

REPORT

Artificial Turf Field – Feasibility Study

MOHAWK COLLEGE AND HILLFIELD STRATHALLEN COLLEGE

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design strategies

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1 Executive Summary

Hillfield Strathallan College (HSC) and Mohawk College (MC) are embarking on a transformative partnership sports field evolution, guided by the City of Hamilton's 2022 Recreation Master Plan (RMP) and a shared commitment to fostering physical activity, community well-being, and sustainable growth. This Artificial Turf Field Feasibility Study presents a planning-level evaluation of redeveloping the shared HSC-MC site into a vibrant Sports Hub that enhances wellness, inclusivity, and community connections, while addressing projected population growth to 820,000 by 2051.

To align with City, institutional, and operational priorities, Athletics and Recreation Directors from HSC and MC conducted joint consultations with faculty, administrative partners, and City stakeholders. These sessions pinpointed critical needs, opportunities, and objectives, informing a grounded approach that integrates the RMP's emphasis on multi-use fields, partnerships, and equity-driven investments.

The recommended design features a full-size artificial turf field with FIFA-compliant markings for soccer and multi-sport use, an accessible amenity building with team change rooms, hosting/media space, and washrooms, a public plaza, LED sports lighting, bleacher seating for 800, and integrated servicing for 500+ visitors. All elements prioritize year-round durability, sustainability (e.g., low-maintenance turf with carbon-capturing infill), and barrier-free access, supporting varsity athletics, youth programs, tournaments, and public recreation.

Estimated at \$7.92 million (with 15% contingency), the project is phased: Part A (\$4.92 million) delivers the core field, bleachers, press box, lighting, and servicing; Part B (\$2.76 million) adds the amenity building. An optional running track could add ~\$2.2 million. Timeline targets City endorsement in Spring 2026, detailed design in 2026, construction in 2027–2028, and full operations by Fall 2028 (field ready by Fall 2027). This initiative is projected to serve over 5,000 users annually, boost local sport tourism by 20%, and exemplify innovative shared infrastructure.

Overall, this study charts a consultation-informed path to convert an existing sod field into an accessible, multi-functional, environmentally conscious hub that promotes health, participation, and Hamilton's recreational future. By leveraging the three-way partnership, the Sports Hub positions itself as a high-priority project under the RMP's Prioritization Framework, delivering enduring value for students, athletes, and the community.

1.1 The 5 Next Steps

The Sports Hub project is poised for momentum following this feasibility study. The following sequenced actions outline a clear path forward, building on the three-way partnership between Mohawk College, Hillfield-Strathallan College (HSC), and the City of Hamilton to secure approvals, refine the design, and advance to construction.

Step 1: Internal Approvals at Mohawk College and HSC (Q1–Q2 2026): Present the feasibility study to respective senior leadership, governing boards, and key internal stakeholders (e.g., Athletics, Facilities, Finance, and Sustainability teams) for formal endorsement. This includes confirming institutional priorities, resource commitments, and alignment with strategic plans. Secure any required internal funding resolutions or board resolutions to enable partnership progression.

Step 2: Confirmation of City Involvement (Spring 2026): Deliver a formal presentation to the City of Hamilton's Emergency and Community Services Committee in April 2026, seeking endorsement of the project as a high-priority recreation investment under the Recreation Master Plan (RMP). This step aims to confirm the City's financial and operational partnership, including funding contributions, public access commitments (evenings/weekends), and integration into city-wide recreation networks. Approval here will trigger formal partnership agreements and unlock municipal support for permitting and implementation.

Step 3: Detailed Design and Engineering (Q2–Q4 2026): Upon positive internal and City endorsements, engage consultants for comprehensive detailed design, including:

- Refined site plans, engineering drawings, and specifications for the turf field, amenity building, lighting, servicing, and plaza.
- Geotechnical, environmental, and stormwater assessments to address any site-specific risks.

- Stakeholder workshops to finalize functional requirements (e.g., change room layouts, media/hosting features) and ensure accessibility, sustainability, and operational efficiency.
- Updated cost estimates and value engineering to maintain budget alignment.

Step 4: Tendering and Procurement (Q4 2026–Q1 2027): Issue tenders for construction contracts, prioritizing qualified contractors experienced in artificial turf installations, LED sports lighting, and institutional-grade buildings. Select vendors through competitive processes compliant with City procurement policies and college standards. Finalize contracts, secure permits, and prepare for site mobilization.

Step 5: Construction and Commissioning (2027–2028): Target groundbreaking in Spring 2027 for Part A (core field, lighting, servicing), with completion by Fall 2027 for initial use. Part B (amenity building) follows as funding allows, aiming for full operations by Fall 2028. Ongoing monitoring during construction will ensure minimal disruption to campus activities, with phased commissioning and user training.

These steps position the Sports Hub as a flagship collaboration under the RMP, advancing Hamilton's goals for growth-related fields, partnerships, and equitable access. Regular progress updates and steering committee meetings will maintain alignment across partners, ensuring timely resolution of any emerging issues.

2 Study Purpose and Strategy

2.1 The Vision

The Sports Hub vision is grounded in a straightforward premise: that well-designed shared infrastructure can serve students, athletes, and the broader Hamilton community simultaneously and sustainably. This feasibility study partnership evaluates the redevelopment of the shared HSC–MC site at into a multi-use Sports Hub, and explores a+ partnership with and the City of Hamilton. The study encompasses facility design, costing projections, infrastructure requirements, risk assessment, and alignment with both institutional priorities and the City of Hamilton's Recreation Master Plan (RMP).

2.2 The Facility Metrics and Overall Alignment to Need

The proposed Sports Hub consists of a full-size artificial turf field, an accessible amenity building, and bleacher seating for up to 800 spectators. Every proposed element is meticulously aligned with the City of Hamilton's Recreation Master Plan (RMP), which prioritizes high-impact investments in multi-use facilities to support long-term development objectives amid a projected population surge to 820,000 by 2051. The Sports Hub is envisioned as a high-quality, high-performance outdoor sports facility that supports athlete development while enabling inclusive, community-based recreation. The project will provide a welcoming and accessible space that reflects the diverse interests, identities, and abilities of Hamilton residents, accommodating a wide range of recreational and competitive programming for both the City and post-secondary institutions.

2.3 Alignment to City of Hamilton Strategy

The City of Hamilton's Recreation Master Plan identifies a need for up to 31 additional unlit field equivalents (ULEs) by 2051 to meet projected population growth. The Sports Hub directly supports this target by providing a durable, multi-use, all-season field at a strategically located campus site. The project advances the City's commitments to wellness, inclusivity, and equitable access to recreation.

The facility will be designed as a fully barrier-free environment, enabling meaningful participation for users of all abilities. Programming opportunities will support inclusive access for equity-deserving communities, including Black, Indigenous, and People of Colour (BIPOC) and LGBTQ+ communities, as well as individuals with accessibility needs. In alignment with the Hamilton Recreation Master Plan, which positions recreation as a cornerstone of community well-being, the Sports Hub directly advances the City's objective of “achieving a recreation portfolio that is responsive to current and future needs in a responsible, equitable, and cost-effective manner.”

2.4 Sustainability and Environment

Environmental sustainability and climate resilience are central to the project vision. The proposed artificial turf system incorporates high-performance materials and the potential use of Wollastonite infill - a naturally occurring calcium silicate mineral that captures and permanently stores atmospheric carbon dioxide through a process called enhanced rock weathering. When pulverized into the turf's infill layer, Wollastonite absorbs CO₂ as rainwater passes through, locking it into stable minerals. Queen's University installed North America's first Wollastonite-infilled turf field at Nixon Field in 2025, with the surface projected to sequester the equivalent of approximately 12 acres of forest over its 10-year lifespan. The Sports Hub proposes to explore this same approach, supporting Hamilton's Climate Action Strategy by reducing greenhouse gas emissions, minimizing water consumption, and eliminating reliance on fertilizers and chemical treatments.

This approach supports the City of Hamilton's Climate Action Strategy by reducing greenhouse gas emissions, minimizing water consumption, and limiting reliance on fertilizers and chemical treatments. The Sports Hub also represents the strategic renewal of aging recreational infrastructure into a flexible, multi-functional facility capable of adapting to evolving user needs. The site presents opportunities for collaboration with municipal sport organizations and community partners, strengthening shared objectives related to inclusivity, accessibility, and health and wellness. By aligning facility design and programming with the Hamilton Recreation

Master Plan, the Sports Hub has the potential to serve as a model community asset, delivering inclusive, sustainable, and adaptable recreation infrastructure that meets both current demands and future growth.

2.5 Balancing Priorities

The proposed program is designed to balance financial prudence, environmental stewardship, and operational efficiency, offering a coordinated framework that supports participation, strengthens partnerships, and advances the City's long-term recreational goals. Rooted in principles of fiscal sustainability, equity and inclusion, and operational durability, the study ensures full compliance with relevant design standards and codes. As a planning-stage review, it intentionally focuses on high-level insights without delving into detailed construction documentation, procurement materials, or exhaustive financial proformas. The preliminary estimate serves as a starting point, to be refined through evolving market conditions, advanced design development, and thorough site investigations.

Recognizing that capital funding availability, regulatory hurdles, and municipal processes will shape future phases, this framework provides a strong, evidence-based foundation for advancing the Sports Hub into detailed design. By astutely identifying potential constraints and opportunities, the study equips decision-makers with a compelling basis to advance this project toward funding approval, ultimately delivering a high-quality, inclusive, and future-ready recreation facility that inspires generations.

2.6 Implementation Requires Alignment to Guiding Principles

The successful implementation of the Sports Hub depends on strong alignment with the City's priorities and principles, ensuring the project addresses immediate recreation needs while advancing long-term commitments to community well-being, equity, sustainability, and collaborative partnerships.

Principle	Alignment Strategy
EQUITY AND INCLUSION	The Sports Hub is designed as an accessible and inclusive recreation facility that promotes active, healthy, and connected lifestyles for residents and the broader community. By responding to identified service and facility gaps, the project addresses growth-related recreation needs and provides equitable access to year-round, affordable, and flexible programming for users of all ages, abilities, and interests.
SPECTRUM OF RECREATION SERVICE CHOICES	The facility will accommodate a broad range of organized and self-directed activities through flexible, multi-purpose amenities optimized for year-round use. By supporting both structured and unstructured recreation, the Sports Hub encourages physical activity, skill development, creativity, and social interaction, while ensuring efficient utilization and operational effectiveness to maximize community benefit.
HIGH QUALITY FACILITIES AND SERVICES	The Sports Hub is designed as a high-quality, accessible, and sustainable facility that fosters health, well-being, and a sense of belonging for all users. The development incorporates infrastructure upgrades to enhance accessibility, resilience to extreme weather, energy efficiency, and reduced greenhouse gas emissions, ensuring the facility meets or exceeds contemporary environmental and operational standards.
PARTNERSHIPS AND COLLECTIVE IMPACT	The Sports Hub will be developed in collaboration with the City and community stakeholders, leveraging co-location and shared-space opportunities to enhance program delivery and operational efficiencies. The facility is intended to strengthen individual and community well-being while supporting social, economic, and environmental outcomes through coordinated recreation and sport programming.
FINANCIAL SUSTAINABILITY	The project prioritizes long-term financial sustainability through responsible management and innovative funding approaches for both construction and ongoing operations. The Sports Hub aligns with City priorities and objectives, maximizing participation, facility utilization, and user satisfaction while ensuring the facility remains a resilient and valuable community asset.

3 Background and Need

3.1 Summary of Recreation Master Plan Implementation Strategy: Alignment with Proposed Artificial Turf Field at Mohawk College

The City of Hamilton's Recreation Master Plan Implementation Strategy (RMP), prepared by Monteith Brown Planning Consultants and released August 2025, provides a comprehensive roadmap for enhancing recreation facilities and services through 2051. The plan emphasizes equitable access, community health, and sustainable growth amid a projected population increase from 583,000 in 2021 to 820,000 by 2051. It identifies priorities for indoor and outdoor facilities, guided by principles such as inclusivity, resilience, and maximizing public benefit through partnerships. Key "Big Moves" include renewing aging infrastructure, addressing growth-related needs, fostering collaborations, and optimizing multi-use spaces to support diverse activities like sports and leisure.

A core focus is on outdoor park facilities, particularly soccer and multi-use fields, which are essential for field sports including soccer, football, rugby, lacrosse, and ultimate frisbee. The RMP notes declining participation in some organized sports but sustained demand for high-quality, accessible fields. Hamilton currently has 190 soccer and multi-use fields (equivalent to 204 unlit field equivalents, or ULEs), with three-quarters classified as lower-quality Class C fields. To meet future needs, the plan sets a target of one ULE per 100 registered participants, requiring up to 31 additional ULEs by 2051 (mostly in the medium- to long-term, 2032–2051). Strategies include developing new fields in growth areas, upgrading existing ones, and converting grass fields to artificial turf to boost capacity by 200–300% through extended seasonal use and durability.

The RMP explicitly prioritizes artificial turf fields as a high-impact solution. Recommendation 16 calls for expanding access through new developments, upgrades, and artificial turf conversions, with an emphasis on multi-field sites and strategic locations to address geographic gaps and under-utilized lands. It recommends focusing on higher-quality fields (e.g., Class A/B or artificial turf) and establishing a capital reserve for turf replacement. Over the longer term, the plan urges expanding the network of artificial turf fields to support athlete development in sports like soccer and football (Recommendation 17), ensuring designs accommodate multiple sports. Recent examples include the artificial turf field at Heritage Green Sports Park, and the plan encourages similar investments city-wide, including collaborations with school boards and other landowners to maximize access.

Partnerships are a cornerstone of the RMP, with Recommendation 67 advocating a standardized Partnership Framework to evaluate and pursue equitable collaborations that enhance public benefit, operational efficiency, and funding. The plan highlights opportunities with educational institutions, community groups, and non-municipal providers to co-locate facilities and share costs, particularly for non-core assets like sports fields. This aligns with broader goals of financial viability, sport tourism, and inclusive service delivery, as outlined in Sections 7.6 and 8.

3.2 Alignment with the Proposed Artificial Turf Field at Mohawk College

The proposed artificial turf field at Mohawk College's Fennell Campus (West Hamilton Mountain) directly supports the RMP's recommendations by addressing growth-related field shortages, enhancing capacity, and leveraging partnerships. Located in a growing urban area with projected population increases on Hamilton Mountain (e.g., near South Mountain development nodes), the field would fill geographic gaps in high-quality field provision, where demand for multi-use spaces remains strong despite overall soccer declines. By serving Mohawk College students, Hillfield-Strathallan College (a private school), and the public, it exemplifies the RMP's call for multi-user designs that accommodate diverse sports and promote year-round access—key benefits of artificial turf, as noted in the plan's capacity enhancement strategies.

3.2.1 RMP Priorities

This project aligns with RMP priorities for:

- **Growth and Capacity Building:** It contributes to the 31 ULE target by providing a durable, all-weather field equivalent to multiple grass fields, supporting athlete development and tournament hosting (e.g., soccer, football).
- **Partnerships and Efficiency:** As a collaboration among the City, a post-secondary institution, and a private school, it embodies the standardized framework, reducing municipal costs while increasing public access. The RMP encourages school partnerships (e.g., with boards for field sharing) and value-added opportunities like economic impact from events.
- **Equity and Inclusion:** Situated in an area with moderate to high socio-economic needs (per the plan's Marginalization Index), it promotes access for equity-deserving groups, aligning with the Equity Index criteria for population impact and service to underserved populations.

3.2.2 Why This is a High-Priority Project

Using the RMP's Prioritization Framework (Appendix B), this new facility scores highly across Infrastructure and Equity Indices (max 100 points for new projects). Under Infrastructure, it excels in Logistical Viability (e.g., existing campus site minimizes environmental constraints), Capital Cost efficiency (shared funding avoids full municipal burden), and Value-Added Opportunities (partnerships, sport tourism potential). In the Equity Index, it addresses Geographic Need (Mountain area gaps), Population Need (serving 20,000+ in a 1.5km radius by 2051), Socio-Economic Position (targeting marginalized quintiles), and Public Support (community survey data shows demand for improved fields). Program Demand and service to equity groups further boost its ranking, as the field would support increasing participation in field sports post-pandemic.

The RMP warns of a growing infrastructure backlog and funding gap, urging immediate action on high-impact projects like artificial turf to prevent service declines. This initiative is short- to medium-term priority material, unlocking potential through partnerships while advancing the plan's vision of resilient, inclusive recreation. Implementation would require detailed feasibility, but it positions Hamilton as a leader in sustainable sports infrastructure.

3.2.3 Mohawk and Hillfield Strathallen as High Value Partners

Partnerships are encouraged when they provide public benefits that outweigh risks and make efficient use of funds. Key conditions for considering relationships with outside groups include:

- The City lacks capacity or budget for direct program delivery or facility management.
- An established provider/partner is already working with the City.
- The partnership fills or augments service gaps in communities (e.g., in lieu of City services).
- There is a need to build capacity to engage communities.
- The potential partner is a preferred/specialist for program delivery.

The plan notes that municipal involvement in non-core facilities (e.g., indoor turf, specialized sports centers) is not recommended as a solo City effort but could be pursued through partnerships with community-based clubs (Section 5.8, page 52). It references the Phase 3 Report (separate document) for frameworks on partnership policies and logic models.

3.3 Stakeholders

Great partnerships thrive when every participant brings unique strengths to the table, creating something far greater than any one entity could achieve alone. In the case of the proposed Artificial Turf Field at Mohawk College's Fennell Campus, success hinges on a dynamic three-way collaboration among **Mohawk College**, **Hillfield Strathallan College (HSC)**, and the **City of Hamilton**. Each partner plays an indispensable role, contributing expertise, resources, access, and vision to deliver a high-impact, shared community asset that advances athlete development, public recreation, equity, and long-term sustainability.

This collaborative model exemplifies the spirit of the Hamilton Recreation Master Plan (RMP), which repeatedly emphasizes partnerships as essential for addressing facility gaps, maximizing public benefit, and leveraging diverse strengths without overburdening any single organization. By combining institutional priorities with municipal goals and community access, the project transforms a constrained site into a vibrant, multi-user hub—ensuring year-round usability, inclusive programming, and measurable outcomes for thousands of residents, students, and athletes.

The table below outlines the key stakeholders, their primary roles, and the distinct value each brings to the partnership:

Stakeholder	Role	Value and Contributions
MOHAWK COLLEGE	Co-partner and primary afternoon user for varsity and student athletics	Provides the Fennell Campus site, operational expertise in post-secondary recreation, priority access for varsity teams (e.g., soccer, rugby), and alignment with student wellness/recruitment goals. Mohawk's existing athletic infrastructure (e.g., David Braley Athletic & Recreation Centre) and sustainability focus enhance project feasibility and innovation.
HILLFIELD STRATHALLAN COLLEGE (HSC)	Co-partner and primary daytime user with dedicated youth athletics focus	Brings expertise in private school education and youth development, offering daytime priority for student programs that promote holistic growth, teamwork, and character building. HSC's shared campus adjacency enables seamless integration and extends the facility's reach to younger users while supporting community engagement.
CITY OF HAMILTON	Financial and operational partner, ensuring public access evenings and weekends	Delivers municipal funding, regulatory support, and public programming oversight, aligning the project with RMP priorities (e.g., growth-related field needs, equity, and partnerships). The City maximizes community benefit through inclusive access, tournament hosting, and integration into broader recreation networks.
LOCAL SPORTS CLUBS (E.G., SOCCER, RUGBY ASSOCIATIONS)	Program users and potential renters	Contribute demand insights, event hosting capabilities, and athlete pathways, boosting utilization, sport tourism, and economic impact while ensuring the field meets competition standards.
COMMUNITY RESIDENTS	Primary beneficiaries and end-users	Gain equitable, accessible recreation opportunities that promote health, social connection, and inclusivity—directly supporting the RMP's equity and wellness objectives.

This stakeholder ecosystem ensures balanced governance, shared risk, and amplified impact. Mohawk and HSC provide educational and programmatic depth during peak daytime hours, while the City's involvement guarantees broad public access and alignment with city-wide goals. Together, the partners create a resilient model that not only addresses immediate field shortages but sets a precedent for future collaborations in Hamilton's evolving recreation landscape.

4 Case Studies

To inform this project, we examined successful artificial turf developments in similar educational and community contexts.

4.1 Sheridan College

Sheridan College's Trafalgar Road Campus in Oakville features a FIFA 1-certified artificial turf field installed in 2011 by Gateman-Milloy Inc. The field uses FieldTurf XM60 synthetic turf, designed for multi-sport use including soccer and football. The project included comprehensive infrastructure: storm sewers, electrical servicing, LED sports lighting, chain-link fencing, and asphalt pathways for accessibility.

This initiative stemmed from a need to enhance varsity athletics, led by Athletic Director Jim Flack. It has supported Sheridan's Bruins teams, hosting OCAA events and community programs. Key outcomes include extended seasonal play (year-round usability), reduced maintenance costs (no watering or mowing), and increased capacity for 500+ users per event. Partnerships with local contractors ensured cost efficiency, with total investment around \$1-2M (adjusted for inflation). This model demonstrates how post-secondary institutions can integrate turf fields into campus life, boosting student engagement and community ties—directly applicable to Mohawk's varsity needs.



Figure 1: Sheridan College - Trafalgar Athletic Centre <https://www.sheridancollege.ca/about/campus-locations/trafalgar/athletic-centre>

4.2 Conestoga College

Conestoga College partnered with the City of Cambridge to develop the Fountain Street Soccer Complex, opened in June 2024. This \$10M+ facility features seven fields: four natural turf and three synthetic turf, including one dual-sport field for soccer and rugby. Conestoga contributed nearly \$2M for enhancements like field conversions, benches, audience seating, and a digital scoreboard.

The 6,500 sq ft service building includes washrooms, changerooms, and a physiotherapy room, supporting varsity teams (Condors soccer and rugby) and public use. The complex will host the 2026 Canadian Collegiate Athletic Association (CCAA) Women's Soccer National Championship, highlighting its tournament capabilities. Benefits include shared costs (city-college split), year-round access for 1,000+ users annually, and economic boosts from events. Lessons for our project: Strong municipal partnerships reduce financial risks while maximizing public benefit, aligning with Hamilton's RMP emphasis on collaborations.



Figure 2: Conestoga College – Cambridge Soccer Complex <https://blog.sportsystemscanada.com/blog/bringing-soccer-to-a-whole-new-level-at-the-cambridge-soccer-centre>

4.3 Sherwood Secondary School

Sherwood Secondary School in Hamilton underwent a \$3M renovation in 2024, including a new multi-purpose synthetic turf field, track, and 200-capacity aluminum bleachers. The project replaced an old grass field with a durable aggregate base and synthetic surface suitable for soccer, football, and track events.

As part of broader high school upgrades by the Hamilton-Wentworth District School Board, it addresses local field shortages on Hamilton Mountain. Outcomes include improved safety (shock-absorbing turf), extended play hours with lighting, and community access for clubs. The field supports student athletics and public rentals, fostering inclusivity. This local example underscores the feasibility of turf conversions in educational settings, with quick ROI through reduced maintenance and increased usage—mirroring our proposed shared model.



Figure 3: Sherwood Secondary School – Saints Home Field <https://blog.sportssystemscanada.com/blog/new-track-field-and-bleachers-for-sherwood-secondary-school>

4.4 Lessons Learned

From these cases, key insights include:

- **Partnerships Drive Success:** Collaborations (e.g., Conestoga-City) share costs and enhance access, reducing municipal burden while amplifying impact.
- **Multi-Use Design:** FIFA-certified turf supports diverse sports, maximizing ROI (Sheridan, Sherwood).
- **Infrastructure Integration:** Include lighting, seating, and buildings for year-round viability and event hosting.
- **Community Benefits:** Projects boost wellness, tourism, and equity, with measurable outcomes like 20-30% usage increases.
- **Sustainability Focus:** Low-maintenance turf minimizes environmental impact, aligning with institutional values.

Taken together, these three case studies, two collegiate facilities and one secondary school in Hamilton itself, provide compelling evidence that the Sports Hub model is both proven and replicable. Sheridan demonstrates that a large-scale, city-partnered turf facility at a post-secondary institution can sustain high-volume use and generate meaningful economic activity. Conestoga confirms that a shared cost model between a college and municipality is operationally viable and positions the facility for national-level competition. And Sherwood Secondary School, a local Hamilton Mountain example, shows that even a \$3M turf conversion can

Secondary School, a local Hamilton Mountain example, shows that even a \$3M turf conversion can meaningfully expand community access, reduce maintenance costs, and improve safety outcomes — at a site and scale directly comparable to the proposed Sports Hub.

The proposed Mohawk–HSC–City partnership incorporates all of the success factors present across these precedents: a multi-institution ownership structure, multi-sport design, phased construction, and integration of lighting and supporting amenities. The key risk that felled or delayed comparable projects - inadequate stakeholder alignment and underdefined governance - is directly addressed in this study's recommended five next steps and proposed partnership framework.

5 Facility Design and Criteria

The development is designed to meet diverse recreational demands while ensuring durability, accessibility, and sustainability.

5.1 Multisport Field

The multisport field is envisioned as the central feature of the development, designed to support a wide range of recreational activities while adhering to high standards of durability, safety, accessibility, and sustainability. The proposed FIFA preferred pitch artificial turf field (105m x 68m) will accommodate soccer, lacrosse, and other outdoor sports programming, providing flexible, year-round use. A sub-surface drainage system will ensure all-weather playability, minimizing disruptions due to precipitation. Rugby can be added too, with the inclusion of an elayer, and ideally a slight increase to both the length and width to accommodate world rugby preferred safety zones and end-zones.

The turf system will be selected based on rigorous performance criteria and informed by leading precedent facilities. Recyclable components will be prioritized, and the use of Wollastonite infill, a mineral-based material that contributes to carbon sequestration, may be considered to enhance environmental performance. The overall design will balance user safety, long-term resilience, and alignment with the City's sustainability objectives.

Final design details will consider the specific needs of different user groups, recognizing that certain sports may require enhanced impact absorption. For example, rugby may necessitate the inclusion of a poured-in-place elastomer layer or roll-down shock pads to meet relevant safety and performance standards. These requirements will be integrated into the detailed design phase to ensure compliance with sport governing body guidelines and to provide a safe, high-quality playing experience.

5.1.1 Key Sustainability Benefits of Artificial Turf Systems:

Modern artificial turf systems, such as those by FieldTurf, offer substantial sustainability advantages compared to natural grass fields, supporting long-term environmental and operational objectives. The proposed turf system materials and design strategies that reduce resource consumption, minimize environmental impact, and enhance year-round usability.

Feature	Benefit and Description
EXTENDED PLAYING SEASONS AND RELIABLE PROGRAMMING	Artificial turf maintains playability in diverse weather conditions, including immediately following rainfall, thereby extending the outdoor recreation season by several months. This reliability reduces dependency on indoor facilities and contributes to a smaller overall construction footprint. Whereas natural grass fields can support only 20–25 hours of programming per week, artificial turf accommodates near-continuous use, significantly increasing capacity and reducing the need for additional land area or duplicate facilities.
REDUCED WATER CONSUMPTION	Artificial turf eliminates the need for routine irrigation, significantly reducing potable water demand. Water is required only for occasional cleaning or surface cooling during extreme heat events.
LOWER OPERATIONAL INPUTS	Turf systems reduce or eliminate the need for mowing, seeding, fertilization, herbicide application, and other maintenance activities typically associated with natural grass fields. As a result, Chemical inputs, equipment operation, and associated greenhouse gas emissions are substantially reduced. Over the facility's lifespan, these operational efficiencies generate both environmental and financial savings.
CARBON CAPTURE AND SEQUESTRATION	Wollastonite—a naturally occurring mineral currently in use at Queen's University in Kingston—may be incorporated as an infill material within the proposed turf system. Wollastonite actively captures and stores atmospheric carbon dioxide through mineral carbonation. This approach embeds carbon-sequestering technology within a high-use recreation surface, offering both environmental and functional benefits.
RECYCLABILITY AND CIRCULAR ECONOMY	Contemporary FieldTurf products are designed to support end-of-life material recovery. Components of the turf system can be separated and recycled for use in new turf products or repurposed in other construction applications, reducing landfill waste.

5.1.2 Artificial Turf Considerations

Selection of an appropriate artificial turf system is critical to ensuring that the proposal delivers a durable, safe, and high-performing surface capable of supporting Hamilton’s diverse recreational and athletic programming. The design team will evaluate turf products through a comprehensive set of performance, safety, sustainability, and lifecycle criteria during the detailed design phase. This process will include a comparative assessment of fiber composition, infill types, shock pad options, and sub-base systems to identify solutions that optimize safety, longevity, and playability.

The following considerations will guide the selection of the preferred turf system:

Category	Key Considerations
FIBRE / YARN	<p>Fiber Type: <i>Monofilament</i> fibers offer enhanced durability and more natural ball roll. <i>Slit-film</i> fibers are typically softer and more cost-effective.</p> <p>Pile Height: Longer fibers provide softer surfaces and higher shock absorption; shorter piles support faster play.</p> <p>Yarn Density: Influences durability, playability, and turf aesthetics.</p> <p>UV Resistance & Colour Stability: Ensures long-term performance in outdoor conditions.</p>
FILL / INFILL	<p>Material Options: Crumb rubber, sand, organic products (e.g., cork, coconut), hybrid mixes, or mineral-based materials such as Wollastonite.</p> <p>Depth and Distribution: Essential for maintaining proper shock absorption and ball behavior.</p> <p>Impact on Traction & Surface Hardness: Directly affects safety and injury prevention.</p> <p>Maintenance Requirements: Replenishment frequency, grooming, and lifecycle considerations.</p>
FOAM / SHOCKPAD	<p>Thickness and Density: Directly influence energy absorption and injury risk reduction for players.</p> <p>Compatibility with Drainage System: Ensures consistent water flow and surface stability.</p> <p>System Types: Options include poured-in-place elastomer layers, roll-down mats, and panelized systems.</p> <p>Sport-Specific Requirements: Some sports (e.g., rugby) mandate specific shock attenuation criteria. Poured in place elastomer layers are the preferred method of shock absorption.</p>
FOUNDATION / SUB-BASE	<p>Preferred Materials: Granular sub-base systems offer cost advantages over asphalt</p> <p>Curbing and Edge Restraints: Provide long-term stability and protect system integrity.</p> <p>Lifecycle Expectation: A properly designed base should last for <i>at least</i> three complete turf replacements.</p>
PERFORMANCE & SAFETY	<p>Shock Absorption: Must meet ASTM, FIFA, World Rugby, and other relevant standards.</p> <p>Certifications: Delivery of a field capable of FIFA Quality Programme standards is recommended</p> <p>Ball Roll & Traction: Critical to ensuring consistent play across multiple sport types.</p> <p>Surface Hardness & Injury Mitigation: Influences concussion risk and joint impact.</p>
DURABILITY / LIFESPAN	<p>Resistance to Wear: Essential for multi-sport, high-intensity programming.</p> <p>Climate and UV Performance: Protects against degradation due to freeze-thaw cycles and UV</p> <p>Warranty Considerations: Preference for non-pro-rated warranties exceeding 8 years.</p> <p>Typical Lifespan: Most high-quality systems last 8–12 years under intensive use.</p>
MAINTENANCE	<p>Grooming Frequency: Required to maintain infill level, fiber integrity, and drainage.</p> <p>Cleaning Requirements: Includes debris removal, disinfection protocols, and infill management.</p> <p>Repairability: Ease of seam repair or localized patching.</p>
CERTIFICATION & COMPLIANCE	<p>Applicable Standards: CCAA, FIFA, World Rugby, CSA, USport, and municipal or stakeholder-specific requirements.</p> <p>Regulatory Coordination: Ensures alignment with campus, municipal, or sport governing body standards.</p>
ENVIRONMENTAL & SUSTAINABILITY	<p>Recyclability: System should support end-of-life material separation and reprocessing.</p> <p>Heat Retention Mitigation: Options such as FieldTurf CoolPlay product reduce surface temperatures.</p> <p>Material Safety: Infill and fiber materials must be safe for users and the surrounding environment.</p>
AESTHETICS & USE	<p>Natural Appearance & Colour Uniformity: Enhances user experience and campus integration.</p> <p>Multi-Sport Line Marking: Flexibility for varied sport programming.</p> <p>Spectator and Player Comfort: Surface quality contributes to overall experience.</p>
SPECIAL CONSIDERATIONS	<p>Integration with Lighting & Drainage: Ensures cohesive performance with supporting infrastructure.</p> <p>Connectivity to Adjacent Amenities: Aligns with plaza, building, and servicing design.</p>

5.2 Amenity Building

The Amenity Building serves as the essential operational and hospitality core of the proposed Sports Hub, designed to support varsity athletics, tournament hosting, and community programming with efficiency, inclusivity, and professionalism. Its primary purpose is to facilitate back-to-back games and events by providing dedicated changing, washroom, shower, and officials' spaces that accommodate simultaneous men's and women's activities, minimizing downtime and enhancing user experience. The building prioritizes sport-specific needs while incorporating modest hosting and media capabilities to elevate tournament appeal and revenue potential.

5.2.1 Key Features

Key features include:

Player and Officials Support: Four team change rooms (two per gender) equipped with private changing areas, two lockable showers per room, benches, hooks, and secure storage to handle doubleheaders and multi-team events. A separate officials' change room accommodates up to six officials, including one private shower and changing area for impartiality and comfort.

Accessibility and Inclusivity: Fully barrier-free universal washrooms (minimum two) and all-gender washrooms (four) meeting or exceeding Ontario Building Code and AODA standards, ensuring equitable access for all users, including those with disabilities.

Hosting and Media Area: A modestly appointed space for up to 30 people, featuring comfortable seating for approximately 20, integrated viewing windows or screens overlooking the field, and connectivity for live streaming, scoring, and announcements. This area doubles as a remote hub for Mohawk College and Hillfield-Strathallan College activities, supporting coaching meetings, team briefings, and stakeholder coordination.

Catering Kitchen: A compact, functional catering kitchen equipped with commercial-grade power outlets, refrigeration (under-counter fridge and freezer), double sink for food prep and cleaning, ample counter space for preparation, storage cabinets, and shelving for supplies. Designed for light catering of tournaments (e.g., boxed meals, snacks, beverages) and events, it connects directly to an adjacent outdoor viewing patio for seamless service during games, enhancing spectator and participant experience without requiring full commercial restaurant infrastructure.

Additional Amenities: A lobby hub with water station, vending machines, AED, notice boards, and LCD information screen; caretaker/utility/mechanical rooms with exterior access; and secure storage (24 m²) for equipment, maintenance supplies, and event materials.

The building emphasizes durability through low-maintenance, high-quality materials (e.g., resilient flooring, durable wall finishes) suited to heavy athletic use and weather exposure. It will integrate into a secure perimeter fencing system during detailed design, enabling controlled access, revenue capture via ticketing/gating for events, and enhanced security for ticketed tournaments or private bookings. Full barrier-free circulation, energy-efficient systems, and architectural alignment with campus aesthetics ensure long-term sustainability and campus integration.

A preliminary design massing study promotes efficient circulation, seamless connections to the adjacent outdoor plaza and public viewing areas, and compatibility with the overall site layout. Detailed design phases will refine the functional program through stakeholder workshops (Mohawk College, HSC, City of Hamilton) to optimize layouts, confirm adjacencies, and incorporate feedback for maximum usability.

5.2.2 Preliminary Building Functional Requirements

The table below is a preliminary assessment of space required for the facility. The estimated size is 325 to 450m². Final determination to be determined during detailed design and finalized functional study.

Room #	Space or Room	Min Qty	Min Area	Notes
101	Vestibule	1	As required	
102	Lobby hub and Hallways	1	15m ²	Include: Water station x1; vending x2; AED x1; notice/message board x1; LCD TV information screen x1
103	Hosting/Media Area	1	As required for ~30 pers occupancy	Include catering kitchen with power, refrigeration, sinks, storage and prep space. Connect to outdoor patio. View to field. Seating for ~20.
104-105	Universal washroom	2	To Code	Consistent with all design standards and precedent
106-109	All gender washroom	4	To Code	Consistent with all design standards and precedent
110	Caretaker closet	1	4.5m ²	Hot and cold water supply; basin and drain; durable wall finish; shelving and racking for supply storage
111	Utility room/Mechanical Room	1	As required.	Include exterior access. Consider co-location with dome utility room during detailed design. Size will increase.
112	Storage	1	24 m ²	Include shelving and racking as required. Durable wall finish.
113-116	Player change rooms	4	As required	4 change rooms. Include 2 showers with lockable stalls, private changing area.
117	Officials Change Room	1	As required	Accommodate 6 officials, 1 shower, private changing area.

5.3 Building Options

The evaluation of building options for the Amenity Building carefully weighed two primary approaches—modular/prefabricated construction and permanent masonry construction—against key project priorities: constructability, cost-effectiveness, long-term alignment with institutional and municipal goals, durability for heavy athletic use, full accessibility, and integration with the Mohawk College and Hillfield-Strathallan College campuses.

5.3.1 Modular Building Option

Modular or prefabricated buildings, assembled off-site in controlled factory environments and delivered for quick on-site installation, offer compelling short-term advantages. These structures can typically be erected in weeks rather than months, minimizing disruption to campus activities and allowing faster commissioning of the facility. Initial capital costs are generally lower due to streamlined manufacturing, reduced on-site labor, and predictable timelines that avoid weather delays. This approach provides high flexibility, as the building can be relocated, reconfigured, or repurposed if needs evolve—making it suitable for interim solutions during broader campus developments or as a testbed for community programming. In Canadian contexts, modular options have proven effective for temporary or expandable recreation spaces, such as athletic support facilities at schools or community centers, where speed and adaptability are paramount.

However, modular construction comes with notable trade-offs for a project intended as a long-term community and institutional asset. Raised plumbing and foundation systems can limit seamless barrier-free accessibility, potentially requiring additional modifications to meet full AODA standards. Finishes tend to be more basic and functional, with moderate durability that may necessitate earlier replacement after approximately 10 years of intensive use (e.g., frequent team turnovers, tournaments, and public events). Aesthetic integration with the campuses' established architectural character is often limited, and opportunities for advanced sustainable features—like energy-efficient systems or resilient, low-maintenance materials—are constrained compared to site-built alternatives.

5.3.2 Site-Built Permanent Building

In contrast, a site-built or 'stick-frame' building, constructed on-site with traditional materials such as brick, concrete block, or reinforced masonry, emerges as the preferred option for this Sports Hub. Designed from the ground up for longevity, it delivers a 50+ year lifespan with superior structural integrity and minimal ongoing maintenance—critical for withstanding the rigors of varsity practices, back-to-back tournament days, and year-round public access. Full barrier-free accessibility is inherent, with seamless circulation, level thresholds, and integrated universal design that avoids the compromises of raised systems. Architecturally, it harmonizes with Mohawk and HSC campus identities, using durable, high-quality finishes that enhance the facility's sense of permanence and pride for users.

This approach also unlocks greater opportunities for sustainability, incorporating energy-efficient HVAC, resilient materials resistant to extreme weather, and low-maintenance exteriors that reduce operational costs over decades. While upfront costs are higher due to site-specific construction and longer timelines, the investment yields exceptional long-term value: lower lifecycle expenses, enhanced user experience, and stronger alignment with the City of Hamilton's Recreation Master Plan (RMP) priorities. The RMP's Prioritization Framework emphasizes maximizing public benefit through durable, equitable, and cost-effective assets that address growth needs responsibly - criteria where permanent construction excels, particularly under the Infrastructure Index (asset condition, accessibility, experience) and Equity Index (population impact, usage potential). Examples from Canadian recreation and educational settings, including permanent modular or site-built support buildings at colleges and municipal sports complexes, consistently favor durable, integrated designs for high-usage facilities to ensure resilience and community legacy.

5.3.3 Preferred Solution Requires Final Determination

Ultimately, the permanent option best supports the project's vision of a resilient, inclusive, and future-ready hub that serves Mohawk varsity teams, HSC youth programs, and the broader Hamilton community for generations. It positions the Amenity Building not as a temporary addition but as a foundational element of the Sports Hub, delivering superior durability, accessibility, aesthetic fit, and operational efficiency while advancing the City's strategic goals for sustainable, high-impact recreation infrastructure. Detailed design will refine these considerations, incorporating stakeholder input to confirm the optimal path forward.

6 Parking, Infrastructure and Servicing

The Sports Hub's supporting infrastructure is engineered to deliver a resilient, fully functional, and sustainable facility that meets the operational demands of Mohawk, HSC, and the City of Hamilton. This integrated approach prioritizes universal accessibility, long-term reliability, environmental responsibility, and seamless compatibility with future expansions or enhancements. All systems are planned in alignment with relevant standards, including the Ontario Building Code (OBC), Accessibility for Ontarians with Disabilities Act (AODA) Design of Public Spaces Standards, City of Hamilton guidelines, and best practices for artificial turf sports fields.

The infrastructure encompasses site access and parking, grading and drainage, sanitary and water systems, power and shallow utilities, lighting, and security/communications. Together, these elements create a cohesive framework that supports high-volume use - varsity practices, tournaments, and public community programming - while minimizing environmental impact and operational costs.

6.1 Site Access and Parking

Site access and parking are designed to ensure safe, efficient, and inclusive movement for all users, while preserving existing campus operations. The strategy maintains the full capacity of the northeast parking lot, which continues to serve regulatory, emergency, maintenance vehicles, and general users. An accessible corridor from this lot provides direct, barrier-free entry without disrupting pedestrian flows or adjacent infrastructure.

Pedestrian priority is central to the design. Primary pathways connect from the northeast parking area and northern campus access points to the turf field, amenity building, spectator seating, storage, and public gathering spaces. These routes feature intuitive, legible layouts with smooth transitions, appropriate widths, slopes, and surfaces compliant with AODA requirements for exterior paths of travel (e.g., minimum clear widths, detectable warnings, and tactile paving where needed). This promotes safety, reduces conflicts between vehicles and pedestrians, and accommodates varying traffic volumes—from daily student/athlete use to event-day surges.

The overall access and parking framework balances operational efficiency with an exceptional user experience, reinforcing the Sports Hub as a welcoming, inclusive destination. Detailed site plans in Appendix A illustrate these connections and adjacencies.

6.2 Grading and Drainage

Grading and drainage strategies integrate the new facility harmoniously with the existing site topography, ensuring compliance with functional, environmental, and regulatory requirements (including City of Hamilton stormwater guidelines and sustainable practices).

6.2.1 Grading Strategy

Site grading supports the artificial turf field, plaza, and amenity building while achieving:

- A stable, level base for the turf system to maintain play quality and support potential future enhancements.
- Smooth transitions between activity zones, pedestrian routes, and adjacent campus areas.
- Positive slopes directing surface water toward designated management features, preventing ponding and erosion.

6.2.2 Drainage and Stormwater Management

The artificial turf field includes a high-performance sub-surface drainage system with perforated pipes and permeable base layers for rapid infiltration and lateral conveyance, ensuring playability during and after rainfall. To enhance sustainability and align with low-impact development principles:

- Naturalized features such as vegetated swales or bioswales slow, filter, and infiltrate runoff,

- improving water quality and reducing downstream impacts.
- Concrete spillways and connections to existing manholes handle overflow during intense storms.
- Native plantings in swales promote infiltration, habitat restoration, and reduced irrigation needs, supporting biodiversity and climate resilience.

This approach minimizes impervious surfaces, mitigates urban heat island effects, and contributes to broader stormwater goals.

6.3 Sanitary and Water Systems

Sanitary and potable water servicing provides reliable, efficient support for the amenity building and field operations, fully compliant with the Ontario Building Code (OBC) and municipal standards.

- **Sanitary Servicing** Connections to existing municipal sanitary sewers (or campus systems) ensure adequate capacity for washrooms, showers, and utility needs in the amenity building. Design includes provisions for high-usage events, with grease interceptors if catering demands require them.
- **Potable Water Supply** A dedicated potable water line supplies drinking fountains, washrooms, showers, and potential irrigation/hose bibs. Systems incorporate backflow prevention, metering, and energy-efficient fixtures to promote conservation. Water-efficient features (e.g., low-flow devices) align with sustainability objectives and reduce operational costs.

Detailed engineering during subsequent phases will confirm sizing, pressures, and integration with campus infrastructure. It is understood that servicing may come from either Mohawk or HSC.

6.4 Power and Shallow Underground Utilities

Electrical and low-voltage systems deliver safe, resilient, and future-ready power, adhering to the Ontario Electrical Code, Alectra Utilities standards, and Mohawk College requirements.

- **Electrical Distribution** Adequate capacity supports amenity building operations, field lighting, and auxiliary systems, with provisions for load growth.
- **Information Technology (IT), Security, and Communications** Shallow utilities include:
 - Empty conduits for IT networking, CCTV, audio-visual systems, and access controls.
 - Pathways for future door monitoring, wireless/cellular integration, and building automation system (BAS) connections to the campus network.
- **Emergency Power and Resilience** Design incorporates generator connection points, emergency lighting/wiring per code, and alignment with campus protocols for continuity during outages.
- **Energy Efficiency and Sustainability** Selections prioritize reduced consumption through LED technologies, smart controls, monitoring, and compatibility with future renewables (e.g., solar integration).

6.5 Lighting

The lighting strategy ensures safe, high-quality illumination while minimizing energy use, light trespass, and environmental impact through advanced LED systems, smart controls, and dark-sky principles.

- **Field Lighting** LED sports lighting illuminates the turf field to IES RP-6 recommended levels for recreational/multi-use play (typically 20–50 foot-candles average, with uniformity ratios of 2:1 or better). Key features include:
 - Compliance with Illuminating Engineering Society (IES) standards for consistency and visibility.
 - Optimized pole placement and directional optics to minimize glare, upward spill, and skyglow.
 - Energy-efficient drivers and low-maintenance components for reliability.
 - Musco is a preferred supplier for sports field lighting
- **Pathway and Plaza Lighting** Architectural LED fixtures provide appropriate levels for safe circulation, with photocells, timers, and occupancy sensors for efficiency. Fixtures match campus standards for

durability and aesthetics.

- **Amenity Building Lighting** High-efficiency interior LEDs with dimming and occupancy sensors in washrooms, corridors, and storage; exterior security lighting integrates with campus monitoring. All meet emergency and accessibility requirements.

Power calculations during detailed design will account for Day 1 and future loads.

6.6 Security and Communications

Because the Sports Hub straddles the campus boundary of two institutions, integration of Mohawk College's and HSC's respective security and communications systems is a key coordination requirement. During detailed design, both institutions' IT and Facilities teams will undertake a joint technical review to assess existing system capabilities, identify integration points, and agree on a unified approach to access control, CCTV, emergency communications, and network connectivity. A memorandum of understanding (MOU) covering ongoing operational responsibilities - including monitoring, maintenance, and incident response - will be developed as part of the formal partnership agreements in Step 2 (Spring 2026).

- **Security Infrastructure** A layered approach includes perimeter fencing integration, CCTV coverage of key areas (field, parking, building entrances), access controls, and lighting to support Crime Prevention Through Environmental Design (CPTED) principles.
- **Information Technology (IT) and Communications** Conduits and pathways enable robust IT, Wi-Fi, scoring/streaming, and public address systems, with integration to campus networks.
- **Coordination with Campus Services** All elements align with both HSC and Mohawk College protocols for monitoring, emergency response, and maintenance, ensuring seamless operations across partners.

This comprehensive infrastructure supports the Sports Hub as a durable, accessible, and sustainable asset, ready for detailed design refinement with stakeholder input.

7 Costing and Schedule

The costing framework for the Sports Hub provides a preliminary, planning-level assessment of capital requirements for Phase 1 implementation, with provisions for potential future expansions. Estimates draw from current industry benchmarks (2025–2026 Canadian data), comparable institutional and municipal projects in Ontario, and site-specific information. While conceptual, these figures establish a foundation for budgeting, funding strategies, and refinement during detailed design and tendering.

Total estimated capital cost for the project is approximately \$7.92 million, inclusive of a 15% contingency to buffer against market volatility, regulatory changes, site conditions, or inflation. This is further broken down to:

- Part A: Turf Field, Bleachers and Press Box at \$4.92 million
- Part B: Auxiliary Building and Servicing at \$2.76 million

Combined, this delivers a fully functional, high-quality facility by 2027/2028, including the full-size artificial turf field, amenity building, public plaza, LED sports lighting, infrastructure/servicing, and associated elements. An optional running track addition is estimated at ~\$2.2 million, based on recent Ontario/Canadian benchmarks for polyurethane/rubberized surfaces, and adjusted for integration and scale.

Part A prioritizes essential components aligned with the City of Hamilton Recreation Master Plan (RMP) priorities for multi-use, all-season fields and partnerships. Costing assumes construction start in 2027, incorporating ~3% inflation from current benchmarks, lifecycle planning (e.g., turf replacement every 8–12 years), and sustainable features (e.g., energy-efficient LED lighting, low-maintenance turf). The permanent amenity building (~\$1,200,000, excluding taxes) offers superior long-term value and durability; a modular alternative could enable phased delivery if funding constraints arise, though it is not recommended for this high-usage, community-focused project.

A detailed cost table in the Appendix will distinguish Part A from Part B. Contingency (15%) provides flexibility for unforeseen items like geotechnical adjustments or enhanced accessibility features. These contingent geotechnical risk items are however, included in the overall estimate as well as covered further in contingency.

7.1 Costing Summary

The pre-design costing for the Sports Hub is grounded in a set of carefully considered assumptions that ensure the estimates are realistic, transparent, and aligned with project realities. These assumptions draw from conceptual design details, industry benchmarks for similar Ontario recreation and institutional projects, and historical data from comparable turf field developments.

General assumptions include: estimates are conceptual and based on pre-design information and past project experience, with actual costs subject to refinement during detailed design, geotechnical investigations, and market conditions; figures incorporate approximately 5% inflation to account for potential construction in 2026–2027; and costs are rounded to reflect their order-of-magnitude nature rather than precise quotes.

For the artificial turf field—the project's major investment—the costing assumes a high-performance, year-round durable system with sub-base preparation, advanced drainage, premium turf materials, and LED sports lighting. The design includes provisions for future dome anchoring compatibility, supporting long-term flexibility without immediate additional expense.

The amenity building considers two options: a modular/prefabricated structure offering lower upfront capital cost and shorter lifespan, versus a permanent stick-built (site-built) construction with higher initial investment but extended durability, reduced lifecycle maintenance, and better integration with campus aesthetics and accessibility standards. The preferred permanent option aligns with the project's emphasis on longevity and public benefit.

Site servicing assumes efficient extensions from nearby utility corridors for electrical transformers, sanitary/storm connections, and IT/security conduits, minimizing trenching and disruption. Environmental mitigation incorporates naturalized plantings, stormwater features (e.g., bioswales), and compliance with relevant guidelines, including allowances from the 2023 Draft Environmental Impact Study.

Lighting and ancillary facilities (e.g., multi-surface courts if included) assume durable LED systems for extended evening use, plus fencing, surfacing, and equipment to support safe, high-quality operations.

MOHAWK and HILLFIELD STRATHALLEN SPORT HUB

Pre-Design Scoping Estimate - Summary

Feb-26

	Total Project		Part A - Turf		Part B - Building	
1.0 Site Works	\$	515,800	\$	273,770	\$	242,030
2.0 Parking	\$	50,000	\$	50,000	\$	-
3.0 Field	\$	2,589,781	\$	2,535,756	\$	54,025
4.0 Power, Lighting and Scoreboard	\$	565,000	\$	565,000	\$	-
5.0 Building	\$	1,865,000	\$	52,500	\$	1,812,500
6.0 Fan Experience	\$	295,000	\$	295,000	\$	-
7.0 Misc and Equipment	\$	250,000	\$	250,000	\$	-
Total Construction	\$	6,130,581	\$	4,022,026	\$	2,108,555
8.0 Design, Permitting and Fees						
Part A - Turf	\$	257,000	\$	257,000	\$	-
Part B - Building	\$	295,678	\$	-	\$	295,678
Total Fees	\$	552,678	\$	257,000	\$	295,678
<i>Fees as a percentage of project</i>		9.02%		6.39%		14.02%
Subtotal Cost	\$	6,683,259	\$	4,279,026	\$	2,404,233
15% contingency	\$	1,002,489	\$	641,854	\$	360,635
Total Budget Cost	\$	7,685,747	\$	4,920,880	\$	2,764,868
<i>2027 Construction Escalation (3%)</i>	\$	230,572	\$	147,626	\$	82,946
2027 Budget Cost	\$	7,916,320	\$	5,068,506	\$	2,847,814
9.0 Allowance for E/W Alignment with 8 Lane BSS-300 Track					\$	2,200,000

Figure 1: Summary of Estimated Costs

7.2 Assumptions

The pre-design costing for the Sports Hub is grounded in a set of carefully considered assumptions that ensure the estimates are realistic, transparent, and aligned with project realities. These assumptions draw from conceptual design details, industry benchmarks for similar Ontario recreation and institutional projects, and historical data from comparable turf field developments.

General assumptions include:

- Estimates are conceptual and based on pre-design information and past project experience, with actual costs subject to refinement during detailed design, geotechnical investigations, and market conditions
- Figures incorporate approximately 5% inflation to account for potential construction in 2026–2027
- Costs are rounded to reflect their order-of-magnitude nature rather than precise quotes.

7.3 Implementation Timeline

- Feasibility Approval & City Endorsement: Spring 2026 (including April 2026 presentation to Emergency and Community Services Committee).
- Detailed Design & Permitting: 2026.
- Tendering & Procurement: Winter 2026/2027.
- Construction: Spring 2027–Summer 2028.
- Operational Launch: Fall 2028 (targeting full use by 2028) ** Field can be ready for Fall 2027**

Future expansions (e.g., addition of a track track) would add approximately 12 weeks to the overall construction program if included with Part A.

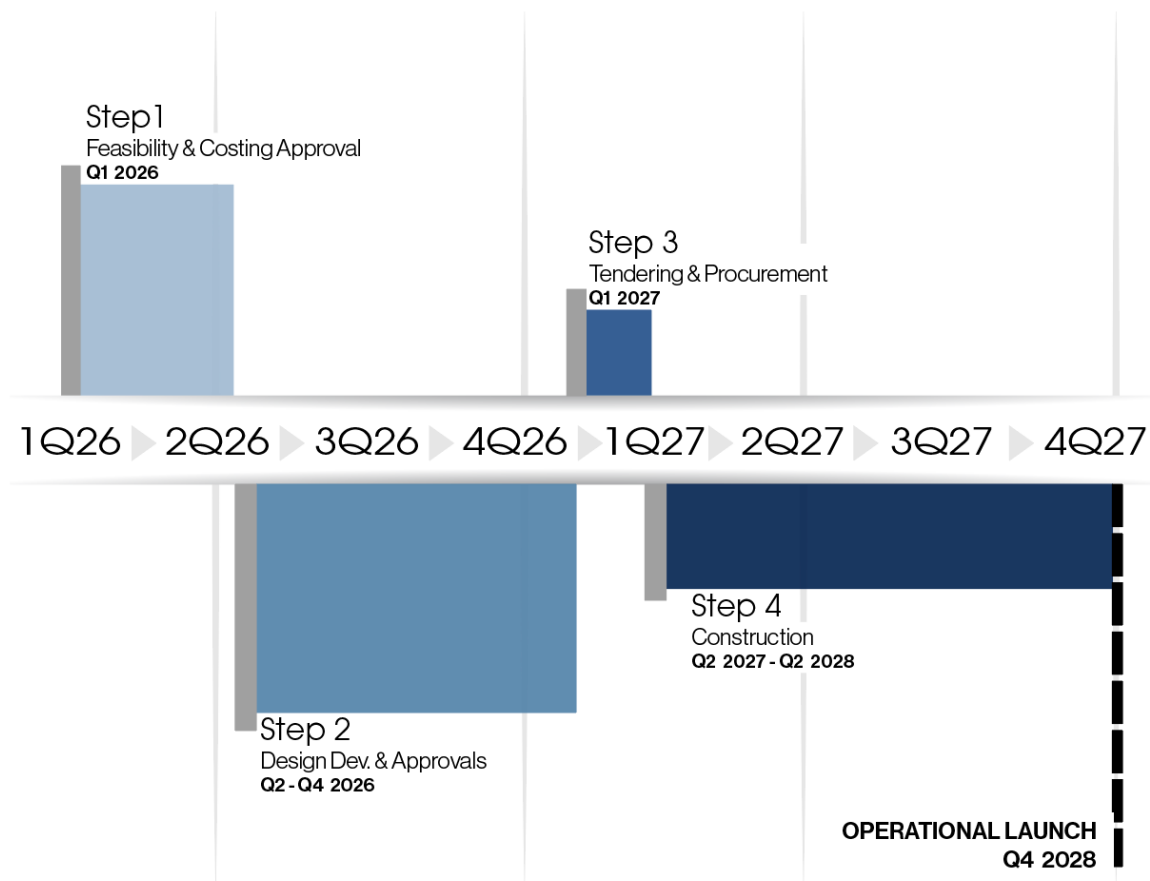


Figure 2: Graphic Representation of Schedule

8 Contingency Planning and Risk Assessment

Major capital projects like the Sports Hub inevitably involve uncertainties—from market fluctuations and regulatory hurdles to site-specific challenges and evolving funding landscapes. This combined section outlines key contingencies and risks, along with targeted mitigation strategies, to ensure the project remains resilient, on-track, and aligned with the partnership's shared goals of delivering a high-impact, inclusive recreation asset.

8.1 Financial Contingencies and Risks

Cost escalation remains a primary concern, driven by inflation, supply chain issues, material/labor volatility, or unforeseen site conditions. The \$7.92 million Phase 1 (Part A) estimate includes a 15% contingency to absorb these variables, with ongoing updates planned at milestones (detailed design, tendering, contract award) to reflect real-time market conditions. Lifecycle costs—such as turf resurfacing every 8–12 years—are factored into long-term planning for sustainable operations. If budgets tighten, value engineering or sub-phasing (e.g., prioritizing the turf field and lighting) provides flexibility without compromising core functionality.

8.2 Phasing Contingencies

The project is structured as Part A (core turf field, lighting, and servicing) for immediate activation, with Part B (amenity building expansions and enhancements) as a future phase. This modular approach allows sub-phasing if funding is constrained, maintaining momentum and year-round recreational value. Part A delivers substantial benefits independently, ensuring community access even if Part B advances later, while avoiding redundant work or cost duplication.

8.3 Regulatory, Environmental, and Permitting Contingencies

Approvals from the City of Hamilton, conservation authorities, and campus stakeholders may require additional studies, modifications, or mitigation (e.g., enhanced stormwater features or ecological buffers). Budget allowances and early engagement (pre-submission consultations) build in adaptability. Geotechnical uncertainties near valley lands could add 5–10% to costs or extend timelines by 3–6 months; early investigations during detailed design, combined with contingency reserves, mitigate this effectively.

8.4 Operational and Stakeholder Risks

High demand could strain initial capacity; flexible programming (extended hours, portable amenities, deepened City partnerships) offers responsive solutions. Construction near active campus zones risks disruption; scheduling during low-impact periods (e.g., summer), clear signage, and stakeholder coordination minimize impacts. Community or environmental concerns may arise; transparent engagement—through town halls, sustainability messaging, and a dedicated consultation plan—builds support and addresses issues proactively.

By integrating these contingencies into the financial model, schedule, and stakeholder strategy, the project team can confidently navigate uncertainties. This forward-thinking approach safeguards the Sports Hub's viability, maximizes partnership value, and advances the stakeholder priorities for equitable, resilient, and high-priority recreation infrastructure.

9 Section 9 – Conclusion and Recommendation

This feasibility study demonstrates that the proposed Sports Hub at the joint Mohawk – Hillfield Strathallen College is a sound, well-justified investment in Hamilton's recreational future. The case for proceeding rests on four pillars that this study has examined in depth.

Need is established. The City of Hamilton's 2022 Recreation Master Plan identifies a shortage of up to 31 unlit field equivalents by 2051, concentrated in growing urban areas including Hamilton Mountain. The proposed site directly addresses this gap. Demand from Mohawk College's student population, HSC's athletic programs, and the wider community is documented and sustained.

The design is appropriate and well-precedented. The recommended program - a FIFA-compliant artificial turf field, LED sports lighting, bleacher seating for 800, and a phased amenity building — reflects current best practice for multi-use institutional facilities. The case studies at Sheridan College, Conestoga College, and Hamilton's own Sherwood Secondary School confirm this model's viability at comparable scale and within similar partnership structures.

The partnership structure is a strategic advantage. The three-way collaboration between Mohawk College, HSC, and the City of Hamilton is not a complicating factor - it is a core strength. It distributes financial risk, broadens the user base, and positions the Sports Hub as a model for the RMP's Partnership Framework. This structure has a direct analogue at Conestoga College's Cambridge Soccer Complex, which hosts CCAA-level competition within a functioning city-college shared model.

The project is deliverable within a clear timeline. With City endorsement targeted for Spring 2026, detailed design proceeding through 2026, and construction planned for 2027–2028, the Sports Hub can realistically be operational for the Fall 2027 season (Part A field) and fully commissioned by Fall 2028 (Part B amenity building). The 15% cost contingency built into the \$7.92 million estimate provides reasonable buffer for a project at this stage of design development.

The study team recommends that Mohawk College, Hillfield Strathallen College, and the City of Hamilton proceed to the next step - formal internal approvals - with a target of presenting to the City's Emergency and Community Services Committee in April 2026. The five next steps outlined in Section 1.1 provide a clear and achievable path to groundbreaking. The Sports Hub is a high-priority, high-impact investment that is ready to move forward.

10 Appendix A - Site Plan



LEGEND

- ① Artificial Turf Field (100m x 65m FOP)
Primary field markings to align with FIFA
Possible secondary field markings for lacrosse & football
- ② Warm Up Turf Area (72m x 8m)
- ③ Service Building (30m x 13m)
Building to include 4x team change rooms, officials room, hosting/media area, storage and utility rooms, 6x washrooms (universal and all gender)
- ④ Bleacher (min. 500 people)
Accessible bleachers with VIP capability
Press box and filming area
- ⑤ Game / Player Facilities
Team benches
Practice turf space
- ⑥ 2.5m wide pedestrian pathway
- ⑦ 6.0m wide combined pedestrian, emergency vehicle, & maintenance vehicle access
- ⑧ Tie into parking lot & existing pathways
- ⑨ Plaza with seating
- ⑩ Storage Garage (10m x 8.5m)
Double access door onto field

- - Site Boundary
- % Grading Slope
- Grass Swale

11 Appendix B - Cost Analysis

MOHAWK and HILLFIELD STRATHALLEN SPORT HUB

Pre-Design Scoping Estimate - Summary

Feb-26



	<i>Total Project</i>	<i>Part A - Turf</i>	<i>Part B - Building</i>
1.0 Site Works	\$ 515,800	\$ 273,770	\$ 242,030
2.0 Parking	\$ 50,000	\$ 50,000	\$ -
3.0 Field	\$ 2,589,781	\$ 2,535,756	\$ 54,025
4.0 Power, Lighting and Scoreboard	\$ 565,000	\$ 565,000	\$ -
5.0 Building	\$ 1,865,000	\$ 52,500	\$ 1,812,500
6.0 Fan Experience	\$ 295,000	\$ 295,000	\$ -
7.0 Misc and Equipment	\$ 250,000	\$ 250,000	\$ -
Total Construction	\$ 6,130,581	\$ 4,022,026	\$ 2,108,555
8.0 Design, Permitting and Fees			
Part A - Turf	\$ 257,000	\$ 257,000	\$ -
Part B - Building	\$ 295,678	\$ -	\$ 295,678
Total Fees	\$ 552,678	\$ 257,000	\$ 295,678
<i>Fees as a percentage of project</i>	<i>9.02%</i>	<i>6.39%</i>	<i>14.02%</i>
Subtotal Cost	\$ 6,683,259	\$ 4,279,026	\$ 2,404,233
15% contingency	\$ 1,002,489	\$ 641,854	\$ 360,635
Total Budget Cost	\$ 7,685,747	\$ 4,920,880	\$ 2,764,868
<i>2027 Construction Escalation (3%)</i>	\$ 230,572	\$ 147,626	\$ 82,946
2027 Budget Cost	\$ 7,916,320	\$ 5,068,506	\$ 2,847,814
9.0 Allowance for E/W Alignment with 8 Lane BSS-300 Track			\$ 2,200,000

MOHAWK and HILLFIELD STRATHALLEN SPORT HUB

Pre-Design Scoping Estimate - Detailed Costing Model

Feb-26



1.0 Site Works	Total Project	Part A - Turf	Part B - Building
Misc general conditions and mobilization	\$ 75,000	\$ 30,000	\$ 45,000
Bonding (1% assumed if required)			
Misc demolition	\$ 10,000		\$ 10,000
Irrigation revisions	\$ 100,000	\$ 90,000	\$ 10,000
Site and Landscape rehabilitation	\$ 55,800	\$ 36,270	\$ 19,530
Hard surfacing	\$ 175,000	\$ 17,500	\$ 157,500
Pathways	\$ 100,000	\$ 100,000	
2.0 Parking			
Parking			
Parking lighting	\$ 50,000	\$ 50,000	
3.0 Field			
Earthworks - assumes waste berm on-site	\$ 290,450	\$ 261,405	\$ 29,045
Earthworks - additional contingency	\$ 145,225	\$ 145,225	
Drainage Pipes and Outfall	\$ 249,800	\$ 224,820	\$ 24,980
Base Gravels	\$ 603,243	\$ 603,243	
Geotextile layer	\$ 44,640	\$ 44,640	
Curb	\$ 107,800	\$ 107,800	
Turf and Grooming Equipment	\$ 1,009,623	\$ 1,009,623	
Turf - Logo Allowance	\$ 30,000	\$ 30,000	
Shockpad (elayer - not included)	\$ -	\$ -	
Field fencing and ball stop	\$ 49,000	\$ 49,000	
Goals, Foundations (excl rugby)	\$ 60,000	\$ 60,000	
4.0 Power, Lighting and Scoreboard			
Scoreboard, foundations and Electrical	\$ 140,000	\$ 140,000	
Lighting	\$ 375,000	\$ 375,000	
Power	\$ 50,000	\$ 50,000	
5.0 Building			
Ancillary building	\$ 1,200,000		\$ 1,200,000
Storage Garage - unconditioned	\$ 175,000		\$ 175,000
Asphalt Apron/Fire Access	\$ 75,000		\$ 75,000
Site lighting	\$ 150,000	\$ 52,500	\$ 97,500
Fire requirements allowance	\$ 25,000		\$ 25,000
Power	\$ 50,000		\$ 50,000
Telco and LV	\$ 35,000		\$ 35,000
Water/Sewer	\$ 90,000		\$ 90,000
Gas and mechanical	\$ 65,000		\$ 65,000
6.0 Fan Experience			
Aluminum bleacher seating for 800 (10 row)	\$ 275,000	\$ 275,000	
Misc seating	\$ 20,000	\$ 20,000	
7.0 Misc and Equipment			
Press box	\$ 250,000	\$ 250,000	
	\$ 6,130,581	\$ 4,022,026	\$ 2,108,555

8.0 Design, Permitting and Fees	Total Project	Part A - Turf	Part B - Building
Part A			
Design, PM and CA	\$ 240,000	\$ 240,000	
Permitting	\$ 5,000	\$ 5,000	
Provisional Items	\$ -	\$ -	
Disbursements	\$ 12,000	\$ 12,000	
Part B			
Design, PM and CA	\$ 253,027		\$ 253,027
Permitting	\$ 30,000		\$ 30,000
Provisional Items	\$ -		\$ -
Disbursements	\$ 12,651		\$ 12,651
Total Fees	\$ 552,678	\$ 257,000	\$ 295,678
<i>Fees as a percentage of project</i>	9.02%	6.39%	14.02%
Subtotal Cost	\$ 6,683,259	\$ 4,279,026	\$ 2,404,233
15% contingency	\$ 1,002,489	\$ 641,854	\$ 360,635
Total Budget Cost	\$ 7,685,747	\$ 4,920,880	\$ 2,764,868
<i>2027 Construction Escalation (3%)</i>	\$ 230,572	\$ 147,626	\$ 82,946
2027 Budget Cost	\$ 7,916,320	\$ 5,068,506	\$ 2,847,814

9.0 Allowance for E/W Alignment with 8 Lane BSS-300 Track

Allowance for Track Add-on		\$ 2,200,000
		\$ 2,200,000