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Environmental Impact Assessment
Queen Elizabeth Pool Project
Kinsmen Park
SW-32-052-24-W4M
Edmonton, Alberta

Presented to

City of Edmonton, Asset Management & Public Works

May 21, 2009

REVISION INDEX

ECOMARK Project No.: EDMON-08503-C4476990-10					
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LETTER OF TRANSMITTAL

May 21, 2009 Our Project Number: EDMON-08503-C4476990-10

City of Edmonton, Asset Management & Public Works
20th Floor, Century Place
9803 – 102A Avenue
Edmonton, Alberta, T5J 3A3

Dear Sir/Madame:

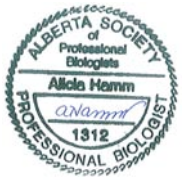
Re: Environmental Impact Assessment – Queen Elizabeth Pool Project
SW-32-052-24-W4M; Kinsmen Park, Edmonton, Alberta

We are pleased to present the above-referenced Environmental Impact Assessment report (Report) for your benefit and use in assessing the environmental integrity of the property known as SW-32-052-24-W4M; Kinsmen Park, Edmonton, Alberta.

The Report is based on a field reconnaissance, records review and review of relevant literature. The Report conforms to the requirements set out by *A Guide to Environmental Review Requirements in the North Saskatchewan River Valley and Ravine System* (December 2000) and the Terms of Reference reviewed and approved by the City of Edmonton Planning & Policy Services, December 8, 2008.

The opinions expressed in this Report are solely those of Ecomark Ltd. This Report is furnished in our capacity as consultants to City of Edmonton, Asset Management & Public Works (Client) for the project described in this Report and do not necessarily reflect the viewpoint of the Client. The Report is written for the benefit and use of the Client and City of Edmonton, Planning & Policy Services only. Conditions assessed are valid to the date of visual assessment and limited by the information that was shared by the third parties involved. Financial liability is limited to the invoiced amount of the report. While every effort was made to confirm that the data collected from third parties is factual, complete and accurate, Ecomark Ltd. makes no guarantees or warranties whatsoever with respect to such data.

Yours sincerely,



Alicia Hamm-Tropak, P.Biol. **Professional Seal**

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EXECUTIVE SUMMARY

At the request of the City of Edmonton, Asset Management & Public Works , Ecomark Ltd. was retained to prepare an Environmental Impact Assessment (EIA) of the property known as SW-32-052-24-W4M; Kinsmen Park, Edmonton, Alberta (Site). The EIA was based on a field reconnaissance, records review and review of relevant literature. The Report conforms to the requirements set out by *A Guide to Environmental Review Requirements in the North Saskatchewan River Valley and Ravine System* (December 2000) and the Terms of Reference reviewed and approved by the City of Edmonton, Planning & Policy Services, December 8, 2008 (Appendix 6).

The City of Edmonton, Asset Management & Public Works department proposes to construct a new Queen Elizabeth Pool and facilities in Kinsmen Park, located north of the Kinsmen Aquatic and Sports Centre. The project intends to replace the original Queen Elizabeth Pool site located in Queen Elizabeth Park. The proposed project involves construction of a new pool, spray park amenity and pool pavilion. The pool is a six-lane, 25-meter pool designed with a zero-entry side, for direct and easy access in to the pool. The pool pavilion includes universal change rooms, men's and women's washrooms, lockers, showers, pool mechanical spaces, staff and first aid room, admission and concession room, and deck storage.

Initial public consultation was conducted during the project feasibility study. An in-house design charrette and subsequent stakeholder charrette was held to evaluate potential pool configurations in Kinsmen Park. Stakeholders included the City of Edmonton, Community Services Department; City of Edmonton, Asset Management & Public Works Department; the Friends of Queen E. Pool Society; and the Kinsmen Club of Edmonton. Subsequent schematic designs for the project were based on these discussions with stakeholders.

The Site is situated along a river terrace, south of the North Saskatchewan River. The Site is a manicured green space and is adjacent to ornamental trees, paved parking lots, a baseball diamond, Kin Park and paved pathways. The project footprint will be confined to previously disturbed areas; no native vegetation or sensitive wildlife habitat will be impacted by development of the Site. Geology, hydrology and soils are the most sensitive environmental elements that may be impacted by development.

P. Machibroda Engineering Ltd. prepared a geotechnical investigation report (December 2008) that evaluated these environmental elements and provided foundation considerations and design recommendations to mitigate impacts to these elements. Mitigation measures to protect soil resources involve appropriate soil handling measures and sediment and erosion controls.

The proposed project is consistent with the City of Edmonton Outdoor Aquatic Strategy, the Ribbon of Green Master Plan and the Urban Parks Management Plan, and will provide additional amenities to Kinsmen Park. The most sensitive socio-economic elements included land use, parking and traffic, and archaeological and historic resources.

Ecomark Ltd. conducted a phase I environmental site assessment at the Site. Based on a review of environmental records, Walter's Coal Mine, the John Walter Saw Mill, Carpenter's Shop, and lumberyard were historically in the immediate vicinity of the Site. From the period the developments were in operation, substances could potentially include lead-based paints, wood preservatives, solvents, oils and lubricants. There was also known lead contamination near the High Level Bridge and the Walterdale Bridge located at least 250 meters southwest and southeast of the Site. It was unknown whether the lead contamination extended to the Site. A review of previous geotechnical investigations confirms the presence of fill material within two meters below ground surface near the proposed pool site. The source of the fill material and the potential for it to harbor contaminants was unknown. For these reasons, a phase II environmental site assessment was required in the immediate vicinity of the proposed pool project to determine the presence or absence of contamination at the Site (Ecomark, 2009*a*; Ecomark, 2009*b*).

The phase II environmental site assessment (May 11, 2009) identified slightly elevated levels of boron and polycyclic aromatic hydrocarbons (PAHs) in the top layer of fill, up to 0.75 m below ground surface. The presence of boron may be attributed to a number of activities at the Site. Historical industrial activities such as coal mining or wood preservatives make use of boron and may have leached into the soil. Due to the close proximity of the Site to the North Saskatchewan River, the levels of boron may have been deposited during flood events. Boron is also present in many fertilizers, which throughout repeat applications allow for accumulation (Ecomark, 2009*c*). The PAHs present in soil may be attributed to historic land uses such as wood treatment from the former lumber yard (Ecomark, 2009*c*).

The boron and PAH exceedances should not preclude development; the soil can be properly managed to avoid any negative ecological or human health effects. A remediation work plan has been submitted and is currently in circulation for review and approval by Alberta Environment, Alberta Health Services and the City of Edmonton Transportation Department. The proposed remediation work plan involves removing topsoil and subsoil within the development footprint up to 0.75 meters below ground surface, sampling soils for available boron and PAHs in soils, and sending contaminated soil to a Class II landfill for disposal. The excavation floor will be sampled at regular intervals to confirm that all contaminated soils have been removed from the excavation site (Ecomark, 2009*d*).

Bunt & Associates conducted a parking assessment to confirm if the existing parking supply will accommodate parking demand associated with the new Queen Elizabeth pool. They report that the proposed development in Kinsmen Park will not significantly alter on-site parking demand. The existing 700 parking stalls at Kinsmen Park are sufficient to accommodate parking demand, since the peak hours of outdoor pool use do not coincide with peak hours of the Kinsmen Aquatic and Sports Centre (Bunt & Associates, 2009). For these reasons, no additional parking will be constructed for the proposed project. Over-flow parking is occasionally required during the winter and for special events. The report recommends parking alternatives, in the event that over-flow parking is required.

Alberta Western Heritage Inc. conducted a Historical Resources Impact Assessment (HRIA) in the area of the proposed development to determine if any intact historical resources were present at the Site. Overall, the recovered historic period artifacts were sparse, scattered, very fragmented, and unidentifiable and did not

yield any new information on the John Walter period in the area. The presence of large pieces of bison faunal material buried at depth was sparse and not well defined. For these reasons, Alberta Western Heritage Inc. recommended that the proposed project proceed as planned. A professional archaeologist should monitor excavation activities during construction to further assist in defining pre-contact occupation in the area (Alberta Western Heritage, 2009).

Construction and engineering details were described in detail in the Schematic Design Report prepared by Johns Group2 Architecture and Engineering (December 2008). The Schematic Design Report and site plan includes details on the current schematic design, alternative configurations and designs, as well as, structural, mechanical and electrical engineering components of the proposed development. The intent of the proposed construction components and techniques are to provide an environmentally conscious and sustainable system design (Johns Group2, 2008).

Short-term and long-term effects were investigated based on the construction details provided by Johns Group2 Architects and Engineering and mitigation measures were presented to reduce or eliminate potentially adverse impacts to the environmental and socio-economic elements. Management strategies minimize potential short-term impacts during the construction phase and design alternatives minimize potential long-term impacts during operation of the new Queen Elizabeth pool.

Additional public consultation was conducted during a public open house on Tuesday, March 3, 2009. Overall, there was considerable amount of public support to replace the Queen Elizabeth pool in Edmonton. Public concerns were raised over the use of universal change rooms within the proposed project design. The City of Edmonton met with the Friends of Queen E. Pool Society and committed to "review the design based on safety considerations, the requirements of potential users of the pool and effective use of taxpayer dollars". No other public concerns were identified.

Based on these findings, the proposed project as described in the assessment should proceed with little to no impact to the natural environment, if the proposed mitigation measures are applied.

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1 INTRODUCTION

1.1 Purpose of Report

At the request of the City of Edmonton, Asset Management & Public Works , Ecomark Ltd. was retained to prepare an Environmental Impact Assessment (EIA) of the property known as SW-32-052-24-W4M; Kinsmen Park; Edmonton, Alberta (Site).

An EIA is required for any new, large scale, capital developments under the City of Edmonton Bylaw 7188. The EIA is based on a field reconnaissance, records review and review of relevant literature. The Report conforms to the requirements set out by *A Guide to Environmental Review Requirements in the North Saskatchewan River Valley and Ravine System* (December 2000) and the Terms of Reference reviewed and approved by the City of Edmonton Planning & Policy Services, December 8, 2008 (Appendix 6).

1.2 Purpose of Project and Rationale

The City of Edmonton, Asset Management & Public Works department has proposed to construct a new Queen Elizabeth Pool and facilities in Kinsmen Park, located north of the Kinsmen Aquatic and Sports Centre in the River Valley Walterdale neighbourhood. The project intends to replace the original Queen Elizabeth Pool site located in Queen Elizabeth Park, built in 1922, that was closed in 2004 when a major crack in the pool tank was discovered.

In March 2005, after a geotechnical review, a redevelopment plan for the new Queen Elizabeth Pool was initiated at the existing pool site in Queen Elizabeth Park. Burgess Bredo Architects completed a pool design for the site and Spencer Environmental Management Services Ltd. conducted an Environmental Screening report for this location (Spencer Environmental, 2006). Although the original construction budget was set at $4.1 million, the project was tendered for $7.8 million in Fall 2006 and $8.1 million in early 2007 (Johns Group2, 2008*a*).

In light of the high costs required to redevelop the pool site at its existing location, the City Council requested that the feasibility of Kinsmen Park be explored as an alternate location for the new Queen Elizabeth Pool project (Johns Group2, 2008*a*; Dumont, 2008, Email Comm.). Kinsmen Park was in close proximity of the existing Queen Elizabeth Pool site and would provide a similar recreational experience in the North Saskatchewan River Valley. The feasibility study (also known as the Site Location Study) was prepared by Johns Group2 Architecture and Engineering and described projects costs associated with development and identified social, environmental and institutional constraints that made Kinsmen Park a suitable location for the proposed development (Johns Group2, 2008*a*).

The proposed pool site in Kinsmen Park is City Council directed and consistent with City of Edmonton Outdoor Aquatic Strategy adopted January 16, 2008. The policy incorporates a concept that "blends indoor and outdoor aquatic facilities on the same site, expanding programming opportunities and benefiting from economies of scale". Kinsmen Aquatic and Sports Centre was named as a site considered for an outdoor aquatic opportunity in the policy (City of Edmonton Policy C534).

The proposed project is also consistent with the Ribbon of Green Master Plan (1992) and the Urban Parks Management Plan approved by City Council on June 13, 2006. These plans permit development, as long as its integrity of the river valley is maintained. The Ribbon of Green Master Plan states "new or expanded facilities [that] enhance recreation opportunities, are compatible with conservation and will be located in areas which are already disturbed or where environmental impact will be low" (Edmonton, 1992). The proposed project is consistent with this plan, as the proposed footprint will be confined to previously disturbed areas and the overall environmental impact is expected to be low.

The Urban Parks Management Plan further highlights the need for new developments within the river valley to provide additional support facilities (i.e. public washrooms), preserve and protect the river valley forests, provide four-season recreational activities, link existing trails, enhance educational and heritage program opportunities, and adopt ecological park design, construction, and maintenance (Edmonton, 2006). The proposed project will provide additional park amenities including public washrooms with entrances outside the pool pavilion, a new walkway between the new pool and the existing Kinsmen Sports and Aquatic Centre, and an outdoor aquatic opportunity. Environmentally conscious and sustainable systems were also incorporated into the proposed project design.

User groups, such as Friends of Queen E. Pool Society and Kinsmen Club of Edmonton, have also expressed support for the proposed pool site in Kinsmen Park. The Friends of Queen E. Pool Society has requested a "working pool in the river valley that can be used during the summer by families" (Stobbe, 2008). The Kinsmen Club of Edmonton supports the proposed pool site with a key requirement that the existing playground at Kin Park be retained and incorporated into the project design (Dumont, 2008, Email Comm.).

1.3 Study Area

The City of Edmonton is situated in the Central Parkland subregion of Alberta. Trembling aspen (*Populus tremuloides*) and balsam poplar (*Populus basamifera*) are common tree species in this subregion. The mean annual temperature for the Central Parkland subregion is 2 °C. The average temperature between May and September is 13 °C. The frost-free period is approximately 95 days. The mean annual precipitation in this subregion ranges between 350 and 450 mm. The majority of the precipitation accumulates between May and September (NRC, 2006).

The Site is situated along a river terrace, south of the North Saskatchewan River in Edmonton, Alberta. The Site is located north of the Kinsmen Aquatic and Sports Centre in the River Valley Walterdale neighbourhood, as shown in Figure 1. The Site is a manicured green space adjacent to ornamental trees, paved parking lots, a baseball diamond, Kin Park and paved pathways. The manicured green space extends north of a paved parking lot, north of the indoor aquatic portion of the facility to the paved pathway near the top of bank of the North Saskatchewan River. The Kinsmen Aquatic and Sports Centre sits between the Site and the toe of the forested slope.

1.4 Study Process and Method

One purpose of an EIA is to predict, interpret and evaluate environmental impacts of a proposed development (Edmonton, 2000). The existing environment was described and evaluated based on a winter field reconnaissance, review of relevant literature and review of environmental reports.

Existing environmental elements were described and evaluated based on whether the elements would likely be affected by development. As the Site is a manicured green space, many of the natural elements (topography, vegetation, wildlife) and socio-economic elements (future expansion, noise and odour, aesthetics) that may be impacted by development were expected to be low. Effects on other environmental and socio-economic elements including geology, hydrology, soils, land use, traffic and parking, and archaeological and historic resources on the Site were unknown and warranted further investigation.

For these reasons, the City of Edmonton, Planning and Policy Services department requested that site-specific studies be conducted as part of the EIA (Appendix 6). P. Machibroda Engineering Ltd. conducted a geotechnical investigation at the Site to evaluate subsurface soil and groundwater conditions and determine whether the Site was suitable for development (Machibroda, 2008); Ecomark Ltd. conducted a phase I and phase II environmental site assessment to identify and evaluate potential environmental liability at the Site (Ecomark, 2009*a*; Ecomark, 2009*b*; Ecomark, 2009*c*); Bunt & Associates conducted a parking assessment to explore the impacts and effects of the proposed development on on-site parking supply and demand in Kinsmen Park (Bunt & Associates, 2009); and Alberta Western Heritage Inc. conducted a Historical Resources Impact Assessment (HRIA) to identify significant historic resources in the proposed development area (Alberta Western Heritage, 2009). Fisheries and Oceans Canada was contacted to confirm if they had interest in the proposed development. The response letters from Fisheries and Oceans Canada is available in Appendix 3.

2 PROJECT DESCRIPTION

2.1 Project Setting and Site Description

The Site is situated along a river terrace, south of the North Saskatchewan River in Edmonton, Alberta. The Site is a manicured green space known as Kinsmen Park and is adjacent to ornamental trees, paved parking lots, a baseball diamond, Kin Park and paved pathways.

The Site is centrally located in Kinsmen Park to allow convenient access to existing indoor and outdoor amenities. The project footprint will be confined to previously disturbed areas; no native vegetation or sensitive vegetative features will be impacted by development of the Site. The most sensitive natural feature to development is the top of bank to the North Saskatchewan River located 165 meters north of the Site. The Kinsmen Aquatic and Sports Centre sits between the Site and the steep forested slope, south of the Site.

2.2 Scope of Work

The proposed new Queen Elizabeth Pool project involves construction of a new pool, spray park amenity, and pool pavilion in a natural low-lying area within existing ornamental trees and services (pathways and parking

lots). The pool is a six-lane, 25-meter pool designed with a zero-entry side, for direct and easy access in to the pool.

The pool pavilion is located north of the pool to block northwest prevailing winds and will include change rooms, washrooms, showers and lockers. The pool pavilion will also include pool mechanical spaces, staff and first aid room, admission and concession room, and deck storage.

The Kin Park spray park will be situated west of the pool, outside of the fence line. Single-person washroom facilities for Kin Park users and the general public can be accessed outside of the pool pavilion at the north side of the building. A site plan is available in Figure 2.

2.3 Alternatives Considered

The first alternative location considered was in March 2005, when the redevelopment plan for the new Queen Elizabeth Pool was initiated at the existing pool site in Queen Elizabeth Park. In light of the high costs required to redevelop the pool site at its existing location, City Council requested that the feasibility of Kinsmen Park be explored as an alternate location for the new Queen Elizabeth Pool project (Johns Group2, 2008*b*; Dumont, 2008, Email Comm.).

As part of the project feasibility study, three possible pool configurations were considered for the project in Kinsmen Park based on project suitability and budget. The configurations explored opportunities to share amenities between the Kinsmen Aquatic and Sports Centre and the new Queen Elizabeth pool site (Johns Group2, 2008*a*).

The preferred configuration was determined to be north of the Kinsmen Aquatic and Sports Centre to maintain existing parking along the northern portion of the facility and to maintain Kin Park west of the facility. The preferred configuration also maintains emergency services vehicle access and is centrally located and in close proximity to existing indoor and outdoor amenities (Johns Group2, 2008*a*). The project footprint was significantly reduced in comparison to original building designs to reduce area and cost.

3 EXISTING ENVIRONMENT

3.1 Natural Environment

3.1.1 General Description

The Site is situated along a river terrace, south of the North Saskatchewan River. The Site is a manicured green space known as Kinsmen Park and is adjacent to ornamental trees, paved parking lots, a baseball diamond, Kin Park and paved pathways. The project footprint will be confined to previously disturbed areas; no native vegetation or sensitive wildlife habitat will be impacted by development of the Site.

3.1.2 Historical Air Photos

In the phase I environmental site assessment prepared by Ecomark Ltd. (January 2009), historical air photos from 1950 to 2007 were observed using ExpressView® software. Copies of the historical air photos are available in Appendix 2.

In the 1950 air photo, the Site was undeveloped parkland. There were several buildings, unidentified structures and roadways observed immediately east of the Site in the 1950 and 1962 air photos, near the existing John Walter Museum. The Fieldhouse was under construction in the 1967 air photo and the Kinsmen Aquatic and Sports Centre and main parking lots were under construction in the 1976 air photo. There was a baseball diamond situated immediately north of the Kinsmen Aquatic and Sports Centre site in the 1967 and 1972 air photos, but was later removed with construction of the narrow parking lot. There were no other historic developments observed near the Site.

3.1.3 Topography

The Site is situated along a river terrace, south of the North Saskatchewan River. The topography is level with little variation throughout the Site. The topography slopes slightly towards the North Saskatchewan River north of the Site and than decreases dramatically at the top of bank. Elevations range from 623 to 625 meters above sea level (Figure 2).

The Site will be leveled during construction and a landscaped berm will be constructed around the pool pavilion. The berm will tie in to the existing landscape, and will not significantly impact Site topography.

3.1.4 Geology

The North Saskatchewan River Valley in the City of Edmonton is situated within the buried Beverly Valley. Following the retreat of glacial ice, the North Saskatchewan River Valley was formed by down-cutting of water to bedrock. The present North Saskatchewan River lies in the middle of the river valley. Adjacent river terraces were formed by lateral shifts within the channel (Hardy, 1986).

The Site is situated on a river terrace along the south bank of the North Saskatchewan River. The Edmonton Formation of the Cretaceous Age underlies the Site. The bedrock geology comprises of sandstone, mudstone, and shale with ironstone and coal beds (Alberta Research, 1972). The surficial deposits on river terraces comprise of alluvial gravel, sand and silt. Bedded silt and clay with minor sand deposits are found in glaciolacustrine surface deposits adjacent to river terraces (Alberta Research, 1972).

Developments on river terraces have the potential to destabilize slopes. Site-specific investigations are required to assess subsurface conditions and the stability of slopes (Alberta Environment, 1986). The geotechnical investigation conducted by P. Machibroda Engineering Ltd. provides foundation considerations and design recommendations to ensure that the Site is suitable for development (Machibroda, 2008).

Maximum regression of banks varies from 11 to 97 meters in the North Saskatchewan River Valley. A minimum setback width of 20 meters is often applied to slopes within the North Saskatchewan River Valley; a 15 meter setback is required to account for maximum bank regression over 60 years and an additional 5 meter setback is required for access in case of remedial work (Alberta Environment, 1986). Development setbacks and construction setbacks should be applied to prevent bank regression and unstable load conditions during development of the Site.

3.1.5 Hydrology

3.1.5.1 Surface Water

The floodplain historically extended from the North Saskatchewan River to 637 meters above sea level in the River Valley Walterdale neighbourhood (Alberta Environment, 1974). According to the Edmonton Zoning Bylaw 12800, Section 812, Floodplain Protection Overlay, the Site is not situated within the floodplain (City of Edmonton, 2008*b*). There are no wetlands or low-lying areas that maintain surface water onsite.

Surface run-off must be controlled onsite to prevent erosion and slope instability. Surface water movements down slope may potentially erode riverbanks and impact the stability of existing slopes along the North Saskatchewan River.

3.1.5.2 Groundwater

Groundwater seepage and sloughing was encountered at the Site during the geotechnical investigation conducted by P. Machibroda Engineering Ltd. Groundwater was recorded approximately 8.5 meters below ground surface at the Site. Higher groundwater levels may be encountered during periods of precipitation or spring thaw (Machibroda, 2008).

Developments in the North Saskatchewan River Valley have the potential to raise groundwater tables, increase groundwater pressure, and decrease the stability of slopes. Leaky storm sewers, irrigation systems, swimming pools and dugouts are known to impact existing groundwater flow movements and contribute to bank instability in the area (Alberta Environment, 1986). Perched groundwaters could also develop at the Site during pool operations and potentially lead to frost heave (Machibroda, 2008).

Foundation considerations and design recommendations presented in the geotechnical investigation should be included in the proposed design. Similarly, the new Queen Elizabeth pool must be maintained during operation to ensure that there is positive drainage away from the buildings and that the pool is not leaking.

3.1.6 Soil

The Site is located in the Central Parkland subregion of Alberta. Black and dark brown chernozems commonly occur under grassland vegetation and dark gray chernozems and luvisolics occur under moister aspen stands (NRC, 2006).

The soils at the Site are consistent with disturbed conditions and consist of a thin layer of topsoil over silty clay fill, sand and gravel, and hard clay shale (Machibroda, 2008). The phase II environmental site

assessment conducted by Ecomark Ltd. indicated that soils were loam, silty loam, silt, silty clay and silty sand up to 3 and 4.5 m below ground surface (Ecomark, 2009*c*). The phase II environmental site assessment also identified some soils with slightly elevated concentrations of boron and polycyclic aromatic hydrocarbons (PAHs) up to 0.75 m below ground surface (Ecomark, 2009*c*).

3.1.7 Vegetation

The Alberta Natural Heritage Information Centre (ANHIC) was requested to provide information on rare plant occurrences in Twp-052-24-W4M. They report 11 rare plant occurrences in the township (Appendix 1; Table A1.1).

The Site is a manicured green space and does not provide suitable habitat for any of the plant species of concern listed in Table A1.1. The majority of the moss species of concern were reported on steep spruce-dominated slopes (ANHIC, 2008). Smooth sweet cicely (*Osmorhiza longistylis*) and flat-topped white aster (*Aster umbellatus*) were found in open mixedwood or aspen-dominated forests within the river valley, whereas false dragonhead (*Physostegia ledinghamii*) and seaside sedge (*Carex incurviformis var incurviformis*) were found in moist areas near the river shore (ANHIC, 2008). The steep forested slopes south of the Kinsmen Aquatic and Sports Centre and the banks of North Saskatchewan River south of the Site, likely provides higher quality habitat for these species of concern.

The project footprint will be confined to previously disturbed areas; no native vegetation or sensitive vegetative features will be impacted by development of the Site. The vegetative features most sensitive to development include the ornamental trees located south and east of the Site. Three (3) trees will be removed at the Site. The City of Edmonton, River Valley, Forestry and Environmental Services conducted an assessment of the trees at the Site and provided relocation and replacement costs for the work. All tree work will adhere to the City of Edmonton Corporate Tree Management Policy (Edmonton, 2009).

3.1.8 Wildlife

3.1.8.1 Birds

Bird occurrence data for the subject property and surrounding areas was requested from Access Natural History Database maintained by the Federation of Alberta Naturalists (FAN) and the provincial Fish and Wildlife Management Information System (FWMIS). They report 196 bird species occurrences near the subject property (Appendix 1; Table A1.2).

Of the bird species listed, resident birds that rely on forest edges and open habitats have the greatest potential to occur at the Site. American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), black-billed magpie (*Pica hudsonia*) and black-capped chickadee (*Poecile atricapillus*) likely have the greatest potential to use the ornamental trees for nesting and feeding habitat at the Site (Birds of North America, 2008). These species are typically abundant in urban areas and well adapted to human activities.

Native vegetation found along the steep forested slopes and banks of the North Saskatchewan River likely provide higher quality habitat for other bird species that rely on forest edges like alder flycatcher (*Empidonax*

alnorum), Baltimore oriole (*Icterus galbula*), blue-headed vireo (*Vireo solitarius*), barn swallow (*Hirundo rustica*), Canada warbler (*Wilsonia canadensis*), common yellowthroat (*Geothlypis trichas*), hermit thrush (*Catharus guttatus*), least flycatcher (*Empidonax minimus*), red-eyed vireo (*Vireo olivaceus*), Swainson's thrush (*Catharus ustulatus*), willow flycatcher (*Empidonax traillii*), and yellow warbler (*Dendroica coronata*) (Rempel 2007; Birds of North America, 2008). These bird species should not be significantly impacted through development of the Site.

Resident birds that may use the ornamental trees for nesting and feeding habitat may be temporarily impacted during removal of the ornamental trees near the Site and construction activities. Resident birds should return to the remaining ornamental trees following construction activities. To reduce impacts to bird species, removal of trees or other vegetation should be avoided during bird nesting seasons (i.e. April 15 to July 31).

3.1.8.2 Fish

The provincial FWMIS was requested to report fish occurrences in the North Saskatchewan River near the subject property. They report 17 fish species occurrences in the North Saskatchewan River (Appendix 1; Table A1.3).

There is no suitable fish habitat on the subject property. The nearest fish-bearing watercourse is the North Saskatchewan River approximately 165 meters north of the Site. No "harmful alteration, disturbance or destruction" (HADD) of fish habitat will occur as the result of the proposed development. No construction activities will occur within 100 meters of the North Saskatchewan River and all riverbanks and riparian vegetation will remain intact. The proposed Queen Elizabeth Pool project will tie into existing infrastructure associated with the Kinsmen Aquatic and Sports Centre to avoid construction of new outfall structures or facilities that may potentially impact fish and fish habitat.

Fisheries and Oceans Canada (DFO) was contacted to confirm if they had interest in the proposed development. They confirm that the proposed development is not likely to result in impacts to fish and fish habitat. A formal approval from DFO is not required (Appendix 3).

3.1.8.3 Amphibians and Reptiles

The provincial FWMIS was requested to report any occurrence records of reptiles and amphibians (herptiles) near the subject property. Based on the FWMIS occurrence records and a review of relevant literature seven species of herptiles could potentially occur within the subject property (Appendix 1; Table A1.4).

Due to the time of year, there was no evidence of herptiles detected on or near the subject property. The subject property does not provide suitable breeding habitat for amphibians, as there are no temporary or permanent wetlands on the subject property. The forested slopes south of the Kinsmen Aquatic and Sports Centre may provide suitable feeding habitat and overwintering habitat for the wood frog (*Rana sylvatica*), as this species prefers damp, shady woods for habitat (ASRD, 2008). The Canadian toad (*Bufo hemiophyrys*), in contrast, prefers river valleys and lake margins with sandy margins (Hamilton et al., 1998). The banks of the

North Saskatchewan River Valley north of the subject property may provide suitable feeding and overwintering habitat for this species. The proposed project will not significantly impact herptile habitat or use onsite.

3.1.8.4 Mammals

The provincial FWMIS was requested to report any wildlife occurrence records for Twp-52-24-W4M. Based on FWMIS occurrence records and a review of relevant literature, there are 38 mammal species that could potentially occur on or near the subject property (Appendix 1; Table A1.5).

The Site does not provide high quality habitat for mammals. The Site is open, with very little cover and browse available for ungulates like white-tailed deer (*Odocoileus virginianus*). The ornamental trees provide very little habitat for small mammals like least chipmunk (*Tamias minimus*), red squirrel (*Tamiasciurus hudsonicus*) and snowshoe hare (*Lepus americanus*) due to lack of connectivity to other habitats. The proposed project will not significantly impact mammal habitat or use onsite.

3.2 Community and Socio-Economic Environment

3.2.1 Land Use

The Site is located in Kinsmen Park and is a manicured green space located north of Kinsmen Aquatic and Sports Centre and east of Kin Park. Existing amenities near the Site include baseball diamonds, sports fields, playgrounds, picnicking areas, day camping, bicycle trails, and hiking and jogging trails. The proposed development will permanently remove the baseball diamond immediately northwest of the Site, along with some open areas used for picnicking and day camping.

Ecomark Ltd. prepared a phase I environmental site assessment for the Site and surrounding areas. Based on a review of environmental records, Walter's Coal Mine, the John Walter Saw Mill, Carpenter's Shop, and lumberyard were historically in the immediate vicinity of the Site. From the period the developments were in operation, substances could potentially include lead-based paints, wood preservatives, solvents, oils and lubricants. There was also known lead contamination near the High Level Bridge and the Walterdale Bridge located at least 250 meters southwest and southeast of the Site. It was unknown whether the lead contamination extended to the Site. A review of previous geotechnical investigations confirmed the presence of fill material within two meters below ground surface near the proposed pool site. The source of the fill material and the potential for it to harbor contaminants was unknown. For these reasons, a phase II environmental site assessment was required in the immediate vicinity of the proposed pool project to determine the presence or absence of contamination at the Site (Ecomark, 2009*a*; Ecomark, 2009*b*).

The phase II environmental site assessment (May 11, 2009) identified slightly elevated levels of boron and PAHs in the top layer of fill, up to 0.75 m below ground surface. The presence of boron can be attributed to a number of activities at the Site. Historical industrial activities such as coal mining or wood preservatives make use of boron and may have leached into the soil. Due to the close proximity of the Site to the North Saskatchewan River, the levels of boron may have been deposited during flood events. Boron is also present in many fertilizers, which throughout repeat applications allow for accumulation (Ecomark, 2009*c*). The PAHs

present in soil can be attributed to historic land uses such as wood treatment from the former lumber yard (Ecomark, 2009*c*).

The boron and PAH exceedances should not preclude development; the soil can be properly managed to avoid any negative ecological or human health effects. A remediation work plan has been submitted and is currently in circulation for review and approval by Alberta Environment, Alberta Health Services and the City of Edmonton Transportation Department. The proposed remediation work plan involves removing topsoil and subsoil within the development footprint up to 0.75 meters below ground surface, sampling soils for available boron and PAHs in soil, and sending contaminated soil to a Class II landfill for disposal. The excavation floor will be sampled at regular intervals to confirm that all contaminated soils have been removed from the excavation site (Ecomark, 2009*d*).

The proposed Queen Elizabeth Pool project intends to tie in most of the existing amenities near the Site. A hard surface walkway will be constructed between the Kinsmen Aquatic and Sports Centre, Kin Park, and the pool site. The proposed outdoor pool, pool pavilion and Kin Park spray park will add additional amenities to Kinsmen Park and is expected to enhance the existing land use. The proposed development will not significantly impact pedestrian routes or the existing cross-country ski loop, but may displace the winter overflow parking area located west of the main parking area. The River Valley trail system will not be impacted during construction activities.

3.2.2 Future Expansion

The proposed Queen Elizabeth Pool project will be situated north of the Kinsmen Aquatic and Sports Centre and east of Kin Park. The preferred configuration potentially limits the expansion of the Kinsmen Aquatic and Sports Centre to the north. The proposed project also potentially limits the expansion of other existing amenities, like Kin Park and the parking lot. Nonetheless, the feasibility study concluded that the preferred configuration was "the most feasible option from the planning perspective" (Johns Group2, 2008*a*). The proposed project should not significantly impact future expansion of these existing amenities.

3.2.3 Parking and Traffic

The proposed Queen Elizabeth Pool project does not intend to add any additional parking facilities for the proposed facility. Access to Kinsmen Park is accessible by car, bus, bicycle, and by foot (Johns Group2, 2008*a*). Many park users note that transit routes are inconvenient due to the one-way access along Walterdale Drive. Parking at the Kinsmen Aquatic and Sports Centre tends to be limited during the winter months when the public seeks activity indoors. During summer months, Kinsmen Park attracts more pedestrians and cyclists, which tends to alleviate parking demands (Kipen Gibbs, 1994).

Bunt & Associates conducted a parking assessment at the Site to confirm if the existing parking supply will accommodate parking demand associated with the new Queen Elizabeth pool. They report that the proposed development in Kinsmen Park will not significantly alter on-site parking demand. Peak user periods occur during weekends in the winter during major events (i.e. swim meets). The existing 700 parking stalls are

sufficient to accommodate the parking demand, since the peak hours of outdoor pool use do not coincide with peak hours of the Kinsmen Aquatic and Sports Centre (Bunt & Associates, 2009).

For these reasons, no additional parking will be constructed for the proposed project. Over-flow parking is occasionally required during the winter and for special events. Parking alternatives are available, in the event that over-flow parking is needed. When higher than expected parking demands are expected at Kinsmen Park, over-flow and remote parking lots may be utilized north of the proposed development or offsite. The remaining field available north of the proposed pool site is approximately 5,000 m^2 and would provide up to 155 overflow parking stalls, as required (Bunt & Associates, 2009).

3.2.4 Noise

The Site is situated in Kinsmen Park, adjacent to the Kinsmen Aquatic and Sports Centre and Kin Park. The proposed site is situated west of Walterdale Drive and the Walterdale Bridge. The Walterdale Bridge typically supports an average of 33,300 vehicles per weekday. Noise generated from traffic along these roads is greatest during the morning and evening rush hour periods (City of Edmonton, 2008*a*). Vehicular speed and vehicular noise significantly decreases as vehicles enter the parking lots at the Kinsmen Aquatic and Sport Centre.

Noise generated from construction traffic and activities may potentially impact park users during development. Consideration should be given to park users to limit excessive noise during peak user periods. Similarly, construction activities and schedules should be made available to the public during major events to avoid unnecessary disruptions or conflicts. Communication with park users during the construction period is critical to avoid park user conflicts.

3.2.5 Odour

There were no significant odours detected at the Site. The new outdoor pool is open to the elements, which will limit detection of odours at the Site (Johns Group2, 2008*b*).

Odours and dust may be generated during construction activities at the Site. Measures should be applied to limit generation of odours and dust. As the construction site will be highly visible in Kinsmen Park, public safety and security should be a top priority (Kipen Gibbs, 1994).

3.2.6 Aesthetics

The Site is a manicured green space situated north of the Kinsmen Aquatic and Sports Centre, and will overlook the High Level Bridge to the west, the Legislature Buildings to the north and downtown skyline to the east. The setting offered by Kinsmen Park is very different from the existing Queen Elizabeth Pool site, which is situated along a river valley slope surrounded by mature ornamental trees and native woodlands.

The new pool, spray park amenity and pool pavilion associated with the proposed Queen Elizabeth Pool project will reflect the river valley landscape. Shaped concrete columns, wood beams and wood-shingled roofs will

reflect the natural environment. The existing ornamental trees and future landscaping will connect the proposed facility to existing natural features and amenities. The new pool and spray park amenity will be oriented to the sun, while the pool pavilion will shelter the pool from the northwest prevailing winds (Johns Group2, 2008*b*).

Aesthetics of the Site may be impacted during construction activities with the presence of construction equipment, staging areas, topsoil stockpiles and building materials on Site. Following construction, however, the proposed project will likely enhance the existing aesthetics.

3.2.7 Archaeological and Historic Resources

The Site is situated along the south bank of the North Saskatchewan River. Prehistoric aboriginal people and early European settlers commonly used the North Saskatchewan River Valley for food, settlement, and travel. As a result, sections of downtown Edmonton along the North Saskatchewan River are known historic sites and support numerous archaeological and palaeontological resources.

The proposed project footprint will be confined to previously disturbed areas within Kinsmen Park; however, it was unknown if there are any historic resources subsurface that may potentially be altered, damaged or destroyed from development of the Site. According to the *Listing of Historic Resources* (September 2008), there were six known occurrence records of historic and archaeological resources in SW-32-052-24-W4M, ranging from "lands afforded the highest level of protection" to "lands believed to contain a historic resource" (Alberta Culture and Community Spirit, 2008).

Alberta Western Heritage Inc. conducted a Historical Resources Impact Assessment (HRIA) in the area of the proposed development to determine if any intact historical resources were present at the Site. One shovel test and four large backhole tests were excavated. During the assessment, a portion of a known archaeological site was identified within the proposed development area. The remains within the archaeological site were largely disturbed and consisted of modern, historic and possible precontact components. Predominant historic artifacts included building materials (i.e. brick, wood, nails) and fragmented faunal materials. Modern artifacts included golf balls, rubber, aluminum can, plastic and concrete fragments. More deeply buried precontact components consisted of bison faunal remains and charcoal (Alberta Western Heritage, 2009).

Overall, the recovered historic period artifacts were sparse, scattered, very fragmented, and unidentifiable and did not yield any new information on the John Walter period in the area. The large pieces of bison faunal material buried at depth were sparse and not well defined. For these reasons, Alberta Western Heritage Inc. recommended that the proposed project proceed as planned. A professional archaeologist should monitor excavation activities during construction to further assist in defining precontact occupation in the area (Alberta Western Heritage, 2009).

A copy of the *Historical Resources Act* clearance letter from Alberta Culture and Community Spirit for development of the proposed pool project is available in Appendix 4.

4 CONSTRUCTION AND ENGINEERING

4.1 General Description

The proposed new Queen Elizabeth Pool project involves construction of a new pool, spray park amenity and pool pavilion in Kinsmen Park. The pool is a six-lane, 25-meter pool designed with a zero-entry side, for direct and easy access in to the pool. The project footprint will be confined to previously disturbed areas and will be tied in to existing infrastructure in Kinsmen Park.

4.2 Options and Alternatives

The proposed project was designed in consideration of project objectives and project budget. During the schematic design process, the original project design was significantly reduced to accommodate project costs (Johns Group2, 2008*b*).

The proposed project was designed to utilize sustainable practices. The pool pavilion was designed with durable materials that have a recyclable component. Buildings are easy to construct and deconstruct, and materials include pre-finished glue laminated wood beams, wood joists, galvanized metal deck, concrete block, and wood slat doors. The design reflects the natural environment and allows for easy repair and maintenance. The proposed project also ties into existing infrastructure at Kinsmen Park to minimize site disturbance and construction of new service lines. Surface water will be managed onsite and the pool pavilion will be equipped with low-flow faucets, showers and toilets to manage and conserve water resources (Johns Group2, 2008*b*).

4.3 Construction Components and Techniques

The construction components and techniques are described in detail in the Schematic Design Report prepared by Johns Group2 in December 2008 (Johns Group2, 2008*b*). They describe the structural, mechanical and electrical components of the proposed project.

The intent of the proposed construction components and techniques are to provide an environmentally conscious and sustainable system design. Water and energy efficient plumbing and pool heating systems will be incorporated with the proposed development, and safety systems will be adopted to ensure a high quality pool environment (Johns Group2, 2008*b*).

4.4 Scheduling

Jen-Col Construction is the construction manager responsible for the project costs and project schedule (Johns Group2, 2008*b*). The proposed start date will occur following City Council approval (Summer 2009) and once all the approvals and permits are in place. The proposed project will be completed by 2010.

The proposed staging and laydown areas will occur over the closest baseball diamond to the Site, at least 100 meters from the riverbank. The location of the proposed staging and laydown areas are available in Figure 3.

5 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

5.1 Assessment Methods

Another purpose of an EIA is to identify mitigation measures to reduce, eliminate or compensate for impacts caused by development of the Site. Based on the information provided in previous sections, potential environmental impacts from development on each element were classified as potential short-term and/or long-term impacts. Generally, short-term impacts may occur during the construction phase of the proposed project, whereas long-term impacts may occur during the operation of the new Queen Elizabeth pool. Mitigation measures are presented to reduce or eliminate potential environmental impacts that are identified.

5.2 Short Term Impacts

5.2.1 Topography

Topography will be impacted to accommodate construction, but will be contoured during landscaping activities. A landscaped berm will be constructed around the pool pavilion. The direction of surface water flow may be impacted during construction.

5.2.2 Soil

Topsoil will be removed from the Site, prior to construction and tested to confirm that the topsoil is suitable for reuse at the Site. Topsoil will be salvaged and stockpiled prior to construction, and then replaced following construction activities. Additional topsoil will be brought in on Site for reclamation purposes. Until vegetation reestablishes, topsoil may potentially be lost due to wind and water erosion. Surface soils with elevated boron concentrations may impact growth of vegetation at the Site and must be managed accordingly.

5.2.3 Vegetation

Ornamental grasses and three (3) ornamental trees may be removed during construction activities. Following replacement of topsoil, all areas will be revegetated with ornamental grasses and trees. Native vegetation or vegetation naturalized to the Central Parkland Subregion of Alberta will be used, where possible.

5.2.4 Wildlife

Wildlife use near the Site is limited to resident birds and small mammals well adapted to human activities. The Site does not provide high quality wildlife habitat. Wildlife will be deterred from the Site during construction activities, but will likely return to the area once vegetation reestablishes. Construction activities may result in spills or releases that may have potentially impact wildlife and wildlife habitat.

5.2.5 Noise

Noise will be generated during construction of the new Queen Elizabeth pool project and will likely impact existing park users during this time. The ornamental trees in between the Site and the Kinsmen Park parking lot will provide a limited sound buffer from vehicular traffic.

5.2.6 Odours

Odours and dust may be generated during construction activities from maintenance and use of construction equipment at the Site.

5.2.7 Aesthetics

Aesthetics will also be impacted during construction with the presence of construction equipment, staging areas, topsoil stockpiles and building materials on Site. Following construction, all equipment and unused building materials will be removed from the Site.

5.3 Long Term Impacts

5.3.1 Geology

Development of the Site may cause frost heave and lead to bank instability. Foundation considerations and design recommendations will be applied to prevent unstable load conditions.

5.3.2 Hydrology

The proposed project may potentially raise groundwater tables, increase groundwater pressure and decrease the stability of slopes. Foundation considerations and design recommendations will be applied to prevent perched groundwater conditions.

5.3.3 Land Use

The proposed development will permanently remove the baseball diamond immediately northwest of the Site, along with some open areas used for picnicking and day camping.

5.3.4 Future Expansion

The proposed Queen Elizabeth pool project may limit the future expansion of Kin Park and Kinsmen Aquatic and Sports Centre. The proposed project is consistent with the Kin Park Redevelopment Plan and the Kinsmen Master Plan, and should not cause a significant impact.

5.3.5 Parking and Traffic

The existing parking supply should accommodate parking demand associated with the proposed Queen Elizabeth pool. The remaining field north of the proposed pool site will provide up to 155 overflow parking stalls during winter and special events (Bunt & Associates, 2009).

5.3.6 Odour

The new outdoor pool is open to the elements, which will limit detection of odours at the Site.

5.3.7 Archaeological and Historic Resources

The proposed development is not expected to significantly impact important archaeological and palaeontological resources located at the Site during development.

5.4 Mitigation Measures

Capital Construction has committed to implement the tasks and mitigation measures outlined in the following sections.

5.4.1 Topography

- Contour site prior to construction to maintain a positive drainage away from the North Saskatchewan River and to existing stormwater management facilities in Kinsmen Park.
- Contour site following construction to tie in existing Site topography and connect natural features.

5.4.2 Geology

- Apply foundation considerations and design recommendations provided in the geotechnical investigation prepared by P. Machibroda Engineering Ltd. to ensure bank stability.

5.4.3 Hydrology

- Apply foundation considerations and design recommendations provided in the geotechnical investigation prepare by P. Machibroda Engineering Ltd. to ensure bank stability.
- Install a temporary stormwater sediment trap down grade from potential drainage areas during construction so that storage is provided in the event of rainfall and increased runoff. Remove the temporary structure once vegetation reestablishes. The water can be reused onsite as dust control, with approval from Alberta Environment and the City of Edmonton.
- Ensure all existing catch basins south of the Site are protected during construction. Ensure no surface runoff is discharged directly through existing catch basins or into the North Saskatchewan River without proper treatment (i.e. sediment and erosion control structures).
- Prepare a dewatering and water treatment plan for the construction site, as groundwater may be encountered during construction.
- Develop a post-construction stormwater management plan for the proposed development and submit to City of Edmonton, Drainage Services for approval prior to construction.
- Maintain a positive surface drainage away from buildings and direct surface water to proposed stormwater management facilities (i.e. storm pipe system and outfall structure upstream of the Walterdale Bridge).
- Ensure that all sediment-laden runoff and contaminant discharges (i.e. chlorine, etc.) are considered in the stormwater management plan.
- Monitor the outfall structure upstream of the Walterdale Bridge to identify changes in water quality of stormwater during construction.
- Maintain the new pool to ensure that the pool is not leaking and contributing to bank instability.

- Develop and implement a contingency plan to ensure that all construction equipment, fuels, oils, lubricants and other construction items that may cause an adverse effect on the environment will be safely removed upland during a flood event.

5.4.4 Soil

- Implement the remediation work plan for the proposed development following approval from Alberta Environment, Alberta Health Services and the City of Edmonton Transportation Department.
- Develop an Erosion and Sediment Control (ESC) Plan to protect environmentally sensitive areas from construction activities. The ESC Plan will prevent loss of topsoil and subsoil from wind and water erosion, and will prevent surface water with high sediment loads from entering stormwater management facilities or the North Saskatchewan River during construction.
- Salvage thin layer of topsoil prior to construction, where possible.
- Place topsoil and subsoil in separate stockpiles in a secure area, away from daily operations and at least 100 meters away from the North Saskatchewan River.
- Remove surface soils that may contain slightly elevated boron or PAH concentrations (up to 0.75 m in depth) during development and place in separate stockpiles from other excavated materials.
- Place stockpiles on an appropriate liner to prevent impact to surrounding vegetation.
- Test stockpiles for boron and PAHs prior to determining intended use. If soils exceed Alberta Tier I Soil and Groundwater Remediation Guidelines (2008), stockpiles must be removed from the Site and sent to a Class II landfill facility.
- Place sediment control structures (i.e. silt socks or silt fences) around existing stockpile locations.
- Test all incoming fill material to ensure that fill materials used onsite meets Alberta Tier I Soil and Groundwater Remediation Guidelines (2008).
- Replace subsoil and topsoil in proper sequence following construction activities.
- Revegetate following contouring and topsoil replacement to reduce erosion potential.
- Hydromulch areas of bare soil once earthwork is completed to ensure that erosion due to wind and water will be kept to a minimum until vegetation establishes.
- Inspect erosion and sediment control structures to identify damage and sediment accumulation weekly and immediately following heavy rain events. The sediment should be carefully removed if sediment accumulates to a depth of 0.2 meters. Sediment control structures should be repaired or replaced, as required.
- Ensure the construction manager is responsible for the ESC Plan being implemented, controlled and monitored. Designate one person onsite to monitor and maintain all sediment control structures and to notify all new sub-contractors and employees of the ESC Plan.

5.4.5 Vegetation

- Prior to construction, receive necessary approval and/or permits from the City of Edmonton, River Valley, Forestry and Environmental Services.
- Train construction personnel on tree protection techniques and follow the hoarding requirements as per City of Edmonton Corporate Tree Management Policy.
- Relocate and replace any trees removed during construction activities as per the City of Edmonton Corporate Tree Management Policy.
- Replant ornamental grasses immediately following construction activities to reduce erosion potential and limit the establishment of weedy species.
- Replant native vegetation or vegetation naturalized to the Central Parkland Subregion of Alberta, where practical.

5.4.6 Wildlife

- Avoid removal of trees or other vegetation during bird nesting seasons (April 15 to July 31). A nesting bird study is required if trees are removed during bird nesting seasons.
- Replant vegetation in areas that will promote connectivity to other habitats, following construction. Develop wildlife habitat corridors to adjacent habitats, where possible.
- Potential contamination sources during construction include sediment, fuel, lubricants, and cleaners. Develop spill prevention and response techniques to prevent contaminants from entering the North Saskatchewan River or adjacent habitats:
    - Use appropriate secondary containment devices to store fuels, lubricants and cleaners.
    - Have spill kits available on Site.
    - Ensure construction equipment is clean and in good working order prior to bringing it on Site.
    - Ensure construction staging and laydown areas (equipment maintenance and refueling areas) are situated at least 100 meters away from the North Saskatchewan River (Figure 3).
    - Develop an emergency response plan (ERP) for the construction phase of the project.
    - Report all spills that have the potential to cause an adverse environmental effect, regardless of size, to Alberta Environment: 1-800-222-6514.

5.4.7 Land Use

- Schedule construction activities to avoid peak user periods and minimize disruption and avoid conflict with existing park users. Provide appropriate signage and construction details for park users.
- Erect fences and provide security around the construction site to avoid park users from accessing the construction site.

- Develop and implement a plan to determine the extent of the contamination and the risk associated with it. A plan to manage contaminated soils is addressed in the phase II environmental site assessment (Ecomark, 2009*c*).
- Construct a hard surface walkway between the Kinsmen Aquatic and Sports Centre, Kin Park, and the new pool to provide safe access for children and other park users.

5.4.8 Parking and Traffic

- Investigate and implement alternative parking locations in the event that over-flow parking is needed (i.e. off-site, the field north of the proposed development etc.).
- Identify and implement a bicycle parking area near the proposed pool site.

5.4.9 Noise and Odour

- Notify user groups of construction schedule to minimize disruption and avoid conflict with existing park users.
- Plant ornamental shrubbery in between the pool and parking lot to reduce noise.
- Only store limited amounts of fuels, cleaners or other materials that may emit odours at the Site during construction.
- Use water from an approved source to ensure that dust is controlled onsite.
- Manage construction and municipal waste on Site daily to avoid odours and to avoid conflicts with problem wildlife.

5.4.10 Aesthetics

- Avoid long construction periods to minimize disruption and avoid conflict with existing park users.
- Apply design and finishing techniques recommended by Johns Group2 Architecture and Engineering to tie in the pool pavilion to the existing landscape and natural features.

5.4.11 Archaeological and Historic Resources

- Obtain necessary approvals and/or permits from Alberta Culture and Community Spirit prior to construction activities.
- Retain a professional archaeologist to monitor specific construction activities that may impact archaeological, palaeontological or historic resources, as recommended in the HRIA.

6 PUBLIC CONSULTATION

During the project feasibility study, an in-house design charrette was conducted to develop preliminary ideas for the possible configurations at Kinsmen Park. A stakeholder charrette was subsequently held on April 22 and 23, 2008, which involved representatives from the City of Edmonton, Community Services Department; City of Edmonton, Asset Management & Public Works Department; the Friends of Queen E. Pool Society; and

the Kinsmen Club of Edmonton (Johns Group2, 2008*b*). The configurations were evaluated with respect to project costs and the stakeholders expressed support for the proposed pool site and configuration in Kinsmen Park. Subsequent schematic designs for the project were based on these discussions with these stakeholders (Johns Group2, 2008*b*).

Further public consultation was facilitated through circulation of a public notification in the Edmonton Journal and a public open house. The Edmonton Journal advertised the proposed pool project and invitation to the public open house on Friday, February 27, 2009. The public open house was held on Tuesday, March 3, 2009. A copy of the invitation is available in Appendix 5. The invitation targeted community leagues, Edmonton Sports Council, Aquarium Club of Edmonton (ACE), the Kinsmen Club of Edmonton, and recreational users of the Kinsmen Sports and Aquatic Centre. Information on the public open house was also posted on the City of Edmonton website. The public open house also received media coverage from Global TV, CTV, 630 Ched radio, and 24 Hours (Dumont, 2009, Email Comm.).

Overall, there was considerable amount of public support to replace the Queen Elizabeth pool in Edmonton. A summary response form from the information session is available in Appendix 5. Public concerns were raised over the use of universal change rooms within the proposed project design. Public concerns were diffused through explanation of the proposed design. Some benefits of the universal change room are summarized below (Edmonton, 2009*c*):

- It provides operational flexibility, and therefore reduces operating costs, by permitting lifeguards of either sex to supervise the change room.
- The design meets the legislated accessibility requirements for disabled persons at recreational facilities, and accommodates people with an attendant of the opposite sex.
- The universal change room is a shared space, and allows people to change in their own private cubicle rather than changing in front of others. Cubicles vary in size; some cubicles can accommodate a family of five, wheelchair users and attendants, or just individual users.
- Washrooms remain segregated for males and females. Showers are outside on the pool deck.
- The design allows for greater safety and security of patrons. Parents can bring children of both sexes into the common room and still have a private cubicle.

The City of Edmonton met with the Friends of Queen E. Pool Society and confirmed that the City "will continue to work towards a solution that will allow the project to continue and the Friends of Queen E. Pool Society will continue to fund the project as originally planned…. [The] City will review the design based on safety considerations, the requirements of potential users of the pool and effective use of taxpayer dollars. The safety of citizens using City facilities is paramount. While no design guarantees a facility will be incident free, minimizing risk is always taken into account during the planning, design and operation of facilities" (Edmonton, 2009*b*).

7 CONCLUSIONS AND RECOMMENDATIONS

The existing environment was described and evaluated based on a winter field reconnaissance, review of relevant literature and review of environmental reports. The geotechnical investigation conducted by P. Machibroda Engineering Ltd., the phase I and phase II environmental site assessments conducted by Ecomark Ltd., the parking assessment conducted by Bunt & Associates, and the HRIA conducted by Alberta Western Heritage Inc. provided information on site-specific conditions for the proposed project.

Short-term and long-term effects were investigated based on the site plan and construction details provided in the Schematic Design Report prepared by Johns Group2 Architecture and Engineering. The mitigation measures were presented to reduce and eliminate potentially adverse impacts to the environmental and socio-economic elements. Mitigation measures were presented to minimize potential short-term impacts during the construction phase of the project and design alternatives were presented to eliminate potential long-term impacts during operation of the new Queen Elizabeth pool.

Initial consultation with stakeholders was conducted during the project feasibility study. Additional public consultation was conducted through a public open house to identify other potential impacts. Public concerns over use of universal change rooms were identified. The City of Edmonton met with the Friends of Queen E. Pool Society and committed to "review the design based on safety considerations, the requirements of potential users of the pool and effective use of taxpayer dollars". No other public concerns were identified.

Based on these findings, the proposed project as described in this assessment should proceed with little to no impact to the natural environment, if the proposed mitigation measures are applied.

8 REFERENCES

Alberta Culture and Community Spirit. September 2008. Listing of Historic Resources. Available online at: http://culture.alberta.ca/heritage/resourcemanagement/landuseplanning/default.aspx

Alberta Environment. 1974. Flood Plain Study of the North Saskatchewan River through Edmonton. Samide, G.W. and S.A. Lowe. Environmental Engineering Support Services.

Alberta Environment. June 1986. Slope Stability in the North Saskatchewan River Valley. Geotechnical Branch. Design and Construction Division.

Alberta Environment. August 2008. Alberta Tier 1 Soil and Groundwater Remediation Guidelines.

Alberta Natural Heritage Information Centre (ANHIC). December 12, 2008. Element Occurrence Records. 30 pp.

Alberta Research. 1972. Surface Geology of Edmonton. Map Sheet 83H.

Alberta Sustainable Resource Development (ASRD). Website accessed January 2009. http://www.srd.gov.ab.ca/fishwildlife/default.aspx

Alberta Western Heritage Inc. April 2009. Historical Resources Impact Assessment of the Queen Elizabeth Outdoor Pool Project. SW-32-052-24-W4M at Kinsmen Park, Edmonton, Alberta. Archaeological Research Permit No. 2009-017.

Birds of North America Online. Website accessed December 2008. http://bna.birds.cornell.edu/bna

Bunt & Associates. May 8, 2009. Kinsmen Park Queen Elizabeth Pool Parking Assessment: Draft Report. Prepared for the City of Edmonton. Project No. 3027.25.

City of Edmonton. 1992. The Ribbon of Green Master Plan.

City of Edmonton. December 2000. A Guide to Environmental Review Requirements: In the North Saskatchewan River Valley and Ravine System. Environmental Planning, Corporate Planning and Policy Section, Planning and Policy Services Branch.

City of Edmonton. June 13, 2006. The Urban Parks Management Plan (UPMP): 2006-2016.

City of Edmonton. January 16, 2008. Outdoor Aquatic Strategy: 2008 – 2017. City of Edmonton Policy C534.

City of Edmonton. May 5, 2008. 2007 Traffic Flow Map: Average Annual Weekday Traffic. Prepared for City of Edmonton, Traffic Department.

City of Edmonton. September 10, 2008. Floodplain Protection Overlay Map. City of Edmonton Zoning Bylaw 12800, Section 812. Planning and Development Branch.

City of Edmonton. April 2, 2009. Memorandum: Estimate for tree work for new Queen E Pool at Kinsmen Sports Centre. From Bonnie Fermanuik, River Valley, Forestry and Environmental Services.

City of Edmonton. April 2, 2009. City of Edmonton Website. City of Edmonton Update on Queen Elizabeth Outdoor Pool Project. Available at: http://www.edmonton.ca/city_government/news/2009/12780.aspx

City of Edmonton. April 28, 2009. City of Edmonton Website. Response to Universal Change Room. Available at: http://www.edmonton.ca/city_government/city_organization/universal-change-room.aspx

Dumont, Rachel. Project Coordinator, Recreation Facility Services, City of Edmonton, Community Services. 2008 and 2009. Email Communications to Robb Heit, Building and Facilities Project Officer, City of Edmonton, Asset Management & Public Works.

Ecomark Ltd. January 20, 2009*a*. Phase I Environmental Site Assessment. Prepared for Robb Heit, City of Edmonton, Asset Management & Public Works.

Ecomark Ltd. January 20, 2009*b*. Addendum to Phase I Environmental Site Assessment. Prepared for Robb Heit, City of Edmonton, Asset Management & Public Works.

Ecomark Ltd. May 11, 2009*c*. Phase II Environmental Site Assessment. Prepared for Robb Heit, City of Edmonton, Asset Management & Public Works.

Ecomark Ltd. May 13, 2009*d.* Confirmatory Sampling Plan of the Proposed Queen Elizabeth Pool Site. 9100 Walterdale Hill, Edmonton, Alberta. Prepared for Robb Heit, City of Edmonton, Asset Management & Public Works.

Hamilton, I.M., Skilnick, J.L., Troughton, H., Russell, A.P., and G.L. Powell. 1998. Status of the Canadian Toad (*Bufo hemiophrys*) in Alberta. Alberta Environmental Protection, Wildlife Management Division, and the Alberta Conservation Association; Wildlife Status Report No. 12; Edmonton, Alberta. 30 pp.

Hardy Associates (1978) Ltd. March 5, 1986. Kinsmen Club of Edmonton, Proposed Twin Ice Arena, Kinsmen Regional Sports Centre. Technical Memorandum No. 2. Slope Stability Analyses. EG-06090/EG-06091. Prepared for the Kinsmen Club of Edmonton.

Johns Group2 Architecture and Engineering (Johns Group2). June 19, 2008. Feasibility Study: Queen Elizabeth Pool and Kin Water Play Amenity in Kinsmen Park. Prepared for the City of Edmonton.

Johns Group2 Architecture and Engineering (Johns Group2). December 5, 2008. Queen Elizabeth Pool in Kinsmen Park: Schematic Design Report. Prepared for the City of Edmonton.

Kipen Gibbs Landscape Architects Ltd. August 1994. John Walter Museum Interpretive Centre: Environmental Impact Assessment. Prepare for Edmonton 1994 Forestry Capital Society Legacy Committee and Edmonton Parks and Recreation.

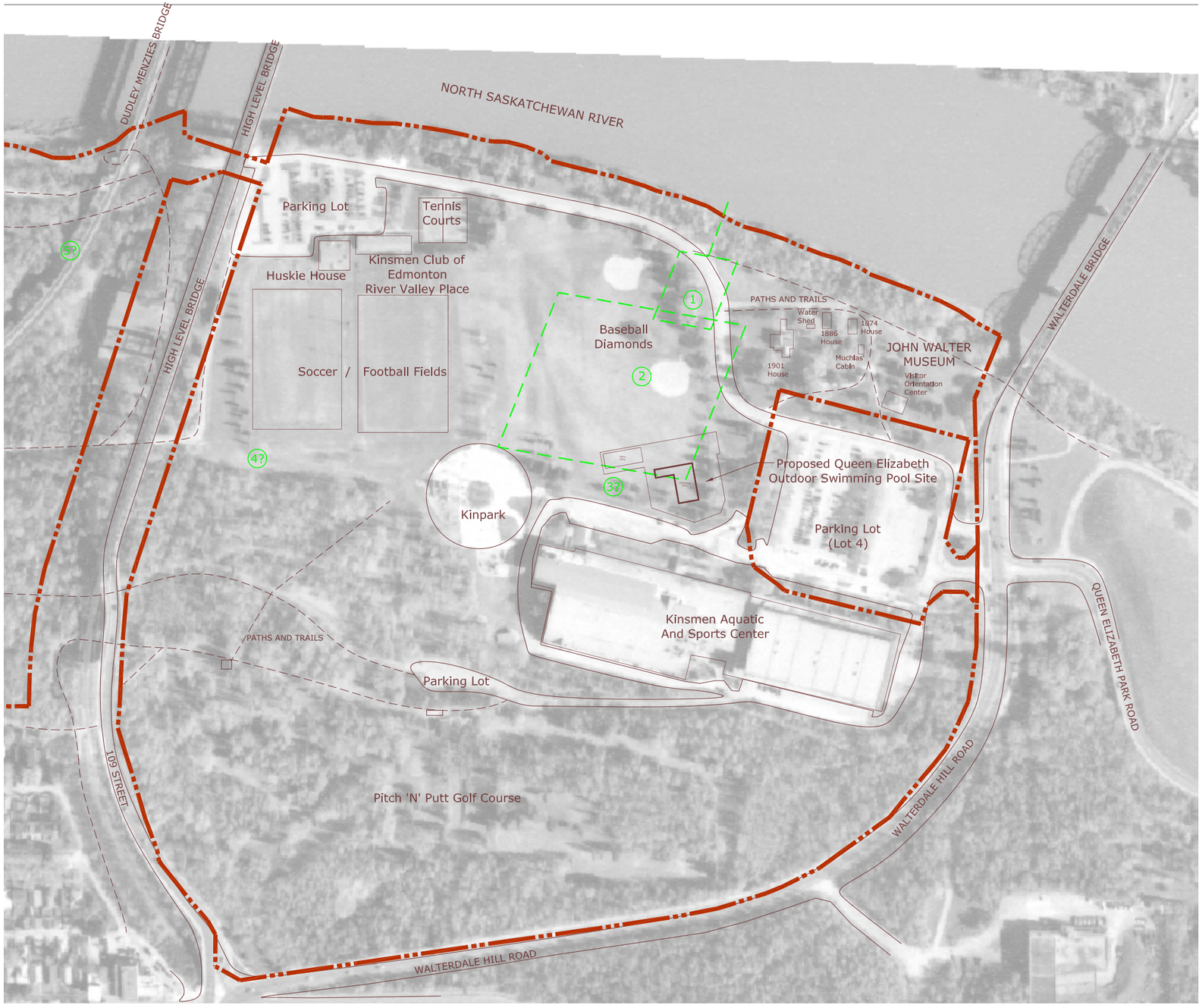
Natural Regions Committee (NRC). 2006. Natural Regions and Subregions of Alberta. Compiled by D.J. Downing and W.W. Pettapiece. Government of Alberta. Pub. No. T/852.

P. Machibroda Engineering Ltd. December 12, 2008. Geotechnical Investigation, Proposed Queen Elizabeth Pool, Kinsmen Sports Centre: 9100 Walterdale Hill Road, Edmonton, Alberta. PMEL File No. A08-1418. Prepared for City of Edmonton, Asset Management & Public Works.

Rempel, R.S. 2007. Selecting Focal Songbird Species for Biodiversity Conservation Assessment: Response to Forest Cover Amount and Configuration. Avian Conservation and Ecology. 2 (1):6. Available online: http://www.ace-eco.org/vol2/iss1/art6/

Spencer Environmental Services Ltd. August 2006. Queen Elizabeth Redevelopment Project Environmental Screening Report: Draft Report. Prepared for the City of Edmonton, Asset Management & Public Works.

Stobbe, J.D. October 2, 2008. Letter to Community Services and City Council. Available online at: www.savequeenepool.org



LEGEND

- PROPERTY BOUNDARY
- 1 HISTORICAL LANDMARK
- 1? LOCATION NOT CONFIRMED

NOTES

APPROXIMATE LOCATIONS OF HISTORIC LANDMARKS BASED ON LITERARY REVIEW:

1	JOHN WALTER LTD. SAWMILL
2	LUMBER YARD
3	WALTER'S MINE LOCATION
4	COAL MINE #127
5	POLLARD BROS. BRICKYARD

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REV #	DATE:	DESCRIPTION
1.0	2009-04-29	MAP OF AREA-ENVIRONMENTAL IMPACT ASSESSMENT

MAP OF AREA
ENVIRONMENTAL IMPACT ASSESSMENT
KINSMEN PARK
LOTS 1 & 4, BLOCK 200, PLAN 862 0658
SW-32-052-24-W4M
EDMONTON, ALBERTA

DRAWN BY: SMR
REVIEWED BY: AHT
APPROVED BY: AHT

ECOMARK ltd. Suite 100, 16812-114th Avenue NW Edmonton, AB T5M 2S2 P: (780) 444-0706 F: 1-866-337-8631 E: ecomark@ecomarkenv.com
Suite 200, 638 - 11 Avenue SW Calgary, AB T2R 0E2 P: (403) 410-3863 W: www.ecomarkenv.com

PROJECT: EDMON-08503-C4476990-10
DATE: 2009-04-29
DWG: EDMON-08503-C4476990-10_MA1_f-hy-2

REV 1.0
FIG 1

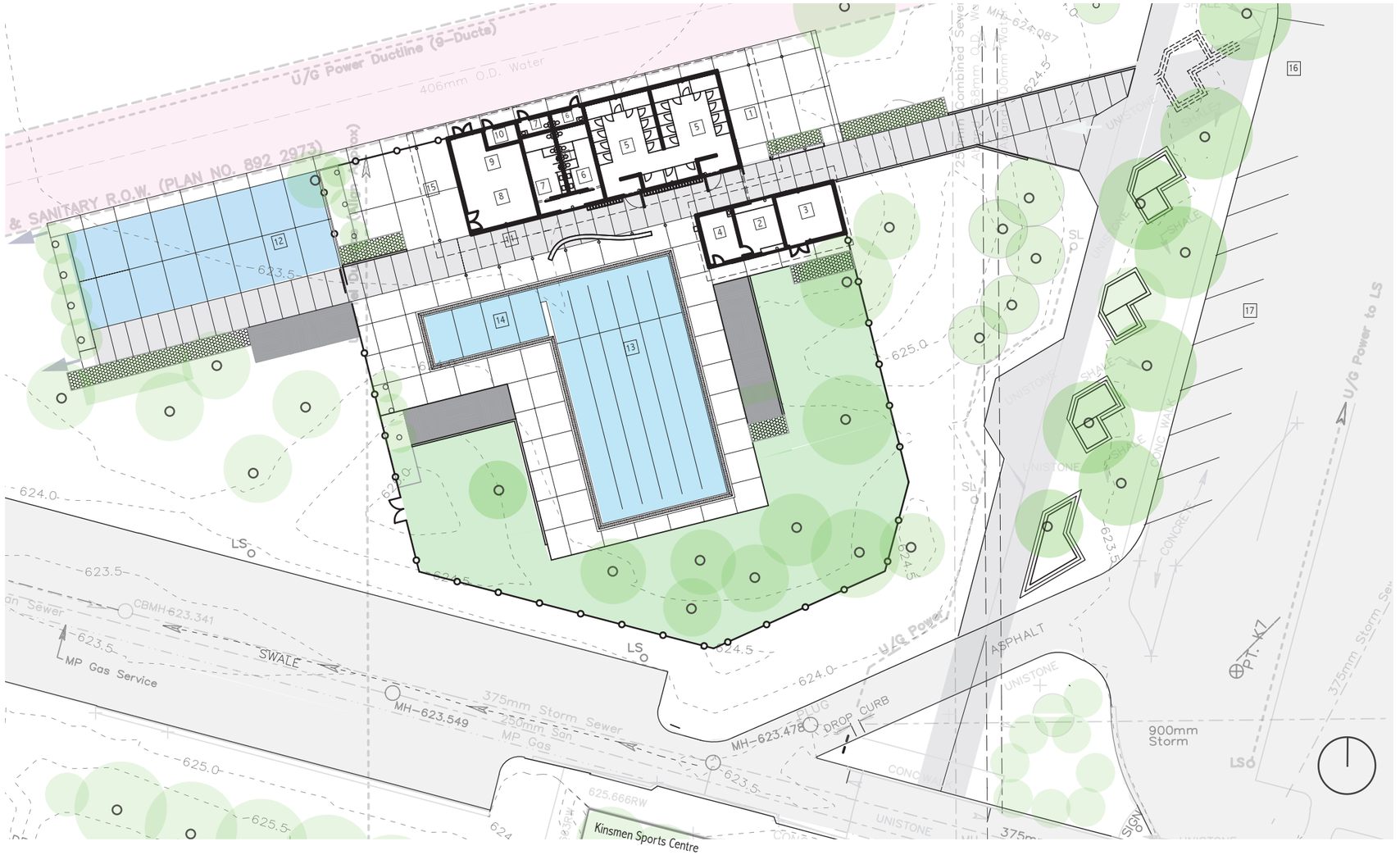

Figure 2: Site Plan

LEGEND

- PROPERTY BOUNDARY
- PROPOSED STAGING AND LAYDOWN AREA

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REV #	DATE:	DESCRIPTION
1.0	2009-04-30	PROPOSED STAGING AND LAYDOWN AREA

PROPOSED STAGING AND LAYDOWN AREA
ENVIRONMENTAL IMPACT ASSESSMENT
KINSMEN PARK
LOTS 1 & 4, BLOCK 200, PLAN 862 0658
SW-32-052-24-W4M
EDMONTON, ALBERTA

DRAWN BY: SMR
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PROJECT: EDMON-08503-C4476990-10
DATE: 2009-04-30
DWG: EDMON-08503-C4476990-10_SA1_d-smr-1

REV 1.0
FIG 3

Appendix 1: Vegetation and Wildlife Occurrence Records

Table A1.1 Plant Species of Concern Compiled from Alberta Natural Heritage Information Centre (ANHIC)

Common Name	Scientific Name	Provincial Rank	Global Rank
Moss	*Bryum algovicum*	S2	G4G5
Moss	*Callicladium haldanianum*	S1	G5
Fallacious Screw Moss	*Didymodon fallax*	S2	G5
Moss	*Entodon concinnus*	S2	G4G5
Moss	*Pohlia atropurpurea*	S1	G4G5
Moss	*Rhodobryum ontariense*	S2	G5
Smooth Sweet Cicely	*Osmorhiza longistylis*	S2	G5
Flat-topped White Aster	*Aster umbellatus*	S2	G5
False Dragonhead	*Physostegia ledinghamii*	S2	G3?
Seaside Sedge	*Carex incurviformis var incurviformis*	S2	G4G5T4T5
White Adder's-mouth	*Malaxis monophylla*	S2	G5

Table A1.2 Bird Species Compiled from Federation of Alberta Naturalists (FAN), Alberta Fish and Wildlife Management Information System (FWMIS), ANHIC

Common Name	Scientific Name	Provincial Status	Federal Status
Alder Flycatcher	*Empidonax alnorum*	Secure	Not at Risk
American Avocet	*Recurvirostra americana*	Secure	Not at Risk
American Bittern	*Botaurus lentiginosus*	Secure	Not at Risk
American Coot	*Fulica americana*	Secure	Not at Risk
American Crow	*Corvus brachyrhynchos*	Secure	Not at Risk
American Golden-Plover	*Pluvialis dominica*	Secure	Not at Risk
American Goldfinch	*Carduelis tristis*	Secure	Not at Risk
American Kestrel	*Falco sparverius*	Secure	Not at Risk
American Pipit	*Anthus rubescens*	Secure	Not at Risk
American Redstart	*Setophaga ruticilla*	Secure	Not at Risk
American Robin	*Turdus migratorius*	Secure	Not at Risk
American Three-toed Woodpecker	*Picoides dorsalis*	Secure	Not at Risk
American Tree Sparrow	*Spizella arborea*	Secure	Not at Risk
American Wigeon	*Anas americana*	Secure	Not at Risk
Baird's Sandpiper	*Calidris bairdii*	Secure	Not at Risk
Bald Eagle	*Haliaeetus leucocephalus*	Sensitive	Not at Risk
Baltimore Oriole	*Icterus galbula*	Sensitive	Not at Risk
Bank Swallow	*Riparia riparia*	Secure	Not at Risk

Common Name	Scientific Name	Provincial Status	Federal Status
Barn Swallow	*Hirundo rustica*	Sensitive	Not at Risk
Barred Owl	*Strix varia*	Sensitive	Not at Risk
Barrow's Goldeneye	*Bucephala islandica*	Secure	Not at Risk
Black Tern	*Chlidonias niger*	Sensitive	Not at Risk
Black-and-white Warbler	*Mniotilta varia*	Secure	Not at Risk
Black-backed Woodpecker	*Picoides arcticus*	Sensitive	Not at Risk
Black-bellied Plover	*Pluvialis squatarola*	Secure	Not at Risk
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Undetermined	Not at Risk
Black-billed Magpie	*Pica hudsonia*	Secure	Not at Risk
Black-capped Chickadee	*Poecile atricapillus*	Secure	Not at Risk
Black-crowned Night-Heron	*Nycticorax nycticorax*	Sensitive	Not at Risk
Black-throated Green Warbler	*Dendroica virens*	Sensitive	Not at Risk
Blackpoll Warbler	*Dendroica striata*	Secure	Not at Risk
Blue Jay	*Cyanocitta cristata*	Secure	Not at Risk
Blue-headed Vireo	*Vireo solitarius*	Secure	Not at Risk
Blue-winged Teal	*Anas discors*	Secure	Not at Risk
Bobolink	*Dolichonyx oryzivorus*	Sensitive	Not at Risk
Bohemian Waxwing	*Bombycilla garrulus*	Secure	Not at Risk
Bonaparte's Gull	*Larus philadelphia*	Secure	Not at Risk
Boreal Chickadee	*Poecile hudsonica*	Secure	Not at Risk
Brewer's Blackbird	*Euphagus cyanocephalus*	Secure	Not at Risk
Brown-headed Cowbird	*Molothrus ater*	Secure	Not at Risk
Bufflehead	*Bucephala albeola*	Secure	Not at Risk
California Gull	*Larus californicus*	Secure	Not at Risk
Canada Goose	*Branta canadensis*	Secure	Not at Risk
Canada Warbler	*Wilsonia canadensis*	Sensitive	Not at Risk
Canvasback	*Aythya valisineria*	Secure	Not at Risk
Cape May Warbler	*Dendroica tigrina*	Sensitive	Not at Risk
Cedar Waxwing	*Bombycilla cedrorum*	Secure	Not at Risk
Chipping Sparrow	*Spizella passerina*	Secure	Not at Risk
Cinnamon Teal	*Anas cyanoptera*	Secure	Not at Risk
Clay-colored Sparrow	*Spizella pallida*	Secure	Not at Risk
Cliff Swallow	*Petrochelidon pyrrhonota*	Secure	Not at Risk
Common Goldeneye	*Bucephala clangula*	Secure	Not at Risk

Common Name	Scientific Name	Provincial Status	Federal Status
Common Grackle	*Quiscalus quiscula*	Secure	Not at Risk
Common Loon	*Gavia immer*	Secure	Not at Risk
Common Merganser	*Mergus merganser*	Secure	Not at Risk
Common Nighthawk	*Chordeiles minor*	Sensitive	Threatened
Common Raven	*Corvus corax*	Secure	Not at Risk
Common Redpoll	*Carduelis flammea*	Secure	Not at Risk
Common Tern	*Sterna hirundo*	Secure	Not at Risk
Common Yellowthroat	*Geothlypis trichas*	Sensitive	Not at Risk
Cooper's Hawk	*Accipiter cooperii*	Secure	Not at Risk
Dark-eyed Junco	*Junco hyemalis*	Secure	Not at Risk
Double-crested Cormorant	*Phalacrocorax auritus*	Secure	Not at Risk
Downy Woodpecker	*Picoides pubescens*	Secure	Not at Risk
Dunlin	*Calidris alpina*	Secure	Not at Risk
Eared Grebe	*Podiceps nigricollis*	Secure	Not at Risk
Eastern Kingbird	*Tyrannus tyrannus*	Secure	Not at Risk
Eastern Phoebe	*Sayornis phoebe*	Sensitive	Not at Risk
Eurasian Wigeon	*Anas penelope*	Accidental/Vagrant	Not at Risk
European Starling	*Sturnus vulgaris*	Exotic/Alien	Not at Risk
Evening Grosbeak	*Coccothraustes vespertinus*	Secure	Not at Risk
Ferruginous Hawk	*Buteo regalis*	At Risk	Special Concern
Fox Sparrow	*Passerella iliaca*	Secure	Not at Risk
Franklin's Gull	*Larus pipixcan*	Secure	Not at Risk
Gadwall	*Anas strepera*	Secure	Not at Risk
Golden Eagle	*Aquila chrysaetos*	Sensitive	Not at Risk
Gray Catbird	*Dumetella carolinensis*	Secure	Not at Risk
Gray Partridge	*Perdix perdix*	Exotic/Alien	Not at Risk
Great Blue Heron	*Ardea herodias*	Sensitive	Not at Risk
Great Egret	*Ardea alba*	Accidental/Vagrant	Not at Risk
Great Horned Owl	*Bubo virginianus*	Secure	Not at Risk
Greater Scaup	*Aythya marila*	Secure	Not at Risk
Greater White-fronted Goose	*Anser albifrons*	Secure	Not at Risk
Greater Yellowlegs	*Tringa melanoleuca*	Secure	Not at Risk
Green-winged Teal	*Anas crecca*	Sensitive	Not at Risk
Gyrfalcon	*Falco rusticolus*	Secure	Not at Risk

Common Name	Scientific Name	Provincial Status	Federal Status
Hairy Woodpecker	*Picoides villosus*	Secure	Not at Risk
Hermit Thrush	*Catharus guttatus*	Secure	Not at Risk
Herring Gull	*Larus argentatus*	Secure	Not at Risk
Hooded Merganser	*Lophodytes cucullatus*	Secure	Not at Risk
Horned Grebe	*Podiceps auritus*	Sensitive	Not at Risk
Horned Lark	*Eremophila alpestris*	Secure	Not at Risk
House Sparrow	*Passer domesticus*	Exotic/Alien	Not at Risk
House Wren	*Troglodytes aedon*	Secure	Not at Risk
Killdeer	*Charadrius vociferus*	Secure	Not at Risk
Le Conte's Sparrow	*Ammodramus leconteii*	Secure	Not at Risk
Least Flycatcher	*Empidonax minimus*	Sensitive	Not at Risk
Least Sandpiper	*Calidris minutilla*	Secure	Not at Risk
Lesser Scaup	*Aythya affinis*	Sensitive	Not at Risk
Lesser Yellowlegs	*Tringa flavipes*	Secure	Not at Risk
Lincoln's Sparrow	*Melospiza lincolnii*	Secure	Not at Risk
Long-eared Owl	*Asio otus*	Secure	Not at Risk
Magnolia Warbler	*Dendroica magnolia*	Secure	Not at Risk
Mallard	*Anas platyrhynchos*	Secure	Not at Risk
Marbled Godwit	*Limosa fedoa*	Secure	Not at Risk
Marsh Wren	*Cistothorus palustris*	Secure	Not at Risk
Merlin	*Falco columbarius*	Secure	Not at Risk
Mew Gull	*Larus canus*	Secure	Not at Risk
Mountain Bluebird	*Sialia currucoides*	Secure	Not at Risk
Mourning Dove	*Zenaida macroura*	Secure	Not at Risk
Nelson's Sharp-tailed Sparrow	*Ammodramus nelsoni*	Secure	Not at Risk
Northern Flicker	*Colaptes auratus*	Secure	Not at Risk
Northern Goshawk	*Accipiter gentilis*	Sensitive	Not at Risk
Northern Harrier	*Circus cyaneus*	Sensitive	Not at Risk
Northern Pintail	*Anas acuta*	Sensitive	Not at Risk
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Secure	Not at Risk
Northern Shoveler	*Anas clypeata*	Secure	Not at Risk
Northern Shrike	*Lanius excubitor*	Secure	Not at Risk
Olive-sided Flycatcher	*Contopus cooperi*	Secure	Threatened
Orange-crowned Warbler	*Vermivora celata*	Secure	Not at Risk

Common Name	Scientific Name	Provincial Status	Federal Status
Osprey	*Pandion haliaetus*	Sensitive	Not at Risk
Ovenbird	*Seiurus aurocapilla*	Secure	Not at Risk
Palm Warbler	*Dendroica palmarum*	Secure	Not at Risk
Pectoral Sandpiper	*Calidris melanotos*	Secure	Not at Risk
Peregrine Falcon	*Falco peregrinus*	At Risk	Non-Active
Philadelphia Vireo	*Vireo philadelphicus*	Secure	Not at Risk
Pied-billed Grebe	*Podilymbus podiceps*	Sensitive	Not at Risk
Pileated Woodpecker	*Dryocopus pileatus*	Sensitive	Not at Risk
Pine Grosbeak	*Pinicola enucleator*	Secure	Not at Risk
Pine Siskin	*Carduelis pinus*	Secure	Not at Risk
Purple Finch	*Carpodacus purpureus*	Secure	Not at Risk
Purple Martin	*Progne subis*	Sensitive	Not at Risk
Red-breasted Merganser	*Mergus serrator*	Secure	Not at Risk
Red-breasted Nuthatch	*Sitta canadensis*	Secure	Not at Risk
Red-eyed Vireo	*Vireo olivaceus*	Secure	Not at Risk
Red-necked Grebe	*Podiceps grisegena*	Secure	Not at Risk
Red-tailed Hawk	*Buteo jamaicensis*	Secure	Not at Risk
Red-winged Blackbird	*Agelaius phoeniceus*	Secure	Not at Risk
Redhead	*Aythya americana*	Secure	Not at Risk
Ring-billed Gull	*Larus delawarensis*	Secure	Not at Risk
Ring-necked Duck	*Aythya collaris*	Secure	Not at Risk
Ring-necked Pheasant	*Phasianus colchicus*	Exotic/Alien	Not at Risk
Rock Pigeon	*Columba livia*	Exotic/Alien	Not at Risk
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Secure	Not at Risk
Rough-legged Hawk	*Buteo lagopus*	Secure	Not at Risk
Ruby-crowned Kinglet	*Regulus calendula*	Secure	Not at Risk
Ruby-throated Hummingbird	*Archilochus colubris*	Secure	Not at Risk
Ruddy Duck	*Oxyura jamaicensis*	Secure	Not at Risk
Ruffed Grouse	*Bonasa umbellus*	Secure	Not at Risk
Rusty Blackbird	*Euphagus carolinus*	Sensitive	Not at Risk
Sandhill Crane	*Grus canadensis*	Sensitive	Not at Risk
Savannah Sparrow	*Passerculus sandwichensis*	Secure	Not at Risk
Say's Phoebe	*Sayornis saya*	Secure	Not at Risk
Sedge Wren	*Cistothorus platensis*	Sensitive	Not at Risk

Common Name	Scientific Name	Provincial Status	Federal Status
Semipalmated Plover	*Charadrius semipalmatus*	Secure	Not at Risk
Semipalmated Sandpiper	*Calidris pusilla*	Secure	Not at Risk
Sharp-shinned Hawk	*Accipiter striatus*	Secure	Not at Risk
Sharp-tailed Grouse	*Tympanuchus phasianellus*	Sensitive	Not at Risk
Short-billed Dowitcher	*Limnodromus griseus*	Undetermined	Not at Risk
Short-eared Owl	*Asio flammeus*	May Be At Risk	Special Concern
Snowy Owl	*Bubo scandiacus*	Secure	Not at Risk
Solitary Sandpiper	*Tringa solitaria*	Secure	Not at Risk
Song Sparrow	*Melospiza melodia*	Secure	Not at Risk
Sora	*Porzana carolina*	Sensitive	Not at Risk
Spotted Sandpiper	*Actitis macularius*	Secure	Not at Risk
Sprague's Pipit	*Anthus spragueii*	Sensitive	Threatened
Surf Scoter	*Melanitta perspicillata*	Secure	Not at Risk
Swainson's Hawk	*Buteo swainsoni*	Sensitive	Not at Risk
Swainson's Thrush	*Catharus ustulatus*	Secure	Not at Risk
Swamp Sparrow	*Melospiza georgiana*	Secure	Not at Risk
Tennessee Warbler	*Vermivora peregrina*	Secure	Not at Risk
Tree Swallow	*Tachycineta bicolor*	Secure	Not at Risk
Tundra Swan	*Cygnus columbianus*	Secure	Not at Risk
Vesper Sparrow	*Pooecetes gramineus*	Secure	Not at Risk
Virginia Rail	*Rallus limicola*	Undetermined	Not at Risk
Warbling Vireo	*Vireo gilvus*	Secure	Not at Risk
Western Grebe	*Aechmophorus occidentalis*	Sensitive	Not at Risk
Western Meadowlark	*Sturnella neglecta*	Secure	Not at Risk
Western Tanager	*Piranga ludoviciana*	Sensitive	Not at Risk
Western Wood-Pewee	*Contopus sordidulus*	Secure	Not at Risk
White-breasted Nuthatch	*Sitta carolinensis*	Secure	Not at Risk
White-crowned Sparrow	*Zonotrichia leucophrys*	Secure	Not at Risk
White-throated Sparrow	*Zonotrichia albicollis*	Secure	Not at Risk
White-winged Scoter	*Melanitta fusca*	Sensitive	Not at Risk
Willet	*Tringa semipalmata*	Secure	Not at Risk
Willow Flycatcher	*Empidonax traillii*	Secure	Not at Risk
Wilson's Phalarope	*Phalaropus tricolor*	Secure	Not at Risk
Wilson's Snipe	*Gallinago delicata*	Secure	Not at Risk

Common Name	Scientific Name	Provincial Status	Federal Status
Wood Duck	*Aix sponsa*	Secure	Not at Risk
Yellow Rail	*Coturnicops noveboracensis*	Undetermined	Special Concern
Yellow Warbler	*Dendroica petechia*	Secure	Not at Risk
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Secure	Not at Risk
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*	Secure	Not at Risk
Yellow-rumped Warbler	*Dendroica coronata*	Secure	Not at Risk

Table A1.3 Fish Species Compiled from ANHIC and FWMIS

Common Name	Scientific Name	Provincial Status	Federal Status
Brook Stickleback	*Culea inconstans*	Secure	Not at Risk
Burbot	*Lota lota*	Secure	Not at Risk
Emerald Shiner	*Notropis atherinoides*	Secure	Not at Risk
Fathead Minnow	*Pimephales promelas*	Secure	Not at Risk
Flathead Chub	*Platygobio gracilis*	Secure	Not at Risk
Goldeye	*Hiodon alosoides*	Secure	Not At Risk
Lake Sturgeon	*Acipenser fulvescens*	At Risk	Endangered
Longnose Dace	*Rhinichthys cataractae*	Secure	Not at Risk
Longnose Sucker	*Catostomus catostomus*	Secure	Not at Risk
Mooneye	*Hiodon tergisus*	Secure	Not at Risk
Mountain Whitefish	*Prosopium williamsoni*	Secure	Not at Risk
Northern Pike	*Esox lucius*	Secure	Not at Risk
Shorthead Redhorse	*Moxostoma macrolepidotum*	Secure	Not at Risk
Spoonhead Sculpin	*Cottus ricei*	May Be At Risk	Not at Risk
Walleye	*Stizostedion vitreum*	Secure	Not at Risk
White Sucker	*Catostomus commersoni*	Secure	Not at Risk
Yellow Perch	*Perca flavescens*	Secure	Not at Risk

Table A1.4 Amphibian and Reptile Species Compiled from FWMIS and Literature

Common Name	Scientific Name	Provincial Status	Federal Status
Boreal Chorus Frog	*Pseudacris maculata*	Secure	Not at Risk
Canadian Toad	*Bufo hemiophyrys*	May Be At Risk	Not at Risk
Northern Leopard Frog	*Rana pipiens*	At Risk	Special Concern
Red-sided Garter Snake	*Thamnophis sirtalis*	Sensitive	Not At Risk
Tiger Salamander	*Ambystoma tigrinum*	Secure	Not At Risk

Common Name	Scientific Name	Provincial Status	Federal Status
Western Toad	*Bufo boreas*	Sensitive	Special Concern
Wood Frog	*Rana sylvatica*	Secure	Not At Risk

Table A1.5 Mammal Species Compiled from FWMIS and Literature

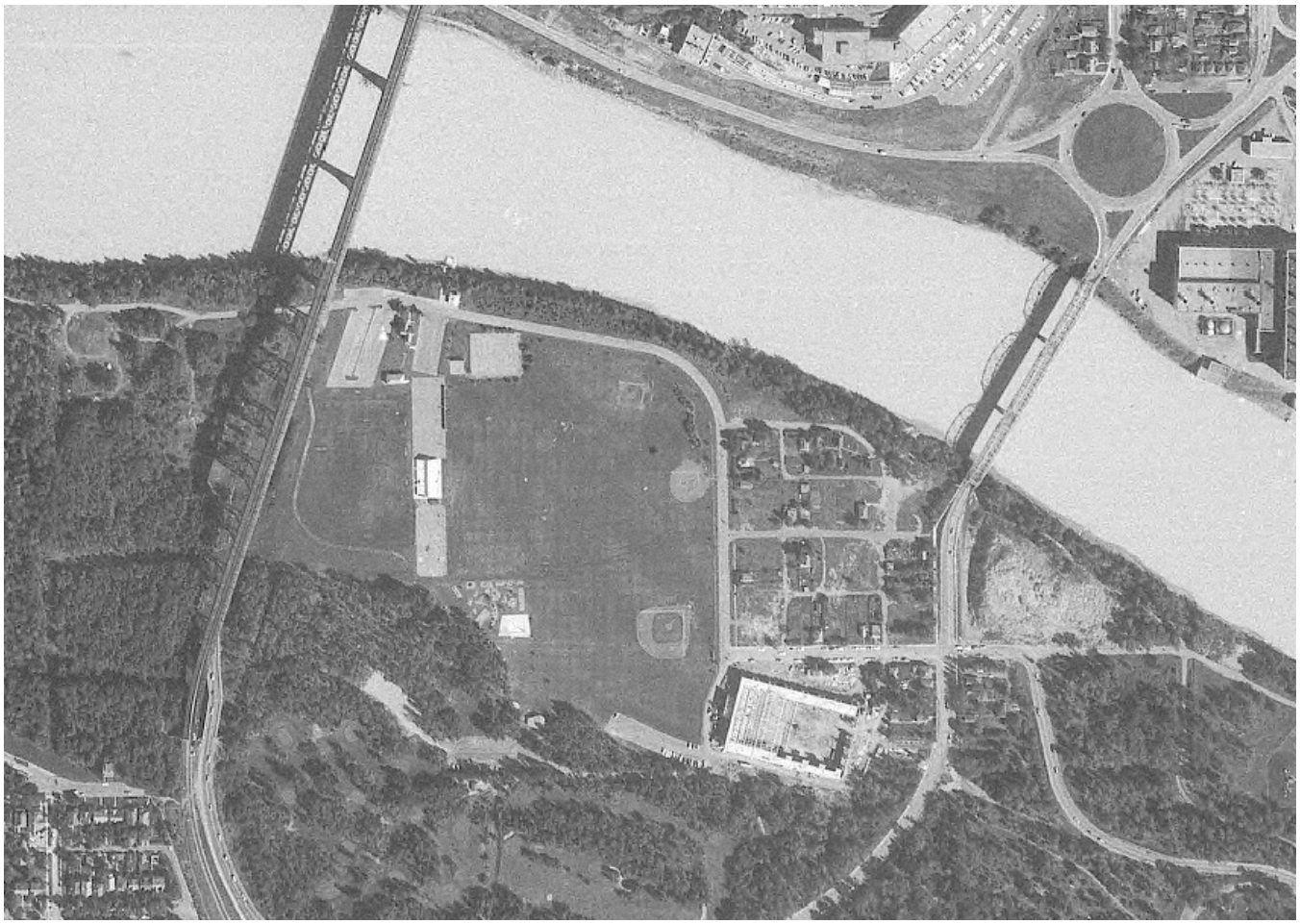
Common Name	Scientific Name	Provincial Status	Federal Status
American Badger	*Taxidea taxus*	Sensitive	Not at Risk
American Mink	*Mustela vison*	Secure	Not at Risk
Arctic Shrew	*Sorex arcticus*	Secure	Not at Risk
Beaver	*Castor canadensis*	Secure	Not at Risk
Big Brown Bat	*Eptesicus fuscus*	Secure	Not at Risk
Black Bear	*Ursus americanus*	Secure	Not at Risk
Common Porcupine	*Erethizon dorsatum*	Secure	Not a Risk
Common Water Shrew	*Sorex palustris*	Secure	Not at Risk
Coyote	*Canis latrans*	Secure	Not at Risk
Deer Mouse	*Peromyscus maniculatus*	Secure	Not at Risk
Dusky Shrew	*Sorex monticolus*	Secure	Not at Risk
Hoary Bat	*Lasiurus cinereus*	Sensitive	Undetermined
House Mouse	*Mus musculus*	Exotic	Not at Risk
Least Chipmunk	*Tamias minimus*	Secure	Not at Risk
Least Weasel	*Mustela nivalis*	Secure	Not at Risk
Little Brown Bat	*Myotis lucifugus*	Secure	Not at Risk
Long-tailed Weasel	*Mustela frenata*	May Be At Risk	Not at Risk
Masked Shrew	*Sorex cinereus*	Secure	Not at risk
Meadow Jumping Mouse	*Zapus hudsonius*	Secure	Not at Risk
Meadow Vole	*Microtis pennsylvanicus*	Secure	Not at Risk
Moose	*Alces alces*	Secure	Not at Risk
Mule Deer	*Odocoileus hemionus*	Secure	Not at Risk
Muskrat	*Ondatra zibethicus*	Secure	Not at Risk
Northern Flying Squirrel	*Glaucomys sabrinus*	Secure	Not at Risk
Pygmy Shrew	*Sorex hoyi*	Secure	Not at Risk
Red Fox	*Vulpes vulpes*	Secure	Not at Risk
Red Squirrel	*Tamiasciurus hudsonicus*	Secure	Not a Risk
Richardson's Ground Squirrel	*Spermophilus richardsonii*	Secure	Not at Risk
Short-tailed Weasel	*Mustela erminea*	Secure	Not at Risk

Common Name	Scientific Name	Provincial Status	Federal Status
Silver-haired Bat	*Lasionycteris noctivagans*	Sensitive	Not at Risk
Snowshoe Hare	*Lepus americanus*	Secure	Not at Risk
Southern Red-backed Vole	*Clethrionomys gapperi*	Secure	Not at Risk
Striped Skunk	*Mephitis mephitis*	Secure	Not at Risk
Thirteen-lined Ground Squirrel	*Spermophilus tridcemlineatus*	Undetermined	Not at Risk
Western Jumping Mouse	*Zapus princeps*	Secure	Not at Risk
White-tailed Deer	*Odocoileus virginianus*	Secure	Not at Risk
White-tailed Rabbit	*Lepus townsendii*	Secure	Not at Risk
Woodchuck	*Marmota monax*	Secure	Not at Risk

Appendix 2: Historical Air Photos

1950 Air Photo (AS 135 #44; 1:40,000)

1962 Air Photo (AS 818 #81; 1:31,680)



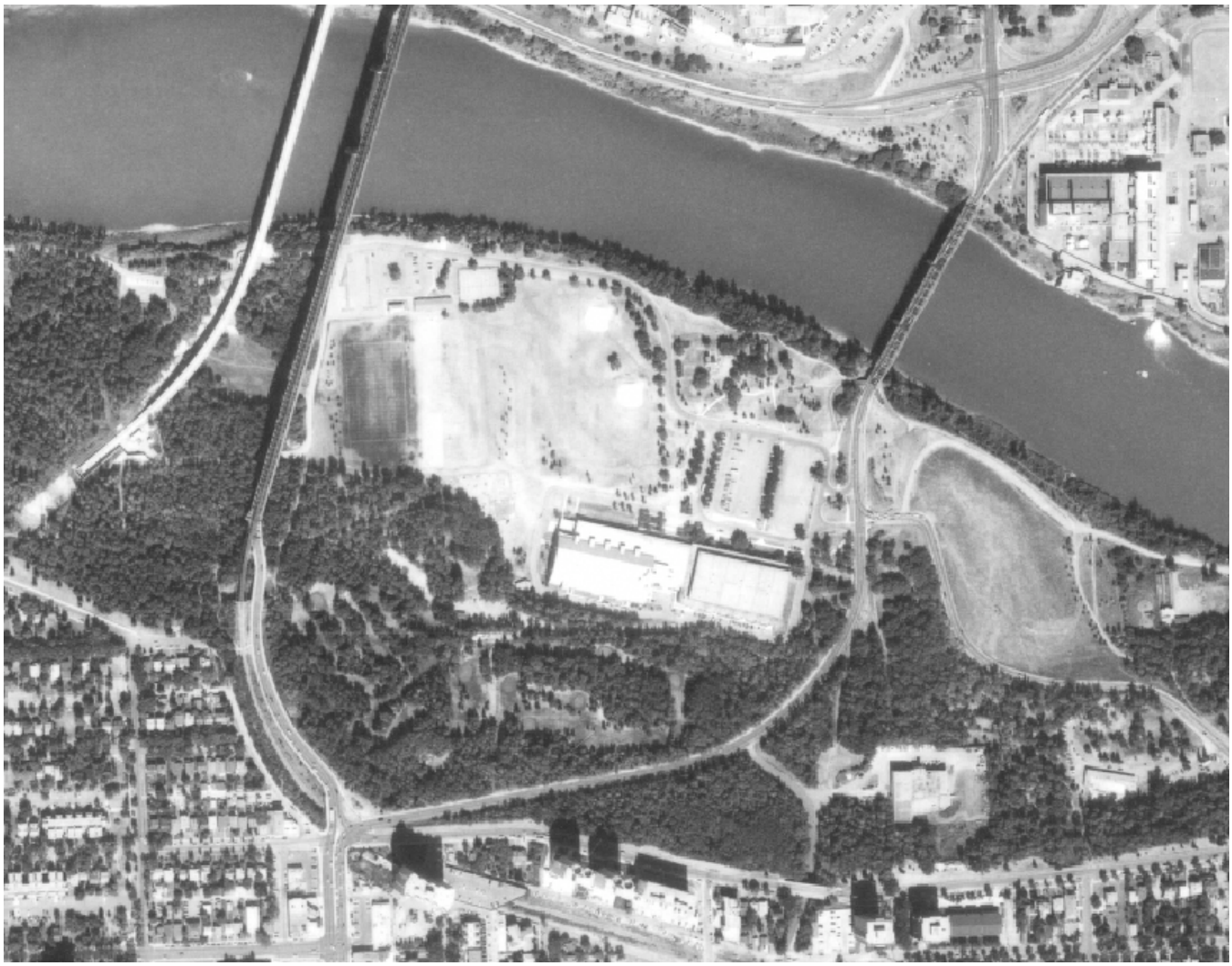
1967 Air Photo (AS 979 #186; 1:31,680)

1972 Air Photo (AS 1207 #69; 1:31,680)

1976 Air Photo (AS 1546 #242; 1:20,000)

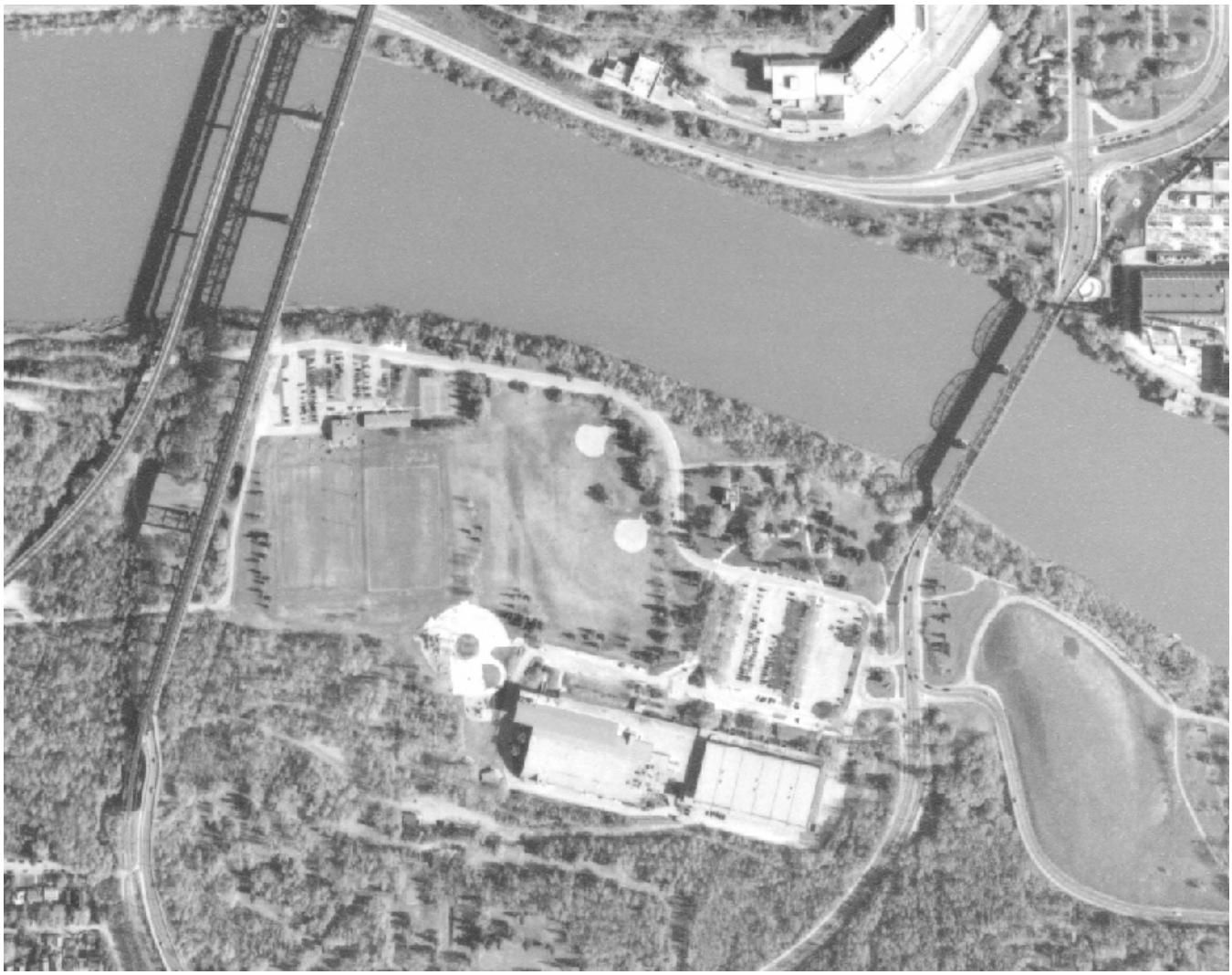
1982 Air Photo (AS 2648 #338; 1:30,000)

1987 Air Photo (AS 3606 #41; 1:30,000)



1992 Air Photo (AS 4346 #35; 1:20:000)

2001 Air Photo (ED2001-0 #202; 1:20,000)



2007 Air Photo (ED2007-1 #170; 1:20,000)

Appendix 3: Letter of Advice from Fisheries and Oceans Canada

Fisheries and Oceans Canada
Pêches et Océans Canada

4253 - 97 Street
Edmonton, Alberta
T6E 5Y7

COPY

Your file *Votre référence*

January 8, 2009

Our file *Notre référence*
08-HCAA-CA1-03627

Robb Heit
City of Edmonton
9803 – 102A Avenue
18th Floor, Century Place
Edmonton, Alberta
T5J 3A3

Dear Mr. Heit:

Subject: Proposal not likely to result in impacts to fish and fish habitat.

Fisheries and Oceans Canada - Fish Habitat Management Program (DFO) received your proposal on December 23, 2008, regarding the proposed construction of the new Queen Elizabeth Pool at Kinsmen Park, in the City of Edmonton. Please refer to the file number and title below:

DFO File No.: **08-HCAA-CA1-03627**
Title: **City of Edmonton Queen Elizabeth Pool Project at Kinsmen Park**

Your proposal has been reviewed to determine whether it is likely to result in impacts to fish and fish habitat which are prohibited by the habitat protection provisions of the *Fisheries Act* or those prohibitions of the *Species at Risk Act* that apply to aquatic species.*

Our review consisted of: Proposed Queen Elizabeth Pool Project – SW-32-052-24-W4M; River Valley Walterdale; Edmonton, Alberta, submitted by Alicia Hamm-Tropak of Ecomark Environmental Stewards Ltd., on December 23, 2008.

We understand that you propose to: Construct a new swimming pool, spray park and pool pavilion which will tie into the existing infrastructure facilities and services associated with Kinsmen Park.

Provided that your plans are implemented as described DFO has concluded that your proposal is not likely to result in impacts to fish and fish habitat.

*Those sections most relevant to the review of development proposals include 20, 22, 32 and 35 of the *Fisheries Act* and sections 32, 33 and 58 of the *Species at Risk Act*. For more information please visit www.dfo-mpo.gc.ca.

You will not need to obtain a formal approval from DFO in order to proceed with your proposal.

If the plans have changed or if the description of your proposal is incomplete you should contact this office to determine if the advice in this letter still applies.

Please be advised that any impacts to fish and fish habitat which result from a failure to implement this proposal as described could lead to corrective action such as enforcement.

If you have any questions please contact the undersigned at (780) 495-8468, by fax at (780) 495-8606, or by email at Michael.Hunka@dfo-mpo.gc.ca.

Yours sincerely,

Michael Hunka
Fish Habitat Biologist
Fisheries & Oceans Canada, Edmonton Office

Appendix 4: Clearance Letter from Alberta Culture and Community Spirit

Alberta Culture and Community Spirit
Historic Resources Management

Old St. Stephen's College
8820 – 112 Street
Edmonton, Alberta, Canada T6G 2P8
Telephone (780) 431-2300 Fax (780) 422-3106
www.culture.gov.ab.ca

May 15, 2009

Project File: 4820-08-008
Permit File: 2009-017

Mr. Robb Heit
City of Edmonton
Asset Management and Public Works
18th Floor, Century Place
9803 – 102A Avenue NW
Edmonton, AB T5J 3A3

Dear Mr. Heit:

SUBJECT: CITY OF EDMONTON
QUEEN ELIZABETH OUTDOOR POOL PROJECT
WITHIN THE SW ¼ OF SECTION 32, TOWNSHIP 52, RANGE 24, W4M
***HISTORICAL RESOURCES ACT* CLEARANCE**

Alberta Culture and Community Spirit has received a final report from Alberta Western Heritage Inc. regarding the Historic Resources Impact Assessment of the Queen Elizabeth Outdoor Pool Project. Although this project does impact a portion of archaeological site FjPj-63, this area has been extensively disturbed so no further archaeological work is required. Therefore, the City of Edmonton has *Historical Resources Act* clearance for the Queen Elizabeth Outdoor Pool Project.

Should you require additional information or have any questions concerning the above, please contact Margret Ingibergsson at 780-431-2374 or by e-mail at margret.ingibergsson@gov.ab.ca.

On behalf of Alberta Culture and Community Spirit, I would like to thank officials of the City of Edmonton for their continued cooperation in our endeavour to conserve Alberta's past.

Sincerely,

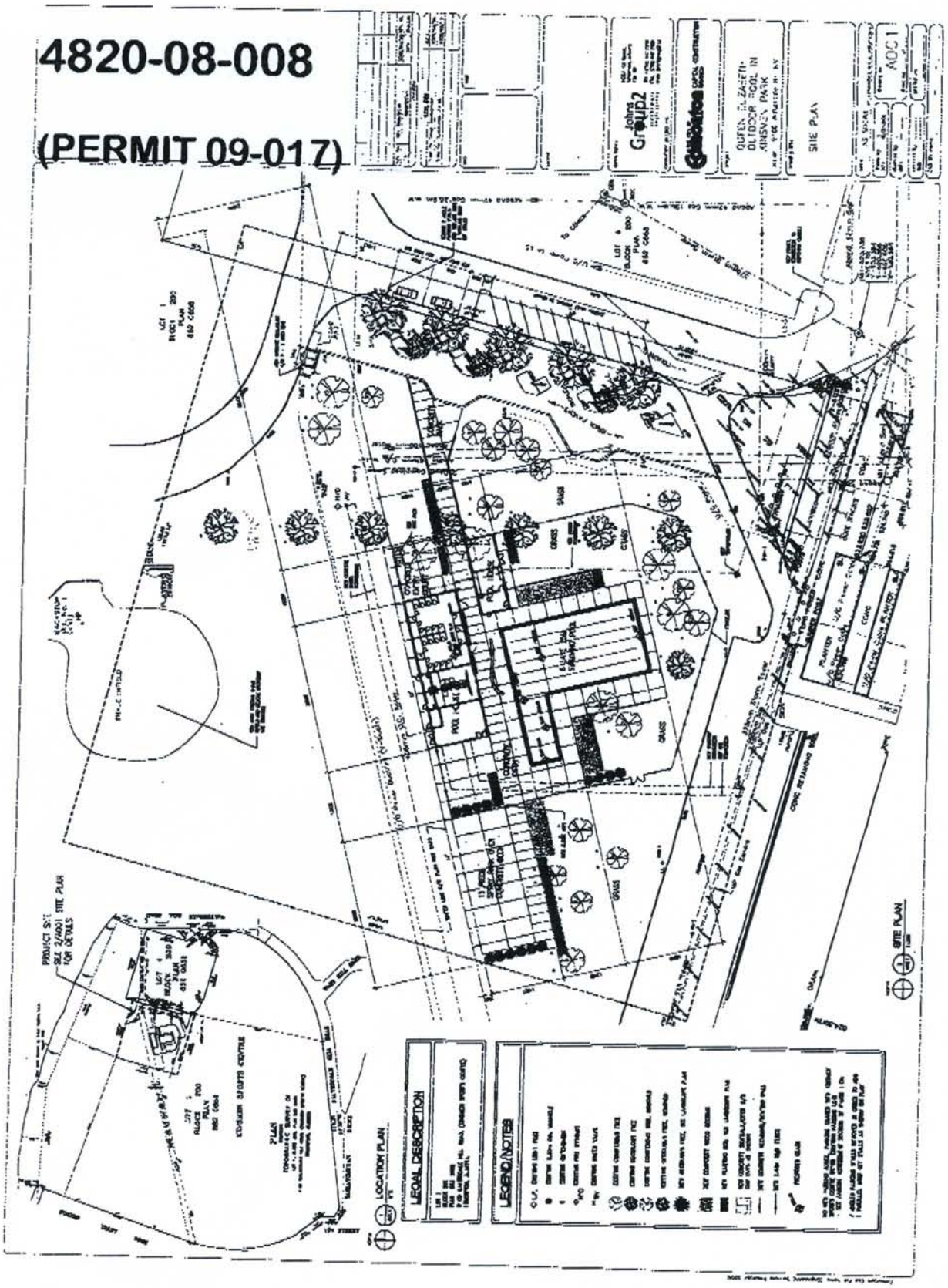
David Link, PhD
Executive Director

Attachment

cc: Elizabeth McBlain, Alberta Western Heritage Inc.

4820-08-008

(PERMIT 09-017)



Appendix 5: Invitation to Public Open House and Information Session Response Form

EDMONTON

QUEEN ELIZABETH OUTDOOR POOL AND KINSMEN PARK REDEVELOPMENT

Information Session

The City of Edmonton invites you to learn more about the redevelopment that is taking place in Kinsmen Park, and the relocation and development of the new Queen Elizabeth Outdoor Pool within the park.

Drop in and see the plans, and talk to staff about the integrated development of the park, playground, spray park, and new outdoor swimming pool that are a part of the project. Everyone is welcome.

Tuesday, March 3, 2009
11 a.m. – 2 p.m. and 4 – 8 p.m.
Kinsmen Sports Centre
9100 Walterdale Hill

For more information, please visit **www.edmonton.ca/QueenElizabethPool** or call **780-442-0219**.

Learn more about and get involved in City issues affecting you and your neighbourhood. Go to **www.edmonton.ca/PublicInvolvementCalendar** for a list of City of Edmonton public involvement opportunities.

THE CITY OF Edmonton COMMUNITY SERVICES

Queen Elizabeth Outdoor Pool

Information Session
March 2, 2009

RESPONSE FORM

1. Please provide us with your overall impression of the Queen Elizabeth Outdoor Pool design by placing a mark along the line that best represents your opinion.

5 (Love it)	4 (Like it)	3 (Satisfactory)	2 (Don't like but can live with it)	1 (Don't like)
8	8		1	1

Please explain your choice:
(Score of 4 & 5)

- Beautiful location , nice design that allows for future enlargement.
- Would be nice to have a 50m pool
- Too bad that the budget is so restrictive. Diving pool necessary in such a small arrangement?
- Simple lines, clean look.
- This facility is long overdue.
- Would like to see diving and family picnic areas
- Looks appealing and accessible for all types of people.
- Incorporate safety in change rooms, bathrooms and shower area
- Design provides for all outside swim requirements at minimal cost.
- Great place to spen the day at playground, pool, picnic area.
- More visable, easy access, fits in with present sports centre.
- Pity about the last location
- Really like single change room concept with outdoor showers.
- Lots of grass space in fenced area
- Missing a hot tub, maybe phase II

(Score 1 & 2)

- Must have separate change/shower facilities separate and distingc
- Histroical interpretation to communicate social and cultural heritage
- Advanced technologies for energy & water consumption and recycling.
- Much more landscaping and design is required to enhance the surroundings of the pool complex
- Could have a deck mounted toddler play with handbump spray toys for kids
- Maybe do some rockscaping or theming to make site more attractive.
- How about an artificial spraying palm tree that doubles as an on deck shower?

Did the Open house snswer all your questions regarding the redevelopment of Queen Elizabeth Outdoor Pool?

- Yes, great staff response, very helpful
- Break ground asap!
- Yes, the information supplied was sufficient
- Staff was knowledgable
- A site master plan to see overall kinsmen park projects

- Transportation to look at the one way access from across the river

Name	Address	Phone	Post Code	Email
Mike Copeland	10707-111st, Edmontn		T5H 3G2	
Sean Wright	11311-110 A ave		T5H1K4	
Gordon Banco	3248-36 A ave			
Jeff Riddle	10644-63 st		T6A 2M6	

Comments for next open house

- Add email to the sign in sheet.
- Staff: Gary Chung, Rachel Dumont, No reps from the playground, Architects attended evening session. Dianne Dunn (CRC), Val Nichol (parks (2 – 4)

Thank you for attending the Queen Elizabeth Information Session !

Appendix 6: Terms of Reference

THE CITY OF Edmonton PLANNING AND DEVELOPMENT

MAILING ADDRESS:
5TH FLOOR,
10250 - 101 STREET NW
EDMONTON, ALBERTA
T5J 3P4

December 8, 2008

Alicia Hamm-Tropak
Ecomark Ltd.
#200, 638 – 11 Ave SW
Calgary, AB
T2R 0E2

Dear Ms. Hamm-Tropak:

Re: Terms of Reference (TOR) for the Environmental Impact Assessment (EIA) for the Proposed Queen Elizabeth Pool Project, Kinsmen Sports & Aquatic Centre, River Valley Walterdale Neighbourhood in Edmonton, AB

The Environmental Planning Group (EPG) has reviewed the above mentioned TOR you submitted and have the following comments:

1. The EIA should clearly express the project rationale, why the project should occur in the river valley and at this location within the river valley and alternatives considered;
2. The TOR indicates that no site-specific studies/biophysical will be conducted. A soil survey is required unless other soil surveys have been conducted for the area and concluded that the soil is acceptable for its intended use;
3. Please confirm that the project will require no vegetation or tree removal;
4. A traffic/parking impact assessment may be required;
5. Full public participation is required. The public must be properly contacted and informed and the public participation should address all community issues. In addition, the public consultation should be in a separate section from the mitigation measures in the report;
6. The EIA should thoroughly investigate the short term and long term impacts due to the changes of the facility footprint with respect to any other future development within Kinsmen Park;
7. A Phase I ESA is required for the subject site;
8. The proponent is responsible for all approvals from any provincial and federal agencies, as we will not circulate the EIA to those agencies; and
9. Please submit ten copies and an electronic version (PDF on CD) of your draft EIA report to Planning and Development for review and technical circulation. The EIA will be finalized based on this review and the proponent will be responsible for preparing and forwarding the final report to City Council for their consideration.

THE CITY OF Edmonton PLANNING AND DEVELOPMENT

MAILING ADDRESS:
5TH FLOOR,
10250 - 101 STREET NW
EDMONTON, ALBERTA
T5J 3P4

The above mentioned comments should be included in the draft EIA report in addition to those items you already listed in your TOR.

Additionally, the EPG has the following report(s) on file that you may find helpful:

1. J35, Initial Project Review for Kinsmen Aquatic Centre Mechanical HVAC Upgrade, prepared by Gibbs Brown Johansson, dated August 2005.
2. M78, Queen Elizabeth Pool Redevelopment Project Environmental Screening Draft Report, prepared by Spencer Environmental, dated August 2006.

If you wish to review the report, please contact Bonnie Bellward at the Planning and Development Library, her number is 780.496.6164, to schedule an appointment.

If you have any questions, please e-mail or telephone me at 496.3460.

Thank you,

Glinis Buffalo
Environmental Planner
Environmental Planning
Corporate Planning and Policy Section
Planning and Policy Services Branch

Appendix 7: Comments from Review Agencies

Alberta
Environment

Regional Services

111 Twin Atria Building
4999-98 Avenue
Edmonton Alberta T6B 2X3

Telephone: (780) 427-7617
Fax: (780) 427-7824
Web: environment.gov.ab.ca

March 23, 2009

Ms. Glinis Buffalo
Environmental Planner
Environmental Planning Group
Planning and Development
The City of Edmonton
5th Floor, 10250 – 101 Street
Edmonton AB T5J 3P4

Dear Ms. Buffalo:

Re: T117 – Phase I and Phase II Environmental Site Assessments
9100 Walterdale Hill (Plan 8620658, Block 200, Lots 1 and 4), River Valley Walterdale Neighbourhood, Edmonton

I have reviewed the *Phase I* and the *Phase II Environmental Site Assessment* reports dated January 20, 2009 and February 13, 2009, respectively, both prepared by Ecomark Ltd. (Ecomark) that you forwarded with your referral letter of March 6, 2009. Based on the results presented I have the following comments:

1. Based on the EBA reports from the mid- and late-1990s it appears that a lead-contaminated area was identified on the subject site. It is not clear whether this contamination has been remediated or not.
2. It is not clear whether the refuse material dumped in the river valley near John Walters Museum located on the subject site or off-site. If it is on-site, has further characterization of the material been done?
3. I concur with Ecomark that the boron-contaminated soils have to be stockpiled separately from the rest of the excavated materials during site construction and later disposed of at an approved facility. Alberta Environment is concerned about the possibility of boron exceedences on the subject site, therefore further assessments may be warranted to prove the presence or absence of metals in the topsoil.

Should any questions arise, please call me at (780) 427-9872.

The review undertaken by this office was restricted to reviewing the information provided in the reports completed by Ecomark and applying the environmental guidelines for the remediation and management of contaminated sites. This office undertook no independent onsite assessment. This letter is not intended to relieve any party from any liability whether the land use changes or where additional concerns arise from any on or off-site contamination that was not identified in the reports submitted.

Sincerely,

Zsolt Margitai, M.Sc., P.Geol., P.Eng.
Contaminant Hydrogeologist
Alberta Environment

Alberta Environment

Regional Services
111 Twin Atria Building
4999-98 Avenue
Edmonton Alberta T6B 2X3

Telephone: (780) 427-7617
Fax: (780) 427-7824
Web: environment.gov.ab.ca

AENV# SCD01774

May 21, 2009

Ms. Glinis Buffalo
Environmental Planner
Environmental Planning Group
Planning and Development
The City of Edmonton
5th Floor, 10250 – 101 Street
Edmonton AB T5J 3P4

Dear Ms. Buffalo:

Re: T117 – Phase II Environmental Site Assessment and Sampling Plan
9100 Walterdale Hill (Plan 8620658, Block 200, Lots 1 and 4), River Valley Walterdale Neighbourhood, Edmonton

I have reviewed the *Phase II Environmental Site Assessment* report dated May 11, 2009 and the *Confirmatory Sampling Plan of the Proposed Queen Elizabeth Pool Site* document dated May 13, 2009, both prepared by Ecomark Ltd. (Ecomark) that you forwarded with your referral letter of May 14, 2009. Based on the results presented and further to our meeting of May 4, 2009, the plan is acceptable. I understand that in the first phase only the proposed pool footprint area will be remediated, while the rest of the site will be delineated and remediated in the second phase at a later date.

Should any questions arise, please call me at (780) 427-9872.

The review undertaken by this office was restricted to reviewing the information provided in the report completed by Ecomark and applying the environmental guidelines for the remediation and management of contaminated sites. This office undertook no independent onsite assessment. This letter is not intended to relieve any party from any liability whether the land use changes or where additional concerns arise from any on or off-site contamination that was not identified in the reports submitted.

Sincerely,

Zsolt Margitai, M.Sc., P.Geol., P.Eng.
Contaminant Hydrogeologist
Alberta Environment

Alberta Health Services

Public Health Division
Environmental Public Health

Office: 780 - 342-0123
Direct: 780 - 342-0128
Fax: 780 - 342-0168
E-mail: phi.phan@capitalhealth.ca

March 23, 2009

Glynnis Buffalo
Environmental Planning
City of Edmonton
Planning and Development Department
6th Floor, 10250 - 101 St NW
Edmonton AB
CANADA T5J 3P4

Dear Ms. Buffalo:

RE: T117, Phase I/II, ESA, Lots 1 & 4, Block 200, Plan 862 0658
9100 Walterdale Hill, River Valley Walterdale Neighbourhood in Edmonton
Your File: BI-272-20-SW-RIVE

With respect to the Phase I and II environmental site assessments of the above noted location, Alberta Health Services (Edmonton region) has reviewed the above reports and we agree with the consultants' conclusion that the site complies with the 2008 Alberta Tier 1 standard for parkland use, with the exception of boron. With respect to the elevated levels of boron, we are satisfied with the consultants' recommendation with respect to the segregation and analysis of soils within the 0 to 0.75m strata during any excavations.

Consequently, Alberta Health Services (Edmonton region) does not have issues or additional comments to make at this time.

Respectfully,

Phi Phan, BSc, CPHI(C)
Senior Advisor

Alberta Health Services

Public Health Division
Environmental Public Health

Office: 780 - 342-0123
Direct: 780 - 342-0128
Fax: 780 - 342-0148
E-mail: phi.phan@capitalhealth.ca

May 15, 2009

Glynnis Buffalo
Environmental Planning
City of Edmonton
Planning and Development Department
6th Floor, 10250 - 101 St NW
Edmonton AB
CANADA T5J 3P4

Dear Ms. Buffalo:

RE: T117, Updated Phase II ESA
Lots 1 & 4, Block 200, Plan 862 0658
9100 Walterdale Hill, River Valley Walterdale Neighbourhood in Edmonton
Your File: BI-274-20-SW-RIVE

Upon reviewing the revised Phase II ESA for the proposed Queen Elizabeth Pool Site as well as the proposed confirmatory sampling plan, Alberta Health Services - Edmonton does not have any further comments to provide at this time.

If you require further information or clarification with respect to these comments, please contact the writer.

Respectfully,

Phi Phan, BSc, CPHI(C)
Senior Advisor

From: Jim Black
Sent: Thursday, March 26, 2009 3:51 PM
To: Glinis Buffalo
Cc: Leslie McWeeny
Subject: T117 Draft EIA Queen Elizabeth Pool Project

Glinis,

Parks Design and Construction has no concerns with this EIA with one exception:

- a 1.5m hard surface walkway is required to the north of the parking/road between the new pool and the existing Kinsmen building. This must extend from the kinsmen entry area toward the existing playground. Otherwise children will be walking down the road.

Thank you.

Jim Black
Senior Landscape Architect
Parks, Parks Design and Construction
Asset Management and Public Works
496 4834 cell 914 3956

From: Jim Black
Sent: Thursday, May 14, 2009 9:27 AM
To: 'Alicia Tropak'; Glinis Buffalo
Cc: Leslie McWeeny
Subject: RE: T117: Draft EIA Comment - Walkway

Parks Design and Construction has no further concerns with the EIA for the Queen Elizabeth Pool. Thank you for adding the clause pertaining to the walkway connection to the playground and spray deck.

Jim Black
Senior Landscape Architect
Parks, Parks Design and Construction
Asset Management and Public Works
496 4834 cell 914 3956

-----Original Message-----
From: Alicia Tropak [mailto:atropak@ecomarkenv.com]
Sent: Wednesday, May 13, 2009 4:42 PM
To: Glinis Buffalo
Cc: Jim Black
Subject: Re: T117: Draft EIA Comment - Walkway

Hi Glinis:

We've added the mitigation measure as requested to Section 5.4.7 Land Use. Please see attached page from the EIA.

We trust that this meets Jim Black's requirements for installing a hard surface walkway between the playground, the existing Kinsmen building, and the pool site.

We will forward you copies of "page 23" so that you can include it with the already bound EIA reports. Also, we will be sure to include the addendum to the resolve the other issues previously identified.

If you have any questions or concerns, please do not hesitate to call.
--
Alicia Hamm-Tropak, P.Biol.
Ecomark Ltd.
#200, 638 11 Avenue SW
Calgary, Alberta
Canada T2R 0E2
P: (403) 410-3867
F: 1-866-337-8631 (Toll-Free)
E: ahamm@ecomarkenv.com
W: http://www.ecomarkenv.com

On 5/13/09 3:39 PM, "Glinis Buffalo" <Glinis.Buffalo@edmonton.ca> wrote:

> Hi Alicia,
>
> That would be great if you can do that. Can you Cc me on the email
> and let him know he can respond back directly to me.
>
> Glinis
>
> Glinis Buffalo, BSc
> Environmental Planner
> City of Edmonton, Planning & Development Department
> 6th Floor, 10250 - 101 St. NW
> Edmonton, AB, T5J 3P4
> P: 780.496.3460 F: 780.401.7067
> E: glinis.buffalo@edmonton.ca
>
>
> -----Original Message-----
> From: Alicia Tropak [mailto:atropak@ecomarkenv.com]

> Sent: Wednesday, May 13, 2009 3:34 PM
> To: Glinis Buffalo
> Subject: T117: Draft EIA Comment - Walkway
>
>
> The section I was referring to was the last paragraph of 3.2.1 Land
> Use.
>
> "The proposed Queen Elizabeth Pool project intends to tie in most of
> the existing amenities near the Site."
>
> The section does not specifically mention the 1.5m hard surface
> walkway, as the design would be finalized during the development
> permit stage.
>
> If needed, we could add the mitigation measure to 5.4.7 Land Use:
>
> "Construct hard surface walkway between the new pool, the existing
> Kinsmen Aquatic and Sports Centre building, and the existing
> playground to provide safe access for children and other park users".
>
> We can reprint and replace this page in the EIA report and send
> directly to Jim Black for approval.
> --
> Alicia Hamm-Tropak, P.Biol.
> Ecomark Ltd.
> #200, 638 11 Avenue SW
> Calgary, Alberta
> Canada T2R 0E2
> P: (403) 410-3867
> F: 1-866-337-8631 (Toll-Free)
> E: ahamm@ecomarkenv.com
> W: http://www.ecomarkenv.com
>

>
>
>

THE CITY OF Edmonton **ASSET MANAGEMENT AND PUBLIC WORKS**

MEMORANDUM

FAX NO.: 496-5648

March 11, 2009 File No.: 51-264-300-000

TO: Glinis Buffalo
Environmental Planner
Environmental Planning

FROM: Liliana Malesevic
Environmental Engineer
Environmental Monitoring Section
Drainage Services

SUBJECT: T117, Review of Draft EIA, Queen Elizabeth Pool Project, Kinsmen Park, Edmonton, AB

Upon review of the submitted report, the Environmental Monitoring Section of Drainage Services provides the following comments:

- Figure 1 should outline the exact proposed site for the new pool, construction area, lay-down area (what is the significance of the red line going all around the park area – legend should have all lines identified).
- Surface runoff must be controlled during and after construction not just to prevent erosion and slope stability problems but also to prevent discharges of sediment laden runoff as well as contaminant (chlorine etc.) discharges into the river (considering the proximity of the river). All existing catch basins south of proposed site location should be protected during the construction and no surface runoff should be discharged directly through existing catch basins or directly into the river without treatment (sediment traps).
- More information needed on post-construction surface runoff management. It should be included in the Site Plan. Surface water collected on this site (all parking lots and paved areas around Kinsmen Sport Center) are collected into the storm pipe system and discharged into the river through the outfall just upstream from the Walterdale Bridge. This outfall should be monitored during the construction for changes in water quality of stormwater coming out.
- It has been stated that all surface water will be managed on the site but with no explanation or description. All surface runoff from the new pool area (if there will be any) should be collected and connected/released into the combined sewer.
- Groundwater is going to be a problem during construction and you should prepare dewatering plan (management and/or pumping of groundwater) for the construction site including treatment of the collected water (before discharge).

If you require additional information, please contact Liliana Malesevic at 780-496-6536.

From: Liliana Malesevic
Sent: Wednesday, May 13, 2009 3:08 PM
To: Glinis Buffalo
Subject: T117 - Queen Elizabeth Pool Project

I reviewed revised report and have following comments:

- Figure 1 is not in the Report anymore - now it is marked as Figure 2 but still mentioned as Figure 1 (1.3 Study Area). (As per my original comment still missing lay down area, construction area etc.) (resolved)
- Add as appendix plan to manage contaminated soils from phase II environmental site assessment.

If you have any questions please call me.

Liliana Malesevic M.Eng., P.Eng.
Environmental Engineer
Environmental Monitoring, Drainage Services
City of Edmonton
☎ ***(780) 496-6536***
🖷 *(780) 496-5648*
✉ *liliana.malesevic@edmonton.ca*

Please only print this email if necessary.

THE CITY OF Edmonton

TRANSPORTATION MEMORANDUM

DATE: March 11, 2009

File No.: 508.1
CAD 931+36+16
Posse: 83002499-002

TO: Glinis Buffalo
Environmental Planner, Planning & Development

FROM: Dave Lapp
Environmental Scientist, Engineering Services

SUBJECT: **T-117 – Phase I & II ESAs for Proposed Queen Elizabeth Pool Site, North of Kinsmen Recreational Facility, 9100 Walterdale Hill, Edmonton**

I have reviewed the January 20, 2009 Phase I and February 13, 2009 Phase II reports by Ecomark Limited that you forwarded to this office with your letter of March 6, 2009. As a result I have a couple observations.

It is noted in section 2.12 regarding past environmental reports (pp. 9-10) that EBA, in their June 1999 **Site Characterization and Human Health and Ecological Risk Assessment of Lead Contamination, High Level Bridge** report, that lead impacts were identified in soil at the south approach to the High Level Bridge as well as adjacent to the south approach of the Walterdale Bridge. If the question being asked is whether the proposed location for the Queen Elizabeth Pool could be impacted from lead derived either from the High Level or Walterdale bridges, neither location is closer than 250 metres from the proposed pool site.

I am also concerned about the extent of testing conducted by Ecomark in their Phase II report. There are two concerns related to that report. The first concern is that the stratigraphy shown in the three Ecomark boreholes does not show a fill layer within the top 2.0 metres of the soil profile. Yet, in the borehole logs from the December 12, 2008 P. Machibroda **Geotechnical Investigation, Proposed Queen Elizabeth Pool** report, all five show fill material of between 0.8 and 1.5 metres thickness within the top 2 metres. BH09-1 by Ecomark is very close to TH08-5 by P. Machibroda and BH09-3 by Ecomark is very close to TH08-4 by P. Machibroda. Nevertheless, the Ecomark borehole logs do not identify fill material. The other three boreholes by P. Machibroda, which were drilled further north of the actual pool location also show fill material. Due to the fact that fill appears to be prevalent throughout the site (if the P. Machibroda borehole log interpretation is correct) would warrant additional testing of fill material elsewhere within the proposed pool development area. This relates to my second concern that three boreholes may not be sufficient to determine that there are no environmental concerns at this location.

In terms of the two slight exceedances for boron, I concur with the approach suggested by Ecomark.

I realize that this is not an environmental concern, but given the high level of use of the Kinsmen recreation facility, I would strongly suspect that additional parking will be required for the users of the new pool. Where will this additional parking be located? This area may also warrant testing.

Should any questions arise, please call me at 496-6782.

Dave

DL

THE CITY OF Edmonton

TRANSPORTATION MEMORANDUM

DATE: March 12, 2009

File No.: 508.1
CAD 931+36+16
Posse: 83002499-001

TO: Glinis Buffalo
Environmental Planner, Planning & Development

FROM: Dave Lapp
Environmental Scientist, Engineering Services

SUBJECT: **T-117 – Draft Environmental Impact Assessment, Queen Elizabeth Pool Project, North of Kinsmen Recreational Facility, 9100 Walterdale Hill, Edmonton**

I have reviewed the above-noted February 13, 2009 report by Ecomark Limited that you forwarded to this office with your memorandum of March 9, 2009. As a result I have several comments.

The consultant acknowledges that during the geotechnical investigation by P. Machibroda fill materials were identified in the top 2.0 metres of the soil profile. However, it was not identified as a potential concern in terms of its potential to harbour contaminants due to its unknown origin.

The consultant does not identify staging or laydown areas that would be required during construction. Such areas must be located a minimum of 100 metres from the North Saskatchewan River.

The consultant does not address potential contamination sources and mitigative measures that should be specified during the construction of the outdoor pool and related amenities. For example, compounds and chemicals may be used during construction that if mishandled or spilled could impact soil and/or groundwater. Similarly lubricants, hydraulic oils and fuels for construction equipment may inadvertently be released during construction. Proper mitigative and clean up measures must be in place for such incidents. These issues must be addressed.

Should any questions arise, please call me at 496-6782.

Dave.

DL

THE CITY OF Edmonton

TRANSPORTATION MEMORANDUM

DATE: April 1, 2009

File No.: 508.1
CAD 931+36+16
Posse: 83002499-002

TO: Glinis Buffalo
Environmental Planner, Planning & Development

FROM: Dave Lapp
Environmental Scientist, Engineering Services

SUBJECT: **T-117 – Additional Information from Ecomark Regarding Proposed Queen Elizabeth Pool, North of Kinsmen Recreational Facility, 9100 Walterdale Hill, Edmonton**

I have reviewed the March 30, 2009 letter report by Ecomark Limited that you forwarded to this office with your letter of April 1, 2009. As a result I have the following comments.

On Monday, March 30, 2009 I had a telephone conversation with Alicia Hamm-Tropak of Econmark about the issue of fill material in the proposed pool area. I indicated that development did not necessarily have to be held up due to the potential for fill material to be impacted and therefore removed prior to development. Other projects have gone forward where impacted soils were present because it was possible to combine building development excavation (e.g. for parkades to be installed beneath apartment structures) with excavation to remove the impacted soil. I suggested a similar approach may be possible here but that the consultant or proponent should make sure that this approach would be acceptable to Planning and Development prior to going ahead. I indicated I would support an approach where impacted soils could be removed as part of the building development excavation.

We did not discuss whether the material identified by Machibroda in their December 12, 2008 **Geotechnical Investigation** was fill from some unknown foreign site or possibly regraded site soils. Nor did we discuss whether there had been sufficient testing of the soils in the area of the proposed pool to state that there were no potential contaminants in fill material that may be on the site.

In their letter report Ecomark is suggesting that since there was no indication in the soil that they may be from a foreign source, such as pieces of concrete or other refuse, then it would not be necessary to test the soil for potential contaminants. If, however, the soils in the area of the proposed pool were not fully homogeneous in nature, reflecting naturally developed soils, there is the possibility that they may have been brought in from outside sources. In fact, there are other geotechnical investigations that have shown other areas in the vicinity of the Kinsmen recreational centre to have fill material within the top 2 metres, e.g. the November 19, 1964 **Preliminary Report on the Foundation Conditions at the Site of the Proposed Recreational Structures at Kinsmen Park** as prepared by L. Dartnell, City of Edmonton and the May 1995 **Kinsmen Sports Centre Parking Lot Expansion** as prepared by Randall Sonnenberg and Steve Melton, City of Edmonton. Therefore, it would be appropriate to conduct additional soil sampling to determine the extent of fill material in the area of the development, not just in the pool structure footprint, to ensure that contamination is not present. This would also be useful in delineating the extent of boron impacts in soil prior to addressing the request by Alberta Environment that the area where boron exceeds applicable guidelines be remediated.

Analysis of soil samples in areas of fill should cover petroleum hydrocarbons, metals and solvents at a bare minimum.

Should any questions arise, please call me at 496-6782.

DL

G:\Engineering Services\Environmental\CITY FILES 500'S\508.1 Planning & Development\CAD 931\931-36\Memo 01Apr09, Additional Info for Queen Elizabeth Pool, 9100 Walterdale Hill, Posse 83002499.doc

Subject: FW: T-117 Queen Elizabeth Pool Project
Date: Thursday, April 2, 2009 2:43 PM
From: Glinis Buffalo <Glinis.Buffalo@edmonton.ca>
To: 'Alicia Hamm' <ahamm@ecomarkenv.com>
Conversation: T-117 Queen Elizabeth Pool Project

Hi Alicia,

I forwarded the response to Dave Lapp. Please see below.

Glinis

Glinis Buffalo, BSc
Environmental Planner
City of Edmonton, Planning & Development Department
6th Floor, 10250 - 101 St. NW
Edmonton, AB, T5J 3P4
P: 780.496.3460 F: 780.401.7067
E: glinis.buffalo@edmonton.ca

-----Original Message-----
From: Dave Lapp
Sent: Thursday, April 02, 2009 1:45 PM
To: Glinis Buffalo
Subject: RE: T-117 Queen Elizabeth Pool Project

GLINIS

In the Henderson's Directory list for both 1914 and 1919 "Walter John Ltd. Lumber" is listed for the address 9219 - 107 Street. This appears to have been located somewhere west of Walterdale Hill Road, perhaps in the vicinity of the existing large parking lot north of the Kinsmen recreational centre, at a guess. I would feel more comfortable if it would be possible to establish where this operation existed. Depending upon the nature of activities carried out at the lumber yard there could have been wood treatment with creosote, cutting of trees into lumber with the use of hydrocarbons for engines and oils to lubricate equipment. For 1909 on Thomas Street in Walterdale, wherever that was but likely in this same area, Walter's Mill was operational. Again, contaminants could have been generated from oils and greases used to lubricate equipment. Therefore, if these activities occurred in the vicinity of the proposed pool testing of soil may be appropriate.

Granted Ecomark did conduct analysis on some soil samples, but depending upon the location of the mill and lumber operations, additional testing may be necessary. Therefore, more effort should be expended in attempting to locate these operations and determine if they were clearly out of the area where development might occur or if they were close enough that further testing should be carried out.

DAVE

-----Original Message-----
From: Alicia Tropak [mailto:atropak@ecomarkenv.com]
Sent: Wednesday, April 01, 2009 6:59 PM
To: Glinis Buffalo
Subject: Re: T-117 Queen Elizabeth Pool Project

Thank you, Glinis:

As requested, Ecomark has conducted a review of the *Henderson's Edmonton City Directories* (Henderson Directories) available from the University of Alberta Library, Peel's Prairie Provinces, Peel 2962. The

Henderson Directories from 1908 to 1953 can be accessed online at: http://peel.library.ualberta.ca/bibliography/2962.html.

Ecomark reviewed the Henderson Directories at five (5) year intervals from 1909 to 1953 for information on historic land use near the subject property. Unfortunately there were no copies of the Henderson Directories available online between 1953 to 1978. As the municipal address known as "9100 Walterdale Hill" did not exist historically, our searches focused on the the "Walterdale" neighbourhood and the 9100- and 9200-blocks along "107 Street". A summary of our findings is attached to this email for your reference.

Of particular significance was the presence of Walter's Coal Mine, Pollard Bros. Brick Yard, Walter's Lumber Mill, and Walterdale Emporium near the subject property in 1909. There was several references to the "Pollard Flat" where several brick makers, mechanics and night watchmen were recorded to have lived. From the 1914 to 1953 records, there was indication that these developments were removed and replaced with several residences.

The site inspection and historic air photo review indicates that these residences were removed in the early 1960's. Based on the review of the 1950 air photo of the subject property, these residences were likely situated off-site in the developed area immediately east of the proposed development, and on the current location of the parking lot at Kinsmen Park. The Henderson Directories confirmed that there were no known residences between the south side of the river and east of the High Level Bridge in the Walterdale neighbourhood.

Ecomark contacted the City of Edmonton Archive Library, the Stanley A. Milner Public Library, the University of Alberta Library, and the City of Edmonton, Emergency Response Department, Public Safety and Education Branch, for information about the fire insurance maps for the City of Edmonton. Unfortunately, there were no available fire insurance maps for the subject property. Fire insurance maps were available for other Canadian cities including the City of St. Albert, but not for the City of Edmonton.

Ecomark acknowledges the value of reviewing these sources, however copies of the fire insurance maps are not readily available and could not be included in this supplemental review of municipal records. If there is a known source of these records, please confirm their location and Ecomark would be happy to schedule a time to review these records.

If this response meets your needs, please advise. Thank you for all your efforts.

Sincerely,
--
Alicia Hamm-Tropak, P.Biol.
Ecomark Ltd.
#200, 638 11 Avenue SW
Calgary, Alberta
Canada T2R 0E2
P: (403) 410-3867
F: 1-866-337-8631 (Toll-Free)
E: ahamm@ecomarkenv.com
W: http://www.ecomarkenv.com

On 4/1/09 9:46 AM, "Glinis Buffalo" <Glinis.Buffalo@edmonton.ca> wrote:

Hi Alicia,

I spoke with Janine (I believe is her name and I don't have her email) regarding the directory searches for the Phase I. When I spoke with her on the telephone, I agreed that Henderson Directories and fire insurance maps would not be useful for current/recent years as this is all we discussed, however, there may have been misunderstanding that these searches did not have to be completed at all. These resources are very useful for historical years. Also, regarding your letter report response, we do not support using regulatory searches to replace directory searches. Therefore, please conduct a review of municipal directories and fire insurance maps.

Please see Dave Lapp's email below regarding your response to this issue.

Note: I have circulated the letter reports out to Alberta Environment, Alberta Health Services and City of Edmonton Transportation and asked for a one week response rather than three weeks (this is our usual circulation period).

Please call me if you have any questions.

Glinis

Glinis Buffalo, BSc
Environmental Planner
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E: glinis.buffalo@edmonton.ca

-----Original Message-----
From: Dave Lapp
Sent: Tuesday, March 31, 2009 10:29 AM
To: Glinis Buffalo
Subject: T-117 Queen Elizabeth Pool Project

GLINIS

After I reviewed the response from Alicia Hamm-Tropak with Ecomark that she sent yesterday there were a couple of comments that were made that have prompted some concern on my part. It is suggested in the letter from Ecomark to you that because the "Henderson Edmonton and Strathcona City Directory" has not been updated since 1978 other information sources can be used to determine land use changes. While this is true for any historical information since 1978 it should not be used as an excuse not to examine the directory for land use information prior to 1978. In fact the directory would be one of the better sources of information on land use for the period it covers. I know for a fact that there used to be residences in this area, that would show up in the directory.

The other comment of concern relates to fire insurance maps. It is stated that "the requirement to review fire insurance maps has been replaced by the record search from the City of Edmonton . . . ". I don't know if I would stress that the review of fire insurance maps is a requirement, but they can be a darn good source of historical information for the periods they cover, typically 1912, 1925 and 1954. If there are fire insurance maps for these dates that cover this area why would you choose to ignore them? Sure, contacts with regulatory agencies would also be useful but I would argue that a review of fire insurance maps is now replaced by contacts with the City. Do both and be that much more comprehensive. After all, isn't the intent here to check as many reputable sources as possible to help our your client?

DAVE

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Visit: www.iclei.org/worldcongress2009

From: Dave Lapp
Sent: Wednesday, May 13, 2009 3:00 PM
To: Glinis Buffalo
Subject: W-117 Revised EIA for Queen Elizabeth Pool
GLINIS

I am just reviewing the revised EIA by Ecomark for the QE pool project and am getting hung up on timing. In the revised EIA they acknowledge the presence of boron and PAHs in soil. They then state that the project should not be delayed due to impacted soil which can be properly managed during construction. They then refer to the plan to manage contaminated soil as it was presented in the Conclusions and Recommendations section of the February 13, 2009 Phase II ESA. The only problem with this is that the issue of PAHs in soil is not discussed in the Phase II because PAHs were not found in soil at that time, they only showed up in subsequent testing done at the beginning of May this year. Maybe I am splitting hairs but if Ecomark is stating in the revised EIA, where they acknowledge the presence of both boron and PAHs in soil, that their method of management of contaminated soil is the plan presented in the Phase II ESA that predates the finding of PAHs, then they are only discussing boron in soil as a contaminant.

In the revised EIA they also note that a "plan must be implemented in order to determine the extent of the contamination and the risk associated with it." Yet that plan has yet to be developed. Should the plan be provided before approval of the EIA be given?

DAVE

THE CITY OF Edmonton

TRANSPORTATION MEMORANDUM

DATE: May 15, 2009

File No.: 508.1
CAD 931+36+16
Posse: 83002499-002

TO: Glinis Buffalo
Environmental Planner, Planning & Development

FROM: Dave Lapp
Environmental Scientist, Engineering Services

SUBJECT: **T-117 – Confirmatory Sampling Plan & Updated Phase II ESA for Proposed Queen Elizabeth Pool Site, North of Kinsmen Facility, Edmonton**

I have reviewed the May 11, 2009 **Phase II Environmental Site Assessment** letter report and May 13, 2009 **Confirmatory Sampling Plan** by Ecomark Limited that you forwarded to this office with your memorandum of May 14, 2009. As a result I have the following comments.

The proposed manner of soil management within the area of the pool development is acceptable including the stepped approach and the contingency that should testing at the 0.75 of a metre interval find residual impacts, further excavation can occur . However, the exact area where soil removal (with associated laboratory analysis and ultimate off-side disposal if necessary) will occur should be clarified. Will this only occur within the footprint of the main pool excavation or will it include the area of the spray pool as well?

On page 11 of the ESA, in point 3 of the proposed soil management plan, it is noted that delineation will occur for PAHs. This step should also include delineation of boron and if fill material is encountered all other metals typically covered in the ICP metals scan.

Should any questions arise, please call me at 496-6782.

DL Dave .

G:\Engineering Services\Environmental\CITY FILES 500'S\508.1 Planning & Development\CAD 931\931-36\Memo 15May09, Revised Phase II & Confirmatory Sampling Plan for Queen Elizabeth Pool, Posse 83002499.doc

Subject: FW: T117, updated Confirmatory Sampling Plan
Date: Tuesday, May 19, 2009 1:02 PM
From: Glinis Buffalo <Glinis.Buffalo@edmonton.ca>
To: 'Alicia Tropak' <atropak@ecomarkenv.com>
Cc: Robb Heit <Robb.Heit@edmonton.ca>
Conversation: T117, updated Confirmatory Sampling Plan

FYI.

Glinis

Glinis Buffalo, BSc
Environmental Planner
City of Edmonton, Planning & Development Department
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-----Original Message-----
From: Dave Lapp
Sent: Tuesday, May 19, 2009 11:33 AM
To: Glinis Buffalo
Subject: RE: T117, updated Confirmatory Sampling Plan

GLINIS

This is fine as long as the spray pool area is also included in the area where soil stripping will occur or, if soil testing in the area of the spray pool has shown (although not to my knowledge) or would show, if samples were analyzed, that there are no impacts, then no stripping in the spray pool area would be necessary.

DAVE

> -----Original Message-----
> **From:** Glinis Buffalo
> **Sent:** Tuesday, May 19, 2009 11:15 AM
> **To:** Dave Lapp
> **Subject:** FW: T117, updated Confirmatory Sampling Plan
>
> Hi Dave,
>
> Can you review the attached updated confirmatory sampling plan as Ecomark has addressed your comments.
>
> Glinis
>
> **Glinis Buffalo, BSc**
> Environmental Planner
> City of Edmonton, Planning & Development Department
> 6th Floor, 10250 - 101 St. NW
> Edmonton, AB, T5J 3P4

P: 780.496.3460 F: 780.401.7067
E: glinis.buffalo@edmonton.ca

-----Original Message-----
From: Alicia Tropak [mailto:atropak@ecomarkenv.com]
Sent: Tuesday, May 19, 2009 10:38 AM
To: Glinis Buffalo
Cc: Robb Heit
Subject: Re: T117, EIA and Site Location Study

Thank you Glinis:

To clarify Dave Lapp's questions/comments, the confirmatory sampling plan will occur in the entire development footprint including the spray park and the pool area. At Dave's request, Ecomark will sample soils for CCME metals in soil (analysis code TT44), which includes boron, and PAHs in soil (analysis code PAH2). An updated sampling plan and subsequent cost estimate for this work is attached.

We trust this meets your requirements. If you have any further questions or comments or issues to be addressed in the EIA, please advise.
--
Alicia Hamm-Tropak, P.Biol.
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Canada T2R 0E2
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W: http://www.ecomarkenv.com

On 5/15/09 3:26 PM, "Glinis Buffalo" <Glinis.Buffalo@edmonton.ca> wrote:

> Hi Alicia
>
> I have received comments from Dave Lapp for the review of the Updated Phase II and Remediation Work Plan. Please see his comments in the attachment. His question/concerns must be addressed. The additional information he is requesting should be reflected in the final EIA and Confirmatory Sampling Plan.
>
> Alberta Health Services had no further concerns (also attached). I am still waiting for Alberta Environment to respond.
>
> All your other responses are fine and should be made in the final EIA. No comments from Darryl Mullen yet, most likely on Tuesday as he is not in the office today.
>
> 13 copies will be required for City Council.
>
> Please call or email if you have any questions.
>
> Regards,
> Glinis

Glinis Buffalo, BSc
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-----Original Message-----
From: Alicia Tropak [mailto:atropak@ecomarkenv.com]
Sent: Friday, May 15, 2009 9:29 AM
To: Glinis Buffalo
Cc: Robb Heit
Subject: Re: T117, EIA and Site Location Study

Thank you Glinis:

We have revised the EIA. Our responses are listed below in red. As mentioned previously, I will wait to hear from Darryl Mullen before we finalize the EIA completely. Also, you mentioned that you wanted us to include the responses from agencies who reviewed the EIA. Would you like us to include all letter, memo, and email communications for all the studies? Are these communications appropriate for a public document?

Thanks again. If I can make any improvements to the wording, or make any other changes, please confirm.

THE CITY OF Edmonton **TRANSPORTATION DEPARTMENT** **MEMORANDUM**

Fax No.: 944-7653

March 16, 2009 File No.: 303.1.1

TO: Glinis Buffalo, Environmental Planner
Corporate Planning and Policy, Planning and Policy Services

FROM: Paul R. Lach, Senior Geotechnical Engineer
Engineering Services, Transportation Department

SUBJECT: **T117 - Geotechnical Review of EIA**
Queen Elizabeth Pool Project
Kinsmen Park, File BI-276-20-P-KINS

I reviewed the EIA Report prepared by ECOMARK Ltd. for the Queen Elizabeth Pool Project in Kinsmen Park. The project site is located within a previously disturbed area on the lower terrace or floodplain lands immediately north of the Kinsmen Aquatic and Sports Centre.

From a geotechnical engineering and risk management perspective, the proposed project location is considered to be a superior alternative to redevelopment at the existing pool site within Queen Elizabeth Park. In particular, the existing pool site is located within an ancient landslide area and therefore redevelopment at this site would be consistent with an inherently higher level of geotechnical risk.

I would expect that construction of the new pool as currently proposed at the Kinsmen Park Site may be undertaken without significant adverse geotechnical impacts on the river valley and surrounding affected lands, provided that the various mitigative measures outlined in the EIA Report are implemented as described. This should include appropriate review, consultation, and inspection by a qualified geotechnical engineering consultant with respect to design and construction.

The EIA Report made reference to a geotechnical investigation report prepared by P. Machibroda Engineering Ltd. I would request a hard-copy of this report for our records. The development consultant should also be aware that public-domain information on geotechnical conditions at the Kinsmen Aquatic and Sports Centre Site is also available in the Engineering Services Library.

Should you have any questions regarding these comments, please call me at 496-6358.

PRL

THE CITY OF Edmonton **TRANSPORTATION DEPARTMENT** **MEMORANDUM**

Fax No.: 944-7653

March 25, 2009 File No.: 303.1.1

TO: Glinis Buffalo, Environmental Planner
Corporate Planning and Policy, Planning and Policy Services

FROM: Paul R. Lach, Senior Geotechnical Engineer
Engineering Services, Transportation Department

SUBJECT: **T117 - Geotechnical Review of EIA**
Queen Elizabeth Pool Project, File BI-276-20-P-KINS

I reviewed the geotechnical report prepared by P. Machibroda Engineering Ltd. for the Queen Elizabeth Pool Project in Kinsmen Park, dated December 12, 2008. The project site is located within a previously disturbed area on the lower terrace or floodplain lands immediately north of the Kinsmen Aquatic and Sports Centre.

The geotechnical report documented a field investigation, laboratory analysis, and engineering assessment, and included geotechnical recommendations for design and construction. The recommendations of the geotechnical engineering consultant should be adhered to in order to address the unique geotechnical conditions and issues for this site and the proposed development. Review of the detailed design and consultation and inspection by the geotechnical consultant is also recommended with respect to all subsequent phases of design and construction.

In relation to the EIA circulation, I would have no further questions or objections concerning the potential for significant adverse geotechnical impacts to the river valley and surrounding lands arising from this project. Based on the available information, I would offer the following additional comments for review.

- The geotechnical consultant should be aware that public-domain information on geotechnical conditions at nearby locations at the Kinsmen Aquatic and Sports Centre Site is also available in the Engineering Services Library. The available previous reports may provide relevant background information for engineering assessment; however, their appropriate use in the context of this project would be subject to the discretion of the geotechnical consultant. Of note in this regard, the geotechnical report prepared by Hardy Associates (1978) Ltd., dated March 5, 1986, addressing the then proposed Twin Ice Arena for the Kinsmen Regional Sports Centre, provided geologic overview of the adjacent site and additional information on the soil stratigraphy and related geotechnical issues.

- If not already completed, the geotechnical consultant should also review the areal extents of the historical coal mine workings in the proximity of the site to assess any potential impacts to the proposed development. Coal mines within the City of Edmonton have been identified, described and compiled in the Atlas of Coal-Mine Workings of the Edmonton Area, prepared by R.S. Taylor and dated 1971.

- The design for the pool and associated facilities must suitably limit or accommodate differential ground movements. The establishment of an appropriate sub-drainage system is also expected to be a critical component of the design to address frost action and the effects of seasonal moisture changes, as identified in the report. Detailed design of the sub-drainage system and the planned facilities should be reviewed by the geotechnical consultant with reference to the relevant subsoil and groundwater conditions. In establishment of groundwater levels for design, due consideration should be given to the influence of meteorological cycles, regional topography, development impacts, and the prevailing river elevations, as required.

- Relative to site preparation and quality assurance inspection and testing for construction, it is recommended that the minimum specifications as outlined in the City of Edmonton Design and Construction Standards should be adhered to where these specifications exceed those requirements outlined in the geotechnical report.

Inspections by qualified geotechnical personnel are recommended to reduce uncertainty and risk relative to the design and construction of the proposed pool and associated facilities.

Should you have any questions regarding these comments, please call me at (780) 496-6358.

PRL

THE CITY OF Edmonton

TRANSPORTATION DEPARTMENT

MEMORANDUM

April 1, 2009

Our Reference No.: 85422603-TP
File No.: DR - 701

TO: Glinis Buffalo
Environmental Planner, Environmental Planning
Planning and Development Department

FROM: Audra Jones, P. Eng.
Director, Sustainable Transportation
Transportation Planning Branch

SUBJECT: Parking Assessment – Queen Elizabeth Outdoor Pool
Your File: BI-276-20-P-KINS
Kinsmen Park

The Transportation Department has reviewed the Parking Impact Assessment (PIA) prepared by Bunt & Associates, dated February 6, 2009, submitted for the proposed Queen Elizabeth Outdoor Pool to be located within Kinsmen Park.

1. Overall, the Transportation Department agrees with the findings of the PIA that the existing 700 on-site stalls will be sufficient to accommodate the expected parking requirements of the proposed outdoor pool during normal operating conditions.

2. The Transportation Department is concerned with the accommodation of parking during major events. The proposed outdoor pool will be constructed in the location of an existing ball diamond which is currently being used as overflow parking during major events. This will result in a reduction of 250 on-site overflow parking stalls. This reduction is not clearly addressed in the PIA. The following issues need to be clarified:

   - The report anticipates that the field north of the proposed outdoor pool can be used. Please confirm that this field will be available for overflow parking and indicate the approximate number of vehicles that could be accommodated.

   - The report also indicates that remote overflow parking can continue at Telus Field with the permission of the Cracker Cats. Is there currently an agreement in place with the owners/operators of Telus Field for the use of their parking facilities? Please confirm that this will continue to be an option for remote parking and indicate the approximate number of vehicles that could be accommodated.

- The conclusion of the report also indicates the possibility of using the existing Queen Elizabeth Outdoor Pool site for remote parking. There is no further discussion on this throughout the report other than in the conclusion. Are there plans to redevelop this site in the near future making remote parking unavailable at this site? If this site is a feasible option, how many overflow stalls are anticipated to be available?

3. The Parking Impact Assessment does not identify bicycle parking in the area, however, bicycle parking should be provided as per the requirements of the Zoning Bylaw.

Should you require any additional information, please contact Darryl Mullen at 780-496-1699.

D. Mullen

DRM/cd

c: Bunt & Associates
Suite 706, 10339 – 124 Street
Edmonton, AB T5N 3W1

Attention: Mark Huberman, P. Eng.

ECOMARK Ltd.
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May 12, 2009

Our Project Number: EDMON-08503-C4476990-10
City of Edmonton, Planning and Development File Number: T117

Ms. Glinis Buffalo
Planner
Environmental Planning, Planning and Policy Services
Planning and Development
6th Floor, 10250 – 101 Street NW
Edmonton, Alberta T5J 3P4

Dear Ms. Buffalo:

RE: Environmental Impact Assessment – Proposed Queen Elizabeth Pool Project
SW-32-052-24-W4M; Kinsmen Park, Edmonton, Alberta

On behalf of City of Edmonton, Asset Management and Public Works, Ecomark Ltd. is pleased to provide you with responses to the following questions and comments about the above-mentioned environmental impact assessment (EIA) sent via email April 6, 2009. The questions are transcribed to facilitate your review.

1. In relation to the City of Edmonton Outdoor Aquatic Strategy, Kin Park Redevelopment Plan and the Kinsmen Master Park, the EIA states the proposed project is consistent with these plans. Please provide how the project conforms and is aligned with these plans. The City of Edmonton Outdoor Aquatic Strategy has been approved. Have the other two plans been approved?

The Kin Park Redevelopment Plan and the Kinsmen Master Plan are internal plans of the City of Edmonton Community Services and have not been approved by City Council. For these reasons, all references to these plans have been removed from the EIA report.

As described in Section 1.2 *Purpose of Project and Rationale*, the proposed project is consistent with the Ribbon of Green Master Plan (1992) and the Urban Parks Management Plan (2006), which are City Council approved documents. These plans permit development, as long as its integrity of the river valley is maintained. The Ribbon of Green Master Plan states "new or expanded facilities [that] enhance recreation opportunities, are compatible with conservation and will be located in areas which are already disturbed or where environmental impact will be low" (Edmonton, 1992). The proposed project is consistent with this plan, as the proposed footprint will be confined to previously disturbed areas and the overall environmental impact is expected to be low.

The Urban Parks Management Plan further highlights the need for new developments within the river valley to provide additional support facilities (i.e. public washrooms), preserve and protect the river valley forests,

provide four-season recreational activities, link existing trails, enhance educational and heritage program opportunities, and adopt ecological park design, construction, and maintenance (Edmonton, 2006). The proposed project will provide additional park amenities including public washrooms with entrances outside the pool pavilion, a new walkway between the new pool and the existing Kinsmen Sports and Aquatic Centre, and an outdoor aquatic opportunity. Environmentally conscious and sustainable systems were also incorporated into the proposed project design.

2. The proposed pool project in Figure A0001 does not include a future parking lot, however, the Site Location Study on page 2 shows proposed replacement overflow parking. This is consistent through the documents and needs to be resolved for the proposed project to be clear in what is being constructed.

The Site Location Study was conducted during the planning phase of the project and prior to the release of the Parking Assessment conducted by Bunt & Associates (2009) and the draft EIA report. There have been changes to the proposed project design since submission of the Site Location Study.

The site plan available in Figure 2 of the EIA report shows the most recent project design. The EIA report was based on the site plan in Figure 2 and the construction details provided in the Schematic Design Report prepared by Johns Group2 Architecture and Engineering (2008).

3. A Historical Resources Impact Assessment is required as directed by Community Culture and Community Spirit. As indicated in the EIA, the HRIA should not be completed until the snow has melted and the ground has thawed. Ecomark should confirm with the Province if the HRIA must be approved prior to site preparation and construction.

As described in Section 3.2.7 *Archaeological and Historic Resources*, Alberta Western Heritage Inc. conducted a Historical Resources Impact Assessment (HRIA) in the area of the proposed development to determine if any intact historical resources were present at the Site. One shovel test and four large backhole tests were excavated. During the assessment, a portion of a known archaeological site was identified within the proposed development area. The remains within the archaeological site were largely disturbed and consisted of modern, historic and possible pre-contact components. Predominant historic artifacts included building materials (i.e. brick, wood, nails) and fragmented faunal materials. Modern artifacts included golf balls, rubber, aluminum cans, plastic and concrete fragments. More deeply buried pre-contact components consisted of bison faunal remains and charcoal (Alberta Western Heritage, 2009).

Overall, the recovered historic period artifacts were sparse, scattered, very fragmented, and unidentifiable and did not yield any new information on the John Walter period in the area. The large pieces of bison faunal material buried at depth were sparse and not well defined. For these reasons, Alberta Western Heritage Inc. recommended that the proposed project proceed as planned. A professional archaeologist should monitor excavation activities during construction to further assist in defining pre-contact occupation in the area (Alberta Western Heritage, 2009).

The HRIA report has been submitted to Alberta Culture and Community Spirit for approval. A permit will be obtained from Alberta Culture and Community Spirit prior to construction activities, as stated in Section 5.4.12 *Archaeological and Historic Resources*.

4. "Develop a remediation or risk management plan to manage soils with elevated concentrations of boron that may be encountered during development of the Site". The remediation and/or risk management plan must be approved by Alberta Environment, Alberta Health Services, and the COE Transportation Department prior to any EIA approval. The outstanding ESA issues must be resolved and this includes any further testing requirements. A meeting is scheduled for next Thursday (April 9th) with all the agencies after they have reviewed the Ecomark Letter Report. All parties will be in attendance except for Alberta Environment.

As described in Section 3.2.1 *Land Use*, an addendum to the phase I environmental site assessment with the results from the supplemental record searches were completed for the Site. Based on a review of environmental records, Walter's Coal Mine, the John Walter Saw Mill, Carpenter's Shop, and lumberyard were historically in the immediate vicinity of the Site. From the period the developments were in operation, substances could potentially include lead-based paints, wood preservatives, solvents, oils and lubricants. There was also known lead contamination near the High Level Bridge and the Walterdale Bridge located at least 250 meters southwest and southeast of the Site. It was unknown whether the lead contamination extended to the Site. A review of previous geotechnical investigations confirmed the presence of fill material within two meters below ground surface near the proposed pool site. The source of the fill material and the potential for it to harbor contaminants was unknown. For these reasons, a phase II environmental site assessment was required in the immediate vicinity of the proposed pool project to determine the presence or absence of contamination at the Site (Ecomark, 2009*a*; Ecomark, 2009*b*).

Ecomark conducted additional environmental testing at the Site and identified slightly elevated levels of boron and polycyclic aromatic hydrocarbons (PAHs) in the top layer of fill, up to 0.75 m below ground surface. The presence of boron can be attributed to a number of activities at the Site. Historical industrial activities such as coal mining or wood preservatives that made use of boron may have leached into the soil. Due to the close proximity of the Site to the North Saskatchewan River, the levels of boron may have been deposited during flood events. Boron is also present in many fertilizers, which throughout repeat applications allow for accumulation (Ecomark, 2009*c*).

The PAHs present in soil can be attributed to historic land uses such as wood treatment from the former lumber yard, or associated with the historic 107 Avenue that was located in the area of the proposed development. The PAHs are associated with heavy tar and oils from asphalt; the fill material near the current parking lot and the Kinsmen Aquatic and Sports Centre in the immediate vicinity of the Site may also be potential sources of PAHs (Ecomark, 2009*c*).

The boron and PAH exceedances should not preclude development; the soil can be properly managed during construction to avoid any negative ecological or human health effects. A plan must be implemented in order to determine the extent of the contamination and the risk associated with it. A plan to manage contaminated

soils was addressed in the Conclusions and Recommendations section of the phase II environmental site assessment (Ecomark, 2009*c*). We acknowledge that the phase II environmental site assessment and subsequent plan must be reviewed and approved by the above-mentioned agencies, prior to approval of the EIA report.

5. Page 3 and 23 state "further public consultation is required to identify any other potential impacts not included in the assessment…". Please provide further details, as the EIA should address all public consultation issues. Also in Section 6 Public Consultation: What date was the public open house and when was the public notification made in the Edmonton Journal. Please provide a summary of comments received from the EIA distribution to the groups identified. This must be completed and reviewed prior to any EIA technical approval by our Department.

As stated in Section 6 *Public Consultation*, public consultation was facilitated through circulation of a public notification in the Edmonton Journal and a public open house. The Edmonton Journal advertised the proposed pool project and invitation to the public open house on Friday, February 27, 2009. The public open house was held on Tuesday, March 3, 2009. A copy of the invitation is available in Appendix 4 of the EIA report. The invitation targeted community leagues, Edmonton Sports Council, Aquarium Club of Edmonton (ACE), the Kinsmen Club of Edmonton, and recreational users of the Kinsmen Sports and Aquatic Centre. Information on the public open house was also posted on the City of Edmonton website. The public open house also received media coverage from Global TV, CTV, 630 Ched radio, and 24 Hours.

Overall, there was considerable amount of public support to replace the Queen Elizabeth pool in Edmonton. A summary response form from the information session is available in Appendix 4 of the EIA report. Public concerns were raised over the use of universal change rooms within the proposed project design. Public concerns were diffused through explanation of the proposed design. Some benefits of the universal change room are summarized below (Edmonton, 2009*c*):

- It provides operational flexibility, and therefore reduces operating costs, by permitting lifeguards of either sex to supervise the change room.
- The design meets the legislated accessibility requirements for disabled persons at recreational facilities, and accommodates people with an attendant of the opposite sex.
- The universal change room is a shared space, and allows people to change in their own private cubicle rather than changing in front of others. Cubicles vary in size; some cubicles can accommodate a family of five, wheelchair users and attendants, or just individual users.
- Washrooms remain segregated for males and females. Showers are outside on the pool deck.
- The design allows for greater safety and security of patrons. Parents can bring children of both sexes into the common room and still have a private cubicle.

Following the public open house, The City of Edmonton met with the Friends of Queen Elizabeth Pool Society and confirmed that the City "will continue to work towards a solution that will allow the project to continue and the Friends of Queen Elizabeth Pool Society will continue to fund the project as originally planned… [The] City will review the design based on safety considerations, the requirements of potential users of the pool and effective use of taxpayer dollars. The safety of citizens using City facilities is paramount. While no design guarantees a facility will be incident free, minimizing risk is always taken into account during the planning, design and operation of facilities" (Edmonton, 2009*b*).

6. Page 8, EIA states "larger family change rooms were removed from the current schematic design". This is not consistent with the proposed design.

This statement has been removed from the EIA report. The EIA report reflects the current proposed design, as shown in Figure 2.

7. Will trees and/or shrubs be removed as part of this project?

As stated in Section 3.1.7 *Vegetation*, three (3) trees will be removed at the Site. The City of Edmonton, River Valley, Forestry and Environmental Services conducted an assessment of the trees at the Site and provided relocation and replacement costs for the work. All tree work will adhere to the City of Edmonton Corporate Tree Management Policy (Edmonton, 2009*a*).

8. "..Over-flow parking will be displaced with development of the site". Does this affect any development permits that have been previously issued or does it affect any contractual agreements made with the Kinsmen Club?

The over-flow parking areas described in the EIA report are not part of any previously issued development permits, as they are not permanent parking facilities. There are no known contractual agreements with the Kinsmen Club for these areas. The overflow parking area is currently used for winter parking and special event parking only.

9. "..Over-flow and remote parking lots may be utilized north of the proposed development or offsite, as required". It was stated earlier that future parking was not proposed for this project. Please provide a map indicating where future over-flow parking is to occur.

As stated in Section 3.2.3 *Parking and Traffic*, the parking assessment confirmed that additional parking is not required. For these reasons, no additional parking will be constructed for the proposed project.

Currently, over-flow parking is occasionally required during the winter and for special events only. Parking alternatives are available, in the event that over-flow parking is needed. When higher than expected parking demands are expected at Kinsmen Park, over-flow and remote parking lots may be utilized north of the proposed development or offsite. The remaining field available north of the proposed pool site is approximately 5,000 m^2 and would provide up to 155 overflow parking stalls, as required (Bunt & Associates,

2009). For more information on the parking assessment or parking alternatives, please refer to the response letter from Bunt & Associates (2009) in Attachment 1.

10. The EIA indicates a ventilation system may be required. Please confirm if one is required or not.

After further consideration, a ventilation system is not required. As stated in Section 3.2.5 *Odour*, the new outdoor pool is open to the elements, which will limit detection of odors at the Site (Johns Group2, 2008).

11. Please provide your construction schedule and a map to identify staging and laydown areas that are required for construction.

As stated in Section 4.4 *Scheduling*, the proposed start date will occur following City Council approval (Summer 2009) and once all the approvals and development permits are in place. The proposed project will be completed by 2010.

12. Section 5.4.3 Hydrology states to "avoid construction activities during high-risk flood periods (May to June)". This statement suggests the project schedule will commit to this statement. If construction will occur during this period, please remove the statement and all other areas where it is stated in the EIA.

Unfortunately, construction activities cannot be avoided between May and June. As an alternative, the following statement has been added to Section 5.4.3 *Hydrology* of the EIA report:

- Develop and implement a contingency plan to ensure that all construction equipment, fuels, oils, lubricants and other construction items that may cause an adverse effect on the environment will be safely removed upland during a flood event. Stop all construction activities in the event of high water levels.

13. Drainage Branch advises if the intent is to "install a stormwater sediment trap down grade from potential drainage areas during development so that storage is provided in the event of rainfall and increased runoff. The water can be reused onsite as dust control, with approval from Alberta Environment and the City of Edmonton", please indicate if this structure will be permanent or temporary. If the structure will be permanent, please contact Liliana Malesevic, Drainage Services, at 780-496-6536 as Drainage will need to review the design and connection with the system.

The stormwater sediment trap described in the EIA report is a temporary structure that is used to manage sediment during construction activities until vegetation reestablishes at the Site. All other stormwater management designs will be provided to Drainage Branch at the development permit stage, following approval of the EIA report.

14. Have all user groups of the ball diamond agreed to the removal of the ball diamonds?

Removal of the ball diamonds were discussed during the public open house held Tuesday, March 3, 2009. No concerns were identified from user groups in attendance. The City of Edmonton Recreation Facility Bookings have agreed to remove the ball diamonds from the booking inventory (Dumont, 2009, Email Comm.).

15. Attached are comments from Drainage, Geotechnical, Transportation, and Parks for the draft EIA (Chris Cooper, Development Officer, had no issues/comments).

The comments from the City of Edmonton Drainage Branch have been incorporated into Section 5.4.3 *Hydrology*. Responses to the specific comments are summarized below:

- Figure 1 of the EIA report has been updated and includes a legend.
- The post-construction surface runoff management plan with specific engineered controls will be submitted to Drainage Branch for approval at the development permit stage, following approval of the EIA report.
- Comments from bullet #2 and bullet #5 were incorporated into Section 5.4.3 *Hydrology*.

The comments from the City of Edmonton Transportation Department pertaining to the parking assessment were sent directly to Bunt & Associates for further clarification. A response to these comments is provided in Attachment 1. Implementing a bicycle parking area near the proposed pool site was incorporated in the mitigation measures described in Section 5.4.9 *Parking and Traffic*.

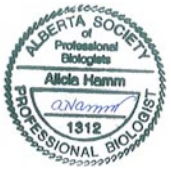
The comments from the City of Edmonton Transportation Department pertaining to environmental concerns were incorporated into the EIA report. Responses to the comments are summarized below:

- As stated in Section 3.2.1 *Land Use*, the phase I and phase II environmental site assessments were revised based on a supplemental records review and additional environmental testing at the Site.
- The phase II environmental site assessment identified slightly elevated levels of boron and PAHs in the top layer of fill, up to 0.75 m below ground surface. The boron and PAH exceedances should not preclude development; the soil can be properly managed to avoid any negative ecological or human health effects. Upon review and approval of the revised environmental site assessments, the plan to manage contaminated soils on Site will be implemented as part of the proposed development.
- The proposed construction staging and laydown area will occur over the closest baseball diamond to the proposed development, as shown in Figure 3 of the EIA report. The staging area is at least 100 meters from the riverbank.
- Potential sources of contamination during construction include sediment, fuel, lubricants, and cleaners. Spill prevention and response techniques to prevent contaminants from entering the North Saskatchewan River or adjacent lands is presented in Section 5.4.6 *Wildlife.*

We trust that the information meets your requirements and you may continue processing the application. If you have any additional questions, please do not hesitate to contact the under-signed at 403-410-3867.

The opinions expressed in this Letter are solely those of Ecomark Ltd. This Letter is furnished in our capacity as consultants to City of Edmonton (Client) for their purposes and does not necessarily reflect the viewpoint of the Client. The Letter is written for the benefit and use of the Client only and may only be relied upon by the Client in connection with the Environmental Impact Assessment. Conditions assessed are valid to the date of the assessment and are limited by the information that was shared by the third parties involved. While every effort is made to confirm that the data collected from third parties is factual, complete, and accurate, Ecomark Ltd. makes no guarantees or warranties whatsoever with respect to such data. While strict data quality objectives were developed and met in the sampling procedure, Ecomark does not represent that the sampling and analyses reported are exhaustive. Liability is limited to the invoiced amount of this Letter.

Sincerely,



Alicia Hamm-Tropak, P. Biol. **Professional Seal**

Attachments

Attachment 1: Bunt & Associates Supplementary Information

References

Alberta Western Heritage Inc. April 2009. Historical Resources Impact Assessment of the Queen Elizabeth Outdoor Pool Project. SW-32-052-24-W4M at Kinsmen Park, Edmonton, Alberta. Archaeological Research Permit No. 2009-017.

Bunt & Associates. May 8, 2009. Kinsmen Park Queen Elizabeth Pool Parking Assessment: Draft Report. Prepared for the City of Edmonton. Project No. 3027.25.

City of Edmonton. 1992. The Ribbon of Green Master Plan.

City of Edmonton. June 13, 2006. The Urban Parks Management Plan (UPMP): 2006-2016.

City of Edmonton. April 2, 2009. Memorandum: Estimate for tree work for new Queen E Pool at Kinsmen Sports Centre. From Bonnie Fermanuik, River Valley, Forestry and Environmental Services.

City of Edmonton. April 2, 2009. City of Edmonton Website. City of Edmonton Update on Queen Elizabeth Outdoor Pool Project. Available at: http://www.edmonton.ca/city_government/news/2009/12780.aspx

City of Edmonton. April 28, 2009. City of Edmonton Website. Response to Universal Change Room. Available at: http://www.edmonton.ca/city_government/city_organization/universal-change-room.aspx

Ecomark Ltd. January 20, 2009. Phase I Environmental Site Assessment. Prepared for Robb Heit, City of Edmonton, Asset Management & Public Works.

Ecomark Ltd. April 9, 2009. Addendum to Phase I Environmental Site Assessment. Prepared for Robb Heit, City of Edmonton, Asset Management & Public Works.

Ecomark Ltd. May 11, 2009. Phase II Environmental Site Assessment. Prepared for Robb Heit, City of Edmonton, Asset Management & Public Works.

Johns Group2 Architecture and Engineering (Johns Group2). December 5, 2008. Queen Elizabeth Pool in Kinsmen Park: Schematic Design Report. Prepared for the City of Edmonton.

May 8, 2009 3027.25

bunt & associates
TRANSPORTATION PLANNERS AND ENGINEERS

City of Edmonton
Transportation Department
Transportation Planning Branch
13th Floor, Century Place
9803 – 102A Avenue
Edmonton, AB
T5J 3A3

Attention: Darryl Mullen

Dear Mr. Mullen:

Re: Queen Elizabeth Outdoor Pool Parking Assessment, Supplementary Information

Thank-you very much for your comments in the April 1, 2009 memorandum. The Kinsmen Park, Queen Elizabeth Outdoor Pool, Parking Assessment, dated May 8, 2009, has been updated to address the Transportation Department's concerns.

In response to your comments, the following points of clarification are advanced:

1. In regards to field north of the proposed outdoor pool, in discussions with Ron Nichol, the baseball diamond will no longer be operational with the installation of the outdoor pool, and the remainder of the field will be available for overflow parking. The remaining field available for parking after the relocation of the Queen Elizabeth Pool was estimated to be about 5,000 m^2. At a rate of about 35-32 m^2/stall, approximately 145 to 155 overflow parking stalls would be available.

2. There is no formal parking agreement in place with the owners/operators of Telus Field. Historically, the Kinsmen Sports Centre would contact Telus Field owners/operators and ask for permission to use their lot for recreation vehicle (RV) parking. I am unsure of the number of stalls that would be available at Telus Field. According to Ron Nichol, Telus Field has been used in the past to accommodate approximately 15 RV trailers during big events at the Kinsmen.

3. As noted on Page 12 of the Parking Assessment, the existing Queen Elizabeth Pool site provides about 50-55 parking spaces within the on-site gravel parking lot. There are also 12 parking stalls available across Queen Elizabeth Park Road producing a total parking supply of about 62 to 67 stalls. If there are no plans to redevelop the existing site in the near future, it is anticipated that the 62 to 67 stalls can be used for overflow parking if required.

It is anticipated that the aforementioned supplementary information meets with your immediate needs and appropriately responds to your concerns. Please do not hesitate to contact us should you require any further information or clarification.

Sincerely,
Bunt & Associates

Mark Huberman, P. Eng.

cc: City of Edmonton, Robb Heit

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May 13, 2009

Our Project: EDMON-09801-C4484000-0

Robb Heit
City of Edmonton
Land and Buildings - Engineering Services
18th Floor, Century Place, 9803 – 102A Avenue
Edmonton, Alberta T5J 3A3

Dear Mr. Heit:

RE: Confirmatory Sampling Plan of the Proposed Queen Elizabeth Pool Site
9100 Walterdale Hill, Edmonton, Alberta

Ecomark Ltd. (Ecomark) is pleased to present a plan for confirmatory sampling of the removal of contaminated soil for the above referenced property. The proposed sampling plan will be conducted as follows:

- Topsoil will be stripped separately from the subsoil and salvaged on a liner. Three composite samples will be taken from the topsoil salvage piles to confirm the presence or absence of contamination in the topsoil.
- Subsoil of the development footprint will be removed to a depth of 0.75 m and will be taken to a class II landfill for disposal.
- The excavation floor will be sampled every 25 m^2 in a grid pattern for a total of 16 samples.
- All samples will be sent to Bodycote Testing Group for CCME metals in soil (TT44), polycyclic aromatic hydrocarbons (analysis code PAH2), and particle size analysis (PS24).
- Two geotechnical groundwater wells will be sampled to determine the impact to the groundwater. The water samples will be sent to Bodycote Testing Group for PAHs in water (analysis code CETH6), and dissolved metals and routine water (analysis code TW30).
- Analyze the laboratory data. Should levels of analytes exceed Alberta Tier 1 Guidelines for parkland use (AENV, 2009); further excavation will be required to remove any residual contamination. If the results indicate that all analytes of interest are below AENV (2009), construction will continue as originally planned.

The opinions expressed in this sampling plan are solely those of Ecomark Ltd. This sampling plan is furnished in our capacity as consultants to the City of Edmonton (Client) for the project described in this sampling plant and does not necessarily reflect the viewpoint of the Client.

Yours sincerely,

Sheri DeBoer, B.A.Sc.

Bill Marsh, M.Sc., P.Eng.

C: Glinis Buffalo, City of Edmonton, Planning & Development Department

Appendix 8: Qualifications and Information Pertaining to the Environmental Consultants

Name of Firm: Ecomark Ltd.

Address: 100, 16812 – 114 Avenue, Edmonton, Alberta T5M 3S2

Phone: (780) 444–0706

Fax: 1–866–337–8631

Date Established: January 11, 2000

Insurance Coverage:

- Professional Errors & Omissions - $2,000,000
- Commercial General Liability - $2,000,000
- WCB Account

Safety Training: All professional staff at Ecomark have appropriate safety training in WHIMS, H_2S Alive, TDG, First Aid and Ground Disturbance Practices.

Ecomark Ltd. is an environmental consulting company with over 75 years combined experience. Our staff includes professional biologists, a professional geologist and an environmental engineer. We offer our clients professionally stamped and signed documents in a comprehensible format. Our experience extends to industrial, commercial, oil and gas, and residential sites and clients, specializing in the following areas:

- Phase I Environmental Site Assessments
- Phase II Environmental Site Assessments
- Phase III & IV Environmental Site Assessments (Remediation & Reclamation)
- Assessments (Biophysical, Habitat, Fisheries, Environmental Impact, Landfill Proximity)
- Monitoring (Air, Water, Soil and Biomonitoring)
- Environmental Engineering
- Applications / Regulatory Compliance
- Training & Environmental Systems

We have appropriate professional errors and omission (E&O) insurance, contractors general liability (CGL) insurance, and Worker's Compensation. We have also attained Small Employer Certificate of Recognition (SECOR) safety status.

Ecomark Ltd. Projects and Experience

Phase I Environmental Site Assessments

Over 300 phase I environmental site assessments throughout western Canada

Phase II Environmental Site Assessments

Phase II environmental site assessments

Tier 2 risk assessments, Airdrie, Sundre, and North Garrington, Alberta

Phase III and IV Environmental Site Assessments

Reclamation and remediation

Oilfields reclamation in Devon, Bonnie Glen and Redwater

Oil lease cleanups

Class 3 railway derailment cleanup and complete railway line abandonment

Diesel spill remediation

Fuel tank removals and cleanups

Underground storage tank remediation

Contaminated soil cleanups

Landfill reclamation

Salt spill weeping tile design and geotechnical assessment

Bioremediation, audit, waste cleanup and process redesign

Erith River crossings reclamation

Grading, cleanup, and reclamation of Mountain Park Loop

Pipeline crossing inspection, creek monitoring and reclamation

Native grass and forbs species research for boreal forest reclamation

Stabilization of a mineral spring

Constructed wetland, survey, plan and construction

Assessments – Biophysical, Acquisition, Habitat, Hazard, Environmental Impact and Others

Landfill proximity assessments

Biophysical assessments

Wetland assessments

Fisheries assessments

Lake assessments

Corporate environmental acquisition assessments

Chemical/brownfield site assessments

Greenhouse gas emissions inventory

Federal and provincial environmental impact assessments (EIA)

Health risk impact assessment (Health Board equivalent of an EIA)

Environmental compliance audit for health facilities

Commercial environmental audits and technical reviews

Hazard identification assessments for industry, developers and municipalities

Complete biophysical assessments including wetland and aquatic assessments, compost research and field application trials

Nutrient management in intensive livestock operations

Effects on nitrogen leaching in soils with the application of bedding

Effects of phosphogypsum on compost

Scouting, application, and approvals for linear development projects

Medicine Lodge Loop environmental assessment

Environmental field report for Cheviot and Mountain Park Railway

Stormwater outflow inspection and installation, Atim Creek

Culvert installation under Atim Creek CN Right-Of-Way

Aquatic inspection in Athabasca and North Saskatchewan drainages

Fisheries monitoring studies and research and creek fisheries assessments

Transalta fish recovery tank for Lake Wabamun

Dredging impact literature search and sediment survey, Lake Wabamun

Rare plant studies throughout western Canada, including a study covering 1.8 million hectares in northwestern Saskatchewan and smaller studies in BC and Alberta

Monitoring - Air, Water, Soil and Biomonitoring

Groundwater monitoring

Soil monitoring

Vegetation, lichen, and agricultural field biomonitoring

Establishment of biomonitoring plots complete with FCIR and air photo interpretation

Indoor air quality monitoring

Environmental Engineering

Stormwater management design and planning

Wastewater system design

Potable water system design

Onsite wastewater treatment systems

Erosion and sediment control plans for LEED™ certification

Landfill design and development

Establishment of bioremediation, composting, and recycling facilities

Peat bog sewage treatment field reclamation

Route selection and design of river crossings for pipelines

Technology evaluations for secondary off-gas treatment, cement kiln

Technology, composting alternatives, fly ash for road building material

Assistance on CADR grinding technology

Ecological land development

Applications, Licenses, and Regulatory Assistance

Facility approval applications

Integrated municipal waste facility Board of Health application

Industrial application for waste handling facilities

Waste management applications

AEUB Guide 58 applications

AEUB Guide 55 support

Water well application for facility water supply system

Redefinition of hazardous waste for Canadian Environmental Protection Act (EPA)

Assessment of regulations for importation of hauling waste from other countries

Development of the Medicine Hat Waste Management Facility, Petro-Canada

Development of the Paintearth Resource Recovery Centre

Development of commercial land for Wetaskiwin, Alberta

Waste management facility approvals

Training & Environmental Systems

Environmental training module and delivery

Environmental procedures manual for North American Construction Group

EUB waste module manual and delivery

Northern Alberta compost brochure and manual

Building operator training program waste module

Habitat restoration and environmental aspects of linear development

Fisheries training (linear development)

Training for Alberta Onsite Waste Water training program

Waste management system development

Creation and implementation of bedding management program for Northlands Park

Compost marketing study for the University of Alberta

Sewage field testing

Intensive livestock composting seminar for the County of Lamont

Assessment of waste dewatering market for Western Canada

Waste audit and waste minimization implementation

Development of integrated waste management facility for Fero, Yukon

Operational enhancement of community septic system and design of new infiltration field

Establishment of hazardous waste transfer station, including market analysis

Assistance in establishing bioremediation market

Historical environmental review for Paintearth Resource Recovery Centre, Coronation, Alberta

Installation of monitoring and demonstration system for solar heating project

Environmental systems management in Columbia, India, Russia, Venezuela