parking efficiently to minimize site development area.

7.4.2 Opportunities and challenges

The unconstrained conditions allowed for more freedom in planning and siting. The results are better relationships between the aquatics and future gymnasium but there is a corresponding increase in area.

Opportunities

- The design options are more flexible going forward. The concept design indicates one departure but there are many ways of approaching the design of the building on this site.
- The site can be defined and shaped to provide the needed parking and drop off areas.
- Construction will be unimpeded by any existing facilities.

Challenges

- The exposure is limited until there is full development of the UNB lands. The building, by contrast to Option 1, is further from the main thoroughfares and does not benefit from the adjacent exposure of the arena.
- The roadway construction to access the site is long.
- Inclusion of a future gymnasium is more adaptable in this option but will require a broader master plan approach towards expanding the parking to accommodate the increased usage.

7.4.3 Concept Plans

The overall gross floor area (GFA) of Option 2 is 6,296 sq. m for the aquatic portion only. The net areas of some components are larger than Option 1 due to the freedom to maximize the public spaces and improve the program areas. This allows Option 2 to be closer to the intended net areas of the base program. The addition of a gymnasium would increase the GFA to a total of 7,762 sq. m.

Exhibit 36: Option 2 – Conceptual Site Plan

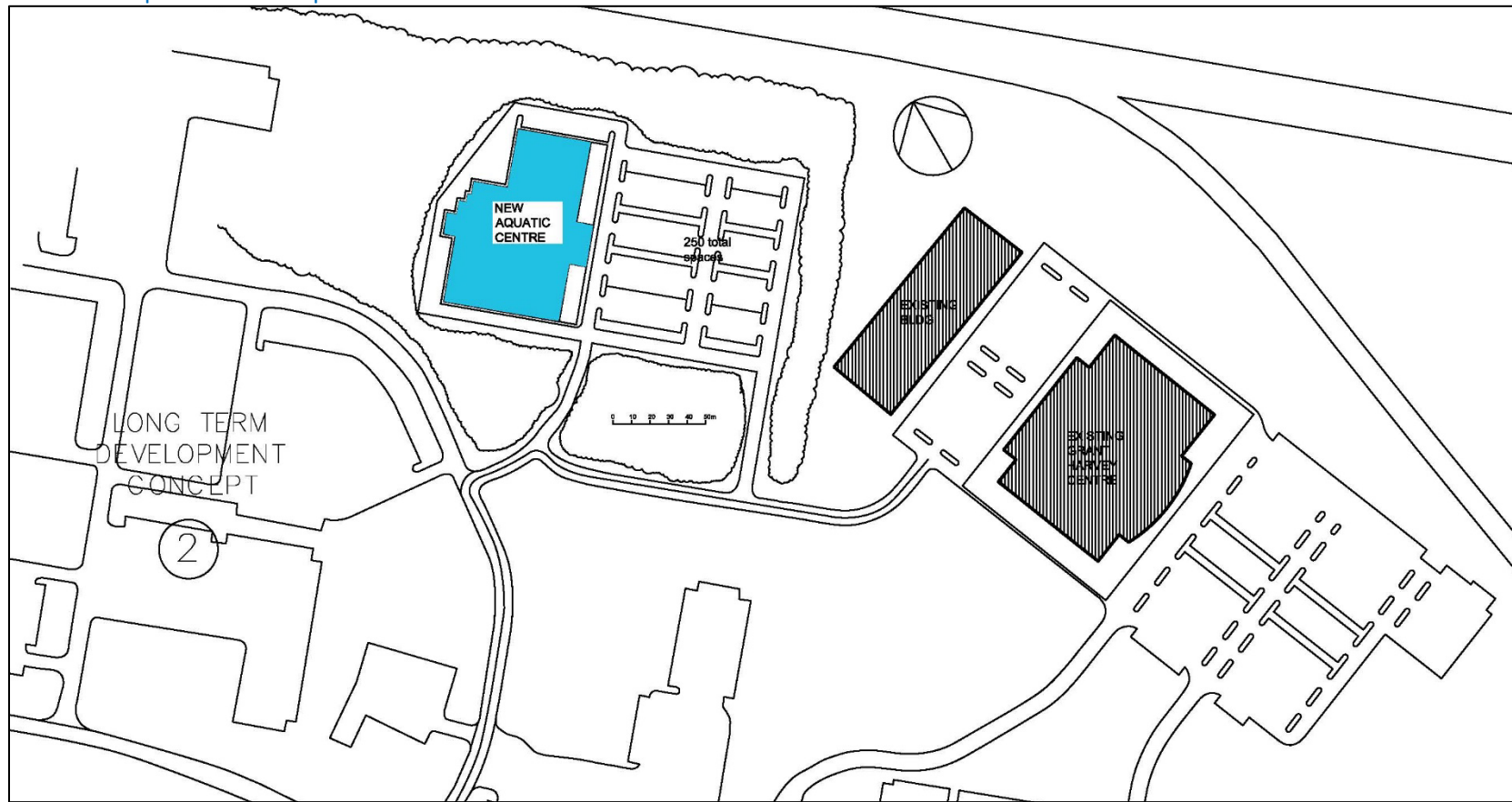


Exhibit 37: Option 2 – Main Floor Concept Plan (Aquatics Only)

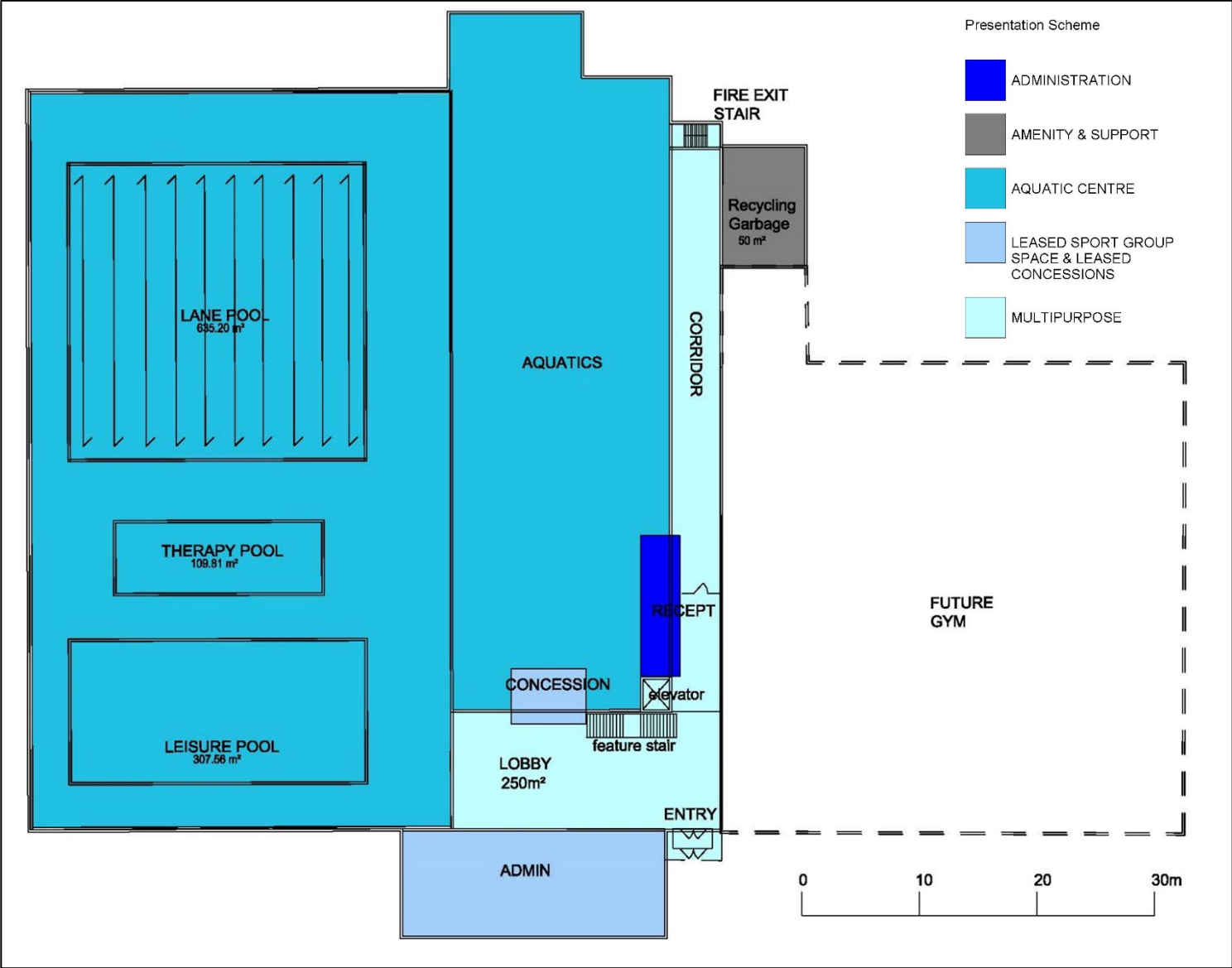
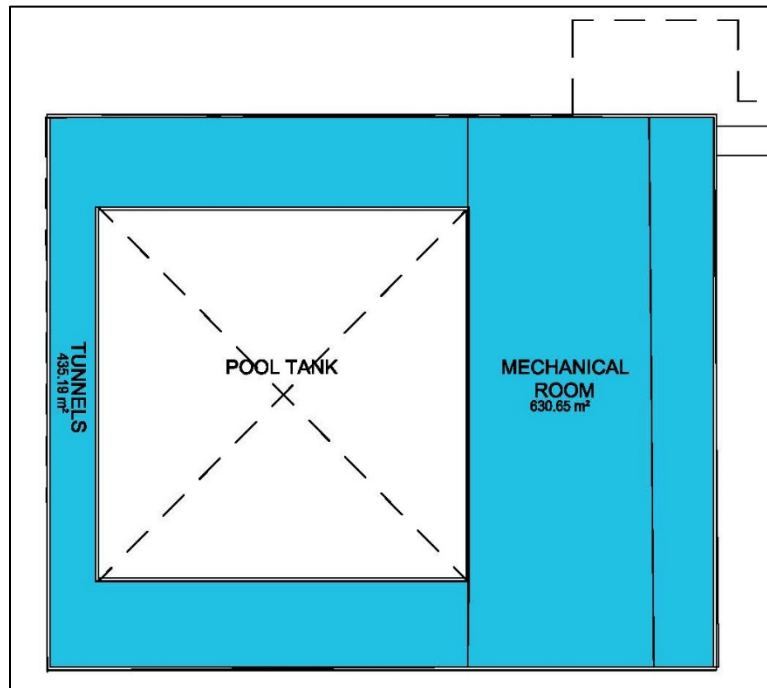


Exhibit 38: Option 2 – Basement Concept Plan



Presentation Scheme

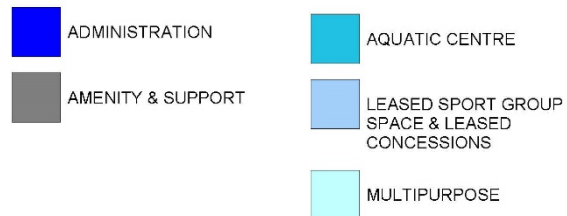


Exhibit 39: Option 2 – Second Floor Concept Plan

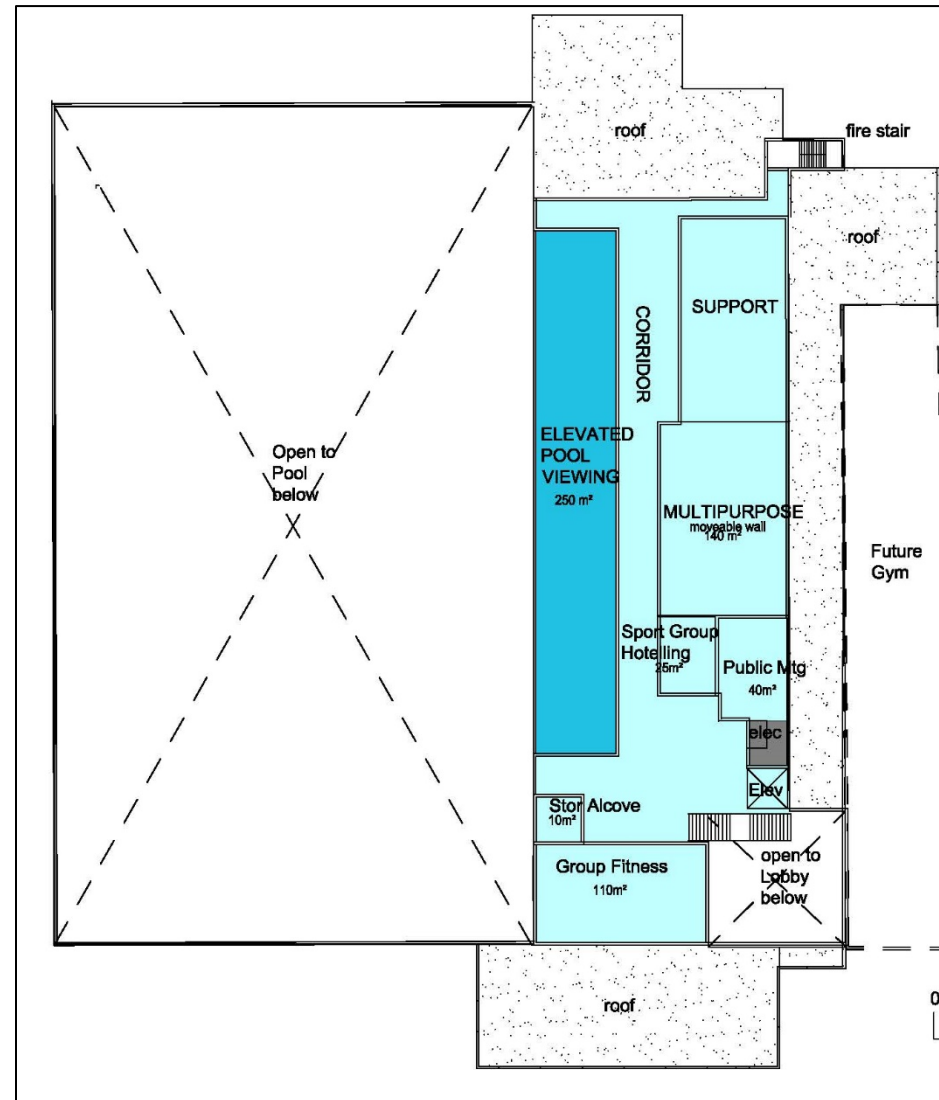
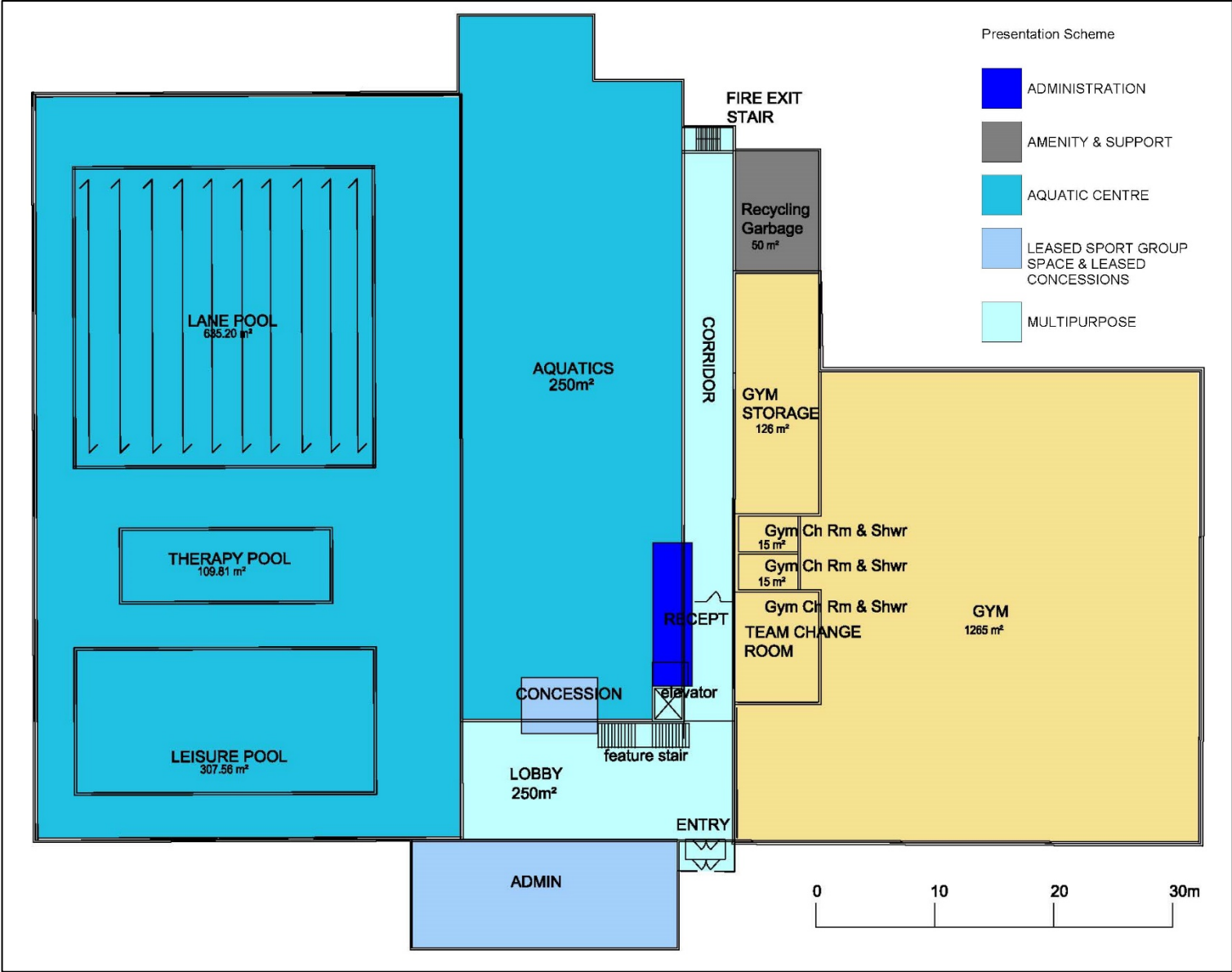


Exhibit 40: Option 2 – Main Floor Concept Plan (with Gymnasium)



7.5 Summary Comparison of the Options

Assessing the options should involve comparing the design merits in conjunction with an understanding of the comparative areas and costs. At the present level of exploration there remains a lot to be understood about both options, however it appears that there is less risk and unknowns to Option 2. Although the estimated construction costs are marginally higher than Option 1, that can be mitigated by future design exercises to reduce area. These are quantifiable and easily attained. Option 1, on the other hand, has embedded unknowns due to the adjacency to the arena and the wetland. These constraints may ultimately hamper the development of the plan to provide the ideal program areas. Although there are benefits from the close connection to the arena, the full build out with the gym, as a remote addition, compromises the overall experience.

The conceptual design of Option 1 and Option 2 strive to remain close to the base program but there were adjustments to those areas during design. For both options, it was felt that the net program area of the pool should increase to provide more deck space around the tanks that was determined in the program phase. In addition, shaping the pool perimeter to accommodate the different sized tanks is not efficient. The overall program areas for Option 2 are closer to the base program than Option 1. Due to site constraints of Option 1, there have been incremental reductions of Administration, Amenity and Support and the Gym addition. There is a 189 sq. m difference between Option 1 and Option 2 in total net area which is marginal at this level of design.

Exhibit 41: Program Comparison Overview

Component	Program	Option 1	Option 2
Aquatics	3,395	4,044	4,151
Administration	181	139	181
Multi Purpose	316	320	316
Leased Space	55	55	55
Amenity and Support	547	533	545
Total Area - Aquatics only	4,494	5,091	5,248
Gym Addition	1,416	1,369	1,507
Total Area - Aquatics and Gym	5,910	6,460	6,755

7.6 Capital Cost Estimates

7.6.1 Basis of Capital Cost Estimates

The costs provided are order of magnitude in nature and should not be seen as definitive project costs – While this study includes an articulated functional space program as a basis for concept planning and cost estimation, the concept design still represents a basic design assessment of scale, functional program and adjacencies resulting in an indicative floor plan and estimation of net and gross floor area. Because the costing undertaken at this pre-design stage represents the first and most general level of costing (Class D), it can be expected to change as more detailed site planning and design work continues. It is important therefore not to underestimate costs at this stage - it is necessary to include design, construction, and other contingencies as well as sufficient allocations of cost for items that cannot readily be fully estimated at this time.

As the project moves forward through the schematic design process, design development and the development of working construction drawings, capital costs are subject to a more granular assessment of individual building components, systems, and other costs. At the same time, as the design progresses, the predictability of capital costs can be more refined which enables a reduction in the capital cost contingency that is added to the initial capital cost estimates. Design development does not remove the need for contingency – development and construction of complex buildings requires that every project carry a contingency for cost overrun, delay, and other financial impacts.

Class of Capital Cost Estimates	
Class D Estimate	• Estimate based on initial functional concept design. • Elemental summary generally based on unit rates, and applied to principle program areas (uses, and overall building gross floor area (GFA). • Accuracy is generally plus/minus 20-30% depending on complexity of the project and site.
Class C Estimate	• Schematic design completed to 33%. • Includes an elemental cost estimate based on greater detail of all major elements, enabling refinement of design and costing.
Class B Estimate	• Design development to 50% or higher. • Represents a detailed construction document upon which to base costs.
Class A Estimate	• Cost estimate based on 100% completion of construction documents prior to tendering. • Expected degree of accuracy of costs of between 5% and 10%.

To illustrate this point, the OME (Order of Magnitude Estimate) of capital cost includes necessary allocations for site-related development costs pending necessary geotechnical, topographical survey, environmental and hydrogeological assessment of site conditions as part of project implementation.

A reasonable breakout of capital cost by component is also helpful as part of any funding plan that is developed for discussion with prospective project partners. In the current exercise, we have delineated costs for the aquatics centre (which includes all related administrative, meeting room, concession and other spaces which together comprise a fully functional indoor aquatics building) and the gymnasium and its support space. Site development and parking related costs are allocated almost exclusively to the aquatics centre so that should aquatics represent a first phase, and a gymnasium a second phase, the incremental cost of this addition is identified.

This project cost estimate also assumes that the facility will be constructed at grade on a “pad ready” site⁵. The project costs include normal site development requirements.

⁵ Defined as being a site with services provided to the site boundary, and removal of all structures or encumbrances that would otherwise be required to be removed or ameliorated. This also assumes that any

7.6.2 Understanding Contingencies in Cost Estimation

The use of contingencies in capital cost estimation is part of an overall approach to understanding and mitigating risk – these are not additional costs that are necessarily expected to be confirmed, as required, later in the design process; they are costs which are added at the outset of the project design and implementation process to account for the range of design, site, construction cost and other uncertainties that exist at that time. As the project advances, the need for contingency is lowered as a percentage of overall costs. The closer the project gets to full design, there is greater certainty with regard to all aspects of cost, whether that results in cost increases or decreases.

The purpose of adding such a large contingency at the outset is to help ensure that costs are more likely to decline (other things being equal) through the planning and design process. This assumes that there are no substantial increases to the program and scale of building, or the approach to site development. Contingencies are not to be confused with *cost escalation* which pertains to the market and inflationary pressure on construction and professional services costs.

With specific regard to the current public health concerns as a result of the pandemic and its uncertain impacts on design and construction, or the duration of such impacts, this

remediation requirements are addressed prior to delivery of the site for development.

reinforces the benefit of contingencies. However, it is not accurate to assume that the post-contingency budget is that which will emerge as the final cost. The expected cost is the quantified estimate **before** contingencies. This “before contingency” estimate based on current pricing, known program, reasonable estimates (allocations) of site development costs, expected timing and includes reasonable allocations for all other costs⁶.

7.6.3 No Estimation of Escalation Beyond 2020

While the cost estimators on the project team have provided an estimate of escalation to mid 2022 of some 8.2%, the cost estimates provided below do not include any provision for escalation. As estimates current as of mid 2020, these represent a reliable basis for planning. The impacts of the current economic crises cannot be readily predicted at this time and this limits the value of predictions. Instead, it is important to recognize that costs should be reassessed frequently during the subsequent detailed design and site planning process.

7.6.4 Capital Cost Inclusions

Costs include all building and site related hard costs for the defined sites for both Option 1 (Addition to Grant Harvey Centre) and Option 2 (Standalone Building on the UNB Endowment Lands). In addition to hard construction costs, soft costs (also referred to as General and Administrative) are

included and comprise a range of costs including in general terms the following:

- Architectural and Engineering – Design Phase
- Architectural and Engineering – Construction Phase
- Project Management and Overhead
- Permitting and Regulatory Approvals
- Legal and Accounting Services
- Financing, Lease, Insurance, and other General Administration
- Other Professional Fees

Soft costs are applied to both building and site related costs to provide an estimate of Total Project Costs at a Class D Level. Total project costs are subject to additional cost contingencies in recognition of the limited current development of design plans and all other conditions necessary for project implementation; namely, a full range of studies carried out to define site conditions, civil engineering design for site and building, necessary traffic impact analysis and design planning, all regulatory approvals and costs associated with potential incursion into a regulated wetland (as in the case of Option 1).

These contingencies are expressed as cumulative design and construction contingencies. As progress is made in the future to develop schematic design plans (Class C costs), Detailed Design Development Plans (Class B costs) and eventually

⁶ This excludes any future decision around pursuing LEED certification (Leadership in Energy and Environmental Design) of the building and associated cost premiums.

Construction-Ready Design Plans (Class A costs), the extent of these contingencies is reduced to the final allowance for construction contingency post-contract award.

At this time, we have included contingencies in the order of 25% of estimated Total Project Costs.

7.6.5 Capital Cost Exclusions

Major fixtures and equipment have been included in hard construction costs but all other furniture, fixtures and equipment (FF&E) that may be included in the facility are not costed at this time.

The costs are exclusive of the HST or any HST rebate that the City or its partners may be entitled to.

The consulting team has not undertaken a site development/servicing assessment which represents an opinion as to servicing strategy/stormwater management, and grading plan. That work represents an immediate next step to help verify the capital costs and overall suitability of the design and site plan associated with each option.

At this stage, site development costs represent reasonable allocations of cost subject to necessary site analysis to confirm conditions and site-related costs. These allocations include recognition that Option 1 (Grant Harvey) will draw water and sewer servicing from the existing servicing for the Grant Harvey Centre; that stormwater management is required; that grading will be required and potentially some replacement of unsuitable soils, and that the site will require

surface development with granular material, paving, curbing, landscaping and landscaping.

Assumptions for Option 2 (the UNB Endowment Lands) are broadly similar (with services for example drawn from that in proximity to Vanier Highway) but at higher absolute cost due to larger site size (21,000 square metres versus 16,000 square metres for Option 1).

All site related development costs should be verified following necessary soil studies and a civil engineering concept design assessment.

7.6.6 Aquatics Facility: Order of Magnitude Capital Costs

The following provides the total project cost estimates associated with the development of the proposed aquatics centre based on the concepts established in Options 1 and 2. The costs include the following for each option:

- Estimated site development costs associated with the development at the Grant Harvey Centre (Option 1) and UNB Endowment Lands (Option 2);
- Building costs for the aquatics centre under Option 1 and Option 2. It should be noted that the building program is specific to the aquatics function and related ancillary program spaces including smaller scale multi-purpose meetings rooms, but specifically excludes both the net and gross floor area associated with the option of a double gymnasium;

All construction costs are subject to the addition of necessary soft costs and the inclusion of cost contingencies to account for risk at this initial level of planning. Costs associated with access road development beyond the assumed development site boundaries are addressed in a separate section.

Details of the hard construction costs, as prepared by the cost consultant are provided in the Technical Compendium.

Option 1: Expansion to Grant Harvey Centre

Exhibit 42: Total Project Costs for Option 1 Aquatics

Building Costs - Option 1 AQUATICS (Addition to Grant Harvey Arena)

Item			Elemental Unit Measure (Hard Costs per Sq. Ft.)	Hard Costs (\$)
Q2 2020 COSTS - NO ESCALATION	Elemental Quantity (Sq. M)	Elemental Quantity (Sq. Ft)		
A BUILDING HARD COSTS	5,714	61,505	\$299	\$18,416,600
B GENERAL REQUIREMENTS & FEE				\$3,625,200
Total Aquatic Centre Building Costs			\$358	\$22,041,800

Site Development - Allocation

Item	Hard Costs (\$)
ALLOCATION	
A WATER, SANITARY & STORM WATER MANAGEMENT	\$300,000
B SITE DEVELOPMENT, ROAD & PARKING	\$1,000,000
C ELECTRICAL	\$500,000
D PROVISION FOR GRADING, REMOVAL OF MATERIAL, EXCAVATION ETC	\$500,000
E TOTAL SITE WORKS	\$2,300,000.00
TOTAL AQUATIC CENTRE HARD CONSTRUCTION COSTS	\$396
TOTAL SOFT COSTS	25%
TOTAL AQUATIC CENTRE	\$495

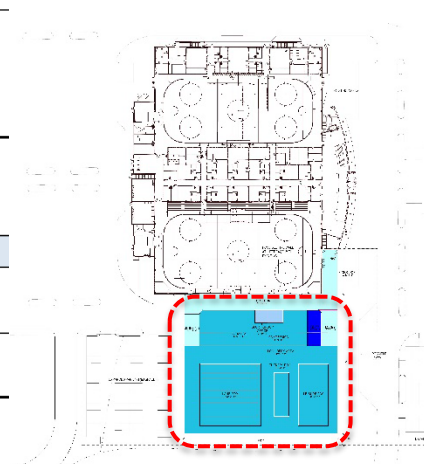
Contingency for Class D Order of Magnitude Estimate

1. Design and Pricing	15.0%	\$4,564,088
2. Construction	10.0%	\$3,499,134
Total contingency	26.5%	\$8,063,221

Grand Total for Phase 1 (Aquatics)



\$38,490,471.25



Option 2: UNB Endowment Lands

Exhibit 43: Total Project Costs for Option 2 Aquatics

Building Costs - Option 2 AQUATICS (UNB Endowment Lands)

Item	Elemental Quantity (Sq. M)	Elemental Quantity (Sq. Ft)	Elemental Unit Measure (Hard Costs per Sq. Ft.)	Hard Costs (\$)
Q2 2020 COSTS - NO ESCALATION				
A BUILDING HARD COSTS	6,296	67,770	\$296	\$20,043,000
B GENERAL REQUIREMENTS & FEE				\$3,947,400
Total Aquatic Centre Building Costs			\$354	\$23,990,400

Site Development - Allocation

Item	Hard Costs (\$)
ALLOCATION	
A WATER, SANITARY & STORM WATER MANAGEMENT	\$400,000
B SITE DEVELOPMENT, ROAD & PARKING	\$1,100,000
C ELECTRICAL	\$500,000
D PROVISION FOR GRADING, REMOVAL OF MATERIAL, EXCAVATION ETC	\$600,000
E TOTAL SITE WORKS	\$2,600,000.00
TOTAL AQUATIC CENTRE HARD CONSTRUCTION COSTS	\$392
TOTAL SOFT COSTS	25%
TOTAL AQUATIC CENTRE	\$490

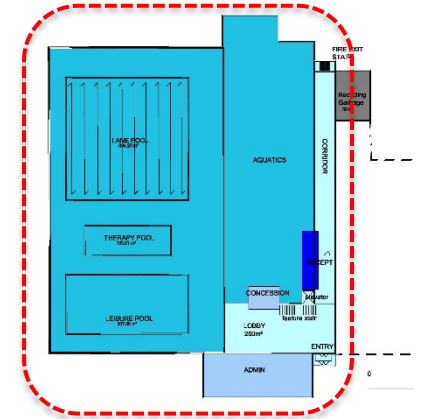
Contingency for Class D Order of Magnitude Estimate

1. Design and Pricing	15.0%	\$4,985,700
2. Construction	10.0%	\$3,822,370
Total contingency	26.5%	\$8,808,070

Grand Total (Aquatics)



\$42,046,070.00



7.6.7 Future Potential: Order of Magnitude Capital Costs Associated with a Double Gymnasium

As this report has identified, there is a community need for larger volume indoor recreation space such as that provided by gymnasia, field houses, seasonally enclosed fields and so forth. Gymnasium needs are largely served by school gymnasia and this is expected to continue. Notwithstanding, demand exists, as does the opportunity, to create a multi-use community recreation complex which includes not only aquatics but community recreation spaces that serve the region as well. This concept is more readily achievable on the Option 2 UNB Endowment Lands given the constraints on available land at the Grant Harvey Centre. While this is generally the case, and specifically, a large footprint addition such as a field house cannot be accommodated as part of the Option 1 plans, both Option 1 and 2 concept plans can accommodate a double gymnasium.

Capital cost estimates are provided for the addition of a gymnasium on the following basis for each option:

- The net area of the gym is included but so is the total gross floor area necessary to enable the gymnasium to function as a modular addition to the aquatics centre. This translates into an estimate of gross floor area for necessary access and circulation and sufficient services (washrooms, changerooms and exits, loading and storage); in short, the costs associated with developing a fully functional gymnasium complex regardless of whether it is constructed now or in the future.

- Parking supply is generally sufficient only for the aquatics facility based on the current parking supply ratios contained under by-law in the City of Fredericton. As can be seen from the concept plans, the future addition of a gymnasium (or larger enclosed space) would remove a portion of the available parking supply at either site, while necessitating not only a corresponding increase in parking elsewhere on site to compensate for the loss but also an additional supply to meet demand from the gymnasium.
- Our position on the matter of parking is that the adequacy of supply will be determined by the City based on adherence to its by-law or other policy and standards as may be appropriate to this facility.
- In the case of the option to develop at the Grant Harvey Centre, a parking deficiency may be challenging to resolve on site, but not impossible; for the UNB Endowment lands, locating additional parking will likely be easier but will necessitate a larger footprint which may impact land availability or cost. It may be that parking is resolved using supply on both of these contiguous sites.

Both options are developed to accommodate a gymnasium as part of the overall building complex either as part of the initial build or protecting the land base for a future addition.

Option 1: Expansion to Grant Harvey Centre

Exhibit 44: Total Project Costs for Option 1 Gymnasium

Building Costs - Option 1 GYMNASIUM (Addition to Pool)

Item	Elemental Quantity (Sq. M)	Elemental Quantity (Sq. Ft)	Elemental Unit Measure (Hard Costs per Sq. Ft.)	Hard Costs (\$)
A BUILDING HARD COSTS	1,768	19,031	\$232	\$4,423,200
B GENERAL REQUIREMENTS & FEE				\$796,100
Total Gymnasium Building Costs			\$274	\$5,219,300

Site Development - Allocation

Item	Hard Costs (\$)
A WATER, SANITARY & STORM WATER MANAGEMENT	
B SITE DEVELOPMENT, ROAD & PARKING	
C ELECTRICAL	
D PROVISION FOR GRADING, REMOVAL OF MATERIAL, EXCAVATION ETC	
E TOTAL SITE WORKS	\$100,000
TOTAL GYMNASIUM HARD CONSTRUCTION COSTS	\$280
TOTAL SOFT COSTS	25%
TOTAL GYMNASIUM	\$349

Contingency for Class D Order of Magnitude Estimate

1. Design and Pricing	15.0%	\$997,369
2. Construction	10.0%	\$764,649
Total contingency	26.5%	\$1,762,018

Grand Total (Gymnasium)



\$8,411,143.13



Option 2: UNB Endowment Lands

Exhibit 45: Total Project Costs for Option 2 Gymnasium

Building Costs - Option 2 GYMNASIUM (Addition to Pool)

Item	Elemental Quantity (Sq. M)	Elemental Quantity (Sq. Ft)	Elemental Unit Measure (Hard Costs per Sq. Ft.))	Hard Costs (\$)
A BUILDING HARD COSTS	1,572	16,921	\$237	\$4,006,600
B GENERAL REQUIREMENTS & FEE				\$722,800
Total Gymnasium Building Costs			\$280	\$4,729,400

Site Development - Allocation

Item	Hard Costs (\$)
A WATER, SANITARY & STORM WATER MANAGEMENT	
B SITE DEVELOPMENT, ROAD & PARKING	
C ELECTRICAL	
D PROVISION FOR GRADING, REMOVAL OF MATERIAL, EXCAVATION ETC	
E TOTAL SITE WORKS	\$100,000.00
TOTAL GYMNASIUM HARD CONSTRUCTION COSTS	\$285
TOTAL SOFT COSTS	25%
TOTAL GYMNASIUM	\$357

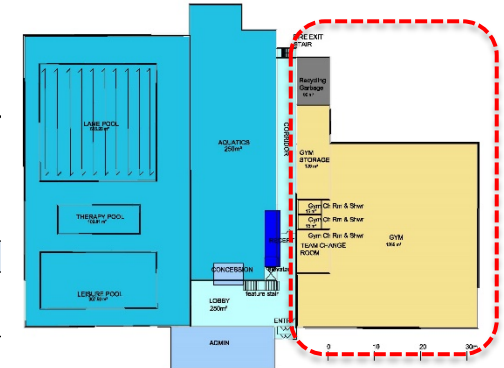
Contingency for Class D Order of Magnitude Estimate

1. Design and Pricing	15.0%	\$905,513
2. Construction	10.0%	\$694,226
Total contingency	26.5%	\$1,599,739

Grand Total (Gymnasium)



\$7,636,488.75



7.6.8 Addressing Off-Site Costs

Agreement to Provide Serviced Land

The MOU between UNB and the City, signed September 10, 2019, has potentially important implications for the treatment of off-site development-related costs associated with the construction of the new aquatics facility. By “off-site”, we refer to those costs of bringing any services to the boundaries of the site, including necessary access roads.

Both Options 1 and 2 have requirements for off-site costs. With respect to Option 1, we assume that services are already at the site by virtue of its connection to the Grant Harvey Centre, and the primary additional off-site cost is a new access road south of the Abony Family Tennis Centre. This access road is considered necessary (subject to traffic impact assessment and engineering design) in order to improve circulation through the entire Grant Harvey campus. Without this additional access, which links to an assumed spine road on the UNB Endowment Lands, it is likely the aquatic centre addition will result in considerable challenges to effective circulation, separation of access and parking, and importantly, separation of pedestrians and vehicles.

With respect to Option 1, this entire concept is located on the City’s own parcel of land. As such, the provisions of the MOU between the University and the City would appear to be compromised in as much as the MOU, to the extent that it outlines a clear set of preferences of each party, does not contemplate the City-owned parcel on Knowledge Park Drive.

There is no such ambiguity with respect to Option 2 – it is located on the UNB lands, and those lands are intended to form part of the contribution of the University as outlined in the MOU. This presumably is subject to confirmation that the proposed site size equates to, and does not exceed, the equivalent in serviced land value per the MOU.

In order to understand the matters that will need to be further negotiated between the University and the City (or project partners), we outline our understanding of the 2019 MOU below:

- The agreement is non-binding and is a statement of expectations of the City and UNB;
- The facility in question is defined as an 8 to 10 lane, 25 metre competitive pool.
- The placeholder **construction cost** is \$32 million. This does not clearly indicate whether this is only construction cost or total project cost.
- At its core, the agreement provides for a 99 year lease to the City for lands on Knowledge Park Drive based on a contribution of land by the University equivalent to \$3 million in serviced land value subject to a reduction in that amount for University owned land transferred to the City elsewhere in the City;
- The agreement is contingent on the City providing a contribution of \$6 million to the facility;

- The contributions of the City and University are contingent on the achievement of a broader funding plan for the facility.
- Should an existing development agreement (2005) between the City and University for lands on Knowledge Park Drive be amended, the lands on which the aquatics complex is located will be transferred in fee simple.
- Should the final cost of the facility differ from the placeholder, the contributions of the parties will be adjusted proportionately with an upper limit of an additional 15% on the value of the contribution of the University.
- If the amount of serviced land value is insufficient to enable the University to meet its obligations, the University will have the right to donate additional land or to contribute additional funds to make up the deficiency.
- The University will have the right to have dedicated space (at its construction cost) and a right of access to the facility for its programs in a manner acceptable to both parties.

Accordingly, for Option 2 lands, an immediate next step in furthering this agreement is to determine a funding plan involving the full range of prospective government and other partners.

Estimation of Off-Site Road Costs

The consulting team has provided a rough assessment of likely off-site road related costs as a baseline recognition of the cost to gain access to the sites themselves (regardless of which organization is responsible for these costs). The exhibit on the following page shows how the allocation has been distributed for each site option.

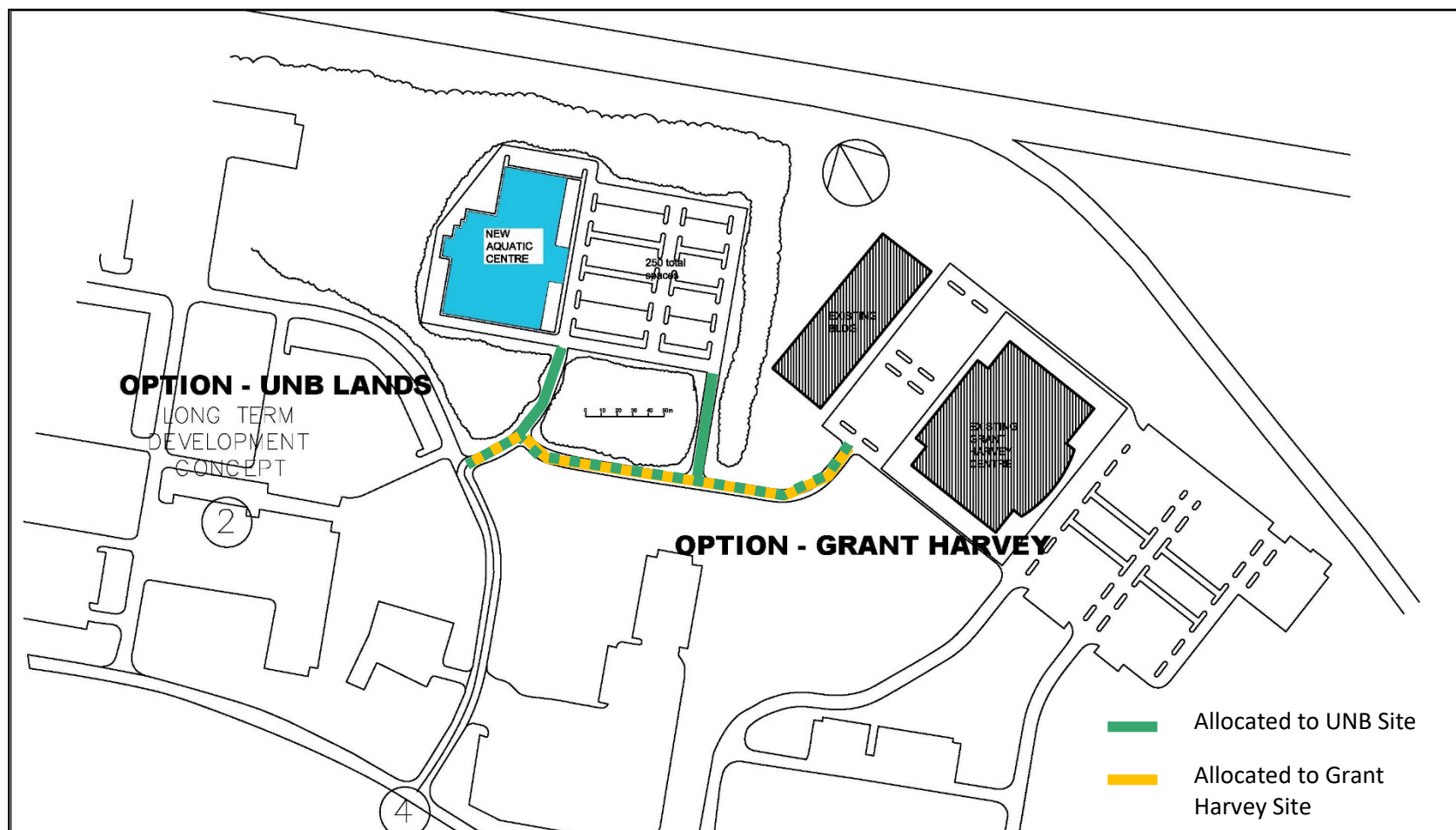
Option 1 Off-Site Road Costs

These are estimated at \$331,000 before any soft costs. With soft costs are around 20%, this equates to \$400,000 before any contingencies. Applying our contingencies, the budget envelope is \$500,000.

Option 2 Off-Site Road Costs

These costs are assumed to be for the access roads from the site to the business park spine road. As such the costs are equivalent to the costs for the Option 1 off-site road.

Exhibit 46: Allocation of External Road Costs



Taking the view that Option 2 represents the option that most clearly meets the objectives of the MOU between the City and University, the requirement of the University is to provide serviced land value. The spine road from Knowledge Park Drive into the business park is part of the University's obligation as developer of these lands. The expectation under the MOU is for the University to provide serviced land value to the City. While recognizing the generality of the MOU, with each party "open" to contributions as described above, it remains reasonable to assume that the costs of bringing all services to the Aquatics Centre site in Option 2 including road access will be to the account of the University.

This commentary, of course, should not be interpreted as being conclusive regarding cost allocation - for the purposes of assessing project feasibility and financial risk, this report represents a starting point for more specific discussions between the City and University on all options.

8 Assessment of Operating Financials

Financial projections of operating performance contained within this section, are based on operations at a normalized state; that is, with the facility operating based on a full schedule and operational staff model, as would be expected to be achieved if not in year 1 but certainly by year 2 of operations. The analysis is intended to provide an illustration of the estimated operating costs and revenues, and the surplus/deficit for the proposed new aquatic facility, over a five-year period.

Pools are deficit propositions. Accordingly, while there are a range of operating models, the essence of the model for purposes of financial analysis is a traditional municipal owner/operator mandate and does not include the assessment of alternative methods to both deliver the capital facility and operate it through partnership with either the private or not-for-profit sectors.

The range of alternative models can include the following examples:

- Based on a capital and operating cost-sharing model among individual municipalities and LSDs in the region, ownership and operation based on the establishment of a non-profit entity; governance is achieved through a board of directors with management reporting to the board. Examples of this approach include the Bell Aliant Centre in
- Charlottetown, as well as the Pan Am Aquatic Centre in Toronto. The Pan Am Centre is jointly owned by the City of Toronto and the University of Toronto;
- A model akin to the Facilities Services Commission (FSC) which operates a number of regional scale facilities in the Saint John Region; This is a variant of the above model and would be specific to the pool complex and not widened to include other regional facilities;
- A further variant could be ownership and operation by the RSC itself, rather than the creation of an FSC. This is not likely to be the best solution given that the RSC would lack the degree of experience and capacity that currently resides with the City of Fredericton in the ownership and operation of recreation specific assets. While it remains an option, it is likely that the RSC could play a more significant role in ensuring the regional effectiveness of a governance model;
- City ownership with operation by a non-profit entity such as the YMCA. The implications of this do not need to be elaborated upon as part of this report but suffice to conclude that any partnership impacts both the philosophy of operation, access and liability,

operating control, pricing and relationship with the building owners.

The analysis conducted herein is based on the current municipal model of pricing for aquatics services and is not based on a non-municipal membership model and pricing strategy.

As with all such financial projections, there are a number of key assumptions, explained below, which are critical to understanding the future operating risks associated with this investment.

8.1 Framework for Financial Analysis

8.1.1 General assumptions

The proposed facility operations are based on the functional space program developed by Perkins & Will. The total floor area of Option 1 is 80,536 ft² with a gymnasium or 61,505 ft² with aquatics only. The floor area of Option 2 is 84,691 ft² with a gymnasium or 67,770 ft² with aquatics only. The aquatic centre includes three pools – a 10 lane pool, a 12x25m leisure pool, and a smaller therapy pool. The facility also includes a large multi-purpose room, a group fitness space, and a public meeting room.

The operating model for the new centre is premised on an operating program for each of the revenue-generating spaces. For the purpose of this analysis, the revenue generating spaces are defined as the aquatics facility, the gymnasium, and the multi-purpose and fitness rooms.

Where available, rental and user rates are sourced from either the FIP or Sir Max Aitken Pool. Expenses that are sourced from the 2016 FIP budget are not escalated for inflation, these include:

- Training/Seminars
- Advertising
- Local Business Expenses
- Snow and Garbage Removal

At their core, each operating program is premised on the following operating hours for the facility.

Day	Opening Hours
Monday	0600-2245
Tuesday	0600-2245
Wednesday	0600-2245
Thursday	0600-2245
Friday	0600-2100
Saturday	0630-2030
Sunday	0730-2130

This assessment includes the assumption that University of New Brunswick students and associations will not have any special rights to access the facility over and above the rights of the public.

8.1.2 Revenue Assumptions

Revenue for the aquatics centre is assumed to be the same regardless of whether Option 1 or 2 is chosen. The fees

charged for drop ins, memberships, swim instruction, and fitness are based on the assumption that the cost for using the pool will be a municipal rate, and therefore correspond to the existing fee structure of the FIP. Where multiple rates exist (e.g. age groups), a blended rate was estimated.

The preliminary estimate of drop-in, fitness, and membership-based revenue for the aquatics centre was derived using the most recent figures from the FIP. In addition, it was assumed that some of the existing drop-in users of the UNB pool will use the new facility, adding approximately 10,000 paid entries to the estimated drop-in total. The assumed fees and usage are as follows:

Public Swims/Drop-in		
Admission Type:	Rate:	Split:
Children under 7	Free	10%
Family Swim	\$ 10.18	10%
Youth 7-18	\$ 2.80	20%
Adult 19+	\$ 4.08	35%
Seniors 60+	\$ 2.80	25%
Blended Rate (excl. UNB)	\$ 3.71	
Annual paid entries (excl. UNB)	22,144	
Allocation of current UNB drop in	10,050	

The revenue from swim instruction was estimated using the Sir Max Aitken Pool schedule (extrapolated from the seasonal schedule to annual totals), which includes 548 hours of swim

instruction time. It is assumed that between the lane pool and the leisure pool, each hour of instruction will include 10 classes of 5 students per hour. The Max Aitken schedule also includes time dedicated to scuba and kayak lessons estimated to total 305 hours per year. This model assumes one class per dedicated hour with 5 students. Classes are priced at a blended rate of \$60 per session.

The rental rate in this model is the current FIP rate of \$74.75. The hours assumed in the revenue model are based on rental hours included in the Max Aitken schedule, in addition to an assumption that the UNB user groups (including the Masters swim club) would use this new facility as renters. The total number of rental hours, including UNB user groups, is 3,441 per year.

The direct programming fees for the fitness space and the gymnasium are on a near break-even basis. Based on 36 weeks of programming, it is assumed that there will be 1,512 hours of programming per year with a maximum of 20 participants per session and a 70% fill rate. The rental rates for multi-purpose and meeting space is set at \$30, slightly above the \$25.88 for the existing Grant-Harvey Centre community rooms. The rental rates for the gymnasium in are set at \$65 per hour, which is the existing Fredericton YMCA rate. Rental use, which may include dedicated usage agreements with the YMCA and St. Thomas University (pending negotiations), is assumed to be 120 hours per month.

For the purposes of this assignment we have assigned annual allocations to categories that are difficult or impossible to

quantify in terms of unit costs or revenues. Specific to revenues, we have provided annual allocations of \$5,000 to locker revenue and \$23,000 to vending/concession revenue. The analysis does not include a provisional amount for facility naming rights.

8.1.3 Expense Assumptions

There is modest variability in the expenses depending on if Option 1 or 2 is chosen, with some operating savings in staffing found if Option 1 is selected.

In both models, the staffing positions are as follows:

- General Manager
- Sales and Marketing
- Administrative Assistant
- Maintenance and Cleaning Staff
- Aquatics Director and Assistant Director
- Front Desk/Registration Staff
- Lifeguards
- Lifeguard Supervisor
- Fitness Instructors
- Lesson Supervisor
- Lesson Instructor
- Recreation Coordinator

- Gymnasium Program Staff (in the models that include a gymnasium)

The cost of front desk and maintenance staff is based on an operating schedule of 110 hours per week (as per the Max Aitken pool schedule). Lifeguard expenses assumes a minimum of two lifeguards present during all operating hours, and three during lane lessons, public swim, and rentals.

The cost of chemicals for the pools is an application of the 2016 cost per square foot for the FIP. Similarly, the costs of uniforms, local business expenses, training/seminars, equipment, advertising, and snow/garbage removal is sourced from the 2016 FIP budget.

For Option 2, utilities are estimated at \$6 per sq. ft for the pools, and \$3.50 for the rest of the facility. This drops to \$3 per square foot for the pools in Option 1 as a result of waste heat recovery from the arena ice plant being used to heat the pools. Other savings realized from Option 1 include sharing a general manager (a 50% savings assuming half is allocated to the expansion), and a 15% reduction in the cost of cleaning staff (the modest reduction assumes some savings as a result of sharing staff but reflects the fact that the same area will need to be cleaned).

It should be noted that there may be further opportunities for savings on utilities in Option 1 in the future through participation in the Grant Harvey Centre's geothermal energy

system, but the magnitude of savings is unknown at this time and is not included in this analysis.

The expenses for the facility include an estimate of provincial property taxes will be incurred. Municipally owned aquatics/recreational facilities are subject the province's residential tax rate on 10% of the assessed value of the facility. For the purposes of this report, the assessed value is assumed to equate to the Class D construction cost estimate.

	Option 1 (Grant Harvey)	Option 2 (UNB)
Building Construction Costs (w/o Gym)	\$24,341,800	\$26,590,400
Gym Construction Cost	\$5,319,300	\$4,829,400
Total Construction Cost	\$29,661,100	\$31,419,800
Value Subject to Tax After 90% Reduction	\$2,966,110	\$3,141,980
Provincial Property Tax Rate, 2019 (residential rate)	1.1233%	1.1233%
Provincial Property Tax Owed with Gymnasium	\$33,318	\$35,294
Provincial Property Tax Owed without Gymnasium	\$27,343	\$29,869

8.1.4 Current Financial Situation at Existing Facilities

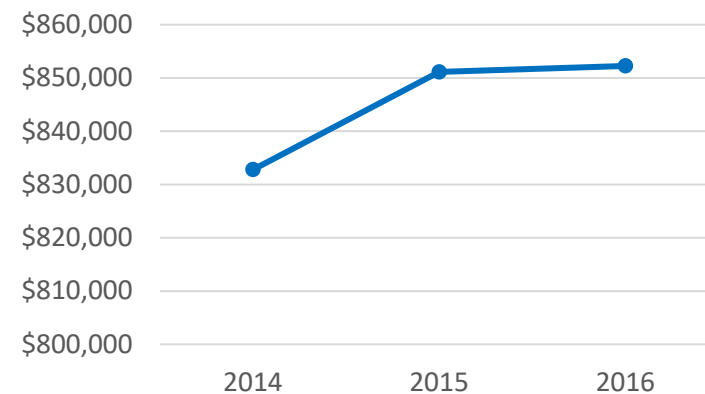
The operating financials of the Sir Max Aitken Pool are unknown at this time; however, the financial assessment of the new facility takes into account available utilization data and scheduling for the pool to estimate the effect of UNB

usage on a new facility, assuming that existing demand is retained.

In terms of the Fredericton Indoor Pool, historically the facility has operated with fairly stable annual expenditures of between approximately \$830,000 to \$850,000.

The increase in overall expenses is mainly attributable to increases in recreational staff expenses. In 2016, the facility ran a deficit of \$537,000, with revenue of \$314,000 and expenses of \$852,000.

Exhibit 47: Fredericton Indoor Pool Historic Operating Expenses (2014-2016)



Source: SPM based on data from City of Fredericton

8.2 Option 1: Expansion to the Grant Harvey Centre – Aquatics Only

Based on the operating assumptions stated above, the normalized deficit of the proposed recreation facility as an expansion of the Grant Harvey Centre would be in the range of -\$745,000. Estimates include a contribution to capital reserves of 2.5% of revenue and provincial property taxes. As noted in the assumptions, the staffing levels in this option reflect sharing a general manager position, utility savings from heat waste recovery from the arena, and a modest savings in cleaning staff as a result of co-locating within an existing facility.

Details of the indicative operating financials for Option 1 are provided in the exhibit on the following page.

8.3 Option 2: UNB Endowment Lands – Aquatics Only

The normalized deficit of the proposed recreation facility as a new stand-alone facility without the gymnasium on the UNB Endowment Lands would be in the range of -\$890,000. Estimates include a contribution to capital reserves of 2.5% of revenue and provincial property taxes. The increased costs in this option relative to Option 1 are a result of being unable to share a general manager position with the Grant Harvey Centre, higher utility costs for the aquatics facility as the facility will be unable to take advantage of waste heat from the arena, and moderately higher baseline cleaning staff requirements.

Details of the indicative operating financials for Option 2 are provided in Exhibit 49.

Exhibit 48: Indicative Operating Performance of Option 1 (Aquatics only)

	YR1	YR2	YR3	YR4	YR5
Escalation: 3% per annum					
Revenues					
Public swim/drop-in	\$ 123,070	\$ 126,762	\$ 130,565	\$ 134,482	\$ 138,516
Swim instruction/lessons	\$ 115,724	\$ 119,196	\$ 122,771	\$ 126,455	\$ 130,248
Memberships	\$ 172,412	\$ 177,584	\$ 182,912	\$ 188,399	\$ 194,051
Pool rentals	\$ 257,234	\$ 264,951	\$ 272,900	\$ 281,087	\$ 289,519
Locker revenue	\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628
Concession revenue	\$ 23,400	\$ 24,102	\$ 24,825	\$ 25,570	\$ 26,337
Room Rental	\$ 121,600	\$ 125,248	\$ 129,005	\$ 132,876	\$ 136,862
TOTAL REVENUE	\$ 818,440	\$ 842,993	\$ 868,283	\$ 894,331	\$ 921,161
Expenses					
Wages & Benefits	\$ 1,032,355	\$ 1,063,326	\$ 1,095,225	\$ 1,128,082	\$ 1,161,925
Utilities	\$ 249,981	\$ 257,480	\$ 265,204	\$ 273,160	\$ 281,355
Repairs & Maintenance	\$ 58,053	\$ 59,795	\$ 61,588	\$ 63,436	\$ 65,339
Insurance	\$ 30,000	\$ 30,900	\$ 31,827	\$ 32,782	\$ 33,765
Snow & Garbage Removal	\$ 17,771	\$ 18,304	\$ 18,854	\$ 19,419	\$ 20,002
Supplies & Materials	\$ 100,511	\$ 103,526	\$ 106,632	\$ 109,831	\$ 113,126
Training/Seminars	\$ 16,135	\$ 16,619	\$ 17,117	\$ 17,631	\$ 18,160
Advertising	\$ 7,189	\$ 7,405	\$ 7,627	\$ 7,856	\$ 8,091
Local Business Expenses	\$ 2,623	\$ 2,701	\$ 2,782	\$ 2,866	\$ 2,952
Property Taxes	\$ 27,343	\$ 28,163	\$ 29,008	\$ 29,879	\$ 30,775
Capital Reserve (2.5% of revenue)	\$ 20,461	\$ 21,075	\$ 21,707	\$ 22,358	\$ 23,029
TOTAL EXPENSES	\$ 1,562,421	\$ 1,609,294	\$ 1,657,573	\$ 1,707,300	\$ 1,758,519
Surplus / Deficit	-\$ 743,982	-\$ 766,301	-\$ 789,290	-\$ 812,969	-\$ 837,358

Exhibit 49: Indicative Operating Performance of Option 2 (Aquatics only)

	YR1	YR2	YR3	YR4	YR5
Escalation: 3% per annum					
Revenues					
Public swim/drop-in	\$ 123,070	\$ 126,762	\$ 130,565	\$ 134,482	\$ 138,516
Swim instruction/lessons	\$ 115,724	\$ 119,196	\$ 122,771	\$ 126,455	\$ 130,248
Memberships	\$ 172,412	\$ 177,584	\$ 182,912	\$ 188,399	\$ 194,051
Pool rentals	\$ 257,234	\$ 264,951	\$ 272,900	\$ 281,087	\$ 289,519
Locker revenue	\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628
Concession revenue	\$ 23,400	\$ 24,102	\$ 24,825	\$ 25,570	\$ 26,337
Room Rental	\$ 121,600	\$ 125,248	\$ 129,005	\$ 132,876	\$ 136,862
TOTAL REVENUE	\$ 818,440	\$ 842,993	\$ 868,283	\$ 894,331	\$ 921,161
Expenses					
Wages & Benefits	\$ 1,118,879	\$ 1,152,445	\$ 1,187,019	\$ 1,222,629	\$ 1,259,308
Utilities	\$ 306,621	\$ 315,820	\$ 325,294	\$ 335,053	\$ 345,105
Repairs & Maintenance	\$ 58,053	\$ 59,795	\$ 61,588	\$ 63,436	\$ 65,339
Insurance	\$ 30,000	\$ 30,900	\$ 31,827	\$ 32,782	\$ 33,765
Snow & Garbage Removal	\$ 17,771	\$ 18,304	\$ 18,854	\$ 19,419	\$ 20,002
Supplies & Materials	\$ 100,511	\$ 103,526	\$ 106,632	\$ 109,831	\$ 113,126
Training/Seminars	\$ 16,135	\$ 16,619	\$ 17,117	\$ 17,631	\$ 18,160
Advertising	\$ 7,189	\$ 7,405	\$ 7,627	\$ 7,856	\$ 8,091
Local Business Expenses	\$ 2,623	\$ 2,701	\$ 2,782	\$ 2,866	\$ 2,952
Property Taxes	\$ 29,869	\$ 30,765	\$ 31,688	\$ 32,639	\$ 33,618
Capital Reserve (2.5% of revenue)	\$ 20,461	\$ 21,075	\$ 21,707	\$ 22,358	\$ 23,029
TOTAL EXPENSES	\$ 1,708,112	\$ 1,759,355	\$ 1,812,136	\$ 1,866,500	\$ 1,922,495
NOI	-\$ 889,672	-\$ 916,362	-\$ 943,853	-\$ 972,169	-\$ 1,001,334

8.4 Option 1: Expansion to the Grant Harvey Centre – Aquatics & Gymnasium

With the addition of a gymnasium, the normalized deficit of the proposed recreation facility as an expansion of the Grant Harvey Centre would be in the order of -\$790,000 in Year 1. The modest difference in deficit with a gymnasium reflects increased recreational staffing costs, maintenance costs, and increased revenue from programming and rentals.

Details of the indicative operating financials for Option 1 with a gymnasium are provided in Exhibit 50 on the following page.

8.5 Option 2: UNB Endowment Lands – Aquatics & Gymnasium

The normalized deficit of the proposed recreation facility with a gymnasium as a new stand-alone facility would be in the order of -\$925,000 in Year 1. As with Option 1, the modest difference in deficit with a gymnasium reflects increased recreational staffing costs, maintenance costs, and increased revenue from programming and rentals.

Details of the indicative operating financials for Option 2 with a gymnasium are provided in Exhibit 51.

Exhibit 50: Indicative Operating Performance of Option 1 (Aquatics and Gymnasium)

	YR1	YR2	YR3	YR4	YR5
Escalation: 3% per annum					
Revenues					
Public swim/drop-in	\$ 123,070	\$ 126,762	\$ 130,565	\$ 134,482	\$ 138,516
Swim instruction/lessons	\$ 115,724	\$ 119,196	\$ 122,771	\$ 126,455	\$ 130,248
Memberships	\$ 172,412	\$ 177,584	\$ 182,912	\$ 188,399	\$ 194,051
Pool rentals	\$ 257,234	\$ 264,951	\$ 272,900	\$ 281,087	\$ 289,519
Locker revenue	\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628
Concession revenue	\$ 23,400	\$ 24,102	\$ 24,825	\$ 25,570	\$ 26,337
Room Rental	\$ 121,600	\$ 125,248	\$ 129,005	\$ 132,876	\$ 136,862
Gym programming	\$ 52,920	\$ 54,508	\$ 56,143	\$ 57,827	\$ 59,562
Gym rentals	\$ 93,600	\$ 96,408	\$ 99,300	\$ 102,279	\$ 105,348
Gym user groups	\$ 16,800	\$ 17,304	\$ 17,823	\$ 18,358	\$ 18,909
TOTAL REVENUE	\$ 981,760	\$ 1,011,212	\$ 1,041,549	\$ 1,072,795	\$ 1,104,979
Expenses					
Wages & Benefits	\$ 1,131,055	\$ 1,164,987	\$ 1,199,936	\$ 1,235,934	\$ 1,273,012
Utilities	\$ 316,589	\$ 326,087	\$ 335,869	\$ 345,945	\$ 356,324
Repairs & Maintenance	\$ 81,842	\$ 84,297	\$ 86,826	\$ 89,431	\$ 92,114
Insurance	\$ 30,000	\$ 30,900	\$ 31,827	\$ 32,782	\$ 33,765
Snow & Garbage Removal	\$ 17,771	\$ 18,304	\$ 18,854	\$ 19,419	\$ 20,002
Supplies & Materials	\$ 112,881	\$ 116,268	\$ 119,756	\$ 123,348	\$ 127,049
Training/Seminars	\$ 16,135	\$ 16,619	\$ 17,117	\$ 17,631	\$ 18,160
Advertising	\$ 7,189	\$ 7,405	\$ 7,627	\$ 7,856	\$ 8,091
Local Business Expenses	\$ 2,623	\$ 2,701	\$ 2,782	\$ 2,866	\$ 2,952
Property Taxes	\$ 33,318	\$ 34,318	\$ 35,347	\$ 36,408	\$ 37,500
Capital Reserve (2.5% of revenue)	\$ 24,544	\$ 25,280	\$ 26,039	\$ 26,820	\$ 27,624
TOTAL EXPENSES	\$ 1,773,947	\$ 1,827,165	\$ 1,881,980	\$ 1,938,440	\$ 1,996,593
Surplus / Deficit	-\$ 792,187	-\$ 815,953	-\$ 840,432	-\$ 865,645	-\$ 891,614

Exhibit 51: Indicative Operating Performance of Option 2 (Aquatics and Gymnasium)

	YR1	YR2	YR3	YR4	YR5
Escalation: 3% per annum					
Revenues					
Public swim/drop-in	\$ 123,070	\$ 126,762	\$ 130,565	\$ 134,482	\$ 138,516
Swim instruction/lessons	\$ 115,724	\$ 119,196	\$ 122,771	\$ 126,455	\$ 130,248
Memberships	\$ 172,412	\$ 177,584	\$ 182,912	\$ 188,399	\$ 194,051
Pool rentals	\$ 257,234	\$ 264,951	\$ 272,900	\$ 281,087	\$ 289,519
Locker revenue	\$ 5,000	\$ 5,150	\$ 5,305	\$ 5,464	\$ 5,628
Concession revenue	\$ 23,400	\$ 24,102	\$ 24,825	\$ 25,570	\$ 26,337
Room Rental	\$ 121,600	\$ 125,248	\$ 129,005	\$ 132,876	\$ 136,862
Gym programming	\$ 52,920	\$ 54,508	\$ 56,143	\$ 57,827	\$ 59,562
Gym rentals	\$ 93,600	\$ 96,408	\$ 99,300	\$ 102,279	\$ 105,348
Gym user groups	\$ 16,800	\$ 17,304	\$ 17,823	\$ 18,358	\$ 18,909
TOTAL REVENUE	\$ 981,760	\$ 1,011,212	\$ 1,041,549	\$ 1,072,795	\$ 1,104,979
Expenses					
Wages & Benefits	\$ 1,217,579	\$ 1,254,106	\$ 1,291,729	\$ 1,330,481	\$ 1,370,396
Utilities	\$ 365,845	\$ 376,820	\$ 388,124	\$ 399,768	\$ 411,761
Repairs & Maintenance	\$ 79,204	\$ 81,580	\$ 84,028	\$ 86,549	\$ 89,145
Insurance	\$ 30,000	\$ 30,900	\$ 31,827	\$ 32,782	\$ 33,765
Snow & Garbage Removal	\$ 17,771	\$ 18,304	\$ 18,854	\$ 19,419	\$ 20,002
Supplies & Materials	\$ 111,510	\$ 114,855	\$ 118,301	\$ 121,850	\$ 125,505
Training/Seminars	\$ 16,135	\$ 16,619	\$ 17,117	\$ 17,631	\$ 18,160
Advertising	\$ 7,189	\$ 7,405	\$ 7,627	\$ 7,856	\$ 8,091
Local Business Expenses	\$ 2,623	\$ 2,701	\$ 2,782	\$ 2,866	\$ 2,952
Property Taxes	\$ 35,294	\$ 36,353	\$ 37,443	\$ 38,567	\$ 39,724
Capital Reserve (2.5% of revenue)	\$ 24,544	\$ 25,280	\$ 26,039	\$ 26,820	\$ 27,624
TOTAL EXPENSES	\$ 1,907,693	\$ 1,964,924	\$ 2,023,872	\$ 2,084,588	\$ 2,147,125
NOI	-\$ 925,934	-\$ 953,712	-\$ 982,323	-\$ 1,011,793	-\$ 1,042,146

9 Risks & Implementation

9.1 Risks Analysis

At the outset, a range of risks exist for any major development project. Where possible, the majority of such risks are mitigated through effective management of the business planning, design and delivery of process.

Capital costs for facilities of this type are not pre-determined and decision makers have considerable control in establishing the balance between budget and what goes “into” a building for this budget. Decision makers, through their advisors, can control scale, quality and business conditions surrounding the allocation of risks in delivery of the project.

9.1.1 Capital costs

The capital cost estimates contained in this report are estimated based on the potential scale of development recommended in this report. Size, quality, and types of use are all yet to be determined in detail through subsequent business planning, such that capital cost estimates at this time are reasonable estimates of possible cost, excluding any extra-ordinary development costs.

The stages required to better inform capital cost estimates are as follows:

1. Confirm building components and develop a final functional space program of the preferred option; and

2. Undertake an elemental capital cost assessment by a professional quantity surveying firm, including the required cost contingency (+/- 25% as a Class D estimate).

9.1.2 Development, Design and Construction Risks

All construction projects involve risk in their design, development, and construction. These risks relate to a range of factors including the following principle elements:

- **Insufficient detail in design** leading to scope creep to meet anticipated functional requirements - This translates into longer timeframes for completion and often increases in capital costs as well as insufficiencies in design and layout of buildings.
- **Design errors and omissions** – this is the risk associated with building features and requirements being either underrepresented or absent and necessitating patched design and construction solutions and potential cost additions in addition to usual project delays associated with such changes in scope. Additionally, there is an ultimate risk in any development project that the intended design is not fulfilled due the failure of the constructor to build the facility to design.
- **Procurement risks** – these risks pertain to problems which arise between prospective contractors and the procurement agency (i.e. the municipality).

- **Construction delays** – from a variety of potential sources related to overall management, individual trades, materials, or unforeseen site-related matters.
- **Cost overruns** – for a variety of reasons, there is a risk associated with the capital cost as estimated in the design stage.

9.1.3 Operating Risks

Facilities, and in particular public sector municipal capital facilities, have a number of operating risks related to revenue generation, operating costs reduction and expense management, effective programming and facility utilization, and attention to opportunities for marketing additional services and identification of revenue sources. The following outlines specifically how these combined risks should be (1) anticipated and (2) mitigated.

Some of the principal operating risks for this facility include:

- **Revenue risk:** as in any exercise, the budgeting and estimating process with regard to operating performance should be developed as the design of the facility is further specified, as partners are made known, and as more certainty exists regarding the range of operating costs closer to the time of the commissioning of the building.
- **Operating costs risk:** There is a risk that the operating costs will be higher than projected due to a range of factors, some of which can be estimated and some of which are difficult to estimate in advance. Items such

as increased utility costs, unforeseen repairs and maintenance cost, higher management costs and a range of other factors which can affect the financial performance of municipal facilities. However, as a new facility, these costs would not be expected to materialize early in the life of the building, while the estimate of normal operating costs for facilities of this type can be estimated to a high degree of accuracy. Once a preferred option is chosen and more detailed designs are developed, the estimate of expected operating costs and event-day expenses can be provided with greater certainty.

- **Management performance:** the management performance is a significant risk and can often be the difference between revenue growth and systemic revenue attrition. The approach of the management team to operating the facility and all respects relating to marketing and services provided to both patrons and suppliers, and the overall environment in which the facility is marketed and positioned, is of significance to the success of any facility.

Risk mitigation strategies that can be undertaken to reduce the range and scale of risks include:

- **High quality management of the facility** – a key feature of risk mitigation which is based on utilization of industry expertise to maximize the revenue, ensure efficient operation, and cost reduction in operating expenses.

- **Minimize lifecycle costs through lifecycle cost planning** – this can include the provision of capital reserve budgets to meet certain capital replacement costs in future years.
- **Pre-opening business planning** – it is important that once a detailed design and functional program is established for the facility, and potential programming and revenue opportunities are created for the operations of the facility, that a detailed plan of action is undertaken to create the necessary departmental operating cost budgets, marketing resource requirements, and pre-opening expenses to ensure that the facility operating plans and forecasts are as rigorous as possible and are aligned with the actual facility that has been designed and built. This can be a crucial link to ensure that “normalized operations”, that is the facility operating at its designed utilization and capacity; can be achieved as quickly as possible.
- **Facility revenue opportunities** - can be expected to continuously evolve, but the initial “ramp-up” period of the first few years is a risk for facilities.

The above risks can be further mitigated to a lesser or greater degree by the method of delivery and operation of the facility.

9.2 Delivery Mechanisms

9.2.1 The Traditional Public Procurement Approach

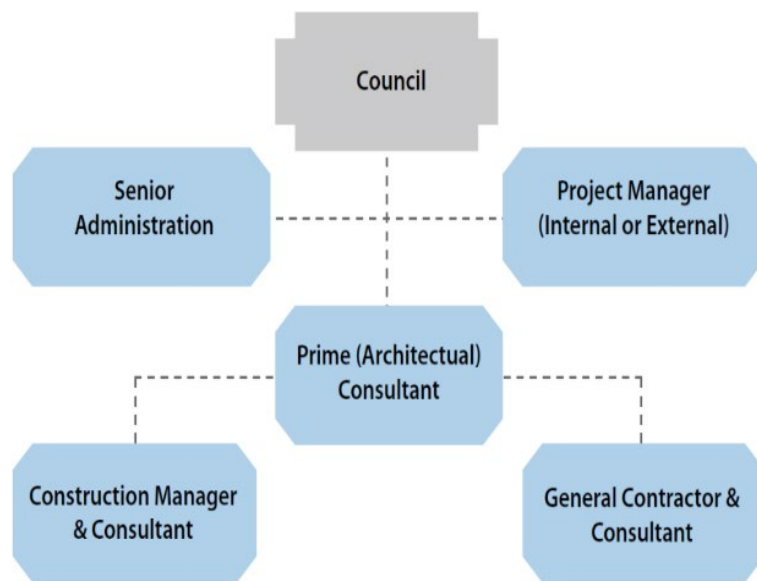
In the traditional public procurement method, municipal or other public sector funds are used to fund capital construction costs and the municipality is responsible for facility operation, maintenance and life cycle works.

Under the traditional approach, the public sector owner of the facility separates out the components of project design, construction, and delivery, through one or more design development contracts, and a series of construction tenders, managed by a project manager contracted by the municipality.

The operation and maintenance of the facility is the responsibility of the municipality with necessary short-term contracts with private sector companies to provide supplies and specific services. Under this model, the municipality has 100% control of the facility, its financing, and operations, and therefore assumes all risks associated with the project including any delays or cost overage prior to completion, and any ongoing operating liabilities (financial or otherwise) during the operation phase of the project.

With respect to the process to design and deliver the facility under the Traditional Public Procurement approach, this is most appropriately one of two traditional approaches: 1) Construction Management Contract or 2) a Stipulated Sum General Contract. There are other variants of these approaches that involve Cost-Plus contracts, Guaranteed Maximum Price contracts and other more integrative project delivery models (IPDs).

Exhibit 52: Traditional Public Procurement Approach



Construction Management Approach

In terms of actions required under the construction management approach the municipality will be required to ensure that the following occurs:

- Select, through competition, a Prime Architectural Consultant (Prime Consultant) to undertake the next steps in functional program development and design. Because the focus is on these initial tasks, it is not necessary to hire a Construction Management firm at the same time as the Prime Consultant. However, it is generally good practice to select a Construction Management firm, if this is the desired approach, relatively early in the detailed design process.
- The Prime Consultant will engage in the following key milestone tasks:
 - Functional Program development (to advance the high-level program to the concept design stage);
 - Schematic Design;
 - Design Development; and
 - Ultimately Contract Drawings, Tendering, and Contract Administration for construction.
- The resulting approach is a collaborative venture in which the qualifications of the Construction Management firm (often these firms are part and parcel of broader construction firms) are of critical

importance. Significant reliance is placed on the Construction Management firm to bring the project in on schedule and budget.

A Construction Management contract can help overcome the inherent price uncertainty by establishing a maximum upset price which will factor in contingencies to mitigate the degree of uncertainty in setting the maximum price.

Stipulated Sum Approach (General Contractor)

If Stipulated Sum is the chosen approach, it is characterized in the following way:

- The contract is between the Owner and Contractor.
- The Prime Consultant is retained by the Owner (as described above) and advances the Owner's interests through the design process.
- The Prime Consultant then acts as an impartial, fair mediator of the construction contract between the Owner and the Contractor during the construction period.

9.3 Partnership Options

9.3.1 Capital Funding

The project proponents (the City and the surrounding municipalities and LSDs) are encouraged to actively investigate potential sources of grant funding from upper levels of government for the capital requirements to develop the facility. Possible sources for capital grant funding include

programs under the Investing in Canada Infrastructure Program (ICIP), specifically the Community, Culture and Recreation stream. As identified in Section 2.3.2, this is a cost-shared infrastructure funding program between the federal government, provinces and territories, and municipalities and other recipients. The Community, Culture and Recreation stream supports community infrastructure priorities across the country, improving the quality of or access to these facilities.

The potential for other partnerships for capital funding, such as with educational institutions or not-for-profit community organizations (e.g. Fredericton YMCA), and of course municipal cost sharing, should also be investigated as part of a more detailed business planning and financial feasibility assessment. In addition, there are the normal contributions that may arise from naming rights, etc., from the private sector, however this is often an operating consideration.

It is important that the project proponents give due consideration to the ways and means to deliver new recreational infrastructure in a cost-effective manner. The proponents should fully evaluate the range of approaches to facility delivery considering all options for funding, financing, and operating a new complex.

Exhibit 53: Public-Private Partnership Options

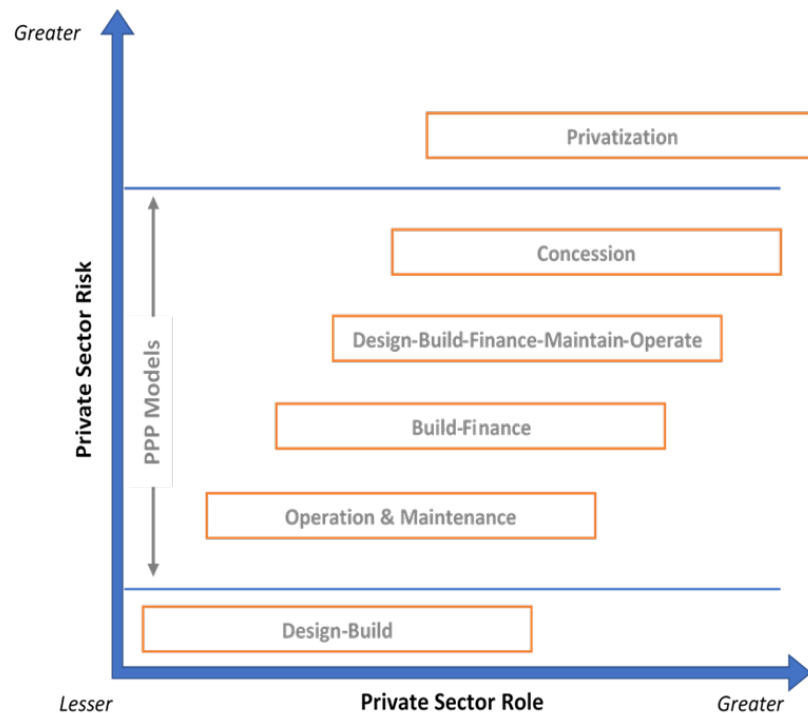
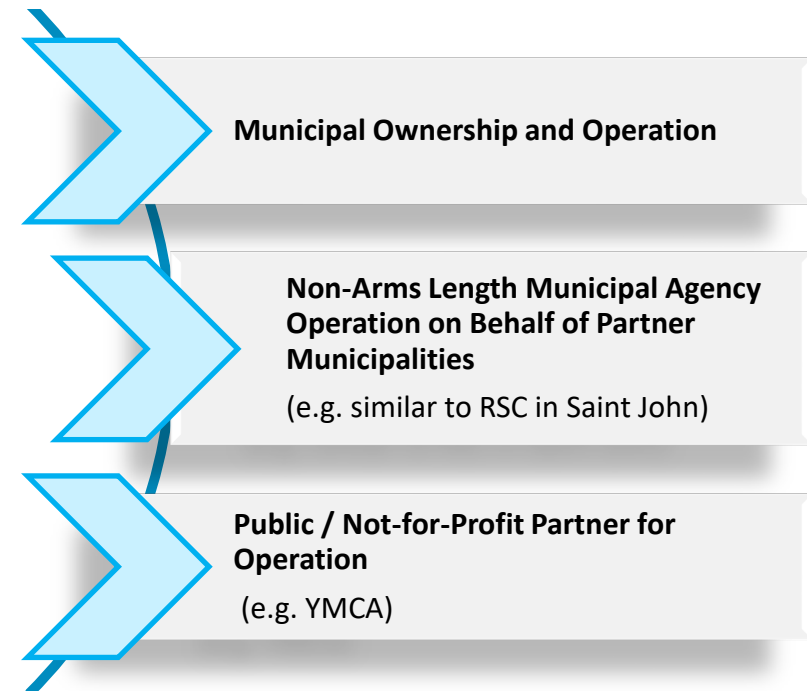


Exhibit 54: Range of Partnership Options Possible for the Operation of an Aquatics Facility



9.3.2 Possibilities of Capital and Operating Partnerships

The City of Fredericton has an existing and positive relationship with the YMCA of Fredericton, working together to ensure the provision of recreational amenities for public use.

While YMCA facilities in New Brunswick are limited to the three major cities, Ontario has a long history of YMCA's with pool facilities and therefore a wide variety of capital and operating models in place. Therefore, case study examples for a selection of Ontario YMCA's with pool facilities are provided below, including details of the partnership type and the capital and operating arrangement between the YMCA and the relevant project partners (including universities in some cases).

Partnerships for the development of recreation assets with non-profit organizations, such as the YMCA, can come in various forms, including:

- YMCA-Municipal,
- YMCA-Public Sector (i.e. hospital), and
- YMCA-Multiple Partner (i.e. municipality, university, others).

YMCA Case Studies - Operating Arrangements

Clarence-Rockland YMCA, Clarence-Rockland, ON

The City is the sole owner of the Clarence-Rockland YMCA. Under the terms of the operating agreement:

- YMCA will provide fitness, aquatics, family and other recreation programs to respond to community needs;
- Operating costs (incl. maintenance, repair and replacement services) are the responsibility of the YMCA-YWCA, except for the Library and Canteen;
- Major capital replacements are City's responsibility;
- City retains shared access of multi-purpose room;
- City provides snow plowing, grass cutting, and exterior grounds maintenance; and
- City works with the YMCA to determine membership and joining fees.

Under the terms of the operating agreement, the City is responsible for major capital repairs. The only significant expenditure expected over the duration of the plan is the replacement of pool heating and dehumidification system and filtration.

Waterloo West YMCA, Waterloo, ON

- Partnership with City and University of Waterloo.
- YMCA has operating costs liability for YMCA operations and shares cost and responsibility for shared spaces with library and City.

Quinte West YMCA, Trenton, ON
• City constructed and owns the YMCA building. • The City partnered with the YMCA, who now run the facility through an operating agreement, for the operation and management of the facility for the provision of recreation programs. • The operating agreement is based on the principle that the facility is financially viable and will be operated in such a way that neither the City nor the YMCA is required to subsidize the facility's maintenance or operation. • The City raised \$5.8 million through internal funds and provincial contributions. Infrastructure Ontario (IO) provided financing for the remaining \$6.6 million.
Laurier Brantford YMCA, Brantford, ON
The capital costs (total of \$58.4 million) of the facility have been split between the Federal Government (\$16.7M), Provincial Government (\$16.7M), City of Brantford (\$5.2M), Wilfred Laurier University (WLU) Students Union (\$3.6M), and Donations: (\$2M). WLU and the YMCA were responsible for the remainder of the capital costs (\$14.2M). In this case, WLU / YMCA operate the facility together, and WLU gets first priority for pool.

In some communities the YMCA has taken the lead and provided a fully independent facility with all operating costs

covered without municipal support. These models tend to exist where there are sufficient and growing populations and where the existing supply of municipal facilities is not comparatively well developed. The project proponents are encouraged to discuss the potential of a partnership with the YMCA as it relates to a range of business models related to facility development and on-going facility operations. If the YMCA were to operate the facility, it would likely warrant an arrangement similar to that in place in Clarence-Rockland, namely the need for a membership fee-based approach.

9.4 Immediate Next Steps

There are a number of next steps associated with pursuing either of the options outlined in this assessment. These are listed below:

1. Develop a Funding Plan

Fulfilling a future funding commitment on the part of both the University and the City to part fund the project is conditional on securing an overall funding plan which includes the exploration and justification of, and ultimately agreement on, a range of sources including levels of government and the municipal sector as well as potential non-profit partners and the education sector. This plan then becomes the backbone for a plan of step by step implementation of the project. Each of the steps outlined below will help identify and answer questions which can be expected to directly impact the willingness of funding partners to collaborate and achieve consensus on the choice of site, design, and operational model.

2. *Develop a Process for Establishing Commitment to Capital and Operating Cost-Sharing amongst Municipal and LSD partners*

Cost sharing for future capital costs and operating costs requires a framework that is based on demonstrated regional function of facilities. A new aquatics facility transferred from the University's jurisdiction to the municipality (or another agency) creates a de facto argument for extending the current regional cost sharing to a) include a new aquatics centre and b) consider whether there is a broader service district for this facility – all commensurate on demonstrating need, demand and opportunity.

This report has demonstrated the needs, opportunities and regionality of aquatics services. It has also made clear that other facility needs of some of the communities in proximity to the City, as well as the City itself, can be met by the development of an Aquatics PLUS facility – namely, the development of a gymnasium and ancillary community centre function.

3. *Establish a New Regional Service Area Agreement (in Principle) for the Recommended Facility*

Concurrent with the establishment of cost-sharing arrangements, most significantly in terms of the sharing of annual operating deficits, is the recrafting/redrafting of a new regional service area agreement that specifically addresses the regional aquatics centre. This is where ongoing design and costing information is critical to scoping the overall envelop of capital and operational costs which are

central to any quantification of impact on the parties to a service area agreement.

This is not easy work and will require the establishment of a committee of representatives to work collaboratively to arrive at a range of solutions and financial projections associated with different models. The details of the cost-sharing model will be further informed by the ongoing business planning that will be required for this project.

Whether the service area agreement is specific only to this facility, is split into separate agreements for initial capital versus lifecycle capital and operational costs, or is a new multi-facility agreement, are all matters that should be weighed.

4. *Site Assessments*

Our recommendations for a preferred site and option are contained below. Should the regional partners agree that a single preferred option is appropriate as a result of this work, the following site assessment recommendation pertains to the preferred site only.

As an immediate next step, the City should obtain all necessary site assessments to include geotechnical investigation and environmental assessment for the preferred site. Notwithstanding our recommendations, if the preferred site selected by the region is Option 1, this includes the required work to delineate the wetland near the Grant Harvey Centre.

This work is required to verify the appropriateness of the site for development, inform the footprint location and design of the facility on the site, and provide necessary input for the capital cost and design solutions for site servicing and building construction.

The environmental assessment would include not only a Phase 1 ESA, but Phase 2 ESA as is expected to occur. Depending on the outcome, additional planning and contingencies may be required to factor in any remediation work or extra-ordinary development costs that may be likely. At that point, the project may require placing the commissioning of more detailed design on hold until or if resolution of the environmental and / or geotechnical issues can be achieved in a cost-effective manner.

5. Design Progression

Assuming that the project does not generate insurmountable challenges as a result of the required initial due diligence, the City can move into design and engineering as follows:

4. Develop the program to a detailed level.
5. Initial Schematic Design (typically this equates to about 12.5% of the total architectural fees to completion).
6. Design Development (typically takes the project to 25% of the total architectural fees to completion). As part of design development, the City

should expect to receive a capital costing estimate equivalent to a Class B level of estimation.

The City and partners will need to determine the expected cost associated with these design services and the extent to which it is covered by existing or proposed budgets for this purpose. This is because this level of design work is likely to be necessary to accurately inform the development of funding plans and cost sharing formulas. Only when both the design is progressed and a funding plan is in place, would the project move actively into an implementation and delivery stage which involves a choice of how to complete the design and construction of the facility.

Recommended Aquatic Facility Option

Based on the full scope of the work undertaken as part of this planning exercise, the preferred option for the delivery of an indoor aquatics facility is Option 2 – development at the UNB Endowment Lands. In summary this site and program offers the following improvements over the Grant Harvey Addition Option (Option 1):

- The program development is not demonstrably different between the two sites but the efficiency of the design is more apparent in Option 2.
- The capital cost differential, when viewed over the long term, is marginal.
- Operating efficiencies at the Grant Harvey site will require further investigation to provide a more robust picture of possible savings. However, we caution

against over-estimating such savings. While our analysis has established a potential quantum for annual operational savings for Option 1 over Option 2, this alone is not a sufficient reason in our view to favour Option 1. Over time such savings represent a significant dollar amount but it is also true that unless operated continuously in such a way as to maximize these efficiencies – particularly in staffing terms - it is not a given that such savings will materialize.

- The contributions of the University toward land supply provide a funding source to Option 2 explicitly. While the land is also free at the Grant Harvey Centre it is unknown at this time whether the commitment of the University could be converted from a contribution in-kind to an actual capital funding contribution.
- The site circulation and overall site planning constraints imposed on the Grant Harvey Centre /Abony Family Tennis Centre campus are significant in our view and do not represent best practice.
- The future expansion of the Grant Harvey site for any use is highly constrained. While the pool complex can be expanded to include a gymnasium, there is a level of conflict with existing uses, loss of parking and resulting insufficiency of parking. The only solution would be yet more incursion into wetland and provision of parking some distance from building entrances.
- Option 2 provides maximum flexibility (within the limits of potential competing demand for

development on adjacent sites in the business park) to enable in-situ expansion of the building over time to accommodate other community functions.

There are questions of cost confirmation for site development, willingness of partners to commit to a larger project, and fundamental questions around whether the University commitment to fund is based on the UNB Endowment Lands site. The City and partners may, in their discretion, seek further clarification on these matters before determining their preferred option and its inclusions. However, at this time and based on the limitations of the work to date, Option 2 is recommended for further detailed assessment and as a basis for the development of a funding plan.

