



SYNTHETIC TURF REPLACEMENT

OAK MEADOWS & KERRISDALE PARKS

PARK BOARD
COMMITTEE MEETING

May 2, 2016



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4. Engagement
5. Oak Meadows Park (Eric Hamber Secondary School)
6. Kerrisdale Park (Point Grey Secondary School)
7. Procurement
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9. Summary

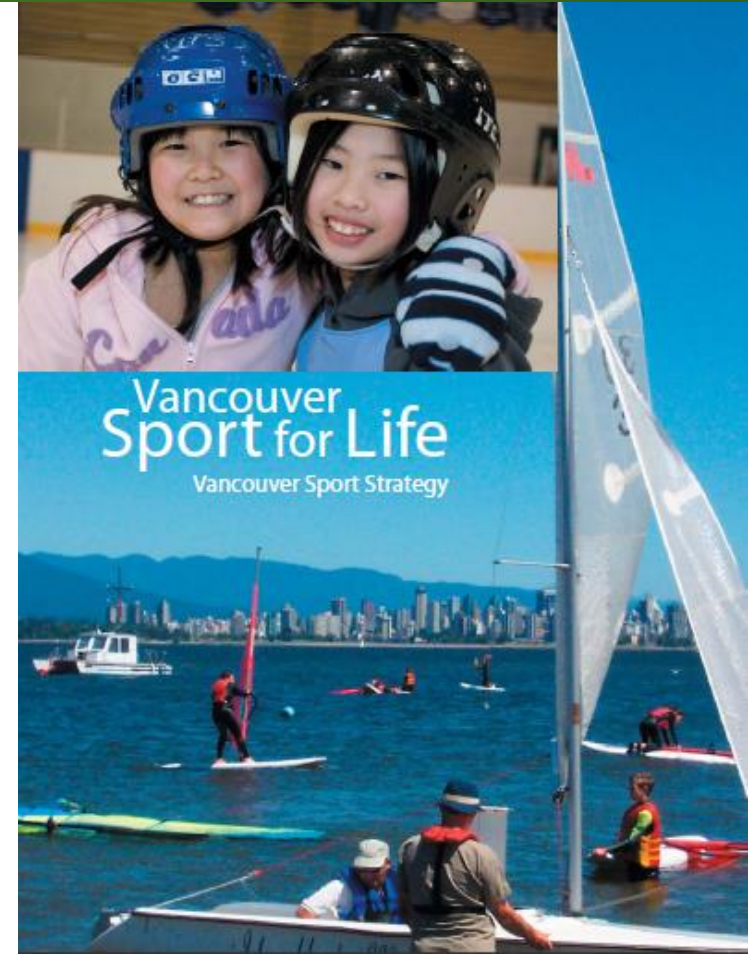
- A. THAT, subject to Recommendations C, D and E, the Vancouver Park Board enter into a contract with **Carpell Surfaces Inc.** in the amount of **\$799,661.16** for the installation of synthetic turf and an elastic layer at Oak Meadows Park, for PS20160293 - Supply and Install of Synthetic Turf at Oak Meadows Park and Kerrisdale Park as detailed in this report;

- B. THAT, the Vancouver Park Board select infill product Option i,ii,or iii and enter into a contract with **Carpell Surfaces Inc.** for a 60mm synthetic turf with the selected option for Kerrisdale Park, and with a bundled savings of \$10,000, for PS20160293 - Supply and Install of Synthetic Turf at Oak Meadows Park and Kerrisdale Park as detailed in this report and subject to Recommendations C, D and E;
- i. Infill Product: **Greenplay Organic Infill (cork)** infill for \$726,274.94, subject to an approved capital budget increase of \$126,678;
 - ii. Infill Product: **Recycled Crumb rubber and sand** for \$599,596.94; or
 - iii. Infill Product: **Thermoplastic Elastomer (TPE)** infill for 859,862.08, subject to an approved capital budget increase of \$260,265.

- C. THAT the contract be on the terms and conditions outlined in this report and on such other terms and conditions as are approved by the General Manager of the Vancouver Park Board in consultation with the Director of Legal Services;
- D. THAT, upon approval of the contract by the General Manager of the Park Board in consultation with the Director of Legal Services, the General Manager of the Vancouver Park Board be authorized to execute the contract on behalf of the Board; and
- E. THAT no legal rights shall arise hereby, and none shall arise until execution of the contemplated contract, and the Board reserves the right to rescind this resolution at any time up to the execution and delivery of the contemplated contract by the General Manager of the Park Board.

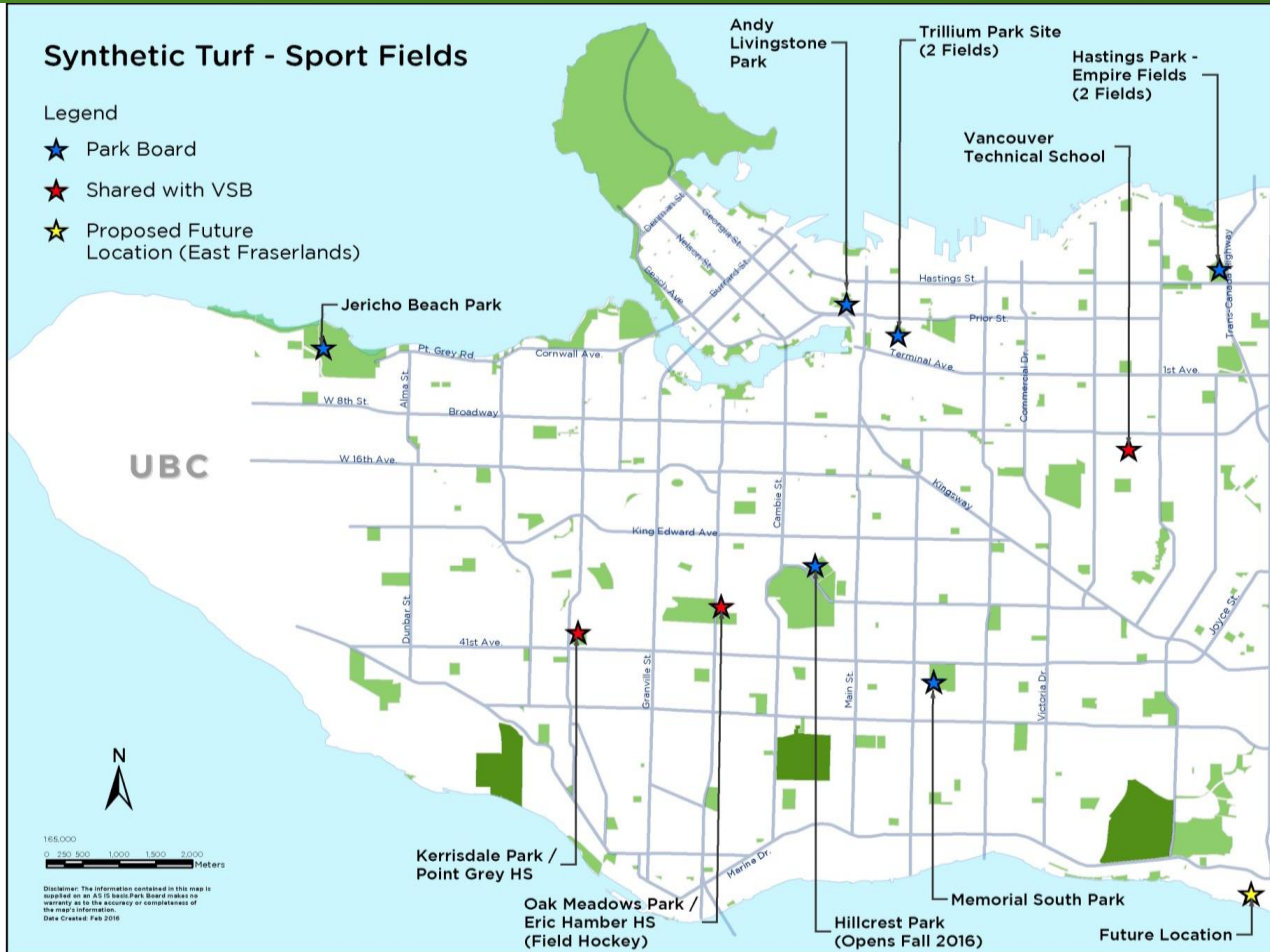
Background – Strategic Plan Alignment

- Park Board Strategic Plan - Parks and Recreation for All and Excellence in Resource Management
 - **Well Managed Infrastructure:** The field will be built with quality for low maintenance and durability.
- Vancouver Sport for Life Strategy
 - **Quality facilities for participation and performance:** Facilities are built for excellence and sport hosting to serve regional needs; the facility design and development is informed by a solid understanding of the sport context and its requirements



- 11 synthetic fields in the VPB inventory
- A synthetic turf field provides 4-6 times more play than grass
- First field build at Oak Meadows Park in 1987
- Vancouver Field Sport Federation and Vancouver Sport Network support the inventory and its growth
- Average life of a synthetic field surface is 10 years

Background – Location of Synthetic Fields



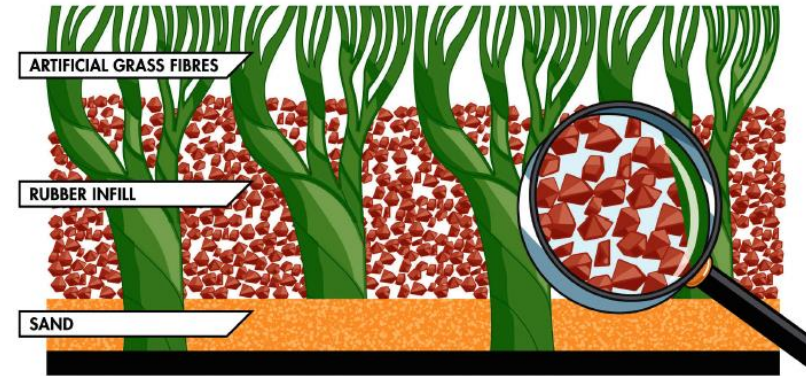
Background – Synthetic Fields Inventory



Park Location	Year Open	Comments	Replacement Year (Target)
Oak Meadows Park (Eric Hamber Secondary School)	1987/ 2003	2003 – replaced turf only (field hockey turf with e-layer)	2016
Kerrisdale Park (Point Grey Secondary School)	2006		2016
Vancouver Technical School	2008	Goal and centre field wear noted	2019
Andy Livingstone	1995/ 2009	Turf surface replaced in 2009 drainage issues	2019 (or coordinated with new parks and renewals)
Jericho Beach Park West Field	2010		2020
Memorial South West Field	2010		2020
Trillium Park Site (2 fields)	2010		2020
Hastings Park – Empire Fields (2 Fields)	2015		2025
Hillcrest Park	2016	Youth Field	2026

Background – Types of synthetic fields

- No infill, short pile (field at Oak Meadows Park)
- Crumb rubber and sand (10 Park Board fields)
- Ethylene Propylene Diene Rubber infill (EPDM) – did not receive submission
- Thermoplastic elastomer (TPE) infill
- Organic (coconut fiber and/or cork blend)



Source: www.wellesley.ma.gov



Photo 1: Crumb rubber Source: tbo.com



Photo 2: TPE Source: www.tpeinfill.com



Photo 3: Cork & Coconut Fiber



Photo 4: Cork

What is it?

- Harvested from organic components such as natural cork and/or ground coconut fibers
- Bowen Island has a 8 year old coconut fiber/cork infill field, and Port Coquitlam has a 3 year old cork infill field that we have inspected
- Cork sourced from renewable European forests

Advantages

- Natural product, players comment it feels more natural to play upon
- Lower surface temperature

Disadvantages

- Cork floats and migrates during periods of intense rain
- Prone to compaction because organic products decompose
- Susceptible to freezing due to low water permeability (few freezing days in Vancouver)
- Additional capital and maintenance costs, uncertain life span with few experienced suppliers

What is it?

- Rubber derived from recycled materials like used tires or running shoes
- Produced by shredding or cryogenic (freezing) process
- Often includes sand in the infill mix for ballast
- 10 of 11 Park Board fields have this infill (Oak Meadows is the exception)
- Meets MoE soil standards for Urban Park

Advantages

- Fewer tires are dumped in the landfill
- Cost and availability
- Can be washed and reused as infill
- Can be repurposed for backfill or in asphalt

Disadvantages

- Not organic
- Media cited health concerns
- Surface temperature of synthetic fields with crumb rubber infill is higher than natural grass or organic infills
- Off gas odour

What is it?

- Thermoplastic elastomer - a man made material
- Made from origin guaranteed and first-use raw materials
- Used in reusable food storage containers
- This type of infill is used in the US as a Green alternative to crumb rubber. California's Proposition 65 compliant.

Advantages

- Can be washed and reused as infill or reprocessed to create other products at the end of its life cycle
- Contains no cancer causing PAH's or heavy metals
- Low maintenance, high performance, minimal 'spray', cooler than crumb rubber, no compaction of infill

Disadvantages

- High cost, inorganic, surface temperature higher than organic

Background – Life Cycle Costs – 10 year estimate

Infill	Crumb rubber & sand	33/67 TPE & sand	50/50 TPE & sand	Cork	Cork & coconut
Turf pile height	60mm	60mm	60mm	60mm	60mm
Capital cost to upgrade	included in the base price	\$260,265	\$348,277	\$126,678	\$126,678
Maintenance & grooming for 10 years (excludes debris removal)	\$54,600	\$54,600	\$54,600	\$109,200	\$109,200
Supply & install top-up material for 10 years	\$25,000	\$49,000	\$49,000	\$80,000	\$300,000
Removal	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Recycle, repurpose or dispose	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
TOTAL	\$114,600	\$398,865	\$486,877	\$350,878	\$570,878

- At threshold of needing another staff person and more equipment to maintain the growing inventory of synthetic fields
- An synthetic field with organic infill requires higher maintenance
- An investment of **\$150K** in staff and machinery would be necessary to satisfy the minimum maintenance requirements of a synthetic field with organic infill and the new field proposed in this capital plan
- Additional operating budget to be requested through a separate process

- Over 12,000 multi-use synthetic turf sites in North American schools, colleges, parks and professional sports stadiums. 98% of synthetic fields are infilled with crumb rubber in North America
- Recycled crumb rubber infill used for many years in recreational products such as running tracks, playground surfacing, resilient flooring, and training mats
- Crumb rubber is tested to meet the Ministry of Environment's soil characterization limits (Industrial for PAH's and Urban Park for all other components)
- Storm water run off from some fields enters the sanitary system for treatment (combined sanitary/storm sewers in Vancouver), in separated storm system locations there are catch basins with sediment traps

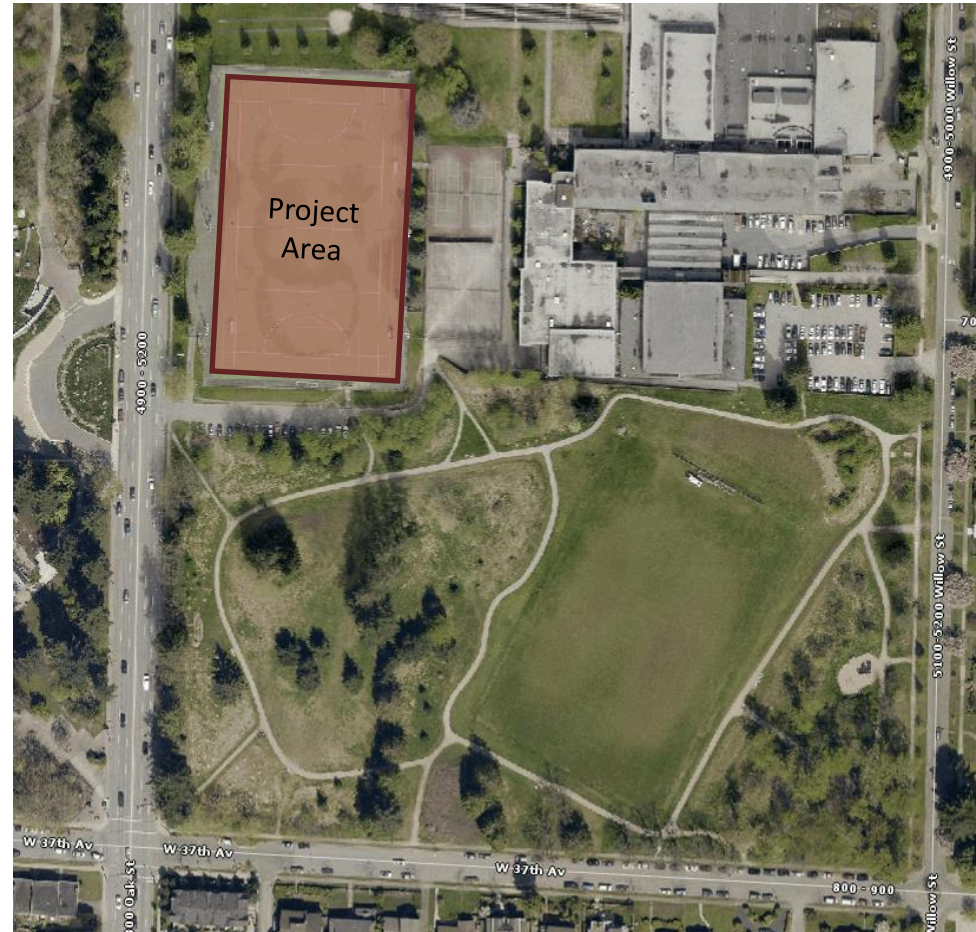
- US National news outlets released stories concerning the health effects of crumb rubber in synthetic turf and the possible link between crumb rubber and cancer;
- The Environmental Protection Agency (EPA) has embarked upon a new study that we are watching closely
- The GM appealed to the Chief Medical Health Officer for recommendations and advice, and she provided the following statement in March:
 - *“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”*

A photograph of two bald eagles perched on a thick, horizontal tree branch. The eagles are facing each other, with their heads turned slightly towards the center. They have white heads and necks, and dark brown bodies. Their yellow beaks and talons are clearly visible. The background consists of dense green pine needles and branches, suggesting a forest setting. The lighting is natural, and the overall tone is somewhat muted.

Oak Meadows Park

Background – Oak Meadows Park

- Located at Eric Hamber Secondary School (Oak Street & 37th Ave)
- Joint Use Agreement with VSB to be renewed in 2017
- Originally built in 1987; last replaced in 2003
- Repairs made to increase its longevity to 2016
- The only field hockey field (short pile type turf without infill) in Vancouver



Engagement: Oak Meadows Park

- Site signs and social media
- Three stakeholder meetings for Oak Meadows
 - Vancouver Field Sports Federation
 - Vancouver Hawks
 - Vancouver Jokers
 - Vancouver United FC
- Coordination with Vancouver School Board
- Turf product evaluation with stakeholders
- New field house to be built this summer (May-October)



A close-up photograph of numerous pink cherry blossoms in full bloom, filling the frame. The flowers are light pink with white centers and are clustered on dark brown branches. The background is a soft, out-of-focus light blue and white, suggesting a bright sky.

Kerrisdale Park

Background – Kerrisdale Park

- Located at Point Grey Secondary School (West Blvd & 41st Ave)
- Joint Use Agreement with VSB
- Last replaced in 2006
- Soccer field infilled with recycled crumb rubber Vancouver
- Field situated within a running track, 2463m² (or 30%) larger than a standard soccer field



- Two stakeholder meetings
 - Vancouver Men's Soccer League
 - Vancouver Ultimate League
 - Vancouver United FC
- Coordination with Vancouver School Board
- VFSF president, VPB staff and the consultant visited Bowen Island and Port Coquitlam synthetic fields that contain organic infill
- Turf product evaluation with stakeholders – Kerrisdale field interested in products that will provide longevity and low maintenance



Bowen Island cork & coconut fiber infill field



- Construction for the civil works is scheduled June - July
- Turf replacement is scheduled for July through September: dry warm weather is essential, especially for Oak Meadows Park.
- The field will be closed during construction. Recreation staff are working with user groups to book alternate fields for league play
- Construction funding is available in the 2015-2018 Capital Plan and 2016 Budget



Procurement Overview

- Park Board Procurement Policy Requires that contracts with values over \$500,000 and less than \$2.0 million require approval by the Vancouver Park Board, with Bid Committee and Chief Purchasing Official (CPO) concurrence
- The project was issued as an Request for Proposal (RFP) with a well-defined scope of work and specifications: the evaluation criteria is based on best overall value
- The RFP requested vendors to submit pricing and product information for turf and for crumb rubber, EPDM or TPE, and organic infill

- PS20160283 posted on February 25, 2016
- 4 vendor proposals received
- 3 of 4 vendors did not submit an organic infill option
- 2 vendors stated they cannot warranty an organic infill field
- Evaluation: technical, financial and legal compliance reviews
- Stakeholders provided input on the turf samples: feedback included in Consultant's technical evaluation
- The Bid Committee met on April 29, 2016

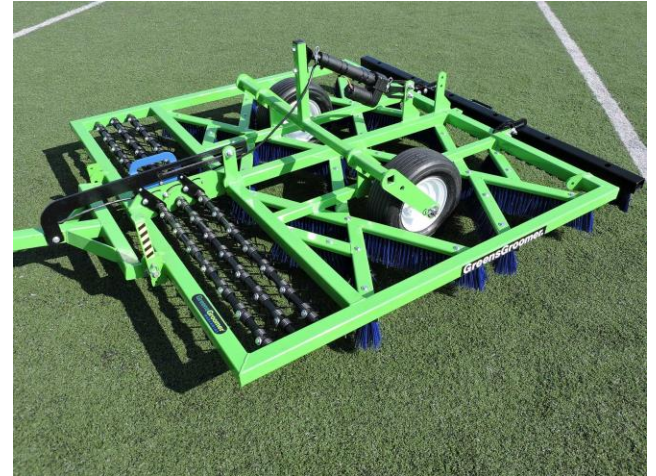
Company	Price
Carpell Surfaces Inc.	\$1,389,258.10
Davan Group Inc.	\$1,156,135.00
AstroTurf West Distributors Ltd.	\$1,545,000.00
Field Turf Inc.	\$1,873,839.00

- **Carpell Surfaces Inc.** provided the best overall value for both Oak Meadows Park and Kerrisdale Park
- Both products were well received by stakeholders and the consultant
- Successfully installed 32 FIFA certified fields in Canada
- Can meet the accelerated schedule
- Offers excellent warranty and post-installation support

- Xtreme Turf NFH 13 MF ET Decke 35
- Short pile texturized polyethylene fibres
- Rated FIH Global
- Adhesion to elastic layer not required. The elastic layer can be potentially reused in the next field renewal
- Made with a primary class of backing and annual stretching is not required
- 8 year warranty

- Xtreme Turf Premiere DX60
- FIFA 1 Star
- Polyethylene monofilament turf
- Turf fibre withstands 140,000 isport cycles – 5 times more durable than the other turf submissions
- Infill type to be confirmed
- 8 years warranty

- 3 years annual top up maintenance (includes a full inspection report)
- A free maintenance drag brush
- Bundled savings: \$10,000 off the original overall price



Source: www.greensgroomer.com

- Staff have considered the stakeholder input, consultant recommendations, literature, turf types available through this RFP, life cycle cost analysis, information from the Chief Medical Health Officer, and operating impacts.
- As a result, staff propose replacing the synthetic turf surfaces at Kerrisdale Park and Oak Meadows Pak with like surfaces.
- Staff ask the Board to weigh the options and analysis and select an infill product for the Kerrisdale synthetic turf field.

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