



September 25, 2017

**TO:** Park Board Chair and Commissioners  
**FROM:** General Manager - Vancouver Board of Parks and Recreation  
**SUBJECT:** Synthetic Turf Playing Field - New Site Options

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## RECOMMENDATION

**THAT** the Vancouver Park Board endorse Beaconsfield Park, Clinton Park, and Sir Winston Churchill Secondary school for consideration as the potential site for a new synthetic turf playing field to be funded by Citywide Development Cost Levy (DCL) Funds, subject to further technical review and a public process.

## POLICY

The 2015-2018 Capital Plan outlines the Park Board's current capital spending program. The Capital Plan includes an allocation of \$2,000,000 for the construction of a new synthetic turf playing field.

The Park Board, in cooperation with the Vancouver School Board (VSB), wants to support a bright future for athletes by meeting demand and where possible increasing participation in field sports. Doing so will support both competitive athletes and a diverse range of users with differing abilities and interests. Increasing access and participation in field sports for residents of Vancouver supports the City of Vancouver Healthy City Strategy, Vancouver Sport Strategy, and the Park Board Strategic Framework, which are all aimed at providing accessible, diverse, and quality amenities and services that encourage participation to meet current and future needs.

## BACKGROUND

Vancouver has 286 playing fields, including regulation-size and mini grass fields, gravel or all-weather fields, and 12 synthetic turf fields (including one mini synthetic turf field). Demand is high for field space for soccer, field hockey, ultimate, football, rugby, and many other sports, and synthetic turf allows for 105 hours of use each week (approximately 48 hours at prime time), compared to grass fields that operationally can only sustain a maximum of 12-14 hours a week and require seasonal downtime to ensure adequate field quality.

Despite increasing the inventory of synthetic turf fields significantly over the past ten years (from 3 to 11), demand continues to exceed supply. The average utilization rate of synthetic turf during out-of-school hours is 91%, with usage occurring almost every day of the year. Empire Fields, which opened in 2015, has 100% of primetime hours booked and provides over 5000 hours annually of permitted use.

Synthetic turf fields are durable and efficient facilities that accommodate unlimited usage, despite Vancouver's wet climate, and allow for greater intensity of use than natural turf facilities. They also require significantly less maintenance and upkeep as they maintain their

even surface, do not require mowing or seeding, and generally have life spans of 10 years with proper upkeep.

## DISCUSSION

The allocation for synthetic turf playing fields in the 2015-2018 Capital Plan provides sufficient funding, given reasonable site conditions, for the installation of one synthetic turf field with associated field lighting.

### Health and Environment

Concerns have been raised about health and environmental impacts of the recycled crumb rubber commonly used as infill for synthetic fields. Recycled crumb rubber infill has been used for many years in recreational products such as running tracks, playground surfacing, resilient flooring, and training mats. Recently, US National news outlets released stories concerning the health effects of crumb rubber in synthetic turf and a possible link between crumb rubber and cancer. As a precautionary measure, staff appealed to reputable sources for information to form a basis for recommendations, including a synthetic turf consultant and the Chief Medical Health Officer (CMHO) for Vancouver Coastal Health. In a March 2016 letter to the Park Board General Manager (see Appendix A), the CMHO provided the following statements:

- “Serious health risks, including cancer, are not increased from playing on synthetic turf fields with crumb rubber infill”
- “There is no public health reason for discontinuing the use of synthetic turf”

New and greener synthetic turf products are becoming available in the industry. A new product was used successfully in the Kerrisdale Park synthetic turf field renewal project at Point Grey Secondary in 2016, and a sustainable approach will also be used for the 2018-19 project. Staff will bring forward further information to the Board about synthetic turf material selection when recommending a final site.

### Location

Staff have worked collaboratively with representatives of the Vancouver Field Sport Federation (VFSF) to create the shortlist of candidate sites shown below (in alphabetical order). Subject to the Board’s endorsement, staff will conduct a technical review of each potential site, including geotechnical testing, and complete a public engagement process before returning with final location recommendations, which will include cost estimates and a schedule for delivery of the project in 2018-19.

Potential 2018-19 Site	Comments
Beaconsfield Park	Existing lit all-weather gravel field near Italian Cultural Centre.
Clinton Park	Existing lit all-weather gravel field in northeast corner of park.
Sir Winston Churchill Secondary (Vancouver School Board Site)	Two existing unlit grass fields south and east of school.

Other high-potential sites remain a priority for both the VFSF and Park Board staff, but timing is not appropriate for 2018-19 due to other site constraints, potential conflicts, and planning efforts. The following sites will be strongly considered in the near future and will inform the 2019-2022 Capital Planning process.

Potential Future Sites	Comments
Killarney Park and School Site	Site master plan required to consider new Seniors Centre, school seismic upgrade, impacts of VanSplash Aquatic Strategy, and the Track and Field Strategy, as well as the potential for up to two synthetic turf fields.
Oak Park	Site master plan required to consider Community Centre redevelopment.
Vancouver Technical School	Awaiting outcome of the Track and Field Strategy and further input from VSB about existing uses and plans for southeast corner of site.
Strathcona Park	Awaiting further details of the Flats Plan implementation and potential new transportation projects in the neighbourhood that may impact Strathcona Park.

The Vancouver School Board has partnered with the Park Board on three existing synthetic turf installations: Eric Hamber, Point Grey (Kerrisdale Park), and Vancouver Technical secondary schools. These jointly developed sites are functioning well. Synthetic turf fields at school sites are efficient, as students use fields during non-peak school hours and local sports groups have access during peak times without any impact on existing shared park spaces.

One of the candidate sites, Sir Winston Churchill Secondary, is on VSB property and will require further discussion with the VSB, as well as a legal agreement similar to other shared use VSB and Park Board sites.

### Site Considerations

The condition of each site is thoroughly reviewed when developing synthetic fields and uses. The following factors were considered in evaluating and identifying preferred candidate locations:

**Level and stable ground:** This critical factor can significantly impact project costs. Few, if any, of the available sites have ideal ground conditions. The completion of geotechnical testing is essential before committing to any site as it will determine whether the project is feasible and can be delivered within budgetary limits. Engineering can correct most ground stability issues, but the costs of such work can be prohibitive.

**Existing trees:** Wherever possible park development projects avoid negatively impacting healthy existing trees. Synthetic turf fields have ideal minimum dimensions of 100m x 64m, plus run-out zones on all sides and require room for amenities such as fencing, warm-up space, covered benches, and washroom

facilities. Expected tree impacts are minimal at the current sites under consideration.

**Local neighbourhood acceptance:** Major park developments rarely, if ever, receive universal support, but every field development should have “champions” within the surrounding neighbourhood and a potential local user base. Staff will gather this information through the consultation process.

**Impact to adjacent residences:** Illumination from the latest generation of field lighting systems is tightly focused on the playing field and effectively contains light spillage around the field margins. Even so, there should be a buffer zone between the field lighting and the nearest residences. Per the table above, two of the selected shortlist sites have existing lights and will have limited impact to adjacent residences. Park Board would replace existing field lighting systems with new systems, employing technologies that greatly minimize the spillover of light outside of the target area.

**Maximize increase in playing capacity:** Given a range of options, it is ideal to construct a new synthetic turf field on a site where there is no existing field, or on a little used or poor quality grass or all-weather field. Staff have been reluctant in the past to convert any of the lit all-weather fields to synthetic; these fields already see high levels of play as they are often used for evening winter training and, when grass fields are closed due to weather, as back-up for gameplay. As the synthetic inventory grows, maintaining the all-weather capacity is less of a concern, and for this reason, the short-list includes two sites that currently have all-weather fields.

**Proximity to a secondary school:** The partnership between the Park Board and the VSB established through the Field Renewal Plan has brought three synthetic turf fields into the system, supporting the programming needs of both organizations. The immediate shortlist includes one partnering scenario at Churchill Secondary.

**Service distribution:** The existing synthetic turf fields are well distributed amongst the west, east, and central neighbourhoods of the city. For this next immediate phase of development, service distribution is less critical. Churchill Secondary is a central site near to future rapid transit expansion and could increase synthetic turf access to many existing users across the city. Clinton Park is fairly close to both Vancouver Technical High School and Empire Fields, but is still an accessible site in a high demand area. Beaconsfield is also close to Vancouver Technical School, however this proximity may be advantageous for club programming (enabling technical staff to support many volunteers in youth sports from a central location), and tournament hosting.

## Next Steps

With Board endorsement of the proposed candidate sites, staff will undertake a more in-depth technical analysis of each site, including geotechnical testing at a cost of approximately \$50,000 for all three locations, with funds coming from the synthetic turf field capital account. Public and stakeholder consultations will follow, including further consultation with VFSF and VSB, with open houses held in proximity to each of the sites to discuss the development proposals and to receive input at the neighbourhood level.

## **SUMMARY**

Staff recommend that the Board support the proposed short-list of potential sites for a new synthetic turf playing field to be delivered in 2018-19. This short-list will provide the basis for a further feasibility study, including geotechnical testing and technical analysis, followed by a public engagement process. Staff will report back to the Board with a final location recommendation, including the findings of the technical review and public process, when the study is complete.

General Manager's Office  
Vancouver Board of Parks and Recreation  
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Letter from Chief Medical Health Officer



Office of the Chief  
Medical Health Officer

#800 - 601 West Broadway  
Vancouver, BC V5Z 4C2

March 24, 2016

Mr. Malcolm Bromley  
General Manager,  
Vancouver Board of Parks and Recreation  
2099 Beach Avenue  
Vancouver, British Columbia  
Canada V6G 1Z4

Dear Mr. Bromley,

**Re: Synthetic Turf**

I am writing in response to your letter dated February 26, 2016. In the letter you asked for updated Public Health recommendations regarding synthetic turf fields. My staff recently reviewed the existing evidence with respect to synthetic turf and health risks, particularly given the recent public interest about the use of recycled crumb rubber for these turfs. We came to the following conclusions and recommendations in light of current information:

- Serious health risks, including cancer, are not increased from playing on synthetic turf fields with crumb rubber infill
- There may be more burns, cuts and scrapes, and ankle injuries from playing on synthetic turf compared to natural turf
- On hot days, synthetic turf can get extremely hot which may cause heat related symptoms in players
- There is no public health reason for discontinuing the use of synthetic turfs

There are potential public health benefits associated with synthetic turf fields. Synthetic turf provides more total available playing hours than natural fields, as it can be used all year round in all-weather situations. This could increase community access and opportunities for physical activity. This can be very important since most of the residents in our region, including children, do not achieve the daily recommended levels of physical activity.

In our review, we also became aware however of the possibility that synthetic turfs may act like urban heat islands in the summer. While this evidence comes from places that typically have hotter summers than Vancouver, and there is no local data, it is something the Board may consider as our region experiences climate change.

Given the present knowledge, we recommend the following to address the potential concerns associated with synthetic turf, as well as to minimize exposure to the crumb rubber and other components of the synthetic turf:

*Promoting wellness. Ensuring care. Vancouver Coastal Health Authority*

Letter from Chief Medical Health Officer

- 2 -

**1. For players (or for parents to monitor)**

- Stay well hydrated on hot days and stay in the shade when possible to reduce the risk of heat related illness
- Properly clean any skin wounds or abrasions, including removing any pieces of crumb rubber, and seek appropriate treatment when necessary
- Wash hands and shower after playing on synthetic turf
- Do not eat on synthetic turf
- Remove crumb rubber pellets as much as possible from shoes, socks and uniforms after playing

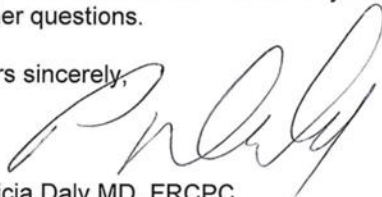
**2. For Sports Organizations, Facility Operators, Spectators, Families**

- Ensure vegetation and tree canopy are maximized when landscaping areas surrounding synthetic turf fields
- On extremely hot days, water the synthetic turf to reduce the temperature of the playing field
- Provide a shaded area for players on hot days
- Ensure players and spectators have easy access to drinking water
- Maintain proper ventilation for indoor fields
- Purchase new turf with the lowest lead content available on the market
- Ensure small children, either players or spectators, do not eat pieces of the synthetic turf or crumb rubber
- Regularly inspect, maintain, repair and replace synthetic turf fields as they show wear and damage and in accordance with manufacturers' recommendations.

We are aware that the State of California Office of Environmental Health Hazard Assessment (OEHHA) is currently conducting additional synthetic turf studies to supplement previous OEHHA studies conducted in 2007 and 2010. Recently the U.S. Environmental Protection Agency, Centers for Disease Control, and Consumer Product Safety Commission also launched a joint study on synthetic turfs. It is expected some results from these ongoing studies will be released by the end of 2016. Vancouver Coastal Health will continue to monitor and review the new scientific evidence as they become available.

I hope this information is useful to you. Please do not hesitate to contact us again if you have further questions.

Yours sincerely,



Patricia Daly MD, FRCPC  
Vice-President, Public Health and Chief Medical Health Officer  
Vancouver Coastal Health

CC: Randy Ash, Manager Health Protection, Healthy Built Environment, Health Protection,  
Vancouver Coastal Health

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