

# Contracts Award

Artificial Turf Field Civil Services,  
Turf and Infill Products

June 5, 2018

## RESORT MUNICIPALITY OF WHISTLER

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# Purpose

- Secure Council approval to award two contracts necessary to construct the artificial turf field
- Address public concerns

# Agenda

- Brief project background
- Public concerns
- Contracts
  - ✓ Civil services
  - ✓ Turf, shock pad and infill
- Whistler 2020 Analysis
- Other Policy Considerations
- Budget Considerations
- Community Engagement and Consultation
- Report Recommendations
- Questions

# Project Background

- Demand for fields exceeds ability to accommodate
- Ongoing field maintenance challenges
- 2008 Bayly Park Master Plan
  - ✓ Envisioned two fields
- 2012 Bayly Park Development Plan
  - ✓ Envisioned two fields
- 2013-15 Recreation and Leisure Master Plan
- Recreation and Leisure Advisory Committee

# Project Background

- Indoor Multi-Purpose Field-Based Recreation Facility
  - ✓ December 1, 2015 Committee of the Whole
- Outdoor ATF Needs Assessment
  - ✓ December 6, 2016 Committee of the Whole
- Comprehensive ATF Project Update
  - ✓ March 7, 2017 Council Information Report No. 17-017
- ATF Site Confirmation
  - ✓ November 21, 2017 Council Administrative Report No. 17-125
- 2018 – 2022 5-Year Financial Plan
  - ✓ \$2,815,000
    - Includes assumed \$100,000 external funding contribution

# Project Background

- Since November 2017
  - ✓ Design development
  - ✓ Tendered
  - ✓ Additional public concerns raised
    - Crumb rubber infill
    - Watercourse pollution
    - Costs to acquire necessary new maintenance equipment
    - Annual operating budget
    - Off gassing
    - Turf lifespan
    - Turf recycling

# Public Concerns

- Crumb rubber infill
  - ✓ Variety of feedback
  - ✓ US EPA study not concluded
  - ✓ Staff recommend against using crumb rubber
- ✓ Included in tender package
  - Baseline comparative cost
  - Encourage competitive pricing for alternative infills

# Public Concerns

- Migration of Infill and Turf Fibers into Watercourses
  - ✓ Infill
    - Different infill products have different migration characteristics
  - ✓ Turf
    - Migrate less in quantity than infill
    - Migrate increases when turf over worn



# Public Concerns

- Migration of Infill and Turf Fibers into Watercourses
  - ✓ Migration containment strategies
    - Select low migration infill product
    - Select stitched rather than glued turf fiber system
    - Install raised perimeter edge to contain migration
    - Install boot brushes and educational signage at all access and egress gates
    - Implement site overland drainage system that directs all drainage to sump style catch basins with inverted weir and filter
      - Slows drainage down
      - Allows migrated elements to be collected and reused
      - Allows monitoring
    - Replace turf before over worn

# Public Concerns

- ATF Lifespan

- ✓ Previously stated 10-15 year lifespan in Whistler
- ✓ Vancouver, Burnaby, Surrey, Langley
  - Over 35 fields, some entering third cycle
  - Fields used 12 months year
  - Typically replace fields at 10-12 years (120 to 144 months of use)
  - Current generation of turf exhibiting a slower wear rate
  - Shorter lifespans have occurred
    - Loss of impact cushioning where no shock pad installed
    - Poor drainage
    - Improper maintenance

# Public Concerns

- ATF Lifespan

- ✓ Whistler

- Expect at least 10 years
- Snow cover
  - provides ultraviolet light protection and reduces availability
- Our season only 8 months long
  - 120 months of use at 8 months per year equals 15 years

# Public Concerns

- ATF Recycling

- ✓ Current practice - remove, separate infill from turf, ship turf to recycling facility located in Asia
- ✓ Recycling facility
  - Certified by International Organization for Standardization (ISO)
  - Meets US Environmental Protection Act's Resource Conservation and Recovery Act
  - Separates turf from backing
  - Generates small pellets used to develop other products
    - Plastic lumber, irrigation pipe, other household products
- ✓ New turf recycling facility California 2020
- ✓ Turf repurposed
  - Equestrian centres, dog parks, kennels, paintball ranges.
- ✓ Infill recycling
  - Depends on infill type

# Public Concerns

- **New Required Maintenance Equipment**

- ✓ Attended artificial turf field maintenance course
- ✓ Discussed operational programs and costs with other jurisdictions
- ✓ Developed an equipment list, operating program and corresponding budget
- ✓ Included equipment costs within the overall project capital budget

Cost	Item
\$8,000	ATF field groomer
\$10,000	Sweeper with tow behind magnet
\$20,000	On site maintenance equipment storage shed
<b>\$38,000</b>	<b>TOTAL</b>

# Public Concerns

- Operating Budget

- ✓ Excludes Hydro

Cost	Item
\$7,300	Internal labour based upon industry recommended maintenance plan
\$2,700	Contracted services (annual deep clean and Gmax safety testing)
\$4,160	Leasing (pro-rated share of equipment used by RMOW Nordic operations that is idle all summer)
\$6,000	Annual recommended infill product top up
\$5,800	Fuel, supplies, insurance, equipment maintenance
<b>\$25,960</b>	<b>TOTAL, excluding Hydro</b>

- ✓ Consultant's ATF operating estimate \$25,000 to \$35,000 per year including Hydro

# Public Concerns

- **Operating Budget**

- ✓ Periodic differential settlement repair will increase the operating costs but not necessarily on an annual basis
- ✓ Local soccer community expects to pay user fees to access the fields and lights
- ✓ If 70% current youth soccer programming at \$30/hour = \$22,800/year

- **Comparatively**

- ✓ The annual operating and maintenance costs for one natural grass field in Whistler is \$20,000
- ✓ The annual operation costs for the arena portion of the Meadow Park Sports Center is subsidized by taxpayers \$600,000 per year.

# Public Concerns

- Off Gassing

- ✓ New and manufactured items release volatile organic compounds and other chemicals
- ✓ Some off gassing of turf occurs during the production phase
- ✓ Once on site and installed it is rare to experience turf off gassing
- ✓ Some infill types off gas more than others
- ✓ Off gassing is typically more of a concern in indoor applications



# Other Topics

- Update - Potential External Funding Opportunities
  - ✓ UBCM's Gas Tax Fund application unsuccessful
  - ✓ Whistler Blackcomb Foundation continues to express interest
  - ✓ Contract pricing received is favourable but not seeking sponsorship
  - ✓ Local Club fundraising and local contractor commitment challenged by project uncertainty through the municipal budget process
  - ✓ With contract approval staff and the local soccer community will continue to seek external funds

# Contracts Award

- Civil Services, Field Base Preparation, Lighting and Landscaping
- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill

# Contracts Award

- Civil Services, Field Base Preparation, Lighting and Landscaping
  - ✓ Process
    - Request for Expression of Interest and Statement of Qualifications
      - RMOW Webpage, BC Bid, local media,
      - E-mailed directly to local large civil contractors
      - Six respondents, all Lower Mainland based
    - Invitation to Tender sent directly to six respondents

# Contracts Award

- Civil Services, Field Base Preparation, Lighting and Landscaping
  - ✓ Results
    - Three compliant responses

Proponent	Total Contract Value	Location
TGK Irrigation Ltd.	\$1,444,900.00	Burnaby BC
Wilco Civil Inc.	\$2,145,881.00	Langley BC
Cdn. Landscape & Civil Services Ltd.	\$3,048,990.00	Langley BC
Cedar Crest Lands Ltd.	Did not bid	Langley BC
Capilano Highway Services Co.	Did not bid	W. Vancouver
Strohmaier's Excavating Ltd.	Did not bid	Chilliwack BC

# Contracts Award

- Civil Services, Field Base Preparation, Lighting and Landscaping
  - ✓ TGK Irrigation Ltd.
    - Experience with similar and other projects in Lower Mainland
    - Supportive reference checks
    - Realistic schedule
  - ✓ Recommendation to Award
    - **That** Council authorize the Mayor and Municipal Clerk to execute the contract with TGK Irrigation Ltd. for the construction of civil, lighting and landscaping services for the artificial turf field in the amount of \$1,444,900.00 excluding taxes

# Contracts Award

- Participation of Local Sub Trades and Material Suppliers
  - ✓ Sought participation from local subcontractors, trades and material suppliers
  - ✓ Provide list for Prime Contractors to consider during the tender phase
  - ✓ Ad posted RMOW Webpage, BC Bid, local media
  - ✓ Two responses

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Specialty item not locally sourced
  - ✓ Process
    - Request for Expression of Interest and Statement of Qualifications
      - RMOW Webpage, BC Bid
      - Four respondents
    - Request for Proposal E-mailed to all four
    - Provide costs on following items bundled as a package
      - Turf
      - Shock pad
      - Up to five different infill types: crumb rubber, safe shell organic (i.e. Walnut shells), TPE or EPDM, coated sand, or other alternative

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Results
    - Four compliant proposals
    - Fifteen different turf system options
    - Ranged from \$445,000 to \$892,000
    - Six of 15 propose crumb rubber infill
      - Delete crumb rubber and results range from \$471,000 to \$892,000
    - Appendix “A” in the Report No. 18-068



# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Analysis - Turf
    - Propriety products
    - Product evaluation characteristics
      - Yarn composition
      - Density
      - Breaking strength
      - Pile height
      - Weight
      - Backing materials
      - Stich spacing
      - Grab tear strength
      - Impact testing
      - Durability
      - Drainage rate
      - Cost
      - Sometimes colour
    - Cost, past performance are key variables.

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Analysis - Infill
    - Variety of products
    - Product evaluation characteristics
      - Material source
      - Sport performance
      - Safety
      - Migration characteristics
      - Environmental profile
      - Level of maintenance
      - Past performance
      - End use or re-use
      - Capital and operating costs

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Preferred Infill Products:
    - Safeshell (Walnut) or TPE/Sand
  - ✓ Coated sand infill discounted because of abrasion, lack of resilience, frequent topping up, cannot be reused in replacement field

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Analysis – Crushed Walnut
    - Made from crushed and rounded American walnut shells
    - Nature-based product
    - Naturally biodegrades over time
    - Composed at end of the turf's lifecycle
  - ✓ Athlete and sport performance considerations
    - Slightly lower surface temperature than other infills
    - More abrasive than other infills
    - Does not offer any additional impact absorption

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Analysis – Crushed Walnut
    - Requires more frequent regular maintenance and topping up
    - Cannot be reused in a new field
    - Relatively new product
      - Has not been used in BC or Alberta
      - Has been used in New York and Colorado

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Analysis – TPE Sand Mix
    - Thermoplastic Elastomer (TPE) mixed with sand
    - Non-organic material combining thermoplastics with elastomers to makes soft and flexible products
    - Food safe, wide range of consumer products with soft ‘rubber like grip’
      - hand tools, pens, toothbrushes, phone cases, toddler sippy cups, medical industry, dental guards, bottle cap liners and footwear.
    - Mix is 40% TPE, 60% sand by weight

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Analysis – TPE Sand Mix
    - Athlete and Sport Performance
      - modestly warmer than walnut surface temperature, less than crumb rubber
      - additional impact absorption
    - Less migratory
    - Requires less frequent maintenance and topping up
    - Can be completely reused in a new field at the end of the first turf's lifespan.
    - Following second lifecycle the TPE separated from sand and recycled as per typical consumer plastics
    - Sand reused in the third lifecycle field
    - Proven successful in BC fields

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Infill recommendation – TPE/Sand Mix
    - Food safe characteristics
    - Use in everyday consumer and medical products
    - Improved impact absorption
    - Less migratory
    - Similar initial capital cost
    - Lower annual operational costs of \$12,000 - \$20,000/year
    - Walnut's inability to be re-used adds \$140,000 premium at turf replacement
    - TPE/Sand's ability to be reused in replacement fields and recycled at end of ATF life



# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Shock Pad
    - Placed below the artificial turf surface
    - Provides improved impact absorption and drainage
    - All proponents offered the same product - ProPlay-Sport 23D
      - Made from polyethene foam
      - 100% sourced from automotive sector foam waste
      - Third party tested against contamination
      - Uses heat rather than glue to bond it together making it easier to recycle

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Shock Pad
    - At time of turf replacement this shock pad is reused at least once
    - At the end of its useful lifespan it can be recycled in current recycling systems
    - Guaranteed for 25 years
    - Meets specifications of the international sports associations of soccer, rugby, football and Gaelic Games.

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ AstroTurf West Distribution Ltd.
    - Based in Vancouver, BC
    - Western Canada's largest supplier and installer of artificial turf fields
    - Eight year warranty
    - Products meet
      - minimum performance specifications included in the RFP
      - FIFA 1 Star and FIFA 2 Star performance criteria
    - Demonstrated ability to deliver the project within the estimated timelines and fit with schedule proposed by TGK Irrigation Ltd.
    - Vancouver based installation and warranty team
    - Excellent reference checks

# Contracts Award

- Supply, Delivery and Installation of Artificial Turf, Shock Pad and Infill
  - ✓ Recommendation to award
    - **That** Council authorize the Mayor and Municipal Clerk to execute the contract with AstroTurf West Distributors Ltd. for the supply, delivery and installation of artificial turf, shock pad and infill for the artificial turf field in the amount of \$571,000 excluding taxes.

# Bayly Park Artificial Turf Field



# Whistler 2020 Analysis

- Complete analysis within Council Report
- “TOWARD”
  - ✓ Natural Areas
    - Proposed site is a brownfield site
    - Additional measures to prevent migration of elements off site and capture and re-use of migratory elements
  - ✓ Partnerships
    - Capital and operating costs partnership potential
  - ✓ Recreation and Leisure
    - ATF will extend the playable season offering increased recreation opportunities
    - Whistler is inclusive and continues to diversify its scope of recreational offerings
    - Soccer is proven to offer high participation rates with respect to gender and cultural diversity
    - Utilized inclusive and regional stakeholder process
  - ✓ Resident Affordability
    - Organized soccer is relatively affordable when compared to many other Whistler programs

# Whistler 2020 Analysis

- “AWAY” Highlights and Mitigation Strategies

- ✓ Built Environment

- DOS: Visitors and residents can readily immerse themselves in nature, free from noise and light pollution
  - Sport field illumination directed at sport field and away from neighbouring buildings
  - Illumination levels less than 15% of the Spruce Grove ball diamonds
  - Sport field use will end at 10pm as per current municipal noise bylaw
- DOS: Landscaped areas consist of native plant species that eliminate the need for watering and chemical use.
  - Does not require potable water for irrigation or chemical fertilizer for grass growth and health.

# Whistler 2020 Analysis

- “AWAY” Highlights and Mitigation Strategies
  - ✓ Materials and Solid Waste
    - DOS: Whistler is using durable materials that are less environmentally harmful, preferring recycled natural and sustainably harvested materials and plentiful metals.
      - Choice for durability, operational costs and in the context of other Whistler recreation passions with an environmental footprint.
      - Turf recycled into other consumer products, currently in Asia, and likely in North America by replacement.
      - Staff monitoring adaptive reuse in other jurisdictions.
      - Recommended infill product is food safe plastic, re-used multiple times and is recyclable.
      - Recommended shock pad made from recycled materials and re-useable.
      - Upgraded storm water management, other design features and material choices prevent migration of unwanted materials into the municipal storm water system, allow capture and reuse of migratory infill.
      - Lighting is low energy LED.



# Other Policy Considerations

- Recreation and Leisure Master Plan

- ✓ *“With relevant partners explore opportunities and feasibility to develop an indoor multi-sport publically accessible facility.*
- ✓ *Develop an additional grass or artificial turf rectangular field to reduce unsustainable wear on existing fields and meet growing demand.*
- ✓ *Continue to facilitate third-party sport training programs and lessons.”*

# Budget Considerations

- 2018-2022 Fiver Year Financial Plan

- ✓ \$2,815,000 General Capital Reserves

- ✓ Includes

- Turf field

- Shock pad

- Alternative infill product

- Fencing

- LED illumination

- Potable water

- Landscaping

- Required maintenance equipment and storage

- Contingency

- Professional fees.

- ✓ Assumes \$100,000 external funding contribution.

- ✓ The contracts recommended for award in this Report along with a construction contingency, 2018 professional fees including construction administration costs, and other project expenditures are within the approved budget amount.

# Community Engagement & Consultation

- 2008 Bayly Park Master Plan
- 2012 Bayly Park Development Plan
- Recreation and Leisure Master Plan
  - ✓ Engagement Phase
- Stakeholders
  - ✓ WYSC, Adult Soccer, Co Ed Soccer, Women's Soccer
  - ✓ Football, Ultimate, V-Ball, Rugby
  - ✓ Whistler Slo Pitch, S2S Baseball
  - ✓ SD48, WSL
- Interviews
  - ✓ Pemberton Soccer
  - ✓ District of Squamish
  - ✓ Whistler Secondary Community School
- Questionnaire, meetings, other follow up
- Whistler Blackcomb Foundation
  - ✓ December 8, 2016
  - ✓ December 1, 2017

# Community Engagement & Consultation

- Recreation and Leisure Advisory Committee
  - ✓ *“To provide an objective view in the public interest and to give impartial and informed higher level advice to municipal staff and Council on matters related to the provision and delivery of indoor and outdoor recreation and leisure opportunities, services and issues.”*
    - October 9, 2014 Minutes
    - October 8, 2015 Resolution
    - November 24, 2016 Resolution
    - January 12, 2017 Minutes
    - November 9, 2017 Resolution

# Community Engagement & Consultation

- Recreation and Leisure Advisory Committee
  - May 3, 2018 Draft Resolution
    - “....support the completion of the artificial turf field in Bayly Park in 2018. The Committee is in support of making the facility the most environmentally friendly artificial turf facility that we can, considering all materials and location and, to mediate any of the adverse effect for drainage that might occur.”

# Community Engagement & Consultation

- Committee of the Whole

- ✓ December 1, 2015
- ✓ December 6, 2016

- Council

- ✓ March 7, 2017 Council Information Report No. 17-017
- ✓ November 21, 2017 Council Administrative Report No. 17-125

# Summary

- Provides a high level overview of the ATF project
- Addresses outstanding concerns
- Recommends award of two separate contracts to construct the project
- Material choices and design details best manage
  - ✓ Environmental footprint in consideration of community needs
  - ✓ Ongoing operating costs
  - ✓ Life cycle replacement costs
  - ✓ Athlete safety

# Recommendations

- **That** Council authorize the Mayor and Municipal Clerk to execute the contract with TGK Irrigation Ltd. for the construction of civil, lighting and landscaping services for the artificial turf field in the amount of \$1,444,900.00 excluding taxes; and
- **That** Council authorize the Mayor and Municipal Clerk to execute the contract with AstroTurf West Distributors Ltd. for the supply, delivery and installation of artificial turf, shock pad and infill for the artificial turf field in the amount of \$571,000 excluding taxes.



# Questions and Discussion

