

2001 OCTOBER 18

**TO:** CITY MANAGER

**FROM:** DIRECTOR PARKS, RECREATION AND CULTURAL SERVICES

**SUBJECT: BURNABY LAKE SPORTS COMPLEX - EAST - INTERIM STUDIES**

**PURPOSE:** To request Council to bring down a Capital Reserves Expenditure Bylaw in the amount of \$41,200 for a preliminary pond design study and electrical feasibility study for the Burnaby Lake Sports Complex - East project.

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**RECOMMENDATION:**

1. THAT a Capital Reserves Expenditure Bylaw in the amount of \$41,200 (inclusive of 7% GST) for a preliminary pond design study and electrical feasibility study for the Burnaby Lake Sports Complex - East project.

**REPORT**

At its meeting of 2001 October 17, the Parks, Recreation and Culture Commission received the above noted report and adopted the three recommendations contained therein.



Kate Friars  
DIRECTOR PARKS, RECREATION  
AND CULTURAL SERVICES

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Attachment

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cc: Director Finance  
Director Engineering  
Director Planning

## SUBJECT: BURNABY LAKE SPORTS COMPLEX - EAST INTERIM STUDIES

### RECOMMENDATIONS:

1. THAT Commission authorize the expenditure of \$40,000 (including net GST) from the 2001 Capital Budget for a preliminary biofiltration pond design study and an electrical feasibility study for the Burnaby Lake Sports Complex - East project.
2. THAT Council be requested to bring down a Capital Reserves Expenditure Bylaw in the amount of \$41,200 (inclusive of 7% GST) for a preliminary pond design study and electrical feasibility study for the Burnaby Lake Sports Complex - East project.
3. THAT a copy of this report be forwarded to the Environment and Waste Management Committee and the Burnaby Lake Park Association for information.

### REPORT

#### 1.0 BACKGROUND

The completion of the artificial turf fields at Burnaby Lake Sports Complex - West in 1998 accommodated a significant amount of field sport activity from other sites, including Burnaby Lake Sports Complex - East. In 1999, the Commission authorized work to begin on a feasibility study and conceptual design for the redevelopment of the Burnaby Lake - East site (**Attachment #1**). On 2001 February 07, the Commission approved in principle the resulting East Complex concept plan that recognized the demand for baseball and the need for environmental mitigation measures on this sensitive site (**Attachment #2**). The concept plan was reviewed favourably in two separate workshops held with user groups and environmental stakeholders, and in a presentation to the Environmental Review Committee. Based on the comments and input received from the above groups, areas for further research were identified. Subsequently, more intensive wildlife and vegetative surveys and water quality sampling were conducted.

The results of the initial geotechnical and environmental study were described to Commission on 2001 February 07. This progress report outlines the more extensive interim studies conducted to date on water quality and habitat, and identifies two further issues requiring investigation, including preliminary wetland design and the preliminary determination of electrical requirements. The information provided by the two additional studies will enable design development and the preparation of detailed construction documents and cost estimates to proceed in 2002.

## 2.0 RESULTS OF 2001 STUDIES

Upon conclusion of the initial feasibility study, the need for monitoring the water quality characteristics of the site and for conducting an assessment of wildlife and vegetative habitat was identified. At this juncture, the habitat assessment has been completed. The water quality study, which was designed to receive data during different rainfall seasons, is nearing completion and the interim results have been submitted. Both studies support the proposed development.

The concept plan indicates the intention to intercept and treat runoff from the development site and the existing parking lot with artificial wetlands and biofiltration structures. Currently, all drainage flows directly into Still Creek and Burnaby Lake. The design of the ponds is contingent on data regarding the existing flow of runoff from the site (water balance), the rate of nutrient loading from the release of fertilizers on the sports fields, and the rate of leaching of compounds from a subsurface layer of hogfuel (wood waste) that was placed over the site when the sports fields were constructed for the 1972 Canada Games.

The results of the water quality study to date suggest: that an additional basin or structure to trap iron leaching from the parking lot be included in the wetland design; that the wetlands would be beneficial with respect to the assimilation of nutrients from the site; and that the detection of leachate from the hogfuel layer has been inconclusive to date until more data is received with higher rainfall events.

The water monitoring program will be completed this fall and the results will facilitate the calculation of required surface area and configuration, and plant community composition of the proposed wetlands.

An environmental assessment was commissioned from March to June inclusive and pertained to fish, vegetation and wildlife resources. The assessment concluded that the addition of new wetland and forest habitat (approximately 18 percent of the total area to be developed) would be a net benefit to the riparian habitat of Still Creek and the west shore of Burnaby Lake.

It was suggested that the anticipated low level of waste light from the proposed low glare sports field lighting system will likely have little negative effect on birds, and may help nocturnal predator species. In addition, the proposed paths, boardwalks, bridges and railings could have the positive effect of redirecting and containing existing pedestrian traffic away from Still Creek and toward the centre of the complex. The proposed interpretive signage, viewing platforms and blinds will help increase public awareness and appreciation of the natural environment. Finally, the report made specific recommendations toward the control of known invasive species that could potentially establish in the proposed wetlands.

### 3.0 ADDITIONAL STUDIES

At this juncture it is recommended to conduct two additional studies that will enable the interim planning phase of this project to be completed. Both studies are anticipated to cost \$41,200, including GST. The information resulting from these studies will have addressed much of the site uncertainty in preparation for the design development process and construction drawings in 2002.

#### 3.1 Preliminary Pond and Wetland Design

Concurrent with the completion of the water quality study this fall, a complementary study is proposed that will determine conceptually the most suitable options for pond design. Given the stringent geotechnical conditions, the presence of a hog fuel layer that may impede the excavation of the ponds, and the challenges of obtaining efficient biofiltration of site runoff in a limited area, significant bioengineering consultation is required.

The study is intended to give an overview for a general approach for pond design at the site. Specifically, the study will include considerations for liner options, grading relative to pond depth, mean water level and other hydrological considerations, geotechnical considerations, hog fuel management issues, a preliminary planting plan, regulatory issues and preliminary cost estimates. The work will not include civil engineering tasks such as the design of subsurface field drains or collectors.

The above consulting work is anticipated to cost in the range of \$30,000, including GST.

#### 3.2 Electrical Feasibility Study

The presence of two full-sized illuminated baseball diamonds with two independent high mast sports field lighting systems requires that a conceptual lighting and electrical plan be completed prior to the final construction drawing phase. An electrical and sports field lighting consultant will accomplish this task as part of a feasibility study. The feasibility study will determine the adequacy of the existing power supply to the site, and address upgrading the existing power to meet the demand, routing of electrical conduit, location of all control panels and kiosks, adapting the preferred lighting system to the physical conditions of the site, and liaising with BC Hydro. The study will provide more accurate costing information for the supply of electrical services to the site. The Department has had much success with lighting systems that utilize high quality glare reduction features.

The electrical feasibility study is anticipated to cost in the range of \$10,000, including GST.

#### 4.0 FINANCING

The cost of the work described herein is \$40,000 (including net GST). Sufficient Capital Reserves are available and this project is included under the Major Parks component of the 2001-2005 Annual Capital Program. Upon Commission approval, Council will be requested to bring down a Capital Expenditure Bylaw in the amount of \$41,200 (inclusive of 7% GST) to finance the proposed studies.

#### 5.0 NEXT STEPS

Initiating the next series of studies will result in additional data and accuracy by which to base the final design development work on. Upon approval of this report, consultants will be retained to initiate the studies described above. Concurrently, the sports and environmental stakeholders will be updated regarding the progress to date.

Upon completion of the above studies, Commission and Council will be requested to approve funding for the award of the final consultant contract toward detailed design development and the provision of construction documents and specifications for the East Complex project. The final design phase will be completed in 2002 in preparation for construction to commence in 2003. The work will be phased over several years and is treated as a priority in the Commission Five Year Capital Program.

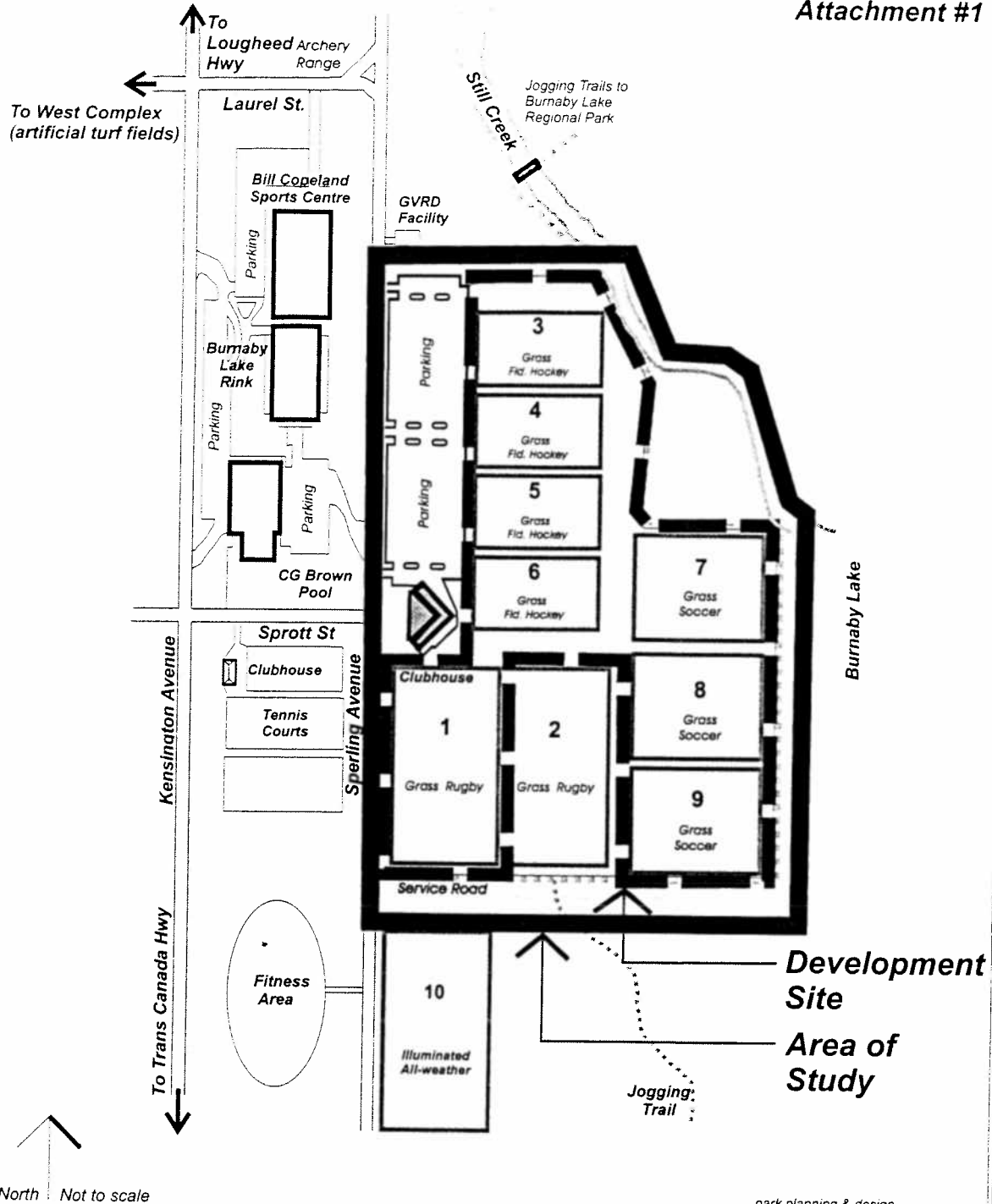


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Attachment (2)

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cc: Director Finance  
Director Engineering  
Director Planning



North Not to scale







park planning & design  
east complex existing  
commission report

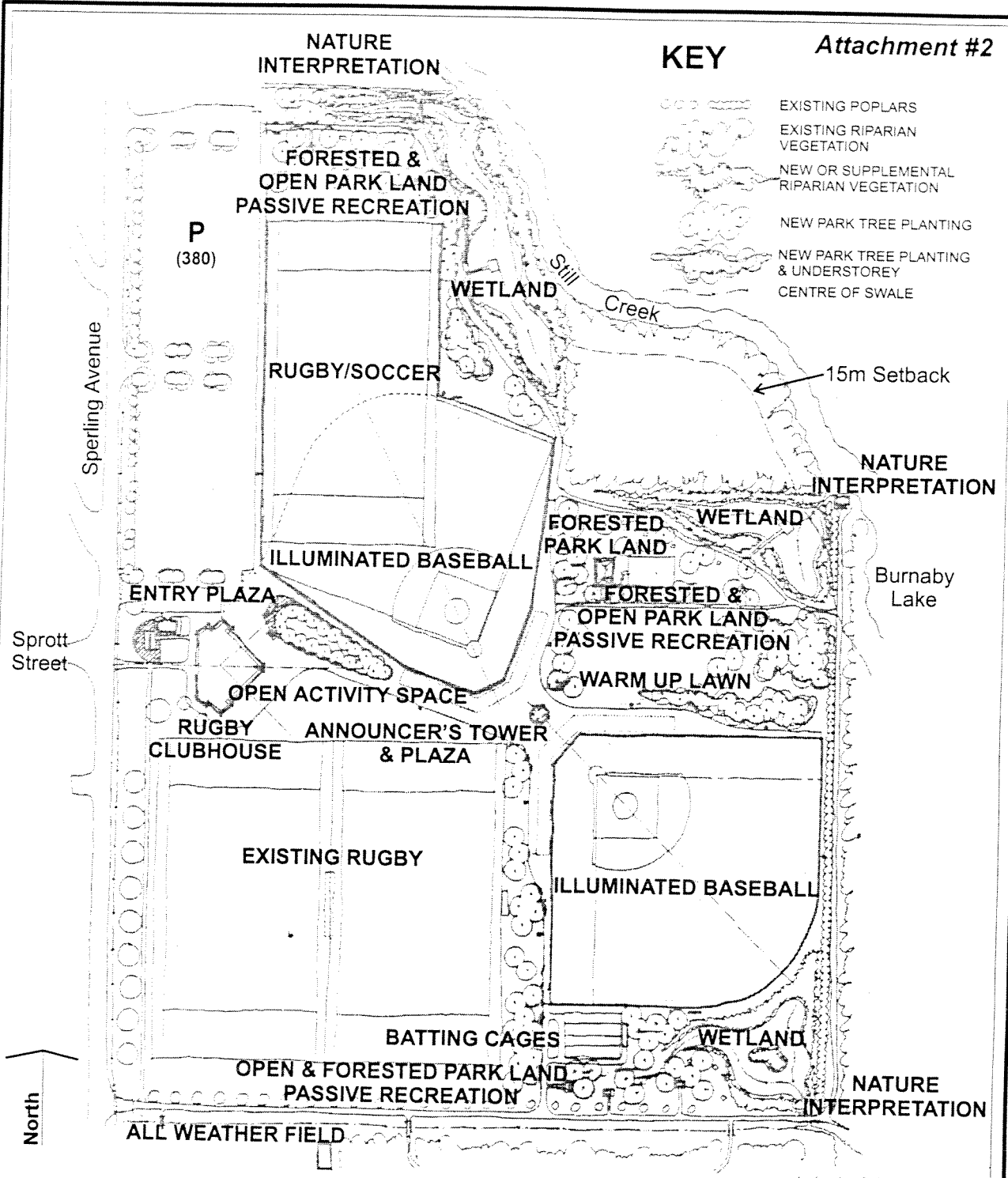


Burnaby Lake Sports Complex  
**East Complex**  
**Existing Conditions**

Drawing: OP 9-1-149s  
Date: 01/01/30  
Scale: NTS  
Drawn: MB

**KEY**

-  EXISTING POPLARS
-  EXISTING RIPARIAN VEGETATION
-  NEW OR SUPPLEMENTAL RIPARIAN VEGETATION
-  NEW PARK TREE PLANTING
-  NEW PARK TREE PLANTING & UNDERSTOREY
-  CENTRE OF SWALE



*park planning & design  
east complex concept  
commission report*



*Burnaby Lake Sports Complex*  
**East Complex**  
**Proposed Concept Plan**

*Drawing: OP 9-1-150s  
Date: 01/01/30  
Scale: NTS  
Drawn: MB*

