AN AQUATIC FACILITY FOR THE SOUTH CARIBOO

SOUTH CARIBOO
AQUAPLEX
INITIATIVE

THE SOUTH CARIBOO AQUAPLEX INITIATIVE
JANUARY 14, 2019
100 MILE HOUSE, BC

FOR THE SOUTH CARIBOO JOINT COMMITTEE

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1. Executive Summary

- Many rural communities in British Columbia (B.C.) have been able to access funds to build and operate an aquatic facility.

- An aquatic facility would provide year-round recreation and fitness opportunities that are accessible to every demographic of the community.

- The benefits of an aquatic facility in a community include improved health, rehabilitation and therapy options, water safety and life-saving skill development, community cohesiveness, bolstered local economy, reduced environmental impact, and improved professional recruitment.

- Swimming and aquatic-based exercise are some of the most popular choices for physical activity. Unique benefits of aquatic environments include: minimized weight-bearing stress, a humid environment and decreased heat load, making it ideal for many individuals.

- A recreation facility offers a safe and supervised environment for children and youth to participate in healthy recreational activity, improving their social wellbeing while engaging in positive behaviours.

- 100 Mile House is a medically underserved community, and a lack of a public pool is a significant deterrent to physicians being recruited to the area.

- There is tremendous interest and support for an aquatic centre within the community.

- Options for site development allow for the construction of a pool with minimal inconvenience to local recreation groups.

- The South Cariboo Aquaplex Initiative (SCAI) is asking for the South Cariboo Joint Committee to consider an indoor aquatic facility as a recreation option in the South Cariboo, and to allow an aquatic facility go to a referendum based on tax funding for a portion of the cost, and fundraise for the remainder (grants, funding and donations). SCAI is requesting support and guidance from local governments to explore opportunities and options for an aquatic facility that meets the South Cariboo community's needs. Consideration given to affordability, accessibility and opportunities for funding is a high priority for SCAI.

2. History of Aquatic Recreation Advocacy in the South Cariboo

- Advocacy for aquatic recreation in the South Cariboo began in the 1960s.
- In 1993, a basic tank was proposed, however, the community felt that it was "too basic," and it was defeated in a referendum.
- In 2001, the South Cariboo Recreation Centre was proposed with a pool to be included in the facility. The ice arena was constructed with the plan of a pool to be added in the future.
- In 2008, the South Cariboo Aquatic Society (SCAS) was formed and worked to bring a pool proposal forward. The proposal was completed in 2010, and included a feasibility study and design report by Bruce Carscadden Architect Inc. (BCA) and Professional Environmental Recreation Consultants Ltd. (PERC).
- In 2014, Discovery Research conducted a telephone survey, on behalf of the Cariboo Regional District (CRD) and the District of 100 Mile House, called the *South Cariboo Pool Project Survey*. Results, shown in Figure 1, indicated that there is great interest for an aquatic facility in the South Cariboo:
    - A total of 72% of respondents ranked the importance of a pool in the community between 7 and 10 on a scale of 1 to 10, with 10 being "very important."
    - 62% of respondents indicated that they, or someone in their household, would use a pool in the next few years.
    - The survey proposed an increase in taxes of up to $135 per $100,000 of assessed property value and asked whether respondents would approve the increase. Of those surveyed, 46% reported "Yes," 14% reported "Not sure," and 40% reported "No". The main reasons respondents gave for not supporting the pool project were 'cost-too expensive' and 'taxes too high'. Of those who reported cost as their reason for not being in favour of a pool, 32% reported 'Yes, they would support the project at a lower cost', 38% reported 'Maybe', and 30% reported 'No'.
    - The costs published in the telephone survey did not include grants or funding; tax-payers would have been responsible for paying for 100% of the project.

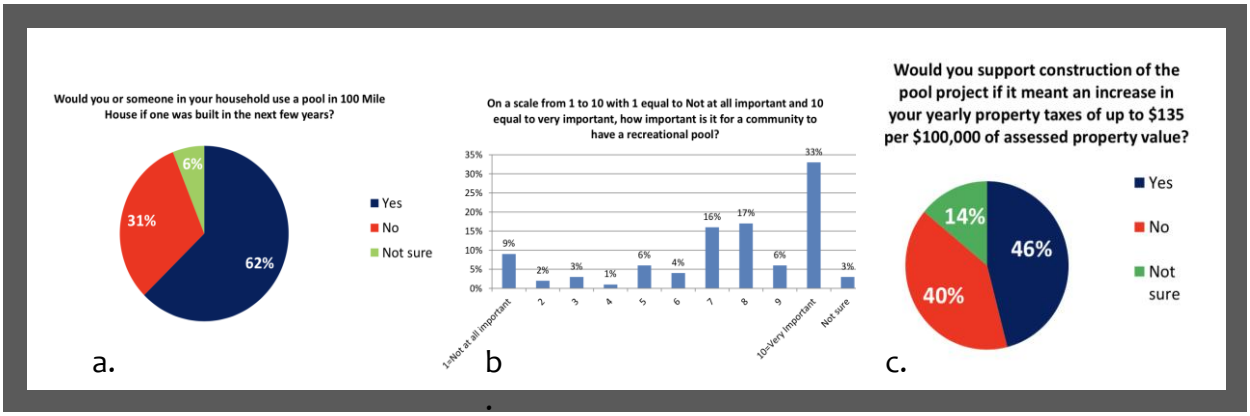

Figure 1. Results from the South Cariboo Swimming Pool Study (Discovery Research, 2014). 1a) The Results from question #4 'Would you or someone in your household use a pool in 100 Mile House if one was built in the next few years?'. 1b) The results from question #6 'On a scale of 1 to 10 with 1 equal to Not at all important and 10 equal to very important, how important is it for a community to have a recreational pool?' 1c) The results from Question 8 'Would you support construction of the pool project if it meant an increase in your yearly property taxes of up to $135 per $100,000 of assessed property value?'

- After the telephone survey, the decision was made by the local government that the pool proposal would not proceed to a referendum in the South Cariboo. The SCAS dissolved shortly after.

3. South Cariboo Aquaplex Initiative

In 2018, a group of community members formed the South Cariboo Aquaplex Initiative (SCAI) to address the community's desire for a pool. The SCAI's mission is to promote and assist with the development of an affordable aquatic recreation facility that is accessible to the South Cariboo community and visitors of all ages and abilities.

The SCAI's goals are to:

- Engage community members and stakeholders, and gather support for an aquatic facility;
- Receive support from the local government;
- Connect with architects and develop an affordable and accessible aquatic facility that meet the community's current and future needs;
- Form a society;
- Build community relationships and successful community partnerships;
- Educate the public and community leaders on the benefits of an aquatic centre; and
- Raise funds to offset costs of building and operations.

4. Benefits of Aquatic Recreation

- Aquatic facilities offer many benefits to community members of all ages and abilities. According to the South Cariboo Pool Complex Feasibility Study (BCA and PERC, 2010), aquatic facilities generally serve a far broader cross-section of residents, from young children to senior citizens, than any other recreation facility.

- Aquatic facilities are especially valuable to a community, offering activities that are multigenerational and accommodate individuals that are not able to participate in dry-land activities.

- The presence or absence of an aquatic facility can also be the deciding factor for professionals considering moving their families to a rural centre. Building an indoor aquatic facility in the South Cariboo could have a significant impact on our ability at attract and retain health care providers, law enforcement officers, and other essential professionals.

- In summary, an aquatic facility would have a beneficial impact on:

    - Health
    - Rehabilitation and aquatic therapy
    - Water safety and life-saving skills
    - Community
    - Economy
    - Environment
    - Physician and other professional recruitment and retention

4.1 Properties of Water

The unique properties of aquatic environments offer an ideal setting for health, wellness and recreation. These properties are:

Viscosity and Resistance. Limb movement in water is subject to a drag force and turbulence. The resistance created by the viscosity of water offers opportunities for strength training via the principle of loading (Swimming and Health Commission (SHC), 2017). In a pool, resistance is evenly distributed over the entire body, incorporating most of the major muscle groups during exercise. Resistance is 12–14 times greater in water than on land (United States Water Fitness association (USWFA), n.d).

Density and Buoyancy. The human body density is slightly less than that of water; therefore the volume of water displaced weighs more than the immersed body resulting in an upward force equal to the water displaced according to the SHC (2017). This upward force is known as buoyancy, and occurs when a fluid exerts a force on an object that is less dense than the fluid. Buoyancy allows for floating in water. Immersion of the body up to the chest (xyphoid) offloads bodyweight by 60% or more, to the neck (C7) by 75% or more (SHC, 2017). Buoyancy results in offloading of peripheral and spinal joints resulting in less stress on bones, joints, and connective tissues, allowing individuals with joint issues to tolerate longer and higher intensity exercise in water than on land. This allows individuals with injuries, painful joint conditions, balance issues or weakness, to exercise and move through a full range of motion, in a safe and enjoyable manner.

Hydrostatic Pressure. Pressure is produced by the weight of a fluid, and acts on the body. The amount of pressure on the body increases as depth increases. The hydrostatic pressure results in a shift of blood towards the heart, raising right atrial pressure, and causes displacement of the diaphragm towards the head (caudally) (SHC, 2017).

Body Temperature and Thermodynamics. Water may be used over a wide range of temperatures due to its heat capacity and conduction properties. This allows the temperature to increase and create a therapeutic environment, which is a safe and comfortable for exercise (SHC, 2017). Individuals engaging in water-based exercise are less likely to overheat because the water disperses heat more efficiently than air (USWFA, n.d). This enables aerobic exercise in hot summer months and encourages participation among individuals who may be unable or unwilling to exercise in the heat due to health conditions or personal preference.

4.2 Health Benefits

Wellbeing. Wellbeing is associated with good self-rated health, longevity, healthy lifestyle, better mental and physical health, social connectedness and a feeling of the ability to contribute to a wider society (SHC, 2017). Wellbeing is a positive outcome that is meaningful for individuals and for society. According to SHC (2017), swimming offers a unique opportunity for people of all ages and abilities the possibility to enhance their wellbeing and psychological health through physical activity. Furthermore, offering access to swimming pools may provide a unique opportunity for individuals to feel good about themselves, and provides a point of contact with others in the community (SHC, 2017).

Fitness and Conditioning. Aquatic exercise incorporates whole-body movements, improves cardiovascular conditioning, increases muscle strength and endurance, and enhances posture and flexibility. Resistance in a pool is evenly distributed over the entire body, incorporating most of the major muscle groups during exercise. The combination of low-impact and high resistance creates the perfect environment for people with joint pain, or other conditions, to stay fit without pain.

Cardiovascular / Heart Conditioning. Cardiovascular disease is the leading cause of death among Canadian adults, and includes heart attacks, strokes, heart failure and heart disease. In the 100 Mile House Local Health Area (LHA), 196 individuals are newly diagnosed with high blood pressure, and 56 people are newly diagnosed with heart failure in one year (Provincial Health Services Authority (PHSA), 2017). High blood pressure contributes to increased risk of cardiovascular diseases, and can be modified by several lifestyle factors, including exercise.

Benefits of Aquatic Exercise on Cardiovascular Conditioning. Swimming and aquatic exercise are viable methods for improving cardiovascular fitness, and is particularly attractive to individuals who are less tolerant to land based exercise (SHC, 2017). Swimming has a valuable role in risk factor modification, especially for high blood pressure, as it is associated with a reduction in blood pressure and improvements in vascular function. Aquatic fitness increases vascular dilation and decreases arterial stiffness, resulting in improved circulation and blood pressure (Nualnim et al., 2012; Alkatan et al., 2016). It also reduces resting heart rate and lowers work on cardiac muscles, which can help prevent certain types of heart disease.

Respiratory / Lung Conditioning. Respiratory conditions affect 1 in 5 Canadians of all ages and genders, and includes asthma, chronic obstructive pulmonary disease (COPD), lung and cystic fibrosis, and more. In the 100 Mile House LHA, 106 people are newly diagnosed with COPD, and 35 people are newly diagnosed with asthma in one year (PHSA, 2017).

Benefits of Aquatic Exercise on Respiratory Conditioning. Water-based exercise can have significant implications for pulmonary exercise and rehabilitation. According to Lazovic-Popovic et al. (2006), aquatic exercise improves lung function and efficiency. Evidence also suggests that aquatic exercise can influence respiratory muscle strength and pulmonary function in children and adults, and improved lung function and cardiorespiratory fitness in certain lung disease (SHC, 2017). Swimming allows for improved lung capacity; immersion in water to at least the level of the thorax causes direct compression of the chest wall by hydrostatic pressure, and directly impacts a 6-9% reduction in vital capacity and an increase in work of breathing, allowing an opportunity for respiratory training (SHC, 2017).

Weight Loss. In Canada, 1 in 3 adults are obese and may require medical support to manage their disease (Canadian Obesity Network, 2017). Overweight and obesity is the leading cause of Type 2 diabetes, high blood pressure, heart disease, stroke, arthritis, cancer and many other diseases. Every year, 74 people in the 100 Mile House LHA are newly diagnosed with diabetes (PHSA, 2017). PHSA also indicates that Type 2 diabetes is the most common type of diabetes, and accounts for 90% newly diagnosed cases. Type 2 diabetes can be managed and modified by lifestyle factors, such as exercise.

Benefits of Aquatic Exercise on Weight Loss. Strength and cardiovascular workouts with water resistance ensure a full body workout, which burns more calories. A 154-pound body can burn approximately 480 calories in an hour of aquatic exercise (Centers for Disease Control and Prevention, 2015). Swimming is also appealing for those who are overweight, as they may be too hot or uncomfortable during land-based exercise. As discussed previously,

aquatic environments have the ability to reduce weight-bearing, making exercise more tolerable.

Mental Health. Depression or anxiety is one aspect of mental health in a community. In the 100 Mile House LHA, 171 people are newly diagnosed with depression or anxiety each year; these figures are based on diagnosis, and do not capture individuals who have not sought medical help (PHSA, 2017).

Benefits of Aquatic Exercise on Mental Health. Water-based exercise can improve quality of life with psychological improvements, such as improved mood in men and women, a reduction in anxiety and depression, and improved functional autonomy (Berger and Owen, 1992; Da Silva et al., 2017). Aquatic based exercise produced psychological improvements such as improved mood, enhanced self-esteem and body image, and decreased anxiety and depression in individuals with multiple sclerosis, cystic fibrosis, arthritis, orthopaedic impairments, cerebral palsy, and asthma; aquatic exercise (Broach and Dattilo, 1996).

Physical Function in Older Adults. Among older adults, falls and fall-related injuries are responsible for significant impairment, loss of independence and reduced quality of life (PHSA, 207). This is due to the impaired ability of the central nervous system to maintain balance and adaptive reactions, and is combined with the effects of age-related muscle loss, which contribute to a significant increased risk of falling (SHC, 2017). The number of people newly hospitalized for injury in 100 Mile house LHA, between 2006 and 2011, is 2176 (PHSA, 2017). The Potential Years of Life Lost Index (PYLLI) related to falls is higher in 100 Mile House LHA than the B.C. average, as indicated in Figure 2. This indicator contributes to an understanding of the adequacy and effectiveness of injury prevention efforts, which includes prevention and treatment resources.

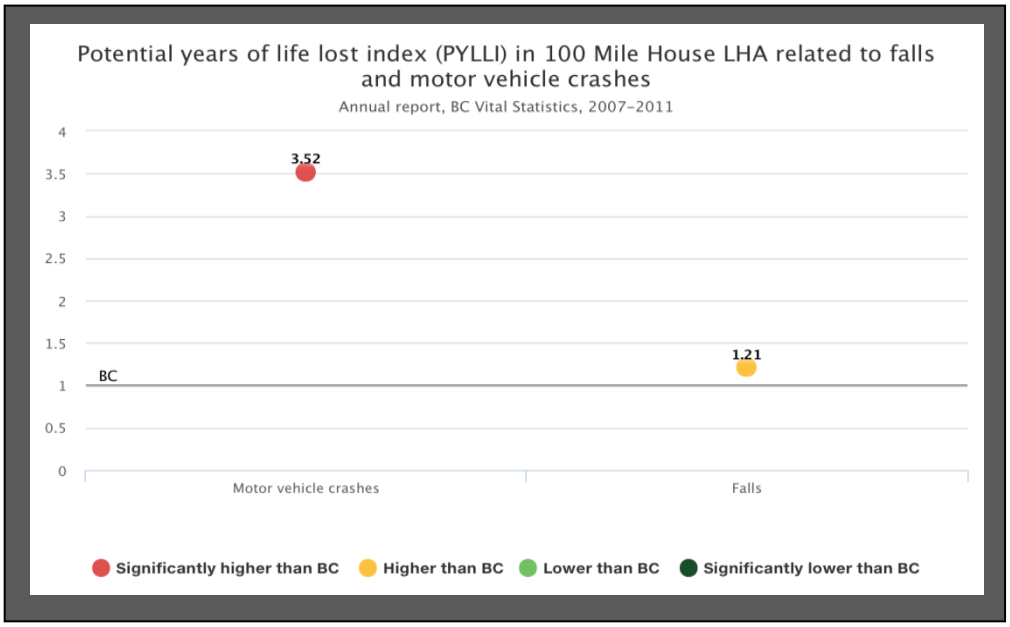

Figure 2. The Potential years of life lost index in 100 Mile House, related to falls (PHSA, 2017)

Benefits of Aquatic Exercise on Physical Function in Older Adults. Aquatic exercise improves quality of life and reduces disability. A systematic review by Waller et al. (2016) found that moderate- to high-intensity aquatic exercise is at least as effective as land-based exercise for improving physical function, including maximum strength, muscular endurance, agility, flexibility, aerobic power, and self-reported physical function. An aquatic environment allows individuals to feel safe while exercising and reduces their fear of falling, which often limits activity or exercise in older adults. British Columbia Recreation and Parks Association (BCRPA) (2010) states that increased health care costs are directly associated with inactivity, which indicates that the availability of an aquatic centre could improve health and decrease health-care costs in the older population. SHC (2017) summarizes that aquatic exercise and swimming is a therapeutic option for improving balance, increasing strength and reducing risk of falls in elderly adults. These positive outcomes lead to increased confidence with balance and walking, a reduction in the risk of falling, and mitigating age-related frailty.

4.3 Rehabilitation and Aquatic Therapy Benefits

Mobility Barriers. Aquatic environments reduce mobility barriers for individuals with physical impairments, such as those with disabilities, injuries, back pain, chronic health issues, pregnancy, frailty, recent surgery, neurological conditions, or developmental disorders.

Therapeutic Environment. Water based exercise prescription is often a key consideration by health care professionals as it offers a safe environment for most individuals. The buoyancy, resistance, and warmth of the water creates an environment for exercise which is more conducive to achieving treatment goals than exercise conducted on land (Hurley and Turner, 1991). Individuals experience less pain, muscle stress, and guarded actions associated with fear of falling, which results in improved performance (Broach and Dattilo, 2001).

Improved Outcomes. The benefits of aquatic activity include pain relief, decreased spasticity, increased relaxation, improved bone density, improved pulmonary function, strengthened muscles, improved endurance, improved joint range of motion, and increased circulation (Broach and Dattilo, 1996).

Musculoskeletal (MSK) Health. Aquatic exercise has many benefits on a wide range of musculoskeletal conditions, while reducing pain, improving function and quality of life. Aquatic environments offer a reduction of stress and weight-bearing on joints due to the buoyancy, making it ideal for those with MSK conditions. During immersion in water, cardiac output is increased, and is distributed to skin and muscle, which results in a 225% increase in muscle blood flow, and has the ability to increase oxygen delivery to the muscle (SHC, 2017). This increase in oxygen delivery to the muscle creates more muscle energy for efficient muscle training. The ease of movement in water, allows for a reduction in perceived pain (SHC, 2017). As the temperature of the water can be controlled, its effect on the sympathetic nervous system, and along with the hydrostatic pressure, a reduction in swelling and pain can be achieved (SHC, 2017). With the prediction of the ageing population on the rise, the

management of MSK conditions is a major concern for public health; research indicates that aquatic exercise is a viable option for managing MSK conditions.

- Hip and Knee Osteoarthritis (OA). Hip and knee OA are very common conditions affecting the aging population, with a prevalence of 1 in 5 British Columbians; more than 3 in 5 people are diagnosed with arthritis are under the age of 65 (ArthritisBC+Me Portal, n.d). Aquatic exercise helps relieve pain, stiffness, and other symptoms of OA due to the buoyancy of the water (Waller et al., 2014). Aquatic exercise is often recommended for rehabilitation after joint replacement surgery, as it is less stressful on new joints and the buoyancy of the water allows for ease of exercise. A high quality systematic review by Bartels et al. (2016) looked at 12 studies, which included over 1000 patients, and found that there is moderate evidence that aquatic therapy has beneficial effects on people with knee or hip OA: there are small short-term effects and clinically-relevant improvements of pain and disability in people with knee or hip OA.

- Ankylosing Spondylitis and Fibromyalgia**.** Studies have shown that aquatic exercise achieves moderate improvements in physical function, pain, and improved quality of life; and with offering a choice between land-based or aquatic exercise, compliance and adherence are improved with exercise programs (SHC, 2017).

- Rheumatoid Arthritis (RA). Due to the reduction of joint integrity associated with RA, especially in weight-bearing joints, exercise programs should be designed with a reduction in joint loading, making water walking and swimming an ideal exercise modality for individuals with RA (SHC, 2017).

Neurological Health. Neurological conditions include a broad group of developmental, auto-immune, hereditary, trauma-induced, and cardiovascular disorders. Aquatic environments offer advantages for individuals with neurological conditions, as it promotes balance and allows for a safer therapeutic environment for those at risk of falling and with decreased balance. The unique properties of water allow rehabilitation of neurological conditions that are not possible on land.

- Neurological Development in Babies. Swimming in babies facilitates neurological development and motor abilities, and preliminary studies have suggested potential improvement in motor development, specifically balance and prehension (SHC, 2017).

- Adult Neurological Conditions.

    - A systematic review by Marinho-Buzelli et. al (2015) investigated the effects of aquatic exercise and swimming on the mobility of individuals with neurological conditions, looked at 20 studies, which included participants with multiple sclerosis (MS), Parkinson's disease and stroke in the chronic phase of their disease. The review concluded that there is moderate level evidence that aquatic exercise improves mobility in individuals with neurological disorders. Methajarunon and Eitivipart (2015)

concluded that aquatic therapy is considered to be superior to land-based exercise for improving balance in stroke patients.

- Exercise is a significant component of MS symptom management and has a role of limiting disease progression (SHC, 2017). Fatigue is common and disabling symptom of MS. Aquatic based exercise has been found to improve functional capacity, balance and perception of fatigue in female patients with multiple sclerosis (Kargarfard et al., 2018). The thermoregulating properties of water, with a constant temperature, and a cooling environment, allowed individuals with MS to exercise without heat fatigue (overheating). Water is an efficient conductor, transferring heat 25 times faster than that of an equivalent volume of air (Bailey et al., 2007). Kargarfard et al. (2018) also concluded that the buoyancy of the water allowed for greater bouts of physical activity before tiring in individuals with MS.

- A warm aquatic environment with the temperature of 36˚C reduced muscle tone and spasticity, and allowed for more efficient movement in children with cerebral palsy (Maniu, Maniu, and Benga, 2013)

Cardio-Respiratory Health. The cardiovascular and respiratory benefits were addressed in the previous section, "Health Benefits". Swimming and aquatic exercise is safe in individuals with cardiorespiratory disease when symptoms are stable, and exercise prescription is directed by a qualified practitioner (SHC, 2017).

- Coronary Artery Disease (CAD). Aquatic exercise and swimming is increasingly used as a successful form of rehabilitation in both coronary artery disease and congestive heart failure, with swimming being associated to delayed sensation of angina compared to land-based training (SHC, 2017).

- Chronic Obstructive Pulmonary Disease (COPD). Aquatic exercise was significantly more effective than land-based exercise training in increasing exercise capacity and improving aspects of quality of life in people with COPD and physical co-morbidities (McNamara et al., 2013).

- Asthma. Swimming is commonly recommended as a form of physical activity for children with asthma as an aquatic environment offers humidity, warmth, low pollen exposure and hydrostatic pressure against the chest wall, which reduces the work of breathing with expiration (SHC, 2017). By offering an environment that is ideal for children with asthma, it allows them to break the cycle of deconditioning and poor cardiorespiratory fitness, promotes normal physical/ psychological development, enhancing lung volumes and breathing technique (SHC, 2017)

4.4 Water Safety and Life-saving Benefits

In a community with an abundance of natural waterways, water safety and life-saving skills are paramount. For this reason, it is vital that everyone in the South Cariboo has access to

swimming lessons and life-saving training in a safe and supervised aquatic environment. According to the Lifesaving Society of B.C. (2018):

- 400 to 500 Canadians die every year in water-related incidents, most of them in unsupervised settings.

- Aquatic fatalities are the second-leading cause of accidental death in Canada for people under the age of 55, and most of these deaths are preventable.

- In 2015, there were 79 water-related fatalities in B.C., with a death rate of 1.7 per 100,000. Of the water-related fatalities in B.C., 28% were age 20-34, 25% were age 50-64 and 18% were age 65+. Of those who drowned, 78% were male and 22% were female. These drownings occurred most frequently in lakes (37%) and rivers (28%). Water-related fatalities occur most often with swimming (21%), power boating (17%), non-powered boating (13%), diving/ jumping (7%) and scuba diving/ snorkeling (5%). Of the swimming fatalities, 30% of the drownings occurred due to weak swimming skills or being a non-swimmer.

- In Canada, drowning is the No. 1 cause of unintentional deaths among children 1–4 years of age, and the No. 2 cause of preventable death for children under 10 years of age.

- Less than 1% of water-related fatalities in B.C. in 2015 occurred in a lifeguard supervised setting; many drownings occurred in backyard pools or unsupervised beaches.

Children with Special Needs. Children with special needs are at increased risk of death by drowning. Guan and Li (2017) reported that drowning accounts for 46% of all injury deaths among children with autism, and, children with autism are 160 times as likely to die from drowning as the general pediatric population. Children with autism spectrum disorder and intellectual disability tend to wander from their safe environment towards bodies of water, seeking relief from the serenity of water when they experience heightened anxiety. With the drowning statistics, Guan and Li recommend that swimming is an imperative survival skill for children with autism; aquatic training should be introduced as soon as a child is diagnosed, and swimming skills should be taught before any behavioral, speech, or occupational therapy.

- An aquatic facility in the South Cariboo would be able to offer:

    - Water safety skills. HCMA Architecture + Design (HCMA) (2017) state that learning how not to drown is one of the most basic of human needs and public services, especially for communities close to natural waterways. Water safety skills include survival flotation, energy conservation, and safety behavior.

    - Life-saving skills and water rescue leadership training, which would also provide leadership and employment opportunities for younger members of our community (Bronze programs, Lifesaving Leadership courses).

- Basic and advanced skill training in swimming, diving, kayaking, and other water sports.

4.5 Community Benefits

Year-round Opportunities for Everyone. Indoor aquatic recreation offers community members of all ages and abilities an opportunity to participate in physical activity, leisure, and recreation year-round, which results in positive community development (Interprovincial Sport and Recreation Council (ISRC) and the Canadian Parks and Recreation Association (CPRA), 2015). During winter in the South Cariboo, current indoor recreation options are limited, and outdoor recreation options are not accessible to all community members. Furthermore, within recent years, access to outdoor activities during the summer months has been limited due to smoke from the wildfires.

Civic Engagement. Civic participation is important to a community as it defines the extent which community members will engage with issues of public concern, and is therefore indicative of the leverage for health and community wellbeing improvement (SHC, 2017). Swimming facilities are valued community assets and encourage significant civic participation (SHC, 2017).

Social Support and Networks. Our health is affected by our sense of community support and connectedness, which reflects our commitment to shared resources and systems (PHSA, 2017). Aquatic facilities build community, foster social engagement, and build strong families. Social support builds family, friend and community relationships, and these relationships are associated with better health (PHSA, 2017). Family bonds are improved by sharing leisure time, improving parent-child and spousal relationships. When a sense of community and social contact is fostered, social problems such as loneliness and isolation are reduced. Research has shown that aquatic recreation brings people together, reduces feelings of isolation, and promotes family cohesion, adaptability and resilience (HCMA, 2017; ISRC & CRPA, 2015). According to SHC (2017), pool-based activities such as swimming clubs and exercise classes have been demonstrated to develop meaningful social networks that have the potential to generate social capacity and thereby bolstering community capacity.

Diversity. A diverse community is a vibrant community (PHSA, 2017). According to PHSA (2017), the population demographics in 100 Mile House LHA are 15.4% Aboriginal, 5.3% visible minority and 2.1% new immigrant. PHSA (2017) states that different population groups often have different opportunities and challenges in maintaining or improving their health, and report that Aboriginal people and new immigrants often face barriers to good health and access to health services.

A pool promotes social connectedness and social cohesion by encouraging participation in activities by individuals from varying cultural backgrounds and racial groups (Bell, 2011). Recreational activities can help build welcoming communities for people and families of diverse cultures (ISRC & CPRA, 2015). This breaks down unfamiliarity, fear and isolation, and

promotes positive contact between ethnic groups and a community. Swimming has the potential to promote opportunities for social inclusion and cultural enrichment within community settings (SHC, 2015). The delivery of culturally appropriate recreation provides an opportunity to address inequity of access in aboriginal and immigrant health (BCRPA, 2010).

A systematic review by Hendrickx et al. (2016) looked at 20 studies and found that pools had a range of social and emotional wellbeing benefits on aboriginal people including improved school attendance among children, improved water safety and social connection. The study suggests that pools can provide an important hub where families can come together in a safe environment and enjoy positive relationships.

Crime Reduction. Social relationships, support networks, and community participation positively increase when there is access to local services that promote healthy physical activity. Community infrastructure can play a central role in reducing criminal activity by establishing friendship and acquaintanceship ties, thereby reducing the effects of social disadvantage (Wen, Browning, and Cagney, 2007; Bell, 2011).

4.6 Child and Youth Benefits

Early Childhood Development. Early childhood development has a profound impact on emotional control, relationship building, self-esteem and health practices that last throughout a child's life (PHSA, 2017). PHSA states that offering accessible and affordable programs and services for a diverse spectrum of children and families can help support healthy childhood development in a community. According to PHSA (2017), the Early Development Instrument (EDI) is an indicator of healthy childhood development, which measures children in kindergarten in five core areas that are known to be good predictors of adult health, education and well-being; language and cognitive development; emotional maturity; communication skills and general knowledge. The EDI results, shown in Figure 3, indicate that children in the 100 Mile House LHA are more vulnerable in one or more vunerability areas than the B.C. average, with a particularly higher vulnerability score in the core area 'physical' with 29% versus 16% for B.C.

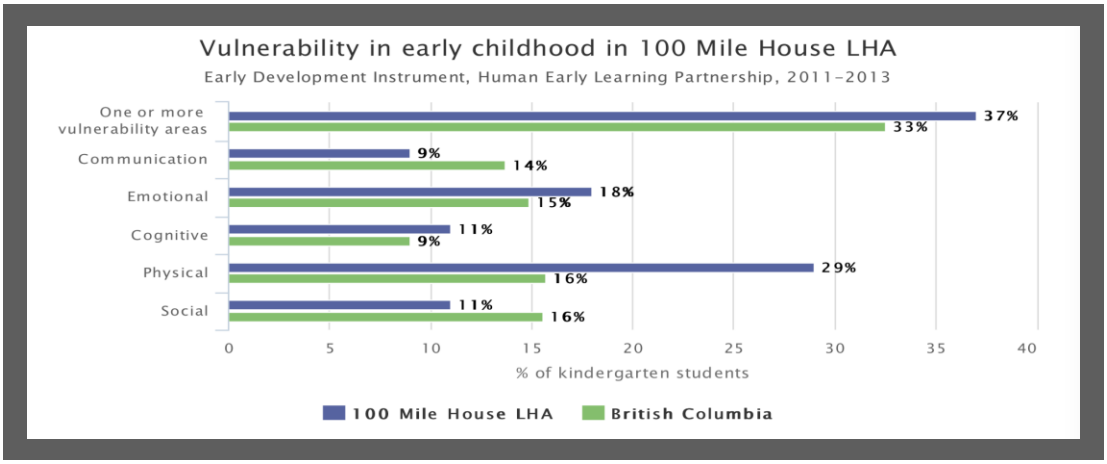

Figure 3. The vulnerability in early childhood in 100 Mile House Local Health Area versus B.C. (PHSA, 2017).

Children and Physical Activity. Health practices that start early in life are likely to continue into adulthood. Figure 4 shows health practices for students in the 100 Mile House LHA, and indicates that less than half of all children in the 100 Mile House LHA are physically active with 47% of grade 3 and 4, 49% of grade 7, 39% of grade 10, and 47% of grade 12 students being physically active. An aquatic facility would offer recreation options for children to participate in fitness, skill building and leisure activities.

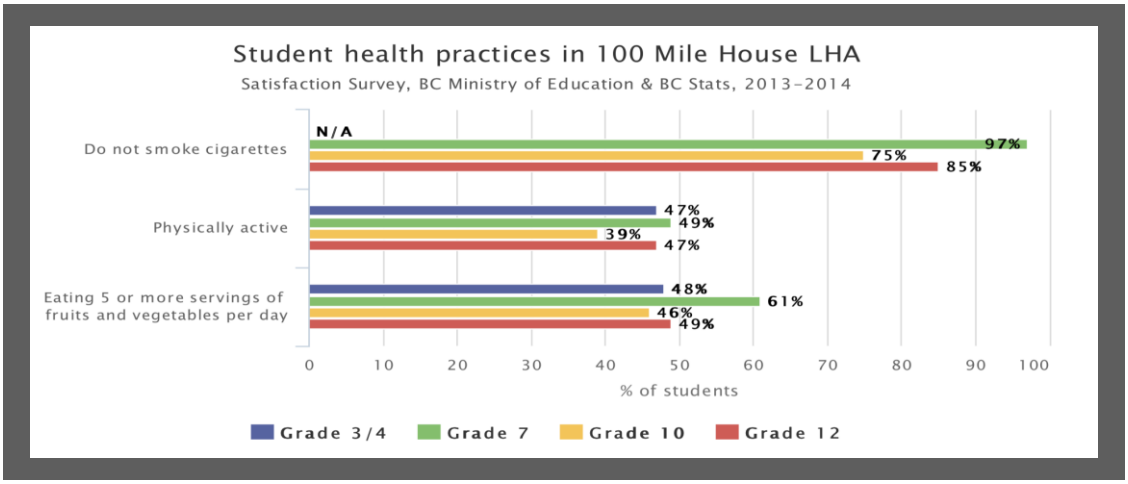

Figure 4. Student health practices in 100 Mile House Local Health Area. Student's levels of physical activity vary by age groups. Students are considered physically active in grade 3 and 4, and grade 7 if they exercised or participated in physical activity in school for at least 30 minutes every day for the last 5 school days, students in grade 10 and 12 are physically active if they exercised or participated in physical activity for more than 150 minutes in the past seven days.

Childhood Obesity. In B.C., more than 26% of youth aged 12-17 are overweight or obese, and over 80% of this group will become obese as adults (Child Health B.C., 2018). Overweight and obese children are at risk for developing chronic diseases that are typically seen in adults, such as type 2 diabetes. Youth who engage in adequate amounts of physically active recreation are more likely to be at an appropriate weight and at a reduced risk for weight-related health problems (Witt & Caldwell, 2010). Lack of access to physical activity contributes to childhood obesity (Childhood Obesity Foundation, 2016). Healthy recreational activity can help decrease health care costs related to childhood obesity.

Latchkey Children. Many parents have work schedules that do not allow them to be home when their children are home from school. This gap in time is typically between 3:00pm and 7:00pm during the week, and could be as many as 20-25 hours per week (Witt & Caldwell, 2010). This unsupervised period of time can open opportunities for children to engage in risky behavior or become victims of crime. Recreation centers can provide a safe, supervised environment, offering healthy, and constructive activities after school and during the summer. According to Witt and Caldwell (2010), these opportunities can lead to improved performance in school, increasing positive behaviours, and reduce the risk for engaging in negative behaviors such as delinquency (committing crimes, smoking, drinking or using drugs). With an investment in healthy recreation, incidences of juvenile crime and risky

behavior can be reduced, resulting in a savings of tax-payer funding. The existence of neighbourhood youth organizations may lead to decreased crime, and thus a decreased exposure to crime (Witt & Caldwell, 2010). Furthermore, Witt and Caldwell report that students who participate in one to four hours per week of extra-curricular activities are 49% less likely to use drugs and 37% less likely to become teen parents, than students who do not participate (Witt and Caldwell, 2010). Recreational activities for youth can also help reduce parental stress and thus affect health care costs and lost job productivity, as it eliminates concerns with their children's safety, reliability of after-school arrangements, and whether their children are using their time productively (Witt & Caldwell, 2010).

Youth Engagement. A pool offers a unique opportunity to serve, engage, and connect with youth, and, a community as a whole benefits when engaging with youth. Involving youth, parents, volunteers and employees in youth serving organizations, generates a greater sense of mutual trust and solidarity (Witt and Caldwell, 2010). Recreation services, facilities and programs have an important role in youth development by offering appropriate supports and opportunities. Youth participation in recreational activities is associated with autonomy (self-direction and independence), identity development ('who I am'), positive social relationships, conflict resolution skills, academic success, mental health and civic engagement (Witt & Caldwell, 2010). Recreational opportunities foster personal achievement, confidence, friendships and the skill development necessary to participate. Offering recreation services for youth generates initiative, which can lead to productive members of society, and increase the economic contributions of young people to society and when they become adults (Witt & Caldwell, 2010).

Youth Leadership and Other Opportunities. Youth can benefit greatly from leadership opportunities through lifeguarding, teaching swim lessons, and participating in other youth-led activities within a recreation centre. Leadership opportunities through recreation allow relationships to be cultivated with community members of all ages. According to Witt and Caldwell (2010), volunteer opportunities allow youth to learn about themselves, the world around them, and various ethical and moral issues; they are exposed to opportunities that require decision making skills, the ability to weigh and discuss actions, and possible consequences. Aquatic programs may include opportunities to obtain scholarships for post-secondary education.

Civic Responsibility and Participation. Recreational activities help to build an adolescent's 'moral compass' by allowing them to develop and understand social and traditional norms and a sense of right or wrong (Witt & Caldwell, 2010). It exposes youth to positive norms and the political and social skills needed for civic engagement. These skills can also be applied to real-life situations. Engagement in community service, such as voluntary youth organizations, establishes civic responsibility and public service as a lifelong habit.

4.7 Economic Impact

Businesses and Services. Aquatic services in the South Cariboo would bolster local economic business and services in the community. Currently, families travel outside of the South Cariboo to swim, and often combine those trips with shopping, services and dining out, which they might otherwise do in 100 Mile House.

Employment and Volunteer Opportunities. An aquatic centre would provide construction and operational employment opportunities within the community, for individuals with various skills, level of experience, and age. Volunteer opportunities within a recreation facility would provide further community engagement.

Tourism. The South Cariboo Visitor Centre report that visitors ask if there is a public swimming pool in 100 Mile House. An aquatic centre would enhance tourism in the South Cariboo by allowing the community to host swim meets, triathlons, diving competitions, and other sports and events. Sport tourism would have an economic impact on local businesses, as travelers would shop, dine, stay at hotels, and use other local services. A pool would also attract vacationers and passers-through to spend some time in the South Cariboo.

Property Values. Recreation facilities have shown to increase property values and tax revenue in communities (BCRPA, 2010).

Community Growth. Recreation opportunities make communities more attractive places in which to live, learn, work, play, and visit (ISRC & CPRA, 2015), thus encouraging growth within a community

4.8 Environmental Impact

Commuting. According to the South Cariboo Pool Complex Feasibility Study (BCA and PERC, 2010), almost all communities in B.C. with a population of 10,000 or more, and an increasing number with much smaller populations, either have their own indoor pool, or have easy access to one in a neighbouring municipality. Currently, residents of the South Cariboo travel year-round to Williams Lake (92 km from 100 Mile House), Kamloops (196 km); or in the summer to Cache Creek (112 km) or Ashcroft (123 km) to swim. This has a significant impact on the environment and quality of life of 100 Mile House residents. It also demonstrates a willingness of the community to spend time and money to access safe swimming facilities. Residents of the South Cariboo that do not have access to a private vehicle, or funds for fuel to commute to a public aquatic facility are not able to access nearby communities with pools.

Geothermal Energy. An aquatic facility next to the South Cariboo Recreation Centre would have access to utilize the geothermal heat exchange system to heat the pool. Geothermal energy is a renewable energy source and would result in significant operational cost savings compared to other energy sources. SCAI is currently looking into the feasibility of accessing the geothermal system for an aquatic centre.

4.9 Physician and Other Professional Recruitment and Retention

Physician Resources in 100 Mile House

- 100 Mile House has recently obtained several new foreign-trained physicians, but many of them are on returns-of-service (ROS) and there should be significant focus on retaining them once beyond their required term. A number of these doctors have young families who would value a pool in the community.

- The wildfires of 2017 burned down the home of two physicians who provided all the obstetric, anaesthetic, and oncologic services for the community. Those programs, along with the surgical program, have all but shut down while the Health Authority recruits general practitioner (GP) specialists and trains local physicians.

- The Medical Staff Resource Plan for 100 Mile House, as of February 2017, provides for 18 family doctors. Currently, 100 Mile House has 14 family doctors, plus the current full-time ER doctor. Of these 14 physicians:

    - Three doctors are over the age of 65.

    - Four doctors are completing a three-year ROS with no obligation to stay beyond that time.

    - One doctor is part-time and starting maternity leave in December.

- The consequences of the doctor shortage in the very recent past were significant. The number of unattached patients and patient wait times increased, resulting in more patients using the emergency room (ER) as a walk-in clinic. This is both expensive for the government and exhausting for family doctors who staff the ER on an on-call basis. Prior to the recent influx of foreign-trained doctors, only 7 of the family doctors in town participated in ER shifts, which resulted in those doctors spending significantly less time in clinic. Physician burn-out and attrition continue to be real and pressing concerns.

- In summary,

    - 100 Mile House has 15 physicians with three posted vacancies.

    - There will be at least one retirement within the next year.

    - Up to 10 physician vacancies could occur within the next three years, due to retirements and completed ROS.

    - The GP surgery, anaesthesia, obstetrics, prenatal, and oncology programs at 100 Mile General District Hospital have all been shut down in the last year due

to loss of qualified physicians. Recruiting specialists to a rural site with a low volume of specialty cases provides an exceptional challenge.

- Most of the doctors who are new to town are younger, and many have young families. Attention should be focused on retaining these physicians. A public pool would help doctors provide better patient care, and would support physicians' families by giving them additional recreational opportunities.

Demonstrated Impact of Aquatic Centres on Physician Recruitment

- Goderich is a small town in southwest Ontario which, in the early 2000s was resourced for 18 physicians but had only five after a number retired, resulting in 5,000 unattached patients.

- The town hired a physician recruiter who pushed town council to raise $6 million to build a YMCA with an indoor pool and ice rink, and to renovate the library. The recruiter then held events to showcase the community's amenities.

- This community of 8,000 residents now has 18 doctors (Ray, 2018).

Recruitment Efforts in 100 Mile House

- Village Medical Clinic actively recruited 13 physicians between July 2017 and August 2018. Five of those physicians (40%) cited the lack of a pool as a significant deterrent in their evaluation of 100 Mile House as a potential medical site.

    - The demographic of physicians remarking on the lack of a pool was highly variable in age, gender, marital status, and presence / age of children.

    - Many of these physicians were also considering other rural sites, such as Williams Lake, Merritt, Prince George, and Cranbrook, all of which have community pools.

- When physicians who are responding to a posted medical position express preferences or concerns, the clinic is often able to make compromises to policies so that the position is more attractive to that individual. If 40% of recruited physicians desire a rural community with a pool, clinics in 100 Mile House do not have any way of negotiating to attract those doctors.

Other Health and Professional Services

- Physicians are not the only type of professional that 100 Mile House has difficulty recruiting and retaining. The community is significantly in need of nurses, laboratory technicians, radiology technicians, physical therapists, occupational therapists, mental health specialists, teachers, and many others. For the community to succeed

in recruiting and retaining quality professionals, we need attractive and desirable amenities, such as a pool.

5. Demographics of the South Cariboo

The population in the South Cariboo in 2016 was 13,124. The South Cariboo includes the following communities:

- 100 Mile House
- Cariboo G (Lac la Hache, 108 Mile Ranch and 93 Mile area)
- Cariboo H (From Mahood Lake to 100 Mile House, excludes Canim Lake Reserves)
- Cariboo L (Horse Lake, Lone Butte, Interlakes, and Deka Lake)

According to Bruce Carscadden Inc. & PERC (2010), there are approximately 2,000 people residing outside of the electoral areas who should be included to calculate attendance figures for an aquatic centre (not reflected in Tables 1 and 2).

Table 1: Population change in the South Cariboo (2011 - 2016)

Area	Population in 2006	Change (2006 to 2011)	Population in 2011	Change (2011 to 2016)	Population in 2016
100 Mile House	1,683	2.3%	1,721	5.2%	1980
Cariboo G	4,974	-0.4%	4,955	4.1%	5,156
Cariboo H	1,744	-10.0%	1,569	13.7%	1,784
Cariboo L	4,316	-3.22%	4,177	0.6%	4,204
South Cariboo	12,717	-2.3%	12,422	5%	13,124
CRD	62,190	0.3%	63,392	-0.6%	61,988
British Columbia	4,113,487	7.0%	4,400,057	5.6%	4,648,055

The population change in the South Cariboo area is shown in Table 1 (data sourced from Statistics Canada, 2018). Between 2011 and 2016, the South Cariboo experienced a growth in population by 5%, while the CRD experienced a -0.6% decline. The growth experienced in the South Cariboo was consistent with the population growth of the Province from 2011 to 2016. The most recent census data indicates that the South Cariboo experienced the largest population growth between 2011 and 2016, in 20 years. The South Cariboo population growth trends for the last 20 years were:

- From 2011 to 2016, a total change in growth of 5%;

- From 2006 to 2011, a total change in growth of -2.3%;
- From 2001 to 2006, a total change in growth of 0.7% (PERC, 2010);
- From 1996 to 2001, a total change in growth of -5.3% (PERC, 2010).

Table 2: Age distribution for the South Cariboo by percentage according to the 2016 census.

Ages of the population:	0 to 14 years	15 to 24 years	25 to 44 years	45 to 64 years	65 years and over
South Cariboo	12%	8%	16%	35%	29%

The age distribution in the South Cariboo, according to the 2016 census, is shown in Table 2. The largest age distribution in the South Cariboo is the '45 to 64 years' group with 35%, the second highest is the '65 years and over' group with 29%, and third highest is the '25-44 years' group with 16% of the population. The demographic trends and population in a community tend to guide the design of an aquatic centre. According to ISRC & CRPA (2015), the aging population is significant, as many communities have a declining proportion of children and an increasing proportion of older adults. The age distributions in Table 2 demonstrate a need to accommodate all ages in a community recreation facility. Activities that appeal to all age groups can be offered in an aquatic facility; infants through mid-teens access instructional programs the most frequently, while middle-aged to older adults access a pool for fitness opportunities (BCA & PERC, 2010).

6. A Site for an Aquatic Facility in the South Cariboo

According to the South Cariboo Recreation Centre Property Site Planning (Catherine Berris Associates Inc., 2012), due to high level of community support, an aquatic facility was included in a recreation plan at the South Cariboo Recreation Centre site. Berris reports that it is good recreation practice to combine recreation facilities, and that an aquatic facility would be ideally situated east of the arena and curling rink. Figure 5 shows the site plan for the South Cariboo Recreation Centre.

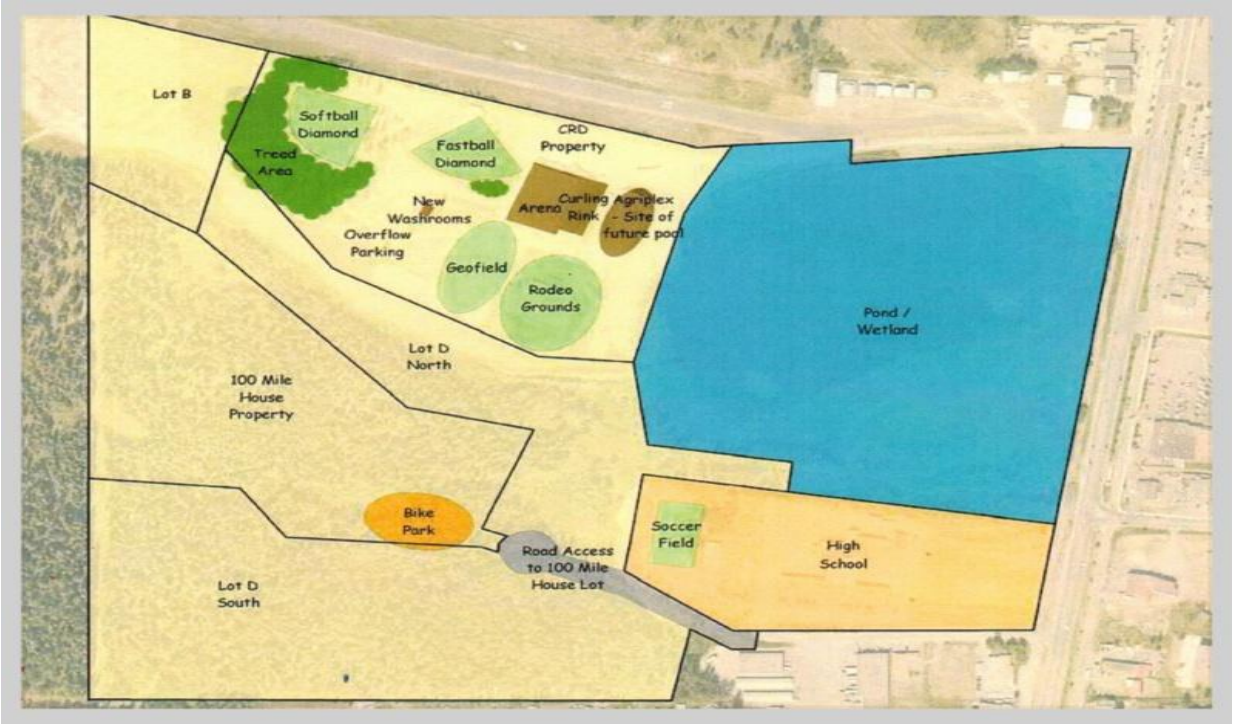

Figure 5. The South Cariboo Recreation Centre Property Site Plan (Catherine Berris Associates Inc., 2012

During a Stakeholder Workshop on October 2, 2011, it was determined by vote that an aquatic facility was the highest priority for new facilities on the South Cariboo Recreation Centre property. It was hoped that an aquatic facility could be accessed by entry from the north and south in order to utilize the parking created to the south of the Recreation Centre. Figure 6 shows Option #3, from the four options for the South Cariboo Recreation Centre Site Plan, and shows the potential new parking spaces on the site.

The site plan contained 4 options for the South Cariboo Recreation Centre, all of which included an aquatic facility. The four design options included:

- 124 parking spaces for aquatic facility use, as per the requirements determined by the District of 100 Mile House; and
- Relocating the Agriplex and rodeo grounds; however, they remain in the current location until funding becomes available for the construction of an aquatic facility.

Figure 6. The South Cariboo Recreation Centre Property Site Plan- Option 3 (Catherine Berris Associates Inc., 2012

6.1 Current Use of the Agriplex and Rodeo Grounds

The Agriplex is used throughout the week by 3 or more user groups. Some user groups include: Equestrian, archery, dog training, and private events. The 4-H group no longer uses the facility.

The Rodeo grounds are utilized by the 100 Mile District Outriders. The Outriders had 40-50 members in 2018 and has 35+ members and counting for 2019. The grounds are used year round, and some events on the grounds include: the 'Little Britches' show, a Rodeo, several clinics, gymkhanas and other functions throughout the year. The Outriders currently have a contract agreement to use the Agriplex.

6.2 Relocation Options for the Agriplex and Rodeo Grounds

According to the South Cariboo Recreation Centre Property Site Planning, there are 3 options for relocation of the Agriplex and the rodeo grounds:

- Option 1: Elsewhere, finding an alternate location for the Agriplex and rodeo grounds
- Option 2 & 3: Relocating the Agriplex south-west of the men's ballfields with the rodeo west of it
- Option 4: Relocating the Agriplex and rodeo grounds on the land owned by the District of 100 Mile House (South of the Recreation Centre, west of the high school).

The land owned by the District of 100 Mile House has a covenant indicating that the land must be used for recreation. Most of the land has been cleared but the site does not have access to utilities (power, water, or sewer). These services will be provided to the property by the District of 100 Mile House when they are needed (Catherine Berris Associates Inc., 2012).

6.3 An Aquatic Facility on the South Cariboo Recreation Centre Property

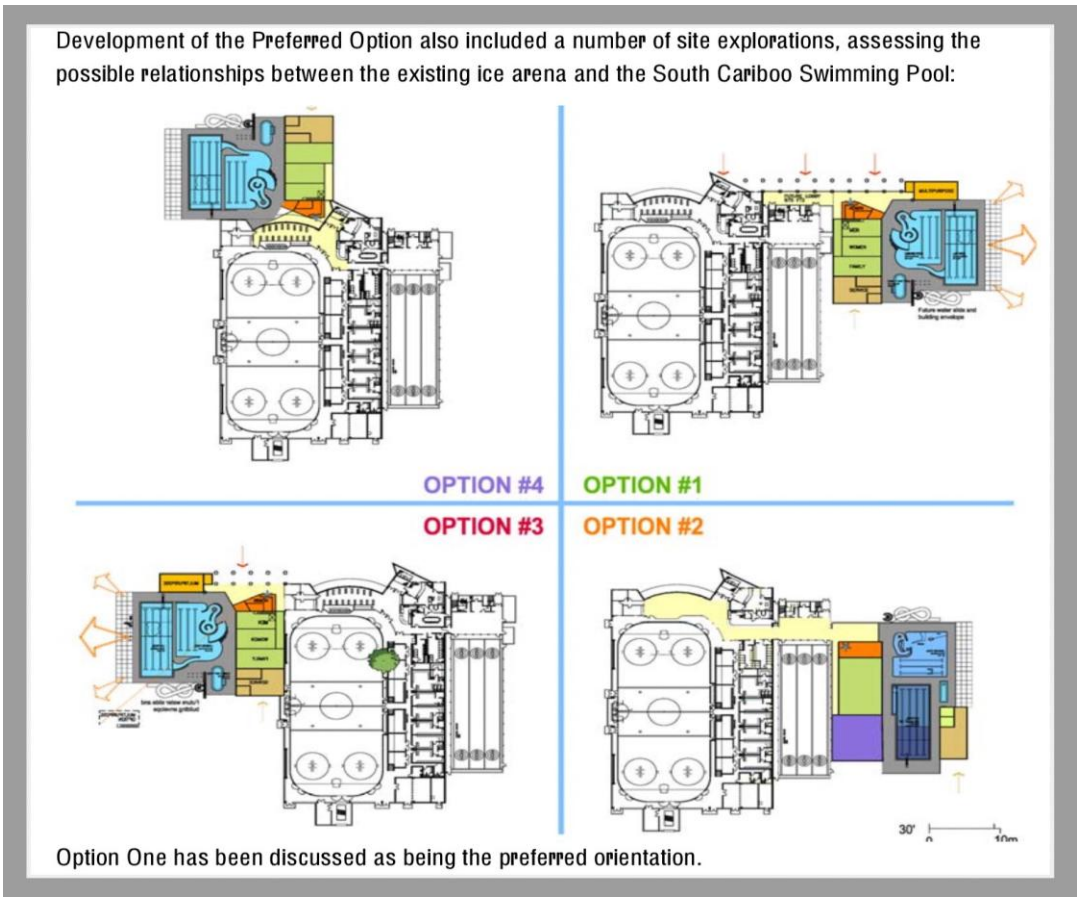

Figure 7. The four option explorations for an aquatic centre in the South Cariboo (BCA & PERC, 2010).

A site analysis was conducted by BCA and PERC (2010) exploring the potential relationships for an aquatic facility and the South Cariboo Recreation Centre (the arena). Figure 7 shows the possible options for an aquatic facility at the South Cariboo Recreation Centre, with option 1 being the 'preferred orientation'.

Combining an aquatic facility with the existing South Cariboo Recreation Centre has the following benefits (BCA & PERC, 2010):

- Close proximity to the village centre, 350m or a 5 minute walk.
- Location enhances the 'campus of recreation facilities'.
- Connections to bus, bicycle trails and pedestrian trails.
- Land use (identified by the District for recreational use) and density.
- The land is owned by the Cariboo Regional district.
- Possible partnership opportunities could exist, but may be limited.

Option 1: The site replacing the Agriplex

- This site has spectacular views of the pond / wetland.
- High visibility from the highway and the access road.
- Potential gateway to the park.
- Excellent access to open space.
- Optimal orientation and exposure.
- Optimal access to social amenities.
- Opportunities for shared use parking with equal distances to entrances.
- Excellent proximity to the geothermal field.
- Considerations:
    - Requires relocation of the Agriplex.
    - The Agriplex may be a historical / cultural asset.

Option 2: The site between the curling rink and the Agriplex

- This site has moderate access to open space.
- Considerations:
    - Location is very narrow.
    - Includes exits from the adjacent spaces making it a very difficult and narrow site to work with.
    - Does not allow visibility or identity.
    - Minimal view opportunities.
    - Orientation and exposure is not ideal.
    - It is a brown field site; however, the site is too narrow to be practical.
    - Parking access is not optimal.
    - Site servicing is reduced.

Option 3 and 4: The site replacing a ball diamond

- With relocation of a ball diamond, this site would provide sufficient space for the new facility.
- May offer excellent relationships to parking and the arena.
- Has moderate access to open space.
- Excellent site servicing with marginal access to geothermal field.
- Minimal disruption to user groups.
- Cost of relocating a ball diamond is less than cost of relocating the Agriplex. Funds could be raised to provide covered grandstands for inconvenience.
- Considerations:
    - Modestly visible from the access road.
    - Requires relocation of a ball diamond.
    - Existing field has cultural value, ball diamonds are valued compatible use on this site.

Option 5: The site replacing the rodeo grounds

- Sufficient area for building.
- Preserves the views east to the pond / wetland.
- Excellent access to open space.
- Excellent orientation and exposure.
- Access to parking would be sufficient at this location.
- Minimal disruption to user groups.
- Cost of relocating outdoor arena is less than cost of relocating Agriplex.
- Considerations:
    - Somewhat tucked away on the site, modestly visible from the access road.
    - Minimal view opportunities.
    - Relationship to other structures on the site is poor.
    - Requires relocation of the outdoor arena.
    - Site servicing may be reduced, including access to geothermal field.
    - May not be connected to the South Cariboo Recreation Centre.

7. Previous Aquatic Facility Proposal for the South Cariboo

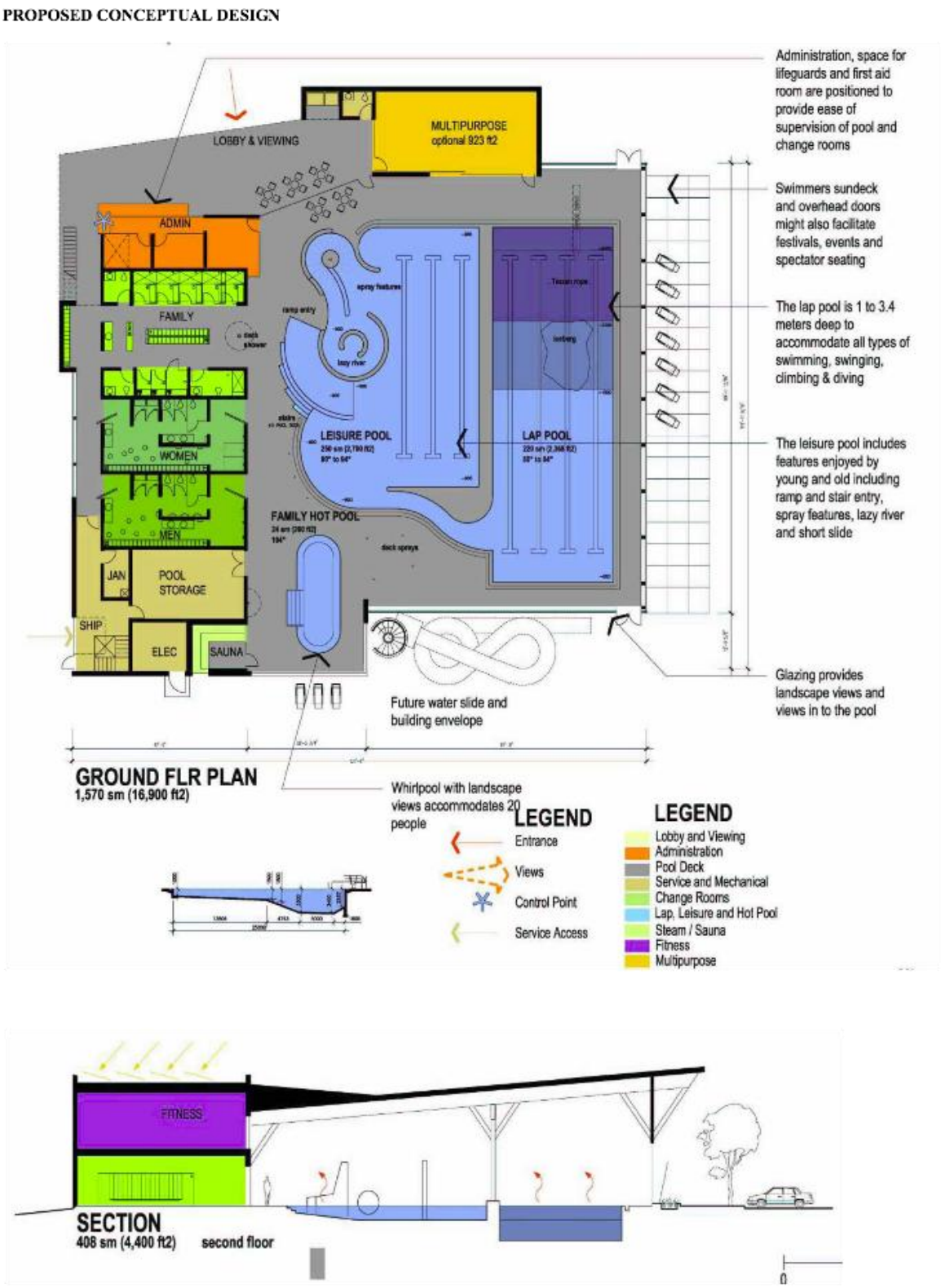

Figure 8. The South Cariboo Pool by BCA and PERC (2010), previously proposed in 2010

7.1 Key Features of the Previously Proposed Aquatic Facility

Aquatic Spaces:

- Lap pool with 4 lanes x 25m (220 m^2), depths of 1m - 3.4m and a temperature between 80˚ to 84˚
    - Options for floating iceberg (anchors to floor), Tarzan rope and diving board.
- Leisure pool (250 m^2) with a temperature between 90˚ to 94˚, and includes :
    - Ramp and stair entry.
    - Spray features.
    - Lazy river.
    - Short slide.
    - 3 walking lanes
- Family hot pool (15-24 m^2) with a temperature of 104˚, accommodates a minimum of 20 people
- Steam room or sauna (7 m^2)
- On deck viewing

Activity Spaces:

- Fitness space (186 m2)
- Multipurpose Space (74 m^2)

8. Estimated Cost Analysis of the Previously Proposed South Cariboo Swimming Pool

(BCA & PERC, 2010)

1. The Class C Cost Estimate completed by James Bush and Associates in 2010, included the escalated total project cost for the preferred option for the South Cariboo Swimming Pool and was $12,780,000.00 (this included soft costs, consultant costs, and factored in escalation).
2. The Operational Cost Assessment was completed by PERC and was based on operating budgets provided by facilities of a similar size in other communities.

The assessment projected a yearly net expenditure of $448,700 for the South Cariboo Swimming Pool.

a. Total expenditures/ Operational costs: $666,700

b. Total Revenue $218,000

c. Net Expenditures/ taxation: $448,700

d. Recovery Rate: 33%

9. An Aquatic Facility for the South Cariboo

SCAI, with the assistance of the CRD, would like to explore the option of an affordable aquatic centre in the South Cariboo. This aquatic facility would include:

- A 4 lane 25m lap pool separated from, or a combination with, a leisure area. 4 lanes is the minimum requirement for swim meets and would allow other competitions, such as triathlons, to be hosted.
- Considerations:
    - An attached leisure and lap pool would have one consistent temperature for all areas, whereas 2 separate basins would each have separate temperatures; ideally warmer in the leisure pool for children and those who are not able to tolerate cooler temperatures, and cooler for those swimming laps.
    - An attached leisure and lap pool would have consistent water chemistry, as it shares one body of water. If the chemistry is not within normal limits in one area, both the leisure and lap pool would require closure until the chemistry is balanced. If this situation occurred with separate leisure and lap basins, users would be impacted less, as they could occupy the unaffected pool.
    - A 4 lane lap pool option may affect program delivery due to space constraints and may not allow for concurrent activities in the same pool, such as aquafit and lane swim. Pools with 5 or more lanes have the ability to offer concurrent programming, more program options and larger class sizes.
    - Exploration of options for accessibility to all basins must be considered: ramp entry for access to each of the pools.
    - Leisure pool or area, with options such as a lazy river (for entertainment and therapeutic value), tot area, and waterfall or spray features.
- A family hot pool, with a minimum capacity of 20 people.

- Steam room and/ or sauna.
- Changing area for men, women, and families.
- Multipurpose space on the main level to accommodate classes, meetings, and parties.

Aquatic facilities located in other rural communities in B.C. offer additional services and activities. These optional spaces could be explored, depending on cost and community interest, and would add avenues for revenue and further recreation options in the South Cariboo:

- Multipurpose and fitness space with fitness studio for classes, meetings, teaching, rehabilitation, events, rentals, and programs. Some examples for classes could be art, pottery, dance, music, holiday events and many more.
- Indoor walking track.
- Indoor play area.
- Rock climbing wall.
- Gymnasium.
- Racquetball or squash courts.

9.1 Estimated costs for an Aquatic Facility in the South Cariboo

Operational costs from various rural aquatic facilities in British Columbia were researched by SCAI. The range for net expenditure/ taxation for a 4 lane, 25m, lap pool with attached or separated leisure pool was from $390,000 to $608,000. The operational costs from existing facilities vary and are dependent on several factors, such as the facility's hours of operation, staffing, programming, revenue, etc. Based on the type of aquatic facility and cost to operate, SCAI would like to explore an aquatic facility with operational costs in the range of $500,000 to $600,000, with a yearly net expenditure/ taxation of $350,000 to $450,000. The approximate cost breakdown would be for an aquatic facility in the South Cariboo would be:

- Total expenditures/ Operational costs: $500,000 to $600,000
- Revenue: $150,000- $200,000
- Net Expenditures/ taxation: $350,000- $450,000
- Recovery rate: 25% - 40%

10. Conclusion

- An aquatic facility would benefit the South Cariboo in many ways.
    - Indoor recreation facilities offer the community a gathering place that everyone can enjoy year-round.
    - The unique benefits of an aquatic facility allow for participation from community members of all ages and ability.
    - In an area surrounded by lakes, water safety is an important life skill.
    - With the ability of all community members to access an aquatic facility, many new recreational activities, opportunities, and programs could be offered in the South Cariboo.
    - An aquatic facility would play a key role in and support building a healthier community in the South Cariboo.
    - As a rural community with a shortage of physicians, healthcare professionals, and skilled workers, the benefits of investing in indoor recreation facilities is immeasurable.
- The South Cariboo Aquaplex Initiative (SCAI) is asking for the South Cariboo Joint Committee to consider an indoor aquatic facility as a recreation option in the South Cariboo, and to allow an aquatic facility go to a referendum based on tax funding for a portion of the cost, and fundraise for the remainder (grants, funding and donations). SCAI is requesting support and guidance from local governments to explore opportunities and options for an aquatic facility that meets the South Cariboo community's needs. Consideration given to affordability, accessibility and opportunities for funding is a high priority for SCAI.

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Stats Canada Area G:

2016: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=5941015&Geo2=PR&Code2=59&Data=Count&SearchText=Cariboo&SearchType=Begins&SearchPR=01&B1=All

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Stats Canada Area H:

2016: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=5941016&Geo2=PR&Code2=59&Data=Count&SearchText=Cariboo&SearchType=Begins&SearchPR=01&B1=All

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Stats Canada Area L:

2016: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=5941017&Geo2=PR&Code2=59&Data=Count&SearchText=Cariboo%20L&SearchType=Begins&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=5941017&TABID=1

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12. Appendix

Table 3. Population by age groups in the South Cariboo

	0-14 years	15-24 years	25-44 years	45-64 years	65 + years	total
100 Mile House	270	215	380	545	575	1,980 15%
Cariboo H	190	130	285	690	490	1,784 14%
Cariboo G	675	450	850	1,765	1,420	5,156 39%
Cariboo L	435	260	555	1,645	1,310	4,204 32%
South Cariboo	1,570 12%	1,055 8%	2,070 16%	4,645 35%	3,795 29%	13,124