



# SWANGARD STADIUM Revitalization Study

August 2023

204 - 1551 Johnston Street  
Vancouver, BC V6H 3R9  
[quentin@cornerplan.com](mailto:quentin@cornerplan.com)  
t. 604.687.5896

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## EXECUTIVE SUMMARY

The City of Burnaby (the City, or Burnaby) has undertaken a planning study to review and explore the future needs of Swangard Stadium (the Stadium) located at 6100 Boundary Road, Burnaby. The study assesses the Stadium's current facility, site and operations and identifies feasible future revitalization opportunities. The study has been completed at a "30,000-foot" level, with the understanding that subsequent analysis and studies will be completed pending preliminary findings.

The study has followed an approach that included a historical documentation review, stakeholder engagement and consultation, population and demographic analysis, stadium trend assessment, environmental scan, and accommodation option development and assessment. The study was initiated in September 2022 and completed in June 2023. A project Steering Committee, including representatives from the City of Burnaby's Parks, Recreation and Culture, Engineering and Planning and Development guided the overall process.

Key findings from the study include:

### Current & Future State

- Swangard Stadium is the only asset within the City's portfolio to accommodate large outdoor sporting (track and field, soccer, football, rugby etc.) and cultural events requiring controlled access and egress.
- Over the last 10-years, 42% of all bookings were related to Track & Field activities/events. Soccer activities/events accounted for 22% and festivals accounted for 20% overall.
- Swangard Stadium is most utilized between April and August. The remainder of the year sees low utilization with very low utilization between December to March. Peak season use is currently limited by the natural grass field maintenance requirements.
- Based on building age and overall physical condition, the Stadium is nearing end of life and requires significant investment to ensure functionality.
- The Stadium is optimally situated within the region, having the largest immediate population within a 30-minute driving radius amongst 19 other stadiums.
- The current infrastructure offering is unique within the region. It is the only stadium that features 5,000 permanent seats, competition level Track & Field infrastructure, and natural grass infield.
- There are several qualitative demand indicators that suggest there is an increasing need for Stadium space within the region.
  - The governing body for Track & Field events, IAAF, is anticipated to increase compliance oversight to ensure competitions take place at Certified facilities. Given



that there are very few competition Certified Track & Field facilities within the Greater Vancouver region, this will increase the demand of Swangard.

- o Current stadium user groups have indicated that they have challenges scheduling time at Swangard due to high utilization during peak times.
- o The City of Burnaby does not have alternate event space that features a large fenced in outdoor area with infrastructure to support events.
- o Within the region, there are few natural grass fields with a stadium with seating capacity of 5,000+. Natural grass fields are the preference for high performance soccer, football and rugby groups.
- o Professional sport organizations have indicated a growing need for large stadiums to support new and expanding teams within the region.

**Revitalization Opportunities**

6 revitalization opportunities categorized into two groups, were identified and explored. The following figure summarizes the focus of each option.



Should the City wish to upgrade and enhance the existing infrastructure (1A, 1B and 1C) to better meet the identified needs of users, it has been estimated that ~\$25m-30m of interventions are required.

Should the City wish to redevelop the site to support a modern Stadium with ~10,000 permanent seats and provide enhanced facility space for community recreation activities (2A, 2B, 2C), it has been estimated that ~\$150-170m is required.

While all options will result in a net overall positive impact to the community and region, there are key differentiating benefits and challenges for each development strategy and option.

### Next Steps

The determination of what option(s) should be further explored depends on the outcomes of several other related studies/assessments, which have not yet been completed. Project next steps include:

- Gather feedback on the assessment and proposed options from Commission and Council and update/finalize report. Finalized report will identify the recommended options to bring forward to public engagement.
- If there is Council support for further exploration of Option 2A, 2B or 2C:
  - Complete a quantitative demand analysis for large stadium activities.
  - Develop a business case to assess the financial impacts of development and various use scenarios and operating models.
- Conduct public engagement for shortlisted options to capture public's perspective as part of OCP Update and Central Park Master Plan process.

# 1. INTRODUCTION

## 1.1 SCOPE OF THE STUDY

The City of Burnaby (The City, or Burnaby) has initiated a planning study to review and explore the future needs of Swangard Stadium located at 6100 Boundary Road, Burnaby. Swangard Stadium is a multi-purpose sport and event stadium owned by The City, located within Central Park, that has been in continuous operation since opening in 1969. As a municipal asset, Swangard stadium is managed by the City of Burnaby Parks, Recreation, and Culture (PRC) department. The following graphic identifies the current location of Swangard stadium within Metro Vancouver.



Figure 1. Swangard Stadium location



The Stadium is well used by sports and cultural organizations, schools, and the community, but after 53 years of operation, it is showing signs of aging. As the population in Burnaby continues to grow, the need for high quality and updated park, recreation, and cultural space is a priority.

The Swangard Stadium Revitalization Feasibility Study has been undertaken to assess the current site from a “30,000-foot perspective” and identify revitalization options that are aligned with current City planning and the captured needs of the community.

The goals of this study include:

- Examine the current use patterns relative to demand at Swangard Stadium.
- Undertake an environmental scan of Sports Stadiums in BC that support a similar type and scale of activities to put the demand for services in context.
- Identify a future vision for the Stadium that is consistent with the City planning initiatives, demand trends and current and future Stadium users.
- Develop stadium revitalization options and assess the relative merits for each option.

The study was initiated October 2022 and completed in June 2023.

## 1.2 STUDY PROCESS

The Swangard Stadium Revitalization Feasibility Study follows a 4-phase approach. The following graphic identifies each phase, the actions taken during each phase are summarized below.

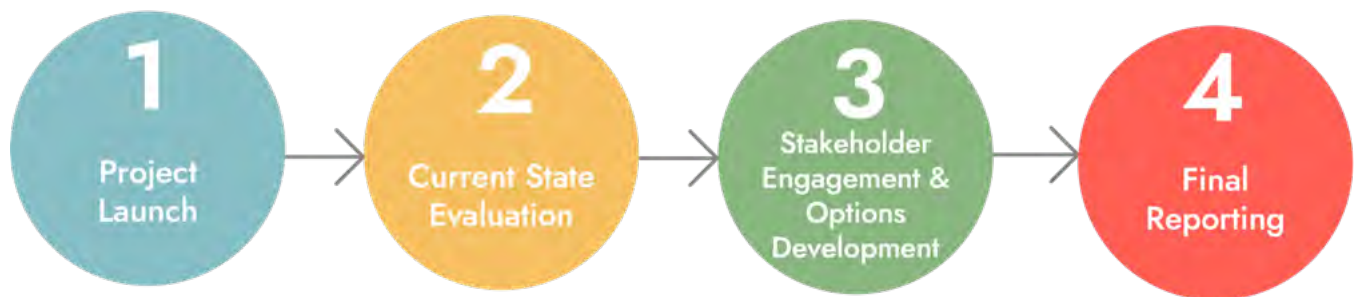


Figure 2. Study Phases

**Phase 1:** Project Launch and Preliminary Research/Analysis – Included a historical background documentation review, population and demographic analysis, and stadium sports trend research.

**Phase 2:** Current State Evaluation – Included an analysis of key activities supported at Swangard Stadium, trends and shifts in type and use of the stadium, revenue and expenditure review, and

identification of opportunities and constraints. Additionally, the project team undertook a desktop review of medium sized stadiums in BC.

**Phase 3: Stakeholder Engagement & Option Development** – Included meetings with City department leadership and staff to identify a future vision for Swangard; meetings with key stakeholders to discuss current and future success measures; a survey of current identified stadium users; and development revitalization options to meet a range of future visions for Swangard Stadium. *BTY Group, a cost consulting firm, was contracted by the City to estimate the capital costs of each option.*

**Phase 4: Final Reporting** – Included the preparation of the final report, summarizing all project activities and outcomes.

A Steering Committee was formed to support and guide the process and analysis. The Committee included City representatives from Parks, Recreation and Culture, Engineering and Planning and Development. The study included 4 Steering Committee meetings throughout the 9-month project duration.

### 1.3 GUIDING DOCUMENTS

There have been numerous studies, assessments, designs, and reports throughout the years that have analyzed the stadium's physical condition, utilization, renovation, and redevelopment proposals. The following table summarizes the studies that were reviewed. These documents were used to inform the consultants' understanding of the current state of the Stadium and to guide future development options.

Year	Document	Description/Findings
2006	Architectural Report	<p>A report developed by CannonDesign identified that Swangard is not compliant with the 2006 BC Building Code. Code compliance will not be enforced unless major renovations are carried out on the facility. Some of the findings documented in the report include:</p> <ol style="list-style-type: none"> <li>1. Corridors that access the team change rooms are required to be a fire separation. No rating labels were visible on the doors to the team rooms.</li> <li>2. Storage areas under the bleacher seating area are required to be rated. Either rated walls are built to accommodate the materials, or materials must be removed.</li> <li>3. Sliding doors in the storage rooms beneath the existing pre-cast concrete seating bleachers need to be replaced with fire rated swinging doors in steel rated door frames.</li> <li>4. The existing plywood room built off the corridor is not fire rated and should be removed or replaced with concrete block walls.</li> <li>5. A code deficiency with the number of public washrooms for the facility, notably the number of female WC's is significantly short of code requirements.</li> </ol>



Year	Document	Description/Findings
2008	Redevelopment Study & Needs Assessment	<p>A report by CannonDesign assessing the facility's condition, consultation with current users, and a series of improvements or redevelopments that would reposition the stadium to ensure long-term viability and financial sustainability.</p> <p>The 7 concepts of redevelopment include:</p> <ol style="list-style-type: none"> <li>1. Artificial Turf Infield -&gt; \$1.6 million -&gt; New revenues</li> <li>2. Track &amp; Field Focus -&gt; \$1.6 million -&gt; Deficit Operation</li> <li>3. Satellite Recreation Centre -&gt; \$12 Million -&gt; New revenues</li> <li>4. West Parking and Drop-Off -&gt; \$1.1 million -&gt; No new revenues</li> <li>5. Under-construction Addition -&gt; \$5.1 million -&gt; No new revenues</li> <li>6. Surface Concourse Addition -&gt; \$7.7 million -&gt; New revenue</li> <li>7. Multi-Purpose Pavilions -&gt; \$2.0 million -&gt; New revenues</li> </ol>
2008	Mechanical Report	Condition / Repair Recommendations for: General Heating and Ventilation, Heating distribution systems, Secondary heating, Plumbing Systems, and Fire suppression systems.
2008	Structural Report	<p>Structural assessment that recommended:</p> <ol style="list-style-type: none"> <li>1. Inspection and repair, if necessary, of the welds in the bearings.</li> <li>2. Installation of a fascia on the west side of the roof to protect the bearings.</li> <li>3. Repair in the areas with deteriorated concrete to prevent further corrosion of reinforcement.</li> <li>4. Regular inspection of the bearings</li> </ol>
2008	Electrical Report	Electrical assessment that recommended Condition / Repair Recommendations for the Main Electrical Service, Stadium Secondary Distribution System, and Stadium Lighting.
2009	Central Park Management Plan	<p>A framework developed by Phillips Farevaag Smallemberg and Jacques Whitford AXYS for decision making to guide future developments and changes in Central Park. Key Park values identified in the report that relate to Swangard Stadium include:</p> <ol style="list-style-type: none"> <li>1. Special events and track and field competitions in the vicinity of Swangard Stadium.</li> <li>2. 1k and 2.5k loops were designed to end at projected Celebration Plaza at Swangard Stadium.</li> <li>3. Sand volleyball courts proposed adjacent to Swangard Stadium.</li> <li>4. Support Swangard Stadium programs by creating flexible open space that can be used as community event spaces in its proximity.</li> <li>5. Linkage between the SkyTrain station and Swangard Stadium more effective outside of daylight hours.</li> <li>6. Parking space numbers are adequate for most days' demand and not sufficient during large events at Swangard Stadium.</li> <li>7. Relocated parking at the west corner of the Triangle.</li> </ol>
2020	Asbestos Building Materials Assessment	<p>An assessment that concluded:</p> <p>Asbestos-containing materials (ACM) are present as follows:</p> <ul style="list-style-type: none"> <li>• Parging cement in pipe elbows in the Janitor's Closet (Location 4)</li> <li>• Drywall joint compound on ceilings throughout the building</li> <li>• Duct mastic throughout the building</li> <li>• Window mastic in the Booths (Locations 25 and 26)</li> </ul>

Year	Document	Description/Findings
		<ul style="list-style-type: none"> <li>• Vermiculite in block walls throughout the building</li> <li>• Caulking on the Exterior</li> <li>• Pipe threading compounds</li> </ul> Recommendations include: <ul style="list-style-type: none"> <li>• Prepare an Asbestos Management Program (AMP)</li> <li>• Perform a re-assessment of asbestos materials on a regular basis</li> <li>• Perform a pre-construction assessment and remove all ACM prior to alteration or maintenance work if ACM may be disturbed by the work</li> </ul>
2022	Announcer's Room and Press Box Architectural Design	Proposed architectural design for the construction of a new announcer's room, spotter's platform, and press box in the higher part of the existing seating area.
2022	Central Park North Electrical Replacement	The study defines new conduit routing paths to minimize disruption to the existing condition of the stadium and recommends that any new conduit routing from Boundary Road to the distribution equipment should take place in the softscape areas near the existing pathways while avoiding tree canopies whenever possible, to minimize restoration of park hardscapes and disturbance to existing trees.
2022	Asset Condition Assessment	Condition assessment of all physical assets that are accessible in the facility grouped in: Substructure, Shell, Interiors, Services, Equipment and Furnishings, Building Sitework about: <ol style="list-style-type: none"> <li>1. Quantity</li> <li>2. Unit Cost</li> <li>3. Replacement Cost</li> <li>4. Years Remaining</li> <li>5. % Used</li> <li>6. Year Installed</li> <li>7. Date Inspected</li> <li>8. Lifetime, among others</li> </ol>

Table 1. Swangard Stadium Previous Studies & Reports

## 1.4 CITY POPULATION AND DEMOGRAPHICS

As of 2021, the City of Burnaby was the third largest municipality in the Metro Vancouver Region with ~249,000 residents, behind the City of Vancouver with ~660,000 residents and City of Surrey with ~568,000 residents. However, Burnaby is one of the fastest growing municipalities in the Lower Mainland, growing at a faster rate than the Metro Vancouver region. On average, Burnaby has been growing by ~1.3% or 3,500 - 4,000 additional residents per year, while the region is growing by ~1.1% per year. Population growth in Burnaby will increase the demand for outdoor recreation, sports and culture space. Additionally, since Swangard provides specialized services, the stadium draws

additional demand beyond the boundaries of Burnaby. Therefore, regional population growth will also play a role in demand for additional use of the stadium.

With a population of 249,125 (2021 Census) Burnaby accounts for ~9% of Metro Vancouver’s overall population. Assuming an average growth rate of ~1.4%<sup>1</sup> per year, Burnaby will have a population of 374,000 by 2051 and will continue to account for ~9% of the Region’s population. The following graph identifies the forecasted population growth in Metro Vancouver over the next 30 years.

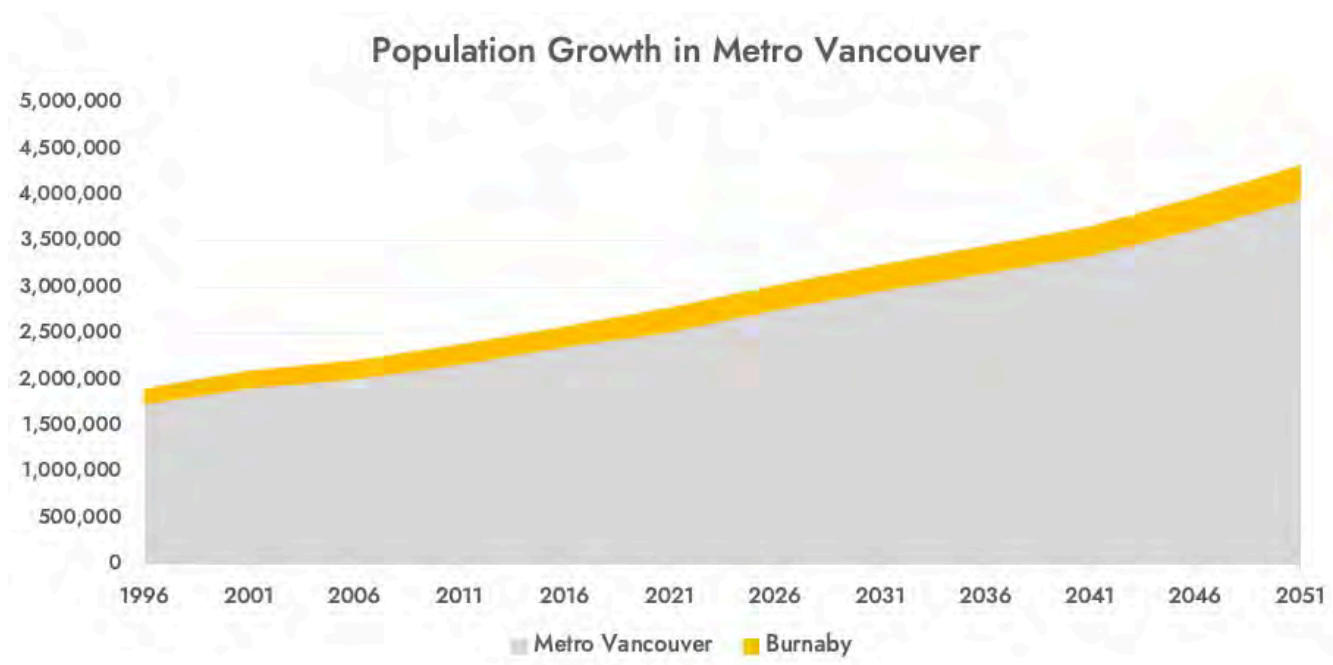


Figure 3. Projected population growth for Burnaby in comparison with remainder of Metro Vancouver

Demographic cohort projections identify a similar forecast for Burnaby and Metro Vancouver over the following 3 decades. It is expected that older demographic cohorts will account for a higher proportion of the population. As shown in the following figures, 65+ population is expected to grow an average of 2.37% annually between 2021 and 2051, followed by middle age demographic cohorts, most notably 35 to 44 and 45 and 54 cohorts with 2.14% and 2.11% respectively. The other three demographic cohorts age are expected to grow on average 0.6% per year.

<sup>1</sup> Based on growth projections for Burnaby from BC Stats



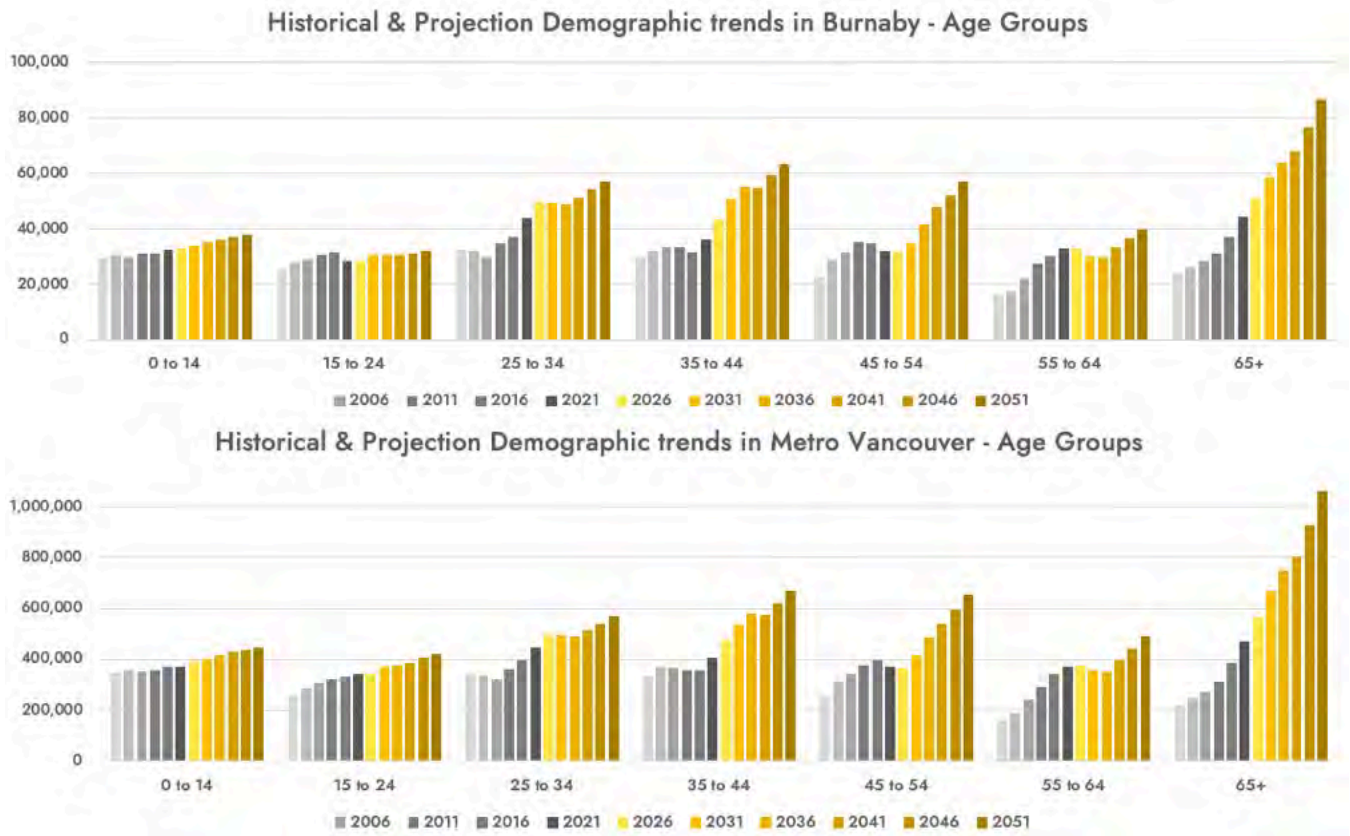


Figure 4. Historical & Projection demographic trends in Burnaby and Metro Vancouver - Age Groups

## 2. CURRENT STATE ASSESSMENT

The following section summarizes the current state of Swangard Stadium.

### 2.1 HISTORY AND SIGNIFICANCE

Swangard Stadium is named after Erwin Swangard, born in Germany, who immigrated to Canada in 1930. By profession he is one of Canada's best known and most widely traveled journalists. Early in his career, Mr. Swangard worked as a freelance sports reporter, covering the 1936 Olympic games for the Vancouver Sun and Toronto Globe. In the late 1930's he launched a full-time career as foreign editor for the Vancouver Province for five years, then fulfilling the same role at the Vancouver Sun for another seven years. Beginning in 1951, Erwin Swangard wore many hats acting as Sports, City, Assistant Manager and Night Editor before his appointment as Managing Editor in 1959. He was always a dedicated supporter of athletics in British Columbia and is one of the seven founders of the B.C. Lions Football club.

Between 1964 and 1967 Erwin Swangard raised almost \$1 million to build an athletic sports focused stadium in Burnaby's Central Park, which was named after him when opening in spring of 1969. The Stadium was intended for *"all types of Amateur Sports and which priority will be given to High School and Amateur Athletes under 21 years of age, except in the case of Track and Field and that the Stadium's primary function is to serve these young people."*<sup>2</sup>

In addition to the fund raising completed by Erwin Swangard, there were three other notable early funding efforts for Central Park and the Stadium.

- 1962 – Burnaby and Vancouver both pay \$5,500 for public pool at Central Park<sup>3</sup>
- 1967 – Burnaby and the Province commit to partial funding of Junior Amateur Sports Stadium<sup>4</sup>
- 1968 – Burnaby and Vancouver agree to provide \$50,000 each for Junior Amateur Sports Stadium<sup>5</sup>

Swangard Stadium was managed by the Central Park Committee until 1977, when management and operation of Central Park, including the Stadium was turned over to the Municipality of Burnaby. The stadium has been home to a large variety of teams and sporting activities over the last 50 years. One of the main user groups has been Track & Field athletics. In 1980-1981 a new track was built

<sup>2</sup> Resolution from the Central Park Committee, November 26<sup>th</sup>, 1964

<sup>3</sup> <https://search.heritageburnaby.ca/link/councilminutes51439>

<sup>4</sup> <https://search.heritageburnaby.ca/link/councilreport34291> and <https://search.heritageburnaby.ca/link/bylaw19149>

<sup>5</sup> <https://search.heritageburnaby.ca/link/councilminutes51730>

based on a recommendation from the British Columbia Track & Field Association, which allowed the Stadium to function as a host for international, national, and provincial competitions. In addition to Track & Field, other sports, and events that the Stadium has hosted in chronological order include:

- The Vancouver 86ers, launched by the City of Vancouver in 1986. Now known as Whitecaps FC, made Swangard Stadium their home pitch, until 2010 when they moved to BC Place
- The 2002 FIFA U-19 Women's World Championship
- The 2007 FIFA U-20 World Cup Championship
- The Vancouver Riptide, a professional ultimate team became a tenant of Swangard in 2013, leaving in 2017.
- The Simon Fraser Clan FC became a tenant of Swangard in 2014, leaving in 2016.
- The first Quidditch Canada National Championship in 2015
- Hosted international professional Rugby matches in 2017.
- TSS FC Rovers Men's Team, previously part of the USL League Two Northwest Division now part of League 1 British Columbia (L1BC), play their home soccer games at Swangard since 2017
- TSS FC Rovers Women's team, previously part of the Women's Premier Soccer League now part of League 1 British Columbia (L1BC), play their home soccer games at Swangard since 2018
- The Whitecaps FC 2 (MLS Next Pro), the reserve team for the Vancouver Whitecaps FC became a tenant in 2022.

In addition to supporting sporting activities, the Stadium has hosted a large variety of cultural and community events, such as<sup>6</sup>:

Name of Event	Month & Year	Estimated Number of Visitors
Pumpkins After Dark Strike	September - October - November 2022	2,700
Friends, Family & Fruit Beer	August 2022	1,600
Philippine Cultural Heritage Festival	August 2022, August 2020, August 2019	1,000
Chinese Cultural Festival Event	Every July from 2016 and 2022, and August 2015	10,000
Bubble Tea Festival	July 2022, July 2020	1,000 – 1,300

<sup>6</sup> Based on the calendar of programming & events



Name of Event	Month & Year	Estimated Number of Visitors
Fiji Fest	Every July from 2011 until 2022	3,500
Safe & Sound Music Festival	May 2022	n/a
Korean Trade & Draft Fair	September 2021	1,500
International Drum Festival	September 2020, June 2020	1,000
Korean Fest	August 2020, August 2019, August 2014	7,000
Canada Day	July 2020 – July 2019	7,000
Ethiopian Fest	July 2019	150
Eurofest	May 2017	n/a
Tacofest	July 2017, July 2016	n/a
Musical Ride	August 2017	n/a
Diversity of India Summer Festival	August 2012	n/a
Vancouver Korean Picnic	August 2012	n/a

Table 2. Community & Cultural events hosted at Swangard Stadium

## 2.2 THE STADIUMS' ROLE WITHIN THE CITY

Within the City of Burnaby's Parks, Recreation and Culture Department, various programs and activities are provided from a large variety of public facilities. These are divided into three main asset categories:

- Parks,
- Recreation facilities, and
- Arts and Culture facilities.

Swangard Stadium is classified within the Recreation Facility asset category but it should be noted that the Stadium does support a range of Art & Culture events, festivals and community gatherings. The following image illustrates the Department's facilities organization:

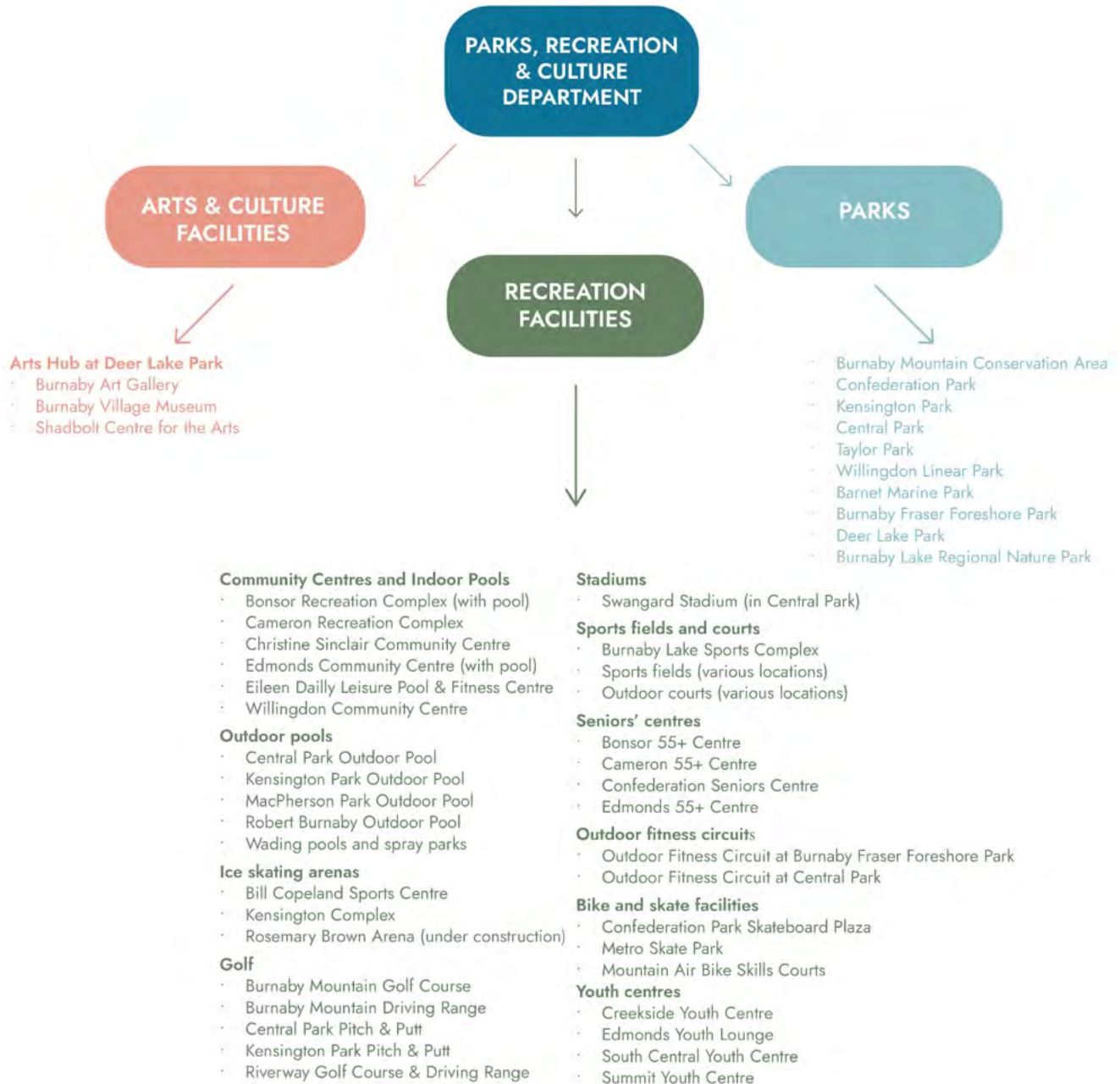


Figure 5. Parks, Recreation and Culture Asset Organization

Swangard Stadium is the only asset within the City’s portfolio to accommodate large outdoor sporting (track and field, soccer, football, rugby etc.) and cultural events requiring controlled access and egress. Other facilities and locations can support large events but do not have the infrastructure in place for simple and efficient delivery. For example, there is adequate outdoor space for a 9,000-person event at Deer Lake Park but there would be financial and operational challenges to ensure access is secure and there is sufficient electrical outlets throughout.

## 2.3 FACILITY OVERVIEW AND CONDITION

Swangard Stadium currently represents one of the main sports venues in Metro Vancouver. The current stadium characteristics are:

Stadium Element	Description	Notes
Seating	Capacity for 5,288 spectators with potential for expansion with temporary seating up to 10,000.	Permanent seating is organized into two zones: general seating and VIP seating. VIP seating is located in the lower mid-section.
Field	Natural grass surface. Accommodates a variety of sports such as soccer, football, rugby, field hockey, and field lacrosse.	Soccer field: 68m x 105m Football field: 60m x 130m Rugby field: 68m x 120m
Track & Field Infrastructure	<ul style="list-style-type: none"> <li>• 8-lane, 400m Olympic regulation oval track.</li> <li>• Long jump, triple jump, and high jump facilities</li> <li>• Pole vault facilities</li> <li>• Steeplechase pit</li> <li>• Infield discus and hammer-throwing circles and cage</li> <li>• Javelin run-up for infield throwing.</li> <li>• Separate shot-put area</li> </ul>	Track currently not usable due to safety reasons related to incorrect installation process. Pending new track installation.
Sport Support Spaces	<ul style="list-style-type: none"> <li>• 4 indoor dressing rooms</li> <li>• Indoor officials' rooms</li> <li>• First aid room</li> <li>• Gear and equipment storage</li> </ul>	Spaces need upgrade and renewal
Spectator Support Spaces	<ul style="list-style-type: none"> <li>• Hospitality Room</li> <li>• Concession Space</li> <li>• Washrooms</li> </ul>	
Vehicle Parking	<p>There are currently two main parking areas with a total of 167 stalls:</p> <ul style="list-style-type: none"> <li>• East Parking Lot with 147 stalls, includes 11 accessible stalls.</li> <li>• South VIP Parking Lot with 20 stalls, includes 4 accessible.</li> </ul>	Parking spaces are noted to be sufficient for most days, but not sufficient for large events
Loading Zone	The stadium has a loading concourse located west of the facility.	The loading concourse currently is graded too steep for a number of vehicles.
Access	The Stadium's site has a perimeter fence and is accessible through four access points. Site has two main vehicle access points.	



Table 3. Swangard Stadium Physical Assets

The following figure introduces the current state of Swangard Stadium’s facility and site components.

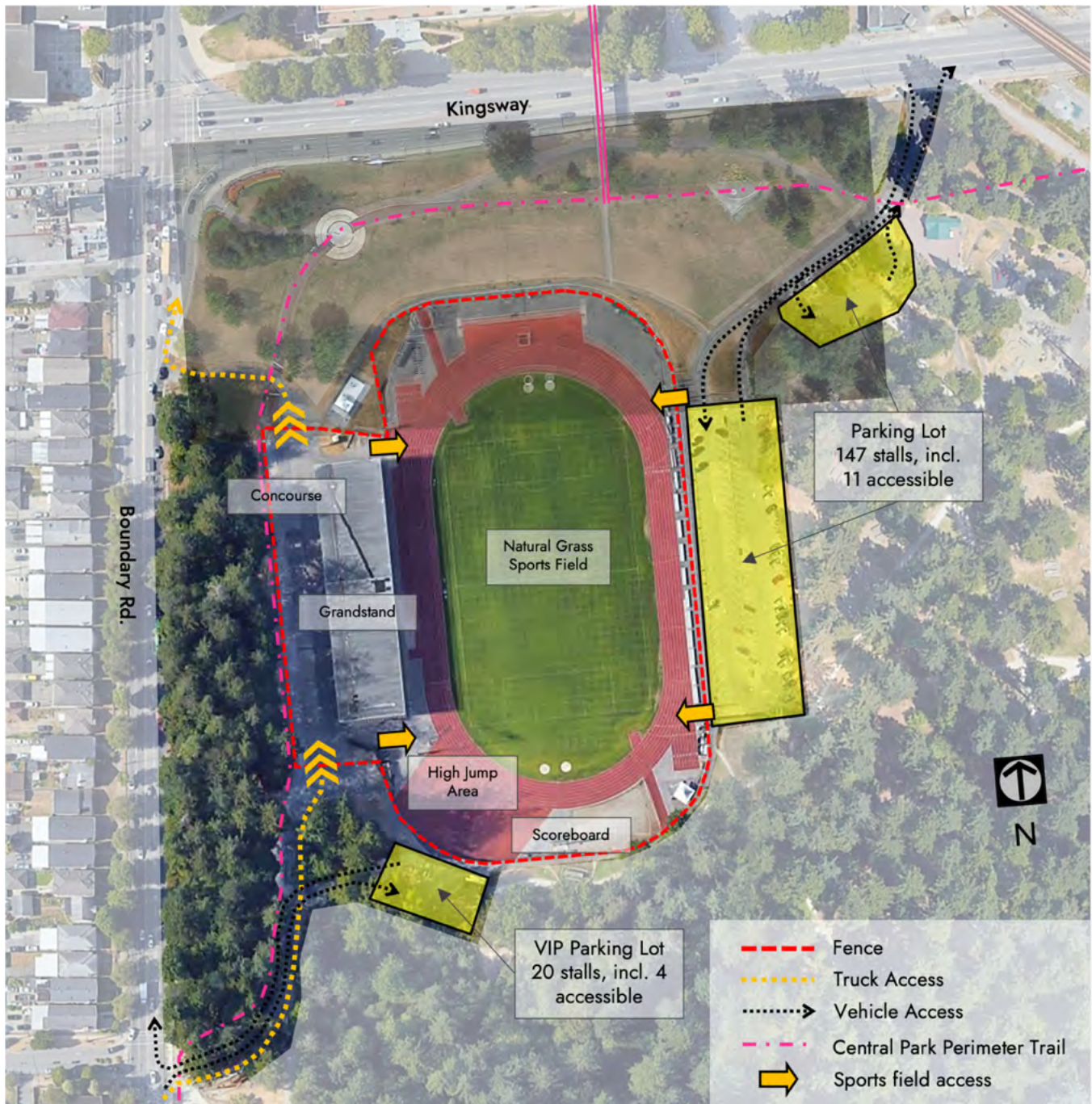


Figure 6. Current State Swangard Stadium

As per the 2014 Building Condition Assessment completed by VFA, the Stadium has a facility condition index of 0.08 indicating that there was an approximate requirement cost of ~\$1.8m to renew and maintain the existing building systems.

*Facility Condition Reports capture the current state of assets with respect to architectural, electrical, mechanical, and fire protection condition and identify the interventions required to maintain peak operation. The Facility Condition Index (FCI) is a commonly cited metric which is calculated by dividing the total cost of system renewal and deferred maintenance/repairs needed for a facility by the current replacement value of the facility. The FCI ranges from 0 to 1. A lower FCI value indicates a facility is in better condition, while a higher FCI value indicates a facility is in poorer condition.*

In addition to the Facility Condition Assessment, there are several alternate engineering assessments which help indicate the current state of the infrastructure. Key findings from these reports are:

- Stadium grandstand is noncompliant with 2006 BC Building Code. Code will not be enforced unless major renovations take place.
- Asbestos containing materials (ACM) present within Stadium grandstand – parking cement, drywall compound, duct and window mastic etc.
- Recommended electrical upgrades to maintain functionality (2008): main electrical service, stadium secondary distribution system, stadium lighting.
- Recommended mechanical upgrades to maintain functionality (2008): general heating and ventilation, heating distribution systems, secondary heating, plumbing Systems, fire suppression systems.
- Recommended structural upgrades (2008) to maintain functionality: repair of select bearing welds, installation of fascia, repair of deteriorated concrete.

Since these reports were prepared the following capital projects have been identified.

- Central Park North Electrical Replacement Project: Upgrade required to support current operations. Upgrade will support Stadium, pool and other outbuildings. Estimated at ~\$3.5m. Pending funding approval.
- Track Replacement: Faulty track installed in 2017. Project capital costs estimated between ~\$1.0-1.6m.
- Dressing Room Renewals: Shower and washroom renewals slated for 2024.
- Announcer's Room and Press Box Redesign Project: To replace and upgrade the facility infrastructure in response to functional and physical challenges. Preliminary design work has been completed.
- Stadium grandstand roof replacement: Renewal project identified for year 2026.

Overall, the Stadium is showing signs of its age and is requiring increasing amounts of renewal and maintenance to ensure functionality. While the FCI of 0.08 in 2014 is positive, it is very likely that a current assessment would show a much less favourable score.

## 2.4 USE PATTERNS

Over the past decade, Swangard Stadium has served as a venue for a diverse range of activities, including track and field, soccer, seasonal events, community events, festivals, and other organized sports activities. To understand how the Stadium is used by user groups and the community, an analysis of Swangard’s Event Calendars, for the years 2011 – 2022, has been conducted. Four major use categories emerged from the analysis, i) Track and Field, i) Soccer, iii) Festivals, and iv) Other. There were also three sub-categories, which included v) Filming, vi) Ultimate Frisbee, and vii) Rugby. In the chart below, the total number of hours booked for each of these categories is displayed.

It’s important to acknowledge that this analysis has been conducted by utilizing Swangard’s Event Calendars as the primary source of data. While efforts have been made to gather the most comprehensive and accurate information, there were instances where the data had limited or incomplete availability. Given these limitations, the results should be considered as providing a highly representative overview, rather than as a precise or definitive representation. Please note, data for 2013 and 2018 were not available.

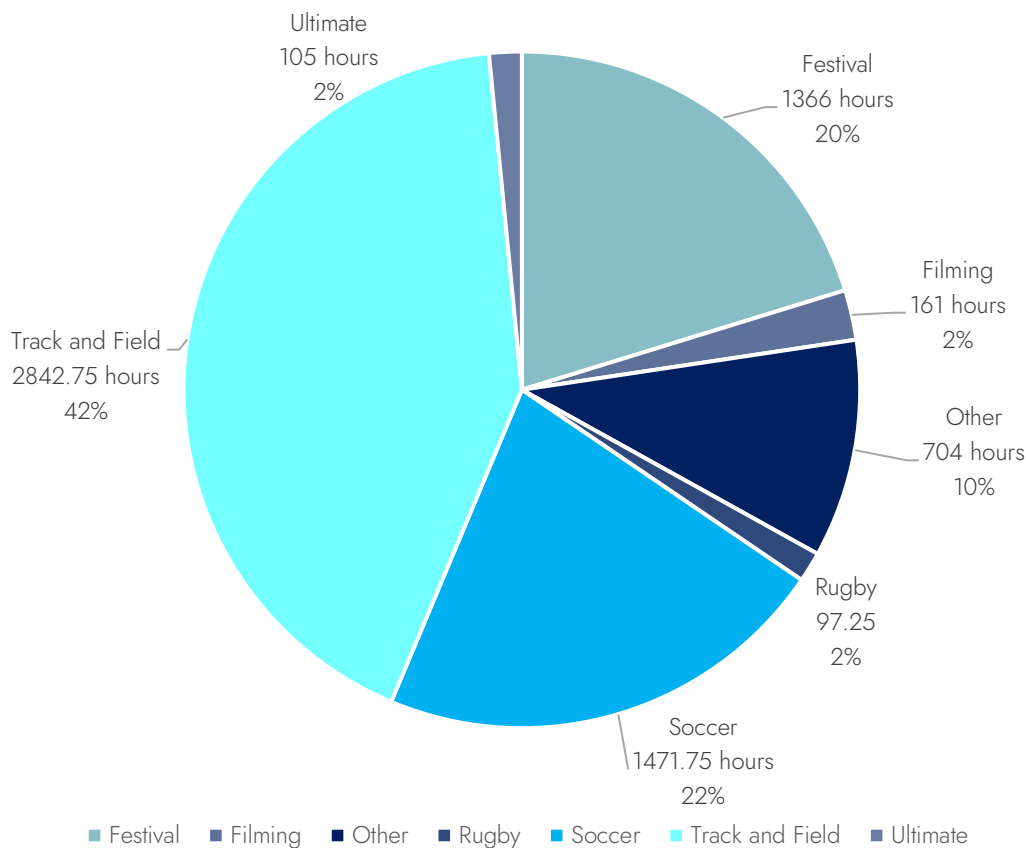


Figure 7. Number of Hours booked by activity, 2011-2022

This analysis reveals the follow results:



- **Track and Field:** Track and Field activities accounted for the highest proportion of booked hours since 2011, comprising 42% of the total hours booked.
- **Soccer:** Soccer events accounted for 22% of the total hours booked.
- **Festivals:** Festivals accounted for 20% of the total hours booked since 2011.
- **Other:** 704 hours (10%): As the fourth most prevalent booked activity, the “Other” category included private bookings, such as corporate picnics and BBQs, Zumba, Seniors Games, Football Games, and Girl Guide Activities.
- **Filming:** Filming activities made up 2.4% of the total hours booked.
- **Ultimate:** Ultimate frisbee events made up 1.5% of the total hours booked.
- **Rugby:** Rugby events represented 1% of the total hours booked.

This data has been further analyzed by category and month, aggregated across the years. For this analysis, the Ultimate Frisbee, Filming, and Rugby categories have been collapsed into the Other category. This analysis is displayed in the subsequent graph, however the following high-level trends were observed:

- **Track & Field** activities were consistently scheduled across each calendar month (except for January), with the highest number of hours booked in April and May, totaling 617 and 1005 hours, respectively. These months accounted for a significant portion (57%) of the total Track & Field hours.
- **Soccer** activities showed a relatively steady distribution of hours across the calendar year, with a peak in August.
- **Festivals** were primarily scheduled from April to September, with May being the busiest month.
- **Other** activities had a relatively even distribution throughout the year, with April having the highest number of hours booked.

This analysis provides a comprehensive overview of the distribution of hours booked for each activity on a monthly basis. It highlights the prominence of Track & Field and Soccer activities, as well as the seasonal variations observed for Festivals and the consistent distribution of Other activities.

### Total Hours, by Activity 2011-2022

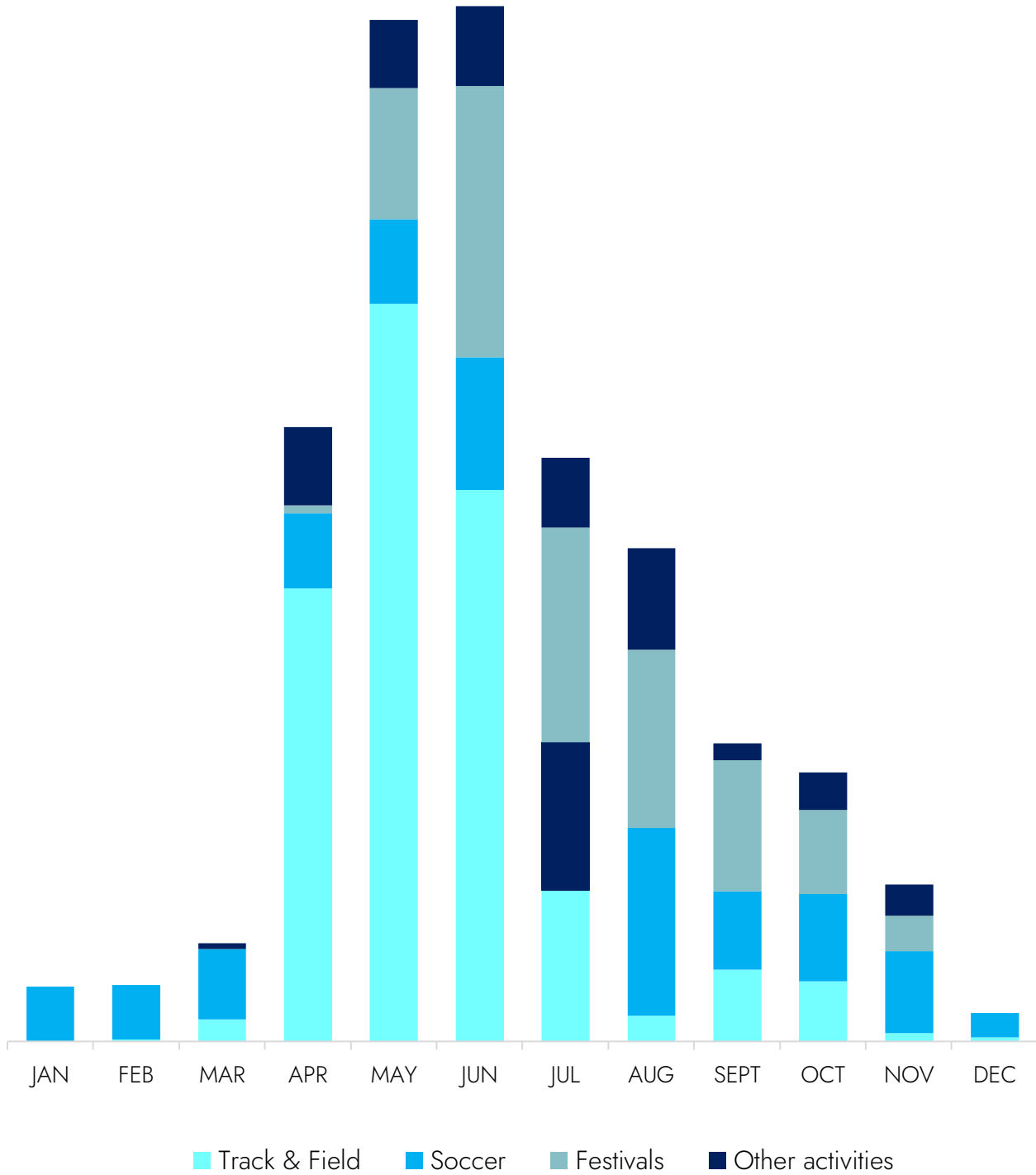


Figure 8. Total booked hours by activity and calendar month

Swangard Stadium is most utilized between April and August. The remainder of the year sees low utilization with very low utilization in December to March. Although this use trend is common amongst natural grass field stadiums that are exposed to the natural environment (no covering), it does identify that the facility is underutilized on an annual basis. There is an opportunity to better utilize the Stadium.

## 2.5 REVENUE AND EXPENDITURES

Historical stadium revenues and expenditures have been reviewed to identify trends. The following financial data has been reviewed:

- Stadium operating budgets between 2013 and 2022.
- Stadium maintenance costs incurred by the City between 2014 and 2022.
- Stadium salary labour allocations between 2014 and 2022.
- Stadium concession revenue for 2022.

The following graphs summarize the outcomes of this review.

Between 2013 and 2019 (prior to the Covid-19 pandemic), there was an increasing gap between revenue generated and expenditures. During the same period, the number of bookings remained steady. These trends are shown in the following figure.

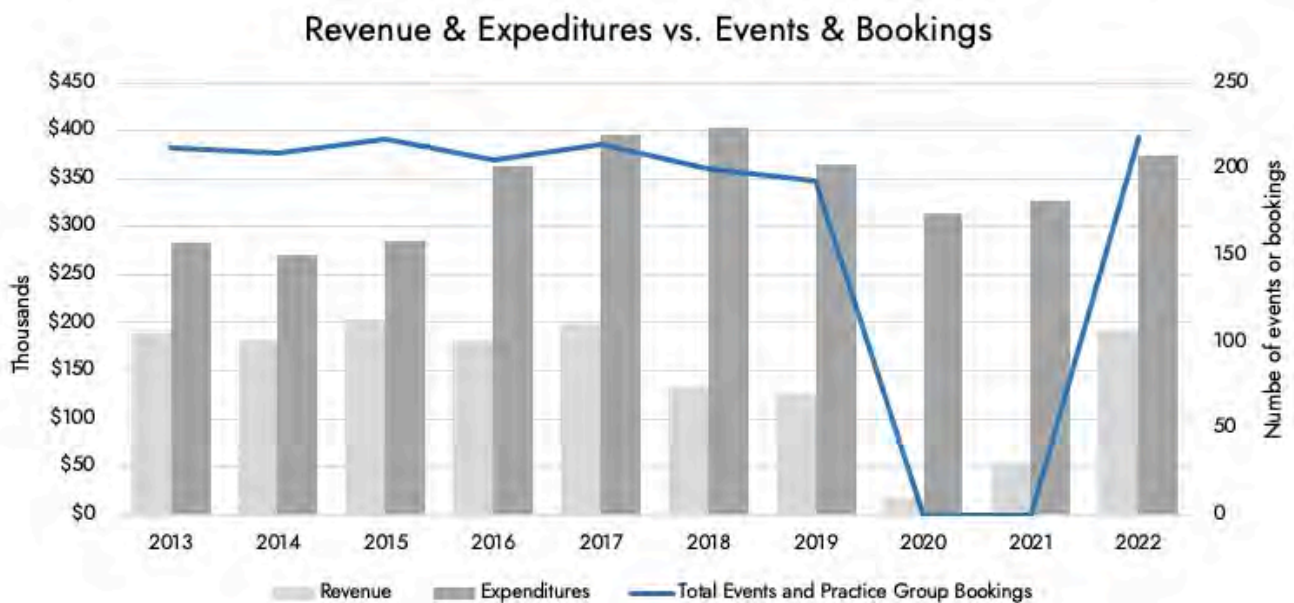




Figure 9. Revenue & Expenditure vs Events & Bookings

The Efficiency Ratio (or cost recovery rate) remained steady between the years 2013 and 2015, having the highest ratio in 2015 with 0.72. After 2015 it declined until 2020 to 0.05, and in 2022 with an increment in revenue it recovers to 0.51.

Between years 2014 and 2019, annual maintenance costs increased from ~\$32,000 to ~\$528,000 which represented an average annual increase of 250%. During the same period, the number of booked events and track practice group bookings remained relatively steady.

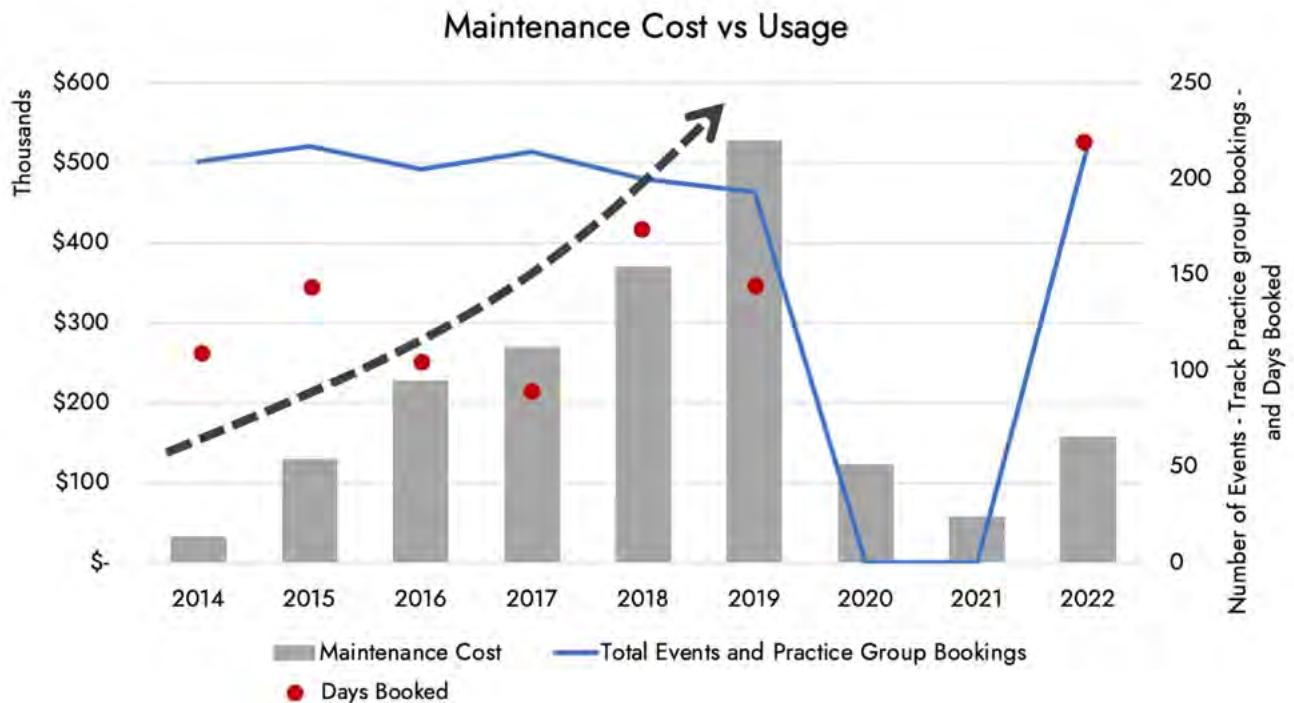


Figure 10. Maintenance Cost vs Usage 2014-2022

There does not appear to be a relationship between days booked per year and the cost of maintenance. The sharp incline of maintenance costs between 2014-2019 is likely a reflection of the increasing costs associated to aging infrastructure and system renewal.



As per historical salary data, there is an increasing trend; salaries and the number of FTE are increasing.

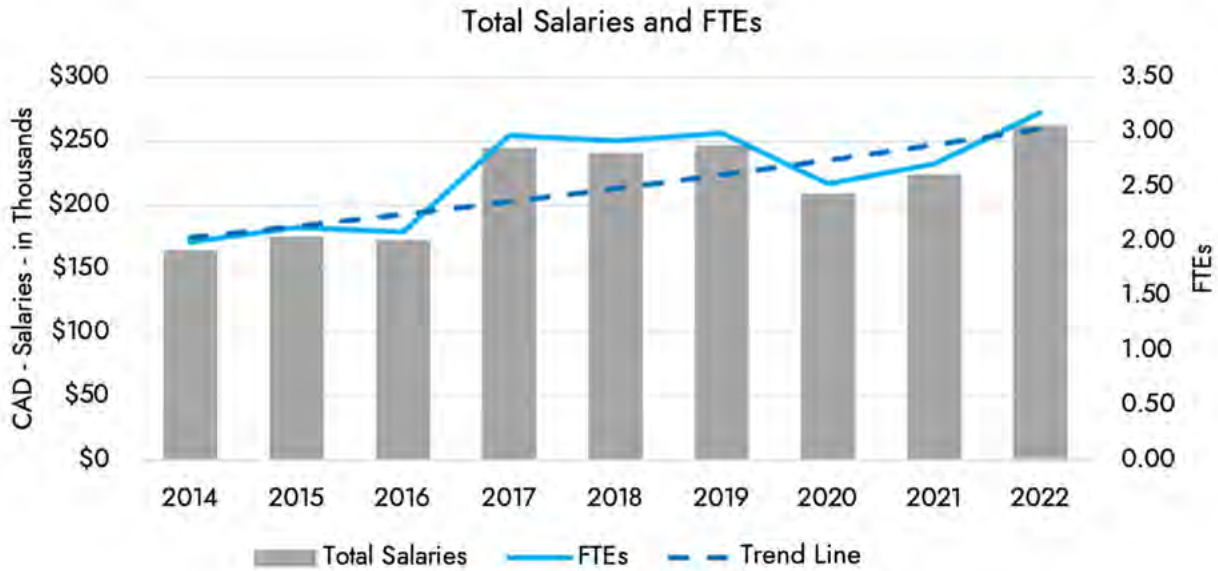


Figure 11. Total Salaries and FTEs

When comparing historical maintenance costs with Salaries and FTEs, both trends increased over the years, however at a different pace: maintenance costs had an exponential increase of 1,500%, while salaries increased 50% between 2014 and 2019.



Figure 12. Total Salaries and Maintenance Costs

Additionally, when comparing the costs associated with Salaries and booked Stadium days, there are three key years that exhibit a link: 2015, 2018, and 2022; those three years saw the largest amount of booked days and salary cost. This relationship is shown in the following figure.

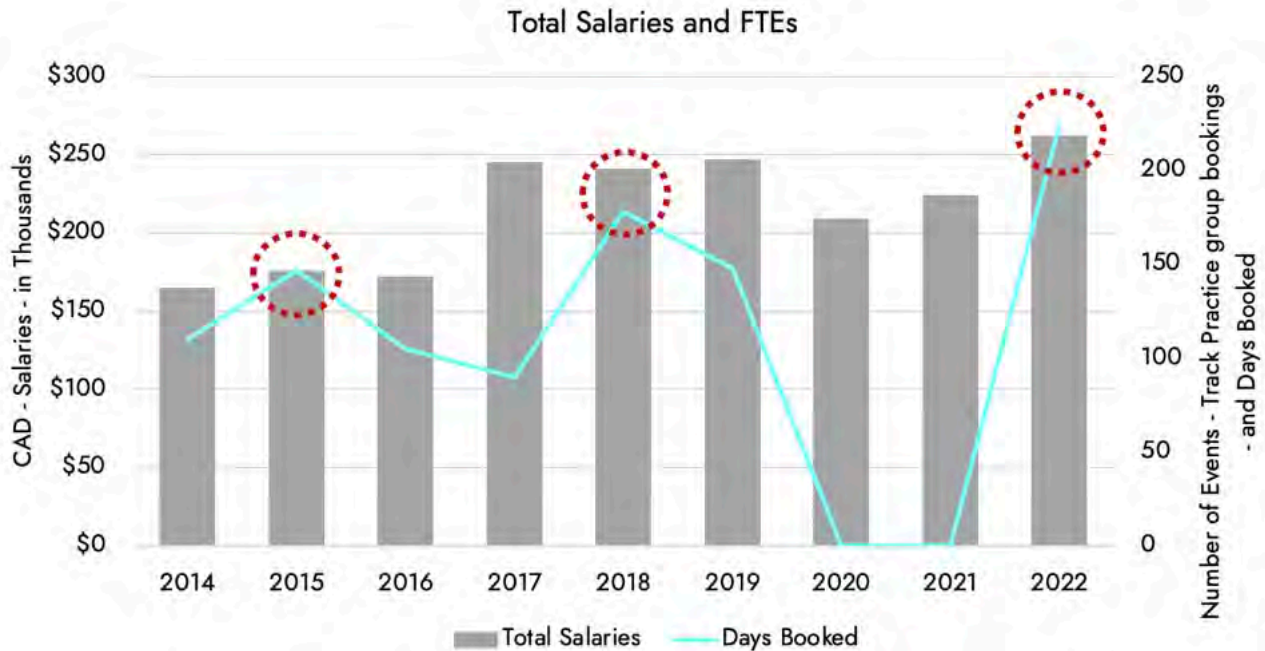


Figure 13. Total Salaries vs Events, Track Bookings, and Days Booked

A high-level assessment of concession revenue from 2022 indicated that half of the ~\$82,000 concession revenue for 2022 was associated to Track & Field activities. The revenue from each of the other three sources were comparable to each other - TSS ROVER ~\$30,300 (19%), Whitecaps FC2 games ~\$26,000 (16%), and Other Events with ~\$24,100 (15%). This result is not surprising as historically, Track & Field activities account for >40% of the total facility use.

### Concession 2022 Revenue

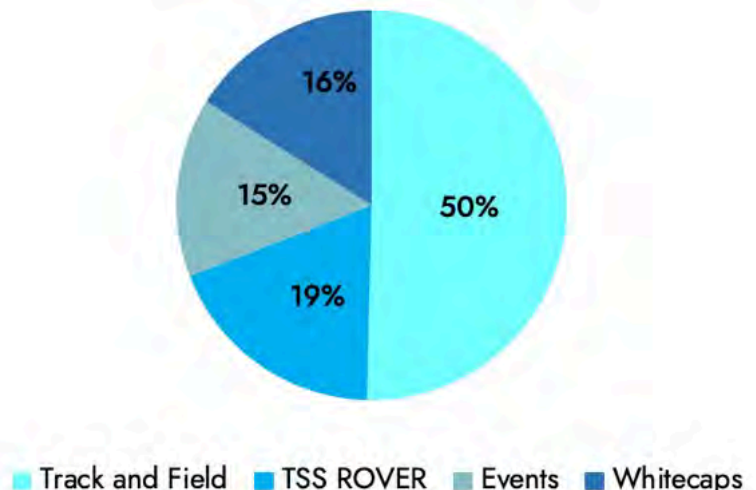


Figure 14. Concession revenue for 2022

Qualitatively it was noted that there is significant opportunity to increase concession revenue with a shift in Stadium allocation. Track & Field events seldom draw large amounts of spectators and therefore if the allocation changes towards activities that draw larger audiences, there is a high probability that concession revenue will increase.

Overall, the cost to operate and maintain the Stadium is increasing faster than the revenue generated. This clearly indicates that updating the infrastructure and/or the operating model would address the decreasing cost recovery rate.

## 2.6 STRENGTHS & CHALLENGES

To summarize the current state of Swangard Stadium, key strengths and challenges have been identified for two categories: Infrastructure Related and Programming Related.

### INFRASTRUCTURE RELATED:

- Strengths**
- Physical Location of the Stadium within the City:
    - Centrally located within Metro Vancouver
    - Close access to Patterson Sky Train station
    - Easy vehicular access at the intersection between Boundary Road and Kingsway
    - Close to other recreation amenities
    - Strong visual connection to the mountains
  - Sports Venue:
    - High seating capacity attracts wide range of activities and levels of sport.
    - High quality natural grass field
  - Gated Space:
    - Ideal for large events requiring controlled access.

- Challenges**
- Aging Infrastructure:
    - Increasing operation and maintenance costs.
    - Requires significant investment to renew building and site systems (electrical, mechanical, structural etc.).
    - Requires track replacement<sup>7</sup>
    - Field needs to be re-leveled.

<sup>7</sup> On May 11<sup>th</sup>, 2023, the City of Burnaby issued RFP 116-04-23 for the reconstruction of the existing running track at Swangard Stadium.

- Lack of activity support and staff spaces.
- Inadequate Infrastructure:
  - Used as a multi-purpose sports and events space but without proper supportive infrastructure.
- Inadequate Parking:
  - Parking space capacity adequate for most days, but not sufficient for large events.
- Accessibility and Connectivity:
  - Lack of adequate, well-lit, and inviting pedestrian and biking access from and to main Swangard entrances and Patterson Sky Train station.
  - Steep vehicle and pedestrian access to track and sports field.

#### PROGRAMMING RELATED:

- Strengths**
- Strong historic connection and highly desirable location for Track & Field activities and events.
  - Reputation for very high-quality field attracts high performing teams/users.
  - Popular with general public for unstructured and self-directed exercise and social activities.
  - Potential for expanded programming in indoor multi-purpose space.
  - Can host wide range of events requiring access control, liquor sales, broadcasting, and/or stage(s).

- Challenges**
- Operates as Burnaby's large event space and high-performance sports venue but without adequate infrastructure support.
  - Significant additional resources required to support large events.
  - Limited field access due to natural grass surface.
  - Limited public visiting hours (7.30 am to 2.30pm).
  - Demand for use exceeds capacity



### 3. ENGAGEMENT SUMMARY

Stakeholder engagement with a range of Stadium users and City staff was completed to inform the study. The following table identifies the spectrum of participants that were engaged during the study and indicates their level of participation and the goals of each engagement. Additional engagement details can be found in *Appendix A – Engagement Overview*.

PARTICIPANT	LEVEL OF PARTICIPATION	ENGAGEMENT TOOLS	GOALS OF ENGAGEMENT
Project Team	Collaborate	Biweekly Virtual Meetings	Present progress of the study in key phases and obtain guidance and feedback
Project Steering Committee	Collaborate	4 Workshops	Present study progress and identify/validate key planning assumptions that will guide the analysis.
City of Burnaby Staff from the Departments: <ul style="list-style-type: none"> <li>• Lands &amp; Facilities</li> <li>• Parks, Recreation and Cultural Services</li> </ul>	Involve	1 Site tour 3 Virtual Sessions	Present project overview and facilitate discussion to collect historical and current state facility, site and operational information.
Burnaby Board of Trade	Consult	1 Virtual Session	Present project overview and facilitate discussion to understand BBOT's relationship with Swangard Stadium and how it may change in the future.
Tourism Burnaby	Consult	1 Virtual Session	Present project overview and facilitate discussion to collect information on what role Swangard currently plays within Burnaby's tourism and how this may change in the future.
Stadium User Groups	Consult	Online Survey	Provide an opportunity for key user groups to identify strengths and challenges of the current infrastructure and how they expect their organizations to change in the future.
Specific Organizations <sup>8</sup> : <ul style="list-style-type: none"> <li>• Achilles International Track &amp; Field Society</li> <li>• BC Athletics</li> <li>• SFU</li> <li>• Whitecaps FC</li> </ul>	Consult	1 Virtual Session	Present project overview and facilitate discussion to collect information relevant to the current and future needs of each organization.

<sup>8</sup> Achilles International Track & Field Society and BC Athletics directly contacted The City to be included in the engagement process. SFU was contacted through the City as part of the benchmark analysis for their Terry Fox recently renovated stadium.

PARTICIPANT	LEVEL OF PARTICIPATION	ENGAGEMENT TOOLS	GOALS OF ENGAGEMENT
Swangard Family	Inform	1 Virtual Session	Present project overview and facilitate discussion to understand the relationship between the Swangard Family and the facility today.

Table 4. Engagement Summary

## 4. REGIONAL STADIUM SCAN

To understand Swangard's position within the region, a benchmark analysis was undertaken. The analysis identifies similar sport venues, their main characteristics, the activities that take place within the venue and the estimated population within a 30-minute driving radius. 18 stadiums were identified for inclusion in the analysis, each assessed based on the following criteria.

- Location
- Type of field (Artificial or Natural grass field)
- Municipality Population
- Population served – 30-minute driving radius
- Permanent and expandable seating capacity
- Year Built
- Lockable/Fenced
- Regular Tenants
- Regular Sport Programming
- Regular Non-Sport Programming
- Upgrades
- Track & Field Infrastructure<sup>9</sup>

The sport venues examined were:

1. Percy Perry Stadium, Coquitlam
2. Rotary Stadium, Nanaimo
3. Thunderbird Stadium, Vancouver
4. Exhibition Stadium, Chilliwack
5. Starlight Stadium, Langford
6. Centennial Stadium, Victoria
7. Royal Athletic Stadium, Victoria
8. McGirr Sports Field, Nanaimo
9. Rotary Bowl, Nanaimo
10. Apple Bowl, Kelowna
11. McLeod Athletic Park, Langley
12. Terry Fox Stadium, Burnaby
13. Hillside Stadium, Kamloops
14. Chase Office Field, Langley
15. Vancouver FC Stadium, Langley
16. Q'unq'inuqwstuxw Stadium, Nanaimo
17. Kinsmen Park, North Vancouver
18. Masich Place Stadium, Prince George

<sup>9</sup> Limited number of stadiums across Canada have IAFF Competition Category 1 Certification for World Championships and Olympic Games.

The following image presents key venue criteria for each of the 18 assessed stadiums. A detailed comparison can be found in *Appendix D – Regional Scan Matrix*.

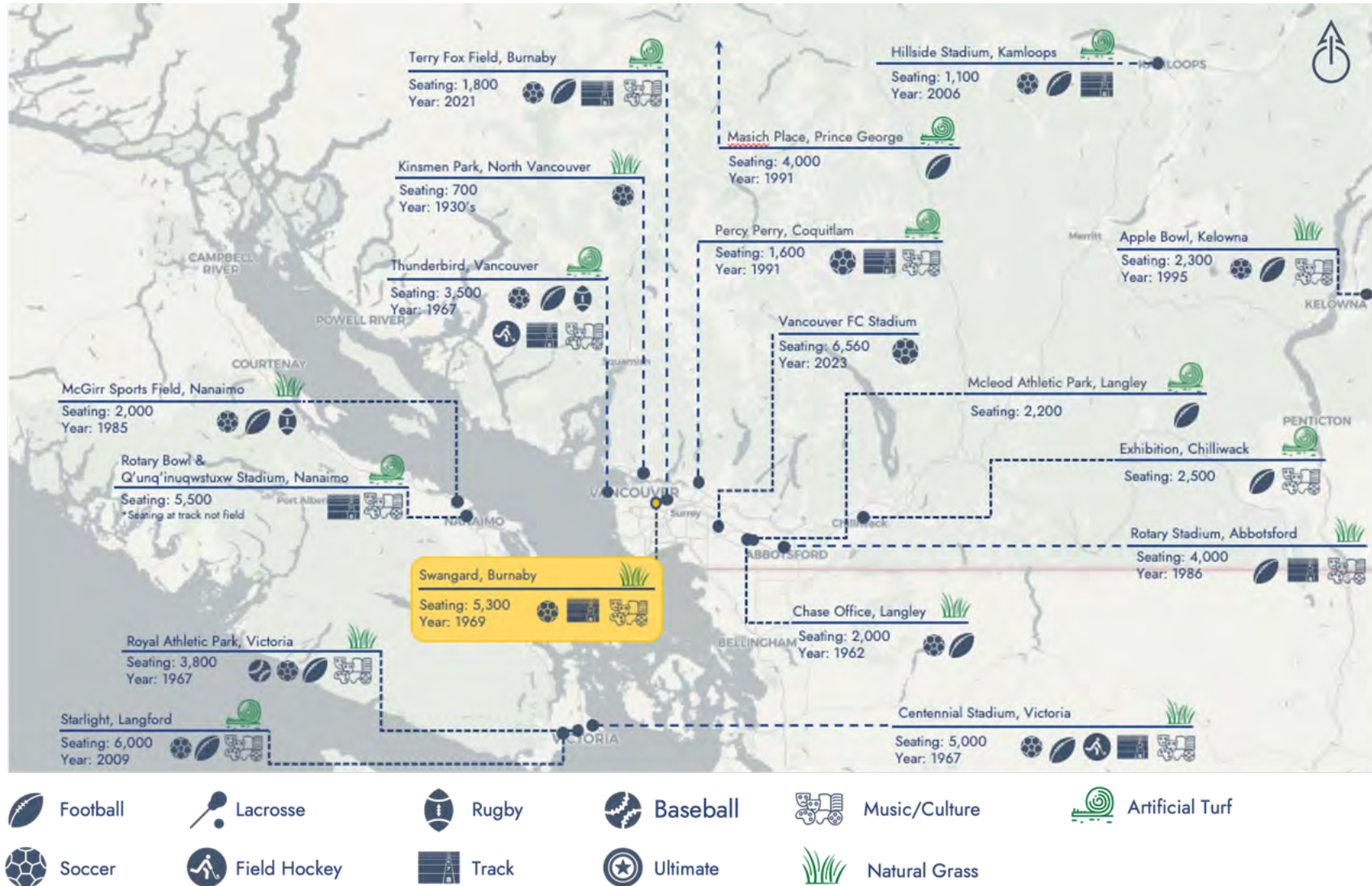


Figure 15. Regional Stadiums Location Map

### Seating Capacity Comparison

Seating capacity impacts the type of activities that take place within Stadiums. Swangard Stadium has 5,300 permanent seats and the site can accommodate an additional ~4,700 for a total maximum seating capacity of 10,000. The following figure presents the stated seating capacities of the comparable stadiums within the region.

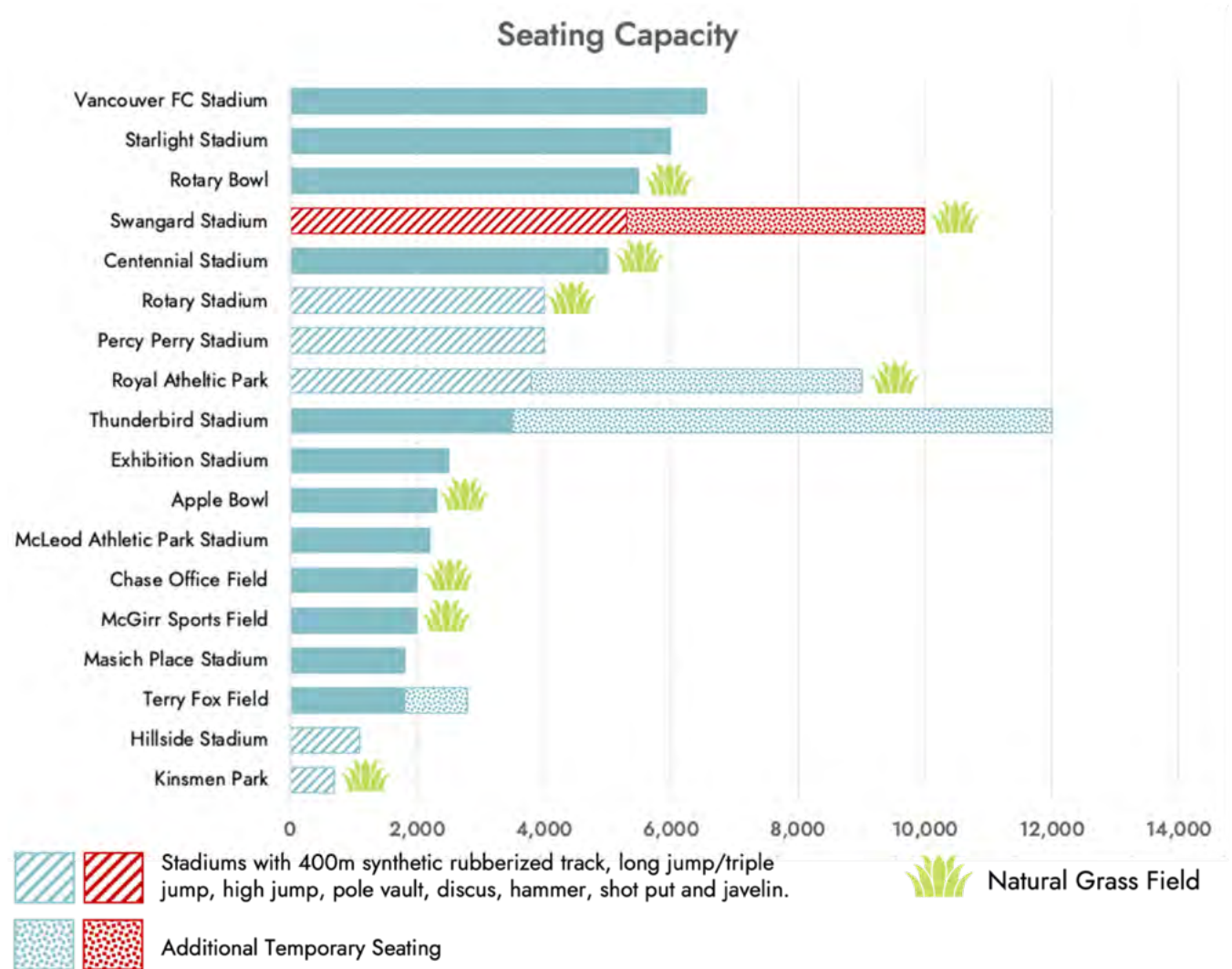


Figure 16. Seating Capacity Regional Stadiums Scan

Swangard Stadium provides the 4<sup>th</sup> most permanent seats within the region. Also, although some stadiums have Track & Field infrastructure, not all of them are at a competition level. Out of the 3 stadiums with higher seating capacity:

- None of them have competition Track & Field infrastructure, making Swangard the most well situated for large Track & Field events.
- The Rotary Bowl located in Nanaimo has natural grass field.



Moreover, when adding expandable temporary seating, Swangard Stadium reaches a total of 10,000 seating capacity, exceeding all top 3 stadiums. The only stadium with higher seating capacity when adding temporary seating is Thunderbird Stadium located at UBC with a total seating capacity of 12,000.

### Population Served Comparison

Two methods to estimate the number of residents each Stadium serves have been undertaken.

- Municipality population: Assessment of each municipality's population. Assumes each Stadium supports residents within municipal boundaries.
- 30-minute drive time radius: Assessment of the population (based on Census 2021) that lives within a 30-minute drive radius of each stadium. Assumes that the activities that take place within a major sport stadium are largely attended by people within a region and not only a municipality.

The following figure presents the results of the Municipality Population Assessment.

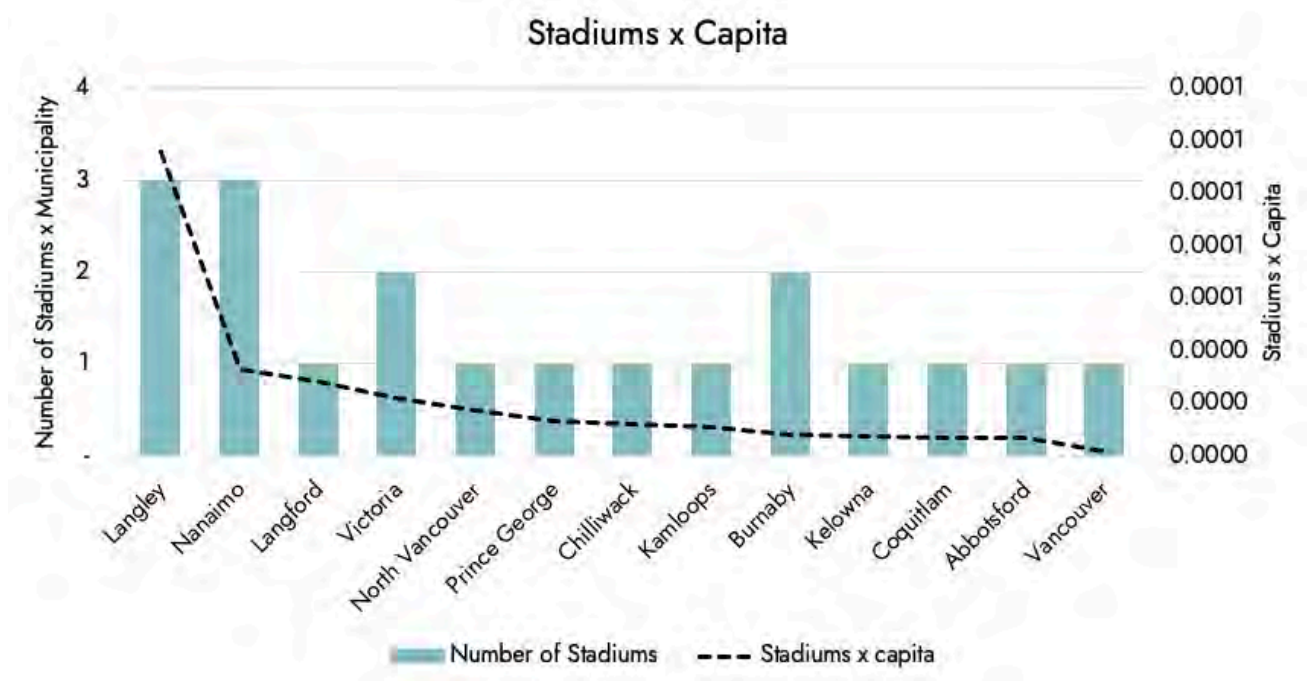


Figure 17. Municipality Population Assessment

As shown, Langley and Nanaimo have the highest number of stadiums with 3 facilities, and the highest stadiums per capita. Burnaby with 2 stadiums is in the lower segment due to its high population.

When including seating capacity per capita, Langley occupies first place with 3 stadiums and 10,720 seats, followed by Langford with 1 stadium and 6,000 seats. All other municipalities with 1 stadium

have similarly low seating capacity x capita including Burnaby that has 2 stadiums.

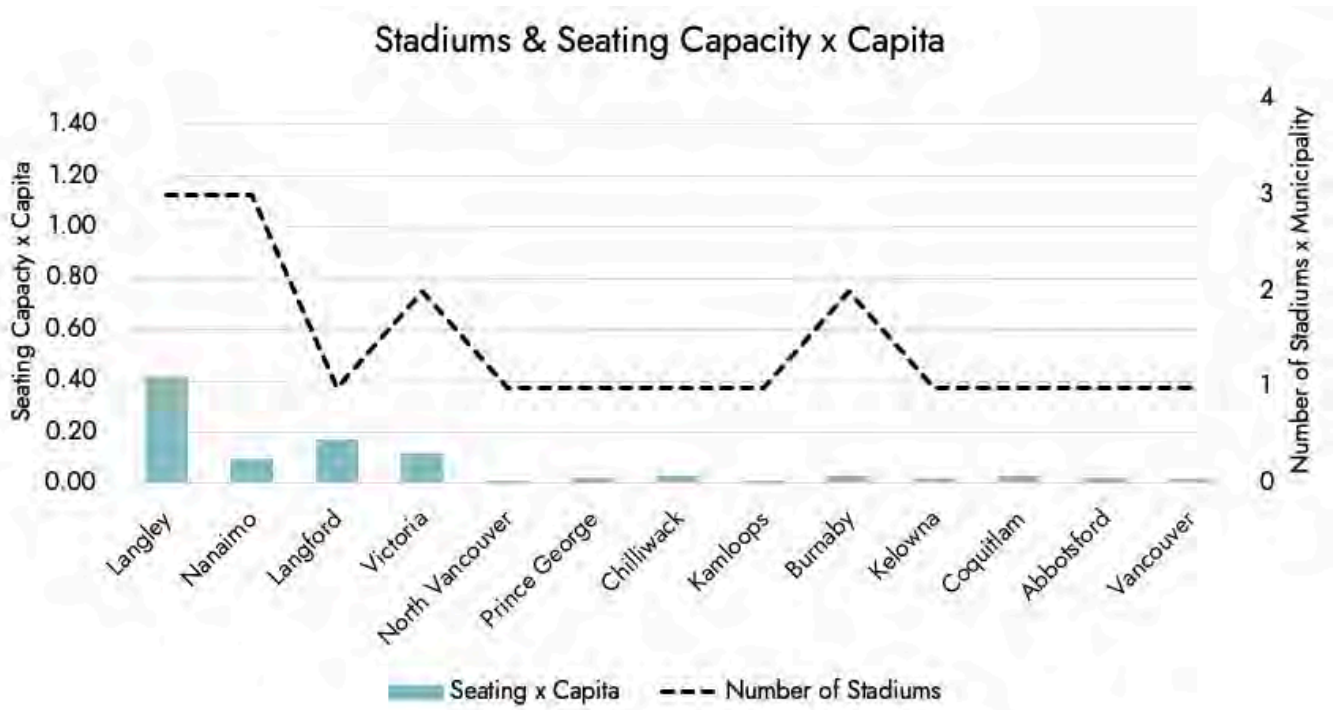
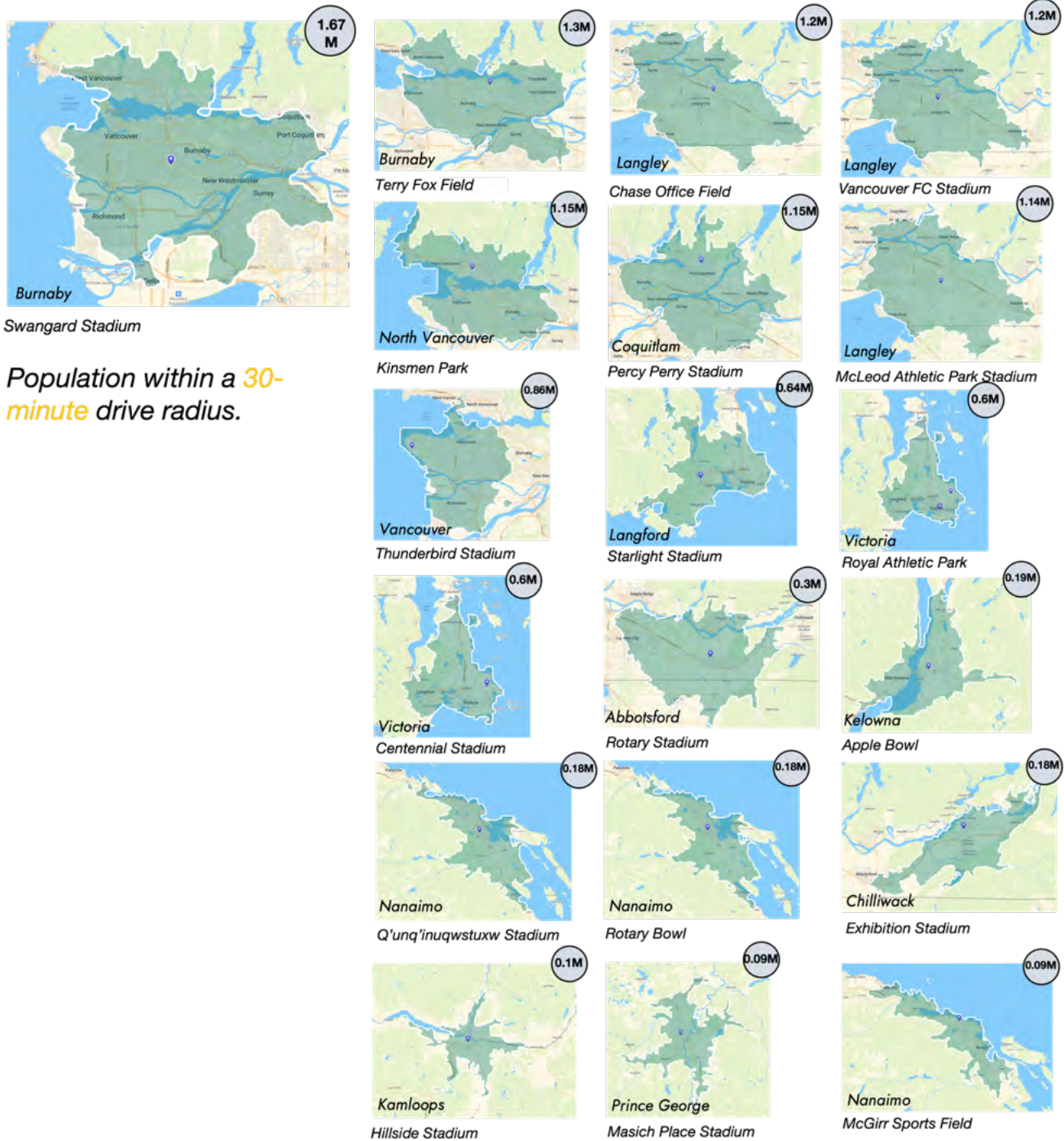


Figure 18. Municipality Population Assessment

Under the second population reach methodology (30-minute drive radius) Swangard Stadium has the largest population (1.67 million) reach. Terry Fox Stadium, also located within Burnaby has 1.3 million and Chase Office Field has 1.2 million. The following images present the 30-minute driving radius from each stadium.



Note: residents' numbers are calculated from Census 2021 and approximated polygons

Figure 19. 30-minute radius from each Stadium location

As shown:

- The stadiums with the largest populations within a 30-minute radius are located in Burnaby, Coquitlam, Langley, and North Vancouver.

- Of the 19 identified stadiums, 12 stadiums serve 30-minute drive radius population of less than 1 million. The stadiums with the lowest population within the 30-minute radius are located in Nanaimo, Prince George, Kamloops, Kelowna, and Chilliwack.

The City of Burnaby is best situated to reach the largest number of residents with a 30-minute driving radius. This fact lends itself well to the notion that Burnaby could be a hub for large sporting and cultural events and activities.

### Remaining Life Span Comparison

Understanding that the regions stadium infrastructure was not all constructed at the same time and that an acceptable lifespan for a stadium is ~60-years, the following assessment compares stadium lifecycle.

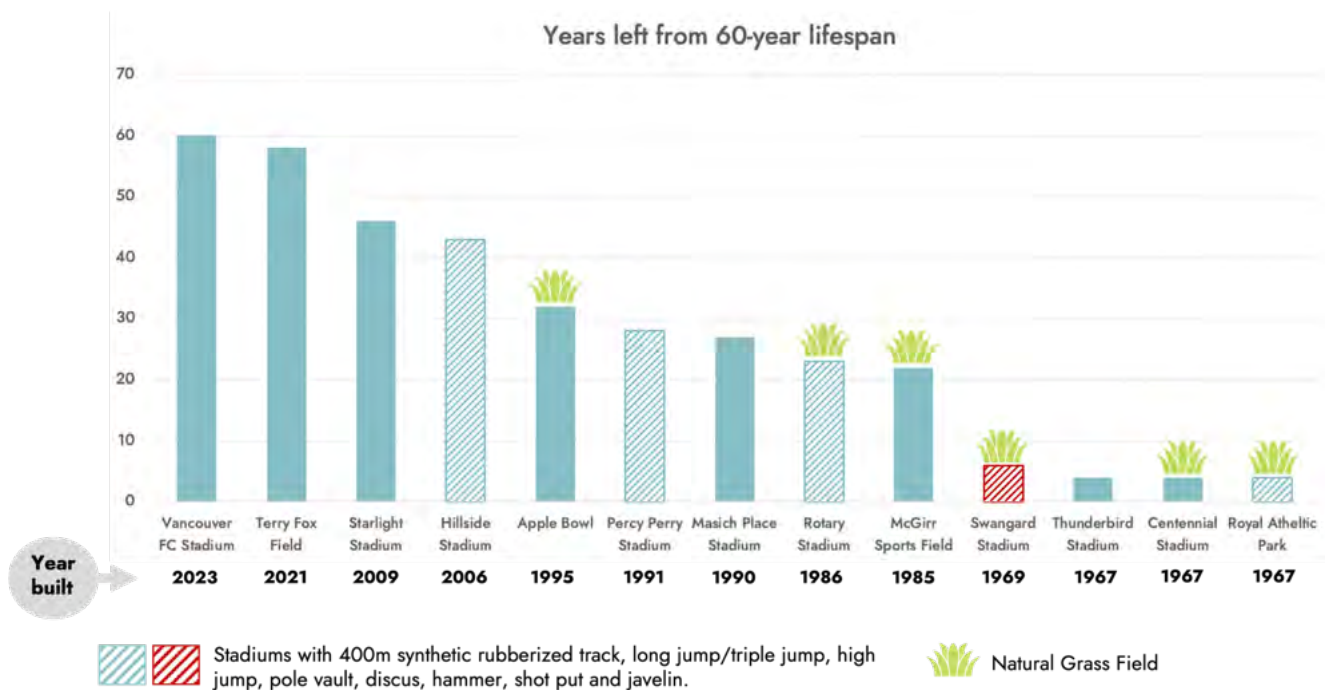


Figure 20. Years Left from 60-year Lifespan - Regional Stadiums Scan

While the results of this assessment have not been driven by site specific infrastructure condition information, it does provide an indicative overview as to where each stadium is within their overall lifecycle. As shown, Swangard Stadium, along with 3 other stadiums, have less than 10-years remaining within their 60-year lifecycle. Of the 9 stadiums with longer remaining lifespan than Swangard:

- Only 3 have Track & Field infrastructure: Hillside Stadium in Kamloops, Percy Perry Stadium in Coquitlam, and Rotary Stadium in Abbotsford.



- Only 3 have natural grass fields, Apple Bowl located at Kelowna, Rotary Stadium located at Abbotsford, and McGirr Sports Field located at Nanaimo.
- Vancouver FC Stadium located at Langley (currently under construction), Terry Fox Field located at SFU in the City of Burnaby (recently renovated), and Starlight Stadium located at Langford don't have competition level Track & Field infrastructure nor natural grass sports field.

### Combined Comparisons

The following images compare three key factors among the stadiums: permanent seating capacity, construction year, and population within 30-minute driving radius from each location. Ideal state for any stadium would be the top right corner.

Swangard Stadium is one of the oldest stadiums within the region, however, it is among the stadiums with the largest seating capacity and has the largest population within a 30-minute driving radius (size of the circles).

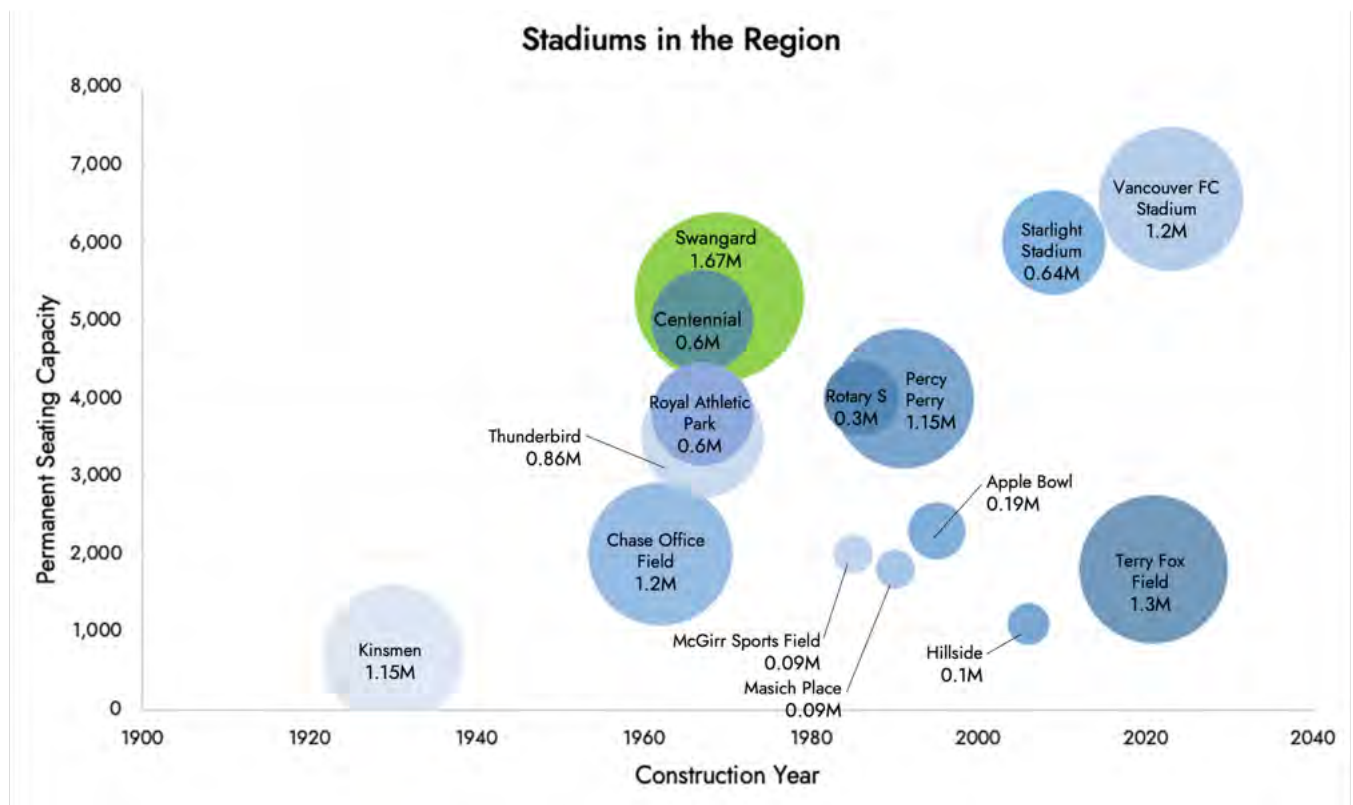


Figure 21. Comparison between X: Construction Year, Y: Permanent Seating Capacity, and Size: Population within 30-minutes driving radius

When comparing construction year vs population within that 30-minute driving radius and assigning seating capacity to the size of the circles, Swangard clearly stands out among the other stadiums in the region. Its relatively short remaining lifespan is a significant limitation.

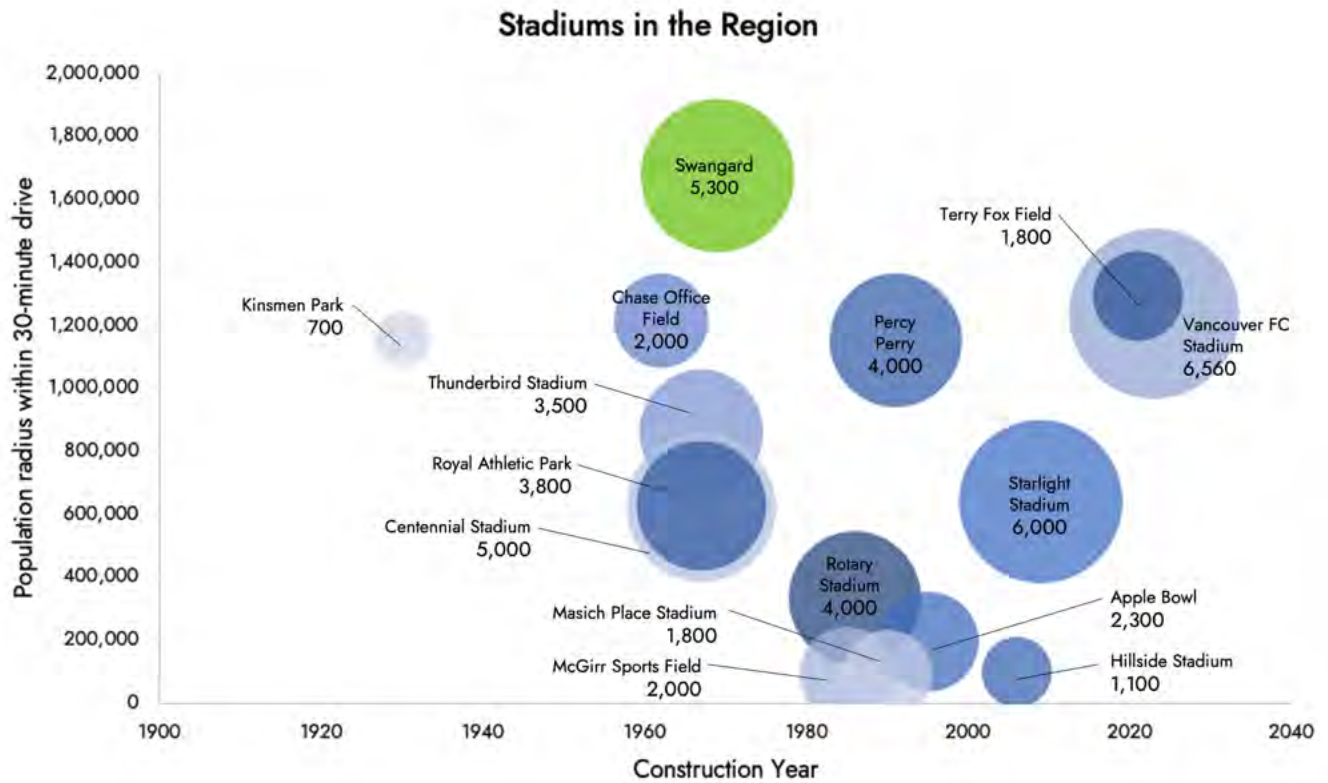


Figure 22. Comparison between X: Construction Year, Y: Population within 30-minute driving radius, and Size: Permanent Seating Capacity

These assessments indicate that Swangard Stadium provides a unique offering compared to the remainder of the benchmarked stadiums. It is the only stadium that optimally located, has a high seating capacity, has natural grass surface and has competition Track & Field infrastructure.

## 5. STADIUM TRENDS

There are various features, innovations, and programming patterns that are being implemented to keep improving fan experience within large stadiums. Some reflect advancements in technology, and some are in response to the Covid-19 pandemic. The stadium and arena industry may be in a re-education and re-building period. The following are eight trends that could be considered for future stadium<sup>10</sup> design scenarios.

1. **Sustainable Design:** sustainability and reduced carbon footprint are key goals for current and upcoming generations. Aging structures in arenas and stadiums provide the opportunity to redevelop community sports gathering and large event buildings that comply with sustainability standards and provide a new icon for the city and the region.
2. **Technological Fortresses:** User connectivity is a focus for a number of new stadiums across the globe, to improve fan experience and bridge the gap between them and the on-field action. It makes it feasible to provide richer content to attendees and to gather more precise information about the sport itself and fan's interactions with it. In the future, augmented and virtual reality, drone technology, AI, robots, sensors, and holographic technology will provide new attributes to sports and event experiences. In addition to those features, cashless transactions are now the norm.
3. **Urban Context:** Few new arenas and stadiums are being built in rural or remote areas. They need to be in multi-use areas with high density and easy access. One of the benefits of building a new stadium is the economic return for the city, which includes new businesses development and more employment.
4. **Multi-purpose fields – Multiple Experiences – Year-Round Activity:** To justify investment in developing a new stadium, the ability to accommodate a wide variety of events and programming needs to be enhanced. This implies higher utilization levels and a wider variety of events and programming.
5. **Anchor Tenants + Side Major events:** similar to the previous trend, having an anchor tenant that has seasonal bookings, hosts a given number of events each year provides a consistent and reliable

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<sup>10</sup> <https://sporttomorrow.com/the-top-10-features-of-future-stadiums/>  
<https://lambentspaces.com/blog/stadium-innovations-5-trends-changing-the-fan-experience/>  
<https://ungerboeck.com/resources/top-trends-in-stadium-and-arena-management-in-2022>

revenue stream. This is usually combined with various one-off major events like music concerts and festivals.

6. **Corporate Partnerships + VIP Experiences Enhancement:** Enhancing revenue generation will be an important goal. Promoting corporate partnerships and providing VIP rooms or boxes help to increase revenue. Corporate partnerships usually provide consistent revenue stream, and could include upscale hospitality packages with additional attributes like personal catering, special entrances, guest lists that streamlines access for VIP fans, etc.
7. **Agile Protocols for Risk Management:** Since the Covid-19 pandemic, fan experience has been evolving helping to make people to want to come back to the venues. An important aspect has been improving safety for all aspects of the experience from purchasing tickets, to travelling to the stadium, entering, accessing the seats, and purchasing from concession stands. Every point of contact will need to remain safe, and this safety should be guaranteed for staff and athletes in their spaces, entrances, and circulation. Risk assessment will need to be updated constantly.
8. **Accommodating Diverse Community Needs:** As the programming diversifies, user profiles would do so as well. Stadiums must provide diverse types of concession stands, think about different dietary needs, and contribute to the wholesome experience. Additional services such as merchandise and personal services may be considered.

## 6. PLANNING ASSUMPTIONS

Given the high-level nature of this study, there are several planning assumptions necessary to inform the development of Stadium revitalization options. They are:

### The 30,000 Foot View.

The report has been prepared as the first phase of visioning for Swangard Stadium. Subsequent studies and engagement will be required to ensure proper process is followed to make informed decisions. Some limitations of this study include:



- No public consultation has been completed to indicate community opinion.
- It is unknown if other municipalities within the region are considering the development a new 5,000-10,000 seat stadium.
- A quantitative demand analysis has not been completed to indicate the projected demand for large stadium infrastructure.
- No engineering assessment has been completed at the existing location to prove expansion or redevelopment feasibility.

### Stadium Demand.

This study has captured several qualitative demand indicators through engagement and analysis that speak to the future community demand for stadium infrastructure.

- The governing body for Track & Field events, IAAF, is anticipated to increase compliance oversight to ensure competitions take place at Certified facilities. Given that there are very few competition Certified Track & Field facilities within the Greater Vancouver region, this will increase the demand of Swangard.
- Current stadium user groups have indicated that they have challenges scheduling time at Swangard due to high utilization during peak times. This indicates that there is likely to be more demand than capacity during peak booking times.
- The City of Burnaby does not have alternate event space that features a large fenced in outdoor area with infrastructure to support events. As such, Swangard Stadium will continue to be the de-facto event space for outdoor events with participation >10,000, unless other new infrastructure is built.
- Within the region, there are few natural grass fields with a stadium with seating capacity of 5,000+. Natural grass fields are the preference for high performance soccer, football and rugby groups and therefore Swangard will continue to be a desirable location for games and competitions.
  - Within the region, there are even fewer stadiums able to support competition Track & Field events. While these events seldom draw more than 2,500 visitors, there will



continue to be strong demand for infrastructure like Swangard to support Track & Field activities and competitions.

Professional sport organizations have indicated a growing need for large stadiums to support new and expanding teams within the region.

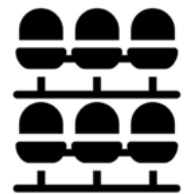
It is assumed that there is current and future activity demand that warrants exploration of an upgraded, expanded, or new stadium development.

### **Stadium Location.**

The current location of Swangard Stadium is optimal for resident and visitor access, with ~1.67M people living within a 30-minute driving radius. The Stadium is well situated to support public transportation and is on a major roadway. It is assumed the current location is optimal for future development of a new or expanded major stadium.

### **Seating Capacity.**

Seating capacity is a key feature for a venue that accommodates large sports or cultural focused events. Although Swangard Stadium is one of the three venues with the largest permanent seating capacity (ref: regional scan) there remains a 10,000-seating capacity venue gap within the region. The different development scenarios include either a small permanent seating addition, or an additional east grandstand that would allow Swangard to reach the 10,000 additional seating target.



### **Track & Field Infrastructure.**

Swangard Stadium has had a strong historical relationship with Track & Field groups, BC school programs, and recurrent training meets and local, regional, national, and international competitions. Due to current state of the infrastructure, on May 11<sup>th</sup>, 2023, the City of Burnaby issued RFP 116-04-23 for the reconstruction of the existing running track at Swangard Stadium. Therefore, all development scenarios except one, include Track & Field infrastructure.



### In-Field Surface Type

A key asset for a facility of this nature is the field. Swangard Stadium is currently known for its' high-quality natural grass surface. However, it requires significant maintenance and has low post-event turn over that hinders reaching higher stadium utilization levels. The benefits and challenges with natural grass and synthetic surfaces are identified with the appendix but one important notion to consider is that a synthetic or hybrid surface can expand the use of the field which should lead to higher utilization and more efficient service delivery. Understanding that use (and users) of the facility will be impacted by the selection of the field surface, revitalization options include both natural grass and synthetic/hybrid.



### Required Interventions.

Despite the different development scenarios explored, there are various interventions needed regardless of the chosen future. During the current state analysis and the engagement activities a series of interventions to current infrastructure were identified as necessary:

- Additional office space for City staff.
- Dressing Rooms and Officials Room upgrade.
- Provision of free-mobility accessibility for visitors, staff, and athletes, specially into the grandstand.
- Additional space for permanent and temporary storage.
- Wider truck access to sports field.
- Site and facility electrical upgrades.
- Access reconfiguration to resolve current conflicts with pedestrians, vehicles, and trucks.

## 7. DEVELOPMENT OPTIONS

Based on the planning assumptions, 6 revitalization development options have been explored. The 6 options are categorized into two types of developments:

- Upgrades/enhancements to current facility and site – low-cost intervention.
- Facility and site redevelopment – high-cost intervention.

The following figure illustrates the 6 revitalization options explored:



Figure 23. Development Scenarios

Scenario notes:

- Track & Field infrastructure replacements were included following IAAF Track & Field Facilities Manual. The definition of classification and competition category chosen in each development option depends on the ability to provide warm-up area near the stadium (items 15 to 19, page 20 within the Manual), and will require further analysis in subsequent phases.
- An order of magnitude cost estimate for each option including specified interventions is included. Detailed information can be found in *Appendix D – Order of Magnitude Estimate*.

Each option is described in the following sections.

## 7.1 OPTION 1A – Sport Focused Upgrades

This option includes site and facility upgrades and space and infrastructure add-ons to primarily support organized sports activities. The order of magnitude capital cost for this option is \$25,213,600. Key characteristics are:

- New Track & Field infrastructure (IAAF Category 2 or 3 - TBC).
- Additional permanent seating covered for up to 500 people (or 1,000 people - reduces parking stalls by 31).
- Natural grass surface remains - Re-level sports field to track elevation.
- Added structure north of existing stand for Administrative Area + Support Spaces for athletes.
- Increase fenced area – Fence Length ~700m.

The following images illustrate the proposed interventions and design inspiration for key aspects.

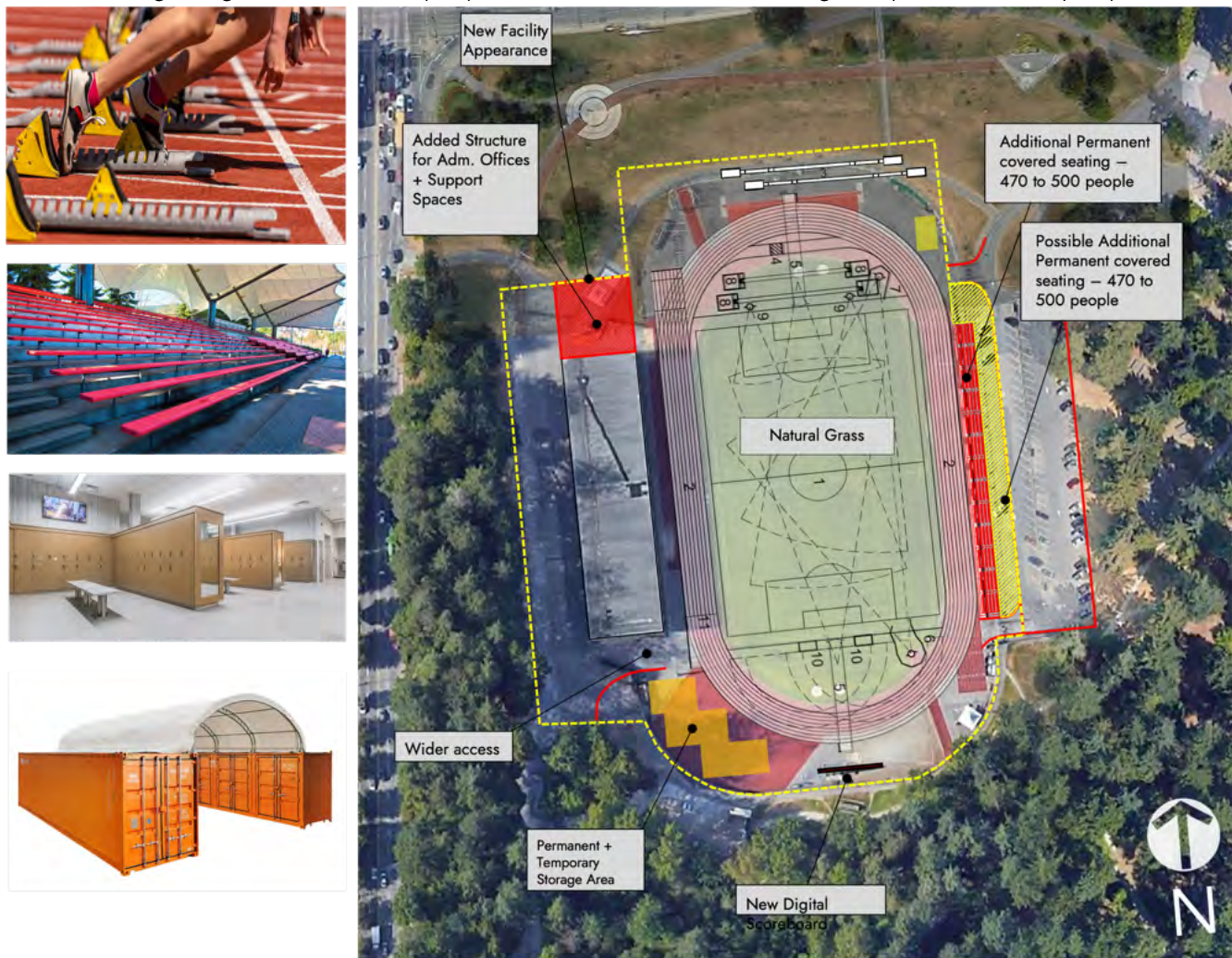


Figure 24. Option 1A Diagram

This option includes various interventions as shown in the following table:

	Activity	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )
1	New Track & Field Infrastructure IAAF Standards that includes Standard Track (8 lanes)	4,200.0	45,208
2	New Track & Field Infrastructure IAAF Standards that includes, Water Jump, Javelin Throw facility, Discus and Hammer Throw facility, Shot Put facility, High Jump facility.	2,440.0	26,264
3	New Track & Field Infrastructure IAAF Standards that includes long jump and triple jump facility	950.0	10,226
4	Relevel football surface and keep natural grass field	7,870.0	84,712
5	New Facility northwest corner of existing grandstand:	1,200.0	12,917
5.1	Office space includes reception, offices for 6 staff, meeting room, staff lounge, 2 bathrooms	120.0	1,292
5.2	Rooms for athletes and coaches. Includes changing rooms, showers/toilets, rooms for coaches, call room, weight training room, sauna, first aid room, doping control room.	600.0	6,458
5.3	4 Rooms for VIPs and Sponsors	280.0	3,014
5.4	Additional support spaces. Includes Equipment room, display areas, and concession	200.0	2,153
6	New fence similar to existing		
7	New digital scoreboard stand-alone - south of track		
8	Permanent Storage Area - Sea cans over concrete	160.0	1,722
9	Wider truck access and maneuver - south of existing grandstand	250.0	2,691
10	Permanent covered seating - East of field - Bleachers for 500 pp.	675.0	7,266
11	Upgrades to existing grandstand	176.0	1,894
11.1	4 Dressing rooms	70.0	753
11.2	Officials room	20.0	215
11.3	First Aid room	16.0	172
11.4	Hospitality room	70.0	753
11.5	Electrical Upgrades: main electrical service, stadium secondary distribution system		
11.6	Mechanical Upgrades: general heating and ventilation, heating distribution systems, secondary heating, plumbing Systems, fire suppression systems		
12	Additions to existing grandstand	51.2	551
12.1	Announcers' Box	17.0	183
12.2	Press Box	34.2	368

Table 5. Option 1A Quantified Interventions



**Use Impacts:**

- The upgrades and enhancements completed as part of Option 1A will result in more appropriate and higher quality sport space for existing user groups. This enhanced space has the potential to attract a wider audience of sport users to the stadium.
- Given that the field remains natural grass, the overall use of the facility will not increase from current utilization rates. The general community will see little enhanced benefit from this option. The field will continue to be the use limiting factor.
- Additional seating may draw more professional soccer, football and rugby organizations to use the Stadium for games and events.

**Other Considerations:**

- There will be an overall decrease in available site parking because of the expanded permanent seating on the east side of the site. There will be ~31 less parking stalls assuming 1,000 additional seats are added. Parking will remain a significant challenge for this option.
- Depending on the connection between the existing grandstand and the expansion on the northwest corner, a building code upgrade may be triggered for the entirety of the current grandstand. If triggered, the existing grandstand will likely require new/upgraded structural, mechanical, and electrical systems.
- Track & Field spectators are able to watch all disciplines from the same seating location.

## 7.2 OPTION 1B – Event Focused Upgrades

This option includes site and facility upgrades and space and infrastructure add-ons to primarily support cultural events and community festivals. Order of magnitude capital cost for this option is \$28,498,400. Key characteristics are:

- Replacement of Track & Field infrastructure.
- Additional permanent seating covered for up to 500 people.
- Event support area with temporary storage, additional visitors' services of ~2,600m<sup>2</sup>.
- Parking area relocated to northeast corner with up to ~125 parking spots.
- Natural grass surface is replaced with a hybrid or artificial grass surface.
- Added structure north of existing stand for Administrative area and support spaces for athletes.
- Increase fenced area – Fence length ~700m.

The following images illustrate the proposed interventions and design inspiration for key aspects.

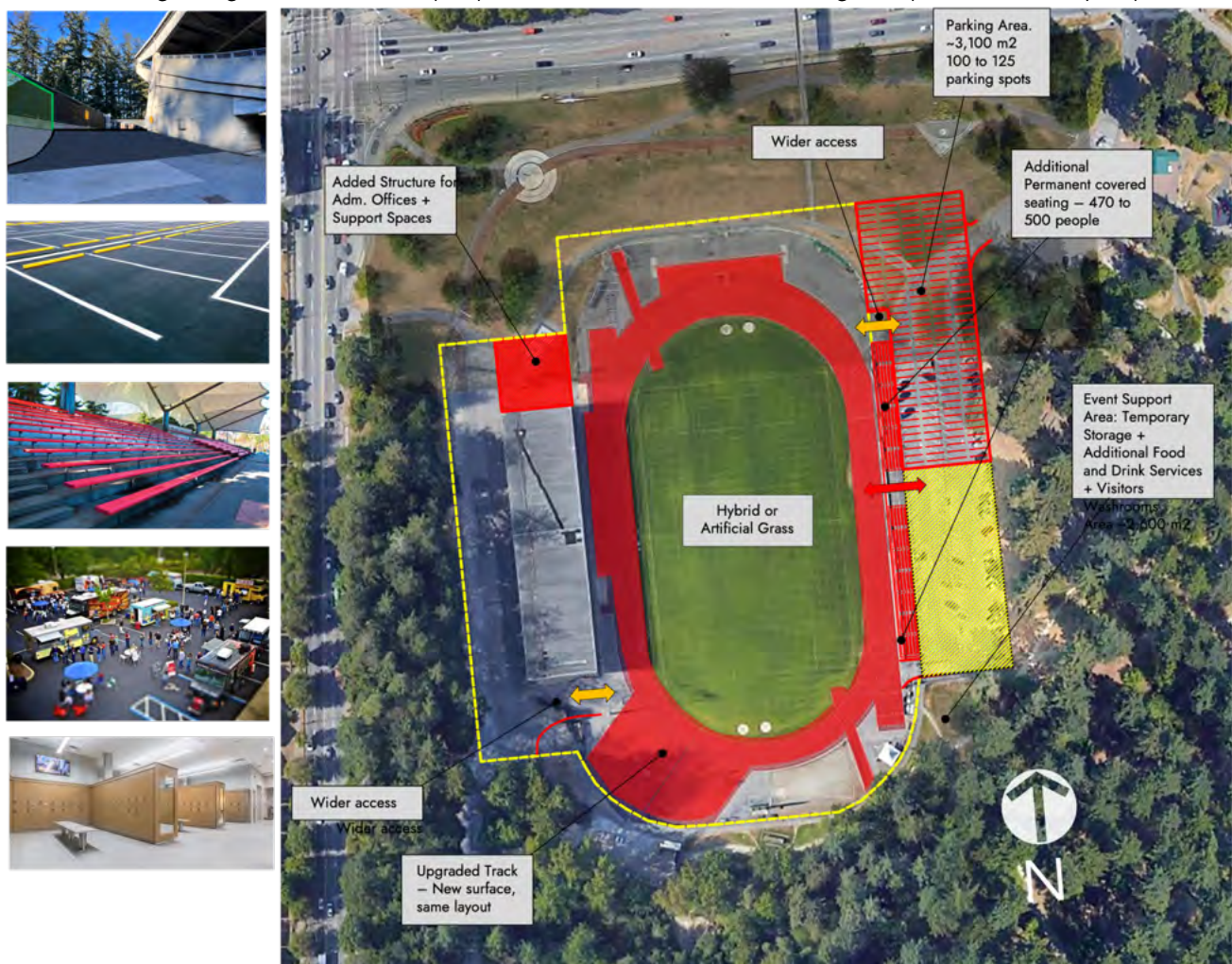


Figure 25. Option 1B Diagram

This option includes various interventions as shown in the following table:

	Activity	Area (m2)	Area (ft2)
1	Replacement of Track & Field surface, same layout		0
2	Relevel Football surface and replace to Artificial Grass		0
3	New Facility northwest corner:	1,200.0	12,917
3.1	Office space includes reception, offices for 6 staff, meeting room, staff lounge, 2 bathrooms	120.0	1,292
3.2	Rooms for athletes and coaches. Includes changing rooms, showers/toilets, rooms for coaches, call room, weight training room, sauna, first aid room, doping control room.	600.0	6,458
3.3	4 Rooms for VIPs and Sponsors	280.0	3,014
3.4	Additional support spaces. Includes Equipment room, display areas, and concession	200.0	2,153
4	New fence similar to existing		
5	Wider truck access and maneuver - south of existing grandstand	250.0	2,691
6	Wider truck access and maneuver - northeast of existing field	100.0	1,076
7	Permanent covered seating - East of field - Bleachers for 500 pp.	675.0	7,266
8	Upgrades to existing grandstand	176.0	1,894
8.1	4 Dressing rooms	70.0	753
8.2	Officials room	20.0	215
8.3	First Aid room	16.0	172
8.4	Hospitality room	70.0	753
8.5	Electrical Upgrades: main electrical service, stadium secondary distribution system		
8.6	Mechanical Upgrades: general heating and ventilation, heating distribution systems, secondary heating, plumbing Systems, fire suppression systems		
9	Additions to existing grandstand	51.2	551
9.1	Announcers' Box	17.0	183
9.2	Press Box	34.2	368
10	Event Support Area (yellow area) with water and power access	2,600.0	27,986
11	New parking area - northeast of existing field.	3,100.0	33,368

Table 6. Option 1B Quantified Interventions

### Use Impacts:

- The upgrades and enhancements completed as part of Option 1B will result in more appropriate space to support large events and festivals. The enhancements will likely increase the interest of organizations to use the Stadium for outdoor events.
- The increase in events has the potential to decrease the use of the facility to support sporting activities during peak event season (June-August).
- The hybrid or synthetic field replacement allows for increased, year-round field use. The general community, sport user groups and event organizations will benefit from this increase.
- The stadium will no longer support a full spectrum of Track & Field competition activities. Throwing events which require natural grass will be required to take place elsewhere within the community.

### Other Considerations:

- Parking will remain a significant challenge for this option. An off-site parking strategy will be required to support large activations.
- The proposed interventions suggest an expansion to the overall site footprint which will decrease park green space.
- Depending on the connection between the existing grandstand and the expansion on the northwest corner, a building code upgrade may be triggered for the entirety of the current grandstand. If triggered, the existing grandstand will likely require new/upgraded structural, mechanical, and electrical systems.



### 7.3 OPTION 1C – Multipurpose Upgrades

This option tries to satisfy the requirements of both sport and event organizations (multipurpose activities). Order of magnitude capital cost for this option is **\$29,034,900**. Key characteristics are:

- New Track & Field infrastructure (IAAF Category 2 or 3 - TBC)
- Additional permanent seating covered for up to 500 people.
- Event support area with temporary storage, additional visitors' services in ~2,600m<sup>2</sup>.
- Parking area relocated to northeast corner with up to 125 parking stalls.
- Natural grass surface remains - Re-level sports field to track elevation.
- Added structure north of existing stand for Administrative Area + Support Spaces for Athletes.
- Increase fenced area – Fence Length ~700m.

The following images illustrate the proposed interventions and design inspiration for key aspects.

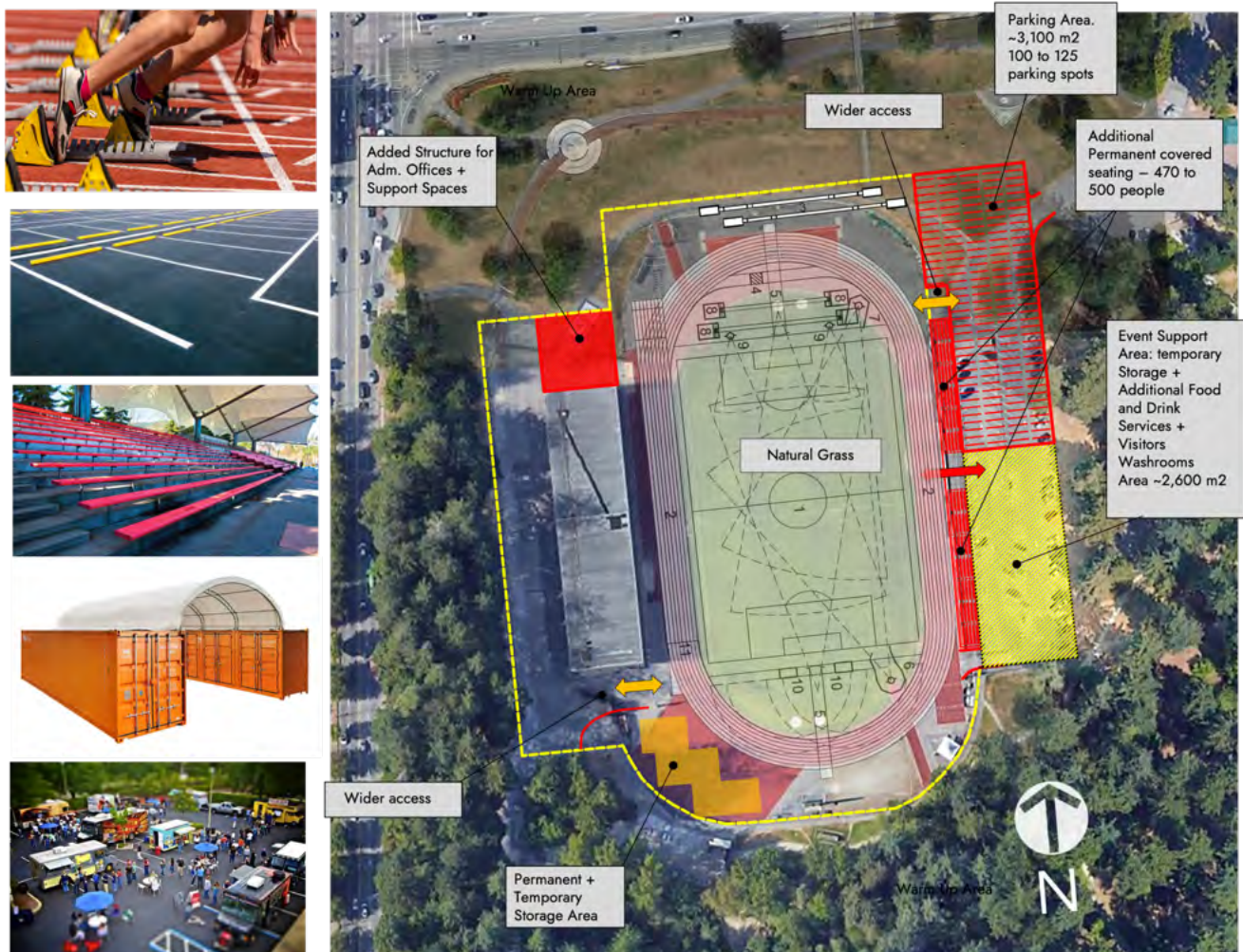


Figure 26. Option 1C Diagram



This option includes various interventions as shown in the following table:

	Activity	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )	Length (m)
1	New Track & Field Infrastructure IAAF Standards that includes Standard Track (8 lines)	4,200.0	45,208	
2	New Track & Field Infrastructure IAAF Standards that includes, Water Jump, Javelin Throw facility, Discus and Hammer Throw facility, Shot Put facility, High Jump facility.	2,440.0	26,264	
3	New Track & Field Infrastructure IAAF Standards that includes long jump and triple jump facility	950.0	10,226	
4	Relevel Football surface and keep natural grass field	7,870.0	84,712	
5	New Facility northwest corner:	1,200.0	12,917	
5.1	Office space includes reception, offices for 6 staff, meeting room, staff lounge, 2 bathrooms	120.0	1,292	
5.2	Rooms for athletes and coaches. Includes changing rooms, showers/toilets, rooms for coaches, call room, weight training room, sauna, first aid room, doping control room.	600.0	6,458	
5.3	4 Rooms for VIPs and Sponsors	280.0	3,014	
5.4	Additional support spaces. Includes Equipment room, display areas, and concession	200.0	2,153	
6	New fence similar to existing			700
7	New digital scoreboard stand-alone - south of track			
8	Permanent Storage Area - Sea cans over concrete	160.0	1,722	
9	Wider truck access and maneuver - south of existing grandstand	250.0	2,691	
10	Wider truck access and maneuver - northeast of existing field	100.0	1,076	
11	Permanent covered seating - East of field - Bleachers for 500 pp.	675.0	7,266	
12	Upgrades to existing grandstand	176.0	1,894	
12.1	4 Dressing rooms	70.0	753	
12.2	Officials room	20.0	215	
12.3	First Aid room	16.0	172	
12.4	Hospitality room	70.0	753	
12.5	Electrical Upgrades: main electrical service, stadium secondary distribution system			
12.6	Mechanical Upgrades: general heating and ventilation, heating distribution systems, secondary heating, plumbing Systems, fire suppression systems			
13	Additions to existing grandstand	51.2	551	
13.1	Announcers' Box	17.0	183	
13.2	Press Box	34.2	368	

Table 7. Option 1C Quantified Interventions

**Use Impacts:**

- The upgrades and enhancements completed as part of Option 1C will result in more appropriate space to support large events and festivals and more appropriate space for sport organizations (particularly Track & Field).
- The enhancements will increase the attraction for both sport and event organizations.
- The general community will see little benefit from the upgrades as the natural grass surface will limit use.
- The existing operational challenges related to field use for sports and large events will continue.

**Other Considerations:**

- Parking will remain a significant challenge for this option. An off-site parking strategy will be required to support large activations.
- The proposed interventions suggest an expansion to the overall site footprint which will decrease park green space.
- Depending on the connection between the existing grandstand and the expansion on the northwest corner, a building code upgrade may be triggered for the entirety of the current grandstand. If triggered, the existing grandstand will likely require new/upgraded structural, mechanical, and electrical systems.
- Track & Field spectators are able to watch all disciplines from the same seating location.

## 7.4 OPTION 2A – Sports Focused Redevelopment

This option includes complete redevelopment of stadium infrastructure to support activities for sport groups that provide structured, organized, and competitive programming. Order of magnitude capital cost for this option is \$153,228,600. Key characteristics are:

- New Track & Field infrastructure (IAAF Category 2)
- Development of a gathering plaza which will act as the main pedestrian entrance and face of the stadium.
- Development of 2 new grandstands, each with seating capacity of ~5,000, VIP boxes, concession areas, staff and athlete support rooms and multipurpose community spaces.
- Two levels of underground parking for a total of ~500 parking stalls.
- Natural grass surface remains - Re-level sports field to track elevation.
- Added structure north of existing stand for Administrative Area + Support Spaces for athletes.

The following images illustrate the proposed interventions and design inspiration for key aspects.

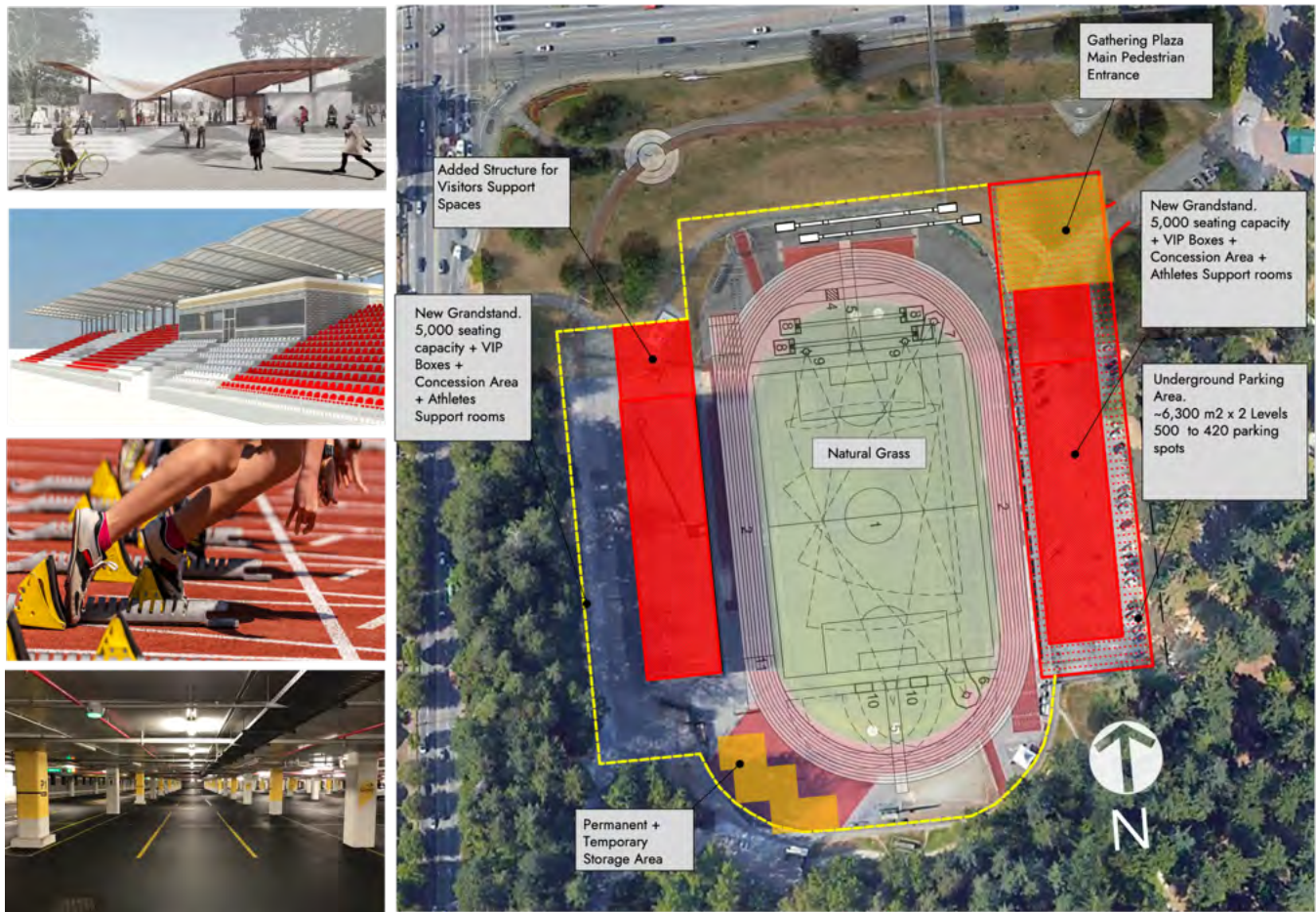


Figure 27. Option 2A Diagram

This option includes various interventions as shown in the following table:

	Activity	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )	Length (m)
1	Two new covered grandstands on each side of the field for 5,000 pp each.			
1.1	Office space includes reception, offices for 8 staff, meeting room, staff lounge, 2 bathrooms	160.0	1,722	
1.2	Rooms for athletes and coaches. Includes changing rooms, showers/toilets, rooms for coaches, call room, weight training room, sauna, first aid room, doping control room.	800.0	8,611	
1.3	Rooms for VIPs and Sponsors	600.0	6,458	
1.4	Additional support spaces. Includes Storage areas, display areas, and concessions	1,500.0	16,146	
1.5	Covered seating for 5,000 pp	2,600.0	27,986	
2	Permanent Storage Area - Sea cans over concrete	160.0	1,722	
3	New Track & Field Infrastructure IAAF Standards that includes Standard Track (8 lines)	4,200.0	45,208	
4	New Track & Field Infrastructure IAAF Standards that includes, Water Jump, Javelin Throw facility, Discus and Hammer Throw facility, Shot Put facility, High Jump facility.	2,440.0	26,264	
5	New Track & Field Infrastructure IAAF Standards that includes Long jump and triple jump facility	950.0	10,226	
6	Relevel Football surface and keep natural grass field	7,870.0	84,712	
7	Wider truck access and maneuver - south of existing grandstand	250.0	2,691	
8	New fence similar to existing			700
9	Gathering plaza with light roof structure and ticketing area	1,360.0	14,639	
10	Underground parking - 2 levels - under East Grandstand - each level 6,300 m <sup>2</sup>	12,600.0	135,625	
11	New digital scoreboard stand-alone - south of track			

Table 8. Option 2A Quantified Interventions

#### Use Impacts:

- The upgrades and enhancements completed as part of Option 2A will result in enhanced sport and event space for large (10,000 spectators) activities.
- The enhancements will increase the attraction for both sport and event organizations.
- The general community will benefit from access to multipurpose activity space within the grandstands but will see no benefit associated to increase field access. The natural grass surface will limit use.

- The existing operational challenges related to field use for sports and large events will continue.
- There will be significant use disruption during construction.

**Other Considerations:**

- Parking will remain a significant challenge for this option. The 500 underground parking stalls will only address a small fraction of the overall parking demand for large activations. An off-site parking strategy will be required.
- The proposed interventions suggest an expansion to the overall site footprint which will decrease park green space.
- Professional soccer, football and rugby teams prefer grandstand seating that is directly adjacent to the field of play. In this configuration, there are 8-lanes of track separating the field from the grandstand seating. This separation has a potential to impact the attraction of professional sport anchor tenants.
- Track & Field spectators are able to watch all disciplines from the same seating location.



## 7.5 OPTION 2B – Multipurpose Redevelopment

This option includes complete redevelopment of stadium infrastructure to support sport and event (multi-purpose) activities. Order of magnitude capital cost for this option is **\$167,184,800**. Key characteristics are:

- New Track & Field infrastructure (IAAF Category 3 - TBC).
- Throwing Track & Field event space outside stadium with natural grass.
- Athletes warm up area adjacent to stadium.
- Development of a gathering plaza which will act as the main pedestrian entrance and face of the stadium.
- Development of 2 new grandstands, each with seating capacity of ~5,000, VIP boxes, concession areas, staff and athlete support rooms and multipurpose community spaces.
- Hybrid or artificial grass field.
- Two levels of underground parking for a total of ~500 parking stalls.

The following images illustrate the proposed interventions and design inspiration for key aspects.

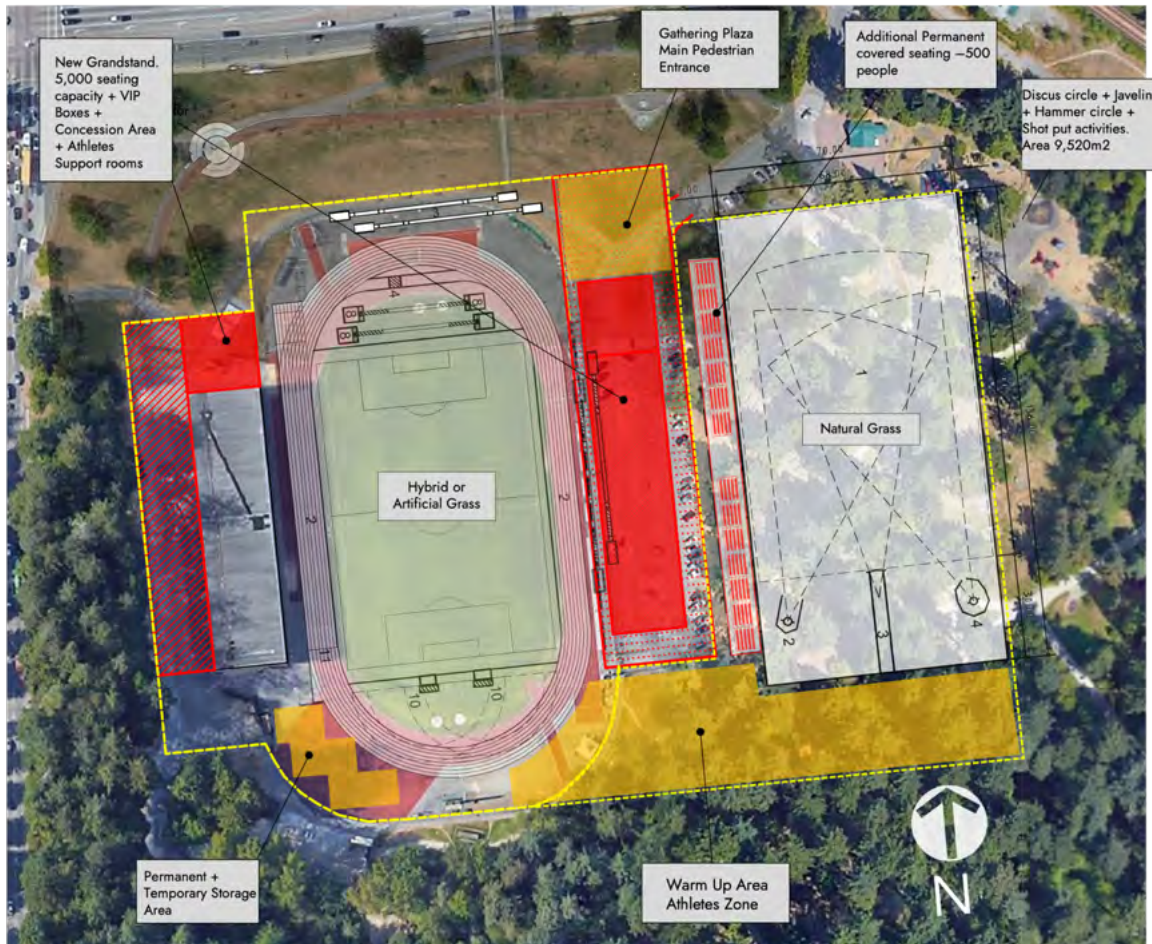


Figure 28. Option 2B Diagram

This option includes various interventions as shown in the following table:

	Activity	Area (m2)	Area (ft2)	Length (m)
1	Two new covered grandstands on each side of the field for 5,000 pp each.			
1.1	Office space includes reception, offices for 8 staff, meeting room, staff lounge, 2 bathrooms	160.0	1,722	
1.2	Rooms for athletes and coaches. Includes changing rooms, showers/toilets, rooms for coaches, call room, weight training room, sauna, first aid room, doping control room.	800.0	8,611	
1.3	Rooms for VIPs and Sponsors	600.0	6,458	
1.4	Additional support spaces. Includes Storage areas, display areas, and concessions	1,500.0	16,146	
1.5	Covered seating for 5,000 pp	2,600.0	27,986	
2	Permanent Storage Area - Sea cans over concrete	160.0	1,722	
3	New Track & Field Infrastructure IAAF Standards that includes Standard Track (8 lines)	4,200.0	45,208	
4	New Track & Field Infrastructure IAAF Standards that includes, Water Jump, Javelin Throw facility, Discus and Hammer Throw facility, Shot Put facility, High Jump facility.	2,440.0	26,264	
5	New Track & Field Infrastructure IAAF Standards that includes long jump and triple jump facility	950.0	10,226	
6	Relevel Football surface and change to artificial field	7,870.0	84,712	
7	Wider truck access and maneuver - south of existing grandstand	250.0	2,691	
8	New fence similar to existing			1,220
9	Gathering plaza with light roof structure and ticketing area	1,360.0	14,639	
10	Underground parking - 2 levels - under East Grandstand - each level 6,300 m2	12,600.0	135,625	
11	New digital scoreboard stand-alone - south of track			
12	New natural grass field for Throwing activities in existing forested area	9,520.0	102,472	
13	Permanent covered seating - East of field - Bleachers for 500 pp.	675.0	7,266	
14	New warm up area for athletes in existing forested area	5,000.0	53,820	

Table 9. Option 2B Quantified Interventions

#### Use Impacts:

- The upgrades and enhancements completed as part of Option 2B will result in enhanced sport and event space for large (10,000 spectators) activities.
- Athletes will benefit from warm up space directly adjacent to the main field.
- The enhancements will increase the attraction for both sport and event organizations.

- The general community will benefit from access to multipurpose activity space within the grandstands and increased field access due to the inclusion of a hybrid or synthetic surface.
- Track & Field competitions will be able to host all events from Central Park with throwing events taking place on an adjacent natural grass field.
- There will be significant use disruption during construction.

**Other Considerations:**

- Parking will remain a significant challenge for this option. The 500 underground parking stalls will only address a small fraction of the overall parking demand for large activations. An off-site parking strategy will be required.
- The proposed interventions suggest a significant expansion to the overall site footprint which will decrease park green space. This option has the most significant impact to Central Park.
- Professional soccer, football and rugby teams prefer grandstand seating that is directly adjacent to the field of play. In this configuration, there are 8-lanes of track separating the field from the grandstand seating. This separation has a potential to impact the attraction of professional sport anchor tenants.
- Track & Field spectators aren't able to watch all disciplines from the same seating location.



## 7.6 OPTION 2C – Anchor Tenant

Considering currently Swangard Stadium operates without an anchor tenant, this option includes complete redevelopment of stadium infrastructure to support sport events and activities without track & field infrastructure and assumes a sports organization as the anchor tenant. Order of magnitude capital cost for this option is **\$169,896,200**. Key characteristics are:

- Development of a gathering plaza which will act as the main pedestrian entrance and face of the stadium.
- Development of 2 new grandstands, each with seating capacity of ~5,000, VIP boxes, concession areas, staff and athlete support rooms and multipurpose community spaces.
- Administrative & Event Support Spaces such as storage.
- Natural grass surface to support soccer, football and rugby play.
- Two levels of underground parking for a total of ~550 parking stalls.
- Sports event support area.

The following images illustrate the proposed interventions and design inspiration for key aspects.

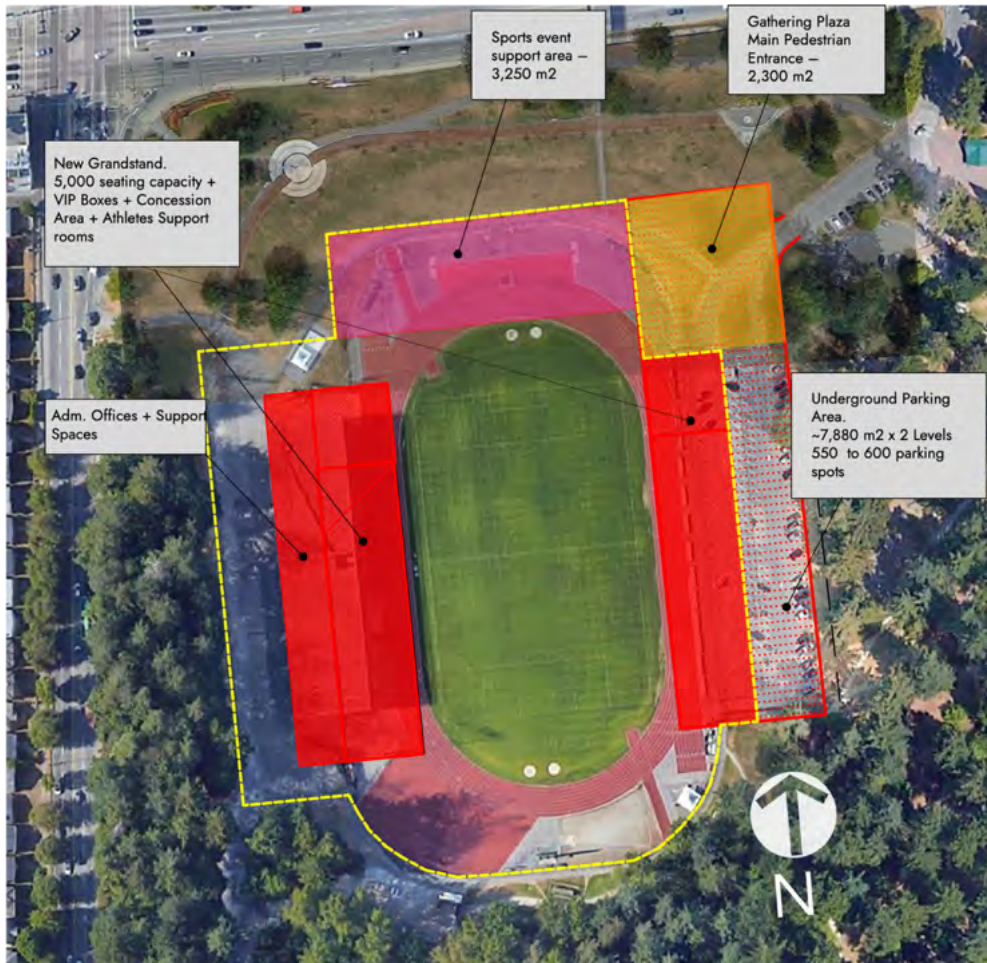


Figure 29. Option 2C Diagram

This option includes various interventions as shown in the following table:

	Activity	Area (m <sup>2</sup> )	Area (ft <sup>2</sup> )	Length (m)
1	Two new covered grandstands on each side of the field for 5,000 pp each.			
1.2	Rooms for athletes and coaches. Includes changing rooms, showers/toilets, rooms for coaches, call room, weight training room, sauna, first aid room, doping control room.	800.0	8,611	
1.3	Rooms for VIPs and Sponsors	600.0	6,458	
1.4	Additional support spaces. Includes Storage areas, display areas, and concessions	2,500.0	26,910	
1.5	Covered seating for 5,000 pp	2,600.0	27,986	
2	Office space includes reception, offices for 6 staff, meeting room, staff lounge, 2 bathrooms	160.0	1,722	
2	Permanent Storage Area - Next to west grandstand	300.0	3,229	
3	Relevel Football surface and keep natural grass field	7,870.0	84,712	
4	Wider truck access and maneuver - south of existing grandstand	250.0	2,691	
5	New fence similar to existing			725
6	Gathering plaza with light roof structure and ticketing area	2,300.0	24,757	
7	Sports event support area	3,250.0	34,983	
8	Underground parking - 2 levels - under East Grandstand - each level 7,880 m <sup>2</sup>	15,760.0	169,639	
9	New digital scoreboard stand-alone - south of track			

Table 10. Option 2C Quantified Interventions

### Use Impacts:

- The upgrades and enhancements completed as part of Option 2C will result in enhanced sport and event space for large (10,000 spectators) activities. The enhancements are aimed to support a professional soccer, football or rugby anchor tenant. Key to this option is the exclusion of a track which is preferable for professional soccer, football and rugby organizations.
- The general community will benefit from access to multipurpose activity space within the grandstands.
- Track & Field activities are not supported in this configuration. These activities will need to take place at another facility within the region. The requirements for a location that meets the Track & Field user groups:
  - IAAF certified Category 2 infrastructure.
  - Approx. seating capacity of 3,500.



- There will be significant use disruption during construction.

**Other Considerations:**

- Parking will remain a significant challenge for this option. The 550 underground parking stalls will only address a small fraction of the overall parking demand for large activations. An off-site parking strategy will be required.
- The proposed interventions suggest an expansion to the overall site footprint which will decrease park green space.

## 7.7 ORDER OF MAGNITUDE ESTIMATE SUMMARY

An order of magnitude capital cost estimate for each option has been completed by BTY Group (under separate contract). The results of the estimate are summarized here. Detailed information can be found in *Appendix D – Order of Magnitude Estimate*.

<Please see next page>

ITEM	OP. 1A	OP. 1B	OP. 1C	OP. 2A	OP. 2B	OP. 2C
Construction	\$17,621,500	\$19,901,600	\$20,285,500	\$107,050,700	\$116,755,900	\$118,697,100
Track & Field Infrastructure	\$3,104,700	\$2,654,700	\$3,104,700	\$3,104,700	\$3,104,700	\$0
Sports Field	\$1,428,400	\$2,518,400	\$1,428,400	\$1,428,400	\$2,518,400	\$1,428,400
Additional Permanent Seating	\$1,589,100	\$1,589,100	\$1,589,100	\$62,074,700	\$63,673,900	\$66,960,300
Additions to Existing Grandstand	\$2,511,100	\$2,511,100	\$2,511,100	\$0	\$0	\$0
Support Spaces for Athletes & Staff	\$5,306,000	\$5,306,000	\$5,306,000	\$0	\$0	\$0
Underground Parking	\$0	\$0	\$0	\$25,250,400	\$25,250,400	\$31,583,000
Other Site Developments	\$1,317,400	\$2,651,500	\$3,623,900	\$3,425,000	\$9,374,200	\$5,677,700
General Requirements	\$1,525,700	\$1,723,100	\$1,756,300	\$6,669,800	\$7,274,500	\$7,395,500
Fees (5%)	\$839,100	\$947,700	\$966,000	\$5,097,700	\$5,559,800	\$5,652,200
Professional Fees	\$1,321,600	\$1,492,600	\$1,521,400	\$8,028,800	\$8,756,700	\$8,902,300
Connection Fees & Permits	\$334,800	\$378,100	\$385,500	\$2,034,000	\$2,218,400	\$2,255,300
Management & Overhead	\$1,233,400	\$1,393,000	\$1,420,000	\$7,493,600	\$8,173,000	\$8,308,800
Project Contingency	\$4,102,300	\$4,633,100	\$4,722,500	\$24,921,500	\$27,180,800	\$27,632,700
Furnishings, Fittings & Equipment	\$600,000	\$700,000	\$700,000	\$3,700,000	\$4,100,000	\$4,100,000
<b>TOTAL PROJECT COST</b>	<b>\$25,213,600</b>	<b>\$28,498,400</b>	<b>\$29,034,900</b>	<b>\$153,228,600</b>	<b>\$167,184,800</b>	<b>\$169,896,200</b>
<i>Financing Costs, Goods &amp; Services Tax, and Escalation are excluded</i>						

The scale of capital costs between development scenario 1 (1A, 1B, and 1C) and 2 (2A, 2B, and 2C) is vastly different. The base level of remediation will require ~\$25-30m and site redevelopment requires ~\$150-170m.

## 7.8 OPTION ASSESSMENT

Given the level of assessment completed as part of this study and knowing there are other required inputs to make an informed decision as to the most suitable option for development, key benefits and risks/challenges have been identified. This option assessment answers the following questions:

- What are the key benefits and risks/challenges when comparing development Option 1 (1A, 1B, 1C) and Option 2 (2A, 2B, 2C)?
- What are the differentiating benefits and risks/challenges of each option (1A, 1B, 1C, 2A, 2B, 2C).

### 7.8.1 Development Option 1 vs. 2

There are two types of developments being considered: Upgrades/enhancements to the current facility and site (low-cost intervention) and major facility and site redevelopment (high-cost intervention). While both development options will result in enhanced facility and site space, there are some key differentiators.

Benefits	Risks / Challenges
<b>Development Option 1 (1A, 1B, 1C)</b>	
<ul style="list-style-type: none"> <li>• Improves facility and site spaces to support general public use, organized sport organizations and cultural events.</li> <li>• Improvements will likely increase the desirability of the Stadium for users. Participation and visitation will increase.</li> <li>• Asset remains a community focused space with most direct benefits for Burnaby residents.</li> <li>• Extends the facility lifespan of Swangard Stadium infrastructure. As part of the improvements, it is assumed some building systems are upgraded.</li> <li>• Minimizes the impact on Central Park and greenspace.</li> <li>• Aligns with existing City planning – no proposed change of use or scale.</li> </ul>	<ul style="list-style-type: none"> <li>• Upgrades and enhancements do not adequately support professional sport organizations and therefore may limit partnership opportunities in the future.</li> <li>• Enhancements may trigger significant upgrades to existing grandstand infrastructure which have not been accounted for.</li> </ul>

Benefits	Risks / Challenges
<ul style="list-style-type: none"> <li>Significantly less disruption to current users and surrounding neighbourhoods during development.</li> </ul>	
<b>Development Option 2 (2A, 2B, 2C)</b>	
<ul style="list-style-type: none"> <li>Increases Swangard's ability to hold large sport and cultural activities and events.</li> <li>Will place Swangard Stadium as the only venue of its kind within the region.</li> <li>Large events and activities will have a significant economic spinoff benefit to the City and city businesses.</li> <li>Location of Swangard is optimal for a stadium of this scale.</li> <li>Will further enhance Central Parks placemaking ability.</li> <li>Asset should remain operational for 50+ years.</li> <li>New grandstand infrastructure will include net new community multipurpose space that could be used for sport or leisure programming.</li> </ul>	<ul style="list-style-type: none"> <li>Use of the Stadium may shift towards supporting the region, rather than Burnaby residents. The high seating capacity and enhanced amenities will attract professional sport organizations and large events which have a less direct positive impact on Burnaby residents.</li> <li>Development will require offsite parking strategy, which has not been explored. The Stadium will have 10,000 permanent seats and only ~600 parking stalls.</li> <li>High level of disruption to current users, neighbouring community and Central Park visitors.</li> <li>Most significant impact to Central Park and green space.</li> <li>Focus of Stadium will shift away from community use and towards revenue generating opportunities.</li> </ul>

### 7.8.2 Option Comparison

Six facility and site redevelopment options have been explored. Each option has distinct key benefits and risks. They are:

Benefits	Risks / Challenges
<b>Option 1A – Sport Focused Upgrades</b>	
<ul style="list-style-type: none"> <li>Upgrades result in more appropriate and higher quality sport space for existing user groups.</li> </ul>	<ul style="list-style-type: none"> <li>Field remains natural grass and thus will not be able to accommodate increased use. This could be perceived as a missed opportunity to increase utilization.</li> </ul>

Benefits	Risks / Challenges
<ul style="list-style-type: none"> <li>Field will remain desirable for high performing sport organizations which have a strong preference for natural grass.</li> <li>Infrastructure will support all Track &amp; Field activities and therefore will be very desirable to host competition and events.</li> <li>Increased seating capacity may draw more professional soccer, football and rugby organizations.</li> </ul>	<ul style="list-style-type: none"> <li>Option decreases available site parking while increasing the permanent seating capacity.</li> <li>The Stadiums ability to host cultural events will remain challenged due to natural grass field and lack of event support spaces.</li> </ul>
<b>Option 1B – Event Focused Upgrades</b>	
<ul style="list-style-type: none"> <li>Upgrades result in more appropriate space to support large events and festivals.</li> <li>The hybrid or synthetic field replacement allows for increased, year-round field use. The general community, sport user groups and event organizations will benefit from this increase.</li> </ul>	<ul style="list-style-type: none"> <li>With a more significant focus on events and festivals, it is expected that there will be decreased use by organized sport organizations.</li> <li>Proposed interventions suggest an expansion to the overall site footprint which will decrease park green space.</li> <li>The stadium will no longer support a full spectrum of Track &amp; Field competition activities. Throwing events which require natural grass will be required to take place elsewhere within the community.</li> </ul>
<b>Option 1C – Multipurpose Upgrades</b>	
<ul style="list-style-type: none"> <li>Upgrades result in more appropriate space to support large events and festivals and more appropriate space for sport organizations (particularly Track &amp; Field)</li> <li>Enhancements will increase the attraction for both sport and event organizations.</li> </ul>	<ul style="list-style-type: none"> <li>Field use will remain limited due to the maintenance needs of the natural grass field.</li> <li>The Stadiums ability to host cultural events will remain challenged due to natural grass field and lack of event support spaces.</li> <li>Proposed interventions suggest an expansion to the overall site footprint which will decrease park green space.</li> </ul>
<b>Option 2A – Sport Focused Redevelopment</b>	



Benefits	Risks / Challenges
<ul style="list-style-type: none"> <li>• Development will increase the attraction for both professional sport and event organizations.</li> <li>• General community will have access to new multipurpose space within the grandstand infrastructure. This is a net new space for the community.</li> </ul>	<ul style="list-style-type: none"> <li>• Field use limitations will remain as a result of maintaining a natural grass surface.</li> <li>• Professional soccer, football and rugby teams prefer grandstand seating that is directly adjacent to the field of play. In this configuration, there are 8-lanes of track separating the field from the grandstand seating. This separation has a potential to impact the attraction of professional sport anchor tenants.</li> </ul>
<b>Option 2B – Multipurpose Redevelopment</b>	
<ul style="list-style-type: none"> <li>• Artificial or Hybrid field surface will increase the overall use of the field. This will increase community, professional and event use.</li> <li>• Track &amp; Field competitions will be able to host all events from Central Park.</li> </ul>	<ul style="list-style-type: none"> <li>• Development has the most significant impact on Central Park. This option has the largest footprint due to the Track &amp; Field throwing area.</li> <li>• Professional soccer, football and rugby teams prefer grandstand seating that is directly adjacent to the field of play. In this configuration, there are 8-lanes of track separating the field from the grandstand seating. This separation has a potential to impact the attraction of professional sport anchor tenants.</li> </ul>
<b>Option 2C – Anchor Tenant</b>	
<ul style="list-style-type: none"> <li>• Redevelopment will provide ideal infrastructure for professional sport (soccer, rugby and football) which will significantly increase the desirability for organizations.</li> <li>• This option will likely have the most significant positive impact on revenue generation for the City and economic spinoff for Burnaby businesses.</li> </ul>	<ul style="list-style-type: none"> <li>• Community, organized sport, and event organizations will see a decrease in availability as a result of an anchor tenant.</li> <li>• No Track &amp; Field infrastructure is included and therefore existing users will experience significant disruption.</li> <li>• The Track &amp; Field heritage/significance of Swangard Stadium may be honoured through the new development but likely due to the exclusion of infrastructure will cause</li> </ul>

Benefits	Risks / Challenges
	some level of public disapproval.

## 8. STUDY CONCLUSIONS

Upon completion of the Swangard Stadium Revitalization Study, there are several conclusions that can be made. They are:

- The Stadium is nearing end of life and requires significant investment to ensure functionality and to extend its life span.
- Over the last 10-years, the Stadium has primarily supported Track & Field activities and organizations. 42% of all bookings are related to Track & Field activities.
- There is community and user group demand for additional stadium booking time to support a range of activities including, sporting, event and drop-in community recreation activities.
- The Stadium is optimally situated within the region, having the largest immediate population within a 30-minute driving radius amongst 19 other stadiums.
- The current infrastructure offering is unique within the region. It is the only stadium that features 5,000 permanent seats, competition level Track & Field infrastructure, natural grass field and the largest immediate population within 30-minutes.
- There are multiple future demand indicators which point to increasing demand for large scale (5,000-10,000 seat capacity) stadiums.
- The capital costs to upgrade and enhance the current stadium infrastructure (Option 1A, 1B, 1C) ranges between \$25m-30m.
- The capital costs to redevelop the site to include a new stadium capable of providing 10,000 permanent seats (Option 2A, 2B, 2C) ranges between \$150m-170m.

The revitalization options that have been explored within this study result in enhanced stadium spaces for sport organizations, event organizations and the general community. All options will result in a net overall positive impact to the community and region. Options 2A, 2B and 2C will likely have the largest impact but would also require the largest capital investment.

The determination of what option(s) should be further explored depends on the outcomes of several other related studies/assessments, which have not yet been completed.

- Gather feedback on the assessment and proposed options from Commission and Council and update/finalize report. Finalized report will identify the recommended options to bring forward to public engagement.
- If there is Council support for further exploration of Option 2A, 2B or 2C:
  - Complete a quantitative demand analysis for large stadium activities.
  - Develop a business case to assess the financial impacts of development and various use scenarios and operating models.

- Conduct public engagement for shortlisted options to capture public's perspective as part of OCP Update and Central Park Master Plan process.

## APPENDIX A – ENGAGEMENT OVERVIEW

The study included various engagement activities for a range of stakeholders. The following section describes the engagement activities and outcomes that helped shape the study and the scenarios considered.

### CITY OF BURNABY SESSIONS.

#### 1. Parks, Recreation and Cultural Services – November 8<sup>th</sup>, 2023

##### Key Outcomes:

- Most of the bookings at the Stadium are related to Track & Field Practice:

Activity	Book days 2019	Book days 2022
Track/Practice Bookings	131	144
Cultural/Filming/Other Bookings	41	47
Sports Bookings	20	25

- Projects on hold - Announcers Booth and Boxes, Track Replacement
- There is a current lack of office space, storage, and adequate change rooms and lockers area
- The natural grass surface is a great asset for sport organizations.
- In Spring 2022, Whitecaps FC2 started to have their games at Swangard.
- There is current discussion with 2 top tier women's soccer organizations to play at Swangard, one plays Fall-Winter which correlates positively with current stadium booking patterns.
- Track spotters' line isn't aligned with the actual finish line.
- Parking is an issue for large events/activities; however, the City encourages the use of public transit.
- Introducing Artificial or Hybrid turf could alienate some soccer organizations but would help increase availability.
- Current aged infrastructure and accessibility challenges limit future growth.
- General public access to the stadium is between 7:30 am to 2:30 pm daily. Open and closed by Park staff.
- Drop-in activities: Seniors' workout group – 25-30 members, 3 days a week.  
Taiichi, badminton groups use the stadium daily.
- Community, drop-in use has increased since the Covid-19 pandemic.
- Access road is hidden, is not welcoming, and has poor signage.
- Seating capacity can be higher: temporary bleachers, for example for Canada-Japan rugby game, there were accommodated 7,000 additional seating.



- Vision: More permanent seating, VIP suites, and better infrastructure for large, organized sports events. More asphalt space at track level.

## 2. Parks, Recreation and Cultural Services – November 9<sup>th</sup>, 2023

**Goal of the Session:** Tour of the Stadium Facility led by the Recreation team. The following are some pictures taken during the tour:



Figure 30. Track & Field infrastructure



Figure 31. Permanent and temporary seating





Figure 32. Stadium's fence



Figure 33. Concourse



Figure 34. Parking

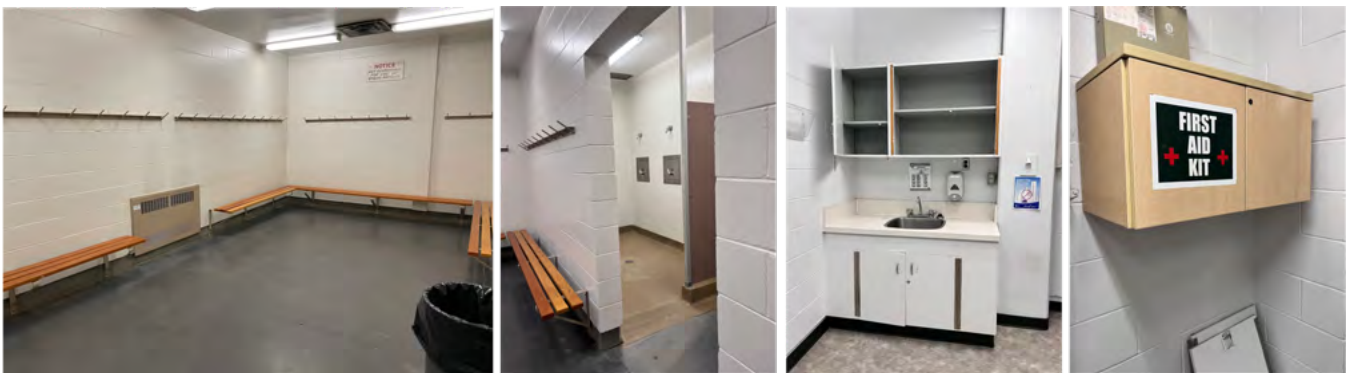


Figure 35. Change rooms.





Figure 36. Hospitality room.

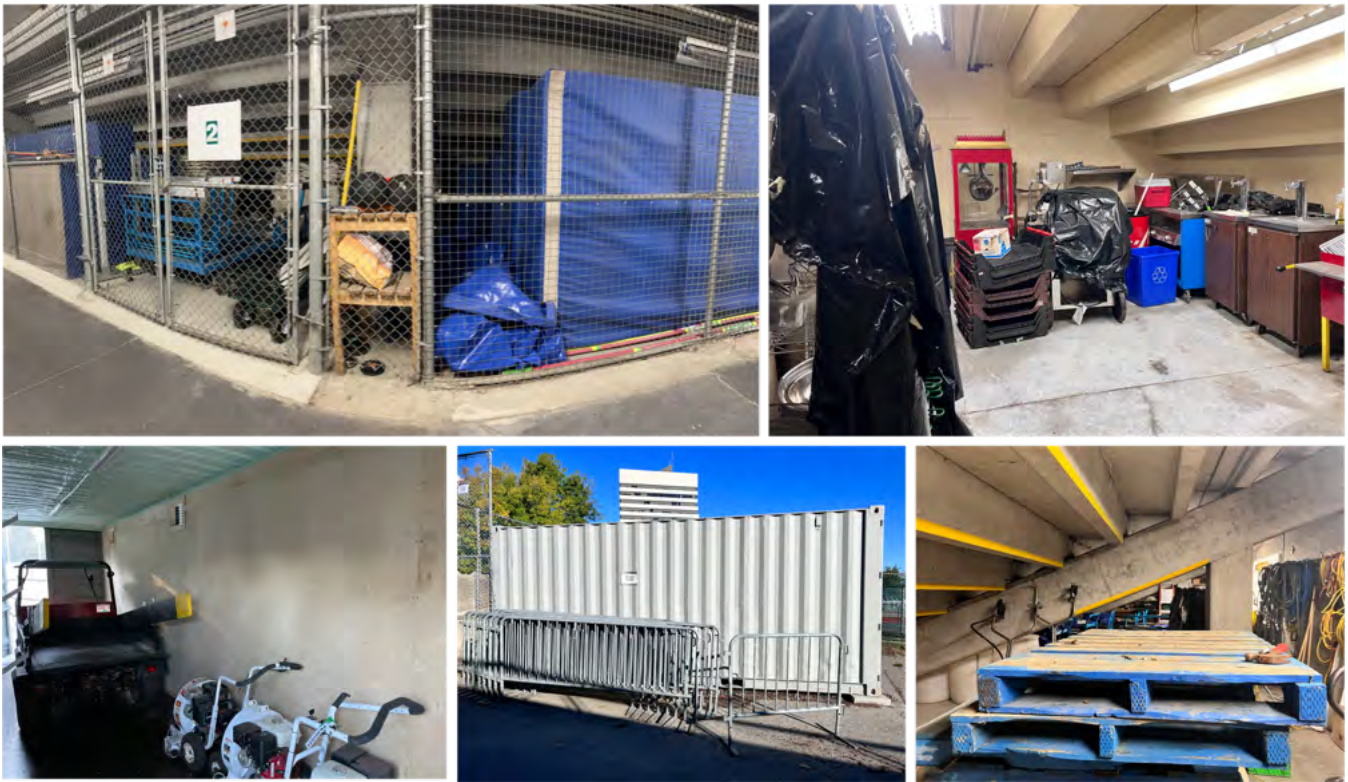


Figure 37. Storage

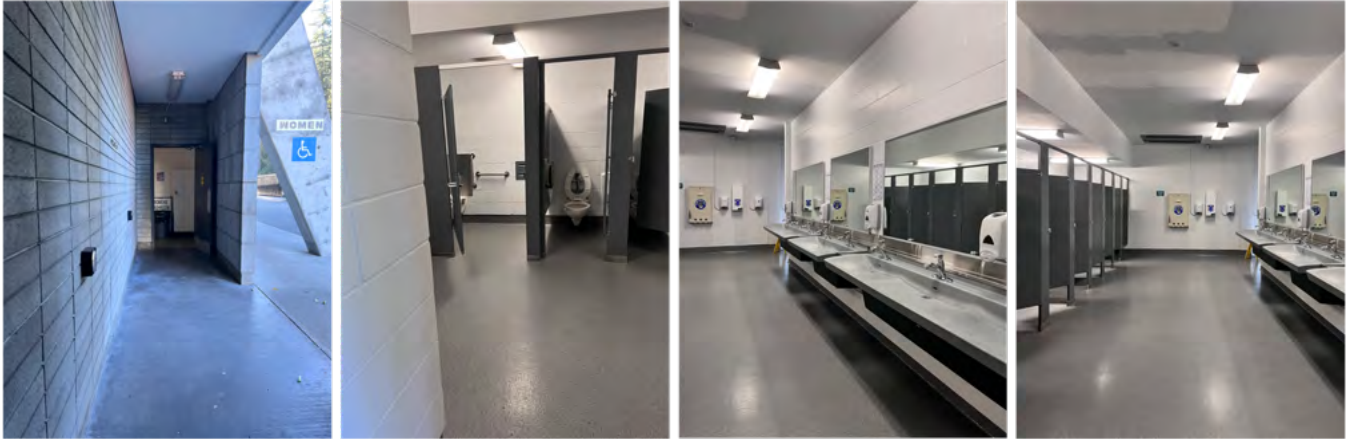


Figure 38. Bathrooms



Figure 39. Office

### 3. Lands & Facilities Department – January 13<sup>th</sup>, 2023

#### Key Outcomes:

- In the 5-year Capital plan there are various projects identified for Swangard:
  - The priority is the electrical upgrade for the whole sector of park to support current state.
  - Dressing renewal for showers and washrooms
  - Main roof replacement targeted for 2026.
  - Replacement of track
  - \$3.5 million playground for the triangle (2024 construction) + off-leash dog park
  - Announcer booth on hold
- What works well:
  - Plumbing has been re-pipped.
  - First Aid room upgrade.
  - HVAC + hot water storage tank.
- Challenges:
  - Field needs to be re-levelled – sand-based field.

- o Signage and advertising to the community
- o Parking for large events – lot on the southeast is used as temporary parking.
- o No welcoming plaza – the Stadium is tucked away.

#### 4. Parks, Recreation and Cultural Services – January 14<sup>th</sup>, 2023

##### Key Outcomes:

- Swangard hosts various cultural events organized by community organizations.
- Swangard previously hosted Canada Day event but it has been moved to a different venue.
- Community needs space for unstructured, outdoor, free, multi-generational activities.
- Swangard facility has been providing services for youth and school events since its opening.
- Plug-and-play utilities is needed to facilitate cultural and food events.
- There is a need to enhance the connection between the Stadium and Patterson sky train – better walkable paths.
- Need infrastructure for itinerant cultural and food events: power, light, running water.
- Ticketing usually is managed by the organization itself, even if the event is free. It is important to be able to count number of participants for public safety.
- Swangard is the only public infrastructure with its current capacity that is fenced.

#### PARTNER ORGANIZATIONS SESSIONS.

##### 1. Burnaby Board of Trade – March 17<sup>th</sup>, 2023

##### Key Outcomes:

- Swangard could hold larger events.
- Their main interest is local business procurement opportunities.

##### 2. Tourism Burnaby – March 30<sup>th</sup>, 2023

##### Key Outcomes:

- Stadium drives important economic development – every person that visits Burnaby spends on average \$80 daily. 2,500 people = \$20,000 in benefits.
- Main objective for Burnaby is to be one of the top sports events hosting cities of Canada and a Sports hub within the region.
- Swangard is a key facility with a strategic location and a large capacity for the region.
- The organization focuses on national and international events; main challenges are: access, seating capacity, connection to public transit, and support infrastructure.



- Other challenges -> limited hotel rooms, 1,200 current number, 800 rooms needed to get back to same number as in 2020. Goal for 2030, at least 3,000 hotel rooms.
- May to September is high season, the organization often focuses on finding events during off-season to offset tourism in the year.
- Rugby and soccer have strong presence in Burnaby.
- Seating capacity can be sometimes too low to host some sports events. It's ideal to reach the 10,000-seating capacity scenario if we want to attract international soccer and rugby events or specific championships such as the Commonwealth Games, Canada Games, and Pan American Games.
- Large sport events bring additional economic support through sponsorships and concession sales.
- Swangard needs better signage, general wayfinding space, messages to the street to promote events.
- Sports Hub is coming to Copeland Arena.
- Pro-National Women's Soccer League might be a good future fit for Swangard.

## SPECIFIC USER GROUP SESSIONS.

### 1. Achilles International Track & Field Society & BC Athletics – March 17<sup>th</sup>, 2023

#### Key Outcomes:

- Achilles International Track & Field Society is a non-profit who coordinates, hosts, and develops international level track competitions, such as Harry Jerome Outdoor Track Classic that rates as a world athletics continental "Bronze Level Tour".
- In August 2017 the City of Burnaby and Achilles International Track and Field Society signed an agreement for the track replacement, funding provided by the Society, and the use of the infrastructure by the Society for the following 12 years of the track replacement.
- Achilles International Track & Field Society has founded several track & field competitions such as Vancouver Sun Fun Run and the September Rainforest Trail Fun Run in Central Park.
- Schools rely heavily on Swangard for their sport activities and championships - Vancouver Elementary schools have their meets at the stadium.
- Training venue for Thunderbirds (3 times a week) and Special Olympics.
- Highest demand between April and June.
- IAAF certification will have important changes in 2024 that will impact current Track & Field infrastructure. IAAF will be enforcing additional oversight to ensure competitions are taking place at Certified locations.
- Grass surface is required for throwing events

- Review configuration and location of track & field individual sports.

## 2. Simon Fraser University – March 17<sup>th</sup>, 2023

### Goal of the Session:

Provide the scope and context of the study and receive comments from SFU, as a possible ally, considering its recent renovation to Terry Fox Stadium.

### Key Outcomes:

- SFU track is tailored for community competitions, not for world class events.
- 2,000 covered seating.
- SFU is certified from World Athletics but lower than bronze. No IAAF certification.
- There is no throw cage.
- Mostly use on a Varsity level, it takes most of the available bookings in prime time.
- Times available are weekends during spring and summer.
- SFU would be open to host events, however there is an existing challenge considering multiple entry points that would have to be monitored.
- The field is synthetic.

## 3. WHITECAPS FC – April 26<sup>th</sup>, 2023

### Goal of the Session:

Provide the scope and context of the study and receive comments from Whitecaps FC, as a possible anchor tenant or seasonal tenant.

### Key Outcomes:

- 10,000-seat stadium at Burnaby's location is ideal for existing and future teams, such as the women's team part of the future Canada's women's league that would start in 2025.
- The fan experience is known to be better the closer they are to the field, ideally a soccer stadium wouldn't have any track & field infrastructure between the seating and soccer field.
- The first Whitecaps FC team could play the early round games at Swangard.
- Natural grass is preferred, however it is known that its maintenance is harder than artificial or hybrid turf, so if full maintenance is a challenge, then artificial or hybrid should be the option to go to.
- During the year there are approximately 14 games, so the stadium where the games are played is needed the day before for training and the day of the game.

## USER GROUPS SURVEY.

Cornerstone Planning Group prepared the survey draft to engage specific user groups, to understand the current use patterns, challenges, and needs, and identify a future vision for Swangard Stadium.

The survey was divided in four sections:

1. Respondent Information
2. What works well?
3. Current issues and challenges
4. Future opportunities

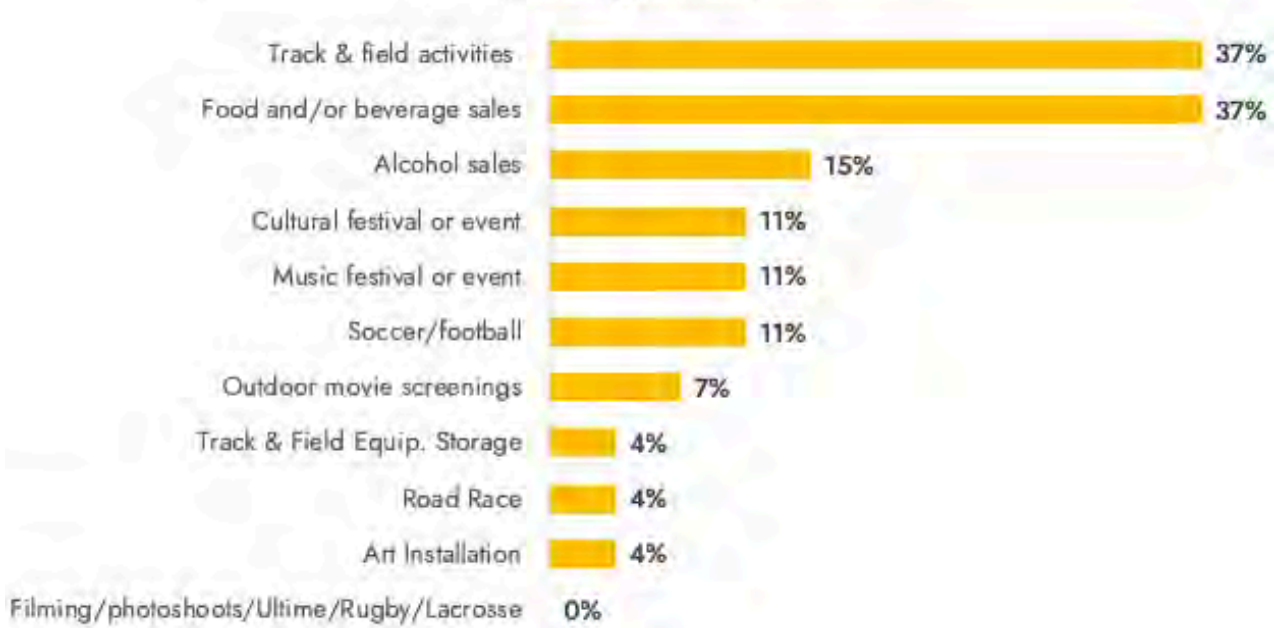
The survey was circulated by The City to 60 user groups and organizations. The following is the summary and key outcomes of the 27 respondents:

## SURVEY OUTCOMES

### User Groups Information.

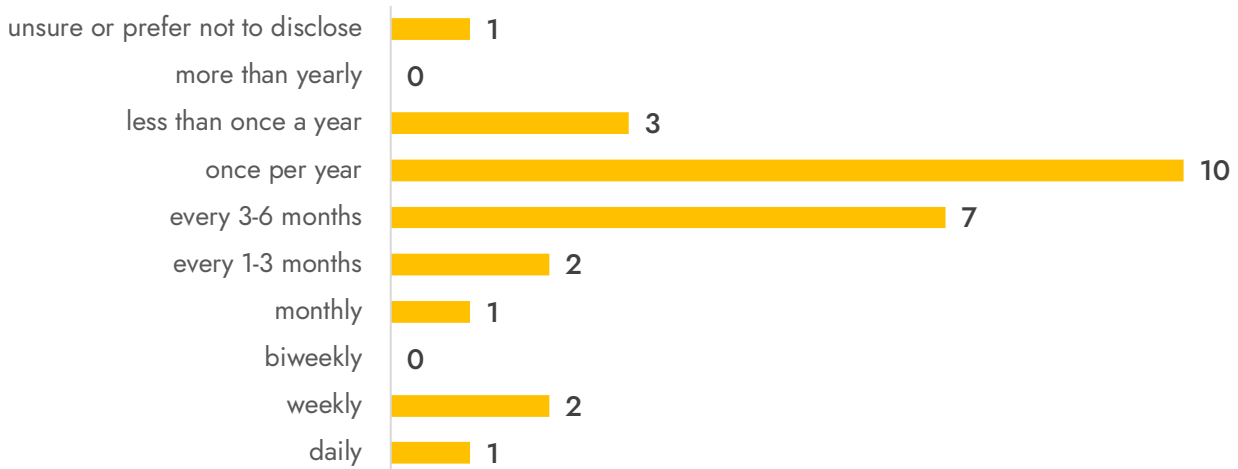


**Out of the 27 user groups, % that provides these services/activities**



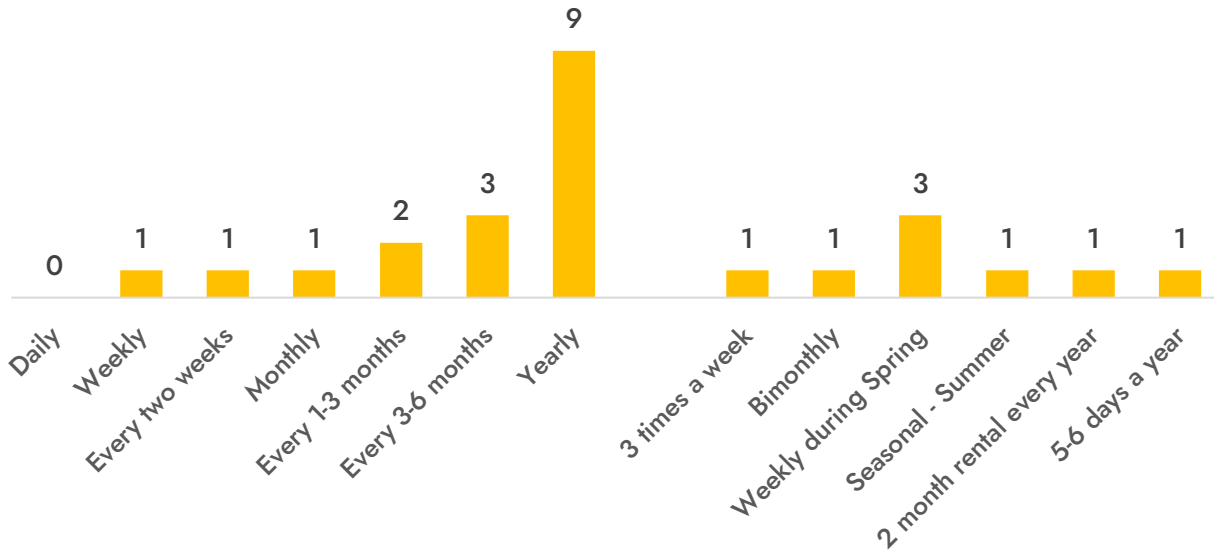
Out of the 27 user groups, 10 marked at least one of the following: Food and beverage sales, Alcohol sales, Cultural festival or event, and Music festival or event.

**Prior to the COVID-19 pandemic, how often did your organization program an event or activity at Swangard Stadium?**



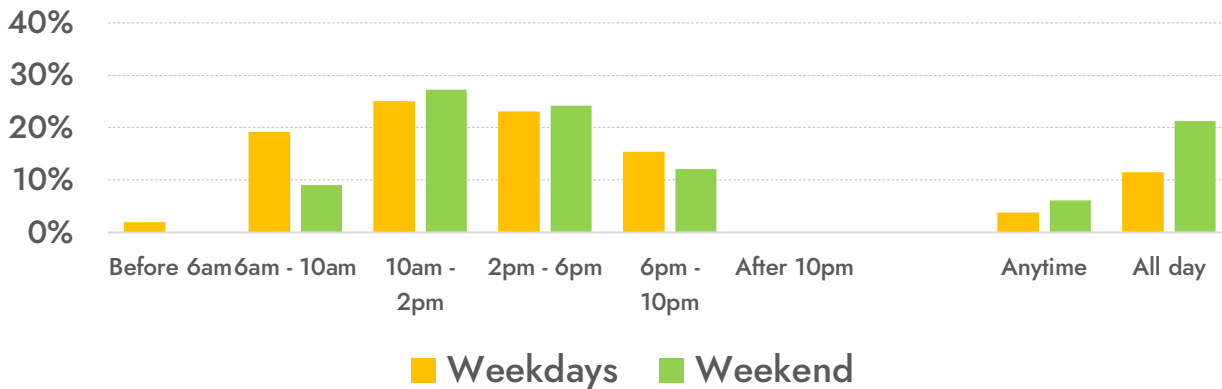
17 out of the 27 user groups used to program and activity between one and four times a year.

### How often would your organization like to use Swangard Stadium?



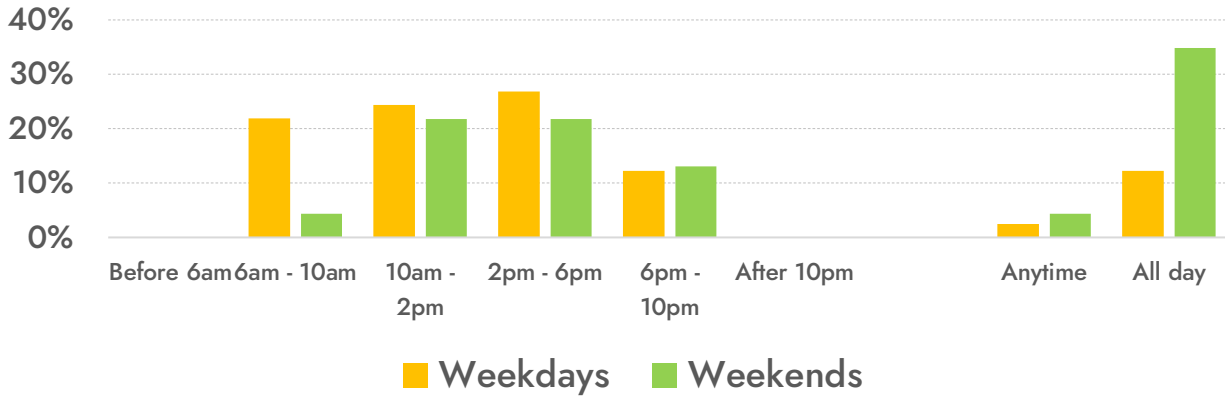
In the future, 12 out of the 27 user groups would like to continue programming an activity between one to four times a year. Seasonal preferences for Spring and Summer.

### When do you use the Stadium?



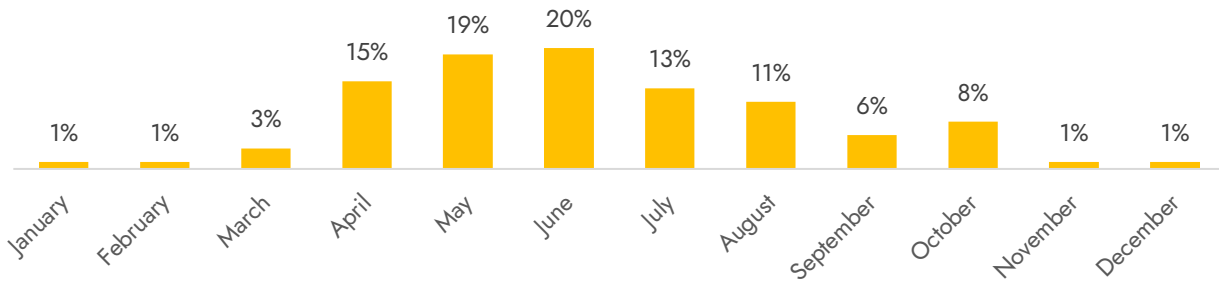


### When would you use the Stadium in the future?



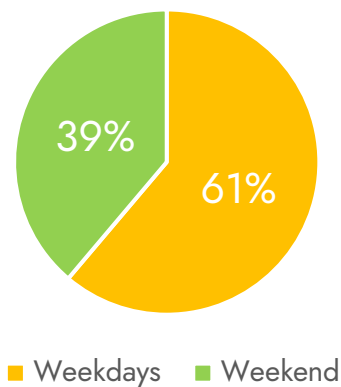
There is a higher expectation to use the Stadium all day during the weekend in the future.

### When do you provide programming and/or use the Stadium?

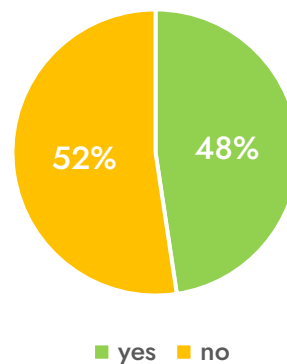


79% of the programming is provided between April and August.

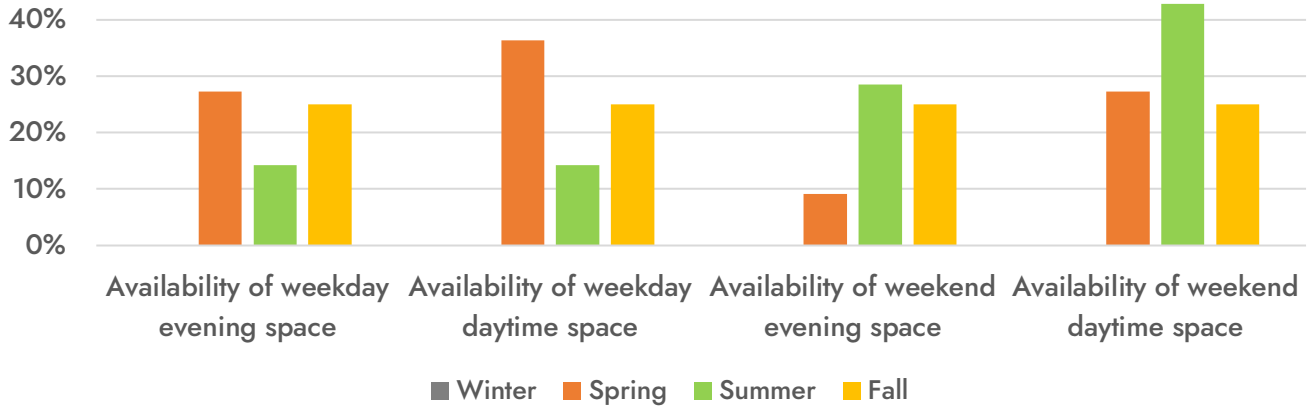
### When do you use the Stadium?



### Is your organization currently facing any challenges in booking or dropping in for activities at the stadium because of space availability?

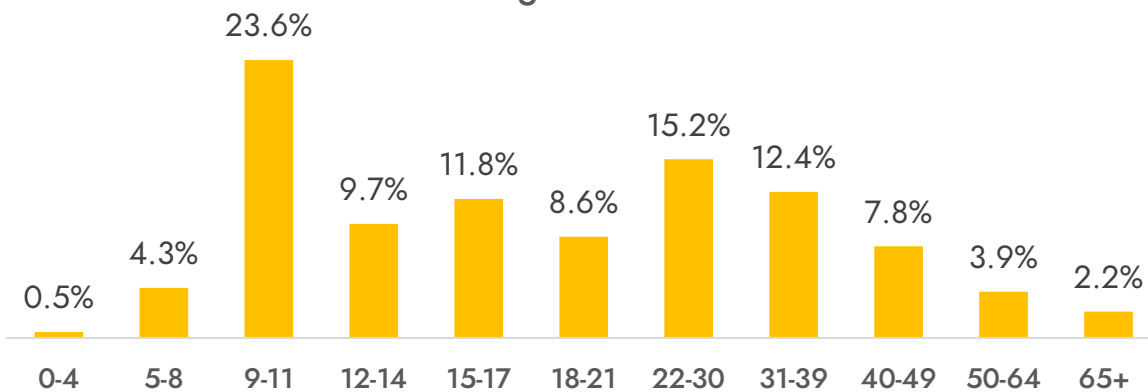


### Time availability challenges



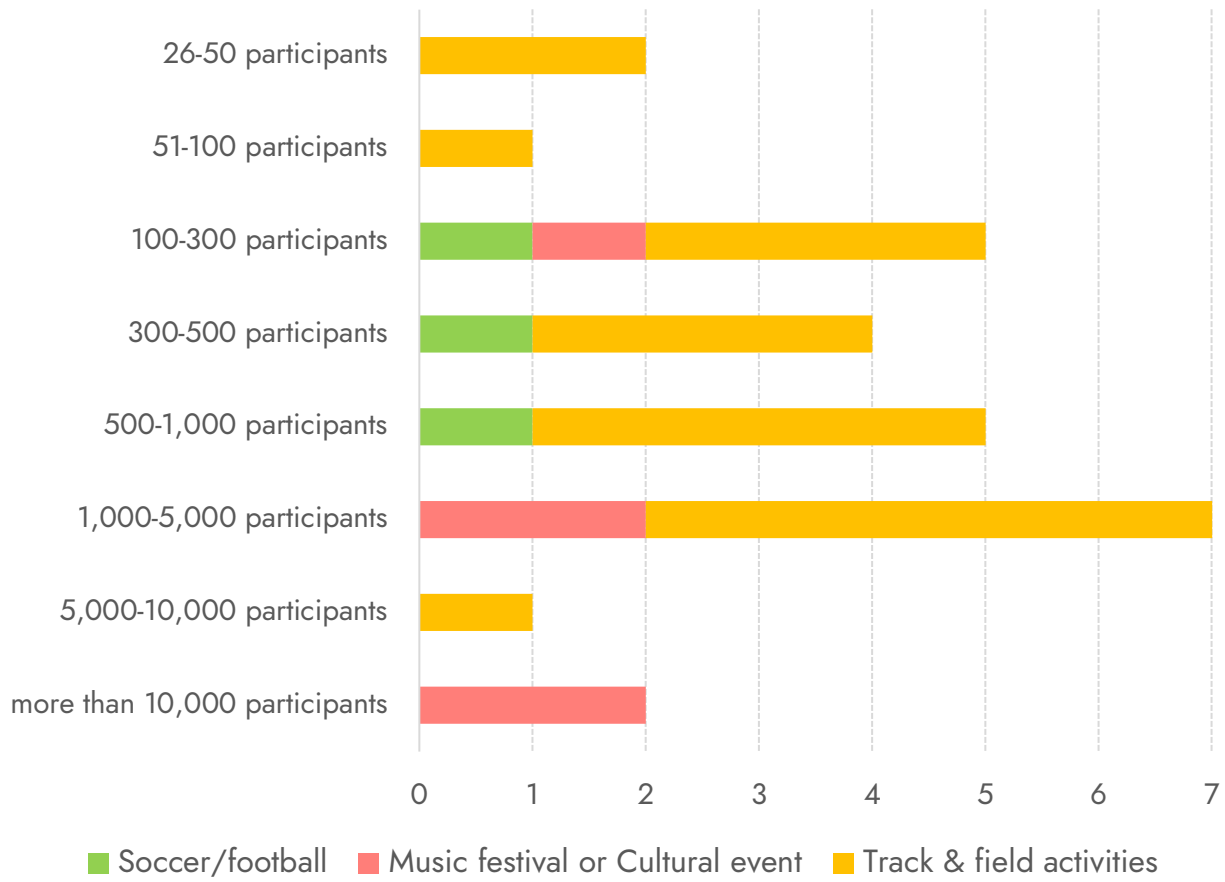
Time challenges to use/book the Stadium are higher on weekdays in Spring and weekends in Summer, both during daytime.

### Age groups distribution of participants in activities at Swangard Stadium

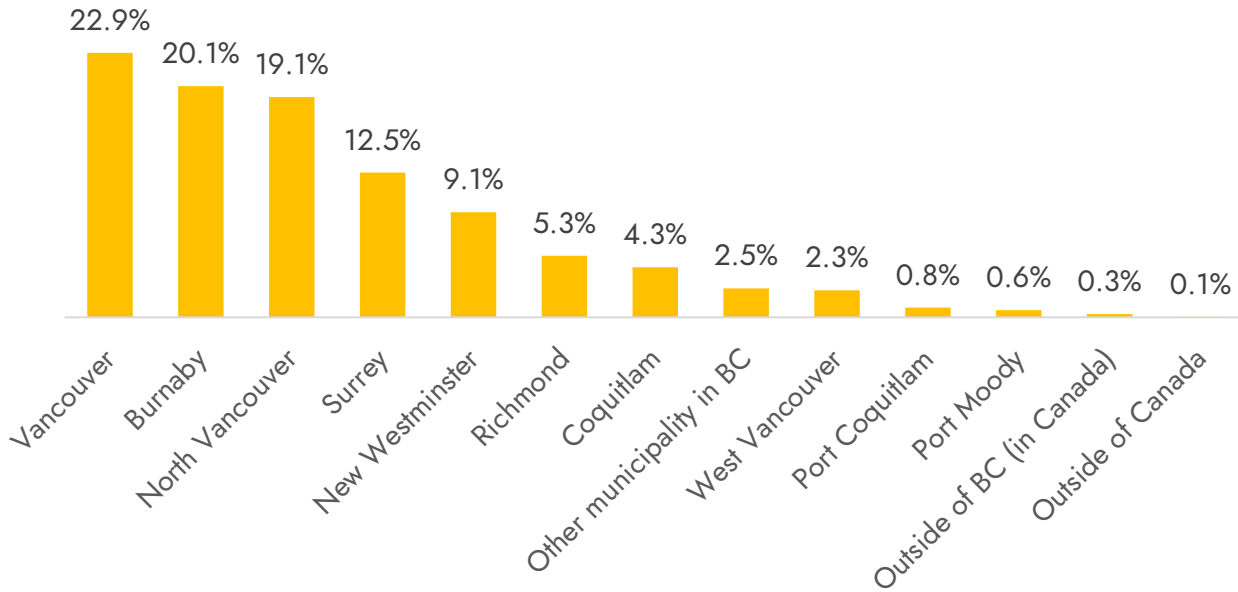


74% of current users have 30 years or less, and 58% are children and youth.

### Number of Participants per type of activity per organization

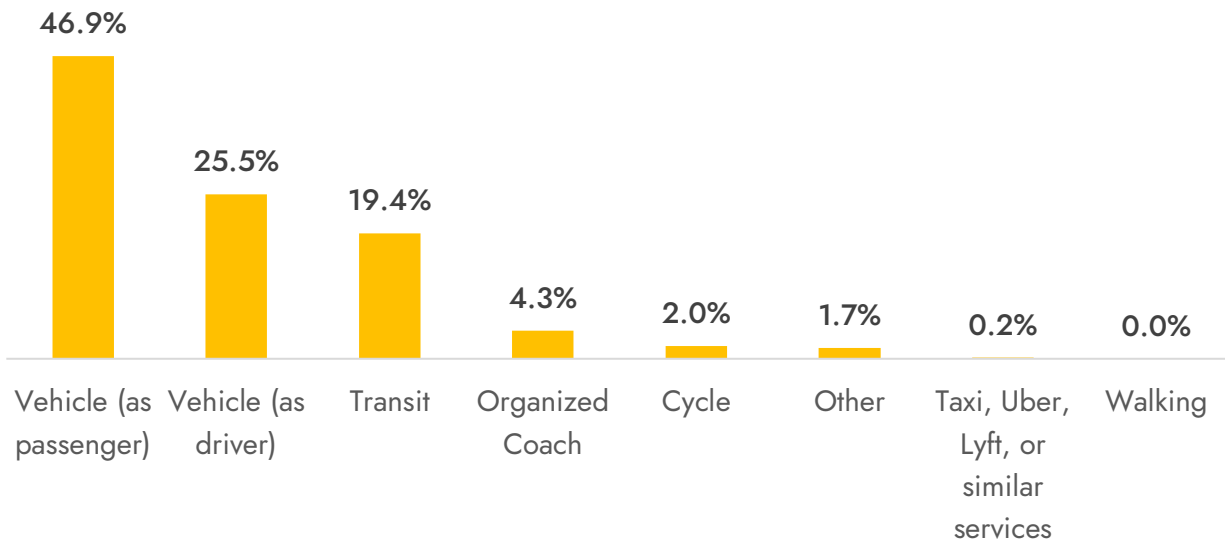


### Where do users live?



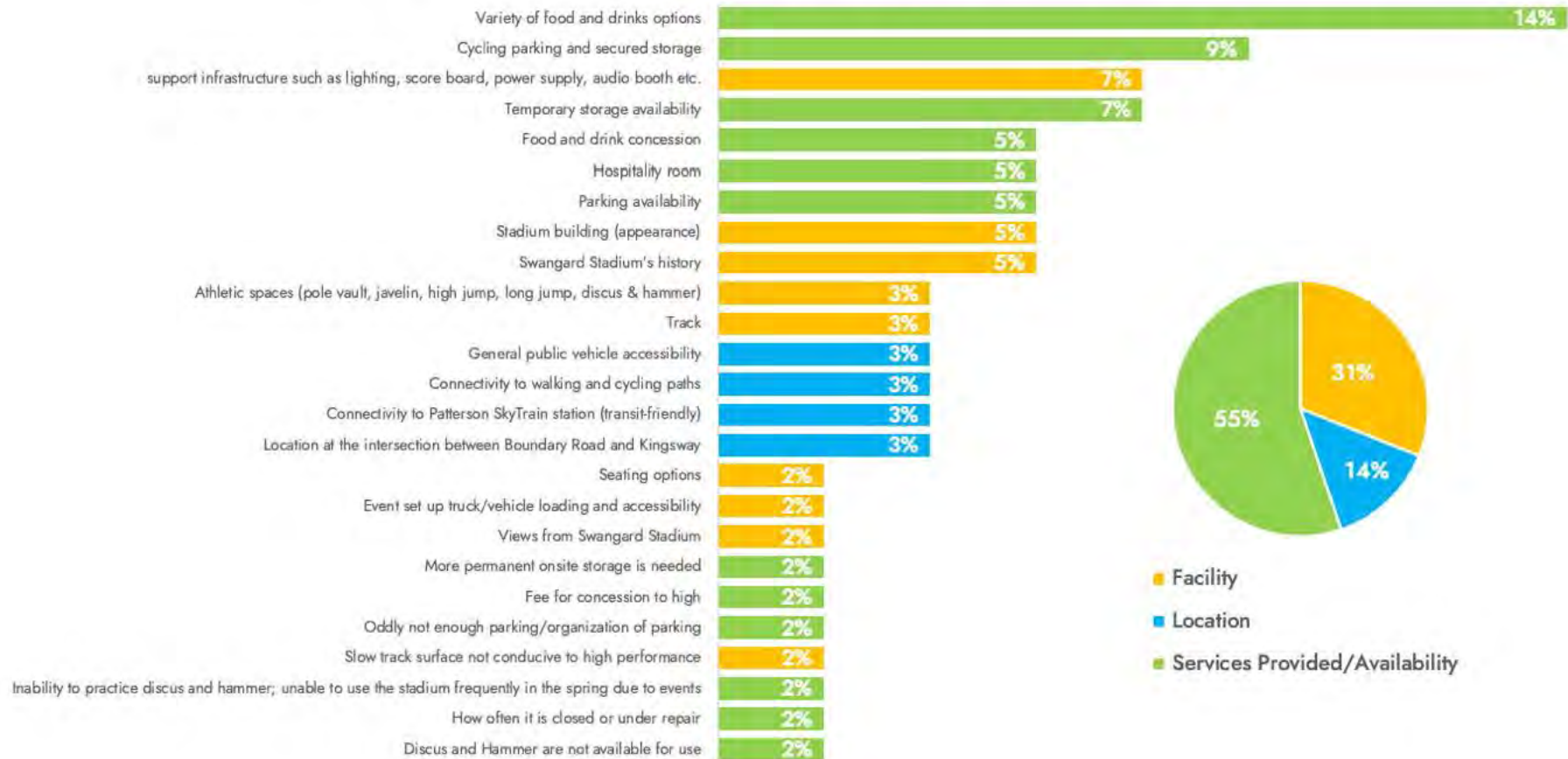
62% of users live in Vancouver, Burnaby, and North Vancouver.

### How the participants travel to Swangard Stadium?



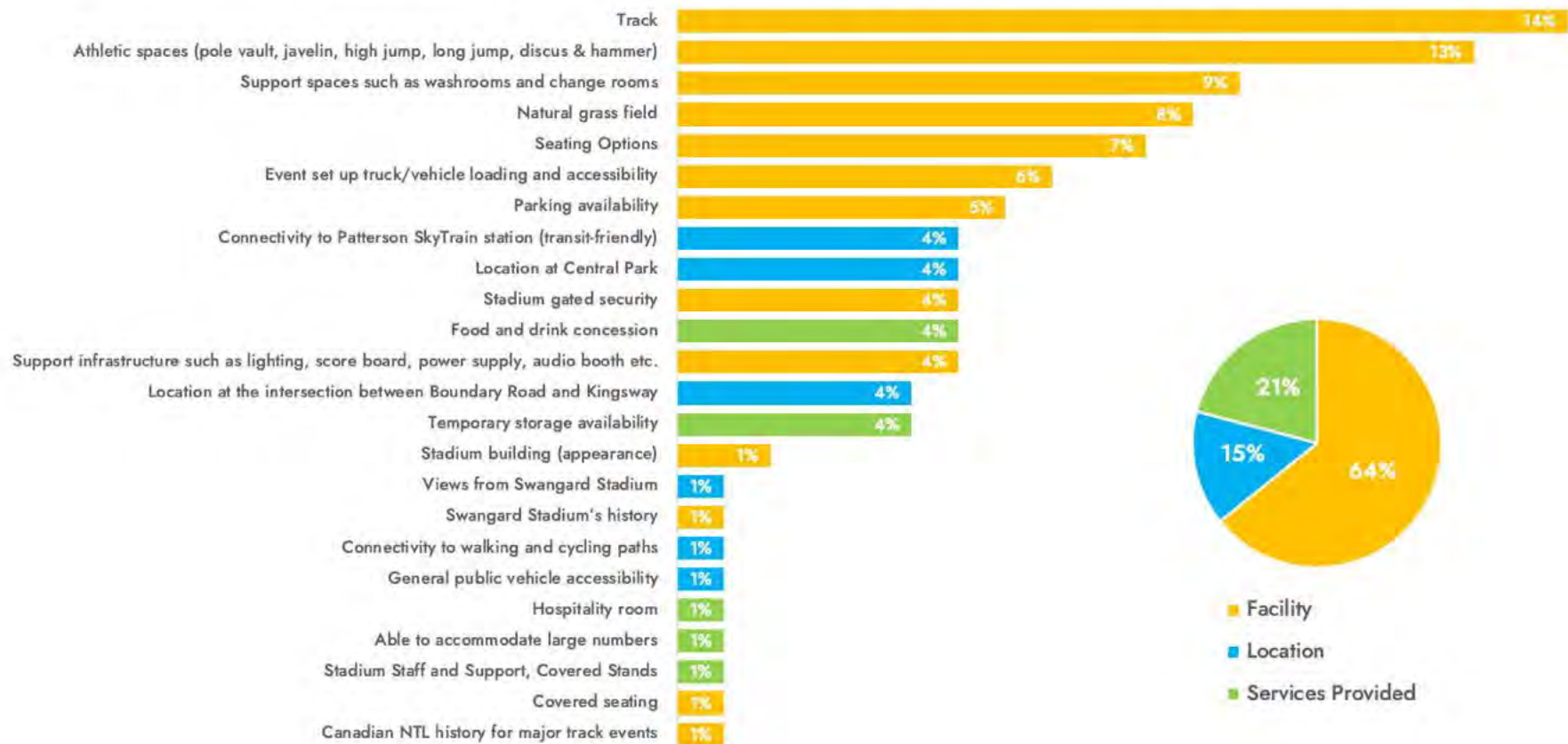
72% of users arrive by private vehicle.

### What does your organization like the *least* about Swangard Stadium?

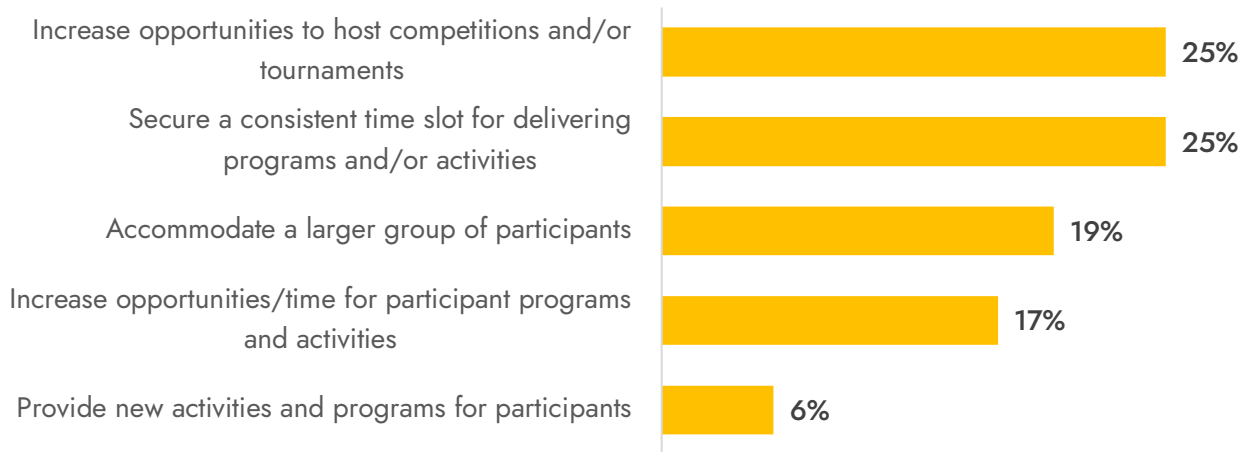




### What does your organization like the *most* about Swangard Stadium?



### User Groups future goals & aspirations at Swangard Stadium



There's a general trend in sports and recreation towards unstructured, spontaneous and/or self-directed activities over team-based activities. Do you think this trend should be reflected in future programming at Swangard Stadium?



## APPENDIX B – FIELD TYPE RESEARCH

Natural grass, synthetic turf, and hybrid grass are all types of turf that can be used for sports fields and stadiums. Each has its own advantages and disadvantages that should be considered when deciding which type of turf to use. Given that some future scenarios allude to a potential change of the natural grass surface into a hybrid or artificial turf, Cornerstone Planning Group examined the relative advantages and disadvantages of the different surfaces to help the City of Burnaby in making such decisions. Field requirements for different sports leagues were also examined.

### NATURAL GRASS

#### Advantages:

- Aesthetics: Natural grass has a natural look and feel that usually is preferred over synthetic turf.
- Environmental benefits: Natural grass helps to improve air and water quality and provides habitat for wildlife. It also helps to cool the air and reduce heat island effect.
- Cooling effect: Natural grass has a cooling effect, which can help to reduce the temperature of a sports field or other landscaped area.
- Healthier for athletes: Natural grass is considered healthier for athletes, as it provides a more forgiving surface and can reduce the risk of injuries.
- Natural drainage: Natural grass has natural drainage capabilities that can help to reduce water runoff and erosion.
- Cost-effective: Natural grass can be less expensive to install.
- Easier to repair: Natural grass can be repaired by reseeded or patching, while synthetic turf needs to be replaced if it becomes damaged.

#### Disadvantages:

- Maintenance: Natural grass requires regular maintenance, such as mowing, watering, fertilizing, and aeration to keep it healthy and looking good. This can be time-consuming and costly.
- Weather: Natural grass can be affected by weather conditions, such as drought, heavy rain, and extreme heat, which can cause it to become dry, patchy, or slippery.
- Wear and tear: Natural grass can become worn out quickly due to heavy use and foot traffic, which can lead to an uneven playing surface and potential injuries.
- Limited use: Natural grass fields are often closed during inclement weather, which limits their use and availability.
- Environmental impact: Natural grass fields require a lot of water, pesticides, and fertilizers, which can have an impact on the environment.

- Limited accessibility: Natural grass fields can be challenging for people with mobility issues and may not be accessible for wheelchairs or other assistive devices.

Overall, while natural grass provides a traditional and natural look, it requires a lot of maintenance, can be affected by weather and heavy use, and has an impact on the environment.

## ARTIFICIAL TURF

### Advantages:

- Durability: Artificial turf is more durable and can withstand heavy use, making it ideal for sports venues that host multiple games and events.
- Low maintenance: Artificial turf requires less maintenance than natural grass, which can save time and money for teams and venues.
- Consistency: Artificial turf provides a consistent playing surface, which can help to reduce injuries and improve the overall quality of play.
- Weather resistance: Artificial turf is not affected by weather conditions such as rain and snow, so games and events can be played as scheduled.
- All season use: Artificial turf can be used year-round, making it ideal for sports venues in areas with cold climates.
- Environment-friendly: Artificial turf fields require less fertilizer and pesticides than natural grass fields.

### Disadvantages:

- Heat: Synthetic turf can become very hot in direct sunlight, which can be uncomfortable for athletes and can increase the risk of heat-related injuries.
- Drainage: Synthetic turf can have poor drainage, which can cause water to pool on the surface and create a slippery playing surface.
- Infill: Many synthetic turf fields use infill materials, such as rubber or sand, to help support the turf fibers. These infill materials can become compacted over time, which can affect the playing surface and create a hard surface that can lead to injuries.
- Environmental concerns: Synthetic turf is made from plastic materials and can release microplastics and other particles into the environment. Furthermore, synthetic turf is not biodegradable and can take hundreds of years to break down.
- Cost: Synthetic turf can be more expensive to install than natural grass, particularly for larger fields or complex designs.
- Limited lifespan: Synthetic turf has a limited lifespan and needs to be replaced more frequently than natural grass, which can increase the life cycle cost.

- Artificial appearance: Synthetic turf does not have the natural look and feel of natural grass, which can be less appealing to some people.

Overall, synthetic turf may have benefits such as low maintenance, reduced water consumption and durability, but it has some downsides such as heat and environmental concerns, limited lifecycle and lack of natural look and feel.

## HYBRID GRASS

### Advantages:

- Durability: The synthetic fibers in hybrid grass fields help to reinforce the natural grass and keep it upright, even in high-traffic areas. This means that hybrid grass fields can withstand heavy use and weather conditions and require less maintenance than traditional natural grass fields.
- Reduced maintenance: Hybrid grass fields are designed to be low maintenance, and require less watering, fertilizing, and mowing than traditional natural grass fields.
- Improved playability: Hybrid grass fields offer a playing surface that is like natural grass, but with a consistent and predictable playing surface. This can lead to improved playability and performance for athletes.
- Increased safety: Hybrid grass fields can provide a safer playing surface than traditional natural grass fields, as they are less likely to become slippery or uneven due to overuse or weather conditions.
- Reduced water consumption: Hybrid grass fields use less water than traditional natural grass fields, which can be beneficial in areas with water shortages.
- Longevity: Hybrid grass fields have a longer lifespan than traditional natural grass fields and synthetic turf fields, which can save money in the long run.
- Environmentally friendly: Hybrid grass fields are environmentally friendly as they reduce the need for pesticides and fertilizers and reduce the amount of water needed to maintain the field.

### Disadvantages:

- Cost: Hybrid grass can be more expensive to install than natural grass and synthetic turf, as it involves the cost of both materials and the installation process.
- Maintenance: While hybrid grass requires less maintenance than natural grass, it still requires regular maintenance such as mowing, watering, fertilizing, and aeration to keep it healthy and looking good.



- Weather: Hybrid grass can be affected by weather conditions, such as drought, heavy rain, and extreme heat, which can cause it to become dry, patchy, or slippery.
- Environmental impact: Hybrid grass fields require water, pesticides, and fertilizers, which can have an impact on the environment.
- Limited use: Hybrid grass fields are often closed during inclement weather, which limits their use and availability.
- Limited lifespan: Hybrid grass has a limited lifespan and needs to be replaced more frequently than natural grass, which can increase the long-term cost.
- Artificial appearance: Hybrid grass does not have the natural look and feel of natural grass and may look artificial to some people.

Overall, hybrid grass has some benefits such as durability and low maintenance, but it has some downsides such as cost and environmental impact, limited lifespan and lack of natural look and feel.




#### OVERALL COMPARISON

Natural grass is a traditional and natural-looking turf that provides a soft and cool playing surface. It is often preferred by professional athletes and sports enthusiasts because of its natural feel and look. However, natural grass requires regular maintenance, such as mowing, watering, fertilizing, and aeration to keep it healthy and looking good. It can also be affected by weather conditions, such as drought, heavy rain, and extreme heat, which can cause it to become dry, patchy, or slippery.

Synthetic turf is a man-made turf that is designed to mimic the look and feel of natural grass. It is often used in sports fields and other areas because it is low maintenance, durable and can be used in all weather conditions. However, synthetic turf can become very hot in direct sunlight, which can be uncomfortable for athletes and can increase the risk of heat-related injuries. It also has poor drainage and the infill materials used can become compacted over time, which can affect the playing surface and create a hard surface that can lead to injuries. It also has environmental concerns, as it is not biodegradable and can release micro-plastics and other particles into the environment.

Hybrid grass is a combination of natural grass and synthetic turf fibers, which is designed to provide the best of both worlds, the natural look and feel of natural grass with the durability and low maintenance of synthetic turf. Hybrid grass fields are low maintenance, durable and more sustainable than natural grass, but can be more expensive to install, has a limited lifespan, and may not have the natural look and feel of natural grass.

The following image summarizes the three possible surfaces and its general characteristics:

	 <b>NATURAL GRASS</b>	 <b>HYBRID GRASS</b>	 <b>ARTIFICIAL GRASS</b>
<i>Aesthetics</i>	Natural look and preferred feel by users	Mixed appearance and feel between natural and artificial	Artificial appearance
<i>Environmental Impact</i>	Helps to improve air and water quality. Has a cooling effect, which can help reduce the temperature of a sports field. Has natural drainage capabilities that can help to reduce water runoff and erosion. Requires a lot of water, pesticides and fertilizers.	Less water consumption than natural grass. Reduce need for pesticides and fertilizers.	Requires no water, unless for cleaning purposes. No need for fungicides, herbicides, or pesticides. Absorbs significantly more radiation than natural grass. Can be made of plastic and is not biodegradable.
<i>Durability &amp; Maintenance</i>	Requires regular maintenance, such as mowing, watering, fertilizing, and aeration	The synthetic fibers in hybrid grass help to reinforce the natural grass. Require less maintenance than natural grass. Longer lifespan.	High durability and low maintenance. Average lifespan of 20 years
<i>Weather Vulnerability</i>	High. Drought, heavy rain, and extreme heat can have a high impact	Medium. Can be impacted in extreme weather conditions. Overall, better resilience than natural grass.	Low. Is not affected by weather conditions such as rain and snow.
<i>Cost</i>	Can be more expensive to maintain than the other options	Can be more expensive to install than natural grass, however, has lower maintaining cost compared to natural grass	Can be more expensive to install but has lower maintaining costs compared to natural grass
<i>Overall Usage</i>	Limited use due to heavy use or weather conditions. Limited accessibility for people with mobility issues and may not be accessible for wheelchairs or other assistive devices.	Can withstand heavy use and weather conditions. Playing surface that is like natural grass, but with a consistent and predictable playing surface.	All season use. Can withstand heavy use, making it ideal for sports venues that host multiple games and events

## SPORTS LEAGUES SURFACE REQUIREMENTS

### League 1 British Columbia (L1BC)

League 1 British Columbia (L1BC) is a semi-professional soccer league in British Columbia, Canada. The league’s field requirements are set by the Canadian Soccer Association (CSA) and FIFA (Fédération Internationale de Football Association). According to the CSA, the field of play for League 1 British Columbia matches must be rectangular in shape and must be within the following dimensions:

- Length: Minimum 100 yards (90 meters) and maximum 130 yards (120 meters)
- Width: Minimum 50 yards (45 meters) and maximum 100 yards (90 meters)

The field must be divided into two halves by a halfway line, and the center of the field must be marked with a center circle with a radius of 10 yards (9 meters). The field must also be surrounded by a touchline and a goal line. The goal area must be 16.5 yards (15 meters) from the goal line and must extend 16.5 yards (15 meters) into the field on each side of the goal.

The field must be **made of natural or artificial turf** and must be in good condition. The field must also have adequate drainage to ensure that the field is playable in wet conditions. In addition to these requirements, the league may have additional regulations regarding the field of play and the facilities that must be provided at the stadium. It is best to consult with the League 1 British Columbia organization directly or check the CSA's website for the most up-to-date information on field requirements.

#### **Pacific Coast Soccer League (PCSL)**

Pacific Coast Soccer League (PCSL) is a semi-professional soccer league in British Columbia, Canada. The league's field requirements are the same as L1BC.

#### **Canadian Premier League (CPL)**

Canadian Premier League (CPL) is the professional soccer league in Canada. The league's field requirements are the same as L1BC and PCSL

#### **The Canadian Junior Football League (CJFL)**

The Canadian Junior Football League (CJFL) is a national amateur league for players aged 17 to 22 in Canada. The league's field requirements are set by the Canadian Football League (CFL), which is the governing body for professional football in Canada. According to the CFL, the field of play for CJFL matches must be rectangular in shape and must be within the following dimensions:

- Length: Minimum 110 yards (100 meters) and maximum 150 yards (140 meters)
- Width: Minimum 65 yards (59 meters) and maximum 85 yards (78 meters)

The field must be divided into two halves by a midfield line, and the center of the field must be marked with a center circle with a radius of 10 yards (9 meters). The field must also be surrounded by a sideline and a end line. The end zones must be 20 yards (18 meters) deep.

The field must be **made of natural grass, or an approved artificial turf** and must be in good condition. The field must also have adequate drainage to ensure that the field is playable in wet conditions. Additionally, the goal must be 18.5 feet (5.6m) wide and 10 feet (3.05m) high.

In addition to these requirements, the CJFL may have additional regulations regarding the field of play and the facilities that must be provided at the stadium. It is best to consult with the Canadian Junior Football League organization directly or check the CFL's website for the most up-to-date information on field requirements.

#### **U Sports**

U Sports is the national governing body for university sports in Canada, and it sets the field requirements for soccer matches at the university level. According to U Sports, the field of play for soccer matches must be rectangular in shape and must be within the following dimensions:

- Length: Minimum 110 yards (100 meters) and maximum 120 yards (110 meters)
- Width: Minimum 70 yards (64 meters) and maximum 80 yards (73 meters)

The field must be divided into two halves by a halfway line, and the center of the field must be marked with a center circle with a radius of 10 yards (9 meters). The field must also be surrounded by a touchline and a goal line. The goal area must be 18 yards (16.5 meters) from the goal line and must extend 18 yards (16.5 meters) into the field on each side of the goal.

The field must be **made of natural or artificial turf** and must be in good condition. The field must also have adequate drainage to ensure that the field is playable in wet conditions.

In addition to these requirements, U Sports may have additional regulations regarding the field of play and the facilities that must be provided at the stadium. It is best to consult with the U Sports organization directly or check their website for the most up-to-date information on field requirements.

**NOTE: FIFA requires natural grass installment for all tournaments; BC Place will have grass installed for 2026 FIFA World Cup.**

## APPENDIX C – REGIONAL SCAN MATRIX

Stadium Name	Location	Municipal Population	Population served - 30 minute drive (Millions)	Seating	Expandable seating	Year Built	60-year lifespan	Lockable - With Fence (N/Y)	Tenants
Rotary Stadium	Abbotsford	149,928	0.3	4,000		1986	2046	N	Valley Royals Track & Field Club + Abbotsford Falcons (Community Football)
Swangard Stadium	Burnaby	249,197	1.67	5,300	Capacity 10,000	1969	2029	Y	TSS FC Rovers (League1 British Columbia)
Terry Fox Field	Burnaby	249,197	1.3	1,800	1000	2021	2081	N	Simon Fraser Red Leafs (U Sports) + Whitecaps Under 19 Spors Academy
Exhibition Stadium	Chilliwack	83,790	0.18	2,500				Y	Valley Huskers (Canadian Junior Football League)
Percy Perry Stadium	Coquitlam	140,028	1.15	4,000		1991	2051	N	Khalsa Sporting Club (Pacific Coast Soccer League) + Coquitlam Cheetahs (Track and field)
Hillside Stadium	Kamloops	90,280	0.1	1,100		2006	2066	Y	Kamloops Broncos (Canadian Junior Football League) + Kamloops Excel (Pacific Coast Soccer League) + Rivers FC (League1 British Columbia) + Thompson Rivers Wolfpack (University Sports) + Kamloops Track and Field Club
Apple Bowl	Kelowna	132,084	0.19	2,300		1995	2055	Y	Okanagan Sun (Canadian Junior Football League), Okanagan FC (Pacific Coast Soccer League)
Starlight Stadium	Langford	35,342	0.64	6,000		2009	2069	N	Rugby Canada + Westshore Rebels (Canadian Junior Football League) + Pacific FC (Canadian Premier League) + Westcastle Interlional Academy (Pacific Coast Soccer League)
Chase Office Field	Langley	25,888	1.2	2000		1962	2022	Y	Trinity Western Spartans (U Sports), Unity FC (League1 British Columbia)
McLeod Athletic Park Stadium	Langley	25,888	1.14	2,200				Y	Langley Rams (Canadian Junior Football League)
Vancouver FC Stadium	Langley	25,888	1.2	6,560		2023	2083	Y	Vancouver FC (CPL)
McGirr Sports Field	Nanaimo	90,505	0.09	2,000		1985	2045	Y	-
Rotary Bowl	Nanaimo	90,505	0.18	5,500				N	Nanaimo Track and Field Club
Q'unq'ínuqwstuxw Stadium	Nanaimo	90,505	0.18		1,500			N	Harbourside FC (League1 British Columbia)
Kinsmen Park	North Vancouver	58,120	1.15	700		1930	1990	Y	Altitude FC (League1 British Columbia)
Masich Place Stadium	Prince George	76,708	0.09	1,800		1990	2050	Y	Prince George Kodiaks (Canadian Junior Football League)
Thunderbird Stadium	Vancouver	675,218	0.86	3,500	Capacity 12,000	1967	2027	Y	UBC Thunderbirds (University Sports) + Varisty FC (League1 British Columbia)
Centennial Stadium	Victoria	92,141	0.6	5,000		1967	2027	Y	Victoria Vikes (U Sports) + Victoria Highlanders (League1 British Columbia)
Royal Athletic Park	Victoria	92,141	0.6	3,800	Capacity up to 5,700 with temporary bleachers. Max capacity noted at 9,247	1967	2027	Y	Victoria HarbourCats (West Coast League) + Victoria Golden Tide (Canadian College Baseball Conference)



Stadium Name	Regular Sport programming from the last 5 years	Regular Non-sport programming that has occurred in the last 5 years	Upgrades	Track	Field
Rotary Stadium	Rugby, Football, Track	Air show, Cultural Festival, Awards ceremony		400m polyflex synthetic rubberized track surface, long jump/triple jump, high jump, pole vault, discus, hammer, shot put and javelin.	Grass
Swangard Stadium	Soccer, Football, Ultimate, Tack	Music, Cultural Festival, Theatre, Civic Holiday		400m synthetic rubberized track, long jump/triple jump, high jump, pole vault, discus, hammer, shot put and javelin.	Grass
Terry Fox Field	Soccer, Football, Track	Music, Cultural Festival		400m synthetic rubberized track, long jump/triple jump, high jump, pole vault, discus, hammer, shot put and javelin.	Artificial
Exhibition Stadium	Soccer, Rugby, Football, Field Hockey	Fair, Cultural Festival, Civic Holiday, Community event			Artificial
Percy Perry Stadium	Soccer, Football, Track	Arts Festival, Civic Holiday, Farmers Market, Community/sport event	2007, new turf	400m polyflex synthetic rubberized track surface, long jump/triple jump, high jump, pole vault, discus, hammer, shot put and javelin.	Artificial
Hillside Stadium	Soccer, Football, Track			400m synthetic rubberized track, long jump/triple jump, high jump, pole vault, discus, hammer, shot put and javelin.	Artificial
Apple Bowl	Soccer, Football, Lacrosse, Track	Music, Cultural Festival, Civic Holiday	Planning an expansion to 3,500 seats - no confirmed date, could be several years before happening. FC is new as of 2022		Grass
Starlight Stadium	Soccer, Rugby, Football	Music, Cultural Festival, Community event			Artificial
Chase Office Field	Soccer				Grass
McLeod Athletic Park Stadium	Soccer, Football, Rugby, Lacrosse, Field hockey, Track				Artificial
Vancouver FC Stadium	Soccer	Not yet built			
McGirr Sports Field	Soccer, Lacrosse, Rugby, Baseball, Ultimate		2007, field upgrade to host Fifa		Grass
Rotary Bowl	Track	Music, Cultural Festival, Civic Holiday			Grass
Q'unq'ınuqwstuxw Stadium	Soccer	Music, Cultural Festival		400m synthetic rubberized track, long jump/triple jump, high jump, pole vault, discus, hammer, shot put and javelin.	Grass
Kinsmen Park	Soccer	Music, Cultural Festival, Civic Holiday	2021, stadium and seating upgrade	400m synthetic rubberized track, long jump/triple jump, high jump, pole vault, discus, hammer, shot put and javelin.	Grass
Masich Place Stadium	Soccer, Football, Track				Artificial
Thunderbird Stadium	Soccer, Rugby, Football	Music, University programming, Civic Holiday			Artificial
Centennial Stadium	Soccer, Football, Track	Music, Cultural Festival	2019, expanded from 1,600 seats to 6,000		Grass
Royal Athletic Park	Baseball, Soccer, Football	Music, Cultural Festival	1994, temporary expansion to 30,000 seats for Commonwealth games; left 2,000 new seats for a total of 5,000	400m synthetic rubberized track, long jump/triple jump, high jump, pole vault, discus, hammer, shot put and javelin.	Grass

Stadium Name	Examples of non-sport programming
Rotary Stadium	The Abbotsford International Airshow, which is an annual event that attracts aviation enthusiasts from around the world and features a variety of aerial displays. The Abbotsford Agrifair, which is a community event that celebrates agriculture and includes a midway, live music, and other activities. The Canada Day Celebrations, which include live music, food, and fireworks to celebrate Canada's national holiday. The Abbotsford International Festival, which showcases cultural diversity through a variety of music, dance, food, and arts. The Fraser Valley Cultural Diversity Awards, which recognizes individuals and organizations that promote diversity and inclusion in the community.
Swangard Stadium	The Burnaby Blues and Roots Festival, which features a variety of blues and roots music performers from Canada and around the world. The Burnaby Hats Off Day, which is a community event that celebrates Burnaby's history and culture with a parade, live music, and various other activities. The Burnaby Summer Theatre, which presents live outdoor theatre performances at Swangard Stadium. The Korean Cultural Heritage Festival, which showcases Korean music, dance, and food, and provides a window into Korean culture and traditions. The Canada Day Celebrations, which include live music, food, and fireworks to celebrate Canada's national holiday.
Terry Fox Field	Burnaby Blues + Roots Festival, which is an annual music festival that features a mix of blues, roots, and world music. Burnaby International Folk Dancers, which is a weekly gathering of folk dancers from around the world to dance and socialize. Diwali Fest, which is an annual festival that celebrates the South Asian festival of lights with cultural performances, food, and activities. Burnaby Pride Street Party, which is an annual event that celebrates the LGBTQ2+ community with live music, performances, and vendors.
Exhibition Stadium	The Chilliwack Fair, which is a community event that celebrates agriculture and includes a variety of activities such as a midway, live music, and animal exhibits. The Fraser Valley Classic Car Show, which is an annual event that showcases vintage and classic cars from around the region. The Chilliwack Pow Wow, which is a celebration of Indigenous culture that includes traditional dance, music, and crafts. The Party in the Park, which is a summer event that features live music, food trucks, and other activities for the community. The Canada Day Celebrations, which include live music, food, and fireworks to celebrate Canada's national holiday.
Percy Perry Stadium	The Coquitlam Farmers Market, which is held weekly during the summer months and features local produce, crafts, and food vendors. The Canada Day Celebrations, which include live music, food, and fireworks to celebrate Canada's national holiday. The Kaleidoscope Arts Festival, which features a variety of arts and cultural performances, including music, dance, theatre, and visual arts. The Coquitlam Crunch Diversity Challenge, which is a community event that promotes inclusivity and diversity through a series of outdoor fitness challenges. The Terry Fox Hometown Run, which is an annual event that honours the memory of Canadian hero Terry Fox and raises money for cancer research.
Apple Bowl	Kelowna Pride Festival, which is an annual event that celebrates the LGBTQ2+ community with live music, performances, and a parade. Kelowna RibFest, which is an annual event that features barbecue ribs and other food vendors, live music, and activities for kids. Canada Day Celebrations, which is an annual event that celebrates Canada's birthday with live music, food, and fireworks. Center of Gravity, which is an annual sports and music festival that features extreme sports competitions, live music, and other activities. Oktoberfest, which is an annual event that celebrates German culture with live music, traditional food, and beer gardens.
Starlight Stadium	The Rifflandia Music Festival, which is an annual event that features a diverse lineup of musical performers from Canada and around the world. The Victoria Highland Games, which is an annual celebration of Scottish culture that includes traditional competitions such as the caber toss and live music and dance performances. The Langford Family Fun Day, which is a community event that includes activities such as face painting, bouncy castles, and live music. The Juan de Fuca Foundation Summer Music Festival, which is an annual event that showcases a variety of musical genres and performers from around the world.
Rotary Bowl	The Nanaimo Marine Festival and World Championship Bathtub Races, which is an annual event that features a variety of water-based competitions and activities, including bathtub races, live music performances, and food vendors. The Nanaimo Fringe Festival, which is an annual performing arts festival that features theatre, dance, and music performances from local and international artists. The Vancouver Island MusicFest, which is an annual event that celebrates a diverse range of musical genres, including folk, roots, blues, and world music. The Nanaimo Heritage Days, which is an annual event that celebrates the city's history and culture with live music, food, and heritage-themed activities.
Q'unq'inuqstuxw Stadium	The Nanaimo Dragon Boat Festival, which is an annual event that features dragon boat races, live music, and food vendors. The Vancouver Island Exhibition (VIEX), which is an annual event that celebrates agriculture and community with live music, carnival rides, and agricultural displays. The Symphony by the Sea, which is an annual outdoor concert featuring the Vancouver Island Symphony. The Nanaimo Pride Festival, which is an annual event that celebrates the LGBTQ2+ community with live music, performances, and a parade. The Vancouver Island MusicFest, which is an annual event that celebrates a diverse range of musical genres, including folk, roots, blues, and world music.
Kinsmen Park	Canada Day Celebrations, which is an annual event that celebrates Canada's birthday with live music, food vendors, and family-friendly activities. Caribbean Days Festival, which is an annual event that celebrates Caribbean culture with live music, cultural performances, food vendors, and a parade. Coho Festival, which is an annual event that celebrates the return of salmon to the local rivers with live music, food vendors, and family-friendly activities. Harmony Arts Festival, which is an annual festival that celebrates arts and culture with live music, art displays, and workshops. North Shore Art Crawl, which is an annual event that showcases local artists and their work through a self-guided tour of studios and galleries.
Thunderbird Stadium	The Vancouver Folk Music Festival, which is an annual event that features a variety of folk and world music performers from Canada and around the world. The Vancouver Whitecaps FC, which is a professional soccer team that plays home games at Thunderbird Stadium. The UBC Homecoming Game, which is an annual event that celebrates the university's alumni and features a football game and other activities. The Vancouver Marathon, which is an annual race that finishes at Thunderbird Stadium and includes a variety of distances for runners of all levels. The Canada Day Celebrations, which include live music, food, and fireworks to celebrate Canada's national holiday.
Centennial Stadium	The Victoria International Track Classic, which is an annual track and field event that attracts athletes from around the world. The Victoria Highland Games, which is an annual celebration of Scottish culture that includes traditional competitions such as the caber toss and live music and dance performances. The Victoria Ska and Reggae Festival, which is an annual event that features a diverse lineup of ska and reggae performers from around the world. The UVic Vikes varsity sports teams games, which includes football, soccer and rugby games.
Royal Athletic Park	The Victoria Fringe Festival, which is an annual performing arts festival that features theatre, dance, and music performances from local and international artists. The Victoria International Jazz Festival, which is an annual event that features a diverse lineup of jazz performers from around the world. The Rifflandia Music Festival, which is an annual event that features a diverse lineup of musical performers from Canada and around the world. The Victoria Beer Festival, which is an annual event that celebrates craft beer and includes tastings, live music, and food vendors.

## APPENDIX D – ORDER OF MAGNITUDE ESTIMATE



COST MANAGEMENT REPORT

# Swangard Stadium Revitalization Order of Magnitude Estimate

REPORT NUMBER 1.1  
MAY 8, 2023

PREPARED FOR:  
Cornerstone Planning Group

Suite 300 – 30 East 6th Avenue, Vancouver, BC V5T 1J4  
T 604 734 3126



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Prepared By	Reviewed By	Date
Willie Yeung	Eldon Lau	5/8/2023





## 1.0 Introduction

### 1.1 Instructions Received

This report has been prepared by BTY Group (“BTY”) at the request of Cornerstone Planning Group (the “Client”).

Cornerstone Planning Group has appointed BTY to provide a Order of Magnitude estimate developed for the Swangard Stadium Revitalization project at 6100 Boundary Road, Burnaby, B.C. (the “Project”). The Project delivery model is yet to be determined, therefore, BTY strongly recommends that estimates are prepared at each of the key design milestones. This report has been prepared in accordance with the scope of our Fee Proposal, dated April 19, 2023 and is subject to the terms of that appointment.

Information related to the Project for the purposes of this report was received by BTY on April 26, 2023. Please refer to Section 13.0 for a list of information received in producing this report.

### 1.2 Report Reliance

This Report is owned by BTY Group, and it is provided for the benefit and sole reliance of the Client. BTY Group, its directors, staff, or agents do not make any express or implied representation or warranty whatsoever as to the factual accuracy of the information provided to us on behalf the Client, its subcontractors or agents, upon which this Report is based. This Report contains confidential, proprietary information and related intellectual property rights of BTY Group which is licensed on a non-exclusive and limited basis to the Client and the Report may not be reproduced, transferred, copied, shared, or distributed, in whole or in part, to any party, without the express prior written permission of BTY Group.

### 1.3 Reporting Qualifications

This Report has been prepared based on information provided to us by the Client up to the date of issue of this Report. BTY Group does not accept any liability or accountability for information that has not been provided, or made available to us, at the time of preparing this Report. Any advice, opinions, or recommendations within this Report should be read and relied upon only in the context of the report as a whole. The contents do not provide legal, insurance or tax advice or opinion. Opinions in this report do not an advocate for any party and if called upon to give oral or written testimony it will be given on the same assumption.

### 1.4 Contacts

Should you have any queries regarding the content of this report, please do not hesitate to contact either of the following:

**Per Willie Yeung**  
Senior Cost Consultant  
Tel: 604-734-3126  
Email: willieyeung@bty.com

**Eldon Lau**  
Partner  
Tel: 604-734-3126  
Email: eldonlau@bty.com



## 2.0 Executive Summary

### 2.1 Report Purpose

The purpose of this report is to provide a realistic estimate of the Project cost based on the information available at the time of writing.

The opinion expressed in this report has been prepared without the benefit of detailed architectural, structural, mechanical and electrical drawings and should, therefore, be considered a order of magnitude estimate. Based on the documents reviewed, our estimate should be correct within a range of approximately +/- 25%.

In order to provide an accurate cost estimate for the Project, BTY Group strongly recommends that a professional Quantity Surveying organization, such as BTY Group, be retained to provide a detailed analysis of any design information produced on behalf of the Client during the remaining stages of design.

### 2.2 Project Background and Description

The City of Burnaby propose to revitalize the facility of the Swangard Stadium. The following 6 options have been costed in this report for consideration:

#### Option 1A

- Replace existing track & field infrastructure to meet IAAF Standards,
- Replace existing natural grass field with new natural grass field,
- New 2-storey high facility building at northwest corner,
- Add new fence 700m similar to existing,
- New stands alone digital scoreboard,
- New permanent storage area,
- Wider truck access & maneuver,
- Add permanent covered bleachers for 500 people,
- Upgrades to existing grandstand,
- Add announcers' box & press box to existing grandstand.

#### Option 1B

- Replace existing track & field surface same as original layout,
- Replace existing natural grass field with new artificial grass field,
- New 2-storey high facility building at northwest corner,
- Add new fence 700m similar to existing,
- Wider truck access & maneuver,
- Add permanent covered bleachers for 500 people,
- Upgrades to existing grandstand,
- Add announcers' box & press box to existing grandstand,
- Add event support area,
- Provide new surface parking area.



## 2.0 Executive Summary (Cont'd)

### 2.2 Project Background and Description (Cont'd)

#### Option 1C

- Replace existing track & field infrastructure to meet IAAF Standards,
- Replace existing natural grass field with new natural grass field,
- New 2-storey high facility building at northwest corner,
- Add new fence 700m similar to existing,
- New stands alone digital scoreboard,
- New permanent storage area,
- Wider truck access & maneuver,
- Add permanent covered bleachers for 500 people,
- Upgrades to existing grandstand,
- Add announcers' box & press box to existing grandstand,
- Add event support area,
- Provide new surface parking area.

#### Option 2A

- Replace existing track & field infrastructure to meet IAAF Standards,
- Replace existing natural grass field with new natural grass field,
- Add new fence 700m similar to existing,
- New stands alone digital scoreboard,
- Wider truck access & maneuver,
- New permanent storage area,
- Remove existing grandstands & provide 2 new covered grandstands for 5,000 people each,
- New gathering plaza with light roof structure & ticketing area,
- New 2 levels underground parking.

#### Option 2B

- Replace existing track & field infrastructure to meet IAAF Standards,
- Replace existing natural grass field with new artificial grass field,
- Add new fence 1,220m similar to existing,
- New stands alone digital scoreboard,
- Wider truck access & maneuver,
- New permanent storage area,
- Remove existing grandstands & provide 2 new covered grandstands for 5,000 people each,
- New gathering plaza with light roof structure & ticketing area,
- New 2 levels underground parking,
- Add permanent covered bleachers for 500 people,
- New natural grass field for throwing activities,
- New warm up area for athletes.

Suite 300 – 30 East 6th Avenue, Vancouver, BC V5T 1J4 | 604 734 3126

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## 2.0 Executive Summary (Cont'd)

### 2.2 Project Background and Description (Cont'd)

#### Option 2C

- Replace existing natural grass field with new natural grass field,
- Add new fence 725m similar to existing,
- Add single level office building adjacent to the new grandstands,
- Wider truck access & maneuver,
- New permanent storage area,
- Remove existing grandstands & provide 2 new covered grandstands for 5,000 people each,
- New gathering plaza with light roof structure & ticketing area,
- Add event support area,
- New 2 levels underground parking.

## 3.0 Development Cost Summary

The current estimated cost of the project may be summarized as follows:

Item	Option 1A	Option 1B	Option 1C	Option 2A	Option 2B	Option 2C
A Land Cost (Excluded)	0	0	0	0	0	0
B Construction	17,621,500	19,901,600	20,285,500	107,050,700	116,755,900	118,697,100
C Professional Fees	1,321,600	1,492,600	1,521,400	8,028,800	8,756,700	8,902,300
D Connection Fees & Permits	334,800	378,100	385,500	2,034,000	2,218,400	2,255,300
E Management & Overhead	1,233,400	1,393,000	1,420,000	7,493,600	8,173,000	8,308,800
F Project Contingency	4,102,300	4,633,100	4,722,500	24,921,500	27,180,800	27,632,700
G Furnishing, Fittings & Equipment	600,000	700,000	700,000	3,700,000	4,100,000	4,100,000
H Financing Costs (Excluded)	0	0	0	0	0	0
I Goods & Services Tax (Excluded)	0	0	0	0	0	0
<b>Sub-Total Project Cost</b>	<b>\$25,213,600</b>	<b>\$28,498,400</b>	<b>\$29,034,900</b>	<b>\$153,228,600</b>	<b>\$167,184,800</b>	<b>\$169,896,200</b>
J Escalation (Excluded)	0	0	0	0	0	0
<b>Total Project Cost (Q4 2023 Dollars)</b>	<b>\$25,213,600</b>	<b>\$28,498,400</b>	<b>\$29,034,900</b>	<b>\$153,228,600</b>	<b>\$167,184,800</b>	<b>\$169,896,200</b>

Please note that, where zero-dollar values are stated, BTY has excluded these costs and the values should be carried in a separate budget (if applicable).



## 4.0 Basis & Assumptions

The construction estimate is based on the following list of assumptions:

1. No rock excavation is expected in site work and building excavation,
2. No structural upgrade to the existing grandstand is required for adding new announcers' box and press box,
3. No upgrade or replacement to existing sport field lighting is required,
4. No upgrade to existing concrete sidewalk adjacent to the running track is required,
5. New dressing rooms, official room, first aid room & hospitality room will be constructed under the existing grandstand - Options 1A, 1B and 1C,
6. An allowance of 5% general contractor's fees is included,
7. Refer to Appendices I to VI cost plan for other assumptions.

Please note that BTY is not qualified to act as design consultant. The assumptions in our estimate should be reviewed and corrected by the design team.

## 5.0 Exclusions

The construction estimate includes all direct and indirect construction costs derived from the drawings and other information provided by the Consultants, with the exception of the following:

1. Financing costs,
2. Legal fees and agreement costs / conditions,
3. Building permits and development cost charges,
4. Temporary facilities for user groups during construction,
5. Removal of hazardous materials from existing site,
6. Unforeseen ground conditions and associated extras,
7. Off-site works,
8. Phasing of the works and accelerated schedule,
9. Decanting & moving,
10. Project commissioning to be carried out by an independent consultant,
11. Erratic market conditions, such as lack of bidders, proprietary specifications,
12. Cost escalation past May 2023.





## 6.0 Project Cost Summary

The estimated project costs may be summarized as follows:

Description	Option 1A	Option 1B	Option 1C	Option 2A	Option 2B	Option 2C
<b>A. LAND COST</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
A1 Land (Purchase) - excluded	\$0	\$0	\$0	\$0	\$0	\$0
A2 Legal Fees - excluded	\$0	\$0	\$0	\$0	\$0	\$0
<b>B. CONSTRUCTION</b>	<b>\$17,621,500</b>	<b>\$19,901,600</b>	<b>\$20,285,500</b>	<b>\$107,050,700</b>	<b>\$116,755,900</b>	<b>\$118,697,100</b>
<b>C. PROFESSIONAL FEES</b>	<b>\$1,321,600</b>	<b>\$1,492,600</b>	<b>\$1,521,400</b>	<b>\$8,028,800</b>	<b>\$8,756,700</b>	<b>\$8,902,300</b>
C1 Professional Fees for Feasibility Study	\$88,100	\$99,500	\$101,400	\$535,300	\$583,800	\$593,500
C2 Design Development	\$1,233,500	\$1,393,100	\$1,420,000	\$7,493,500	\$8,172,900	\$8,308,800
<b>D. CONNECTION FEES &amp; PERMITS</b>	<b>\$334,800</b>	<b>\$378,100</b>	<b>\$385,500</b>	<b>\$2,034,000</b>	<b>\$2,218,400</b>	<b>\$2,255,300</b>
D1 Development Cost Charges	\$17,600	\$19,900	\$20,300	\$107,100	\$116,800	\$118,700
D2 Building Permits	\$141,000	\$159,200	\$162,300	\$856,400	\$934,000	\$949,600
D3 Connection Fees	\$176,200	\$199,000	\$202,900	\$1,070,500	\$1,167,600	\$1,187,000
<b>E. MANAGEMENT &amp; OVERHEAD</b>	<b>\$1,233,400</b>	<b>\$1,393,000</b>	<b>\$1,420,000</b>	<b>\$7,493,600</b>	<b>\$8,173,000</b>	<b>\$8,308,800</b>
E1 Project Management Fee	\$528,600	\$597,000	\$608,600	\$3,211,500	\$3,502,700	\$3,560,900
E2 Owners Planning & Administrative Cost	\$440,500	\$497,500	\$507,100	\$2,676,300	\$2,918,900	\$2,967,400
E3 Project Insurance	\$176,200	\$199,000	\$202,900	\$1,070,500	\$1,167,600	\$1,187,000
E4 Project Commissioning	\$88,100	\$99,500	\$101,400	\$535,300	\$583,800	\$593,500
E5 Temporary Facilities (excluded)	\$0	\$0	\$0	\$0	\$0	\$0
E6 Moving & Decanting (excluded)	\$0	\$0	\$0	\$0	\$0	\$0
<b>F. PROJECT CONTINGENCY (20% of Items B to E)</b>	<b>\$4,102,300</b>	<b>\$4,633,100</b>	<b>\$4,722,500</b>	<b>\$24,921,500</b>	<b>\$27,180,800</b>	<b>\$27,632,700</b>
<b>G. NET PROJECT COST</b>	<b>\$24,613,600</b>	<b>\$27,798,400</b>	<b>\$28,334,900</b>	<b>\$149,528,600</b>	<b>\$163,084,800</b>	<b>\$165,796,200</b>
<b>H. FURNISHINGS, FITTINGS &amp; EQUIPMENT</b>	<b>\$600,000</b>	<b>\$700,000</b>	<b>\$700,000</b>	<b>\$3,700,000</b>	<b>\$4,100,000</b>	<b>\$4,100,000</b>
<b>J. FINANCING COSTS (EXCLUDED)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>K. GST (EXCLUDED)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>L. TOTAL PROJECT COST (Q2 2023 Dollars)</b>	<b>\$25,213,600</b>	<b>\$28,498,400</b>	<b>\$29,034,900</b>	<b>\$153,228,600</b>	<b>\$167,184,800</b>	<b>\$169,896,200</b>
<b>M. ESCALATION ALLOWANCE</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>N. ESCALATED PROJECT COST (Q1 2026 Dollars)</b>	<b>\$25,213,600</b>	<b>\$28,498,400</b>	<b>\$29,034,900</b>	<b>\$153,228,600</b>	<b>\$167,184,800</b>	<b>\$169,896,200</b>

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## 7.0 Construction Cost Summary

The estimated construction cost of the project may be summarized as follows:

Description	Option 1A \$	Option 1B \$	Option 1C \$	Option 2A \$	Option 2B \$	Option 2C \$
A. Track & Field Infrastructure	3,104,700	2,654,700	3,104,700	3,104,700	3,104,700	0
B. Sports Field	1,428,400	2,518,400	1,428,400	1,428,400	2,518,400	1,428,400
C. Additional Permanent Seating	1,589,100	1,589,100	1,589,100	62,074,700	63,673,900	66,960,300
D. Additions to Existing Grandstand	2,511,100	2,511,100	2,511,100	0	0	0
E. Support Spaces for Athletes & Staff	5,306,000	5,306,000	5,306,000	0	0	0
F. Underground Parkade	0	0	0	25,250,400	25,250,400	31,583,000
G. Other Site Developments	1,317,400	2,651,500	3,623,900	3,425,000	9,374,200	5,677,700
H1. General Requirements	1,525,700	1,723,100	1,756,300	6,669,800	7,274,500	7,395,500
H2. Fees (5%)	839,100	947,700	966,000	5,097,700	5,559,800	5,652,200
<b>TOTAL CONSTRUCTION COST</b>	<b>\$17,621,500</b>	<b>\$19,901,600</b>	<b>\$20,285,500</b>	<b>\$107,050,700</b>	<b>\$116,755,900</b>	<b>\$118,697,100</b>



## 8.0 Taxes

The estimate includes the Provincial Sales Tax (P.S.T.) where applicable.

The estimate excludes the Goods & Services Tax (G.S.T.).

## 9.0 Project Schedule & Escalation

No cost escalation allowance has been included in this estimate. BTY strongly recommends that the client establish a separate budget to cover the escalation cost from the date of this estimate to the mid-point of construction of the project. Our current projected escalation rates are shown below:

	2023	2024	2025 +
Current BTY Group Forecast	5% - 8%	2% - 4%	2% - 4%

## 10.0 Pricing

This estimate has been priced at second quarter 2023 rates assuming a normal market. The unit rates utilized are considered appropriate for a project of this type, bid under a Design-Bid-Build model in an open market, with a minimum of four (4) bids, supported by a sufficient number of sub-contractors to ensure competitiveness.

The estimate allows for labour, material, equipment and other input costs at current rates and levels of productivity. It does not consider extraordinary market conditions, where bidders may be few and may include in their tenders' disproportionate contingencies and profit margins.



## 11.0 Risk Mitigation

BTY Group recommends that the Owner, Project Manager and Design Team carefully review this document, including exclusions, inclusions and assumptions, contingencies, escalation and mark-ups. If the project is over budget, or if there are unresolved budgeting issues, alternative systems/schemes should be evaluated before proceeding into the next design phase.

Requests for modifications of any apparent errors or omissions to this document must be made to BTY Group within ten (10) days of receipt of this estimate. Otherwise, it will be understood that the contents have been concurred with and accepted.

It is recommended that BTY Group design and propose a cost management framework for implementation. This framework would require that a series of further estimates be undertaken at key design stage milestones and a final update estimate be produced which is representative of the completed tender documents, project delivery model and schedule. The final updated estimate will address changes and additions to the documents, as well as addenda issued during the bidding process. BTY Group is unable to reconcile bid results to any estimate not produced from bid documents including all addenda.

## 12.0 Contingencies

### 12.1 Project Contingency

A Twenty Percent (20%) contingency has been included in the estimate to cover modifications to the program, drawings and specifications during the design and construction.

## 13.0 Documents Reviewed

The list below confirms the information that we have reviewed in order to prepare our opinion contained within this report:

Description	Revised Date
Drawings & Specifications	
Architectural Set (9 sheets)	July 19, 2022
Documents	
Swangard Revitalization Steering Committee Workshop #3	April 18, 2023
Option 2D Facility + Site Redevelopment	April 28, 2023
Activities & Area Options 1A, 1B, 1C, 2A & 2B for Costing	April 26, 2023
Activities & Area Option 2C for Costing	April 28, 2023



COST MANAGEMENT REPORT

# Swangard Stadium Revitalization

## APPENDICES

APPENDIX I	Cost Plan – Option 1A	9 pages
APPENDIX II	Cost Plan – Option 1B	9 pages
APPENDIX III	Cost Plan – Option 1C	10 pages
APPENDIX IV	Cost Plan – Option 2A	9 pages
APPENDIX V	Cost Plan – Option 2B	10 pages
APPENDIX VI	Cost Plan – Option 2C	9 pages

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T 604 734 3126





**APPENDIX I**

# Cost Plan – Option 1A

**9 PAGES**

Description	Quantity	Unit	Rate	Amount
<b>Option 1A</b>				
<b>A. Track &amp; Field Infrastructure</b>				
Remove existing track including: Remove existing track surface Excavation for running track Remove existing field infrastructure	7,590	m <sup>2</sup>	40.00	303,600
Running track infrastructure including: Rough & finishing grading Asphalt pavement with asphalt sub-base Granular sub-base ACO drain catch buckets Concrete drain footing Concrete gutter	7,590	m <sup>2</sup>	160.00	1,214,400
OM3000 sandwich running track system	7,590	m <sup>2</sup>	130.00	986,700
Allowance for the following new sport fitment including concrete works & granular fill: Long jump facility Triple jump facility High jump facility Pole vault facility Steeplechase water jump facility Discus & hammer throw facility Shot put facility Javelin throw facility	1	sum	600,000.00	600,000
<b>Total Track &amp; Field Infrastructure</b>				<b>\$3,104,700</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 1A</b>				
<b>B. Sports Field</b>				
Excavation to remove existing sport field & disposal offsite including re-level sport field to track elevation	6,036	m <sup>3</sup>	76.00	458,800
New natural grass sport field including: Rough & finishing grading Geotextile filter fabric Sand growing medium Sodding lawn Irrigation system	7,870	m <sup>2</sup>	80.00	629,600
Assume no replacement of existing underlaying subbases		excl.		
Allow chain link fence 1 m high	1	sum	100,000.00	100,000
Allowance for goal posts with concrete base	1	sum	40,000.00	40,000
Metal backstops to both goal posts	1	sum	200,000.00	200,000
<b>Total Sports Field</b>				<b>\$1,428,400</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 1A</b>				
<b>C. Additional Permanent Seating</b>				
New permanent covered seating for 500 people Remove existing asphalt pavement	675	m <sup>2</sup>	30.00	20,300
Concrete slab on grade with poly vapour barrier & granular sub-base	675	m <sup>2</sup>	250.00	168,800
Permanent aluminum frame grandstand with seating up to 500	1	sum	600,000.00	600,000
Allowance for heavy timber canopy cover including lighting & rain water drainage	1	sum	800,000.00	800,000
<b>Total Additional Permanent Seating</b>				<b>\$1,589,100</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 1A</b>				
<b>D. Additions to Existing Grandstand</b>				
Add 4 dressing rooms, official room, first aid room & hospitality room below the existing grandstand				
Remove existing concrete pavement	320	m <sup>2</sup>	30.00	9,600
Structural framing including:	176	m <sup>2</sup>	1,200.00	211,200
Concrete foundation including detail excavation & backfill				
Concrete foundation walls				
Concrete slab on grade with poly vapour barrier & granular sub-base				
Plywood roof sheathing with glulam beams & steel columns				
Exterior envelope including:	176	m <sup>2</sup>	1,600.00	281,600
Exterior concrete block walls with insulation				
Exterior windows / clerestory windows				
Exterior doors / overhead grille				
SBS roofing with insulation				
Interior fit-out including:	176	m <sup>2</sup>	1,920.00	337,900
Interior partitions				
Interior doors & access panels				
Interior floor, ceiling & wall finishes				
Metals, millwork & specialties				
Mechanical	176	m <sup>2</sup>	1,260.00	221,800
Electrical	176	m <sup>2</sup>	1,520.00	267,500
Concrete pavement to perimeter of building	144	m <sup>2</sup>	200.00	28,800
Electrical upgrade including:	1	sum	100,000.00	100,000
Main electrical service				
Stadium secondary distribution system				
Mechanical upgrade including:	1	sum	250,000.00	250,000
General heating & ventilation				
Heating distribution systems				
Secondary heating				
Plumbing systems				
Fire suppression systems				

Description	Quantity	Unit	Rate	Amount
<b>Option 1A</b>				
<b>D. Additions to Existing Grandstand</b>				
Replace existing press box with new press box				
Demolition including:	1	sum	13,000.00	13,000
Remove existing press box				
Cut back existing bench				
Remove existing steel guardrails				
Other misc. demolition				
Concrete floor slab including:	34	m <sup>2</sup>	1,060.00	36,300
Fill void form insulation				
Concrete front wall				
Concrete slab on void form				
Light weight concrete on existing concrete bleaches				
Roof structure including:	34	m <sup>2</sup>	570.00	19,500
Plywood roof sheathing				
Wood beams & steel columns				
Exterior envelope including:	34	m <sup>2</sup>	5,400.00	184,700
Aluminum panel exterior walls				
Exterior windows				
Exterior doors / roll shutter				
SBS roofing with insulation				
Interior fit-out including:	34	m <sup>2</sup>	1,400.00	47,900
Interior floor, ceiling & wall finishes				
Metals, millwork & specialties				
Mechanical	1	sum	112,500.00	112,500
Electrical	1	sum	52,500.00	52,500



Description	Quantity	Unit	Rate	Amount
<b>Option 1A</b>				
<b>D. Additions to Existing Grandstand</b>				
New announcers' box				
Demolition including:	1	sum	16,200.00	16,200
Remove existing sound booth				
Remove existing spotters booth				
Other misc. demolition				
Concrete floor slab including:	17	m <sup>2</sup>	1,580.00	26,900
Fill void form insulation				
Concrete front wall				
Concrete slab on void form				
Concrete infill				
Roof structure including:	17	m <sup>2</sup>	1,105.00	18,800
Plywood roof sheathing				
Wood beams & columns				
Exterior envelope including:	17	m <sup>2</sup>	11,720.00	199,200
Concrete block walls with insulation				
Exterior windows				
Exterior doors / roll shutter				
SBS roofing with insulation				
Interior fit-out including:	17	m <sup>2</sup>	2,040.00	34,700
Interior floor, ceiling & wall finishes				
Metals, millwork & specialties				
Mechanical	1	sum	33,000.00	33,000
Electrical	1	sum	7,500.00	7,500
<b>Total Additions to Existing Grandstand</b>				<b>\$2,511,100</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 1A</b>				
<b>E. Support Spaces for Athletes &amp; Staff</b>				
Remove existing pavement	800	m <sup>2</sup>	30.00	24,000
Allowance for concrete foundation including detail excavation & backfill	1,200	m <sup>2</sup>	130.00	156,000
Concrete slab on grade with poly vapour barrier & granular sub-base	600	m <sup>2</sup>	120.00	72,000
Steel floor decking with structural steel beams & columns	600	m <sup>2</sup>	1,090.00	654,000
Concrete topping on steel decking	600	m <sup>2</sup>	90.00	54,000
Suspended steel stairs	40	risr	600.00	24,000
Steel decking with structural steel beams & columns	600	m <sup>2</sup>	880.00	528,000
Concrete block exterior wall with insulation	634	m <sup>2</sup>	600.00	380,200
Aluminum windows (20% of walls above grade)	158	m <sup>2</sup>	1,500.00	237,600
Exterior HM single door & frame with hardware	6	no	2,700.00	16,200
Allowance for interior partitions, doors & finishes	1,200	m <sup>2</sup>	600.00	720,000
Allowance for fittings & equipment	1,200	m <sup>2</sup>	400.00	480,000
Mechanical including heating & cooling system	1,200	m <sup>2</sup>	950.00	1,140,000
Electrical	1,200	m <sup>2</sup>	650.00	780,000
Allowance for concrete sidewalk to perimeter of building	200	m <sup>2</sup>	200.00	40,000
<b><i>Total Support Spaces for Athletes &amp; Staff</i></b>				<b><i>\$5,306,000</i></b>

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Description	Quantity	Unit	Rate	Amount
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Option 1A

**F. Underground Parkade**

Not required

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***Total Underground Parkade***

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Description	Quantity	Unit	Rate	Amount
<b>Option 1A</b>				
<b>G. Other Site Developments</b>				
New digital scoreboard				
Remove existing scoreboard	1	sum	3,000.00	3,000
Allow concrete footings including detail excavation & backfill	1	sum	30,000.00	30,000
Allow structural steel support	1	sum	35,000.00	35,000
Allow LED video display with timing console	1	sum	550,000.00	550,000
Allow power supply for display system	1	sum	70,000.00	70,000
Fencing				
Additional chain link fence 2.4m high	700	m	300.00	210,000
Wider access				
Remove existing hard/soft landscaping including site furniture	250	m <sup>2</sup>	40.00	10,000
New asphalt pavement with curb & road marking	250	m <sup>2</sup>	500.00	125,000
Permanent storage area				
Remove existing hard/soft landscaping including site furniture	160	m <sup>2</sup>	40.00	6,400
Concrete slab on grade with poly vapour barrier & granular sub-base	160	m <sup>2</sup>	400.00	64,000
Allow for 40' sea-can	4	no	10,000.00	40,000
Allowance for curved canopy	1	sum	144,000.00	144,000
Allowance for lighting and power receptacles	1	sum	30,000.00	30,000
<b>Total Other Site Developments</b>				<b>\$1,317,400</b>



**APPENDIX II**

# Cost Plan – Option 1B

**9 PAGES**

Description	Quantity	Unit	Rate	Amount
<b>Option 1B</b>				
<b>A. Track &amp; Field Infrastructure</b>				
Remove existing track including: Remove existing track surface Excavation for running track Remove existing field infrastructure	7,590	m <sup>2</sup>	40.00	303,600
Running track including: Rough & finishing grading Asphalt pavement with asphalt sub-base Granular sub-base ACO drain catch buckets Concrete drain footing Concrete gutter	7,590	m <sup>2</sup>	160.00	1,214,400
OM3000 sandwich running track system	7,590	m <sup>2</sup>	130.00	986,700
Remove & re-install existing spot fitment	1	sum	150,000.00	150,000

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***Total Track & Field Infrastructure*** ***\$2,654,700***

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Description	Quantity	Unit	Rate	Amount
<b>Option 1B</b>				
<b>B. Sports Field</b>				
Excavation to remove existing sport field & disposal offsite including re-level sport field to track elevation	6,036	m <sup>3</sup>	76.00	458,800
Artificial grass sport field including: Rough & finishing grading Field top course gravel Field base course gravel Shock pad Artificial grass	7,870	m <sup>2</sup>	218.50	1,719,600
Assume no replacement of existing underlying subbases		excl.		
Allow chain link fence 1 m high	1	sum	100,000.00	100,000
Allowance for goal posts with concrete base	1	sum	40,000.00	40,000
Metal backstops to both goal posts	1	sum	200,000.00	200,000
<b>Total Sports Field</b>				<b>\$2,518,400</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 1B</b>				
<b>C. Additional Permanent Seating</b>				
New permanent covered seating for 500 people Remove existing asphalt pavement	675	m <sup>2</sup>	30.00	20,300
Concrete slab on grade with poly vapour barrier & granular sub-base	675	m <sup>2</sup>	250.00	168,800
Permanent aluminum frame grandstand with seating up to 500	1	sum	600,000.00	600,000
Allowance for heavy timber canopy cover including lighting & rain water drainage	1	sum	800,000.00	800,000
<b>Total Additional Permanent Seating</b>				<b>\$1,589,100</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 1B</b>				
<b>D. Additions to Existing Grandstand</b>				
Add 4 dressing rooms, official room, first aid room & hospitality room below the existing grandstand				
Remove existing concrete pavement	320	m <sup>2</sup>	30.00	9,600
Structural framing including:	176	m <sup>2</sup>	1,200.00	211,200
Concrete foundation including detail excavation & backfill				
Concrete foundation walls				
Concrete slab on grade with poly vapour barrier & granular sub-base				
Plywood roof sheathing with glulam beams & steel columns				
Exterior envelope including:	176	m <sup>2</sup>	1,600.00	281,600
Exterior concrete block walls with insulation				
Exterior windows / clerestory windows				
Exterior doors / overhead grille				
SBS roofing with insulation				
Interior fit-out including:	176	m <sup>2</sup>	1,920.00	337,900
Interior partitions				
Interior doors & access panels				
Interior floor, ceiling & wall finishes				
Metals, millwork & specialties				
Mechanical	176	m <sup>2</sup>	1,260.00	221,800
Electrical	176	m <sup>2</sup>	1,520.00	267,500
Concrete pavement to perimeter of building	144	m <sup>2</sup>	200.00	28,800
Electrical upgrade including:	1	sum	100,000.00	100,000
Main electrical service				
Stadium secondary distribution system				
Mechanical upgrade including:	1	sum	250,000.00	250,000
General heating & ventilation				
Heating distribution systems				
Secondary heating				
Plumbing systems				
Fire suppression systems				

Description	Quantity	Unit	Rate	Amount
<b>Option 1B</b>				
<b>D. Additions to Existing Grandstand</b>				
Replace existing press box with new press box				
Demolition including:	1	sum	13,000.00	13,000
Remove existing press box				
Cut back existing bench				
Remove existing steel guardrails				
Concrete floor slab including:	34	m <sup>2</sup>	1,060.00	36,300
Fill void form insulation				
Concrete front wall				
Concrete slab on void form				
Light weight concrete on existing concrete bleaches				
Roof structure including:	34	m <sup>2</sup>	570.00	19,500
Plywood roof sheathing				
Wood beams & steel columns				
Exterior envelope including:	34	m <sup>2</sup>	5,400.00	184,700
Aluminum panel exterior walls				
Exterior windows				
Exterior doors / roll shutter				
SBS roofing with insulation				
Interior fit-out including:	34	m <sup>2</sup>	1,400.00	47,900
Interior floor, ceiling & wall finishes				
Metals, millwork & specialties				
Mechanical	1	sum	112,500.00	112,500
Electrical	1	sum	52,500.00	52,500

Description	Quantity	Unit	Rate	Amount
<b>Option 1B</b>				
<b>D. Additions to Existing Grandstand</b>				
New announcers' box				
Demolition including:	1	sum	16,200.00	16,200
Remove existing sound booth				
Remove existing spotters booth				
Other misc. demolition				
Concrete floor slab including:	17	m <sup>2</sup>	1,580.00	26,900
Fill void form insulation				
Concrete front wall				
Concrete slab on void form				
Concrete infill				
Roof structure including:	17	m <sup>2</sup>	1,105.00	18,800
Plywood roof sheathing				
Wood beams & columns				
Exterior envelope including:	17	m <sup>2</sup>	11,720.00	199,200
Concrete block walls with insulation				
Exterior windows				
Exterior doors / roll shutter				
SBS roofing with insulation				
Interior fit-out including:	17	m <sup>2</sup>	2,040.00	34,700
Interior floor, ceiling & wall finishes				
Metals, millwork & specialties				
Mechanical	1	sum	33,000.00	33,000
Electrical	1	sum	7,500.00	7,500
<b><i>Total Additions to Existing Grandstand</i></b>				<b><i>\$2,511,100</i></b>

Description	Quantity	Unit	Rate	Amount
<b>Option 1B</b>				
<b>E. Support Spaces for Athletes &amp; Staff</b>				
Remove existing pavement	800	m <sup>2</sup>	30.00	24,000
Allowance for concrete foundation including detail excavation & backfill	1,200	m <sup>2</sup>	130.00	156,000
Concrete slab on grade with poly vapour barrier & granular sub-base	600	m <sup>2</sup>	120.00	72,000
Steel floor decking with structural steel beams & columns	600	m <sup>2</sup>	1,090.00	654,000
Concrete topping on steel decking	600	m <sup>2</sup>	90.00	54,000
Suspended steel stairs	40	risr	600.00	24,000
Steel decking with structural steel beams & columns	600	m <sup>2</sup>	880.00	528,000
Concrete block exterior wall with insulation	634	m <sup>2</sup>	600.00	380,200
Aluminum windows (20% of walls above grade)	158	m <sup>2</sup>	1,500.00	237,600
Exterior HM single door & frame with hardware	6	no	2,700.00	16,200
Allowance for interior partitions, doors & finishes	1,200	m <sup>2</sup>	600.00	720,000
Allowance for fittings & equipment	1,200	m <sup>2</sup>	400.00	480,000
Allowance for mechanical including heating & cooling system	1,200	m <sup>2</sup>	950.00	1,140,000
Allowance for electrical	1,200	m <sup>2</sup>	650.00	780,000
Allowance for concrete sidewalk to perimeter of building	200	m <sup>2</sup>	200.00	40,000
<b><i>Total Support Spaces for Athletes &amp; Staff</i></b>				<b><i>\$5,306,000</i></b>



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Description	Quantity	Unit	Rate	Amount
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Option 1B

F. Underground Parkade

Not required

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***Total Underground Parkade***

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Description	Quantity	Unit	Rate	Amount
<b>Option 1B</b>				
<b>G. Other Site Developments</b>				
New digital scoreboard - not required				
Fencing				
Additional chain link fence 2.4m high	700	m	300.00	210,000
Wider access				
Remove existing hard/soft landscaping including site furniture	350	m <sup>2</sup>	40.00	14,000
New asphalt pavement with curb & road marking	350	m <sup>2</sup>	500.00	175,000
New surface parking area				
Demolition including:	1	sum	103,000.00	103,000
Remove existing soft & hard landscaping				
Remove existing trees				
New asphalt pavement with curb & road marking	3,100	m <sup>2</sup>	250.00	775,000
Mechanical site services	1	sum	108,500.00	108,500
Surface water drainage system				
Electrical site services	1	sum	250,000.00	250,000
Assumed 38nos of EV charger				
Assumed for 20nos pole lighting				
Allowance for power to pay parking machines				
New event support area				
Demolition including:	1	sum	78,000.00	78,000
Remove existing soft & hard landscaping				
New asphalt pavement with curb & road marking	2,600	m <sup>2</sup>	250.00	650,000
Mechanical site services	1	sum	208,000.00	208,000
Water supply for food vehicles and temporary washrooms				
Electrical site services	1	sum	80,000.00	80,000
Power supply for food vehicles				
Temporary washrooms		excl.		
<b>Total Other Site Developments</b>				<b>\$2,651,500</b>



**APPENDIX III**

# Cost Plan – Option 1C

**10 PAGES**

Description	Quantity	Unit	Rate	Amount
<b>Option 1C</b>				
<b>A. Track &amp; Field Infrastructure</b>				
Remove existing track including: Remove existing track surface Excavation for running track Remove existing field infrastructure	7,590	m <sup>2</sup>	40.00	303,600
Running track including: Rough & finishing grading Asphalt pavement with asphalt sub-base Granular sub-base ACO drain catch buckets Concrete drain footing Concrete gutter	7,590	m <sup>2</sup>	160.00	1,214,400
OM3000 sandwich running track system	7,590	m <sup>2</sup>	130.00	986,700
Allowance for the following new sport fitment including concrete works & granular fill: Long jump facility Triple jump facility High jump facility Pole vault facility Steeplechase water jump facility Discus throw facility Shot put facility Hammer throw facility Javelin throw facility Soccer net tie-down (2 nos.)	1	sum	600,000.00	600,000
<b>Total Track &amp; Field Infrastructure</b>				<b>\$3,104,700</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 1C</b>				
<b>B. Sports Field</b>				
Excavation to remove existing sport field & disposal offsite including re-level sport field to track elevation	6,036	m <sup>3</sup>	76.00	458,800
New natural grass sport field including: Rough & finishing grading Geotextile filter fabric Sand growing medium Sodding lawn Irrigation system	7,870	m <sup>2</sup>	80.00	629,600
Assume no replacement of existing underlying subbases		excl.		
Allow chain link fence 1 m high	1	sum	100,000.00	100,000
Allowance for goal posts with concrete base	1	sum	40,000.00	40,000
Metal backstops to both goal posts	1	sum	200,000.00	200,000
<b>Total Sports Field</b>				<b>\$1,428,400</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 1C</b>				
<b>C. Additional Permanent Seating</b>				
New permanent covered seating for 500 people Remove existing asphalt pavement	675	m <sup>2</sup>	30.00	20,300
Concrete slab on grade with poly vapour barrier & granular sub-base	675	m <sup>2</sup>	250.00	168,800
Permanent aluminum frame grandstand with seating up to 500	1	sum	600,000.00	600,000
Allowance for heavy timber canopy cover including lighting & rain water drainage	1	sum	800,000.00	800,000
<b><i>Total Additional Permanent Seating</i></b>				<b><i>\$1,589,100</i></b>



Description	Quantity	Unit	Rate	Amount
<b>Option 1C</b>				
<b>D. Additions to Existing Grandstand</b>				
Add 4 dressing rooms, official room, first aid room & hospitality room below the existing grandstand				
Remove existing concrete pavement	320	m <sup>2</sup>	30.00	9,600
Structural framing including:	176	m <sup>2</sup>	1,200.00	211,200
Concrete foundation including detail excavation & backfill				
Concrete foundation walls				
Concrete slab on grade with poly vapour barrier & granular sub-base				
Plywood roof sheathing with glulam beams & steel columns				
Exterior envelope including:	176	m <sup>2</sup>	1,600.00	281,600
Exterior concrete block walls with insulation				
Exterior windows / clerestory windows				
Exterior doors / overhead grille				
SBS roofing with insulation				
Interior fit-out including:	176	m <sup>2</sup>	1,920.00	337,900
Interior partitions				
Interior doors & access panels				
Interior floor, ceiling & wall finishes				
Metals, millwork & specialties				
Mechanical	176	m <sup>2</sup>	1,260.00	221,800
Electrical	176	m <sup>2</sup>	1,520.00	267,500
Concrete pavement to perimeter of building	144	m <sup>2</sup>	200.00	28,800
Electrical upgrade including:	1	sum	100,000.00	100,000
Main electrical service				
Stadium secondary distribution system				
Mechanical upgrade including:	1	sum	250,000.00	250,000
General heating & ventilation				
Heating distribution systems				
Secondary heating				
Plumbing systems				
Fire suppression systems				

Description	Quantity	Unit	Rate	Amount
<b>Option 1C</b>				
<b>D. Additions to Existing Grandstand</b>				
Replace existing press box with new press box				
Demolition including:	1	sum	13,000.00	13,000
Remove existing press box				
Cut back existing bench				
Remove existing steel guardrails				
Concrete floor slab including:	34	m <sup>2</sup>	1,060.00	36,300
Fill void form insulation				
Concrete front wall				
Concrete slab on void form				
Light weight concrete on existing concrete bleaches				
Roof structure including:	34	m <sup>2</sup>	570.00	19,500
Plywood roof sheathing				
Wood beams & steel columns				
Exterior envelope including:	34	m <sup>2</sup>	5,400.00	184,700
Aluminum panel exterior walls				
Exterior windows				
Exterior doors / roll shutter				
SBS roofing with insulation				
Interior fit-out including:	34	m <sup>2</sup>	1,400.00	47,900
Interior floor, ceiling & wall finishes				
Metals, millwork & specialties				
Mechanical	1	sum	112,500.00	112,500
Electrical	1	sum	52,500.00	52,500

Description	Quantity	Unit	Rate	Amount
<b>Option 1C</b>				
<b>D. Additions to Existing Grandstand</b>				
New announcers' box				
Demolition including:	1	sum	16,200.00	16,200
Remove existing sound booth				
Remove existing spotters booth				
Other misc. demolition				
Concrete floor slab including:	17	m <sup>2</sup>	1,580.00	26,900
Fill void form insulation				
Concrete front wall				
Concrete slab on void form				
Concrete infill				
Roof structure including:	17	m <sup>2</sup>	1,105.00	18,800
Plywood roof sheathing				
Wood beams & columns				
Exterior envelope including:	17	m <sup>2</sup>	11,720.00	199,200
Concrete block walls with insulation				
Exterior windows				
Exterior doors / roll shutter				
SBS roofing with insulation				
Interior fit-out including:	17	m <sup>2</sup>	2,040.00	34,700
Interior floor, ceiling & wall finishes				
Metals, millwork & specialties				
Mechanical	1	sum	33,000.00	33,000
Electrical	1	sum	7,500.00	7,500
<b>Total Additions to Existing Grandstand</b>				<b>\$2,511,100</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 1C</b>				
<b>E. Support Spaces for Athletes &amp; Staff</b>				
Remove existing pavement	800	m <sup>2</sup>	30.00	24,000
Allowance for concrete foundation including detail excavation & backfill	1,200	m <sup>2</sup>	130.00	156,000
Concrete slab on grade with poly vapour barrier & granular sub-base	600	m <sup>2</sup>	120.00	72,000
Steel floor decking with structural steel beams & columns	600	m <sup>2</sup>	1,090.00	654,000
Concrete topping on steel decking	600	m <sup>2</sup>	90.00	54,000
Suspended steel stairs	40	risr	600.00	24,000
Steel decking with structural steel beams & columns	600	m <sup>2</sup>	880.00	528,000
Concrete block exterior wall with insulation	634	m <sup>2</sup>	600.00	380,200
Aluminum windows (20% of walls above grade)	158	m <sup>2</sup>	1,500.00	237,600
Exterior HM single door & frame with hardware	6	no	2,700.00	16,200
Allowance for interior partitions, doors & finishes	1,200	m <sup>2</sup>	600.00	720,000
Allowance for fittings & equipment	1,200	m <sup>2</sup>	400.00	480,000
Allowance for mechanical including heating & cooling system	1,200	m <sup>2</sup>	950.00	1,140,000
Allowance for electrical	1,200	m <sup>2</sup>	650.00	780,000
Allowance for concrete sidewalk to perimeter of building	200	m <sup>2</sup>	200.00	40,000
<b><i>Total Support Spaces for Athletes &amp; Staff</i></b>				<b><i>\$5,306,000</i></b>

Description	Quantity	Unit	Rate	Amount
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Option 1C

**F. Underground Parkade**

Not required

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***Total Underground Parkade***

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Description	Quantity	Unit	Rate	Amount
<b>Option 1C</b>				
<b>G. Other Site Developments</b>				
New digital scoreboard				
Remove existing scoreboard	1	sum	3,000.00	3,000
Allow concrete footings including detail excavation & backfill	1	sum	30,000.00	30,000
Allow structural steel support	1	sum	35,000.00	35,000
Allow LED video display with timing console	1	sum	550,000.00	550,000
Allow power supply for display system	1	sum	70,000.00	70,000
Fencing				
Additional chain link fence 2.4m high	700	m	300.00	210,000
Wider access				
Remove existing hard/soft landscaping including site furniture	350	m <sup>2</sup>	40.00	14,000
New asphalt pavement with curb & road marking	350	m <sup>2</sup>	500.00	175,000
Permanent storage area				
Remove existing hard/soft landscaping including site furniture	160	m <sup>2</sup>	40.00	6,400
Concrete slab on grade with poly vapour barrier & granular sub-base	160	m <sup>2</sup>	400.00	64,000
Allow for 40' sea-can	4	no	10,000.00	40,000
Allowance for curved canopy	1	sum	144,000.00	144,000
Allowance for lighting	1	sum	30,000.00	30,000
New surface parking area				
Demolition including:				
Remove existing soft & hard landscaping	1	sum	103,000.00	103,000
Remove existing trees				
New asphalt pavement with curb & road marking	3,100	m <sup>2</sup>	250.00	775,000
Mechanical site services	1	sum	108,500.00	108,500
Surface water drainage system				

Description	Quantity	Unit	Rate	Amount
<b>Option 1C</b>				
<b>G. Other Site Developments</b>				
Electrical site services Assumed 38nos of EV charger Assumed for 20nos pole lighting Allowance for power to pay parking machines	1	sum	250,000.00	250,000
New event support area Demolition including: Remove existing soft & hard landscaping	1	sum	78,000.00	78,000
New asphalt pavement with curb & road marking	2,600	m <sup>2</sup>	250.00	650,000
Mechanical site services Water supply for food vehicles and temporary washrooms	1	sum	208,000.00	208,000
Electrical site services Power supply for food vehicles	1	sum	80,000.00	80,000
Temporary washrooms		excl.		
<b>Total Other Site Developments</b>				<b>\$3,623,900</b>





**APPENDIX IV**

# Cost Plan – Option 2A

**9 PAGES**

Description	Quantity	Unit	Rate	Amount
<b>Option 2A</b>				
<b>A. Track &amp; Field Infrastructure</b>				
Remove existing track including: Remove existing track surface Excavation for running track Remove existing field infrastructure	7,590	m <sup>2</sup>	40.00	303,600
Running track including: Rough & finishing grading Asphalt pavement with asphalt sub-base Granular sub-base ACO drain catch buckets Concrete drain footing Concrete gutter	7,590	m <sup>2</sup>	160.00	1,214,400
OM3000 sandwich running track system	7,590	m <sup>2</sup>	130.00	986,700
Allowance for the following new sport fitment including concrete works & granular fill: Long jump facility Triple jump facility High jump facility Pole vault facility Steeplechase water jump facility Discus throw facility Shot put facility Hammer throw facility Javelin throw facility Soccer net tie-down (2 nos.)	1	sum	600,000.00	600,000
<b>Total Track &amp; Field Infrastructure</b>				<b>\$3,104,700</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 2A</b>				
<b>B. Sports Field</b>				
Excavation to remove existing sport field & disposal offsite including re-level sport field to track elevation	6,036	m <sup>3</sup>	76.00	458,800
New natural grass sport field including: Rough & finishing grading Geotextile filter fabric Sand growing medium Sodding lawn Irrigation system	7,870	m <sup>2</sup>	80.00	629,600
Assume no replacement of existing underlying subbases		excl.		
Allow chain link fence 1 m high	1	sum	100,000.00	100,000
Allowance for goal posts with concrete base	1	sum	40,000.00	40,000
Metal backstops to both goal posts	1	sum	200,000.00	200,000
<b>Total Sports Field</b>				<b>\$1,428,400</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 2A</b>				
<b>C. Additional Permanent Seating</b>				
Two new grandstands for 5,000 people each				
Remove existing grandstands	1	sum	300,000.00	300,000
Remove existing slab on grade	1	sum	60,000.00	60,000
Allowance for concrete foundation including detail excavation & backfill	6,680	m <sup>2</sup>	400.00	2,672,000
Concrete slab on grade with poly vapour barrier & granular sub-base	3,340	m <sup>2</sup>	200.00	668,000
Extra over concrete suspended roof slab to underground parkade	3,340	m <sup>2</sup>	300.00	1,002,000
Allowance for precast stadium bleachers, stairs with concrete columns	6,680	m <sup>2</sup>	3,600.00	24,048,000
Allowance for guardrails & handrails	1	sum	254,500.00	254,500
Allowance for seats with backrest	10,000	seat	130.00	1,300,000
Allowance for mechanical	1	sum	290,400.00	290,400
Allowance for electrical	1	sum	2,118,400.00	2,118,400
Canopy over grandstands				
Timber canopy with structural steel support	2,600	m <sup>2</sup>	2,800.00	7,280,000
Roofing & projection	2,600	m <sup>2</sup>	600.00	1,560,000
Allowance for mechanical	1	sum	157,000.00	157,000
Allowance for electrical	1	sum	11,200.00	11,200
Rooms for VIPs & sponsors				
Steel structure framing including: Concrete topping on steel floor decking Steel roof decking with steel beams & columns	600	m <sup>2</sup>	3,000.00	1,800,000
Exterior envelope including: Aluminum panel exterior walls Exterior windows Exterior doors / roll shutter	600	m <sup>2</sup>	8,000.00	4,800,000

Description	Quantity	Unit	Rate	Amount
<b>Option 2A</b>				
<b>C. Additional Permanent Seating</b>				
Interior fit-out including: Interior partitions Interior floor, ceiling & wall finishes Metals, millwork & specialties	600	m <sup>2</sup>	2,000.00	1,200,000
Mechanical	1	sum	900,000.00	900,000
Electrical	1	sum	780,000.00	780,000
Support spaces for athletes & staff				
Allowance for concrete foundation including detail excavation & backfill	2,460	m <sup>2</sup>	130.00	319,800
Concrete slab on grade (included in grandstands)				
Wood roof structure	2,460	m <sup>2</sup>	460.00	1,131,600
Exterior enclosure	2,460	m <sup>2</sup>	1,130.00	2,779,800
Interior fit out including: Interior partitions & doors Interior floor, ceiling & wall finishes Metals, millwork & specialties	2,460	m <sup>2</sup>	990.00	2,435,400
Mechanical including heating & cooling system	2,460	m <sup>2</sup>	950.00	2,337,000
Electrical	2,460	m <sup>2</sup>	760.00	1,869,600
<b>Total Additional Permanent Seating</b>				<b>\$62,074,700</b>

Description	Quantity	Unit	Rate	Amount
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Option 2A

D. Additions to Existing Grandstand

Not required

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***Total Additions to Existing Grandstand***

Description	Quantity	Unit	Rate	Amount
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Option 2A

**E. Support Spaces for Athletes & Staff**

Includes in new grandstands

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***Total Support Spaces for Athletes & Staff***

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Description	Quantity	Unit	Rate	Amount
<b>Option 2A</b>				
<b>F. Underground Parkade</b>				
2 levels underground parkade (each level 6,300 m <sup>2</sup> )				
Allowance for excavation & backfill including: Sedimentation control & dewatering Shotcrete shoring with anchors Bulk excavation Detail footing excavation Disposal excavated material offsite Imported backfill Footing drainage	12,600	m <sup>2</sup>	630.00	7,938,000
Concrete structure including: Concrete footings Concrete basement perimeter walls Concrete slab on grade Concrete suspended floor slab with concrete beams & columns Concrete suspended stairs Concrete suspended roof slab with concrete beams & columns Interior concrete walls	12,600	m <sup>2</sup>	865.00	10,899,000
Envelope including: Waterproofing & drain mat to basement wall Roof covering Security overhead gate	12,600	m <sup>2</sup>	138.00	1,738,800
Interior fit out including: Interior partitions Interior doors Interior floor, ceiling & wall finishes Stair handrails, guardrails & misc. metals Interior signage & fire safety play Hydraulic elevator	12,600	m <sup>2</sup>	102.00	1,285,200
Mechanical	12,600	m <sup>2</sup>	155.00	1,953,000
Electrical	12,600	m <sup>2</sup>	114.00	1,436,400
<b>Total Underground Parkade</b>				<b>\$25,250,400</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 2A</b>				
<b>G. Other Site Developments</b>				
New digital scoreboard				
Remove existing scoreboard	1	sum	3,000.00	3,000
Allow concrete footings including detail excavation & backfill	1	sum	30,000.00	30,000
Allow structural steel support	1	sum	35,000.00	35,000
Allow LED video display with timing console	1	sum	550,000.00	550,000
Allow power supply for display system	1	sum	70,000.00	70,000
Fencing				
Additional chain link fence 2.4m high	700	m	300.00	210,000
Wider access				
Remove existing hard/soft landscaping including site furniture	250	m <sup>2</sup>	40.00	10,000
New asphalt pavement with curb & road marking	250	m <sup>2</sup>	500.00	125,000
Permanent storage area				
Remove existing hard/soft landscaping including site furniture	160	m <sup>2</sup>	40.00	6,400
Concrete slab on grade with poly vapour barrier & granular sub-base	160	m <sup>2</sup>	400.00	64,000
Allow for 40' sea-can	4	no	10,000.00	40,000
Allowance for curved canopy	1	sum	144,000.00	144,000
Allowance for lighting	1	sum	30,000.00	30,000

Description	Quantity	Unit	Rate	Amount
<b>Option 2A</b>				
<b>G. Other Site Developments</b>				
Gathering plaza				
Demolition including:	1	sum	46,000.00	46,000
Remove existing soft & hard landscaping				
Remove existing trees				
Allowance for hard landscaping	1,360	m <sup>2</sup>	500.00	680,000
Allowance for light roof structure & ticketing area	1	sum	1,200,000.00	1,200,000
Mechanical site services	1	sum	81,600.00	81,600
Surface water drainage				
Electrical site services	1	sum	100,000.00	100,000
Allowance for exterior lighting				
Allowance for duplex receptacles				

<b><i>Total Other Site Developments</i></b>	<b><i>\$3,425,000</i></b>
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**APPENDIX V**

# Cost Plan – Option 2B

**10 PAGES**

Description	Quantity	Unit	Rate	Amount
<b>Option 2B</b>				
<b>A. Track &amp; Field Infrastructure</b>				
Remove existing track including: Remove existing track surface Excavation for running track Remove existing field infrastructure	7,590	m <sup>2</sup>	40.00	303,600
Running track including: Rough & finishing grading Asphalt pavement with asphalt sub-base Granular sub-base ACO drain catch buckets Concrete drain footing Concrete gutter	7,590	m <sup>2</sup>	160.00	1,214,400
OM3000 sandwich running track system	7,590	m <sup>2</sup>	130.00	986,700
Allowance for the following new sport fitment including concrete works & granular fill: Long jump facility Triple jump facility High jump facility Pole vault facility Steeplechase water jump facility Discus throw facility Shot put facility Hammer throw facility Javelin throw facility Soccer net tie-down (2 nos.)	1	sum	600,000.00	600,000
<b>Total Track &amp; Field Infrastructure</b>				<b>\$3,104,700</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 2B</b>				
<b>B. Sports Field</b>				
Excavation to remove existing sport field & disposal offsite including re-level sport field to track elevation	6,036	m <sup>3</sup>	76.00	458,800
Artificial grass sport field including: Rough & finishing grading Field top course gravel Field base course gravel Shock pad Artificial grass	7,870	m <sup>2</sup>	218.50	1,719,600
Assume no replacement of existing underlaying subbases		excl.		
Allow chain link fence 1 m high	1	sum	100,000.00	100,000
Allowance for goal posts with concrete base	1	sum	40,000.00	40,000
Metal backstops to both goal posts	1	sum	200,000.00	200,000
<b><i>Total Sports Field</i></b>				<b><i>\$2,518,400</i></b>

Description	Quantity	Unit	Rate	Amount
<b>Option 2B</b>				
<b>C. Additional Permanent Seating</b>				
Two new grandstands for 5,000 people each				
Remove existing grandstands	1	sum	300,000.00	300,000
Remove existing slab on grade	1	sum	60,000.00	60,000
Allowance for concrete foundation including detail excavation & backfill	6,680	m <sup>2</sup>	400.00	2,672,000
Concrete slab on grade with poly vapour barrier & granular sub-base	3,340	m <sup>2</sup>	200.00	668,000
Extra over concrete suspended roof slab to underground parkade	3,340	m <sup>2</sup>	300.00	1,002,000
Allowance for precast stadium bleachers, stairs with concrete columns	6,680	m <sup>2</sup>	3,600.00	24,048,000
Allowance for guardrails & handrails	1	sum	254,500.00	254,500
Allowance for seats with backrest	10,000	seat	130.00	1,300,000
Allowance for mechanical	1	sum	290,400.00	290,400
Allowance for electrical	1	sum	2,118,400.00	2,118,400
Canopy over grandstands				
Timber canopy with structural steel support	2,600	m <sup>2</sup>	2,800.00	7,280,000
Roofing & projection	2,600	m <sup>2</sup>	600.00	1,560,000
Allowance for mechanical	1	sum	157,000.00	157,000
Allowance for electrical	1	sum	11,200.00	11,200
Rooms for VIPs & sponsors				
Steel structure framing including: Concrete topping on steel floor decking Steel roof decking with steel beams & columns	600	m <sup>2</sup>	3,000.00	1,800,000
Exterior envelope including: Aluminum panel exterior walls Exterior windows Exterior doors / roll shutter	600	m <sup>2</sup>	8,000.00	4,800,000



Description	Quantity	Unit	Rate	Amount
<b>Option 2B</b>				
<b>C. Additional Permanent Seating</b>				
Interior fit-out including: Interior partitions Interior floor, ceiling & wall finishes Metals, millwork & specialties	600	m <sup>2</sup>	2,000.00	1,200,000
Mechanical	1	sum	900,000.00	900,000
Electrical	1	sum	780,000.00	780,000
Support spaces for athletes & staff Allowance for concrete foundation including detail excavation & backfill	2,460	m <sup>2</sup>	130.00	319,800
Concrete slab on grade (included in grandstands)				
Wood roof structure	2,460	m <sup>2</sup>	460.00	1,131,600
Exterior enclosure	2,460	m <sup>2</sup>	1,130.00	2,779,800
Interior fit out including: Interior partitions & doors Interior floor, ceiling & wall finishes Metals, millwork & specialties	2,460	m <sup>2</sup>	990.00	2,435,400
Mechanical including heating & cooling system	2,460	m <sup>2</sup>	950.00	2,337,000
Electrical	2,460	m <sup>2</sup>	760.00	1,869,600
New permanent covered seating for 500 people Remove existing hard/soft landscaping including trees removal	675	m <sup>2</sup>	45.00	30,400
Concrete slab on grade with poly vapour barrier & granular sub-base	675	m <sup>2</sup>	250.00	168,800
Permanent aluminum frame grandstand with seating up to 500	1	sum	600,000.00	600,000
Allowance for heavy timber canopy cover including lighting & rain water drainage	1	sum	800,000.00	800,000
<b>Total Additional Permanent Seating</b>				<b>\$63,673,900</b>

Description	Quantity	Unit	Rate	Amount
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Option 2B

D. Additions to Existing Grandstand

Not required

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***Total Additions to Existing Grandstand***

Description	Quantity	Unit	Rate	Amount
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Option 2B

E. Support Spaces for Athletes & Staff

Includes in new grandstands

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***Total Support Spaces for Athletes & Staff***

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Description	Quantity	Unit	Rate	Amount
<b>Option 2B</b>				
<b>F. Underground Parkade</b>				
2 levels underground parkade (each level 6,300 m <sup>2</sup> )				
Allowance for excavation & backfill including: Sedimentation control & dewatering Shotcrete shoring with anchors Bulk excavation Detail footing excavation Disposal excavated material offsite Imported backfill Footing drainage	12,600	m <sup>2</sup>	630.00	7,938,000
Concrete structure including: Concrete footings Concrete basement perimeter walls Concrete slab on grade Concrete suspended floor slab with concrete beams & columns Concrete suspended stairs Concrete suspended roof slab with concrete beams & columns Interior concrete walls	12,600	m <sup>2</sup>	865.00	10,899,000
Envelope including: Waterproofing & drain mat to basement wall Roof covering Security overhead gate	12,600	m <sup>2</sup>	138.00	1,738,800
Interior fit out including: Interior partitions Interior doors Interior floor, ceiling & wall finishes Stair handrails, guardrails & misc. metals Interior signage & fire safety play Hydraulic elevator	12,600	m <sup>2</sup>	102.00	1,285,200
Mechanical	12,600	m <sup>2</sup>	155.00	1,953,000
Electrical	12,600	m <sup>2</sup>	114.00	1,436,400
<b>Total Underground Parkade</b>				<b>\$25,250,400</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 2B</b>				
<b>G. Other Site Developments</b>				
New digital scoreboard				
Remove existing scoreboard	1	sum	3,000.00	3,000
Allow concrete footings including detail excavation & backfill	1	sum	30,000.00	30,000
Allow structural steel support	1	sum	35,000.00	35,000
Allow LED video display with timing console	1	sum	550,000.00	550,000
Allow power supply for display system	1	sum	70,000.00	70,000
Fencing				
Additional chain link fence 2.4m high	1,220	m	300.00	366,000
Wider access				
Remove existing hard/soft landscaping including site furniture	250	m <sup>2</sup>	40.00	10,000
New asphalt pavement with curb & road marking	250	m <sup>2</sup>	500.00	125,000
Permanent storage area				
Remove existing hard/soft landscaping including site furniture	160	m <sup>2</sup>	40.00	6,400
Concrete slab on grade with poly vapour barrier & granular sub-base	160	m <sup>2</sup>	400.00	64,000
Allow for 40' sea-can	4	no	10,000.00	40,000
Allowance for curved canopy	1	sum	144,000.00	144,000
Allowance for lighting	1	sum	30,000.00	30,000
Gathering plaza				
Demolition including: Remove existing soft & hard landscaping Remove existing trees	1	sum	46,000.00	46,000
Allowance for hard landscaping	1,360	m <sup>2</sup>	500.00	680,000
Allowance for light roof structure & ticketing area	1	sum	1,200,000.00	1,200,000
Mechanical site services Surface water drainage	1	sum	81,600.00	81,600

Description	Quantity	Unit	Rate	Amount
<b>Option 2B</b>				
<b>G. Other Site Developments</b>				
Electrical site services Allowance for exterior lighting Allowance for duplex receptacles	1	sum	100,000.00	100,000
New natural grass field for throwing activities Allowance for trees removal	1	sum	300,000.00	300,000
Excavate to reduce level including tree stumps removal	9,520	m <sup>2</sup>	40.00	380,800
Allowance site regrade / cut & fill to required elevation	1	sum	700,000.00	700,000
New natural grass sport field including: Gravel base and subbase Rough & finishing grading Geotextile filter fabric Sand growing medium Sodding lawn Irrigation system	9,520	m <sup>2</sup>	130.00	1,237,600
Allowance for chain link fencing 2.4m high	416	m	300.00	124,800
Mechanical site services Surface water drainage	1	sum	300,000.00	300,000
Electrical site services Allowance for sports lighting	1	sum	400,000.00	400,000
New warm up area for athletes Allowance for trees removal	1	sum	150,000.00	150,000
Excavate to reduce level including tree stumps removal	5,000	m <sup>2</sup>	40.00	200,000
Allowance site regrade / cut & fill to required elevation	1	sum	400,000.00	400,000
Running track including: Rough & finishing grading Asphalt pavement with asphalt sub-base Granular sub-base ACO drain catch buckets Concrete drain footing Concrete gutter	5,000	m <sup>2</sup>	160.00	800,000

Description	Quantity	Unit	Rate	Amount
<b>Option 2B</b>				
<b>G. Other Site Developments</b>				
Rubber surface	5,000	m <sup>2</sup>	100.00	500,000
Mechanical site services Storm water	1	sum	100,000.00	100,000
Electrical site services Power receptacles Sports lighting	1	sum	200,000.00	200,000

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***Total Other Site Developments*** ***\$9,374,200***

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APPENDIX VI

# Cost Plan – Option 2C

9 PAGES

Description	Quantity	Unit	Rate	Amount
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Option 2C

A. Track & Field Infrastructure

No upgrade required

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***Total Track & Field Infrastructure***

Description	Quantity	Unit	Rate	Amount
<b>Option 2C</b>				
<b>B. Sports Field</b>				
Excavation to remove existing sport field & disposal offsite including re-level sport field to track elevation	6,036	m <sup>3</sup>	76.00	458,800
New natural grass sport field including: Rough & finishing grading Geotextile filter fabric Sand growing medium Sodding lawn Irrigation system	7,870	m <sup>2</sup>	80.00	629,600
Assume no replacement of existing underlying subbases		excl.		
Allow chain link fence 1 m high	1	sum	100,000.00	100,000
Allowance for goal posts with concrete base	1	sum	40,000.00	40,000
Metal backstops to both goal posts	1	sum	200,000.00	200,000
<b>Total Sports Field</b>				<b>\$1,428,400</b>

Description	Quantity	Unit	Rate	Amount
<b>Option 2C</b>				
<b>C. Additional Permanent Seating</b>				
Two new grandstands for 5,000 people each				
Remove existing grandstands	1	sum	300,000.00	300,000
Remove existing slab on grade	1	sum	60,000.00	60,000
Allowance for concrete foundation including detail excavation & backfill	6,680	m <sup>2</sup>	400.00	2,672,000
Concrete slab on grade with poly vapour barrier & granular sub-base	3,340	m <sup>2</sup>	200.00	668,000
Extra over concrete suspended roof slab to underground parkade	3,340	m <sup>2</sup>	300.00	1,002,000
Allowance for precast stadium bleachers, stairs with concrete columns	6,680	m <sup>2</sup>	3,600.00	24,048,000
Allowance for guardrails & handrails	1	sum	254,500.00	254,500
Allowance for seats with backrest	10,000	seat	130.00	1,300,000
Allowance for mechanical	1	sum	290,400.00	290,400
Allowance for electrical	1	sum	2,118,400.00	2,118,400
Canopy over grandstands				
Timber canopy with structural steel support	2,600	m <sup>2</sup>	2,800.00	7,280,000
Roofing & projection	2,600	m <sup>2</sup>	600.00	1,560,000
Allowance for mechanical	1	sum	157,000.00	157,000
Allowance for electrical	1	sum	11,200.00	11,200
Rooms for VIPs & sponsors				
Steel structure framing including: Concrete topping on steel floor decking Steel roof decking with steel beams & columns	600	m <sup>2</sup>	3,000.00	1,800,000
Exterior envelope including: Aluminum panel exterior walls Exterior windows Exterior doors / roll shutter	600	m <sup>2</sup>	8,000.00	4,800,000

Description	Quantity	Unit	Rate	Amount
<b>Option 2C</b>				
<b>C. Additional Permanent Seating</b>				
Interior fit-out including: Interior partitions Interior floor, ceiling & wall finishes Metals, millwork & specialties	600	m <sup>2</sup>	2,000.00	1,200,000
Mechanical	1	sum	900,000.00	900,000
Electrical	1	sum	780,000.00	780,000
Support spaces for athletes & staff				
Allowance for concrete foundation including detail excavation & backfill	3,300	m <sup>2</sup>	130.00	429,000
Concrete slab on grade (included in grandstands)				
Wood roof structure	3,300	m <sup>2</sup>	460.00	1,518,000
Exterior enclosure	3,300	m <sup>2</sup>	1,130.00	3,729,000
Interior fit out including: Interior partitions & doors Interior floor, ceiling & wall finishes Metals, millwork & specialties	3,300	m <sup>2</sup>	990.00	3,267,000
Mechanical including heating & cooling system	3,300	m <sup>2</sup>	950.00	3,135,000
Electrical	3,300	m <sup>2</sup>	760.00	2,508,000
Office space attached to the grandstands				
Allowance for concrete foundation including detail excavation & backfill	160	m <sup>2</sup>	250.00	40,000
Concrete slab on grade	160	m <sup>2</sup>	200.00	32,000
Wood roof structure	160	m <sup>2</sup>	600.00	96,000
Exterior enclosure	160	m <sup>2</sup>	1,600.00	256,000
Interior fit out including: Interior partitions & doors Interior floor, ceiling & wall finishes Metals, millwork & specialties	160	m <sup>2</sup>	1,900.00	304,000
Mechanical including heating & cooling system	160	m <sup>2</sup>	1,260.00	201,600
Electrical	160	m <sup>2</sup>	1,520.00	243,200
<b>Total Additional Permanent Seating</b>				<b>\$66,960,300</b>

Description	Quantity	Unit	Rate	Amount
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Option 2C

**D. Additions to Existing Grandstand**

Not required

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***Total Additions to Existing Grandstand***

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Description	Quantity	Unit	Rate	Amount
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Option 2C

**E. Support Spaces for Athletes & Staff**

Includes in new grandstands

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***Total Support Spaces for Athletes & Staff***

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Description	Quantity	Unit	Rate	Amount
<b>Option 2C</b>				
<b>F. Underground Parkade</b>				
2 levels underground parkade (each level 7,880 m <sup>2</sup> )				
Allowance for excavation & backfill including: Sedimentation control & dewatering Shotcrete shoring with anchors Bulk excavation Detail footing excavation Disposal excavated material offsite Imported backfill Footing drainage	15,760	m <sup>2</sup>	630.00	9,928,800
Concrete structure including: Concrete footings Concrete basement perimeter walls Concrete slab on grade Concrete suspended floor slab with concrete beams & columns Concrete suspended stairs Concrete suspended roof slab with concrete beams & columns Interior concrete walls	15,760	m <sup>2</sup>	865.00	13,632,400
Envelope including: Waterproofing & drain mat to basement wall Roof covering Security overhead gate	15,760	m <sup>2</sup>	138.00	2,174,900
Interior fit out including: Interior partitions Interior doors Interior floor, ceiling & wall finishes Stair handrails, guardrails & misc. metals Interior signage & fire safety play Hydraulic elevator	15,760	m <sup>2</sup>	102.00	1,607,500
Mechanical	15,760	m <sup>2</sup>	155.00	2,442,800
Electrical	15,760	m <sup>2</sup>	114.00	1,796,600
<b>Total Underground Parkade</b>				<b>\$31,583,000</b>



Description	Quantity	Unit	Rate	Amount
<b>Option 2C</b>				
<b>G. Other Site Developments</b>				
New digital scoreboard - not required				
Fencing				
Additional chain link fence 2.4m high	725	m	300.00	217,500
Wider access				
Remove existing hard/soft landscaping including site furniture	250	m <sup>2</sup>	40.00	10,000
New asphalt pavement with curb & road marking	250	m <sup>2</sup>	500.00	125,000
Permanent storage area				
Remove existing hard/soft landscaping including site furniture	300	m <sup>2</sup>	40.00	12,000
Concrete slab on grade with poly vapour barrier & granular sub-base	300	m <sup>2</sup>	400.00	120,000
Allow for 40' sea-can	6	no	10,000.00	60,000
Allowance for curved canopy	1	sum	216,000.00	216,000
Allowance for lighting	1	sum	40,000.00	40,000
New event support area				
Demolition including: Remove existing soft & hard landscaping	1	sum	97,500.00	97,500
New asphalt pavement with curb & road marking	3,250	m <sup>2</sup>	250.00	812,500
Mechanical site services				
Water supply	1	sum	260,000.00	260,000
Electrical site services				
Power provision	1	sum	100,000.00	100,000
Temporary washrooms		excl.		

Description	Quantity	Unit	Rate	Amount
<b>Option 2C</b>				
<b>G. Other Site Developments</b>				
Gathering plaza				
Demolition including:	1	sum	74,000.00	74,000
Remove existing soft & hard landscaping				
Remove existing trees				
Allowance for hard landscaping	2,300	m <sup>2</sup>	500.00	1,150,000
Allowance for light roof structure & ticketing area	1	sum	2,020,000.00	2,020,000
Mechanical site services	1	sum	163,200.00	163,200
Electrical site services	1	sum	200,000.00	200,000

<b><i>Total Other Site Developments</i></b>				<b><i>\$5,677,700</i></b>
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