

MMM Group Limited



Big White Arena Feasibility Study

FINAL

Regional District of Kootenay Boundary

COMMUNITIES
TRANSPORTATION
BUILDINGS
INFRASTRUCTURE



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STANDARD LIMITATIONS

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EXECUTIVE SUMMARY

MMM Group Limited (MMM) was retained by the Regional District of Kootenay Boundary (the District) to undertake the feasibility study intended to provide preliminary information to assist the District and community with future decision making about the potential multi use arena facility location, size, design and procurement management strategy. All services provided within the District's local service areas must be funded by the residents benefitting directly from the service. Thus new services must be a self-sustaining business venture in terms of construction and ongoing operation and maintenance costs.

The study is based on developing a multi use arena complex that can meet current community needs for the next 5 to 10 years while allowing for future expansion to accommodate and house additional services that may be added. Conceptual layouts were developed based on facility reviews from similar sized B.C. communities and conceptual building footprints and layouts were created to allow for costing analysis. The construction and cost assessments are based on the conceptual layouts.

The proposed conceptual layouts provide a complex with an ice surface that can become a dry surface with the potential for hosting multi-purpose events, banquets, craft fairs and other indoor sports. The facility footprint proposed accommodates (1) 200' x 85' NHL size ice sheet, lockers and change rooms with showers, men's and women's washrooms, a concession and reception area, a multi-purpose events room, and a large storage area for equipment in a footprint of approximately 3,400 m² or 36,600 ft².

The potential location for the facility was determined to be near the Happy Valley Parking Lot near the existing school site. This would place the arena within walking distance to Lara's Gondola, and near utility servicing and community context. Final site selection will be dependent on additional stakeholder and community consultation that will be undertaken outside of the scope of this study.

Based on the preliminary building footprint an assessment of capital construction cost estimate was generated in the amount of \$10,540,095.00 not including taxes.

The capital cost share per unit in the Big White fire service area would be \$4,371.67 as a onetime payment or \$174.87 per year amortized over 25 years.

Based on comparable sized facilities annual operation costs are estimated to be \$395,000, or \$163.83 per parcel.

Comparable revenue expectations are based on similar sized facilities and are estimated to be \$165,000. As the popularity of the facility grows and event hosting increase, revenue expectations are estimated to increase by 6% annually.

The year one service charge to the area residents on a per unit basis within the Big White fire service area is estimated to be \$95.40 per year for capital cost and annual operations after revenues of \$165,000 are collected.

Expected revenue opportunities and services to be provided at the facility need to be explored further to ensure all the needs and space requirements are considered in the design stage and that revenue generation can be maximized.

A comparison and analysis of project delivery methodology and construction management has been provided for Design/Bid/Build, Design/Build, and Design/Build/Operate.

Prior to design development all business opportunities and functions to be carried on within the multi-use facility should be reviewed further to determine the best suited service delivery model to ensure a sustainable cost effective regional service. This review would result in a business plan that the District could use to move this project forward.

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1.0 PROJECT REQUIREMENTS AND GOALS

1.1 General

Currently the Big White area is known as a destination ski resort servicing 17,000 guests annually with a full range of winter activities located only 56 km (35 miles) from Kelowna. The area is looking to become a full season destination community and is considering offering more recreational services to its full time residents and visiting guests.

The Regional District of Kootenay Boundary retained the services of MMM Group to review the development potential of a new multipurpose complex at Big White and to provide preliminary capital and operating cost estimates. The facility would be a multipurpose building housing a new ice arena in the area adjacent to the existing school at the Happy Valley parking lot. The following information will be used to determine if the District carries on further with the project and develops a business case and design drawings.

The proposed service would require the establishment of a local service area as it is a brand new service being provided to the community. As the facility is proposed to be located at Big White, the boundaries used to determine cost sharing are the same as the Big White fire service area. As each service provided by the District must be self-sustaining the focus has been limited to an initial 3,400m² (36,600 ft²) multipurpose facility that can allow for future expansion. This allows our team a focused look at the possible development and operating costs associated with this facility.

Communities are constantly being asked to provide their constituents with a variety of recreation programming options. Because approval of the large capital costs required, spending for the provision of new recreation facilities is typically a long process requiring levels of approval and support at homeowner, administrative staff and ultimately political levels. A key task of recreation providers is to provide as much “multi use” programming as possible to maximize the use of facilities. At the initial meeting various uses such as the possibility of the facility housing a swimming pool, fire hall or medical facility were raised.

In Canada, ice arenas continue to be a core component of community recreation facilities with the national average being one arena per every 7-10,000 in population. The basis of this feasibility study was to identify the costs associated with an multiuse arena complex that meets the basic requirements below, thus forming the focus of this report.

Preliminary project requirements for the building design area as follows:

- ▶ One regulation sized NHL ice surface (200'x 85') with seating for approximately 300 spectators
- ▶ Locating the facility adjacent to the existing school to allow the facility to service both school and private user events

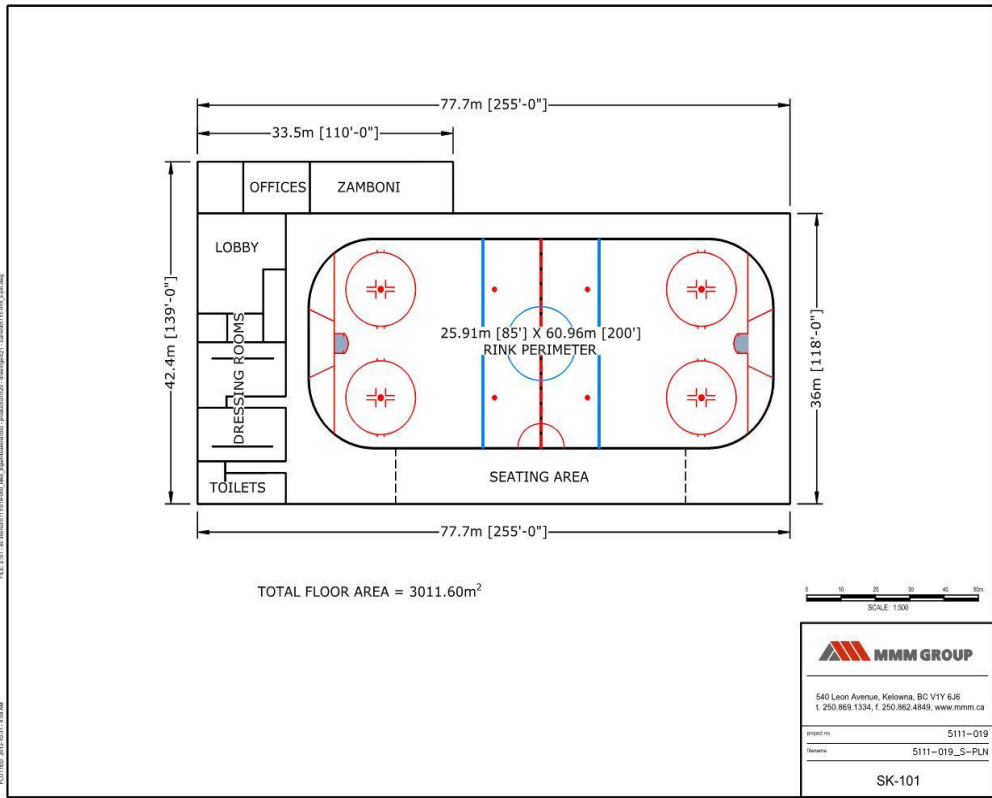
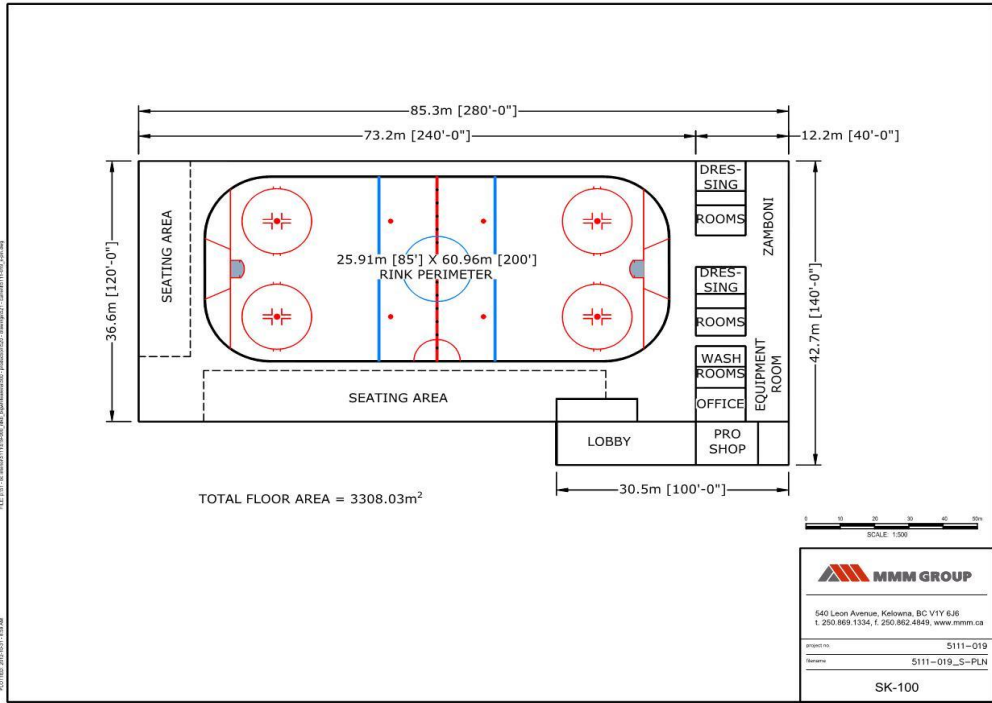
- ▶ Provide for a concession room with space for equipment such as an ice box or fridge, stove, sink and microwave
- ▶ Provide for office and administrative space
- ▶ Consideration of a multipurpose meeting room or banquet area

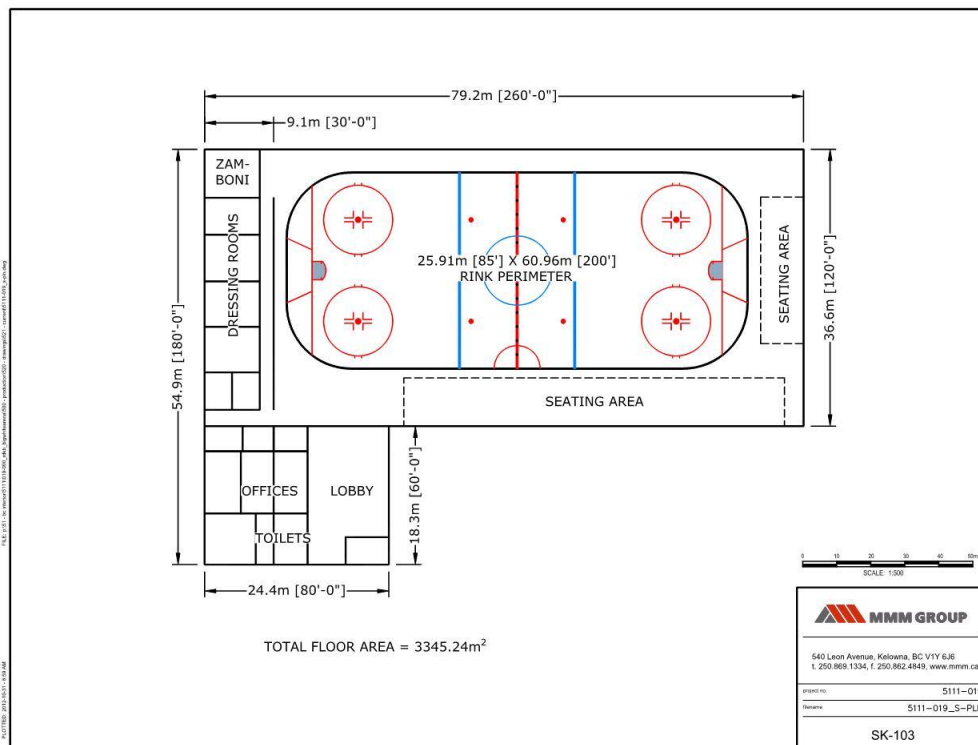
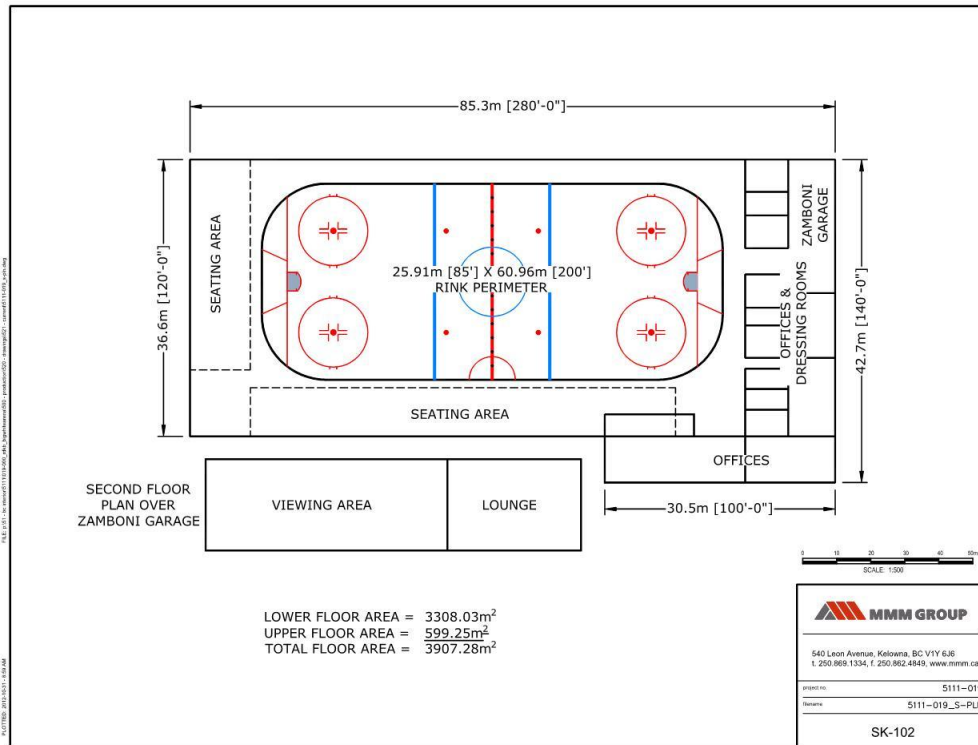
1.2 Proposed Building Program

- ▶ Arena facility that can accommodate, 1 NHL sized ice surface 85' x 200'
- ▶ Change rooms
- ▶ Public washrooms
- ▶ Equipment Storage
- ▶ Mechanical and electrical room
- ▶ Banquet area
- ▶ Offices
- ▶ Lobby
- ▶ Pro Shop
- ▶ Seating for approximately 300 spectators

To accommodate the above base requirements a total floor area of 3,400 m² or 36,597 ft² is required.

This floor area was derived using an average of the following figures and excluding any second floor levels.



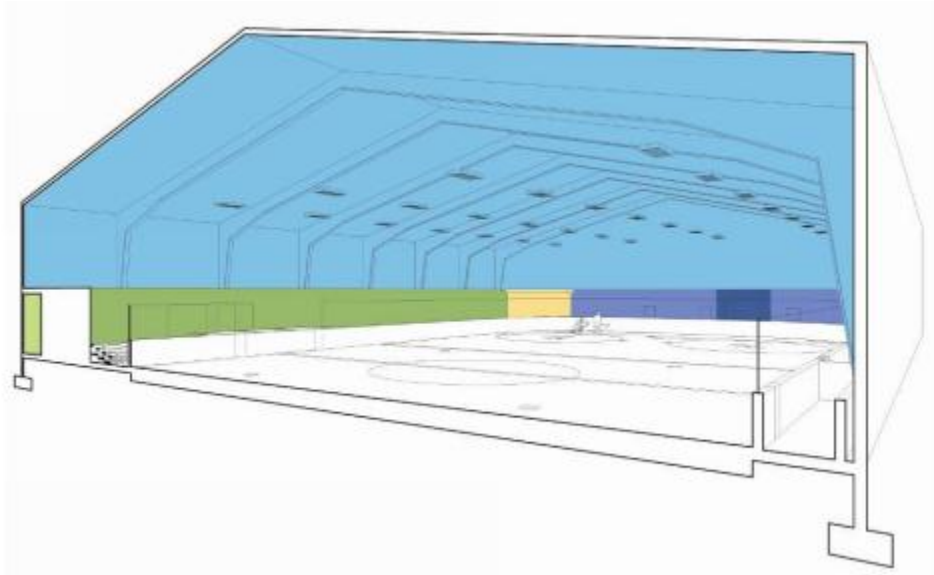


1.3 Building Construction Type

The proposed building type could be a pre-engineered truss or a pre-engineered clear span steel box with a “future multipurpose area” or front end attached if required as a future expansion.

The pre-engineered truss system may hold an advantage over clear span steel in efficiency and cost. Steel sandwich insulated panels may be used as cladding with corrugated steel cladding.

An example of this is the facility proposed for the Township of Smithers shown below.



If a higher end look with more wood is desired then the Armstrong arena constructed in 2005 may be considered.



1.4 Site Servicing

Based on the preliminary information the facility would typically need to be serviced by water, sewer and storm water with the following capacities:

- ▶ Storm water for roof drainage:
 - ▶ Based on a roof area of 3,600 m², 2 x 200 mm (8") or 1 x 250 mm (10") pipe connections would be required.
- ▶ Sanitary:
 - ▶ Based on typical fixtures, fixture units for a facility with a concession, change rooms and public washrooms would require a 150 mm (6") sanitary connection.
- ▶ Domestic water:
 - ▶ Based on a combined service (domestic and fire), a 150 mm (6") service would be required. A 100 mm (4") may be possible but more detailed calculations will have to be carried out to confirm this based on construction materials.
- ▶ Parking
 - ▶ Car parking has been priced based on an estimated 85 parking stall requirement with an all-weather asphalt surface and a conventional pipe and catch basin drainage system.
 - ▶ Substantial savings are possible though reducing the number of parking spots and/or switching to an unpaved gravel surface, and using overland drainage rather than a conventional piped drainage system.
- ▶ Lighting
 - ▶ Provision for lighting has been included as follows: 6 light poles for the parking lot, and overhead power connection.
- ▶ Connections
 - ▶ 100 m long connections to existing services have been assumed for storm, sanitary and domestic water supply and have been included in the cost estimate. Stormwater should ideally be treated on site as much as possible though infiltration and detention facilities but will be dependent on space availability and geotechnical information.
- ▶ Landscape / Environmental
 - ▶ Landscaping and Irrigation costs are included to cover basic site restoration with limited or no amenity planting, and temporary irrigation for establishment purposes only.
 - ▶ A range of environmental enhancements not included in the pricing that could be considered are:
 - Trees to shade paved areas and reduce heat effects
 - Additional areas of turf and planting for amenity and beautification purposes
 - Outdoor seating and paved courtyard areas
 - Trail and open space linkages as an active transportation initiative

2.0 DESIGN AND COST ESTIMATE

2.1 Risk Level

As a Preliminary Estimate, it is our opinion that the risk associated with this Estimate of Probable Costs is +/- 25%.

2.2 Basis of the cost estimate

2.2.1 Cost Base

Pricing reflects our opinion of the current construction industry market conditions for this size and type of development in the Big White, Kelowna region based upon the project being procured and built on a stipulated sum basis (Design/Bid/Build). Pricing shown reflects our opinion of probable construction costs obtainable in the 2nd Quarter of 2012 and a review of historical pricing prior to the date of this report.

This estimate is our opinion of fair market value for the construction of this type of project using modest finishes and a pre-engineered truss or pre-engineered clear span steel box design. Our estimate is not a prediction of low bid.

2.2.2 Contingencies

Design Contingency

A Design Contingency allowance of 5% has been included. This allowance is a reserve fund to be included in the construction estimate which is allocated to cover design and pricing adjustments resulting from incomplete design information and design detailing that is not currently available.

Escalation Contingency

This allowance is a reserve of funds to cover possible price increases from the time that this estimate is prepared to the time that the project is scheduled to be tendered. An Escalation Contingency of 2% is included.

Construction Contingency

A Construction Contingency allowance of 3% has been included. The Construction Contingency is a reserve of funds included in the construction estimate which is allocated to cover change orders for unforeseen issues that are required during the course of construction. It is not intended to be a scope change contingency.

2.2.3 Exclusions

The following are specifically excluded from this estimate:

- ▶ Client furniture, furnishings and all equipment including common area furnishings, and appliances,
- ▶ Concession equipment, IT, security alarm etc.

Gross Floor Area

The Gross Floor Area (GFA) for the project is estimated at an average arena size of 3,400 m² or 36,597 ft² based on a review of average arenas in BC with a single sheet of ice.

Statement of Probable Costs

Preliminary estimates of construction costs prepared by MMM Group Limited represent our best judgment with the information available at this time. It is recognized, however, that we do not have control over the cost of labour, materials or equipment, over professional design fees, over the contractor's method of determining prices, or over market or negotiating conditions. We cannot and do not warrant or represent that bids or negotiated prices received will not vary from this nor any subsequent estimate of design/construction cost or evaluation prepared by or agreed to by us.

The project is estimated at **\$10,540,095.00** excluding taxes as shown in the following spreadsheet.

The total project value including HST is estimated at **\$ 11,804,906.40**.

PRELIMINARY PROJECT CONSTRUCTION HARD AND SOFT COST ESTIMATE SUMMARY			
		SM	SF
	Total Gross Floor Area =	3400	36596.92
	Total Gross Floor Area (New Building)	3400	36596.92
	Estimated Value	\$/SM	\$/SF
HARD COSTS - BUILDING			
Estimated Building Cost	\$7,655,500.00	\$2,251.62	\$209.18
Client Equipment and Furniture, Loose Fixtures & Fittings, IT	\$230,000.00	\$67.65	\$6.28
Design Contingency - Building (5%)	\$382,775.00	\$112.58	\$10.46
Escalation Contingency - Building (2%)	\$153,110.00	\$45.03	\$4.18
Construction Contingency - Building (3%)	\$229,665.00	\$67.55	\$6.28
Estimated Total - Building	\$8,651,050.0000	\$2,544.43	\$236.39
HARD COSTS - ON AND OFF SITE			
Site Development (Servicing, parking lot and landscape)	\$467,500.00	\$137.50	\$12.77
Design Contingency - Site (5%)	\$23,375.00	\$6.88	\$0.64
Escalation Contingency - Site (2%)	\$9,350.00	\$2.75	\$0.26
Construction Contingency - Site (3%)	\$14,025.00	\$4.13	\$0.38
Estimated Total - Building, Site & Contingencies	\$9,165,300.00	\$2,695.68	\$250.44
SOFT COSTS			
Architect Design Fees			
Structural Engineering Design Fees			
Electrical Engineering Design Fees			
Mechanical Engineering Design Fees			
Geotechnical Engineering Fees			
Civil Engineering Fees			
Landscape Architect Fees Excluded			
Disbursements for Architect and Engineers (5% of Fee Value)			
Quantity Surveyor Fees & Disbursements			
Legal Fees and Expenses			
Insurance			
Testing & Inspections			
Survey			
DCC's			
Building Permit			
Plumbing Permit (Plumbing/Sprinkler/Stormwater Etc. - Allowance)			
Soft Costs @ 15%	\$1,374,795.00	\$404.35	\$37.57
OPINION OF COST - BEFORE OWNER'S CONTINGENCY	\$10,540,095.00	\$3,100.03	\$288.00
Estimated Total before HST	\$10,540,095.00		
HST	\$1,264,811.40		
OPINION OF TOTAL CONSTRUCTION COST (HARD AND SOFT)	\$11,804,906.40		

2.3 Cost per Property Owner

Using the BC Assessment data that was available as of March 20, 2012 it was determined that there are 2,421 development units in the Big White Fire Protection service area. Since the proposed arena is going to be located within the same area it was deemed that the users in this area would receive the direct benefits of the facility.

Of the 2,421 units in the service area, 8 are deemed for utility functions and 2 are recreation and non-profit and have been removed from the cost per unit calculation. The capital cost of the new ice arena would be distributed across the remaining 2,411 units in the service area.

The cost per unit shown below has been calculated as a lump sum amount and annually over a 25 year amortization period with and without possible grant funding.

Estimated Project Budget	Big White Service Area - # of Units * does not include utility and recreational / non-profit units	Per Unit Cost	Per Unit Cost Over 25 Years
\$ 10,540,095	2,411	\$ 4,371.67	\$ 174.87
Assumed 10% Government Funding from Community Relief Program			
\$ 10,540,095	2,411	\$ 3,934.50	\$ 157.38

* Per unit costs are for Capital construction costs only

A grant of approximately 10 % of the construction value has been used for calculation purposes.

2.4 Operating and Revenue Cost Projections

Operating Costs

A reasonable operating cost is estimated at \$ 395,000 a year, based on the review of similar sized facilities within BC. This estimate includes utilities, maintenance and basic administration costs and is expected to grow 2.75% per year to keep up with facility maintenance and utility and administration increases. These costs may be reduced though the efficiencies of having Regional District staff operate the facility remotely and then supplement with part time contracts for programming, ice maintenance, janitorial and concession staff. Or provide a lower level of service with limited hours of operation. The basic operating costs are summarized in the following table.

Expenditure Type	Estimated Annual Cost	Big White Service Area Units	Annual Per Unit Cost
Labour and Benefits	\$ 240,000	2,411	\$ 99.54
Utilities (water, sewer, gas, hydro)	\$ 85,000	2,411	\$ 35.26
Administration (socan, tel, advertising, office supplies, insurance, interest and misc)	\$ 20,000	2,411	\$ 8.29
Building Maintenance	\$ 50,000	2,411	\$ 20.74
Total Expenditures Estimate	\$395,000		\$ 163.83

Consideration of a sustainable energy and building model should occur as part of the design process which may lead to reduced energy, maintenance and utility costs for the building. The cost benefit of a possible increased capital cost in relation to a lower operating cost will need to be reviewed as the design progresses.

Revenue Projection

A total annual revenue estimate of \$165,000 is considered probable for year one of the facility based on the review of similar sized facilities in BC and information gathered from the BCRPA (BC Parks and Recreation Association) data. Revenue generation in year one is anticipated from the following types of activities:

- ▶ Revenue from ice surface rentals, or registration per player
- ▶ Revenue through cost recovery from the District
- ▶ Additional revenue streams are possible from:
 - ▶ concerts
 - ▶ other ice training rentals
 - ▶ use of a walking track
 - ▶ use of the ice by schools for physical education
 - ▶ use of the facility for different non-sporting events
- ▶ Revenue can also be generated from spectators on sporting events
- ▶ Advertising / Corporate Sponsorship

The basic revenue opportunities for year one are estimated in the following table.

Revenue Stream	Amount
Ice surface rental	\$ 65,000
Dry floor rental (banquets, lacrosse, indoor sports)	\$ 25,000
Concerts / Events	\$ 30,000
School use	\$ 10,000
Advertising sales	\$30,000
Misc. (skate sharpening, concession)	\$ 5,000
Total revenue estimate	\$ 165,000

In the first year of operation it is estimated that the facility would have a shortfall of \$230,000 to cover the operating costs. This shortfall translates to a service charge of \$95.40 per parcel within the Big White service area. Alternate service delivery methods and additional revenue generation events should be programmed for the facility.

Additional Programing Opportunities and revenue generation opportunities

► Hockey Programs

- Minor
- Adult
- 3 on 3
- Sledge
- Mini Rink

► Other Ice Sports

- Figure Skating
- Ringette
- Public Skating
- Broom Ball
- Short track speed skating
- Skating school

- ▶ Dry Floor Sports
 - ▶ Lacrosse
 - ▶ Indoor Soccer
 - ▶ Ball Hockey
 - ▶ Basketball
 - ▶ Volleyball
 - ▶ Badminton
 - ▶ Roller / Inline skating
 - ▶ Fitness Facility
 - ▶ Dry land training
- ▶ Dry Floor Events and Social Programs
 - ▶ Dances
 - ▶ Concerts
 - ▶ Beer / Wine Festivals
 - ▶ Banquets / Weddings
 - ▶ Trade Show and Exhibitions
 - ▶ Car Shows
 - ▶ Craft Fairs

3.0 FUTURE CONSIDERATIONS

In today's society, the support for and feasibility of designing and constructing a single focus, stand-alone community recreation facility is limited. To be sustainable the trend of proposed facilities is generally to become a centre of regional activity; a multi-use building designed to meet the region's requirements for sports and recreation, active living, and community meetings, gatherings and events as well as providing the capability for enhancing the region's ability to host special events.

The industry trend is planning for multiple uses to try and maximize the occupancy of the facility. Some considerations as the planning progress continues should be to look at:

- ▶ A combination curling/skating facility could work if promoted properly to the community as a multi-use complex that houses skating and curling as part of its capacity
- ▶ A second rink to allow for tournament hosting
- ▶ Dual use of ancillary facilities (i.e. banquet, lounge, viewing/meeting rooms, and concessions) makes sense and would create the ability to host tournaments and other special events requiring these types of spaces not currently available
- ▶ Creation of a Civic centre complex, with the ancillary uses and addition of Protective services as tenants

A thorough review of programming options should be considered with the District's recreation staff, residents and the Big White group. This will allow for the planned programs to be incorporated into the design process and maximize the revenue potential.

4.0 TYPES OF CONSTRUCTION PROJECT DELIVERY

4.1 Stipulated Price Contract (Design-Bid-Build)

Most building projects follow this traditional method of project delivery (sometimes referred to as “Design-Bid-Build”) in which:

- ▶ The owner engages a design professional to prepare the design, drawings, and specifications
- ▶ The owner hires a contractor by competitive bidding to build the facility under a construction contract (usually a CCDC 2, Stipulated Price Contract)
- ▶ The design professional administers the contract, reviews and certifies the construction

This design-bid-build form of project delivery is characterized by:

- ▶ Three distinct phases
- ▶ Its two independent contracts between: the design professional and the client/owner; and the contractor and the client/owner
- ▶ Linear sequencing of the work

Advantages

- ▶ Widespread use and familiarity
- ▶ Clear roles assigned to each party
- ▶ Thorough resolution of design prior to construction
- ▶ Usually has a known estimated price before construction begins

Disadvantages

- ▶ Process can be lengthy
- ▶ Separation of design and construction restricts useful communication with the builder
- ▶ The contractor is unknown when the construction documents are prepared

4.2 Design-Build

In Design-Build, the owner contracts with one firm to provide both design and construction. A Design-Build project usually has two phases:

Phase 1: The Design-Build team provides design services and, throughout the design process, monitors costs to ensure the building remains within the owner’s budget. Based on the design developed in the first phase, the Design-Build team usually proposes a stipulated maximum price, which includes a fee for managing the construction.

Phase 2: The parties enter into a stipulated price contract for the completion of the building. It is also possible to have a cost plus fee agreement in the Design-Build method of project delivery. The builder works to save costs during construction. Any savings accrue to the owner, who pays only the actual cost of construction, plus the Design Build team's fee.

Advantages

- ▶ Functional program (statement of owner's requirements) and owner's decisions are committed early
- ▶ Cost benefit analysis is addressed early in the design process
- ▶ Immediate feedback is received from the contractor on design options
- ▶ Flexibility because design alternatives are reviewed by the builder during the process
- ▶ Streamlined process can increase efficiency
- ▶ Team approach is reinforced

Disadvantages

- ▶ Responsibility for design approvals shifts from the owner to the Design-Build team
- ▶ Decisions by the Design-Build team are based more on initial cost rather than on design or long-term value or operations
- ▶ The project cost is determined before the design is complete
- ▶ Design Professional's role as leader of the design team is reduced
- ▶ High risk to the design professional for preparing the proposal, which may or may not be successful
- ▶ Potential for tension between the "regulated" design professional and the building contractor
- ▶ Potential conflicts of interest in preparing Change Orders and certification because the design professional's client and the builder are one and the same

4.3 Developer Proposal (Design-Build-Operate)

In this delivery method, the services of the design professional, the contractor, and a developer are combined into one entity. Also known as turnkey construction, or Design-Build-Operate, the developer proposal delivery method is characterized by the legal transfer of title to real property. It involves two principal players: the developer and the owner. In the Developer Proposal method:

- ▶ An owner initiates the process and contracts for services with the developer, and services usually include acquiring land and obtaining financing
- ▶ Ownership passes from the developer to the owner when construction is complete and the project is functional

The owner's early involvement distinguishes this process from speculative development. This delivery method is characterized by three phases:

Phase 1: an owner prepares preliminary design information to define a project, sets the budget, and hires a developer. Cost commitments may be made in the form of a guaranteed maximum price at the point of hiring the developer

Phase 2: the developer completes the project design and carries out construction. After construction is complete, the developer operates the building long enough to ensure that all systems are functioning properly

Phase 3: the developer sells the property to the owner, transferring title or, instead, the user or "intended owner" signs a long-term lease on the building

Advantages

- ▶ Effective for owners unable to obtain financing for a new building
- ▶ The owner is purchasing a fully functional building as a package from one supplier
- ▶ The risk to the owner is greatly reduced because the developer is providing financing, land acquisition, and an early cost commitment
- ▶ Interactions between parties are limited, which saves time
- ▶ The owner can prepare performance specifications which the developer must meet
- ▶ Time delays, delay claims, and Change Orders are substantially reduced
- ▶ Conflicts between project professionals are internalized and do not involve the owner

Disadvantages

- ▶ A project built without owner participation in the design process may not meet owner expectations
- ▶ The developer proposal method is not well understood and can be complex, particularly for owners with little experience in the building industry

- ▶ The owner may not have the time or expertise to prepare adequate performance specifications to realize the full potential of the developer proposal method
- ▶ The design professionals do not directly serve the owner
- ▶ The developer's cost commitment is not based on full design and documentation
- ▶ The owner may not have access to the actual costs of the project
- ▶ "Lease-back" financing can be more costly than "owner-arranged" financing
- ▶ If the developer is selected on the basis of price alone, quality may be compromised