Bryan Anderson Athletic Grounds
Concept Plan Update

The City of Edmonton

Report

November 2020
ISL Engineering and Land Services Ltd. is an award-winning full-service consulting firm dedicated to working with all levels of government and the private sector to deliver planning and design solutions for transportation, water, and land projects.
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## 1.0 Executive Summary

The Bryan Anderson Athletic Grounds (BAAG), previously known as Terwillegar Heights District Park and Leger District Park, requires an update to an earlier approved concept plan for the remaining undeveloped parcels in the park. The Concept Plan Update will address the two major changes to the original plans proposed for the park: confirming a new location for an artificial turf facility (ATF), as well as a site for a new Edmonton Public Library.

In the existing concept plan for BAAG, completed in 2008, the location for the artificial turf facility was in the southwest corner (Terwillegar Heights Artificial Turf Field and Facility, Dub Architects, February 2018). Due to unstable soil conditions, it was determined that it would be economically un-feasible to build the ATF in the proposed location. Terwillegar Heights District Park (BAAG) was identified, in the 2009-2015 Artificial Turf Plan as a priority location for the southwest area of the City.

Edmonton Public Library (EPL) is also interested in adding a larger facility to southwest Edmonton, as the Riverbend location has reached its capacity to meet the needs of the community. A site within BAAG has been identified by EPL and they were interested in working with the project to seek feedback from stakeholders and the community.

This Concept Plan Update identifies, evaluates and recommends a new location and layout for the proposed ATF. In support of this recommendation, a 2019 geotechnical investigation completed by Tetra-Tech was reviewed to confirm the soil conditions for the newly proposed site are favourable for construction. A parking and traffic study for BAAG is also included in the project to assess current and projected parking demands for the existing facilities and the addition of the proposed ATF.

Various stakeholders in the park were consulted on the proposed changes to the concept plan, the stakeholders were in agreement with the changes. The findings from the stakeholder meetings and any concerns or conditions requested are detailed in the report.

At the completion of the report any Spring 2020 in-person public engagement has been put on hold due to COVID-19 Health Canada and Alberta Health.

Class 4 cost estimates are provided for the artificial turf facility and the current undeveloped lands.
2.0  Project Background

BAAG is located along 23 Avenue NW and Terwillegar Drive NW, Leger Road NW intersects the site and it is adjacent the Leger Transit Centre. The site is nearing full development, and includes the Terwillegar Community Recreation Centre, Lillian Osborne School, Archbishop Joseph MacNeil Catholic School, and Mother Margaret Mary Catholic School. Proposed future development includes a new Edmonton Public Library and the Oak Hill Community League. BAAG is formally known as the Terwillegar Heights District Park and Leger District Park.

2.1  Project Location and Zoning Context

The Bryan Anderson Athletic Grounds project is located at 2010 Leger Road NW (zoned US – Urban Services). In addition, two portions zoned US Edmonton Public Schools (EPSB) properties, two portions zoned US Edmonton Catholic School Division (ECSD) and two portions zoned Public Utility (PU) for the transit centre and a stormwater management facility. The City has existing Land-Use Agreements with EPSB for a K-8 School site and the Oak Hill Community League license lands identified in BAAG.

2.2  Adjacent Developments Affecting this Project

As part of the preparation of this concept plan update, the project team is coordinating with the following adjacent projects:

- **Edmonton Public Library**: The Riverbend EPL is currently in preliminary design stage for the development of a new facility to be located within BAAG. The site is located at the northwest corner of 23 Avenue and Leger Road NW and is approximately 0.67 hectares. This location does not impact the potential Artificial Turf Facility location but would displace land uses, the tennis courts and wheeled sports area identified on the 2008 Concept Plan.

- **EPSB K-8 Public School Lands**: EPSB has 1.08 hectares of land in the northeast corner of the site. Meetings with EPSB indicated they had no intention to use this site for a K-8 Public School. As part of agreement ECSD and the Centre-Nord School Board (CNSB) have the first right to refusal before these remnant lands would be released back to the City. EPSB has indicated they would be interested in a land swap within the BAAG boundary.

- **Oak Hill Community League**: The community league is currently updating their land boundaries for a new community league site. This boundary area is 0.77 hectares and is currently with the City for review.

2.3  Bryan Anderson Athletic Grounds Concept Park Update

The concept plan update involves updating the previously approved 2008 Concept Plan for the remaining undeveloped parcels in the park. The concept plan update will maintain elements from the previous concept and consider past stakeholder input, while incorporating two major changes proposed for the park: an artificial turf facility and adding an Edmonton Public Library location.

2.3.1  Goal

The goal of the Concept Park Update Plan is to deliver a strategic approach to the design and long term development of the remaining undeveloped portions of the park. This includes renewal targets that consider the physical condition, functionality and demand capacity of the parks, recreation needs identified through stakeholder and public consultation, and operational requirements to ensure sustainability of the park. The driver of the study is the evaluation and recommendation of an alternate location for a proposed ATF.
2.3.2 Objectives

The objectives for the Concept Plan include:

- Confirm stakeholders support alternative lands identified for artificial turf facility, and lands are suitable and financially viable.
- Seek coordinated development opportunities with partner organizations to develop remaining undeveloped lands.
- Develop and implement a Concept Plan that address the needs of the public and stakeholders, including educational institutions, non-profit sports organizations, recreation and cultural organizations and the community.

2.3.3 Outcomes

The park outcomes define what success will look like once the park is fully developed and is aligned with the City’s expected outcomes for all parks:

- Parks are connected to their diverse communities and a source of pride.
- Parks are vibrant, connected, engaging, safe, accessible and welcoming.
- Parks support a vibrant, diverse sports sector.
- Parks celebrates and promotes healthy living.
- Parks support a diverse, creative city with a rich and vibrant arts and cultural community.
- Parks are environmentally sustainable.

Site location proposed for an Artificial Turf Facility (image by ISL)
3.0 Public Engagement

This section of the report summarizes the communications and engagement process, and the feedback received during the Design Concept Phase of the Bryan Anderson Athletic Grounds update (the project). The Public Engagement Plan for this project was divided into two phases. The first phase involved meeting with key stakeholders to discuss key decision points for the project and gathering information on how the space is currently being used. The second phase involved sharing final concept plans and collecting feedback from stakeholders and the public.

3.1 Key External Stakeholder Identification and Engagement

A comprehensive list of stakeholders was identified, and stakeholders were categorized into groups based on their decision-making power within the project, and the impact changes to the original concept plan would make on their organization. The two groups were the Landholders and the community members.

Landholders within BAAG were contacted to discuss the future of BAAG and the undeveloped sites within the park. These stakeholders included: Edmonton Catholic School Division (ECSD), Edmonton Public School Board (EPSB), the Conseil scolaire Centre-Nord (Francophone School Board), Terwillegar Community Recreation Centre (TCRC) and the Oak Hills Community League. EPSB is a landowner with in BAAG and Oak Hills Community League is currently in approval process for building a community hub.

Stakeholder meetings were held, in-person in January and February and online in March and April, with representatives from the three school boards, Oak Hills Community League, Neighbourhood Resource Coordinators, Terwillegar Riverbend Advisory Council (TRAC), and Community Recreation and Facilities representatives from the City of Edmonton. These meetings were held to discuss the artificial turf placement, the undeveloped school site, the remaining land in the park and the addition of Edmonton Public Library.

The following table provides a summary of the key themes we heard during the individual stakeholder meetings.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Detailed descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support for Edmonton Public Library within BAAG</td>
<td>Although the new EPL location is not part of the project scope, the library is a new addition to the grounds. All stakeholders welcome the addition of the library and see it as a benefit for the community. Tervillegar Community Recreation Centre supports having EPL as part of the grounds and wants to work with EPL to ensure TCRC signage is not impacted by the new facility</td>
</tr>
<tr>
<td>Support for an Artificial Turf Facility</td>
<td>EPSB and ECSD support including an artificial turf within the park. Both school boards envision the two high schools within the park being able to use the turf facility and extend their athletic seasons in the fall and spring. The internal stakeholder with Arena and Facilities identified this site as a top priority for an artificial turf facility. The preferred footprint was identified and raised awareness for concrete to run parallel to the field for efficient snow removal in the spring and fall.</td>
</tr>
<tr>
<td>Concern about increased traffic and the need for parking</td>
<td>Tervillegar Community Recreation Centre was concerned about the increased traffic adding two more amenities to the park would bring. The area experiences traffic congestion at the lights at Leger and 23 Avenue during peak hours.</td>
</tr>
<tr>
<td>Theme</td>
<td>Detailed descriptions</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>EPSB and ECSD both raised questions about parking</td>
<td>EPSB and ECSD both raised questions about parking spaces for the artificial turf facility and are concerned about enough parking spaces during operating hours for the schools.</td>
</tr>
<tr>
<td>spaces for the artificial turf facility and are</td>
<td></td>
</tr>
<tr>
<td>concerned about enough parking spaces during</td>
<td></td>
</tr>
<tr>
<td>operating hours for the schools.</td>
<td></td>
</tr>
<tr>
<td>Concern about other programmed spaces not being</td>
<td>Oak Hills Community League expressed concern about some elements not moving forward, such as the skatepark and tennis courts.</td>
</tr>
<tr>
<td>included</td>
<td></td>
</tr>
<tr>
<td>Current school-site</td>
<td>EPSB is allocated a parcel of land that would be required for the placement of the artificial turf. EPSB and ECSD have both indicated they are not considering building on this land. EPSB would be interested in a land swap within the park.</td>
</tr>
<tr>
<td></td>
<td>The Centre-Nord school board indicated the current site has some transportation concerns and is not interested in pursuing the site if EPSB does a land swap.</td>
</tr>
</tbody>
</table>

Overall, there is support from stakeholders to for the updated concept plan for BAAG. The inclusion of the artificial turf facility is important to internal and external stakeholders. Stakeholders recognize the importance of adding an artificial turf facility to BAAG for the local community, including the two high schools within BAAG, and for southwest Edmonton.

The removal of other amenities within the park to add the Edmonton Public Library were a concern for the community league. Although the updated Concept Plan does not identify spaces for specific amenities within BAAG, the updated plan does have unprogrammed space in the southwest corner of the site that could support other amenities, such as tennis courts or hard wheel surface sports if community partners come forward.

The addition of the Edmonton Public Library is supported by all stakeholders, stating EPL will be beneficial to the community and a great addition to BAAG.

### 3.2 Public Information Session

In-person public engagement events for many projects with the City of Edmonton were placed on-hold in the Spring of 2020 due to the COVID-19 Heath Canada and Alberta Health directions for self-isolation. As such, an in-person public information session was not held in support of this concept plan update.
4.0 Background Review and Analysis

4.1 Proposed ATF Site

The land proposed for the ATF site is the open play field area between the two catholic schools (Mother Margaret Mary and Archbishop Joseph MacNeil) which is north of the Terwillegar Recreation Centre, partially on the EBSP K-8 Public School lands. The following background review and analysis investigates this site for the suitability of the ATF. See Figure 1 – LA 04 Land-Use Plan.

4.2 Land Use

Bryan Anderson Athletic Grounds lands are primarily zoned as Urban Services (US) See Figure 1 – LA 04 Land-Use Plan.

The storm water management facility along the north boundary is zoned as public utility lot (PUL), and there are three parcels zoned as municipal reserve (MR) along the north east boundary. The existing transit centre zoning is PUL.

The Edmonton Public School Board (EPSB) has a parcel of land adjacent to Leger Road NW and west of Archbishop Joseph MacNeil School. Through discussions with EPSB, they have indicated that they will not be using this land for school development, therefore the ECSD and Francophone School Board were offered first right of refusal for the land to develop a school. ECSD and Francophone School board have indicated there is no interest to develop this land at the current location. EPSB will consider a land swap to move their current parcel into the unused portion of land in the southwest corner of BAAG. EPSB has not yet declared this site as surplus.

The Oak Hill Community League license boundary is currently in circulation at the City of Edmonton.

See Figure 2 – Schedule "A" Oak Hills Community League Site.

4.3 Geotechnical

The City engaged Tetra Tech Canada Ltd. to do preliminary geotechnical testing on the lands for the proposed Artificial Turf Facility and lands for the proposed EPL site. This geotechnical fieldwork was completed January 15, 2020 and a review copy of the report was issued to the City and the BAAG Concept Update team for review on March 2, 2020.

The ATF study comprised of twelve boreholes ranging in depths from 6.1 m to 7.3 m below grade. Four boreholes were studied for the Public Library site. This report will focus on the boreholes for the ATF site but provide a summary of the findings for the EPL.

Boreholes at the ATF site are generally comprised of:
- 75mm to 200mm topsoil;
- 1.5m to 5.0 m silty clay fill with a trace of sand and gravel
- Silty sand was under the fill at one borehole location and underlying the native clay at three locations
- Native clay from depths ranging from 4 m to the borehole termination depths
- Fill was recorded at each bore hole ranging in depths from 1.4 m to 5.0m. The fill increased in depth for the southeast to the north of the site, and the deepest fills are located on the north and west sides of the site.
- No slough or groundwater was encountered at the ATF borehole locations.

See Figure 3 – Tetra Tech: Site Plan and Borehole Locations.
Oak Hills Community League Site (.79 ha)
Terwillegar Heights District Park - Leger Neighbourhood

Schedule "A"
Figure 2

Legend

- Oak Hills Community League License Boundary (0.79 ha)
- Property Boundary

DISCLAIMER:
The Community League License boundary is not based on land survey. Instead, it is created using aerial imagery and based on the physical features of the site.
Figure 1

Site Plan and Borehole Locations

LEGEND

- Borehole Location
- Approximate Previous Borehole Location (HBT AGRA Ltd.)
- Approximate Fill Depth Below the Existing Grade (m)

NOTES:
- Base 3D model: Imagery provided by Google Earth, DigitalGlobe (2017)

SCALE: 1:2,500

Legend:
- Artificial Turf Facility Site
- Library Site
- Mother Margaret Mary Catholic High School
- Terwillegar Recreation Centre
- Lillian Osborne High School
- Archbishop Joseph MacNeil Catholic Elementary/Junior High School
- Artificial Turf Facility Site

Projection: UTM Zone 12
Datum: NAD83
Zone: UTM

Status: EXPIRED FOR REVIEW

ARTIFICIAL TURF FACILITY AND LIBRARY
2015 LEGER ROAD NW AND 715 LEGER WAY NW
EDMONTON, AB

EGEO03534-01 Figure1.mxd
February 28, 2020

Client: Engel & Völkers North America
The geotechnical report focused on analyzing the suitability of the underlying soil conditions to support the development of the ATF. The site was found to be feasible for the development of the ATF. The following summarizes a few of the key geotechnical conditions that make this site suitable for ATF construction:

- Based upon the geotechnical investigation, the proposed field location should be positioned to minimize the depth of underlining fill. However, there will be a differential amount of fill across the proposed field location. Recommends considering the southeast side of the site for facility location.
- The geotechnical report recommends removal and replacement of existing fill to provide uniform subgrade support for the proposed development for the different aspects of the facility – building, track and turf field, pavement and landscape areas. Each of the concept options proposed (See Section 5.1) were assessed and had varying levels of risk associated with them. Landscape areas – impact of long-term settlement considered low, therefore where feasible the existing soils may be left in place in landscape areas.

**EPL Site:**

The geotechnical findings for the EPL site found deep fill on-site that will have significant impact on the design, construction and cost of the new EPL.

- Boreholes recorded depths from 7.0m to 17.1m below the existing grade. In general, the fill increased in depth from the north to the southeast of the site.
- Long-term settlement of the fill should be anticipated to cause significant total and differential movements of any grade-supported slabs. Tetra Tech recommends the use of structurally supported slabs for the building. Shallow foundations are not recommended for this site due to the extensive fill on-site.
- It should be anticipated that to excavate and replace with engineered fill would not be feasible due to costs. Additional maintenance costs will be required in the pavement areas in the long term.

### 4.4 ATF Site Grading and Servicing

An updated topographic survey was not completed for this report. ISL obtained current City of Edmonton ‘Open Portal’ contour data and used this data for analyzing the site and preparing the concept plan options.

Based on the contours, the proposed ATF site falls approximately 2% from south to north, with a difference in elevation of approximately 4.5 m. With this amount of topographic relief, laying out the ATF in a bowl configuration would best balance the grading with a cut at the south end of the field and a fill situation in the north. Balance of cut and fill is optimal.
The estimated main floor elevation of the adjacent schools is 694.0 metres for Archbishop Joseph MacNeil (east of the ATF site) and 695.0 metres for Mother Margaret Mary High School (west of the site). The parking lot for the high school slopes northward to approximately 693.0 metres. The schools, their sports fields and parking lot form grading boundaries to the east and west of the proposed ATF site.

Based upon the available contour information the proposed elevation of the ATF site would be approximately 692.00 metres. This would place the ATF 2.5 metres below the prevailing ground surface along Leger Road, 1.5 m above the prevailing ground surface to the north, and 2-3 metres below the finished floor elevation of the two schools. Transition grading will be required to tie into the multi-use trail to the west, slopes will be passive. Transition grading will also be required to the east towards the relocated sports fields and school. It is recommended that a retaining wall be used to transition along the south side of the track to Leger Road, this will reduce the amount of off-site water draining to the track. The ATF site grading will be required to be accessible between the parking lot and facility as well as maintaining acceptable grades to the adjacent schools, paths and sport fields.

Municipal services are available for the proposed field development from Leger Road NW, sanitary and storm sewer have been stubbed into the parcel. Water has not been stubbed into the parcel but is available.

The proposed Library site does not have municipal services stubbed into the parcel but services are available from Leger Road along north half of frontage for storm.

See Figure 4 – Drawing LA 03 Utilities Plan

4.5 Traffic and Parking Assessment

A detailed assessment of the traffic impacts and parking was completed in support of the BAAG Concept Plan update. The scope of work included the following:

- **Traffic Assessment:** Comparison of the 2007 traffic impact assessment and parking study for the original site plan to the existing and proposed uses and completing additional study as needed.
  - Concerns with shortcutting traffic from the BAAG site into the adjacent Leger and Carter Crescent neighbourhoods was assessed as a separate component of this study and the results are provided in Appendix A.
- **Parking assessment:** Parking assessment for the proposed artificial turf facility (ATF), based on the 2018 ART parking study, completed by Bunt and comparing this to the new proposed ATF.

4.5.1 Traffic Assessment

In 2007, a traffic impact assessment (TIA) and parking study was done for development of the concept plan relevant at the time. The 2007 study concludes that the transportation services planned, including parking supply, roadways and accesses to surrounding arterials were sufficient based on the 2007 concept plan. The focus of the following is a gaps assessment, comparing the current site uses and new proposed uses to the original plan relevant to the 2007 TIA and parking study, to determine whether additional assessment may be needed. An inventory of uses assessed in the 2007 TIA and parking study plan are summarized in the following table.
Table 2: Inventory of 2007 Concept Plan (relevant to original TIA and Parking Study)

<table>
<thead>
<tr>
<th>Component</th>
<th>Size (2007 TIA)</th>
<th>Component</th>
<th>Size (2007 TIA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-Use Facility</td>
<td></td>
<td>Sports fields</td>
<td></td>
</tr>
<tr>
<td>Fitness Centre</td>
<td>2,070 m²</td>
<td>Baseball Diamonds</td>
<td>4 fields</td>
</tr>
<tr>
<td>Aquatic Centre</td>
<td>1,600 m²</td>
<td>Soccer/Football Fields</td>
<td>8 fields</td>
</tr>
<tr>
<td>Children’s Activities</td>
<td>825 m²</td>
<td>Schools</td>
<td></td>
</tr>
<tr>
<td>Multi-Purpose Rooms</td>
<td>451 m²</td>
<td>Public High School</td>
<td>1000 students</td>
</tr>
<tr>
<td>Gym/Flexi-Hall</td>
<td>1,845 m²</td>
<td>Catholic High School</td>
<td>700 students</td>
</tr>
<tr>
<td>Administration Area</td>
<td>318 m²</td>
<td>Public school (K-8)</td>
<td>500 students</td>
</tr>
<tr>
<td>Commercial Area</td>
<td>531 m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arenas (4)</td>
<td>4 sheets - 1,170 seats</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To confirm the details in the above table a review of existing uses compared to the 2007 uses is provided in the following figure.

Figure 5: 2007 Concept Plan Review (A to H uses are discussed in Table 3)

Additional notes relative to Figure 5 above are provided in the following table.
Table 3: Review of 2007 Concept Plan (relevant to original TIA and Parking Study)

<table>
<thead>
<tr>
<th>Note</th>
<th>Comments</th>
</tr>
</thead>
</table>
| A    | • 2007 TIA and parking study did not anticipate any capacity (proposed = ~750 seats)  
• ATF Facility relocated between B and D. |
| B, C | • Existing Schools |
| D    | • Future K – 8 school that has since been removed. (no longer planned at this site) |
| E    | • New parking lot (not included in the 2007 TIA and parking study) |
| F    | • Lillian Osborn School  
• 1000 student capacity assumed in the 2007 TIA and parking study  
• Additional 600 student capacity added in 2017, total capacity is 1,600 students |
| G    | • Parking lot expansion (not included in the 2007 TIA and parking study) |
| H    | • New 18,000 square foot library, not included in the 2007 TIA and parking study |

Three additional uses found compared to the 2007 plan and these are summarized as follows:
- An existing addition to the Lillian Osborn School, in 2014, increasing capacity from 1000 to 1600 students
- Library (current proposal), 18,000 sq. ft
- 750 seat (to be confirmed) capacity for the artificial turf facility
- Discussions with the school boards indicate that a future K-8 school in the park is no longer part of the plan, therefore the increase of 600 students was not calculated in this review.

Figure 6 – Transportation, Traffic and Parking for current parking counts in BAAG.

The two parking areas added in areas E and G, indicated in Figure 5 appear to be in support of the additional student capacity constructed for the Lillian Osborn School. Additional travel demands generated due to the increase in student capacity at this school and due to the proposed library are not included in the 2007 TIA. The site is only accessible from one access at 23 Avenue and existing concerns with traffic congestion, delay and queueing have been shared with ISL as part of this study. Alternative access to the site is through Leger Way, but encouraging traffic to use this route is not recommended as this road is a neighbourhood collector.

To address traffic concerns generated due to the additional uses outlined and provide an overall update on the traffic conditions, ISL conducted a traffic operational analysis of the intersection of Terwillegar Drive and 23 Avenue, based on existing intersection layout and traffic controls and the following traffic demands.  
- Traffic count volumes (provided by the City of Edmonton).  
  • The traffic count used for this assessment was conducted May 15, 2014 as the more recent 2016 traffic count was conducted in July outside of the regular school season and may not be representative of typical traffic conditions. The 2014 count was adjusted to 2020 by applying a growth rate.  
- Additional traffic volumes due to future uses (ATF facility and library) and expansion of to the Lillian Osborn School, which was completed after the traffic count volumes were completed by the City.  
- New trips were estimated using the Institute of Transportation Engineers Trip Generation Rates for the library and Lillian Osborne School Expansion. New trips for the ATF facility were based on the anticipated peak parking demand, as outlined in the 2018 Parking Study that is described and discussed in the following section under the review of ATF Parking.  
- Trips estimated for the library were reduced to account for a portion captured from existing uses (25%) and mode choice for transit (10%) and walking/cycling (10%). The reductions applied are based on best engineering judgement, as there was no information available at the time of writing this report.
• Trips estimated for the Lillian Osborne School expansion were reduced to account for mode choice by transit/bus (40%) and walking/cycling (10%). The reductions applied are assumed as there was no information available at the time of writing this report.

• New trips were assigned to the roadway network based on the current traffic distribution proportions from the traffic count.

The analysis was conducted using Synchro traffic analysis software, based on the existing layout. Analysis results are provided below.

Table 4: AM Peak Hour Total Traffic Synchro Results

<table>
<thead>
<tr>
<th>Movement</th>
<th>Eastbound</th>
<th>Westbound</th>
<th>Northbound</th>
<th>Southbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geometry</td>
<td>L / T / T / R</td>
<td>L / T / T / R</td>
<td>L / T / TR</td>
<td>L / T / TR</td>
</tr>
<tr>
<td>Volume (vph)</td>
<td>326</td>
<td>453</td>
<td>99</td>
<td>82</td>
</tr>
<tr>
<td>v/c</td>
<td>0.77</td>
<td>0.38</td>
<td>0.17</td>
<td>0.23</td>
</tr>
<tr>
<td>Delay (s)</td>
<td>40.8</td>
<td>35.4</td>
<td>6.1</td>
<td>23.2</td>
</tr>
<tr>
<td>LOS</td>
<td>D</td>
<td>D</td>
<td>A</td>
<td>C</td>
</tr>
<tr>
<td>95th Queue (m)</td>
<td>#101.3</td>
<td>76.2</td>
<td>13.6</td>
<td>25.5</td>
</tr>
<tr>
<td>Intersection Delay</td>
<td>25.9</td>
<td>Intersection LOS</td>
<td>C</td>
<td></td>
</tr>
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</table>

Table 5: PM Peak Hour Total Traffic Synchro Results

<table>
<thead>
<tr>
<th>Movement</th>
<th>Eastbound</th>
<th>Westbound</th>
<th>Northbound</th>
<th>Southbound</th>
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<tr>
<td>Geometry</td>
<td>L / T / T / R</td>
<td>L / T / T / R</td>
<td>L / T / TR</td>
<td>L / T / TR</td>
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<tr>
<td>Volume (vph)</td>
<td>309</td>
<td>515</td>
<td>303</td>
<td>279</td>
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<tr>
<td>v/c</td>
<td>0.9</td>
<td>0.48</td>
<td>0.44</td>
<td>0.78</td>
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<tr>
<td>Delay (s)</td>
<td>54.9</td>
<td>40.4</td>
<td>5.4</td>
<td>40.9</td>
</tr>
<tr>
<td>LOS</td>
<td>D</td>
<td>D</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>95th Queue (m)</td>
<td>#98.9</td>
<td>89.7</td>
<td>22.2</td>
<td>#84.9</td>
</tr>
<tr>
<td>Intersection Delay</td>
<td>29.7</td>
<td>Intersection LOS</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

Based on the assessment there are no significant delay or capacity issues, except for queueing for southbound left turning vehicles that may spill back into the through lanes and back to the first main access to the recreational center. The details are discussed as follows:

• The volume to capacity (v/c) ratio is well below the City’s threshold of 0.85 for all turning movements during the AM and PM peak.

• The level of service (LOS) is D or better for all movements, which is the City’s typical threshold for traffic operations. LOS D is equivalent to an average delay per vehicle from 35 to 55 seconds. The average delay in seconds that correlates with the LOS is published in the table for reference.

• The overall intersection LOS is C for both AM and PM peak hours, which is equivalent to an average delay of 20 to 35 seconds per vehicle at the intersection.

• The 95th percentile queue (95th Queue) represents the queue length that should be accommodate within the respective turn lane.

• The eastbound and westbound left turn lane provided over 100 m of storage and sufficiently accommodate the calculated 95th percentile queue.

• The southbound left turn lane provides approximately 40 m of storage which is less than the calculated queue of over 92 m. While the delay is acceptable (LOS D) for this movement, queueing is expected to
block access to the transit centre and spill back to the first main access road into the recreational centre. As such, access to the library should only be permitted where it is aligned with the first main access road.

- The City should consider adding a southbound left turn phase at this intersection to help clear up the queueing.
- The northbound left turn lane provides approximately 50 m of storage, which is slightly less than the calculated queue of 67 m. There will be some minor spillback from the left turn lane into the through lanes.

4.5.2 Review of ATF Concept Parking

2018 ATF Concept Plan: The 2018 ATF Parking Study (2018 parking study) recommends 175 parking stalls based on the highest parking demand measured at one site during playoffs with back to back games. Many other sites that were measured for the 2018 parking study had much lower demands, averaging at 110 parking stalls needed during the regular season. In comparison, the City of Edmonton bylaw requirement is 10 parking stalls and a typical soccer pitch parking demand is 65 parking stalls, based on the Institute of Transportation Engineers, Parking Generation Manual.

The 2018 parking study also concluded that peak parking occupancy for the entire BAAG site is approximately 65 – 70% for the busiest time of the year (Saturday in November). The existing site provides approximately 1025 parking stalls, excluding stalls provided at Lillian Osborne High School, and parking occupancy is broken down as follows:

- Parking lots within the inner ring road are utilized at around 90% capacity. These parking stalls are much closer to the main center.
- Parking lots on the outer are utilized at around 40% capacity.
- Total parking demands are well accommodated within the entirety of the site, with approximately ~300 – 350 stalls unoccupied on the busiest day of the year, excluding special event days.

Current, 2020 ATF Concept Plan: The ATF location is changed to the north side of the outer road and the parking lot size is reduced from 168 to 100 parking stalls, compared to the 2018 concept plan. The parking lot provides 75 less stalls than the recommendation made in the 2018 parking study. Additional parking supply is available within walking distance of approximately 250 m to the ATF facility and includes on-street parking and parking within the inner ring road, as follows.

- Approximately 50 additional parking stalls are available on the north side Leger Road, west of Leger Way, noted as not highly occupied in the 2018 parking study, due to availability of other more convenient parking stalls.
- Approximately 20 additional parking stalls available on Leger Way, north of Leger Road. These parking areas were not included in the 2018 parking study, but are expected to be available for ATF facility users.
- A small number of parking stalls (~15) available within the rear parking lot of the recreational centre, otherwise the area is designated as staff parking. These stalls are highly utilized by the recreational centre.

In addition, school parking at the Lillian Osborne School and Mother Margaret Catholic School may be made available. Using existing school parking for the ATF facility could be realistic where one or both high schools will be users of the ATF and through a joint use agreement use of school parking would be made available on an event by event basis. The number of parking stalls available at the schools are as follows:

- Approximately 60 additional parking stalls are available on the northeast corner of Lillian Osborn School that could be used for the ATF where there are events occurring when the school is not using parking
- 176 parking stalls are available on the south side of Lillian Osborne School and these could be used in a similar way.
- 97 parking stalls are available on the east side of Mother Margaret Catholic School
ATF Special Events: Special events that are meant to fill the entire seating capacity are recommended to occur outside of peak times of the year. The City can provide an inventory of events ongoing through the year and advise when peak times occur. From the 2018 study, July/August appears to be a low demand period.

- Planning parking for special events occurring a few times of year results in parking being underutilized during the rest of the year and this is not recommended.
- Alternatively, traffic and parking management plans should be created for special events occurring during peak times of the year, including options that limit users access to the site (similar to Heritage Festival) and use of park and ride.

Recommendations (ATF Parking)

The following is recommended for based on the parking assessment for the ATF.

- No additional parking is recommended.
- The 100 stall parking lot, plus a small amount of parking on-street will be sufficient for regular season events, based on the 2018 parking study that indicated 110 parking stalls are needed for regular season events.
- During playoffs events, where there are back-to-back games, 175 parking stalls will be needed based on the 2018 parking study. The additional parking needed will be taken from on-street parking on Leger Road and Leger Way, where there are 70 parking stalls available within a 250 m walk to the ATF facility. A small amount of users may choose to park at the recreational centre inner lot, which will offer some additional parking capacity. Additional overflow parking is available further to the west, approximately 450 m walking distance to the ATF and is available if needed.
- Providing parking to accommodate special events is not recommended, however a traffic and parking management plan should be created. It could leverage the existing transit centre and park and ride opportunities.
5.0 Concept Design Plan

5.1 Artificial Turf Facility Preliminary Options

Based on the review of the site, consideration of geotechnical and grading recommendations, and consideration of school and public use of the site, three concept options for the Artificial Turf Facility layout in the northeast corner of the site were prepared for discussion with the various stakeholders. These plans show the facility, parking and the impact on the existing play fields (soccer and baseball fields).

Each option orients the long length of the ATF in a north-south configuration, the ideal layout for these facilities. The AFT would provide a four lane running track, a full size football field and a regulation FIFA soccer field. The existing sports fields affected include one 200’ baseball diamond, one 300x160’ soccer field, 1 330x65’ soccer field and two 180x90’ soccer fields (See Figure 7-9).

- **Concept Option 1** – The ATF is located to the north end of site with access from Leger Road NW through the Mother Margaret Mary Catholic School entrance. This option affects all the existing sports fields, with room for potentially replacing the ball diamond or one large soccer field. Boreholes indicate an existing fill removal between 3.2m and 4.3m. Grade drop from south to north approximately 3.5 metres, balance of cut and fill would be greater in this location. This option was considered high risk in the geotechnical report but with minimal site preparation within footprint of floor slabs, track and turf field, and pavement areas, consisting of stripping topsoil, standard subgrade preparation and fill placement. Risks include significant differential and total settlement of slabs-on-grade. Option 1 is cost effective in terms of initial construction but potential higher than normal costs for repair, should settlement occur.

- **Concept Option 2** – Locates the ATF in the southeast corner of the same site, with the same parking access as option 1. The layout would allow for maintaining the baseball diamond and relocating 2 small soccer fields. The other potential field layout option would be to replace the ball diamond with large soccer field. This is the optimal location for the ATF based on the geotechnical findings, as the existing fill replaced with engineered fill would be less. Boreholes indicate an existing fill removal between 1.4m and 3.2m. Most economically feasible location. Grade drop from south to north approximately 3.0 metres, balance of cut and fill would be the less in this location. Option 2 would remove existing unsuitable fill and organic soils and replace with engineered fill within footprint of floor slabs, track and turf field and pavement areas. Considered low to medium risk of poor performance of the slab, track and turf field, and pavement areas the greater the replaced fill the greater the risk of poor performance of the slab. Construction costs anticipated to be higher than option 1 due to fill replacement, but lower long-term costs should repair be required than Option 1.

- **Concept Option 3** – In this option, the ATF is located in the southwest corner with access directly from Leger Road NW. this access would be directly across from the Lillian Osborne High School north parking lot access. Similar to option 2, the baseball diamond could remain or be replaced with a full size soccer field. Location is less desirable due to the increase in existing fill removal required. Boreholes indicate an existing fill removal between 2.7m to 5.0 m. Grade drop from south to north approximately 4.0 metres, balance of cut and fill would be greater in this location. The geotechnical recommendation for Option 3 propose structurally supported slabs for the building. The use of structurally supported slabs in the footprint involves the lowest risk of poor performance of the slabs. Construction costs anticipated to be the highest but option has minimal long-term costs. Option to use structurally supported slabs under the track and turf field, would be lowest risk of poor performance but is likely cost prohibitive.

In reviewing these three options with the stakeholders and comparing the layouts to the geotechnical study, it was determined that Option 1 was not ideal. The distance from the roadway and other recreation facilities, and the extent of existing undesirable fill to be replaced was too great.

See Figures 7 – 9: LA 05 to LA 07.
5.2 Concepts 1 and 2

Concept 1 and Concept 2 have been developed further based on the initial layouts of Option 2 and 3. These concepts refine the ATF layout, illustrate a 750-1000 person grandstand, 100-car parking lot, pedestrian circulation and track access for maintenance and snow removal. The preferred location of the ATF is on the south portion of site, adjacent to Leger Road NW.

Site access for Concept 1 and 1A is shared with the existing Mother Margaret Mary Catholic School. Concept 2 and 2A indicate a new entrance be created along Leger Road NW directly across from the Lilian Osborne north parking lot. Concepts 2 and 2A were the preferred options by the Arena and Facilities Group. This layout provides direct access to Leger Road NW, eliminating concerns with traffic and maintenance access through the school entrance. The layout creates a greater buffer between Archbishop Joseph MacNeil Catholic School and the future Oak Hill Community Centre.

See Figures 10 and 11 – Concepts 1 and 1A.
See Figures 12 and 13 – Concepts 2 and 2A.
6.0 Preferred Concept Plan

Based on the input from the community stakeholders and City staff, a preferred concept plan was prepared based on the ATF facility layout of Concept 2A. Based on this preferred concept, the recommended development for the BAAG Concept Plan update will include:

- **ATF - Optimal layout for the proposed artificial turf facility based on concept 2A.** Option allows for relocating the most number of existing sports fields on the site, room to maintain the existing baseball diamond or replace with a soccer field. Direct site access from Leger Road NW into a 100-stall parking lot, with potential to expand within boundary. Option does allow for sharing entrance and potential parking stall expansion with the future Oak Hills Community League. The field is accessible for maintenance on the north and south ends via walks/service roads and gated entrances. A building footprint that allows for storage and offices under 750 - 1000 person grandstand. Pedestrian connections to Leger Road NW and to the Recreation Centre, High School and transit centre. Some existing trails to the north of ATF may require adjustment to accommodate sports fields as illustrated. Future crosswalks required to address pedestrian crossings on Leger Road NW as noted in Appendix A.

- **New Public Library - the Edmonton Public Library to be located at the southwest corner of the overall BAAG site.**

- **Existing Unused Open Space - The existing unused lands along the west property is identified as Partner Lead Development Lands, should user groups come forward with proposals to develop in the park.** The site has been left as unprogrammed space for future partnerships but does not preclude the potential for tennis courts and hard wheel surface sports.

- **EPSB K-8 Public School Lands - A formal agreement with EPSB and the City is required to move EPSB land to the existing unused open space.**

- **Second Park Sign – Consideration for future second BAAG Park sign will be confirmed at a later date, pending confirmation of location and cost.**

This preferred concept plan is intended to be presented to the public at a future date for additional feedback. Based on City and stakeholder review, and public feedback the concept plan will be adjusted accordingly.

See Figure 14 and 15 – Preferred Concept Plan.
7.0 Costing

The following defines the recommended strategy for implementation of BAAG Concept Update, including capital costs. Costs are Class 4 cost estimates with a 25% contingency added overall, but no future inflation factor has been calculated.

ATF

Arenas and Facilities identifies this as the top priority for development, therefore it is recommended the City begin the schematic and detailed design process. The cost include the site preparation requirements, relocation of existing sports fields and the facility as illustrated in the preferred concept plan.

Partner Lead Development Lands

Recommend that these undeveloped lands be grade level, topsoil and seeded to create usable un-programmed green space, until such time that any additional uses are developed by partnerships. The informal bike track area could remain in current state until a formal land use is identified.

EPL

The EPL is reviewing the site for a 2-storey 18,000sq² library. The geotechnical report has been shared with EPL. Costs for the library and potential cost implications to the site development due to the geotechnical results. The estimated cost related to the library site development and building are not assessed and therefore not included within this report.
Table 6: Order of Magnitude Costs

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<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Units</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Total</th>
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<td>1.00</td>
<td>Artificial Turf Facility</td>
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<td>1.01</td>
<td>Site preparation</td>
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<td>Earthworks - Site area = 27,000m³</td>
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<td>Trees</td>
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<td>122</td>
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<td>1.12</td>
<td>Relocate two U9 sized soccer fields</td>
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<td>2</td>
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<td>1.13</td>
<td>Relocate U9 baseball diamond</td>
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<td>2.00</td>
<td>Partner Lead Development Lands</td>
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<td>Total including 25% contingency</td>
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Note:
1. Assumes existing large baseball diamond to remain north of ATF.
8.0 Summary

The overall goal of this Concept Park Update Plan is to deliver a strategic approach to the design and long term development of the remaining undeveloped portions of Bryan Anderson Athletic Grounds.

The driver of the study was the evaluation and recommendation of an alternate location for a proposed ATF within BAAG, which was previously identified as a priority location for an ATF in the southwest area of the City. Through the assessment of the proposed ATF site, consideration of land use constraints, analysis of parking and traffic, and dialogue with key stakeholders, it was determined that the proposed site could support an artificial turf facility. Three concept options were prepared, assessed and further refined, and then a preferred concept plan was developed, refined, costed and then recommended for implementation.

This Concept Plan Update and associated geotechnical and site review, provides the City with the required background to proceed with the next phases of development review and implementation. Since public engagement was not completed during preparation of the Concept Plan Update due the COVID-19 pandemic, it is recommend that the City complete engagement at some point preceding the next phases of implementation, to gather further feedback on the concept design and potential uses for the partner lead development lands.
Appendix A
Bryan Anderson Athletic Grounds Accessibility and Shortcutting Assessment