Appendix A
Biophysical Assessment

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1.0 INTRODUCTION

1.1 Background

In 1992, the Edmonton City Council approved the Ribbon of Green North Saskatchewan River Valley and Ravine System Master Plan. That Master Plan highlighted individual planning objectives for Buena Vista Park and Sir Wilfred Laurier Park (Laurier Park). Objectives for Buena Vista Park were to "conserve and rehabilitate a moderately sensitive undeveloped open space by establishing a pedestrian-oriented nature park for informal recreational use and picnicking, accessible by the main trail system, with amenities for safety and comfort". Objectives for Laurier Park were to "selectively redesign a major activity area to improve the function and quality of existing facilities (City of Edmonton Parks and Recreation, 1992).

Since that time, various developments have occurred with respect to the management of both parks, including approval of program statements, designation of Buena Vista Park as a Dogs-Off-Leash Area and, in 2009, the initiation of a public consultation process regarding the future use of the parks. Now, in 2012, the City of Edmonton is embarking on the next step and has begun the process of developing a Master Plan that will guide the development and management of Buena Vista and Laurier Park for the next ten years. ISL Engineering and Land Services (ISL) was retained by the City as the prime consultant tasked with preparing the Master Plan. ISL, in turn, retained Spencer Environmental Management Services Ltd. (Spencer Environmental) to complete a Biophysical Assessment of both parks as a means of assessing current site conditions and providing environmental information as background information for use in developing the Master Plan.

1.2 Objectives

The primary objectives of this biophysical review were as follows:

- Collect and compile existing environmental information.
- Identify environmental constraints (i.e. sensitivities).
- Identify opportunities for restoration.
- Identify potential permitting requirements related to park development.

This report is intended to serve as the formal Biophysical Assessment for the Buena Vista/Laurier Park Master Plan, but will also provide the information necessary for any Environmental Impact Assessment required under the *North Saskatchewan River Valley Area Redevelopment Plan* (Bylaw 7188) related to proposed development stemming from the new Master Plan. This report identifies data gaps that will need filling as part of future environmental assessment work.

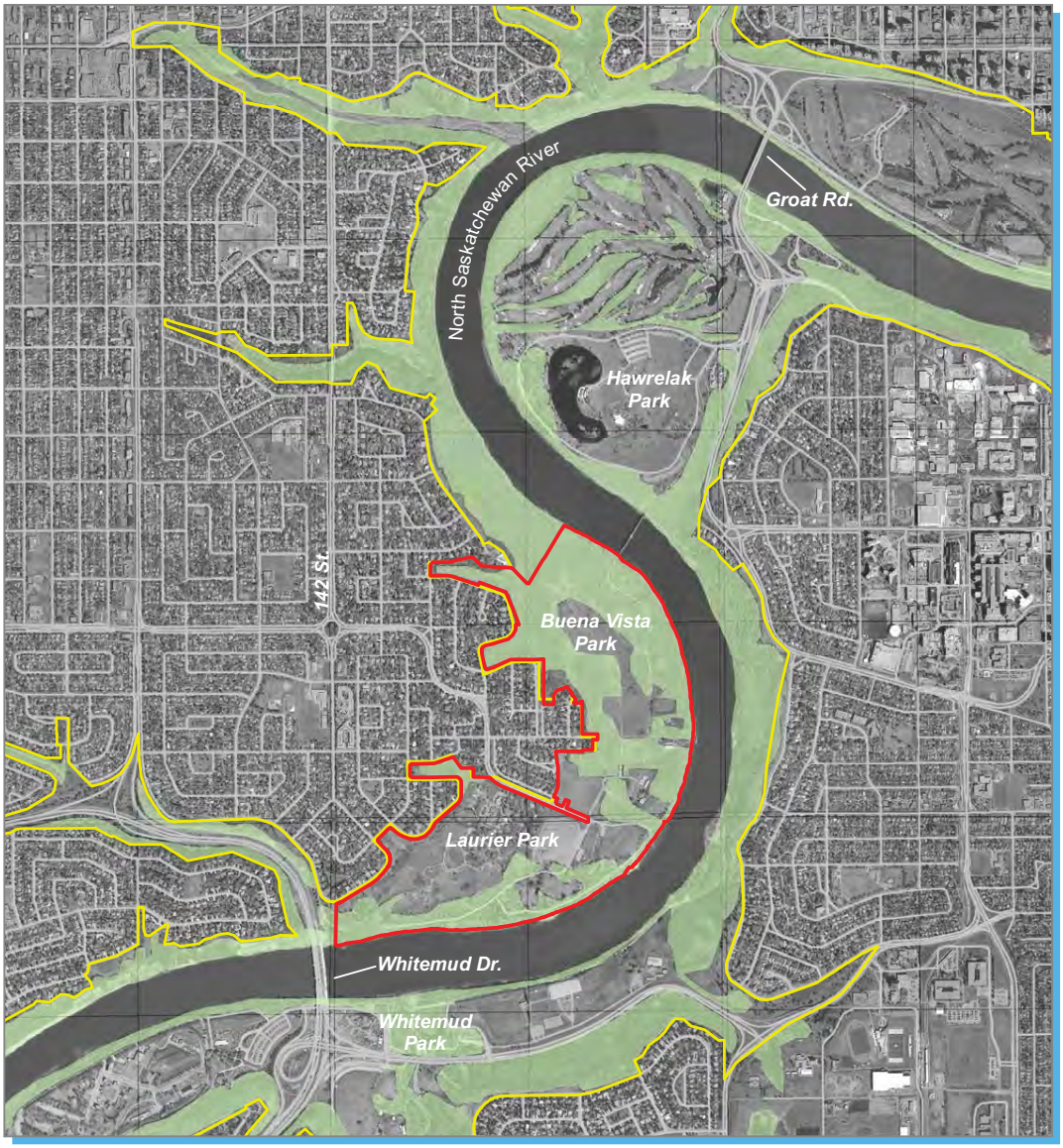
1.3 Study Area

We defined the study area as including all lands within the park boundaries of Buena Vista and Laurier Park (Figure 1). The Edmonton Valley Zoo lands are, however, not included in any of the descriptions of natural features.

1.4 Report Organization

This report consists of seven chapters. Chapter 1 (*Introduction*) provides background information related to the project, the objectives and the structure of the report and presents the study area under analysis. Chapter 2 (*Methods*) outlines the methodology used in this report. Chapter 3 (*Existing Conditions*) provides a description of natural resources within the study area. Chapter 4 (*Environmental Sensitivities and Opportunities*) provides a discussion of the environmental sensitivities and potential opportunities along with recommended planning guidelines. Chapter 5 (*Regulatory Considerations*) provides a brief description of potential federal, provincial and municipal legislation and permitting requirements that may be required. Chapter 6 (*Summary and Conclusions*) summarizes the results of the biophysical review. All literature cited in this report is referenced in Chapter 7. There is one appendix to this report.

For the purposes of this report, Buena Vista Park and Laurier Park will be treated as a single park in the planning process and will be referred to as Buena Vista/Laurier Park. The parks will be referenced separately when required for a more accurate description of site conditions or feature locations.



Legend

- Study Area
- City of Edmonton Natural Areas (Golder 2010)
- NSRV ARP Boundary

0 250 500 1,000 Meters

1:23,000

Figure 1. Study Area Location

Aerial Photograph Date: May 2010

Date Map Created: 16 February 2012

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2.0 METHODS

2.1 General Assessment Methods

We undertook the following tasks as part of this Biophysical Assessment:

- Reviewed previous environmental studies conducted in and around the study area.
- Reviewed relevant literature and databases.
- Reviewed historical aerial photographs to analyze changes in land use throughout the study area over time.
- Conducted a field reconnaissance of the study area on 13 January 2012.

2.2 Detailed Assessment Methods

2.2.1 Review of Previous Studies

Buena Vista/Laurier Park and surrounding lands have been the focus of several environmental studies in the past. The assessments that were deemed relevant to this Biophysical Assessment and included in our review included the following:

- The Edmonton Rowing Club Facilities Development, Environmental Impact Assessment Study (Geographic Dynamics Corporation, 1994).
- Edmonton River Valley and Ravine Trails Development Program, Environmental Screening Report (AMEC Earth & Environmental, 2004).
- Edmonton Valley Zoo Polar Extremes, Environmental Impact Assessment (EIDOS, 2009).
- Edmonton Valley Zoo Animal Care Structure, Environmental Impact Assessment (EIDOS, 2011).
- Edmonton Valley Zoo Entry and Wander, Environmental Impact Assessment (EIDOS, 2011).
- The Edmonton Rowing Club Boathouse Construction Environmental Impact Assessment (Komex International Ltd., 2005), and Addendum (WorleyParsons Komex, 2008).
- Hawrelak-Buena Vista Footbridge Environmental Impact Assessment (Kippen Gibbs, 1993).
- Whitemud Drive and Quesnell Bridge Widening Environmental Assessment (Millennium EMS Solutions, 2008).

2.2.2 Review of Existing Databases

We reviewed the following sources for information relevant to the study area:

- Alberta Conservation Information Management System (ACIMS) database for records of rare plant species or unusual plant communities both within the study area and on immediately adjacent lands (ATPR-Parks, 2011). Accessed on 26 January 2012.

- Fish and Wildlife Management Information System (FWMIS) database for any recorded instances of special status wildlife species for the study area, North Saskatchewan River and immediate surrounding lands (Alberta Sustainable Resource Development, 2010). Accessed on 26 January 2012.

2.2.3 Historical Aerial Photograph Analysis

The purpose of the historical aerial photograph analysis was to provide information on the historical land uses of the park space as context for understanding of current, existing conditions. To that end, we reviewed historical photographs from 1950, 1962, 1974. Recent changes in park land were reviewed through the analysis of photos from 2005, 2008, 2009 and 2010.

2.2.4 Reconnaissance survey

A vegetation and general reconnaissance survey of the study area was undertaken on January 13, 2012. This survey consisted of a walk through each park to identify and roughly delineate the plant communities found in the study area. All vascular plants found were recorded and classified as dominant, abundant, frequent, occasional or rare within each community type. Representative photos were taken from each community type. Owing to project scheduling, the reconnaissance survey was completed during the middle of winter. As a result, all vascular plants had either died or dropped their leaves, making identification to species level difficult. Snow cover made identification of low-lying plants even more difficult. Because of these limitations, the vegetation survey was by no means comprehensive (i.e., does not represent actual plant diversity), but was sufficient to facilitate the identification and classification of general plant community types in the study area. Incidental wildlife sightings and sign were noted where possible.

3.0 EXISTING CONDIITONS

3.1 Park Overview

The Buena Vista/Laurier Park study area, comprising a total of approximately 119 ha, is located in the North Saskatchewan River Valley (NSRV) in west Edmonton (Figure 2). Within the study area, Laurier Park includes the lands to the south of Buena Vista Road and Buena Vista Park includes all lands to the north of the road. The majority of the parks comprise the relatively flat terrace along the bottom of the NSRV, however, the valley slopes are also included within the park boundaries. In general, the parks are bound by the North Saskatchewan River (NSR) along three sides and by residential neighbourhoods to the west. The north end of Buena Vista Park is demarcated by a utility right-of-way and trail, but forested land extends to the north beyond the park boundaries. The south and west end of Laurier Park is located just a short distance east of Whitemud Drive and the Quesnell Bridge.

Amenities at Laurier Park include nine picnic sites, two ball diamonds, a power boat launch, a playground, washroom facilities, horseshoe pits, the Edmonton Valley Zoo and multiuse trails. Amenities at Buena Vista Park include an off-leash dog area, Edmonton Rowing Club facilities and boat launch, the city-owned Yorath House and a network of formal and informal trails.

Legend

Study Area
Edmonton Valley Zoo
(not described)

N

0 100 200 400 Meters

1:10,000

Figure 2. Study Area

Aerial Photograph Date: May 2010
Date Map Created: 16 February 2012

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3.2 Climate

Climate data were obtained from the weather station at Edmonton International Airport. Thirty-year climate normals (1971-2000) include an average annual temperature of 2.4 °C, with a January average of -13.5 °C and a July average of 15.9 °C. Average annual total precipitation is 482.7 mm.

3.3 Geology/Soils

3.3.1 Geology

The NSRV is one of the most prominent geomorphological features of the Edmonton area. The river separates the two main bedrock formations present in the Edmonton area; south of the river lies the Horseshoe Canyon Formation and to the north is the Wapiti Formation (Godfrey, 1993). Being on the north side of the river, Buena Vista/Laurier Park lies within the Wapiti Formation. Both formations originated in the Cretaceous period and are typically composed of sandstone, mudstone, shale, ironstone or coal deposits. Above the bedrock formations, the surficial geology within the Edmonton area consists primarily of glaciolacustrine deposits with variable, bedded, sandy, silty clay (Godfrey, 1993). More specifically, the undisturbed surficial geology of the NSRV consists of approximately 4 m of glaciolacustrine deposits comprised of bedded sands, silts and clays, overlying approximately 26 m of glacial till (unsorted, unstratified sediment deposited by a glacier) comprised of clay, silt and sand with pebbles and boulders (lenses of outwash sand or gravel or disturbed bedrock are common), underlain by approximately 8 m of disturbed Saskatchewan gravels and sands. The North Saskatchewan River has downcut through those layers, to create a deeply incised river valley characterized by sharply-cut river banks bordered by broad river terraces, and steep valley slopes leading to the adjacent uplands.

The majority of Buena Vista/Laurier Park is located along the bottom of the North Saskatchewan River Valley on an alluvial terrace (EPEC, 1981). Along its western edge, the park includes valley slopes with park boundaries extending to the top-of-bank in some places.

One area of Buena Vista Park has been previously assessed for slope stability (EPEC, 1981). The assessed area was located in the ravine situated in the northwest portion of the park. The ravine was rated as having a moderate to high level of slope stability.

3.3.2 Soils

Soils in the Edmonton area are generally dominated by Black and Dark Gray Chernozems, with Luvisols commonly found in wooded areas and pockets of Black Solonetzics found throughout the region. Regosols and Luvisols are found in colluvial soils on valley slopes, while Regosols and Gleysols are common on alluvial terraces in the valley (EPEC, 1981).

The only site specific soil information available for Buena Vista/Laurier Park are the results of soil sampling completed in 1993 at the location of the Edmonton Rowing Club.

Borehole-based soil investigations at that time found 15 cm of topsoil above a layer of sandy clay that varied in thickness between 1.65 m and 3.85 m (Geographic Dynamics Corporation, 1994). Beneath the sandy clay were stratified layers of clayey sand and sandy gravel.

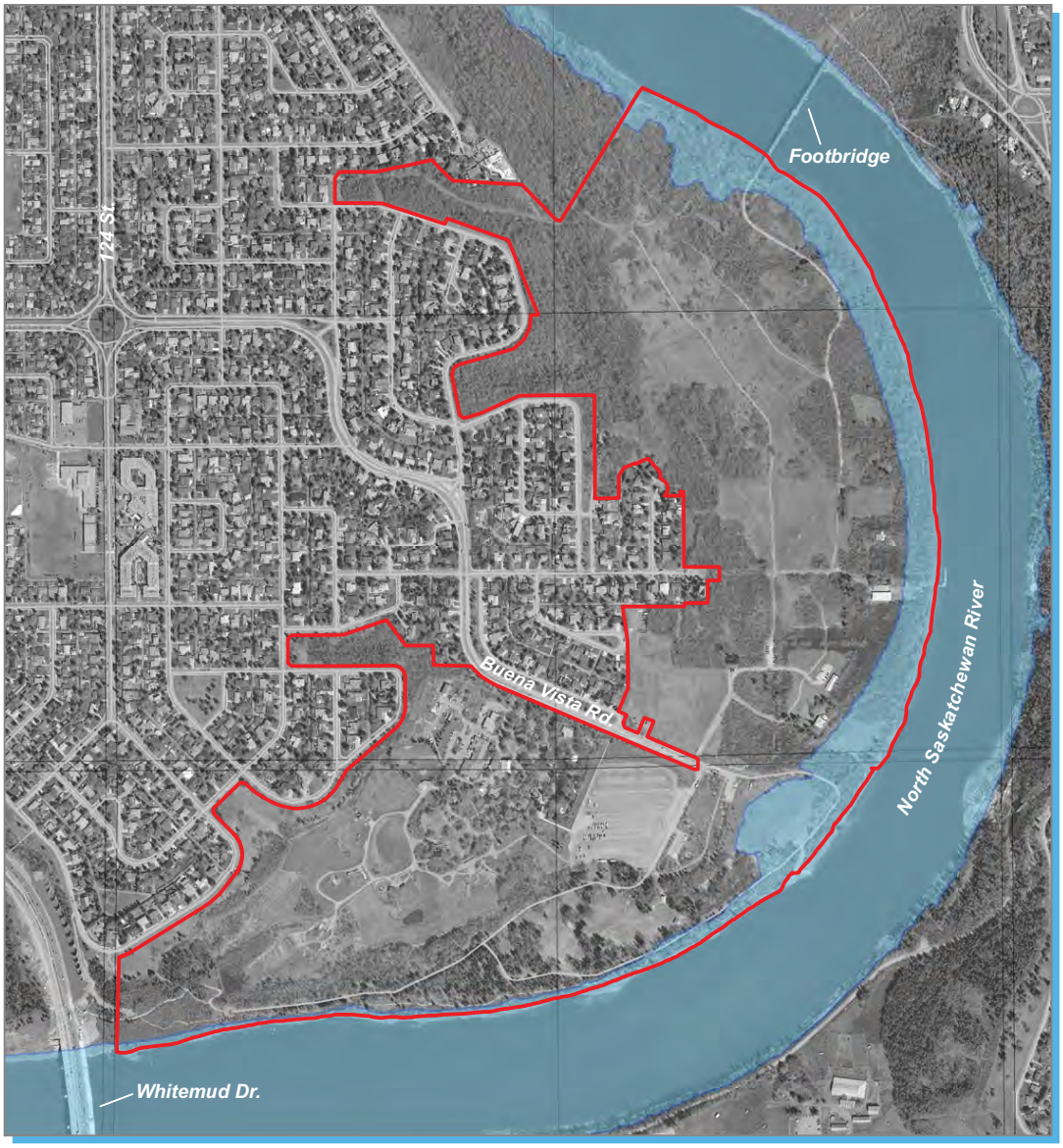
A rating system for the trafficability of river valley soils was outlined in the North Saskatchewan River Valley Biophysical Study (EPEC, 1981). Ratings were based on the soil's resistance to pedestrian traffic and susceptibility to erosion. Within the Buena Vista floodplain most site surfaces were rated moderately susceptible to pedestrian traffic damage. The area of the river bank along the North Saskatchewan River was rated as highly susceptible, with steeply sloped surfaces being particularly vulnerable.

3.4 Hydrology

The North Saskatchewan River is the single most significant hydrological feature of relevance to Buena Vista/Laurier Park. Some maps of the parks show a watercourse originating from the ravine located at the north end of Buena Vista Park and flowing towards to the NSR, but, at the time of the site reconnaissance, there was no evidence of an active watercourse at that location. At a point approximately 100m northwest of the footbridge to Hawrelak Park, there was a narrow, meandering depression that looked like it may have once contained a drainage course of some type (Plate 1). Once again, there was no evidence of active drainage. At that point a riverside trail bisects the depression, forming what would be a barrier to any surface water flow. There is, however, no evidence upstream of the trail that suggests that water is regularly held within the depression (i.e., the trail does not function as a dam).

The North Saskatchewan River is dammed twice upstream of Edmonton, resulting in non-natural fluctuations in flow levels (WorleyParsons Komex, 2008). Highest flows do, however, typically occur in the spring, associated with melting and runoff of the mountain snowpack. The reach of the North Saskatchewan River adjacent to Buena Vista/Laurier Park) is almost entirely frozen in the winter months (November-March).

Within Buena Vista/Laurier Park, the 100-year flood limit of the North Saskatchewan River extends up to a distance of 885 m onto the terrace from the west end of the park (Figure 3). A flood of this magnitude would inundate approximately 15 ha of parkland, and extend inland a maximum of roughly 150 m from the river.



Legend

100-year flood limit
(Alberta Environment 2002)

Study Area

N

0 100 200 400 Meters

1:10,000

Figure 3. The 100-Year Flood Limit of the North Saskatchewan River in the Study Area

Aerial Photograph Date: May 2010
Date Map Created: 16 February 2012

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Plate 1. A narrow, meandering depression near the north end of Buena Vista Park that appears that it may have once contained a drainage course of some type (January 2012)

3.4.1 Groundwater

No groundwater surveys specific to this study were completed, however, a survey completed by J.R. Paines and Associates Ltd. in 1993 in support of work being done at the Edmonton Rowing Club facilities in Laurier Park found no ground water within 7 m of the surface in a single borehole located near the club boathouse (Geographic Dynamics Corporation, 1994).

3.5 Vegetation

3.5.1 Regional Context

At a regional scale, Buena Vista/Laurier Park lies within the Central Parkland Natural Subregion (Natural Regions Committee, 2006). The Central Parkland natural subregion, which forms a belt between the boreal forest to the north and the prairies to the south, consists of a mosaic of prairie and aspen woodland, with a gradual transition to more continuous forest towards the northern boundary of the subregion, and to more open fescue grasslands toward the south. Edmonton is located near the northwestern edge of this subregion. Much of the native vegetation within the Central Parkland has been cleared for agricultural purposes and urban development, however, remnant communities are often found in ravines and river valleys throughout the subregion (Natural Regions Committee, 2006). While much of the native vegetation in the North Saskatchewan

River Valley has been altered, particularly in the downtown areas, mature and regenerating stands of native vegetation still exist, particularly on slopes and undeveloped areas of the river valley.

3.5.2 Plant Communities

Six different plant communities were identified within the study area, ranging from natural forest communities to highly managed, manicured parkland (Figure 4, Table 1). Some forested areas appear to have changed relatively little since the 1950's and 1960's, suggesting that these communities have never been cleared. Other areas of the park have established as a direct result of past disturbance. The large meadow in Buena Vista Park was once an area completely cleared of woody vegetation and may have been used as pasture. Over the past 50 years or so, natural succession and regeneration have resulted in the low shrub and grass-dominated meadow present today. Similarly, many of the forested areas surrounding the meadow were not present 50 years ago. These young forests are present today as a result of the slow, natural expansion of surrounding woodlands.

The following sections provide a brief description of each of the plant community types identified within the park. Scientific names of plant species follows terminology currently used by ACIMS (ATPR-Parks, 2011). Appendix A contains a list of all species observed during the site reconnaissance survey and those records of known occurrences compiled from other environmental assessments.

Table 1. Summary of Plant Community Types in the Study Area

Community Type	Brief Description	Area (ha)	% of Study Area*
Upland Forest			
Poplar Forest	Dominated by aspen poplar, balsam poplar, or co-dominated by both species; variable in age and structure	53.0	56%
Birch-Poplar Forest	Co-dominated by paper birch, aspen poplar and balsam poplar	2.3	2%
Mixedwood Forest	Co-dominated or dominated by white spruce; aspen and balsam poplar formed the deciduous component	10.0	11%
Meadow			
Shrub-Grass Meadow	Co-dominated by low-growing prickly rose and the non-native grass smooth brome	8.8	9%
Weedy Meadow	Dominated almost entirely by non-native, weedy species	1.0	1%
Disturbed			
Shelterbelt	Dominated by common caragana and Manitoba maple	1.2	1%
Manicured Open Park	Subject to regular mowing; very little vegetative structure; a variety of native and non-native trees	17.7	19%

* Study area used in calculation excludes Edmonton Valley Zoo lands (25.2 ha)

Figure 4. Plant Communities in the Study Area

Legend

- Study Area
- Edmonton Valley Zoo

Plant Communities

Upland Forest

- Poplar Forest
- Birch-Poplar Forest
- Mixedwood Forest

Meadow

- Shrub-grass Meadow
- Weedy Meadow

Disturbed

- Shelterbelt
- Manicured Open Park

0 75 150 300 Meters

1:8,000

Aerial Photograph Date: May 2010
Date Map Created: 16 February 2012

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3.5.2.1 Upland Forest

Poplar Forest

By far the most common community type in Buena Vista/Laurier Park, the poplar forest was variably dominated by aspen poplar, balsam poplar, or co-dominated by both species. The well-developed shrub layer was dominated by prickly rose, red-osier dogwood, and red raspberry. High-bush cranberry, low-bush cranberry, willows, western snowberry, western clematis and caragana were also present in lesser abundance within the shrub layer. Smooth brome, an exotic grass species, was common in many areas, particularly along trails and forest edges. White spruce, jack pine and Manitoba maple were also present in the canopy in low numbers, and forbs included veiny peavine, Canada thistle, Canada goldenrod, and vetch.

The areas of poplar forest were variable in terms of canopy height and age (judging by the size and appearance of trees). Canopy height ranged from about 5 m to over 15 m. Areas of younger forest, such as that immediately west of the main Dogs Off-Leash Area parking lot, represent the lower end of the canopy height range, while areas of mature balsam poplar near the north end of Buena Vista, on the valley slopes and along the riverbank had significantly higher canopies. The mature balsam poplar stand at the north end of Buena Vista, in particular, supported many large trees, many of which were partially dead or showed signs of disease. Scattered throughout the poplar forest, were several small areas that appeared to have experienced some level of anthropogenic disturbance, as evidenced by a greater abundance of Manitoba maple and the presence of lilac bushes, both of which are non-native species typically planted in association with human habitation. These areas were also very shrubby and supported only a sparse canopy of small aspen trees, suggesting that they were relatively young in age.

Around the outside perimeter of much of the park, the poplar forest community bordered the edge of the NSR. Although present at a scale unmappable on Figure 4, areas along the riverbank supported a riparian community composed of many of the same species that were found in the forest interior, but in which shrubs (willow and red-osier dogwood), rather than trees, were the dominant growth form.

Birch-Poplar Forest

This community type was characterized by a canopy co-dominated by paper birch, aspen poplar and balsam poplar. The understorey was similar to that found in the poplar forest, though a higher abundance of western mountain ash was found in this community. This community was found only in Buena Vista along the valley slope in the northwest corner of the park (Figure 4).

Plate 2. Paper birch present as the dominant canopy trees species along the valley slopes in the northwest corner of Buena Vista Park (January 2012)

Mixedwood Forest

Combining a mix of coniferous and deciduous trees, this community type was variably co-dominated or dominated by white spruce while aspen and balsam poplar formed the deciduous component of the canopy. Other conifers, including jack pine, balsam fir, and the non-native species Norway spruce, were also present in lesser abundance. Understorey species composition was similar to the poplar forest, but was sparser in areas dominated by conifers.

Areas of mixedwood forest were found only in Laurier Park, most notably near the southern edge of the park, along the river's edge. Two other small patches of mixedwood forest were found: one at the far southwest end of the park and the other in a small ravine in the northwest corner of Laurier Park. The patch at the west end of the park appears to have originated as a plantation, as all the spruce trees are situated in rows; the area has since naturalized and functions as a natural forest community.

3.5.2.2 Meadow

Meadows were the second most common community type in Buena Vista, but were not present at all in Laurier Park. This community type represents previously cleared areas that are now regenerating through natural successional processes. Based on the presence of dominant species, we sub-divided this community type into two subtypes: shrub-grass meadows and weedy meadows. Shrub-grass meadows were co-dominated by low-

growing prickly rose and the non-native grass smooth brome, with willows and western snowberry shrubs also present in good abundance. At the time of the reconnaissance survey, identifiable forbs included long-head anemone, goldenrod and northern bedstraw. Bluegrass was also present but could not be identified to species.

In contrast, weedy meadows lacked the low-shrub component and, instead, were dominated almost entirely by non-native, weedy species. Common tansy and smooth brome were dominant, while Canada thistle and sweet clover were also present in abundance. Canada thistle and common tansy are both considered noxious weeds under the Alberta Weed Control Act (2010). Some native plants, including a number of balsam poplar saplings, were noted in these areas as well.

Plate 3. View looking northeast across the shrub-grass meadow in the centre of Buena Vista Park (January 2012)

3.5.2.3 Disturbed Plant Communities

Shelterbelt

Located in the area surrounding the Yorath House, this community type was dominated by common caragana, a non-native and invasive shrub, with Manitoba maple present as a significant component of the community as well. Both these species are commonly planted to create shelterbelts surrounding farmsteads. The understorey was typically very sparse in this area, likely a result of the dense cover of caragana. The caragana appeared to be encroaching into the poplar forest east of the shelterbelt. Komex International Ltd. (2005) surveyed this area during the growing season and found several native and non-

native shrub species, including choke cherry, pin cherry, tall-bush cranberry, lilac, cotoneaster and snowberry. They also noted the sparseness of the herb layer.

Manicured Open Park

Several areas throughout Buena Vista/Laurier Park were identified as manicured open park (Figure 3). At the time of the reconnaissance survey we were not able to identify the species composition of the lawns in these areas due to snow cover. Despite a lack of species composition information, an important characteristic of these areas is that they are subject to regular mowing and, as such, support very little vegetative structure. A variety of native and non-native trees were present, including jack pine, western cottonwood, and Manitoba maple. Landscaped, planted beds were also present.

Manicured areas were present along much of the top-of-bank along the western perimeter of Laurier Park and in two large areas adjacent to the Valley Zoo lands. There were three manicured areas in Buena Vista, all located in the southern half of the park: near the park entrance, surrounding the Yorath House and in the Dogs Off-Leash Area.

3.5.3 Special Status Species

Special status species are those which are at risk, rare or uncommon within a jurisdiction. In Alberta, rare species are defined as those ranked as S1 or S2 by the Alberta Conservation Information Management System (ACIMS): S1 species are known from five or fewer location while S2 species are known to have 6-20 occurrences in the province. S3 species are typically considered “uncommon”; these are species that have 20-100 recorded occurrences in the province and are often uncommon in the areas where they are found.

One rare species, flat-topped white aster, and one uncommon species, yellow lady’s slipper, have previously been found in the study area (Table 2). Flat-topped white aster was found growing on open lawn areas in the vicinity of the Yorath House (Komex International Ltd., 2005), while yellow lady’s slipper was noted near the Buena Vista-Hawrelak footbridge (Kippen-Gibbs 1993). Hybrid dwarf raspberry, a rare (S1) species, was found in Whitemud Creek in 1940 (ATPR-Parks, 2011). There is also one existing report of white adder’s mouth, a species of orchid ranked as S3, from near Keillor Road (i.e., across the river from Buena Vista/Laurier Park), but this observation dates back to 1918 (AMEC Earth & Environmental, 2004).

A number of rare mosses have also been found in the NSRV in areas near Buena Vista/Laurier Park (Table 2). *Bryum algovicum* was noted in Hawrelak Park in 1976, and *Callicladium* moss was noted across the river from Buena Vista/Laurier in 2006. Between 1955 and 1973, six rare mosses were found in Whitemud Creek Ravine: Ontario rhodobryum moss, blunt-leaved hair moss, compact conardia moss, *Bryum pallens* and *Bryum uliginosum* (ATPR-Parks, 2011).

Table 2. Special status plant species in and around the study area

Scientific Name	Common Name	Plant Type	Status	Area Observed	Year Observed
Vascular Plants					
Rubus paracaulis	Hybrid dwarf raspberry	Shrub	S1	Whitemud Park	1940
Aster umbellatus	**Flat-topped white aster**	**Forb**	**S2**	**Buena Vista Park**	**2008**
Cypripedium calceolus	**Yellow lady's slipper**	**Forb**	**S3**	**Buena Vista Park**	**1993**
Malaxis monophylla	White adder's mouth	Forb	S3	Near Keillor Rd	1918
Non-vascular Plants					
Bryum algoricum	--	Moss	S2	Hawrelak Park	1976
Callicladium haldanianum	Callicladium moss	Moss	S1	East of study area	2006
Rhodobryum ontariense	Ontario rhodobryum	Moss	S2	Whitemud Park	1973
Bryum algoricum	--	Moss	S2	Whitemud Park	1955
Bryum pallens	--	Moss	S2	Whitemud Park	1958
Bryum uliginosum	--	Moss	S2	Whitemud Park	1961
Conardia compacta	Compact conardia moss	Moss	S2	Whitemud Park	1958
Didymodon tophacens	Blunt-leaved hair moss	Moss	S1/S2	Whitemud Park	1960

* Species recorded directly in Buena Vista/Laurier park are shown in bold.

3.6 Wildlife

3.6.1 General

As a whole, the habitat diversity of the North Saskatchewan River valley within the boundaries of the City of Edmonton supports a varied assemblage of both resident and migratory wildlife species (AMEC, 2005). Including migrants and both summer and winter residents, a total of 226 vertebrate species have been reported to occur within the City of Edmonton and river valley (Geowest 1999).

As a result of surrounding development and related stressors, urban parks are typically dominated by a limited variety of urban-adapted wildlife species. Buena Vista/Laurier Park, however, benefits from a relatively high level of habitat diversity, a large size and good ecological connectivity to other nearby natural areas. Because of these features, the park is characterized by a suite of wildlife species that is comparable to a typical Central Parkland ecosystem.

Comparing Buena Vista and Laurier Parks, Buena Vista provides higher quality wildlife habitat. This is primarily a result of the park being relatively undeveloped, it containing large, contiguous areas of natural habitat, and because it supports primarily passive recreational activities. With the exception of a few areas of manicured lawn, a small network of access roads and a handful of small buildings, almost the entire area of Buena Vista Park comprises semi-natural or natural habitat. The large meadow complex in the

centre of the park provides a large area of grassland-shrub habitat that is relatively uncommon within the developed extent of the City. In fact, similar habitat can only be found at Terwillegar Park and a few very small areas scattered elsewhere throughout the NSRV. The woodland areas of Buena Vista vary widely in age and consequently provide varied habitat conditions. Much of the woodland near the south end of the park and near the Laurier-Hawrelak footbridge supports relatively young forest, having established since the 1950's and 1960's. In contrast, the woodlands along the west side of the park and in some areas along the NSR support mature, deciduous forest. Historical aerial photographs suggest that these areas supported mature forest in 1950 and there is no evidence to suggest that there has been any significant clearing of those areas since that time. Adding to the wildlife habitat quality of Buena Vista Park is the fact that undisturbed, woodland habitat extends north of the park, effectively connecting it to habitat areas of MacKenzie and MacKinnon Ravines.

Laurier Park is the more developed of the two parks, comprising the Edmonton Valley Zoo, the zoo's large parking lot and a fairly extensive manicured park area that includes picnic shelters, a playground and a couple sports fields. Despite these things, the park also includes a narrow band of mature deciduous forest along the NSR and a few areas of spruce-dominated mixedwood forest. The areas of mixedwood forest are particularly valuable as wildlife habitat as they represent a habitat type that is not found elsewhere in Buena Vista/Laurier Park. The patch of mixedwood forest located immediately south of the zoo and near the west end of the manicured park area is of a sufficient size that it likely supports some species specifically adapted to spruce-dominated woodlands.

Buena Vista/Laurier Park does provide a good diversity of natural habitat capable of supporting a number of native wildlife species, however, certain aspects of the parks also present many disturbances to wildlife. The high level of human visitation to the parks represents a relatively major disturbance that can have various ecological impacts, many with direct implications for wildlife. This issue is most pronounced during special events in Laurier Park when high levels of human activity have the potential to displace some wildlife. The day-to-day levels of human activity in the parks are, however, also expected to influence wildlife in certain ways. Some bird species have been found to be less abundant in areas near trails and nest predation can be greater along trails (Miller *et al.* 1998). In forested areas, a larger number of pedestrians can result in lower species richness of birds in the surrounding areas (Fernandez-Juricic, 2000 *in* Environment Canada, 2007). The presence of free-running dogs throughout Buena Vista Park could also plausibly result in ecologically significant disturbances to wildlife, however, the results of previous work on the matter were inconclusive (Forrest and St. Clair, 2006).

The following sections provide accounts of wildlife species recorded in Buena Vista/Laurier Park as organized by broad species groupings. Discussion is generally limited to only those species known to have occurred within the park. Although there are many additional species that could potentially occur in Buena Vista/Laurier Park, the discussion of those species and their potential for occurrence would be excessive in terms of the objectives of this assessment.

Table 3. Birds species previously recorded in and near to Buena Vista/Laurier Park

Species	Buena Vista				Buena Vista & Laurier	Laurier & Surrounding Lands
	Kippen Gibbs (1993)	Forrest and St. Clair (2002)	Komex (October 2004)	Anecdotal	Site reconnaissance (January 2012)	Westworth (June 2007)
American crow	x					x
American robin	x	3				x
Baltimore oriole*	**x**					
Blackbird spp.		1				
Black-capped chickadee	x	24	x		x	x
Blue-headed vireo						x
Blue jay			x			
Brown-headed cowbird	x					x
Canada goose	x					
Cedar waxwing	x	2				x
Chipping sparrow		1				x
Clay-colored sparrow	x	2				x
Common raven					x	
Dark-eyed junco	x	2				x
Downy woodpecker		3				
Eastern phoebe*						**x**
Golden-crowned kinglet						x
Gray catbird	x					x
Hairy woodpecker	x					
House sparrow						x
House wren	x					x
Lincoln's sparrow	x					x
Least flycatcher*	**x**	**3**				

Appendix A

Species	Buena Vista				Buena Vista & Laurier	Laurier & Surrounding Lands
	Kippen Gibbs (1993)	Forrest and St. Clair (2002)	Komex (October 2004)	Anecdotal	Site reconnaissance (January 2012)	Westworth (June 2007)
Mallard	x					x
Mourning warbler						x
Northern flicker						x
Northern saw-whet owl				x		
Northern shrike				x		
Ovenbird	x					
Philadelphia vireo	x					
Pileated woodpecker*	**x**				**x**	
Pine grosbeak					x	
Pine siskin		1				x
Red-breasted nuthatch						x
Red-eyed vireo	x	10				x
Red-winged blackbird	x					
Ring-billed gull	x					x
Ring-necked pheasant	x	1				
Rock Pigeon						x
Rose-breasted grosbeak	x					
Ruby-crowned kinglet						x
Savannah sparrow	x					
Song sparrow	x		x			x
Spotted sandpiper	x					x
Tree swallow						x
Western tanager*						**x**
Western wood-pewee	x					x

Species	Buena Vista				Buena Vista & Laurier	Laurier & Surrounding Lands
	Kippen Gibbs (1993)	Forrest and St. Clair (2002)	Komex (October 2004)	Anecdotal	Site reconnaissance (January 2012)	Westworth (June 2007)
White-breasted nuthatch		4			x	
White-crowned sparrow	x					
White-throated sparrow	x	1				x
Yellow warbler	x	12				x
Yellow-rumped warbler		1				x
Species Richness	**31**	**17**	**4**	**2**	**6**	**33**
Total Species Richness	**53**					

Appendix A

3.6.2 Birds

A combined total of 53 bird species have been recorded in Buena Vista/Laurier Park and immediately surrounding areas (Table 3). Of those, 37 species have been observed within Buena Vista/Laurier Park during the summer breeding bird season. A species richness of 37 represents a relatively high level of biodiversity compared to other City of Edmonton river valley and ravine parks. In fact, in terms of breeding songbird richness, Buena Vista/Laurier Park is matched only by Whitemud Creek Ravine and Terwillegar Park (Forrest and St. Clair, *unpublished data*).

Overall, the species composition of Buena Vista/Laurier Park is fairly typical of a Central Parkland ecosystem. The areas of deciduous forest support a diversity of species including common generalist species such as black-capped chickadee, yellow warbler and red-eyed vireo; the three most commonly encountered species in a series of bird surveys conducted in Buena Vista park in 2002 (Forrest and St. Clair, *unpublished data*). Along forest edges, species of edge habitat such as white-throated sparrow and American robin are expected to be common. The open grassland-shrub meadow provides suitable nesting habitat for open habitat species such as the savannah and clay-colored sparrow. In the winter, this open meadow provides good hunting habitat for the northern shrike. The areas of mixedwood forest provide habitat for a different suite of species dependent on the presence of coniferous trees such as the pine siskin, red-breasted nuthatch and ruby-crowned kinglet. The North Saskatchewan River, which borders the entire Buena Vista/Laurier Park complex, provides valuable feeding and loafing habitat for species such as mallard and Canada goose. The forested areas along the river likely support a few typically riparian species such as song sparrow, cedar waxwing and Lincoln's sparrow. The relatively large and continuous tracts of woodland located along the west side of Buena Vista park as well as the NSR are large enough and contain sufficient mature woodland habitat to support some species that are considered to be forest interior species (i.e., those species requiring areas that are removed from the effects of the forest edge; typically considered to be areas greater than 100 m away from the forest edge). Among the list of recorded species, the ovenbird, hairy woodpecker and pileated woodpecker are all considered forest interior species (Ontario Ministry of Natural Resources, 2000). The observation of a northern saw-whet owl near the north edge of Buena Vista Park (A. Forrest, *pers. comm.*) is further evidence that areas of the park provide valuable forest interior habitat.

3.6.3 Mammals

A variety of mammals, including ungulates, small mammals and carnivores, have previously been noted in the study area. Large mammals typically found in the NSRV include white-tailed deer, coyote and, to a lesser extent, moose. Komex International Ltd. (2005) reported that deer are not frequent users of the Yorath House area at the south end of Buena Vista Park, despite the fact that the area has ample browse. They attributed the lack of deer activity to the presence of physical barriers (e.g., arterial roads and the river) hindering deer movement to Buena Vista/Laurier Park from other areas of the NSRV where they are known to be more abundant (e.g., Whitemud Creek Ravine). In contrast, coyotes are comparatively common in the park.

Several species of bats have been reported to be residents of Buena Vista Park, including the little brown bat, big brown bat, silver-haired bat and hoary bat (Kippen Gibbs 1993). The little brown bat is the most frequently encountered bat species in Alberta (Pattie and Fisher, 1999) and, therefore, is the most likely to be found in the park. The probability of occurrence of the other species is much reduced relative to that of the little brown bat. The silver-haired bat may only be a transient in our region.

Small mammals represent the most abundant group of mammals occurring in the park. Previously reported small mammal species from area of Buena Vista Park include least chipmunk, red squirrel, woodchuck, beaver, snowshoe hare and white tailed jack rabbit (Mowat, 1992, cited in Kipen Gibbs, 1993). Based on provincial distributions and known habitat preferences, many additional rodent species also have the potential to occur in the park; those include the deer mouse, red-backed vole, meadow vole, Richardson's ground squirrel and porcupine. Certain species of weasel (e.g., long-tailed weasel, short-tailed weasel, least weasel, skunk) may also be present, however, it is expected that they would be less abundant than other small mammals.

During the site reconnaissance in January 2012, a beaver lodge was observed along the edge of the North Saskatchewan River (Plate 4), south of the manicured lawn and picnic area within Laurier Park. Many chewed and felled trees were noted surrounding the location of the lodge. Similar signs of beaver use were noted elsewhere around the periphery of the park (i.e., along the NSR), however, away from the lodge, most signs appeared to not be very recent.

Plate 4. Beaver lodge and beaver cut trees along the riverbank of the North Saskatchewan River along the south side of Laurier Park (January 2012).

3.6.4 Amphibians and reptiles

Several species of amphibians are known to live in the NSRV, including the boreal chorus frog, wood frog, Canadian toad, western toad and tiger salamander (Kippen Gibbs, 1993). All of these species require wetlands or pools of shallow water to breed, however, no wetlands are present in Buena Vista/Laurier Park. No amphibian species are expected to breed in Buena Vista/Laurier Park. It is, however, possible that some amphibian species with terrestrial components to their life cycle (e.g., wood frog) may use the park during the summer as foraging habitat (Kippen Gibbs, 1993). It is also possible that, in wet springs, some meltwater pools may remain flooded long enough to support the breeding of some amphibians, with the boreal chorus and wood frog being the most likely to occur.

The red-sided garter snake, considered a sensitive species in Alberta (ASRD, 2012), is known to live in the Edmonton River Valley. This species has wide habitat preferences ranging from wetlands to forests and even urban habitat. Considering the mix of natural habitats available in the park, the potential for this species to occur in the park is considered high. Garter snakes gather from over a relatively large area to overwinter in hibernacula (crevices or hollows below the frostline) which are sometimes located in exposed river valley slopes and banks or areas where rocky substrate has been piled. Locations suitable as hibernacula exist within the park, however, no hibernacula have been reported within the study area (ASRD, 2012).

3.6.5 Fish and Aquatic Resources

The Fish and Wildlife Management Information System (FWMIS) lists 38 species as occurring in the North Saskatchewan River. Previous studies have also conducted fish inventories and fish habitat assessments in the vicinity of Buena Vista/Laurier Park (Kippen Gibbs, 1993). The environmental impact assessment for the Buena Vista/Hawrelak footbridge identified 21 species of fish, eight of which were sportfish (Kippen Gibbs, 1993). Those sportfish included goldeye, mountain whitefish, walleye, Northern pike, sauger, burbot, mooneye and lake sturgeon. Coarsefish species were, however, the most abundant group of species, with species such as longnose sucker, white sucker, shorthead redhorse and quillback being the most common.

The section of the North Saskatchewan River adjacent to the parks is classified as Class C under the Alberta *Code of Practice for Watercourse Crossings*, indicating that the watercourse has moderate sensitivity with respect to fisheries resources. A moderate classification typically reflects habitat areas that have the potential to be damaged by unconfined or unrestricted activities within a water body. A waterbody can also hold a moderate classification if it provides broadly distributed habitats supporting local fish species populations. As a Class C watercourse, instream construction activities are restricted in the period 16 September to 31 July.

3.6.6 Special Status Species

There are several records of special status wildlife species occurring in Buena Vista/Laurier Park, however most are species described as 'Sensitive' or of 'Special Concern'. None of the species known to occur in the parks are considered 'Threatened' or 'Endangered'. Previous environmental assessment work in the park documented the occurrence of several special status wildlife species and the FWMIS database holds records of additional species.

When discussing special status species, the likelihood of such species occurring in the study area and their likely duration of stay are critical considerations for assessments, as these factors influence the possibility that a particular species could be affected by a proposed project. For many species, the presence of available habitat does not necessarily indicate that a species will be present. For example, many special status species are listed as such because of limited distribution; therefore, not all suitable habitats will be occupied. To account for this, we qualitatively assessed the likelihood of a species to occur within the study area (noted as low, moderate or high) through the consideration of available habitat and species-specific habitat requirements. We also assessed the most likely use of the available habitat for each species (e.g., potential to breed at the site or more likely to pass through on migration).

Table 4 provides a list of 14 vertebrate species known to have occurred in Buena Vista/Laurier Park, federally-listed with an identified occurrence probability of moderate or high, or provincially-listed as Sensitive with a high probability of occurring in the park. The following sections briefly discuss the potential of those species to occur within the study area.

Table 4. Summary of special status wildlife species potentially occurring in the study area.

Common Name	Scientific Name	Provincial Status (General Status of AB Wild Species)	Wildlife Act Designation and New Species Assessed by ESCC	COSEWIC Designation	SARA Designation	Species Recorded in Study Area	Potential Habitat Use*	Likelihood of Occurrence*
Long-tailed Weasel	*Mustela frenata*	May Be At Risk		Not at Risk			B	M
Cape May Warbler	*Dendroica tigrina*	Sensitive					M	M
Bay-breasted Warbler	*Dendroica castanea*	Sensitive					M	M
Red-sided Garter Snake	*Thamnophis sirtalis*	Sensitive	LP Candidate	LP Candidate (SSC)			B	H
Barred Owl	*Strix varia*	Sensitive	Special Concern			X	B	H
Bald Eagle	*Haliaeetus leucocephalus*	Sensitive					B	H
Barn Swallow	*Hirundo rustica*	Sensitive		Threatened			B	M
Canada Warbler	*Wilsonia canadensis*	Sensitive		Threatened	Schedule 1 (Threatened)		M	M
Western Wood-pewee	*Contopus sordidulus*	Sensitive				X	B	H
Least Flycatcher	*Empidonax minimus*	Sensitive				X	B	H
Eastern Phoebe	*Sayornis phoebe*	Sensitive				X	B	H
Western Tanager	*Piranga ludoviciana*	Sensitive				X	B	H
Baltimore Oriole	*Icterus galbula*	Sensitive				X	B	H
Pileated Woodpecker	*Dryocopus pileatus*	Sensitive				X	B	H

* Potential Habitat Use: B = breeding; M = migration stopover
Likelihood of Occurrence: M = moderate; H = high

3.6.6.1 Special Status Mammals

There are no known records of species status mammals in Buena Vista/Laurier Park. The long-tailed weasel, a *May Be At Risk* species, does, however, have a moderate likelihood of occurring in the park. With a preference for open areas and foraging in aspen forests, the combination of habitat features within Buena Vista/Laurier Park would provide the long-tailed weasel with suitable habitat.

3.6.6.2 Special Status Birds

Birds are, by far, the most abundant form of special status species known to have occurred within Buena Vista/Laurier Park. Combining FWMIS records and previous observations, seven special status birds have been recorded in the park. Another five species have a moderate to high potential of occurring.

The barred owl, provincially-listed as 'Sensitive' and 'Special Concern', is the only special status species for which FWMIS has a record directly within Buena Vista/Laurier Park. The habitat preference for the barred owl is generally described as mature coniferous or mixedwood forests and is also often found in riparian areas (Fisher and Acorn 1998). A pair of barred owls has nested regularly over the past several years in Whitemud Creek Ravine, a short distance upstream of where Whitemud Creek flows into the North Saskatchewan River, across the river from Laurier Park (A. Forrest, *pers. comm.*). Considering their large territory size, Buena Vista/Laurier Park may be located within their home range and these owls may occasionally forage in the mature, forested areas of the park. Despite the presence of suitable habitat, barred owls have not been recorded as nesting in the park.

The other five special status bird species known to have occurred in the park are the western wood-pewee, least flycatcher, eastern phoebe, western tanager, Baltimore oriole and the pileated woodpecker. There is a high likelihood that all five of these species occur in the park during most breeding seasons, while the pileated woodpecker is also expected to use the park during the winter months and was, in fact, observed during the site reconnaissance in January 2012. The pileated woodpecker and the Baltimore oriole are primarily dependent on the mature forested areas of the park. The western tanager is dependent on conifer trees as nesting habitat and, thus, is most likely to occur in the areas of mixedwood forests present in Laurier Park. The eastern phoebe is most likely to occur in the forest along the edge of the North Saskatchewan River. Lastly, the western wood-pewee and least flycatcher have the potential to occur in almost any area of deciduous forest within the park.

The five species status bird species identified as having a moderate to high potential of occurring in the park are the Cape May warbler, bay-breasted warbler, Canada warbler, bald eagle and barn swallow. The three warbler species would almost certainly occur in the park only during migration, as all three typically nest further north in the Boreal forest. Two of these species, the Cape May and bay-breasted warbler, have been recorded in areas surrounding Buena Vista/Laurier Park (ASRD, 2012). The bald eagle is unlikely to nest in the park because of the relatively high level of human use, but bald

eagles are known to travel along the North Saskatchewan River and it is very likely that they occasionally rest and forage along the river's edge within the park. Barn swallows typically build their nests on buildings and other anthropogenic features near water. This combination of features is present in Buena Vista/Laurier Park and, thus, there is a potential for barn swallows to breed in the park.

3.6.6.3 Special Status Reptiles and Amphibians

One special status reptile, the red-sided garter snake, has the potential to occur in Buena Vista/Laurier Park. See Section 3.6.3 for a discussion on the probability of this species to occur in Buena Vista/Laurier Park.

No special status amphibians have been recorded in the study area and the likelihood of any occurring was considered low.

3.6.6.4 Special Status Fish

The lake sturgeon (*Acipenser fulvescens*) is ranked as a S2 species by the Government of Alberta, indicating that there have been between 6 to 20 known occurrences of the species in the province or many individuals in fewer occurrences. According to FWMIS, the most recent occurrence of lake sturgeon in the vicinity of Buena Vista/Laurier Park was in 1991, however, more recent records of the species exist elsewhere in the City.

3.6.1 Ecological Connectivity

The North Saskatchewan River Valley is known to be an important regional wildlife movement corridor (City of Edmonton Office of Natural Areas, 2006). There are, however, additional site specific considerations that are necessary to fully understand ecological connectivity within the context of Buena Vista/Laurier Park.

Despite being a large and significant natural feature, the North Saskatchewan River, which borders much of Buena Vista/Laurier Park, does, in fact, act as a significant barrier to wildlife movement. During the summer, its wide expanse of open water imposes a barrier impassable to almost all terrestrial wildlife (deer may swim across the river in extreme circumstances). Surprisingly, similarly wide rivers have also been shown to function as barriers to forest songbirds during the breeding season (St. Clair, 2003) despite the fact that such features are readily crossed during migration. Even during winter, wide-ranging species such as deer and coyote are more likely to travel along the edge of the frozen river rather than directly across its open expanse.

The network of local roads and residential development that line the top-of-bank above Buena Vista/Laurier Park combine to present another barrier to wildlife movement. Regardless of their purpose (e.g., dispersal, feeding) for moving through the landscape, wildlife do not move randomly; instead, they preferentially choose routes that are easy to travel and pose little risk. Features such as roads and residential areas are typically avoided because of the high level of human activity, safety risk and lack of cover associated with them. Because of this, the whole western edge of Buena Vista/Laurier

Park, which is flanked by urban development, greatly reduces the potential movement of wildlife to and from the park from areas beyond the top-of-bank.

Considering the presence of the river and urban development as movement barriers, Buena Vista/Laurier Park's only effective structural connections to other areas of wildlife habitat are upstream and downstream along the North Saskatchewan River. North of Buena Vista/Laurier Park this connection is seamless as the mature deciduous forest at the north end of Buena Vista Park extends beyond the park boundaries. The forested slopes of the river valley continue north to MacKenzie Ravine and further north to MacKinnon Ravine. North of Buena Vista/Laurier Park, there is no significant barrier to wildlife movement until the network of roads surrounding the Groat Road bridge are encountered, some 3 KMs beyond the north edge of the park. At the south (west) end of Buena Vista/Laurier Park, the connection to areas beyond the park is not nearly as functional. Almost immediately west of the park boundary is Whitemud Drive, a multi-lane arterial roadway. However, the road bridge across the river includes a semi-vegetated abutment (i.e., the area of land beneath the bridge) along the north side of the river which should accommodate the passage of some terrestrial wildlife.

Within the boundaries of Buena Vista/Laurier Park, with the exception of the Edmonton Valley Zoo, wildlife and ecological connectivity is high. The entire zoo is enclosed in fencing, effectively making it impassable to almost all terrestrial wildlife. Some birds may continue to travel through the zoo using the abundance of planted trees present throughout the zoo. Beyond the zoo, the entire Buena Vista/Laurier Park comprises natural and semi-natural habitat as well as open park space. The areas of natural habitat represent lands where all wildlife, avian and terrestrial, should experience no issues with movement. The areas of semi-natural habitat and open park space may, however, provide some restrictions to the movement of certain species (e.g., small mammals unlikely to travel through manicured areas lacking protective vegetation cover). The network of access roads and trails in the parks may also present species-specific movement restrictions, however, overall these linear disturbances are relatively narrow and should be easily travelled across by the vast majority of species expected to occur in the park. The area where wildlife connectivity through the park is likely the most restricted occurs east of Buena Vista Road where the forested riparian area along the NSR measures as little as approximately 50 m wide. The constricted nature of the available habitat through this area of the park represents a 'bottleneck' in terms of ecological connectivity.

Overall, Buena Vista/Laurier Park is well connected within the context of Edmonton's NSRV. The park and the forested river valley and ravine lands that extend to the north towards Groat Road were identified in a connectivity analysis as a 'Secondary Connected Segment' within the City of Edmonton (Spencer Environmental, 2006). As such, this indicates that the Buena Vista/Laurier Park area functions as an integral component of Edmonton's Ecological Network.

3.7 Historical Resources

In addition to insight of biophysical features within the study area, our review of previous environmental assessments also provided information pertaining to historical resources in the study area. The following is a short summary of the main findings of our review.

Historical resources known to exist within the Edmonton River Valley include pre-settlement and fur-trade era artifacts as well as historical buildings. Heitzmann Consulting (1980, in EPEC, 1981) notes that most areas in the valley have the potential to contain historical resources and that any given area cannot be dismissed without survey work being done to confirm this (EPEC, 1981).

Historical surveys have not yet been conducted for this project, but previous surveys have been carried out in association with specific developments within the study area. Kippen Gibbs (1993) excavated several sites throughout Buena Vista Park up to a depth of 2 m, and found nothing of archaeological or historical significance. They did find bison remains, but concluded that these had little historical value. A second survey was conducted in association with the redevelopment of Edmonton Rowing Club facilities at the south end of Buena Vista Park. That survey similarly did not yield any significant results.

The lack of significant findings in both previous surveys conducted in Buena Vista/Laurier Park suggests that the overall potential of the area to contain historical resources is relatively low. Further, the extensive gravel extraction activities that were conducted in the area of the park in the mid-1900's would have destroyed many artifacts.

4.0 ENVIRONMENTAL SENSITIVITIES AND OPPORTUNITIES

Buena Vista/Laurier Park represents the great diversity that exists within the City of Edmonton's network of river valley parks. The largely undeveloped, natural environment of Buena Vista provides abundant wildlife habitat and supports a wide range of passive recreational pursuits, while the comparatively manicured environment of Laurier Park is ideal for family picnics, informal sports and hosting special events. Such a varied combination of uses in a natural park often presents potential conflicts between park use and the natural environment. It is important to acknowledge that further development of the park, whether it is increased infrastructure, paving of trails or other modifications, is likely to result in impacts to the ecology of the park. At the same time, however, further planning of the park presents opportunities to plan for nature education, interpretive uses or restorative work.

The following sections provide some general guidelines and/or environmental objectives for consideration during the preparation of the Master Plan and a discussion of how they relate to identified environmental sensitivities within the park. This approach assumes that there is a desire to, at the very least, retain, if not enhance the environment of Buena Vista/Laurier Park as part of the planning process. The guidelines are intended to provide a simply stated connection between the described environmental sensitivity and how they might be acknowledged during the planning of Buena Vista/Laurier Park (Figure 5).

4.1 Environmental Sensitivities and Recommendations

4.1.1 Guideline #1

Maintain the area of Buena Vista Park north of the main manicured area in a natural state.

While large areas of Buena Vista/Laurier Park have been altered and manicured, the northern portion of Buena Vista Park remains in a relatively natural state, and the meadows and forest that are found here provide valuable plant and wildlife habitat.

Large meadows such as the one found in Buena Vista Park are relatively unusual in Edmonton's North Saskatchewan River valley, where grassland-like communities are largely restricted to steep, south-facing slopes. Although weedy and anthropogenic in origin, the large meadow has value as habitat for species of open areas such as the clay-coloured sparrow and savannah sparrow.

The relatively large continuous tracts of mature forest that dominate the northern portion of the study area support certain wildlife species that are dependent on forest interior habitat. More specifically, the presence of these forest interior species, such as the ovenbird, hairy woodpecker and pileated woodpecker, is reliant on areas of habitat that are isolated from the various disturbances present at the forest's edge. This interior forest habitat has considerable conservation value given the highly fragmented nature of most

woodlands in Edmonton's NSRV. The abundance of paper birch along the valley slopes, just below the top-of-bank in Buena Vista, represents an additional uncommon element to these forested areas, as birch is typically not a large component of deciduous and mixedwood stands in Alberta. Their abundance in this area suggests there may be higher than average soil moisture, possibly as a result of groundwater seeps (R. Caners, *pers. comm.*). It is possible that this area may provide habitat for other plants that are unusual in Edmonton's River Valley.

In order to maintain the distinct and valuable communities and habitats found in the northern portion of Buena Vista Park, we recommend that any extensive developments or activities be located away from these areas, in more developed parts of the park. Leaving the large grass-shrub meadow unmowed and undeveloped will maximize its ecological value.

4.1.2 Guideline #2

Avoid development that will hinder wildlife and ecological connectivity through the park

Currently, the narrowest point of natural habitat in Buena Vista/Laurier Park occurs east of Buena Vista Road where the forested riparian area along the NSR measures approximately 50 m wide. A "break" in the forest in this area could create an ecological barrier to the movement of certain wildlife species, and would decrease the ecological connectivity of this portion of the river valley.

In order to remain current levels of ecological connectivity it will be important to ensure that the wildlife movement along the river and through the park is not constrained by future park development. This can be done by avoiding any development that encroaches on the forest between Buena Vista Road and the riverbank.

4.1.3 Guideline #3

Minimize the creation of new trails/new edge habitat

This recommendation pertains primarily to Buena Vista Park, which contains an extensive network of trails. Though a relatively low-impact form of recreational infrastructure, trails do affect surrounding ecosystems. Trails fragment ecological communities and increase the amount of "edge" area relative to interior area, which can decrease habitat for certain species. Trails are also routes by which weedy species can encroach into native plant communities; seeds are transported attached to shoes, paws, bike wheels etc., and establish on and near the disturbed trail environment. Additionally, trails can facilitate soil erosion, particularly on steep slopes. This is typically an issue on informally-developed trails where no design measures, such as switchbacks, are taken to mitigate erosion. Minimizing the extent of the trail network in the park can help mitigate these issues.

If the retention of forest interior species and non-weedy natural plant communities are desired, it is recommended that no new trails be planned within areas of mature forest and that any further trail development (i.e., widening or paving) should occur on existing trails, with a preference to limit trail development to only the largest of the existing trails in the park (i.e., along the main trail from the footbridge to Laurier Park). Further, if trail development occurs, consider decommissioning and restoring other trails to mitigate the impacts of trail development. Active restoration will likely be necessary to prevent decommissioned trails from becoming infested with weedy species.

4.1.4 Guideline #4

Avoid development along the riverbank

Riparian communities along the river help to control erosion of the riverbank and, in doing so, control sedimentation of the river. Riparian communities also provide valuable wildlife habitat. According to a study completed by EPEC (1981) the riverbank along the North Saskatchewan River was rated as highly susceptible to erosion, with steeply sloped surfaces being particularly vulnerable.

In order to maintain the health of nearby fish habitat and the quality of the riparian communities, development of the riverbank should be avoided, or, if this is not feasible, soil disturbance should be minimized and adequate erosion control measures implemented. In particular, careful consideration should be given to the redevelopment of any trails that cut perpendicularly across the riverbank.

Legend

- Study Area

Environmental Sensitivity

- Undeveloped Natural Habitat
- Ecological Connectivity Bottleneck
- Sensitive Riverbank

Restoration Potential

- Weed Control
- Caragana Control

Development Potential

- Development Potential

N

0 50 100 200 Meters

1:10,000

Figure 5. Summary of Ecological Sensitivities and Opportunities

Aerial Photograph Date: May 2010
Date Map Created: 16 February 2012

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4.2 Areas with Restoration Potential

The development of a Master Plan for Buena Vista/Laurier Park presents an opportunity to not only consider potential new uses and redevelopment, but also provides an opportunity to consider enhancing certain aspects of the ecology of the park through active restoration. The proliferation of non-native weeds is a concern in many areas of the park. Although weeds are generally widespread throughout the park (as they in most urban parks in Edmonton), we recommend focusing efforts on a few specific areas and species.

The small meadows in the eastern portion of Buena Vista Park (see Figure 4) are infested with weeds, including species considered noxious in the province (Alberta Weed Act, 2010). These meadows are likely to eventually return to a forested state via natural succession, at which point light-dependent weeds will likely diminish as they are shaded out. This process will, however, takes decades and, in the meantime, these weedy meadows are acting as seed sources, facilitating the spread of weedy species to other areas both within and outside of the park. Weedy species in these meadows should, therefore, be controlled as much as is feasible within budgetary and other constraints. Common tansy and Canada thistle, both considered to be noxious weeds in Alberta, should be prioritized for control. Restoration could be as simple as mowing weeds and sowing seed of native plant species. However, if weedy species form a large portion of the seedbank, more intensive management measures may be required.

The second area that should be prioritized for weed control is the extensive caragana community near the Edmonton Rowing Club boathouse. In this area the caragana has begun to invade the adjacent natural aspen forest. Although caragana can be an excellent ornamental and shelter species in certain circumstances, it is an aggressive colonizer, and without active management it will continue to spread throughout the woodland. Based on our observations, as well as those recorded in other surveys (Komex International Ltd., 2005), caragana appears to strongly inhibit the development of understorey communities, which normally contain much of the plant species diversity characteristic of aspen woodlands. Despite its aggressive tendencies, caragana is not widely considered to be a problem weed, and control strategies are only in the first stages of development. The City may wish to explore and test strategies currently being developed.

Smooth brome is an aggressive grass species that is widespread in many areas of the park. This species is known to invade ecosystems and form dense monocultures, and is a threat to grassland communities throughout central Alberta (Natural Regions Committee, 2006). Efforts to control smooth brome are further complicated by its ubiquity in disturbed and developed environments in our region, which creates an abundance of seed sources. Many areas in Laurier/Buena Vista Park have been infested to the point that control is impractical and control measures may cause more harm than good (e.g., grassland habitat will be lost at least temporarily, native plant species may be damaged or killed by control activities). However, the City may consider investigating potential control strategies for areas that are only lightly colonised by smooth brome, or measures for preventing its spread.

4.3 *Areas with Development Potential*

Despite the various environmental sensitivities present within Buena Vista/Laurier Park, there are a few locations in the park that, in terms of minimizing ecological impacts, are better suited for development. The following points highlight these areas:

- The manicured area immediately north of Buena Vista Road and west of 132nd Street. This area is immediately adjacent to residential properties, is bordered on two sides by roadways and comprises very little in the way of natural features. This area would be well suited for the development of small scale public service infrastructure (e.g., indoor public washrooms). Although this area has the potential to be restored (see Section 4.3.1), development within this area would have a very minimal impact to the ecology of the park as a whole.

- Among the network of trails throughout Buena Vista/Laurier Park are several relatively wide and well-established trails. The presence of these larger trails provides the opportunity to enhance the trail network (e.g., through trail expansion, upgrading or paving) with limited impacts to the ecology of the park.

4.4 General Management Considerations

In addition to the environmental sensitivities and opportunities described above, certain aspects of the ecology of Buena Vista/Laurier Park may influence the future management of the park and, thus, warrant consideration during the development of the Master Plan. Those considerations include the following:

- Areas of mature aspen and poplar at the north end of Buena Vista Park are showing signs of disease, and many trees appear to be dying. Falling trees and branches must be considered a hazard when considering the suitability of an area for recreation. Mature trees elsewhere in the park may also present a hazard to park users.

- Beavers are known to be present in the North Saskatchewan River around the periphery of Buena Vista/Laurier Park. The potential threat that beavers pose to park trees must be considered in all areas adjacent to the river. At a minimum, large, healthy trees near the riverbank should be protected with wire mesh.

4.5 Additional Investigations

To the extent possible, this biophysical assessment report will be used as the existing conditions chapter for the Bylaw 7188 environmental assessment document that will be required for the approval of any proposed developments that come about as a result of the newly developed Master Plan. Despite our best efforts to compile all available information pertaining to the study area, there are certain subject areas where we think that the level of existing information may not be current enough, detailed enough or site-specific enough to comply with the requirements of the future environmental assessment. Accordingly, we have identified the items below as infill investigations that may be

required to complete an environmental assessment pursuant to Bylaw 7188. Determination of actual requirements will depend on the nature and location of the proposed developments. We recommend that the City of Edmonton Sustainable Development Department be consulted prior to the initiation of environmental assessment work to ensure all information requirements are satisfied.

4.5.1 Soil and Geotechnical Surveys

Considering the location of Buena Vista/Laurier Park within the NSRV and its location adjacent to the river, future development within the park could have the potential to result in impacts to either the riverbank and/or river valley slopes. Thus, depending on the nature of proposed activities, additional site-specific soil and geotechnical (including slope stability) investigations may be required.

4.5.2 Rare Plant Surveys

Because rare plants, including rare mosses, are known to occur in the NSRV in the vicinity of Buena Vista/Laurier Park, targeted surveys searching for rare plants should be undertaken during the growing season prior to any new development in the study area. The recorded occurrence of flat-topped white aster on lawns near the Yorath House (Komex International Ltd., 2005) is of particular interest and concern, and it would be advisable to attempt to relocate and mark or map this population for future reference. Mature forested areas, particularly the mature birch-poplar at the north end of Buena Vista Park, should be surveyed for rare mosses by a qualified bryologist prior to any disturbance, as those areas may provide habitat for rare mosses.

Additional, site-specific plant surveys may also be necessary to provide information in support of approvals pursuant to the City of Edmonton's Corporate Tree Management Policy, should such an approval be required (see Section 5.2.1.4).

4.5.3 Fisheries Surveys

Any proposed development of the riverbank (e.g., permanent boat dock, promenade) in Buena Vista/Laurier Park that has the potential to affect fish habitat in the North Saskatchewan River may require aquatic surveys for the purposes of permitting.

4.5.4 Historical Resource Surveys

Consider conducting pre-construction historical resource surveys for any proposed development that requires significant disturbance of the ground surface (e.g., excavation, drilling). Although previous assessments have identified a low potential for the occurrence of historical resources, this does not preclude the presence of significant resources being located in previously unsurveyed areas.

5.0 REGULATORY CONSIDERATIONS

As plans regarding future development in Buena Vista/Laurier Park are not finalized, it is not possible to detail specific regulatory considerations that may be necessary to facilitate such development. It is, however, likely that development within Buena Vista/Laurier Park will require federal and provincial approvals. Some legislative considerations may not require formal approval, but require development to adhere to certain guidelines. The following provides an overview of legislation that may be relevant to the future development of Buena Vista/Laurier Park.

5.1 Federal Legislation

5.1.1 Canadian Environmental Assessment Act

There are several conditions under which the *Canadian Environmental Assessment Act (CEAAct)* and the associated environmental review process are automatically triggered: the need for federal environmental permitting, construction on federal lands, or federal government funding. In the case of potential development within Buena Vista/Laurier Park, authorizations and approvals under the *Fisheries Act* and the *Navigable Waters Protection Act* are the most likely triggers for the *CEAAct*. An assessment pursuant to *CEAAct* would also be triggered if any federal funding is sought for development within the park.

5.1.2 Fisheries Act

The Department of Fisheries and Oceans (DFO) administers the federal *Fisheries Act.* The North Saskatchewan River is considered fish-bearing habitat by DFO and any proposed development (e.g. boat launch or stormwater outfall) within or along the river banks would require review by DFO. If it is determined that a proposed development may result in the harmful alteration, disruption or destruction (HADD) of fish habitat, an authorization pursuant to the *Fisheries Act* would be required before construction is permitted. The application for an authorization under the *Fisheries Act* would automatically trigger the requirement for an environmental review pursuant to the *Canadian Environmental Assessment Act*. In support of any approval under the *Fisheries Act*, a project-specific assessment of fisheries resources and habitat within the proposed project location may be required. If it was determined that HADD of fish habitat would occur, habitat compensation would likely be required.

5.1.1 Navigable Waters Protection Act

The *Navigable Waters Protection Act* (*NWPA*), administered in Alberta by Transport Canada (TC), regulates the activities permitted on watercourses and waterbodies and requires an approval for certain works, including construction of crossing structures. The North Saskatchewan River is considered a navigable water body, thus an approval under the *Act* will be required for any development that is determined to have an impact on the navigability of the river (e.g. boat launch). An application under the *NWPA* would automatically trigger the requirement for an environmental review pursuant to the *Canadian Environmental Assessment Act*.

5.1.1 Migratory Birds Convention Act

Environment Canada administers the *Migratory Birds Convention Act (MBCA)*, which prohibits the disturbance of active nests of bird species covered under the *Act*. With respect to development, the *Act* provides guidelines for enforcement only; it is not linked to formal approvals. Violation of the *Act* may, however, result in penalties. An amendment to the *MBCA* further protects disturbance to individual migratory birds and prohibits release of deleterious substances into waters or areas frequented by migratory birds. In addition, Environment Canada recommends avoiding vegetation clearing during the period 01 May to 31 July. To ensure compliance with the *Act*, vegetation clearing associated with any development should be scheduled for dates outside of the spring breeding season. Recognizing federal and provincial clearing timing guidelines minimizes the potential for contravening legislation. If it becomes apparent that these restricted clearing dates cannot be complied with, removal of vegetation should only occur if a qualified biologist has inspected each site to be cleared and determined that no active nests are present. If an active nest is found, clearing should not commence in that vicinity until after the young have fledged and appropriate buffers have been established in consultation with Alberta Sustainable Resource Development and Environment Canada.

5.1.1 Species at Risk Act

The *Species At Risk Act* (*SARA*) is administered by Environment Canada. It prohibits disturbance to listed species and, in some instances, listed species' habitat. Habitat is defined not only as the area where a species naturally occurs and on which it depends to carry out its life processes, but also areas where that species formerly occurred and has the potential to be reintroduced. The *SARA* emphasizes guidelines for enforcement, and harming a Schedule 1 species is prohibited.

5.1 Provincial Legislation

5.1.1 Water Act

All surface water within Alberta is owned by the Crown; matters affecting surface drainage are administered by Alberta Environment and Water. Under the Alberta *Water Act*, the *Code of Practice for Outfall Structures on Water Bodies* applies to any outfall structures that may be associated with development within Buena Vista/Laurier Park. Specific conditions of the *Codes of Practice* are dependent upon the classification of the water body. The North Saskatchewan River is a Class C water body with a restricted activity period from 16 September to 31 July.

5.1.1 Public Lands Act

The province owns the bed and shore of all bodies of water that are permanent and naturally occurring. This includes permanent and naturally occurring wetlands and watercourses. The *Public Lands Act* defines a permanent water body as one that exhibits persistent evidence of a bank, bed and shore and a tendency to return to normal water levels under the ordinary circumstances after periods of drought or flood. Development

within a Crown-owned wetland or other body of water can be authorized under the *Act*; however, compensation for any loss would be required usually in the form of title to an equivalent land parcel. In an instance where a proposed project requires approval under both the *Public Lands Act* and the *Water Act* (such as alterations along the bank of the North Saskatchewan River), the province has instituted a one-window application process that allows applications for approvals under both *Acts* through a single application.

5.1.1 Alberta Wildlife Act

The Alberta *Wildlife Act* prohibits disturbance to a nest or den of prescribed wildlife species. Although permitting is not required under that *Act*, violations may result in fines. Alberta Sustainable Resource Development (ASRD) recommends avoiding vegetation clearing during 15 April to 31 July in the Edmonton area to minimize the potential for contravening the *Wildlife Act*. If as development begins, it becomes apparent that the ASRD restricted clearing dates (15 April to 31 July) cannot be complied with, removal of vegetation should only occur if a qualified biologist has inspected each site to be cleared and determined that no active nests or dens are present. If an active nest is found, ASRD should be contacted to determine if a buffer around the nest can be established to allow partial clearing of the area.

5.1.1.1 Historic Resources Act

Any development with potential to disturb historical resources requires clearance by Alberta Culture and Community Services, pursuant to the *Historic Resources Act*.

5.1.1.1 Alberta Weed Control Act

The Alberta *Weed Control Act* regulates designated weed species and weed seeds in the province through various control and enforcement measures, while creating provisions for the recovery of expenses in the case on non-compliance. Within the *Act*, there are two categories of designated weeds: Noxious and Prohibited Noxious. Noxious weeds are required to be controlled while Prohibited Noxious weed are required to be destroyed. The responsibility for the control/destruction of designated weed species lies with the owner or occupier of the land in question. The *Act* also gives power to municipalities to designate additional weed species as Noxious or Prohibited Noxious, but does not allow for the delisting of species or reduction in status from Prohibited Noxious to Noxious.

The Alberta *Weed Control Act Regulation* provides a complete listing of all designated Noxious and Prohibited Noxious weed species in the province.

5.2 Municipal Legislation

5.2.1.1 North Saskatchewan River Valley Redevelopment Plan (Bylaw 7188)

Any developments within Buena Vista/Laurier Park would be located within the boundaries of the North Saskatchewan River Valley Redevelopment Plan (*Bylaw 7188*).

Therefore, an environmental review will be required for all components of the project. This document satisfies such requirements.

5.2.1.2 Parkland Bylaw (2202)

The City of Edmonton's *Parkland Bylaw 2202* regulates the conduct and activities of people on parkland and protection of the environment in all City parks, including the North Saskatchewan River Valley. Pursuant to *Bylaw 2202*, disturbance to natural areas, utilization of construction laydown areas, interferences with other park users and motor vehicle access are restricted. Buena Vista/Laurier Park is considered parkland under this Bylaw and, thus, any proposed project within the park would be subject to the regulations of this Bylaw. If contravention of the regulations of the bylaw is required for the implementation of a project, an exemption to Parkland *Bylaw 2202* would be required. Such an exemption can be requested from the City Manager prior to beginning the construction activities. Also, a detailed Staging Area Agreement would be required prior to construction and would have to outline hazardous materials storage, staging area size, access, security, utilities hoarding, public safety measures provided and construction staff parking.

5.2.1.3 City of Edmonton Community Standards Bylaw (14600)

Sections of this Bylaw establish allowable working periods and acceptable noise levels. Other sections of this Bylaw establish additional *Noxious* weed species in the City of Edmonton, beyond those defined in the Province of Alberta's *Weed Control Act*. The regulatory requirements for weed management do, however, remain under the purview of the *Weed Control Act*. Adherence to this bylaw would be necessary during construction activities within Buena Vista/Laurier Park.

5.2.1.4 City of Edmonton Corporate Tree Management Policy (C456)

All ornamental trees and natural treed areas on City-owned property are the responsibility of Edmonton Parks Branch pursuant to the City of Edmonton's Corporate Tree Management Policy. The Corporate Tree Management Policy states that where damage to or loss of City trees occurs, equitable compensation for that loss will be recovered from the entity causing the damage or loss and applied to future tree replacements as be *Bylaw 7829*. The policy also references the City of Edmonton's Guidelines for Work Near Trees. Those guidelines apply in all instances where construction activity will occur within 5 m of any City-owned trees. The Forestry Policy and Contracts Units must be contacted should work be contemplated within this 5 m zone. The Corporate Tree Management Policy notes that trees may be inspected on City-owned property for possible damage, prior to issuance of a Final Acceptance Certificate. Any proposed project in Buena Vista/Laurier Park with the potential to impact existing shrubs or trees would be subject to this Policy.

6.0 SUMMARY AND CONCLUSIONS

6.1 Summary of Ecological Considerations

The following provides a quick overview of the various ecological guidelines, recommendations and considerations outlined in this report.

Environmental Sensitivities

The following guidelines were developed in response to identified environmental sensitivities within Buena Vista/Laurier Park. Planning the future of Buena Vista/Laurier Park in accordance with these guidelines will help minimize the impacts to the ecology of park.

- Maintain the area of Buena Vista Park north of the main manicured area in a natural state.
- Avoid development that will hinder wildlife and ecological connectivity through the park.
- Minimize the creation of new trails/new edge habitat.
- Avoid development along the riverbank.

Restoration Opportunities

Restoration opportunities in Buena Vista/Laurier Park focus primarily around weed control and the associated re-naturalization of specific target areas. The City may also consider the decommissioning and restoration of certain trails as a mitigation measure if future developments are identified as having the potential to result in adverse impacts.

Development Opportunities

Acknowledging that further development of the park to some extent is likely, whether it is increased infrastructure, paving of trails or other modifications, the following areas were identified as being better suited for development so as to minimized ecological impacts. Those areas were:

- The manicured area immediately north of Buena Vista Road and west of 132nd Street.
- The relatively wide and well-established trails in various locations throughout the park.

General Management Considerations

We identified certain aspects of the ecology of Buena Vista/Laurier Park that may influence the future management of the park and, therefore, warrant consideration during the development of the Master Plan. Those considerations include the following:

- The presence of dead and dying trees and the hazard they present to park users.
- The presence of beavers and the threat they pose to trees in the park.

Additional Investigations

This biophysical assessment report will provide much of the information necessary for the existing conditions chapter if a Bylaw 7188 environmental assessment is required as part of the approval for any proposed developments that come about as a result of the newly developed Master Plan. The following surveys were identified as infill investigations that may be required to complete an environmental assessment pursuant to Bylaw 7188:

- Soil and Geotechnical Surveys
- Rare Plant Surveys
- Fisheries Surveys
- Historical Resource Surveys

6.2 Conclusions

Buena Vista/Laurier Park represents the great diversity that exists within the City of Edmonton's network of river valley parks. From the largely undeveloped, natural environment of Buena Vista to the comparatively manicured environment of Laurier Park, Buena Vista/Laurier Park is valued both as a natural park, but also as an amenity ideal for family picnics, informal sports and hosting special events. The future use and management of Buena Vista/Laurier Park must respect this broad range of values and functions. Buena Vista/Laurier Park is biologically diverse and an important component of Edmonton's ecological network. There are, however, no environmental features that are sensitive to the point that all development should be avoided. Instead, a planning process that is sensitive to the ecological qualities of the park should result in a park space that can accommodate a certain amount of recreational activity and development, but that at the same time remains in balance with the ecology of the park.

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Appendix A

Appendix B

Phase 1 Environmental Site Assessment

Note: Volume 2 (Land Titles) is not included in this Appendix.

THURBER ENGINEERING LTD.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
SIR WILFRED LAURIER AND BUENA VISTA PARKS
EDMONTON, ALBERTA

VOLUME 1 OF 2

Report

to

Spencer Environmental Management Services Ltd.,
ISL Engineering and Land Services Ltd., and
The City of Edmonton

PROFESSIONAL ENGINEER ALBERTA
MICHAEL F. HALLIWELL

M. Halliwell, CESA, EP, P. Eng.
Project Engineer

PERMIT TO PRACTICE
THURBER ENGINEERING LTD.
Signature
Date
PERMIT NUMBER: P 5186
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PROFESSIONAL ENGINEER ALBERTA
NEAL H. FERNUIK

N. H. Fernuik, P.Biol., P.Eng.
Review Engineer

Date: March 7, 2102
File: 18-38-9

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EXECUTIVE SUMMARY

Thurber Engineering Ltd. (Thurber) was retained by Spencer Environmental Management Services Ltd. (Spencer), working on behalf of ISL Engineering and Land Services Ltd. (ISL) for the City of Edmonton (CoE) to conduct a Phase I Environmental Site Assessment (ESA) on two properties identified as Sir Wilfred Laurier Park (Laurier Park) and Buena Vista Park (collectively the "subject property") in Edmonton, Alberta. The subject property has 24 legal land descriptions and 26 municipal addresses. An assessment of structure interiors on the subject property was not included in the scope of work; however, observations of the interiors were made from publically accessible areas.

According to Alberta Land Titles, the current owner of the property is the CoE.

The subject property consists of an irregularly shaped area of approximately 119 hectares (295 acres). The property is developed for use as a pair of urban parks with the Edmonton Valley Zoo, Edmonton Rowing Club (ERC), Edmonton Whitewater Paddlers (EWP) paddling club, a boat launch, a vacant residence, asphalt paved roadways and associated asphalt and gravel parking lots present. Structures on the subject property include habitats, winter quarters and related service and administration buildings for the Valley Zoo, a pool house, two boat houses and a shed (ERC), a storage building with fenced yard (EWP), a house with attached garage (former Yorath Residence), picnic venues, public washrooms (Laurier Park), two propane aboveground storage tanks (ASTs) and a pedestrian bridge to William Hawrelak Park.

Prior to development as a municipal park and zoo starting in the late 1950's, portions of the subject property included residential housing, commercial yards and a gravel pit dating back to the 1930's. Prior to commercial and residential development, the subject property had been used for agricultural land or as undeveloped parkland since at least 1912.

The subject property is located within a residential and parkland portion of the CoE. Due to the size and complex shape of the subject property, surrounding areas are described in general cardinal points (i.e. north, south, east and west) for the property as a whole, while descriptions from different areas within the subject property could be considerably different. To the north is Melton Ravine and the North Saskatchewan River, with William Hawrelak Park and the Mayfair Golf and Country Club beyond. To the east, across the North Saskatchewan River, are residential homes and the University of Alberta (U of A) main campus. To the south, across the North Saskatchewan River, is Keillor Road, the Whitemud Equine Centre, Fox Drive, Whitemud Creek, Whitemud Park, residential homes and portions of the U of A farm. To the west are residential homes, the Quesnel Bridge and Whitemud Drive.

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Prior to residential development starting in the late 1950's, the surrounding areas to the west were used for gravel pit operations, agricultural land or were undeveloped since 1912. Areas to the north, east and south have generally been part of the North Saskatchewan River with greenspace, residential housing or agricultural land beyond since at least 1912.

In general, the inspection performed for this Phase I ESA did not encounter visual or historical evidence (aerial photographs, past reports, agency and third party records) indicating that the subject property has been impacted by contaminants above generally accepted levels associated with sites of this nature. However, identified items of potential environmental concern include:

- Untested backfill material, related to a former gravel pit, outside of the Edmonton Valley Zoo site;
- A composting area without lining or secondary containment in the southwest portion of the Valley Zoo site;
- Residual soil stockpiles / windrows in the north portion of Buena Vista Park;
- A soil stockpile beneath the William Hawrelak Park footbridge, and
- A former commercial yard (CoE Northwest Distribution Yard) in the east-central part of Buena Vista Park.

In order to assess the potential environmental impact arising from these concerns, it would be necessary to undertake a sampling and testing program that is beyond the scope of work for a Phase I ESA.

SCM Risk Management Services Inc. was contacted to conduct a search for IAO information pertaining to the subject property; however, a reply has not been received as of the date of this report. Should their response indicate additional items of potential environmental concern, an addendum to this report will be issued.

Use of the report is subject to the Statement of Limitations and Conditions that is included at the end of the text of this report. The reader's attention is specifically drawn to these conditions as it is considered essential that they be followed for the proper use and interpretation of this report.

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1. INTRODUCTION

Thurber Engineering Ltd. (Thurber) was retained by Spencer Environmental Management Services Ltd. (Spencer), working on behalf of ISL Engineering and Land Services Ltd. (ISL) for the City of Edmonton (CoE) to conduct a Phase I Environmental Site Assessment (ESA) on two properties identified as Sir Wilfred Laurier Park (Laurier Park) and Buena Vista Park (collectively the "subject property") in Edmonton, Alberta. The legal and municipal addresses that make up the parks are:

- N½ 24-52-25 W4M (13315 Buena Vista Road NW)
- Lot 13R Block 30 Plan 450MC (13221 Buena Vista Road NW)
- Lot 1R Block 30 Plan 450 MC (13511 Buena Vista Road NW)
- Lot 12U Block 30 Plan 450MC (7806U Buena Vista Road NW)
- Lot 3 Block 6 Plan 892 2228 (13210 Buena Vista Road NW)
- SE 25-52-25 W4M (13110 Buena Vista Road NW)
- Block OT Plan 9020238 (13108 Buena Vista Road NW)
- Block Y Plan 476AF (8621 – 134 Street NW)
- Block OT Plan 2128MC (13402 – 86 Avenue NW)
- Block R Plan 2128MC (13508 – 86 Avenue NW)
- S½ 25-52-25 W4M (13400 – 86 Avenue NW)
- Block A Plan 5069KS (87 Valleyview Crescent NW)
- Block 21 Plan 456HW (57 & 69 Valleyview Crescent NW)
- Block OT Plan 4164MC (71 Valleyview Crescent NW)
- Lots 7&8 Block 20 Plan 456HW (51 Valleyview Crescent NW)
- Block OT Plan 456HW (63 Valleyview Crescent NW, 9111 Valleyview Drive NW)
- Lots 1&2 Block 19 Plan 456HW (13315 Centre Road NW)
- Lots 1, 2, 4 & 5 Block 16 Plan 456HW (13304 Centre Road NW)
- Lot 3 Block 16 Plan 456HW (13320 Centre Road NW)
- Lot 5 Block 15 Plan 456HW (13216 Centre Road NW)
- Lot 4 Block 15 Plan 456HW (13204 Centre Road NW)
- Lot 3 Block 15 Plan 456HW (13116 Centre Road NW)
- Lot 2 Block 15 Plan 456HW (13104 Centre Road NW)
- Lot 1 Block 15 Plan 456HW (13020 89 Avenue NW)

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According to Alberta Land Titles, the current owner of the subject property is The City of Edmonton.

The purpose of a Phase I ESA is to identify potential and actual contamination of land by record reviews, visual site inspection, interviews, and evaluation and reporting. A Phase I ESA is completed without the benefit of sampling, analytical testing or measurement, and, as such, should not be considered a certificate of compliance. The principal objective of the assessor is to document evidence for potential or actual contamination – not to judge the acceptability of the risks associated with such contamination.

The subject property was snow covered at the time of the site reconnaissance (up to 10 cm) and the observation of visible contaminant staining or stressed vegetation was limited.

This report is comprised of a Canadian Standards Association (CSA) Standard Z768-01 Phase I ESA. The scope of work generally consists of:

- Review of site history;
- Site reconnaissance; and
- Report preparation & evaluation.

An assessment of structure interiors on the subject property was not included in the scope of work; however, observations of the interiors were made from publically accessible areas. Further details on the scope of work are outlined in Thurber's September 6, 2011 proposal included in Appendix A.

Authorization to undertake the Phase I ESA was provided by Mr. Jeff Schurek, of ISL,

Use of the report is subject to the Statement of Limitations and Conditions that is included at the end of the text of this report. The reader's attention is specifically drawn to these conditions as it is considered essential that they be followed for the proper use and interpretation of this report.

2. SITE DESCRIPTION

2.1 Subject Property

A site plan showing the approximate subject property boundaries is presented on Drawing 18-38-9-1 in Appendix B. The subject property presently includes twenty-four legal land

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descriptions covering an irregularly shaped area of approximately 119 hectares (295 acres). The property has been developed for use as a pair of urban parks with the Edmonton Valley Zoo, Edmonton Rowing Club (ERC), Edmonton Whitewater Paddlers (EWP) paddling club, a boat launch, a vacant residence, asphalt paved roadways and associated asphalt and gravel parking lots present. Structures on the subject property include habitats, winter quarters and related service and administration buildings for the Valley Zoo, a pool house, two boat houses and a shed (ERC), a storage building with fenced yard (EWP), a house with attached garage (former Yorath Residence), picnic venues, public washrooms (Laurier Park), two propane aboveground storage tanks (ASTs) and a pedestrian bridge to William Hawrelak Park.

The subject property is located on a flood plain within an inside bend of the North Saskatchewan River and, as a result, ranges from generally flat to having significant slopes at the transition from the river valley flood plain to the top of bank. The subject property and surrounding area is generally sloped toward the North Saskatchewan River.

The subject property was snow covered at the time of the site reconnaissance (up to 10 cm).

2.2 Surrounding Areas

The subject property is located within a residential and parkland portion of the CoE. Due to the size and complex shape of the subject property, surrounding areas are described in general cardinal points (i.e. north, south, east and west) for the property as a whole, while descriptions from different areas within the subject property could be considerably different.

To the north is Melton Ravine and the North Saskatchewan River, with William Hawrelak Park and the Mayfair Golf and Country Club beyond. To the east, across the North Saskatchewan River, are residential homes and the University of Alberta (U of A) main campus. To the south, across the North Saskatchewan River, is Keillor Road, the Whitemud Equine Centre, Fox Drive, Whitemud Creek, Whitemud Park, residential homes and portions of the U of A farm. To the west are residential homes, the Quesnel Bridge and Whitemud Drive.

2.3 Geological Setting

According to Kathol and McPherson (Urban Geology of Edmonton, Bulletin 32, Alberta Research Council, 1975), the surficial geology consists of approximately 7 metres of alluvial gravel, sand and silt deposits on the flood plain with mixed bedrock and glacial materials in slump areas of the ravines and gullies. These materials are underlain by bedrock of the Edmonton Formation (otherwise known as the Horseshoe Canyon Formation).

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2.4 Hydrogeological Setting

The North Saskatchewan River is located adjacent to the subject property on the north, east and south. Whitemud Creek is located approximately 200 metres to the south, on the opposite bank of the river. Melton Ravine is located approximately 800 metres to the northwest of the subject property while Patricia Ravine and Wolf Willow Ravine are located approximately two kilometres to the west.

According to W. Ceroci (*Hydrogeology of the Southwest Segment, Edmonton Area, Alberta,* Earth Sciences Report 78-5, Alberta Research Council, 1979), the local groundwater flow is easterly and upward, toward the North Saskatchewan River.

3. SITE HISTORY

Information on the historical conditions and land use of the subject property was obtained from a review of historical aerial photographs and from the following sources:

- Alberta Land Titles;
- Petroleum Tank Management Association of Alberta (PTMAA);
- Alberta Energy Resources Conservation Board (ERCB);
- Alberta Environment (AENV) Freedom of Information and Protection of Privacy (FOIP) Office, FOIP Records & Information Management (FRIM) Office and Environmental Site Assessment Repository (ESAR);
- City of Edmonton (CoE);
- Alberta Health Services;
- Environmental Law Centre;
- Insurance Advisory Organization (IAO) via SCM Risk Management Service Inc.; and
- Previous investigations carried out for the CoE.

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3.1 Aerial Photographs

Historical air photos from 1924 (undeveloped), 1930, 1943, 1950, 1958, 1965, 1971, 1978, 1984, 1990 and 1995 as well as historical maps from 1912 and 1925 were reviewed at the CoE Archives. Air photos from 2001, 2006 and 2011 (most recent available) were obtained from the CoE Transportation Department. The 2011 air photo was utilized as the base for Drawing 18-38-9-1. Copies of the historical air photos and plans, where available, are included in Appendix B.

The 1912 Driscoll & Knight's *Map of the City of Edmonton, Alberta* (copy not available), has limited coverage of the subject property; however, it does show the "Buena Vista" subdivision on the north halves of SE and SW 25-52-25 W4M (currently Laurier Park) as well as "Laurier Park" on the adjacent NE and NW 24-52-25 W4M. The surrounding area is shown as generally undeveloped and unplanned land with the exception of residential lots across the North Saskatchewan River to the east. Contemporary photographs held in the CoE Archives Laurier Park.

In 1924 and 1925, the historical air photo and *General Key Plan of the City of Edmonton, Alberta* shows the subject property as generally unchanged. The plan continues to show residential lots planned for the Buena Vista subdivision and a municipal reserve to the north. The air photo shows that the subject property is generally undeveloped land with the exception of a cleared parcel along the southwest edge of Laurier Park and three cleared lots along the river in Buena Vista Park. The surrounding area is generally undeveloped; however, some clearing is visible to the west.

Air photos from 1930 provide only partial coverage of the subject property; however, it is possible to see that the cleared lot along the southwest edge of Laurier Park is now a tree farm and additional land has been cleared from the tree farm toward the river valley to the south. To the west of the subject property, additional land has been cleared and a road and gravel pit are visible. Other properties in the vicinity appear generally unchanged.

By 1943 (photo not available for copies), the air photo shows that a gravel pit has extended on to the subject property and that additional land has been cleared for agricultural purposes on the subject property and in the surrounding areas.

In 1950, the air photos show considerable changes on the subject property. In the south, the gravel pit now covers approximately half of Laurier Park. Several access roads are visible, both for the gravel pit and to access several residences and yards, on Buena Vista Park. The Yorath

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Residence is visible, as is a lumber yard, ice rink, CoE NW Distribution Yard and several other cleared areas. To the west, additional roadway development and clearing has taken place.

The 1958 air photos only include partial coverage (predominantly Laurier Park) of the subject property. The gravel pit appears to be minimally operational with most of the pit areas no longer in use; however, many of the access roads for the gravel pit remain visible. A low area (pond / slough) is visible in the south-central part of Laurier Park. Other properties in the area of coverage appear generally unchanged.

By 1965, considerable changes have taken place on the subject property and in the surrounding area. Laurier Park has been redeveloped into park space with the Valley Zoo, main park roadways and the boat launch visible. The agricultural lands on the west edge of Laurier Park have been removed. Buena Vista Park remains generally unchanged from the 1950 air photo other than the relocation of the ice rink and addition of a second rink. To the west, Buena Vista Road has been constructed down to the Valley Zoo parking lot and the utility compound is visible. Areas west of the subject property along the top of the river valley have been cleared and a majority of the area has been developed for residential homes.

In 1971, Laurier Park remains generally unchanged other than the addition of two baseball diamonds and a public washroom. The ice rinks in Buena Vista Park have been removed, as have some of the residences and storage yards. A power line right-of-way is now visible from 86 Avenue to the North Saskatchewan River and some of the smaller access roads in Buena Vista Park appear less defined. To the west, residential development continues up to the park boundaries. To the southwest, the Quesnel Bridge has been constructed. Other properties in the area appear generally unchanged.

The 1978 air photos show the Valley Zoo has expanses further to the southwest and that additional expansion is under development. The north access road for Laurier Park has been re-aligned and no longer cuts through the parking area for the Valley Zoo. In Buena Vista Park, several residences have been removed, the access road off 81 Avenue is closed and the CoE has set up its Northwest Distribution Yard and Wood Yard in previous yard locations. The storage building for the EWP and initial ERC boathouse are visible on the west side of the park. In the north part of Buena Vista Park, six large windrows of stockpiled soil are visible and the former northern access road appears unused. Other properties in the surrounding area appear generally unchanged.

For 1984, the Valley Zoo continues to expand to the southwest and stockpiles of soil are visible at various locations in the western third of Laurier Park, which has additional baseball diamonds

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present at its northwest corner. In Buena Vista Park, the CoE Wood Yard appears to have been shut down and the access road in the northwest portion of the park has been converted to a walking trail. Four of the soil windrows in the north portion of Buena Vista Park have been removed; however, two windrows remain visible. The ERC boathouse has been expanded on the eastern part of Buena Vista Park. Other properties in the area appear generally unchanged.

In 1990, the subject property appears generally unchanged other than the last two windrows having been removed or spread in Buena Vista Park and the Valley Zoo appearing to have completed its expansion. In Laurier Park, some disturbance is visible at the end of Buena Vista Road, indicating the development of a distinct access road for the Park with the portion of the Valley Zoo parking south of the access road being converted into greenspace. Additionally, one of the baseball diamonds in the northeast corner of Laurier Park has been removed. Other properties in the vicinity appear generally unchanged.

The 1995 air photos show the subject property remains generally unchanged except for the addition of the rowing tank building and dock for the ERC. Other properties in the area appear generally unchanged.

In 2001, there have been some changes to the subject property. In Laurier Park, the former Valley Zoo parking lot segment has trees visible on it and a trail is visible along the bank of the North Saskatchewan River. In Buena Vista Park, parking lots have been established at the rowing tank and to the west of the rowing tank for park patrons. Further to the north, the CoE Northwest Distribution Yard has been removed and a trail has been established to the now present footbridge that connects to William Hawrelak Park. Many of the former access roads and yard locations are being reclaimed by vegetation or have been converted to walking paths by park patron use. Other properties in the vicinity appear generally unchanged.

For 2006, the subject property appears generally unchanged with the exception that the pond / slough in the south-central part of Laurier Park (within the Valley Zoo fence) appears full and the greenspace added to Laurier Park from the former Valley Zoo parking area has better defined parking areas and a trail visible. Other properties in the area appear generally unchanged.

The 2011 air photo (base for Drawing 18-38-9-1) shows several changes at the subject property. In Laurier Park, new construction is in progress at the south end of the Valley Zoo and the pond/slough appears to have been refined into a stormwater management lake. A Quonset is under construction in the north corner of the Valley Zoo and a second boathouse is visible at the ERC facility in Buena Vista Park. Some previously cleared areas of Buena Vista Park are

showing signs of being reclaimed by vegetation as additional saplings and small trees are visible in locations such as the former CoE Northwest Distribution Yard. Surrounding properties appear generally unchanged with the exception of construction activities and presence of construction trailers related to the expansion of the Quesnel Bridge to the west of the subject property.

3.2 Research

3.2.1 Alberta Land Titles

According to Alberta Land Titles, the subject property is owned in its entirety by CoE and has been since 2010. Prior to 2010, the property was owned by the CoE and private individuals since 1960 and with some commercial entities (trust and investment companies or the Edmonton Jesuit College) since at least 1950.

A summary from 2011 to 1950 and a copy of the Alberta Land Titles record have been included in Appendix D.

3.2.2 Other Provincial Offices

PTMAA checked their files for registered active tanks sites and abandoned tank sites and reported that they have one record of underground petroleum storage tanks (UST's) and no records of aboveground petroleum storage tanks (AST's) on the subject property. The PTMAA record consists of a closure report indicating two 1,800 litre steel UST's were removed in 1990. One tank was for diesel fuel while the other was for gasoline and both were listed as being 25 years old. The record does not indicated if there was secondary containment or cathodic protection present.

The Alberta Energy Resources Conservation Board (ERCB); as accessed through the AbaData® database, has does not have records of wells, leases, complaints or facilities on the subject property as of January 31, 2012. One high-pressure natural gas pipeline is located approximately one kilometre to the east and the ERCB has records of three abandoned wells and two odour complaints within one kilometre of the subject property boundaries.

AbaData® also contains information from the Alberta Environment Groundwater Information Centre database and lists two groundwater wells (for domestic use) on and six groundwater wells (five for domestic use, one for an unknown purpose) within a one-kilometre of the subject property.

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The AENV FOIP and FRIM Offices have no records for the subject property. A search of the ESAR database contained nine records for the subject property and six other locations within one kilometre where assessments had been carried out. The records for the subject property include two parts of a June 2011 Phase I ESA carried out by EBA, a Tetra Tech Company (EBA) on the Edmonton Valley Zoo property, a 2011 Limited Phase II ESA carried out by EBA at the site of the former UST's at the Edmonton Valley Zoo and correspondence with Alberta Health Services, Alberta Environment and the CoE regarding the findings of the EBA reports. These investigations and correspondence are related to a re-zoning of the Edmonton Valley Zoo property. The reports and their findings are discussed further in the previous reports section (Section 3.2.7).

3.2.3 City of Edmonton

The CoE Fire Rescue Services indicated the CoE has records of one – 1,800 litre diesel UST and one – 1,800 litre gasoline UST having been removed from 13315/13221 Buena Vista Road (Edmonton Valley Zoo site) on November 7, 1990 and that there is one – 227 kg (500 lb) propane AST currently located at this address. Fire Rescue Services indicated that they have no records of tank installation or removal, leaks, site contamination or site remediation for any other parcel associated with the subject property.

The CoE Sustainable Development Department, Current Planning Branch did not have files related to bylaw infractions for the subject property; however, they do have numerous development permits on file for the Edmonton Valley Zoo. The development permits do not involve environmental items. The Sustainable Development Department Industrial Area and Environmental Planning Unit indicated that they have records of Phase I & II ESAs conducted as part of the rezoning of the Edmonton Valley Zoo property. These reports are discussed in the previous reports section (Section 3.2.7).

The CoE Waste Management Services have indicated that they have no records of landfills or dump sites within a 500 m radius of the subject property.

The Drainage Services Division of the CoE Infrastructure Services Department did not have records of violations pertaining to the Sewers Bylaw or Sewers Use Bylaw related to the subject property.

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3.2.4 Alberta Health Services

The Alberta Health Services was contacted and they do not have records of outstanding orders, landfills, waste sites or contamination related to the subject property.

3.2.5 Environmental Law Centre

The Environmental Law Centre has records of enforcement actions pertaining to the CoE; however, a review of the information provided does not indicate enforcement actions related to the subject property.

3.2.6 Insurance Information

Fire insurance plans held at the CoE Archives (1959/1960) do not cover the subject property. SCM Risk Management Services Inc. was contacted to conduct a search for IAO information pertaining to the subject property; however, a reply has not been received as of the date of this report. Should their response indicate items of potential environmental concern, an addendum to this report will be issued.

3.2.7 Previous Environmental Investigations

The Edmonton Valley Zoo portion of the subject property has been the subject of numerous Phase I ESAs, Phase II ESAs, geotechnical investigations and Environmental Impact Assessments (EIAs) over the past four years as part of re-zoning and redevelopment of the zoo. The following sections outline items of potential environmental concern identified in the individual reports (for the re-zoning) or as cited in the EIAs.

3.2.7.1 Eidos Consultants Incorporated – 2009

In 2009, Eidos Consultants Incorporated (ECI, formerly Gibbs Brown Johansson) carried out an EIA[1] for the Polar Extremes development at the Edmonton Valley Zoo. This EIA identified several items of potential environmental concern as follows:

- First, based on a geotechnical investigation[2] by CT & Associates Engineering Inc. (CTA), the EIA identified 0.1 m to 0.3 m of topsoil over 0.8 m to 2.6 m of sand and gravel fill overlying shale and sandstone bedrock to a depth of at least 8.3 m. A layer of clay till

[1] Eidos Consultants Incorporated. December 22, 2009. “Edmonton Valley Zoo Polar Extremes Environmental Site Assessment.”

[2] CT & Associates Engineering Inc. April 9, 2009. “Geotechnical Investigation, Proposed Valley Zoo Pinniped Exhibit, 13315 Buena Vista Road, Edmonton, Alberta.”

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(0.4 m to 0.9 m thick) was also encountered in the northern part of the CTA investigation area. (Fill material present on site.)

- ECI also cited a June 2009 Phase I ESA[3] carried out by CTA to identify a former surface mining operation (gravel pit) that was present on the subject property from 1949 until the mid-1960's. The gravel pit, which covered the entire Polar Extreme site, was backfilled with material from an unknown source. ECI noted that testing carried out on the fill material indicated it was "free from impact" by metals and hydrocarbons (i.e. met Alberta Environment and Water (AEW) 2009 "Alberta Tier 1 Soil and Groundwater Remediation Guidelines" (Tier 1)). (Former gravel pit, backfill source unknown.)

The ECI EIA also noted that the Edmonton Valley Zoo uses windrow composting of animal wastes (excepting primate and carnivore wastes due to the pathogenic potential), that the zoo has a co-mingle recycle bin and that perlite used in the on-site water filtration systems was composted.

A supplement to the EIA[4] was issued in 2010 and did not identify additional items of potential environmental concern.

3.2.7.2 Eidos Consultants Incorporated – 2011

Plans for additional development at the Edmonton Valley Zoo triggered another EIA in 2011[5]. The second EIA cited a January 2011 P. Machibroda Engineering Ltd. (PMEL) geotechnical investigation[6] that noted a thin layer of topsoil overlying clay and sand fill over glacial till deposits. These lithographic layers overlaid clay shale bedrock to a depth of 10.5 m (maximum depth of investigation) and are generally consistent with the work done by CTA in the Polar Extremes EIA.

[3] CT & Associates Engineering Inc. June 2009. "Phase I Environmental Site Assessment, Southwest Portion of Edmonton Valley Zoo, 13315 Buena Vista Road, Edmonton, Alberta."

[4] Eidos Consultants Incorporated, February 23, 2010. "Edmonton Valley Zoo Polar Extremes Environmental Site Assessment – Supplemental Submission."

[5] Eidos Consultants Incorporated, April 26, 2011. "Edmonton Valley Zoo Entry and Wander Environmental Site Assessment."

[6] P. Machibroda Engineering Ltd. January 21, 2011. "Geotechnical Investigation, Edmonton Valley Zoo Revitalization, 13315 – Buena Vista Road, Edmonton, Alberta, PMEL File No. A10-1663."

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Also cited was a March 2011 Phase II ESA[7] by PMEL which noted that the surficial soils were not salt impacted and that metals and hydrocarbons met AEW 2010 Tier 1 residential / parkland coarse-grained soils criteria. Groundwater was found to meet AEW 2010 Tier 1 criteria for routine water chemistry parameters.

A supplement to the EIA[8] was issued in June 2011 and did not identify additional items of potential environmental concern.

3.2.7.3 EBA Phase I ESA – June 2011

In June 2011, EBA issued a Phase I ESA[9] carried out on the Valley Zoo property carried out as part of a re-zoning application. EBA's report identified the following environmental concerns for the Edmonton Valley Zoo:

- Management of stormwater and run-off are a concern, including inflow of run-off from the upslope communities;
- The compost manure pile in the southwest portion of the property is not lined and has no secondary containment to control surface run-off;
- Two UST's were identified as having been removed from the site; however there was no indication of confirmatory laboratory chemical testing being carried out; and
- Asbestos is present in at least four structures on the property.

EBA recommended a Phase II ESA for the area of the former UST's, that secondary containment is added to the compost area and that hazardous building materials testing is carried out prior to any extensive building renovations or demolition. They noted that the Edmonton Valley Zoo has a stormwater management plan and is constructing a stormwater management pond in the south-central part of the zoo property.

[7] P. Machibroda Engineering Ltd. March 7, 2011. "Phase II Environmental Site Assessment, Edmonton Valley Zoo Revitalization, 13315 Buena Vista Road, Edmonton, Alberta, PMEL File No. A11-1663.1."

[8] Eidos Consultants Incorporated, June 1, 2011. "Edmonton Valley Zoo Entry and Wander Environmental Site Assessment – Supplemental Submission."

[9] EBA, A Terta Tech Company, June 29, 2011. "Phase I Environmental Site Assessment, 13221 and 13315 Buena Vista Road, Lot 13R, Block 30, Plan 450 MC, NE & NW 24-52-25-W4M, Edmonton, Alberta."

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3.2.7.4 EBA Limited Phase II ESA – October 2011

In October 2011, EBA issued the results of its Limited Phase II ESA[10] carried out in the vicinity of the former UST's on the Edmonton Valley Zoo site. The EBA program consisted of advancing four test holes in the area of the former UST's and completing one test hole as a groundwater monitoring well.

The EBA test hole logs show sand and gravel fill overlaying a layer of clay (up to 2 m thick) which in turn overlays sand to a depth of approximately 5.3 m. Beneath the sand is a 0.8 m thick layer of clay which overlaid sand to a depth of 9.1 m (maximum depth of investigation).

The sample with the highest headspace reading from each test hole was submitted for benzene, toluene, ethylbenzene and xylene (BTEX) and F_1-F_4 hydrocarbon fraction chemical analyses. One groundwater sample was submitted for BTEX and F_1-F_2 hydrocarbon fraction analyses.

The EBA investigation found that soil samples submitted for BTEX and F_1-F_4 hydrocarbon fraction and the groundwater sample submitted for BTEX and F_1-F_2 hydrocarbon fraction analyses met AEW 2010 Tier 1 residential / parkland criteria for fine grained soil.

4. INTERVIEWS

The subject property was discussed with Mr. Colin Wenger, a 30 year employee at the Edmonton Valley Zoo on February 15, 2011. Mr Wenger has long term knowledge of the zoo and surrounding area. Mr. Wenger also referred Thurber to Mr. Kevin Bokenfohr, who is the CoE EnvISO program contact for the zoo. Mr. Bokenfohr arranged a February 22, 2011 meeting between Mr. Michael Halliwell, of Thurber, Ms. Tannia Franke, Mr. Alan Otterbein and Mr. Bokenfohr of the CoE. Ms. Franke was able to provide additional reports regarding the Edmonton Valley Zoo for Thurber's review. Comments from Mr. Wenger, Ms. Franke, Mr. Otterbein and Mr. Bokenfohr are incorporated into the assessment in Section 5.

5. ASSESSMENT

The assessment was based on a February 15 and 16, 2012 site reconnaissance of the subject property by Mr. Michael Halliwell, EP, P.Eng., of Thurber, interviews with persons familiar with the subject property, a review of previous investigations on the subject property, a historical

[10] EBA, A Terta Tech Company, October 11, 2011. "Limited Phase II Environmental Site Assessment, 13221 & 13315 Buena Vista Road, Lot 13R, Block 30, Plan 450 MC, NE & NW 24-52-25-W4M, Edmonton, Alberta."

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photograph review and documentation from various regulatory and third party agencies. At the time of the site reconnaissance the subject property was snow covered (up to 10 cm).

Photographs (1 through 9) of the subject property taken during Thurber's site reconnaissance are included in Appendix B.

5.1 Past/Present Operations - Subject Property

The subject property consists of an irregularly shaped parcel of land developed as two municipal parks with recreational facilities present. The subject property is zoned Metropolitan Recreation Zone (A); however the Edmonton Valley Zoo portion of the subject property is currently being evaluated for consolidation and re-zoning to River Valley Activity Node (AN) to make it consistent with other CoE facilities in the North Saskatchewan River Valley. Development of the Edmonton Valley Zoo is on-going (Photo 2 in Appendix B)

Buena Vista Park, located on the northern portion of the subject property, includes (from north to south) a pedestrian bridge to William Hawrelak Park, an access road/trail from 138 Street, an EWP storage building, two ERC boathouses (Photo 6 in Appendix B) and a dock when the river is not frozen, the ERC rowing tank building (Photo 8 in Appendix B), a residential house (former Yorath residence, see Photo 5 in Appendix B), gravel parking areas and gravel access roads from Buena Vista Road. Laurier Park, located on the southern portion of the subject property, includes the Edmonton Valley Zoo, gravel parking areas (zoo and park related), an asphalt paved road, boat launch, picnic sites, two propane ASTs and public washrooms. Both parks include multiuse and unimproved trails.

Prior to development as a municipal park and zoo starting in the late 1950's, portions of the subject property included residential housing, commercial yards (Photo 7 in Appendix B) and a gravel pit back to the 1930's. Prior to commercial and residential development, the subject property had been used for agricultural land or as undeveloped parkland since at least 1912.

5.2 Past/Present Operations – Adjacent Properties

The subject property is surrounded by a mixture of residential and parkland properties. To the north, east and south are the North Saskatchewan River with greenspace/parks, residential housing and an equine stable beyond. To the west are residential homes with schools and long term care facilities beyond (near 142 Street).

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Prior to residential development starting in the late 1950's, the surrounding areas to the west were used for gravel pit operations, agricultural land or were undeveloped since 1912. Areas to the north, east and south have generally been part of the North Saskatchewan River with greenspace, residential housing or agricultural land beyond since at least 1912.

5.3 Underground or Aboveground Storage Tanks

Two 1,800 L fuel USTs are known to have been present in the northern portion of the Valley Zoo site until 1990. A 2011 Limited Phase II ESA carried out by EBA indicated that there were no residual soil or groundwater hydrocarbons associated with the removed UST's. A propane AST with an identified capacity of 227 kg (500 lb) is present in the northern extent of the Edmonton Valley Zoo site. A similar propane AST is present to the north of the main public washrooms in Laurier Park (Photo 3 in Appendix B). Visual evidence of petroleum UST's or other petroleum AST's was not observed on the subject property at the time of the site reconnaissance.

Public washrooms in the western portion of Laurier Park are known to have an underground septic tank present. A small AST is also present in Buena Vista Park as part of a portable toilet installed for public use. A concrete structure adjacent to the ERC Rowing Tank suggests the presence of a cistern or septic system at that location (Photo 8 in Appendix B).

A salt water tank for aquatic mammals (sea lion pool) and a man-made stormwater control lagoon are present within the Edmonton Valley Zoo site. The ERC rowing tank building contains a freshwater tank (in-ground pool) for off-season rowing practice.

5.4 Sumps and Floor Drains

Sumps and floor drains are known to be present within several buildings on the Edmonton Valley Zoo site. It is understood that these facilities carry wash water from floor cleaning associated with housekeeping activities.

Floor drains associated with the rowing tank are anticipated to be present within the ERC rowing tank building.

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5.5 Polychlorinated Biphenyls (PCBs)

Two pole mounted transformers were observed on the subject property while numerous pole mounted transformers are present in the adjacent residential development. Six transformers were identified on the Edmonton Valley Zoo site in the 2011 EBA Phase I ESA[11].

Fluorescent and high-intensity discharge lighting was also observed throughout the subject property. PCB-containing light ballasts and transformer oils were phased out in the early 1980's and, given the age of the developments in the area, it is possible that the transformers or lighting contain PCBs. The high-intensity light and pole-mounted transformers observed in the vicinity appeared to be in good condition with no obvious visual signs of leakage. PCB containing light ballasts do not represent an environmental risk as long as they are not leaking. If present, PCB light ballasts should be disposed of in an appropriate manner when replaced.

5.6 Asbestos

Asbestos-containing materials (ACM) is known to be present in four buildings and is suspected to be present in other buildings on the Edmonton Valley Zoo site. Given the age of other structures, such as the former Yorath residence, public washrooms in Laurier Park, original ERC boathouse, and EWP storage building, it is possible that ACM are present at other locations on the subject property. If ACM is present, as long as it is enclosed or not friable (easily releases fibres) it is not an environmental concern. Determining the presence of ACM requires sampling and assessment, which is beyond the scope of work for a Phase I ESA.

5.7 Waste Management, Hazardous Materials and Chemicals Handling

Numerous waste receptacles (maintained by the CoE) and recycling bins, maintained by outside contractors, were observed at various locations on and around the subject property.

Limited quantities of chemicals are known to be present at the Edmonton Valley Zoo for maintenance activities (i.e. cleaners and supplies for grounds-keeping equipment) and operations (i.e. water treatment for aquatic mammal tanks) as well as at the ERC Rowing tank (pool chemicals for maintaining the rowing tank). Hazardous materials were not observed on the subject property at the time of the site reconnaissance.

[11] EBA, A Terta Tech Company, June 29, 2011. "Phase I Environmental Site Assessment, 13221 and 13315 Buena Vista Road, Lot 13R, Block 30, Plan 450 MC, NE & NW 24-52-25-W4M, Edmonton, Alberta."

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Small amounts of litter associated with public use were observed in both Buena Vista Park and Laurier Park. Although Buena Vista Park is designated as an off-leash area for dogs and the CoE has an *Animal Licensing and Control Bylaw* (Bylaw 13145), significant amounts of dog feces were observed in open areas of the park and along access routes from the surrounding communities. It is understood that there is a volunteer clean-up program in May and September each year for off-leash areas.

5.8 Soil Stockpiles / Fill

A gravel pit was known to operate on the southern half of the subject property and past investigations have identified the presence of fill material on the former gravel pit site. A 2011 Phase II ESA[12] indicated that fill materials met AEW 2010 Tier 1 criteria where tested on the Edmonton Valley Zoo site.

Soil stockpiles to be used as part of the Edmonton Valley Zoo revitalization are also known to be present on the southwestern portion of the zoo site. A stockpile of soil from an unknown source was observed below the Hawrelak Park footbridge (see Photo 9 in Appendix B).

The historical air photo noted soil stockpiles in the northern part of Buena Vista Park in 1965 as well as windrows of stockpiled soil in 1978 and 1984. Observations of the windrow area during the site reconnaissance suggest that portions of the windrows still remain on the subject property (Photo 4 in Appendix B). The source of this material could not be ascertained.

5.9 Compost Area

The Edmonton Valley Zoo maintains a compost area for animal manure in the southwest portion of the zoo site. It is understood that carnivore and primate manure is specifically excluded due to the potential for the transmission of pathogens. EBA's 2011 Phase I ESA[13] on the zoo site indicated that there is no liner beneath the compost piles and that there is no secondary containment for controlling run-off.

[12] P. Machibroda Engineering Ltd. March 7, 2011. "Phase II Environmental Site Assessment, Edmonton Valley Zoo Revitalization, 13315 Buena Vista Road, Edmonton, Alberta, PMEL File No. A11-1663.1."

[13] EBA, A Terta Tech Company, June 29, 2011. "Phase I Environmental Site Assessment, 13221 and 13315 Buena Vista Road, Lot 13R, Block 30, Plan 450 MC, NE & NW 24-52-25-W4M, Edmonton, Alberta."

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5.10 Surface Staining

Surface staining, associated with vehicle parking, was observed in the Edmonton Valley Zoo gravel parking area at the time of the site reconnaissance; however, the general observation of surficial contaminant staining was limited due to the presence of snow cover (up to 10 cm).

5.11 Potential for Lead

Use of lead in most paints was phased out in the mid-1970s. Given the age of the various structures on the subject property and recent restrictions to permissible lead content outlined in the Government of Canada 2011 “Surface Coating Materials Regulation,” it is likely that lead-containing paints are present. Care is required in any work involving demolition, cutting, grinding and sanding that could release airborne lead paint dust.

Mr. Wenger noted that the Edmonton Valley Zoo makes extensive use of electric vehicles (i.e. golf carts) on their site for maintenance and as part of the zoo attractions (electric train). Lead-acid or lead paste batteries are present on the zoo site to power these vehicles. Batteries containing lead should be disposed of in an environmentally responsible manner at the end of their service life.

5.12 Chlorofluorocarbons (CFC’s)

Chlorinated fluorocarbons (CFC’s) are coolants normally used in air-conditioning and cooling systems. Air-conditioning units, refrigerators and freezers are present on or within structures on the subject property. These uses pose no threat to the health of workers or to the value of the real property. However, recent legislation provides for significant penalties for the release of CFC’s into the atmosphere.

5.13 Oil and Gas Facilities

The ERCB; as accessed through the AbaData® database, does not have records of wells, leases, complaints or facilities on the subject property as of January 31, 2012. One high-pressure natural gas pipeline is located approximately one kilometre to the east and the ERCB has records of three abandoned wells and two odour complaints within one kilometre of the subject property boundaries.

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5.14 Unidentified Substances

Unidentified substances were not observed on the property at the time of the site reconnaissance.

5.15 Odours and Air Emissions

Strong, pungent or noxious odours were not observed on the subject property during the site reconnaissance.

5.16 Potable Water

The subject property obtains its drinking water from the North Saskatchewan River via the CoE's water treatment plants. Potable water is stored in the City's reservoirs and distributed via a municipal distribution system.

Information from AENV's Alberta Water Well Information Database, as obtained via the Abadata® database (current to January 31, 2012) lists two groundwater wells (for domestic use) on and six groundwater wells (five for domestic use, one for an unknown purpose) within a one-kilometre of the subject property. It is not clear whether the two groundwater wells on the subject property are still in use.

5.17 Urea Foam Formaldehyde Insulation

Foam type insulation was not observed at the time of the site reconnaissance.

5.18 Electromagnetic Fields

Numerous overhead power lines and pole-mounted transformers were observed on and in the vicinity of the subject property at the time of the site reconnaissance. A vault-style transformer is present on in the utility compound along Buena Vista Road and a power utility right of way is present from 86 Avenue to the North Saskatchewan River, crossing Buena Vista Park. Determining the presence of EMF normally requires metering and assessment, which was not part of the scope of this assessment.

5.19 Mercury

Known sources of liquid mercury were not observed on the subject property during the site reconnaissance; however, the interiors of the structures were not included as part of this

Phase I ESA. Given the age of the structures on the subject property, liquid mercury actuated heating, ventilation and air conditioning (HVAC) controls may be present. Small amounts of mercury vapour are typically present in fluorescent light tubes, which were observed in, on or around multiple structures on the subject property. When light tubes are replaced, the tubes should be disposed of in an environmentally responsible manner.

5.20 Pesticides and Herbicides

The subject property is known to have a history of agricultural and parkland use and fertilizers, herbicides and pesticides may have been present. However, a CoE city council directed "herbicide free" program is in effect at Laurier Park[14] and the CoE has a general commitment to minimize herbicide and pesticide use[15]. Areas of stressed vegetation were not visible in the historical air photos or during the site reconnaissance.

6. CONCLUSIONS

The Phase I ESA was based on researched history of the subject property, interviews with persons familiar with the subject property and surrounding area, a site reconnaissance and documentation from various regulatory and third party agencies. An assessment of structure interiors on the subject property was not included in the scope of work; however, observations of the interiors were made from publically accessible areas. These are generally accepted environmental practices to identify available information on the property relating to environmental contamination for a Phase I ESA.

In general, the inspection performed for this Phase I ESA did not encounter visual or historical evidence (aerial photographs, past reports, agency and third party records) indicating that the subject property has been impacted by contaminants above generally accepted levels associated with sites of this nature. However, identified items of potential environmental concern include:

- Untested backfill material, related to a former gravel pit, outside of the Edmonton Valley Zoo site;
- A composting area without lining or secondary containment in the southwest portion of the Valley Zoo site;

[14] As indicated by the City of Edmonton website (as viewed on February 24, 2012): http://www.edmonton.ca/environmental/conservation_landscaping/herbicide-free-sites-council-d.aspx

[15] City of Edmonton Community Services Department, February 9, 2004. *City Policy Number C501, Integrated Pest Management.*

THURBER

- Residual soil stockpiles / windrows in the north portion of Buena Vista Park;
- A soil stockpile beneath the William Hawrelak Park footbridge, and
- A former commercial yard (CoE Northwest Distribution Yard) in the east-central part of Buena Vista Park.

In order to assess the potential environmental impact arising from these concerns, it would be necessary to undertake a sampling and testing program that is beyond the scope of work for a Phase I ESA.

SCM Risk Management Services Inc. was contacted to conduct a search for IAO information pertaining to the subject property; however, a reply has not been received as of the date of this report. Should their response indicate additional items of potential environmental concern, an addendum to this report will be issued.

7. QUALIFICATIONS OF THE ASSESSOR AND REVIEW PRINCIPAL

7.1 Mr. Michael Halliwell, M.Eng., CESA, EP, P.Eng.

Mr. Halliwell obtained his Bachelors of Science (Civil Engineering, 1998) and Masters of Engineering (Environmental Engineering, 1999) from the University of Alberta and is a Professional Engineer (P.Eng.) with over 11 years of environmental site assessment experience. Mr. Halliwell has been with Thurber since 2000 and during that time has progressed to become an Associate with the firm. While with Thurber, Mr. Halliwell has completed more than 150 Phase I ESA's. In 2005, Mr. Halliwell completed the Associated Environmental Site Assessors of Canada (AESAC) Phase I ESA Training course and is presently a Certified Environmental Site Assessor (CESA) with AESAC. Mr. Halliwell is also an Environmental Professional (EP) registered with the Canadian Environmental Certification Approvals Board (CECAB).

7.2 Mr. Neal Fernuik, M.Sc., P.Biol., P.Eng.

Mr. Fernuik obtained his B.Sc. in Biology from the University of Saskatchewan in 1980, a B.Sc. in Civil Engineering from the University of Alberta in 1982 and his Masters of Science (Environmental / Geotechnical Engineering) from the University of Saskatchewan in 1987. Mr. Fernuik is a Professional Biologist (P.Biol.) and Professional Engineer (P.Eng.) with over 25 years of experience. Mr. Fernuik has been with Thurber since 1988 and during that time has progressed to become a Principal of the firm. Mr. Fernuik has extensive experience in environmental assessments and in National and International projects in soil and ground water contamination detection and monitoring, project administration and construction supervision.

Appendix C
Yorath House Condition Assessment & Adaptive Reuse Summary

Yorath House Condition Assessment & Adaptive Reuse Summary

Summary Provided by Group 2

Existing House and Historical Significance

The Yorath Residence was one of the last portions of privately owned river frontage properties to be acquired by the City of Edmonton for inclusion within the River Valley park system. The house is believed to be one of few remaining outside of established neighbourhoods located on the river flats and is representational of some of the large estate properties that once existed alongside the North Saskatchewan.

The 2 storey house was built in 1949 for Dennis K. Yorath MBE, an Alberta business man and outstanding citizen, and his family. The single-family home is of early modern style with west coast influences and was designed by the prominent architectural firm of Rule Wynn Rule.

The property has been placed on the City of Edmonton, Inventory of Historic Resources and through the masterplan process discussions have occurred to designate the property as a Municipal Historic Resource.

Existing Condition

The house is in relatively good condition given the age and lack of ongoing maintenance that has occurred since the property was vacated in 1992. There are some immediate concerns that should be urgently addressed to prevent the condition of the house from deteriorating significantly before the adaptive re-use of the property is undertaken.

The general foundations and stud framing of the building are in excellent condition and while the roof finish requires replacement the roof structure is unlikely to require any amendments with the exception of those for the installation of the new elevator. The exterior cladding is generally in good condition with some noted areas of concern but is serviceable and should be retained. Similarly the majority of the windows and doors can be restored and upgraded with new sealed units.

Through the BVLPMP consulting process, it was recommended to retain the property as a four season multi-purpose public amenity building for the park. The existing floor structure is not capable of supporting these loadings and will require upgrading as will the large south roof terrace. While the interior of the house has remained relatively unchanged since it was vacated, significant modifications are required to fulfil the program requirements. Every effort will be made to retain the character defining elements of the interior in the rehabilitation of the property.

Proposed Redevelopment

The design response creates a large open multi-use space at main floor by removing some of the interior walls to the living room, dining room and kitchen and raising the floor in the living room to provide barrier free accessibility. The existing freezer / cold storage is removed and the mechanical space and laundry re-configured to create a concession / servery area that could be operated independently from the main facility by use of a sliding partition or coiling grille. A small preparation kitchen area is created where caterers can set up for events. No commercial kitchen / cooking facilities are provided. The garage and solarium will be utilized for washrooms to serve the facility and the park as a whole with a separate external entrance. A separate barrier free washroom is provided for park users when a major event is being held in the facility.

To provide for barrier free accessibility to the second floor, the small addition that was constructed in 1985 will be removed (along with the access corridor to the west of the garage) and a new stair and elevator installed.

Group2 architecture interior design

At second floor level a number of the interior partitions will be removed to create meeting space, a multi-purpose room and a studio for an artist in residence. An administration office and barrier free washroom complete the proposed layout. The south roof terrace will be reconstructed to comply with the current Building Code. New mechanical and electrical systems and distribution will be required.

In upgrading the building to comply with the current Code for assembly occupancy there are 2 major classifications that can be applied to the property. One requires the supporting structure to be upgraded to 45min rating and the other requires the building to be provided with a sprinkler system. Through the design development stage of the project both options will be investigated and value engineered to determine the most effective solution.

The conservation plan has identified the works that are required to the property by building element. They acknowledge the desire to designate the building as a Municipal Historic Residence and interventions to the property have been developed in accordance with the Standards and Guidelines for the Conservation of Historic Places in Canada.

Outline of Probable Construction Cost and Recommendations

This budget estimate is provided based on generic cost per sqft allowances and without the benefit of detailed architectural and engineering drawings and specifications developed in consultation with the client. Should the project proceed with designation as a Municipal Historic Residence, the construction costs may increase slightly while grant assistance monies are available through the City of Edmonton Historic Resource Management Plan.

- Recommended Concept Design Budget (Designation) $805,875
- Potential grant assistance monies $75, 000
- Recommended Concept Design Budget $758,625

The condition assessment had noted a number of items that needed to be addressed in the short term to mitigate further deterioration of the property. It is strongly recommended that these are undertaken to stabilize the building envelope.

While it is recognized that the project approval and commencement of construction activities are subject to funding approval, it is recommended that the consultant team are instructed to commence the design development stage of the project in October of 2013 and engage the services of structural, mechanical and electrical engineers to provide a more detailed scope of work and associated budget pricing. This will facilitate a construction start in April of 2014 to take advantage of summer construction for the majority of exterior works.

It is also recommended that the project is procured using a construction management form of contract to enable a thorough examination of the existing building and proposed mechanical and electrical systems through the design development and contract documents stage. This form of contract will also provide budget updates to the City and allow an enabling works package for demolition and remediation to reduce the project schedule.

Appendix D
List of Essential and Non-Essential Programming

Program Elements

The program elements for the park areas focus on areas that need some change or adjustment to improve their function or to provide additional amenity opportunities for park users that fit within the vision for Buena Vista/Sir Wilfrid Laurier Park. Areas of the park not mentioned in this section are not currently being considered for modification.

The visioning process was developed to encourage idea collection on a broad range of scales from integration of the park into the surrounding community and river valley park system to individual park elements. Interviews with stakeholders also provided considerations for park developments. Finally meetings with the advisory committee and other stakeholders have provided both context for park use as well as ideas for enhancement of the park facilities. Engagement evaluation forms provided from the various input sessions suggest that the public and stakeholders are engaged in the park master planning process and feel heard on issues surrounding the park use. See the attached appendix for the 'What We Heard Documents' from the public and stakeholder engagements as well and the engagement evaluation forms.

The following program elements were developed through review all previous of previous documents, review of information gathered from the public, Advisory Committee and stakeholder events, and in consultation with the City of Edmonton staff.

The program elements have been divided into five categories – Recommended general improvements, recommended improvements to Sir Wilfrid Laurier area, recommended improvements to the Buena Vista area, additional improvement ideas and options for Yorath House and it surrounding property. Additional non-essential improvement ideas for to the park setting are provided at the end of this section.

Recommended Park Improvements

General

Improvements for the park setting as a whole will address access issues and integration within the River Valley park system. General programmatic improvements include:

- Improve signage including: off leash boundary notification, directional signage, and identification of the Trans Canada Trail
- Improve the entrance of the park to clearly identify park areas and uses, add a parks entry sign that has event notification opportunities (electronic?), and add distance markers for runners
- Add or improve function of parking areas – Zoo parking is currently available but access to this parking will reduce over time as zoo redevelops
- Add opportunities for barrier-free access to the park; including access to the river and off leash opportunities

- Add and improve washroom facilities for year-round use in the park (improve barrier free access): the Zoo entry court will have one washroom for year round use, add washroom by the boat launch and by the bridge
- Use required storm water management facility (for managing off site water) as a park amenity with preference for a wetpond – Further information is required for location within the park

Buena Vista Area

Improvements for the Buena Vista area will maintain and enhance the existing natural character found onsite. Improvements will focus on enhancements for the off leash area including a washroom facility and information sharing centre, barrier free off leash access, improved parking, defined access locations to the river and improvements to park infrastructure. Specific program elements for this area of the park include:

- Establish the official name of Buena Vista Park
- Paved 3m Shared Use Pathway to replace the existing gravel pathway – this will be considered a commuter route, add rest areas
- Adjust alignment of main spine trail to improve sightlines and provide natural separation between off leash and trail uses
- Improvement of Looping trails – But keep small scale (1.5 -2m) width and natural looking, close and rehabilitate non-essential trails
- Provide a washroom, drinking fountain, dog water station and information Kiosk north of the existing west parking lot, review additional locations for washrooms with in the park
- Fenced barrier free secure dog off leash and dog training area
- Add lighting to specific areas of Buena Vista (i.e. parking and rest areas) – must be night sky friendly
- Add rest areas including benches, waste receptacles and doggy bags
- Adjust off-leash area to allow access to the water
- Add kiosk at Bridge access location
- Improve and increase parking for users
- Remove and manage invasive species found with in the park, re-establish native vegetation

Sir Wilfrid Laurier

Improvements for Laurier Park will generally maintain the existing character found onsite. Improvements will focus on enhancements around the boat launch, added barrier free picnic access, offsite storm water management for the Zoo, better access to the river and additions to park infrastructure. Specific program elements for this area of the park include:

- Reverse flow of traffic through the Sir Wilfrid Laurier Park to improve wayfinding at the entrance with three discernible activity areas
- Provide an opportunity for a park urban forest succession plan (non-native areas)
- Increase the number of reservation and non-reservation picnic sites

- Add small accessible picnic areas (5-8 sites) with paved surface and typical amenities
- Add river viewing areas, along the river trail to provide visual access to the river and minimize physical access to the river edge
- Provide larger group picnic sites that can be split into two spaces
- Upgrade the staircase on the south west end of the site
- Improve and increase the size of the boat launch including improved designated parking
- Improve power service to event spaces for hosting large events
- Provide a lit skating area
- Add a cross country ski loop with ski tracks set and maintained by a local ski club.
- Explore snowshoeing opportunities within the park
- Improve activity areas for children including a natural play area and/or traditional playground equipment and / or a spray park facility
- Barrier free play equipment to encourage intergenerational play
- Maintain or improve existing trail connections
- Zoo SWMF Wetland or pond to treat and detain storm water from the Zoo and Laurier Heights
- Add an information layby when accessing the park to enhance new user experience and provide information on upcoming park events
- Add accessible dock / river access to Laurier boat launch area – Improve as a canoe destination along the river

Yorath House and Surrounding Property

Yorath House

Options for the Yorath property fall into two categories: demolish and rehabilitate the site or improve the existing building to provide amenity space for a variety of uses. Yorath house offers a unique opportunity to restore and enhance a building with heritage value within the park system while providing opportunities for recreational and cultural development, while addressing an increasing need for year round indoor facilities within the river valley parks system. Opportunities for City of Edmonton use of Yorath House are currently being explored. Current Concepts for Yorath House include:

- **Demolish the Building**: building is removed and the City will integrate the Yorath Property into the active spaces of Laurier Park while providing active connections to the Laurier Park area and an accessible connection to the North Saskatchewan River

- **Retain the Building:** building is retained and the City will undertake all modifications and improvement to the exterior shell of the building to bring the building up to a minimum state that users or City personal can occupy Opportunities currently being explored are:

- Develop Yorath House as a multi-functional building – Supporting City administrative uses in the upper floor and public access for the lower floor
- Develop Yorath House as a Community Arts Centre (programming by the City of Edmonton or alternatively by a local group)
- Single or shared use community, City or non-profit facility

- **Develop the Site to compliment future uses – the following will be explored through the concept development process:**
  - Re-establish the upper patio and garden space combination with outdoor small scale kiosk (café space)
  - Develop arboretum demonstrating native vegetation
  - Re-establish a small scale orchard for public food consumption – demonstrating local food production opportunities
  - Develop a small scale day use space that provides river travelers a rest area within the City limits
  - Develop the lower lawn as a winter skating area and use
  - Interpretive signage regarding the history of the site, settlement of the area, Ribbon of Green forefathers

Appendix E
July 2012 Concept Plans

Rationale for BVLP Master Parking Expansion

Three draft concepts with design elements were created and presented to the public via a Public Workshop in June and then via an online survey in July/August to reach members of users and interested stakeholders. Though each concept plan creates a complete vision for the park, the plans were intended to be read together to form a palette of design options. It was anticipated that no one plan would be considered the ultimate solution for the park. Instead the concept plans were used as a tool for the public to review, discuss, and indicate preference for different project elements.

For clarity, instead of describing the concept plans individually, the following outlines the design elements and options that were presented to the public in the concept plans.

Park Entrance Improvements

Description of Element: Key elements of the entrance improvements include additional boulevard trees along Buena Vista Rd., additional natural low shrub and perennial plantings, a park sign and information board with vehicle pullout (lay-by).

Rationale: Improvements at the park entrance on Buena Vista Road will help visitors understand they are entering a river valley park. Currently, the park does not have a well-defined entrance and new visitors to the site may find it difficult to understand where different facilities and amenities are located.

The roundabout forms a strong "finish" to Buena Vista Road visually creates an entryway into the different park sites. It also helps reinforce the three main destinations; the Zoo, Buena Vista, and Laurier Park.

Design Options: Concept 1 shows the entrance with the same roadway and intersection configuration.

Concept 2 and 3 show a single lane roundabout at the intersection near the entrance. This provides a strong focal point with opportunities for improved signage and additional enhanced entry

landscaping.

Public Response: According to the online survey conducted in July 2012, **79% of respondents supported or somewhat supported the entrance improvements in Concept 1 (no round-about);** whereas, 17% did not support or somewhat did not support it. Of the respondents 4% were undecided.

According to the online survey conducted in July 2012, **45% of respondents supported or somewhat supported the entrance improvements in Concepts 2 and 3 (with round-about);** whereas, 37% did not support or somewhat did not support it. Of the respondents 6% were undecided.

Signage

Description of Element: Signage is considered to be an important element of Buena Vista/Laurier Park improvements. The types of signage include entrance sign features, wayfinding, information boards, and information signage (boundary indication, permissible pathway use, etc).

Rationale: Entrance sign features are an important part of creating a great first impression when entering a space. The existing entrance signs need to be upgraded with an aesthetic and coordinated design. All three destinations, Buena Vista, Laurier Park, and the Edmonton Valley Zoo, should be clearly indicated at the intersection that marks the entrance to the site.

Wayfinding signage allows visitors to navigate through the park and encourages users to make use of the park's various amenities. Wayfinding can also be used to identify recreational opportunities and connections to open spaces and pathways outside of the park.

Information boards provide spaces where park users can learn about the amenities available in the park, events taking place, and provide space for park users to post information.

Throughout the project, stakeholders and park-users have identified the need for clearer, consistent information signage. Currently, there is a great deal of confusion over the extent of the off leash area and pathways that allow or disallow cycling (etc.). A comprehensive signage plan would help alleviate some of these concerns, allow for improved bylaw enforcement, better

inform park users, and help facilitate cooperation between user groups.

Public Response: Preferences for signage were not identified by survey; however, signage has been a reoccuring theme in public comments received during the public consultation process.

Viewpoints and Riverside Pathway Improvements

Description of Element:

Low-key viewpoints are provided along the riverside pathway in Laurier Park in areas that can be easily modified to provide river views. Minor improvements to bank stabilization and pathway surfacing are recommended along the riverside pathway.

Rationale:

Viewpoints along the riverside pathway provide visitors with the ability to experience a connection to the river, without walking down goat trails to the riverbank. In areas river bank erosion is beginning to become a concern. Bank stabilization and vegetation will protect the bank and help prevent people from creating trails to the water. Resurfacing (granular) and minor regrading will help prevent puddling during rain events and prevent trail widening when people try to walk around wet areas of the pathway.

Public Response:

According to the online survey conducted in July 2012, **66% of respondents supported or somewhat supported the viewpoint and riverside pathway improvements;** whereas, 24% did not support or somewhat did not support it. Of the respondents 7% were undecided.

Asphalt Shared-Use Pathway

Description of Element: Asphalt surfacing of the main shared use pathway (SUP) through the entire park increases barrier free accessibility in all four seasons. The Class 1 main shared use pathway is part of the City wide river valley network and the Trans Canada Trail.

Rationale: The main pathway running through Buena Vista/ Laurier Park is a designated Class 1 shared-use pathway and is designated as part of the Trans Canada Trail. According to the City of Edmonton's Roadway Design Standards (2011), Class 1 shared-use pathways should be constructed as 3m wide asphalt pathways. This standard was adopted and publicly supported during the preparation of The Ribbon of

Green Master Plan. Resurfacing of the granular trail to upgrade it to asphalt allows for better barrier-free access, four-season maintenance, and multimodal transportation.

In the Program Statement for Buena Vista / Laurier Park Development (1993), a 3m wide asphalt shared-use pathway was recommended to be installed at the time of the Hawrelak pedestrian bridge construction to help direct pedestrian and cyclist traffic from the Hawrelak Park pedestrian bridge. It is also acknowledged in the Program statement that some areas require landscape measures to "screen that Great Meadow from the multi-use trail, and to limit potential bicycle traffic off the main trail". These recommendations were publically supported during the Program Statement creation. The following recommendations are a continuation of this work.

Design Options: Concept 1 encourages a cooperative use environment by providing an asphalt shared use pathway that follows the existing major pathway alignment, with post and rail fencing along the section of the pathway that is directly adjacent to the off leash area.

Concept 2 and 3 re-aligns the main shared use pathway to run through the existing small "meadows" provides separation between pathway and the off leash area (requires some tree clearing). This alignment takes advantage of existing small open meadow areas and provides an opportunity rehabilitate areas of noxious vegetation. The abandoned section of the existing shared use pathway would be used as part of an off leash looping pathway, marking the boundary of the off leash area.

Public Response: According to the online survey conducted in July 2012, **56% of respondents supported or somewhat supported paving the shared-use pathway with asphalt;** whereas, 41% did not support or somewhat did not support it. Of the respondents 3% were undecided.

According to the online survey conducted in July 2012, **55% of respondents supported or**

somewhat supported the Concept 1 shared-use pathway alignment; whereas, 36% did not support or somewhat did not support it. Of the respondents 8% were undecided.

According to the online survey conducted in July 2012, **52% of respondents did not support or somewhat did not support the Concept 2 and 3 shared-use pathway alignment;** whereas, 37% supported or somewhat supported it. Of the respondents 11% were undecided.

Buena Vista Looping Pathway Surfacing

Description of Element: Improve barrier free access along a few existing pathways in the off leash area by upgrading them to 1.8m wide hardened surface (not asphalt). The pathway surface is intended to be a material that will blend in with the natural setting. Crushed limestone or a combination of gravel, sand and clay (Calgary pavement) are examples of hardened surface materials that fit with Buena Vista's natural setting.

Rationale: Preferred pathways would be those that are well used and create loop(s) to allow users to complete a return trip around the site. By hardening the surface with natural looking materials, barrier-free access is accommodated without adversely altering the look of the site. Hardened surfaces will also allow users to use the pathways when weather is poor and the ground is saturated. Currently, when flooding occurs, the pathways become widened as people walk along the grass edge to avoid puddles.

Design Options: Multiple alignments that use existing pathways are shown on all three concept plans.

Public Response: According to the online survey conducted in July 2012, **61% of respondents supported or somewhat supported the hardened looping pathways in the off leash area;** whereas, 35% did not support or somewhat did not support it. Of the respondents 4% were undecided.

Preferences for pathway locations were not identified by survey.

Parking Along 132 Street

Description of Element: Extending parking along the edges of 132 St. by providing right angle parking stalls will increase parking capacity for the off leash area by approximately 29 stalls.

Rationale: The off leash parking is often at full capacity during peak days in the summer months. Currently the north side of 132 Street is designated as parallel parking. Because the land adjacent to the roadway is relatively flat, it is relatively simple to increase the number of stalls by changing it to 90° stalls and to evaluate if there is a reasonable enough space to allow for parallel parking on the south side of 132 St.

Public Response: According to the online survey conducted in July 2012, 8**0% of respondents supported or somewhat supported parking expansion along 132st;** whereas,

17% did not support or somewhat did not support it. Of the respondents 3% were undecided.

Shared-Use Pathway / Off leash Pathway Mitigation

Description of Element: Install sections of post and rail fence and planted buffers where required to provide improved separation and definition between the off leash area and the shared use pathway, while maintaining safe sightlines. At intersections between the shared use path and the off leash pathways use 'dog legs', short lengths of fence that force pedestrian to slow down when approaching intersection and rumble strips, in the shared use pathway, will be used to identify important crossings.

The shared use pathway in Concept 1 follows the existing major pathway alignment, which runs along the off leash open space. Because there is no vegetation to provide a buffer between the off leash area and shared-use path a small section of post and rail fence delineates the edge and prevents dogs from running across the pathway that is frequently used by cyclists. If the Concept 2 and 3 shared-use pathway alignment is used, this section of fence is unnecessary.

Rationale: Both off leash park users and cyclists have expressed safety concerns in regards to accidents between bikes and dogs. In the 2009 Buena Vista/Sir Wilfrid Laurier Park Management Plan Public Consultation Report, the most frequently mentioned issues regarding conflicts include with dog owners (31%), conflicts with cyclists (24%), and bikes travelling too fast (18%). The main area where these issues are anticipated is related to the interface between the shared-use pathway and the off leash area.

As expressed in The Way We Move (2009), one of the City's sustainability mandates is to encourage active transportation by creating a "more walkable environment, a cycle-friendly city and an integrated network of multi-use trail facilities". It is also understood that the off leash area is one of the most popular and enjoyed places in Buena Vists/Laurier Park (Buena Vista/Sir Wilfrid Laurier Park Management Plan Public Consultation Report, 2009). In order to ensure a safe and enjoyable park experience, clear boundaries for each activity must be maintained to ensure that both activities are effectively supported.

In places where off leash pathways intersect with the shared-use pathway, additional measures beyond signage are necessary. The rumble strips on the shared use pathway will alert cyclists of the intersection, help slow their speed, and audibly notify dog-walkers of the coming bicycle. The "dog-legs" serve as a physical obstacle for movement. Since they are easily visible , they will compel the pedestrian (or dog) to zig-zag when approaching the intersection, and dog owners will have the opportunity to call their dogs and leash-up prior to crossing. Furthermore, these structures will restrict cyclists from exiting the shared-use pathway into off leash areas.

In areas where there is a strong vegetation buffer between open areas and the shared-use path, this issue may not be as great as long as signage is clear. In areas where the pathway is adjacent to open spaces there needs to be a physical barrier to prevent dogs from crossing the pathway without being leashed and to prevent cyclist from leaving the pathway and cutting across the off leash area. This is especially the issue if the Concept 1, shared-use pathway alignment is used (see Section 2.0 Asphalt Shared-Use Pathway). This area can also be supplemented with naturalized vegetation in order to lessen the visual impact of the post and rail fence, and reinforce the separation between the activities.

Public Response: According to the online survey conducted in July 2012, 6**1% of respondents supported or somewhat supported improvement to intersections (i.e. rumble strips and "dog legs");** whereas, 34% did not support or somewhat did not support it. Of the respondents 5% were undecided.

In the July 2012 survey, responses to the post and rail fence sections between the shared-use pathway and open off leash areas were submitted as comments, as opposed to a multiple choice question indication of degree of support/unsupport. For a list of responses regarding the post and rail fencing please refer to Appendix *.

Off Leash Boundaries Modification

Description of Element: Recognize current off leash use and formalize the off leash boundary on Buena Vista's north side just beyond the Hawrelak Park pedestrian bridge. This boundary is contained within Buena Vista's boundaries and does not include the preservation land north of Buena Vista. The proposed off leash boundary runs along an existing pathway.

Modify existing off leash boundaries in areas where overlapping activities, for example cycling and off leash activities, cause safety concerns. The shared use pathway is proposed as an on leash area.

Though the off leash boundaries are proposed to be modified, off leash users will be able to access the river and shoreline; however, locations for off leash access vary by concept. On leash access to the river is available in all areas of Buena/Vista Laurier.

Concept 1

Concept 1

Concept 1

Rationale: Modifications to the off leash boundaries are intended to help mitigate some of the overlapping activities on site that pose safety or environmental concerns. The formalization of the north boundary, which runs along an existing path, creates a more recognizable dividing line between off leash and on leash preservation area. Furthermore, it will enable off leash users to access the shoreline via a pathway under the pedestrian bridge, which will limit the need to cross the shared use path.

The modification to shoreline access routes, directly south of the pedestrian path, are intended to protect existing vegetation along the river and help mitigate bank erosion.

The southeast modifications to the shoreline are intended to provide a buffer between the paddling and rowing facilities and off leash areas. In the 2009 Buena Vista/Sir Wilfrid Laurier Park Management Plan Public Consultation Report, received "Dogs being off leash in on leash areas (i.e. the boat launch, dock areas)" is among the top three issues most commonly identified by the over 400 people who participated in the public consultation. There are safety concerns for people carrying equipment down to the docks when unleashed dogs enter the on leash area. By creating an on leash buffer around these sites, dog owners will have the opportunity to call their dogs and leash-up prior to reaching the rowing facilities.

Design Options: The three concept plans show different scenarios for off leash boundary modification. Concept 1 shows a conservative change to the boundaries. Concept 2 shows significant reduction of off leash areas around the rowing facilities and the northern riverside area. Concept 3 shows moderate modification to off leash areas, mostly around the paddling facilities.

Public Response: According to the online survey conducted in July 2012, **79% of respondents supported or somewhat supported formalization of the northern area of Buena Vista as off leash;** whereas, 14% did not support or somewhat did not support it. Of the respondents 7% were undecided.

According to the online survey conducted in July 2012, **68% of respondents supported or somewhat supported the Concept 1 off leash boundary modifications;** whereas, 23% did not support or somewhat did not support it. Of the respondents 9% were undecided.

According to the online survey conducted in July 2012, **72% of respondents did not support or somewhat did not support the Concept 2 off leash boundary modifications;** whereas, 21% supported or somewhat supported it. Of the respondents 7% were undecided.

According to the online survey conducted in July 2012, **70% of respondents did not support or somewhat did not support the Concept 3 off leash boundary modifications;** whereas, 23% supported or somewhat supported it. Of the respondents 8% were undecided.

Fenced Off Leash Training Area

Description of Element: Create a small (separate) fenced and gated off leash area for service dog training and for barrier-free access for elderly and mobility impaired (off leash) dog walkers. The area would include benches and a small looping asphalt pathway.

Rationale: Small fenced and gated training areas are common in many off leash dog parks. They provide dog owners with the ability to allow their dogs off leash in a contained area. This is especially important for owners who are still training their dogs and people with mobility issues, who are worried about their dogs running off. As well, service dog training programs, such as Dogs with Wings, have identified that they would benefit from a training area like this.

The proposed location of the training area is relatively close to parking and washrooms, which is important to people with mobility issues, while remaining in proximity to major area of the off leash area.

The area selected will not require tree removals, but remains nestled into an existing treed area.

Public Response: According to the online survey conducted in July 2012, **54% of respondents supported or somewhat supported the Concept 1 off leash boundary modifications;** whereas, 39% did not support or somewhat did not support it. Of the respondents 7% were undecided.

Rowing Tank/Yorath House/Off leash Parking and Access

Description of Element: Expand the parking lot near the rowing tank/and off leash parking lot for off leash and other park-users. Provide parking and better vehicle access for Yorath House if it becomes a public facility (see Section 2.0 Yorath House and Adjacent Terrace). Better access into the off leash area is provided in Concept 3.

Rationale: The parking lot near the Rowing Club Tank is well-used. Additional parking would be beneficial and take some of the pressure off of the existing off leash and rowing tank parking lots. The area adjacent to rowing tank parking lot is an open grass area and

construction would be relatively simple without requiring tree removals.

If Yorath House becomes a public facility, additional parking and better vehicle and emergency access to the site will be needed.

The off leash parking lot is well used and filled to capacity during peak seasons of the year. Additional parking would benefit off leash and other park users. An added benefit of Concept 3 is better access into the off leash area, which would provide better access for elderly people or people with mobility issues.

Design Options: Concept 1 and 2 provides for expansion of the existing off leash parking lot (increase of 30 stalls). This will effectively double the size of the parking lot by creating additional stalls to the east. Parking lot access will remain the same.

Concept 1 shows expansion of the parking lot near the Rowing Tank (increase of 60 stalls). The shared use pathway separates designated Rowing Club parking from off leash parking.

Concept 2 creates an expanded parking lot (increase parking to 120 stalls), keeping the designated stalls for Rowing Club use. A separate parking lot (Additional 30 stalls) with a roundabout would be created near Yorath House, with an optional connection to Laurier Park loop road.

Concept 3 proposes larger parking lot to expand/replace the Rowing Club lot and to provide parking for Yorath House (increase of 140 stalls), with part of the lot designated for Rowing Club use.

Concept 3 identifies that the existing roadway that is restricted to boat trailers accessing the paddling and rowing facilities, north of the existing off leash parking lot, would be opened to provide public

vehicular access and additional parking (40 additional stalls). A turn around and gate would be located near the Whitewater Paddlers and Edmonton Rowing Club.

Public Response: According to the online survey conducted in July 2012, **71% of respondents supported or somewhat supported the Concept 1 parking expansion;** whereas, 22% did not support or somewhat did not support it. Of the respondents 7% were undecided.

According to the online survey conducted in July 2012, **51% of respondents supported or somewhat supported the Concept 2 parking expansion;** whereas, 41% did not support or somewhat did not support it. Of the respondents 8% were undecided.

According to the online survey conducted in July 2012, **57% of respondents did not support or somewhat did not support the Concept 3 parking expansion (Yorath/Rowing Tank area only);** whereas, 34% supported or somewhat supported it. Of the respondents 9% were undecided.

According to the online survey conducted in July 2012, **55% of respondents did not support or somewhat did not support the Concept 3 the opening roadway north of the off leash parking for additional parallel parking;** whereas, 37% supported or somewhat supported it. Of the respondents 7% were undecided.

Yorath House and Adjacent Terrace

Description of Element: Yorath House is renovated into a public multi-use facility, while still recognizing the historical value of the house. The main floor is renovated to be utilized for a variety of functions by numerous interest groups. A small concession that may be used independently of the main event space is included in the design. There is improved access into the building, including access to public washrooms independent from the rest of the building. The second floor is designed to be used as offices or small meeting spaces. The building is upgraded to provide better barrier-free accessibility.

Rationale: Yorath House is an important historical asset in Edmonton. As well, its structure and foundations are in good condition, which allow it to be potentially renovated and reused as a multi-use facility.

Design Options: Concept 1 allows for the demolition and removal of Yorath House and reclamation of the site. This option is considered as a "worst-case scenario" should Yorath House renovation prove not to be economically feasible or of benefit to Buena Vista/ Laurier Park or the City of Edmonton.

Concept 2 (Figure 6.1) shows Yorath House remaining, with interior and exterior upgrades to provide a multi-use facility. This option would also include minor site improvements to the upper terrace, but the design of the landscape would be low key and simple.

Concept 3 (Figure 8.1) shows Yorath House remaining, with interior and exterior upgrades to provide a multi-use facility. Significant site improvements would include a high level of landscaping and a large patio on the upper terrace, which would provide a connection between indoor and outdoor event spaces.

Public Response: According to the online survey conducted in July 2012, **36% of respondents preferred Concept 3**; whereas, 26% preferred Concept 2 and 20% preferred Concept 1 . Of the respondents 18% were undecided.

Yorath House/Laurier Park Event Areas

Description of Element: The lower terrace between Yorath House and the river and the large event space in Laurier Park (north of boat launch) are consider to be important gathering space on the site. There is the opportunity to leave the spaces to function independently, though linked by a trail, or to modify the design to allow them to flow one into the other, though there remains some separation. Event servicing, power and water are considered to be important improvements to both sites.

Rationale: Event spaces are an important part of the City of Edmonton's parks and open space system. Laurier Park provides a venue for some events, but is very limited due to its small scale. As pressure and demand for event spaces increase as the City grows, places like Laurier Park could potentially experience an increase in use. The opportunity to provide two event spaces, the existing Laurier Park one and the lower terrace at Yorath House, would be of great advantage. The flexibility to use the spaces independently or as one continuous, though slightly separated, space would provide functionality for a range of event sizes. In order to accommodate this reconfiguration of the Laurier Park road would be necessary. As an additional benefit to road reconfiguration, Laurier's open space and proposed viewpoint (see Section2.0 Boat Launch Viewpoint Area) provide a strong focal point for the park, visible as people enter the site.

Design Options: Concept 1 and 2 identifies the two event areas as remaining separated by vegetation. Laurier Park roadway remains in its existing configuration.

Concept 3 identifies the two event spaces as no longer being separated by vegetation. Laurier Park roadway is reconfigured to provide a seamless transition between Yorath House and Laurier Park.

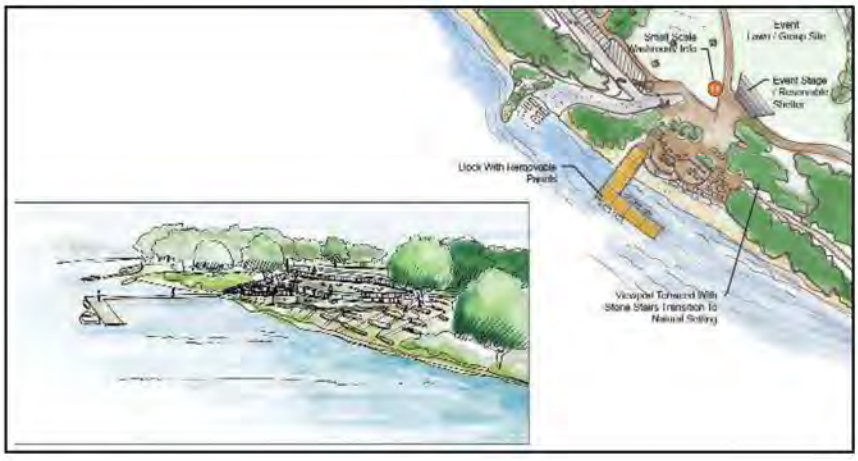
Public Response: According to the online survey conducted in July 2012, **57% of respondents supported or somewhat supported the Concept 2 Yorath House/Laurier Park event areas (separate spaces);** whereas, 32% did not support or somewhat did not support it. Of the respondents 10% were undecided.

According to the online survey conducted in July 2012, 4**8% of respondents did not support or somewhat did not support the Concept 3 Yorath House/Laurier Park event areas (linked spaces);** whereas, 39% supported or somewhat supported it. Of the respondents 13% were undecided.

Boat Launch Viewpoint Area

Description of Element:

A viewpoint area, complete with benches, wayfinding, information and other small amenities is provided near the existing boat launch on the top of the bank. The viewpoint ramps down to the shoreline and may connect to an optional dock out onto the water. If the dock is constructed, the design would need to consider the changing water levels and current of the river and winter storage. A location for storing dock panels overwinter would need to be considered as well.



Rationale: A viewpoint feature creates a welcoming entrance to people entering the site from the river. Furthermore, the viewpoint looking out, the ramp moving down and the optional dock out onto the river, allows Buena Vista/Laurier Park visitor an opportunity to experience the river setting without venturing down the existing riverbank. Creating a means for people to access the shoreline near Laurier Park may prevent bank erosion by providing people with easier access to the water. Need to verify where RVA notes Laurier as a future dock location.

Design Options: Concept 2 shows a low-key boat launch viewpoint area and wooden boardwalk ramp down to the water.

Concept 3 shows a highly refined boat launch viewpoint area and ramped walkway down to the water and dock.

Both concepts show the location for a dock connecting to the viewpoint ramp. This item is considered to be an optional element. (Costs for development of a dock have not been currently included.)

Public Response: According to the online survey conducted in July 2012, 54% of respondents supported or somewhat supported the Concept 2 boat launch area viewpoint; whereas, 30% did not support or somewhat did not support it. Of the respondents 16% were undecided.

According to the online survey conducted in July 2012, **46% of respondents supported or somewhat supported the Concept 2 boat launch area viewpoint;** whereas, 39% did not support or somewhat did not support it. Of the respondents 15% were undecided.

According to the online survey conducted in July 2012, **45% of respondents supported or somewhat supported the addition of a dock to the viewpoint**; whereas, 31% did not support or somewhat did not support it. Of the respondents 15% were undecided.

Boat Launch and Trailer Parking

Description of Element:

Increase the capacity of the boat launch by doubling the size. Increase the number of boat trailer parking stalls.

Rationale:

Increasing size of the boat launch and increasing the boat trailer parking will improve recreational access to the river. Currently, during the busier parts of the summer the boat launch and trailer parking are used at full capacity. These changes are focused on supporting the City of Edmonton's recreational goals for the river valley. The River Valley Alliance Plan of Action (2007), recognizes Laurier Park as an important destination and portage / launch location for paddlers, rowers, and boaters.

Public Response:

According to the online survey conducted in July 2012, **45% of respondents supported or somewhat supported the boat launch expansion;** whereas, 35% did not support or somewhat did not support it. Of the respondents 21% were undecided.

According to the online survey conducted in July 2012, **43% of respondents supported or somewhat supported the boat trailer parking expansion;** whereas, 36% did not support or

somewhat did not support it. Of the respondents 21% were undecided.

Washroom Facilities

Description of Element: A four-season washroom facility will be integrated into the Yorath House. A basic washroom is proposed near the boat launch and another at the north end of 131 St. for the off leash community. Existing washrooms in Laurier Park will be renovated.

Rationale: The majority of washroom facilities are located in Laurier Park. These facilities have been well-used over the years and require renovations to continue to function. The addition of a permanent basic washroom located near the boat launch would be beneficial to people accessing the site from the river or boat launch.

Buena Vista only has a portable toilet located near the dog park and does not have any permanent public washroom facilities or water access. A permanent basic washroom near the off leash area would be beneficial to park users.

Public Response: According to the online survey conducted in July 2012, **89% of respondents supported or somewhat supported the washroom facilities and their identified locations;** whereas, 8% did not support or somewhat did not support it. Of the respondents 3% were undecided.

Stormwater Management Feature

Description of Element: A storm pond or engineered wetland will be created as a landscaped feature in Buena Vista/Laurier Park in order to deal with stormwater from the Edmonton Valley Zoo and its parking lot.

Rationale: As a result of the Edmonton Valley Zoo's master plan and renovations, a storm facility is required to be located within Buena Vista/Laurier Park. The feature should be design to fit in with the natural quality of the area and can be landscaped to provide an attractive feature and amenity in the park.

Design Options: Though the location of the feature is dependent on grading requirements, three potential locations were presented. These locations require verification to ensure that they will function relative to grading and drainage patterns. Of these locations, the functionality of the location shown in Concept 3 is the most unsure.

Concept 1 shows the stormwater feature adjacent to the entry road into Laurier Park, just south of the zoo's parking lot. The stormwater feature would be a prominent part of the Laurier Park entrance landscape design.

Concept 2 shows the stormwater feature in the location of the small existing parking lot directly south of the Zoo parking lot. To compensate for this loss of parking lot directly southwest of the park entrance would be enlarged (increase of 60 stalls). A vegetated buffer would be provided to screen views of the parking lot from the park entrance.

Concept 3 shows the stormwater feature located in the open field east of the park entrance. In this location the stormwater feature would be a prominent part of the entrance landscape design.

Public Response: Preferences for the stormwater feature locations were not identified by survey.

Appendix F
July 2012 Online Survey and Public Workshop Results

ISL Engineering and Land Services

Buena Vista/Sir Wilfrid Laurier Park Master Plan

Concept Review Summary Report

Becky Machnee/Jan Bloomfield
8/20/2012

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ONLINE SURVEY REPORT

BACKGROUND

The City of Edmonton is working towards having master plans for all its parks. Existing plans for Buena Vista / Sir Wilfrid Laurier Park are out of date or in Buena Vista's case never developed. The Ribbon of Green document from 1992 recommended this area as a high priority for master planning.

The process of the master plan provides a comprehensive planning process for the park. Providing an image of the park and how it will function over the next ten years. The process for this master plan included development of a park vision from public process in April, Park Programming, and developing three concepts for public review.

Three draft concepts with design elements were created and presented to the public via a Public Workshop in June and then via an online survey in July/August to reach members of the public and interested stakeholders who were unable to attend the workshop. The Project Team sought input regarding what the public likes and doesn't like about the different design elements presented in the three concepts.

From comments received regarding the three draft concepts and review with City administration a master plan will be developed for a second review and comment period from the public and the City.

This report combines highlights of what we heard from participants at the Concept Review Workshop on June 23, 2012, as well as the results of the Online Survey that ran from July 13 to August 3, 2012.

A total of 306 individuals responded to all or part of the Online Survey, representing a variety of users and interests, as well as residents from across the City. A total of 94 individual response forms responding to all or part of the questions were received from participants at the Concept Review Workshop, in addition to the summary input from the 15 table groups, representing approximately 160 participants.

Only 43 (14%) of respondents to the Online Survey participated in any of the face to face consultation events, and of these, 25 (58%) participated in the June 23rd Concept Review Workshop.

Type of Activities Participate in When Visit the Park:

Online Survey Results (253 of 306 respondents completed this question)

184 (73%)	144 (57%)	113 (45%)	79 (31%)	79 (31%)	56 (22%)	25 (10%)	15 (6%)	1 (0.5%)	27 (7%)
Walk my Dog	Walk /Run	Cycle	Visit Zoo	Picnic	Family/ Other Events	X- Country Ski/ Snowshoe	Visit Rowing Club	Visit Paddling Centre	Other

A total of 253 individuals responded to the question in the Online Survey regarding the types of activities they did when visiting the park. Many respondents indicated that they participate in more than one activity. The most frequently noted activity was "walk my dog" (184 or 73%), followed by

"walk/run" (144 or 57%) and "bicycle" (113 or 45%). Visiting the zoo and picnicking were each noted by 79 or 31% of respondents, and family or other events was noted by 56 (22%).

Concept Review Workshop Survey Results (76 of 94 respondents completed this question)

57 (66%)	40 (47%)	34 (40%)	17 (20%)	15 (17%)	12 (14%)	11 (13%)	5 (6%)	0 (0%)	7 (8%)
Walk my Dog	Walk /Run	Cycle	Visit Zoo	Family /Other Events	X- Country Ski/ Snowshoe	Picnic	Visit Rowing Club	Visit Paddling Centre	Other

Approximately half (76) participants at the Concept Review Workshop responded to this question. While the most frequently noted activity was "walk my dog" (57 or 66%), the majority of respondents to the survey / evaluation at the Concept Review Workshop also indicated they participate in more than one type of activity (50 or 58%). This reflects that most participants at the workshop represented various park user interests. Of these multi-use visitors, 12 (14%) indicated they participate in 2 activities, 20 (23%) in 3 activities, 9 (10%) in 4 activities, 4 (5%) in 5 activities, 3 (3%) in 6 activities, and 2 (2%) in 7 activities.

WHAT WE HEARD

Questions included in the workshop and online surveys are similar; however, some modifications were made in the online survey to make them clearer for respondents. Responses to the questions from the 94 individual workshop surveys and the 306 online surveys have been combined and summarized in this document for ease in assessing the level of support for various elements presented in the three draft concepts. Full reports from both the Concept Review Workshop and Online Surveys are also available.

It should be noted that not all respondents to either the workshop or online surveys provided responses to all of the questions. The results for each question outlined below indicate the number of responses provided and the percentage of that number of respondents who "strongly support/support/somewhat support" or "not support/somewhat not support" the element or option presented.

The results for each question are provided in both tabular and graph form. The first table provides the number of responses received from the individual workshop surveys, the second table presents the number of responses from the online survey, and the third table provides the combined responses from the two surveys which are also portrayed graphically.

ALL CONCEPTS

Question 1: To what extent do you support paving the shared use path (SUP) extension from Laurier Park to the Hawrelak pedestrian bridge?

- A total of 384 individuals responded to this question (298 in the online survey and 86 in the workshop survey).
- Just over half of these, 216 (56%) of respondents strongly support, support or somewhat support paving the SUP.
- Two-fifths (157 or 41%) somewhat do not support, do not support or strongly do not suppor paving.
- A further 11 (3%) were undecided or not sure.

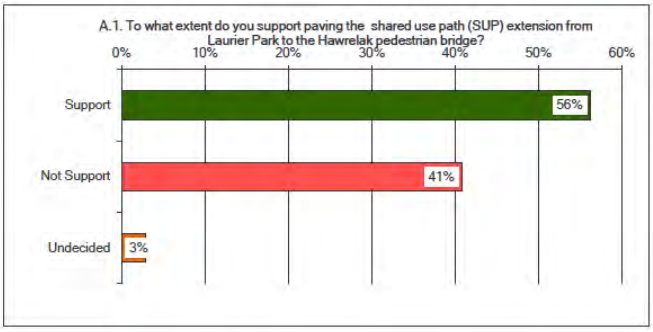
A.1. To what extent do you support or not support paving of the shared use pathway through the park that is included in all three concepts?

Workshop Responses	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Resp Co
	18	12	7	11	36	2	3.48	8
							answered question	
							skipped question	

A.1. To what extent do you support paving the shared use path (SUP) extension from Laurier Park to the Hawrelak pedestrian bridge?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	118	61	22	88	9	2.36	298
						answered question	298
						skipped question	8

Combined Responses	Support	Not Support	Undecided	Rating Average	Response Count
	216 56%	157 41%	11 3%	2.36	384



Question 2: Please explain what you particularly like or dislike about extending asphalt surface along the shared use path.

- While slightly more than half of respondents support extending the paved surface along the shared use path (SUP), concerns were raised that this would allow cyclists to increase their speed and potentially result in increased conflicts with dogs off leash.
- Other concerns included a preference by many (including dogs) for walking on natural (softe trail surfaces, a desire to keep area natural, and suggestions for use of alternative surfaces.
- Supporters of a hard surface felt it would reduce the amount of mud, and make the trail mor accessible for all users throughout the year.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 3: To what extent do you support increasing parking stalls along 132 St. (29 additional stalls)? (modification of existing parallel parking to right angle stalls and adding parallel parking along 132 St.)

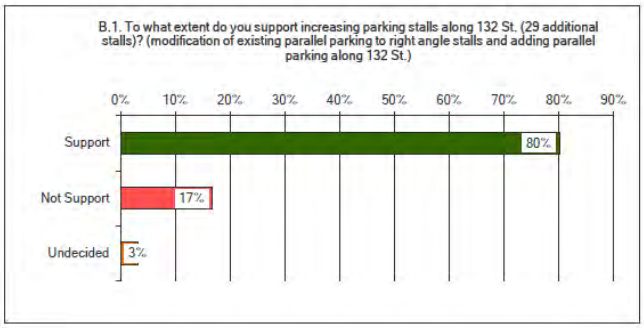
B.1. To what extent do you support or not support modification of existing parking to 90 degree stalls along 132 St.?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	40	18	13	2	10	3	2.22	86
							answered question	86
							skipped question	8

B.1. To what extent do you support increasing parking stalls along 132 St. (29 additional stalls)? (modification of existing parallel parking to right angle stalls and adding parallel parking along 132 St.)

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	160	75	18	34	9	1.84	296
						answered question	296
						skipped question	10

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	306	64	12	1.84	382
	80%	17%	3%		



- A total of 382 individuals responded to this question (296 in the online survey and 86 in the workshop survey).
- Four fifths of these, 306 (56%) of respondents strongly support, support or somewhat support increased parking along 132 St.
- Almost one sixth (64 or 17%) somewhat do not support, do not support or strongly do not support increased parking along 132 St.
- A further 12 (3%) were undecided or not sure.

Question 4: Please explain what you particularly like or dislike about increasing parking along 132 St.

- The majority of respondents support the need for more parking and this option.
- Comments included concerns about possible congestion along the road, safety re: backing out of stalls, and attracting more users to the park if more parking was available.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 5: To what extent do you support doubling the size of the boat launch?

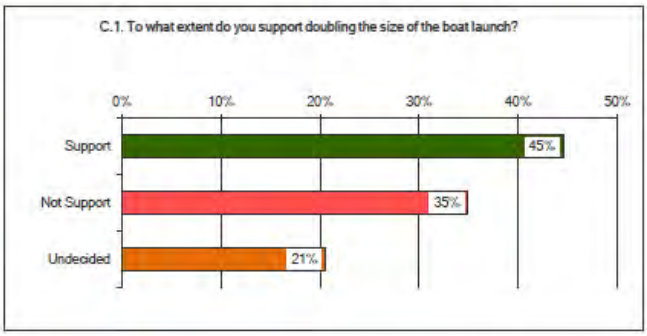
C.2. To what extent do you support or not support doubling the size of the boat launch that is included in all three concepts?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Respo Cou
	5	11	6	7	36	16	4.31	81
							answered question	
							skipped question	

C.1. To what extent do you support doubling the size of the boat launch?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	74	71	31	57	61	2.86	294
						answered question	294
						skipped question	12

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	167	131	77	1.84	375
	45%	35%	21%		



- A total of 375 individuals responded to this question (294 in the online survey and 81 in the workshop survey).
- Almost half, 167 (45%) of respondents strongly support, support or somewhat support doub the size of the boat launch.
- Just over one third (131 or 35%) somewhat do not support, do not support or strongly do no support doubling the size of the boat launch.
- A further 77 (21%) were undecided or not sure.

Question 6: To what extent do you support expansion of the boat trailer parking?

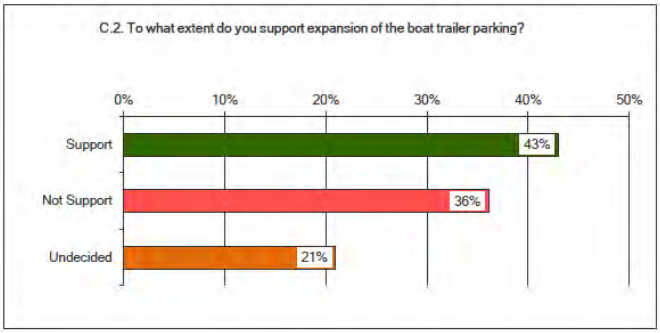
C.1. To what extent do you support or not support expansion of the boat trailer parking that is included in all three concepts?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	8	11	8	8	29	19	4.16	83
							answered question	83
							skipped question	11

C.2. To what extent do you support expansion of the boat trailer parking?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	65	70	37	62	60	2.94	294
						answered question	294
						skipped question	12

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	162	136	79	1.84	377
	43%	36%	21%		



- A total of 377 individuals responded to this question (294 in the online survey and 83 in the workshop survey).
- Almost half, 162 (43%) of respondents strongly support, support or somewhat support the expansion of the boat trailer parking.
- Just over one third (136 or 36%) somewhat do not support, do not support or strongly do not support the expansion of the boat trailer parking.
- A further 79 (21%) were undecided or not sure.

Question 7: Please explain what you particularly like or dislike about expanding boat trailer parking and doubling the size of the boat launch.

- There are mixed views regarding expanding boat trailer parking and doubling the size of the boat launch, with close to half supporting it, but over one third not supporting it.
- Many respondents support increasing access to and use of the river and boat launch, particularly for use by non-power boats, but there are concerns regarding noise and increased motor boat traffic, visual impacts, increased congestion in the area, reduction in the natural and serene aspects of the park, and safety issues regarding increased conflicts with rowers.
- Almost one fifth of respondents were not sure or did not care, and a few respondents suggested alternative locations for boat launches outside of BVLP.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 8: To what extent do you support the improvements at the park entrance?

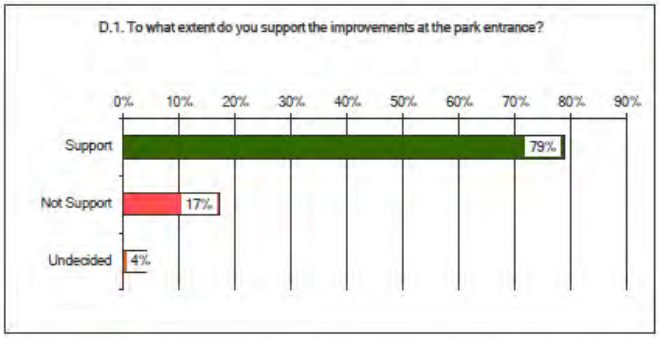
D.1. To what extent do you support or not support the improvements at the park entrance that are included in all three concepts?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	27	15	17	3	13	4	2.65	79
							answered question	79
							skipped question	15

D.1. To what extent do you support the improvements at the park entrance?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	136	97	16	32	11	1.92	292
						answered question	292
						skipped question	14

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	292	64	15	1.84	371
	79%	17%	4%		



- A total of 371 individuals responded to this question (292 in the online survey and 79 in the workshop survey).
- Four fifths, 292 (79%) of respondents strongly support, support or somewhat support the improvements at the park entrance.
- Almost one sixth (64 or 17%) somewhat do not support, do not support or strongly do not support the improvements at the park entrance.
- A further 15 (4%) were undecided or not sure.

Question 9: Please explain what you particularly like or dislike about the entrance improvements.

- The majority of respondents support improvements to the entrance, noting it will make it more welcoming and attractive, as well as providing needed information about the park.
- Improved signage is felt to be important by most respondents, even if they do not feel that the expense of major landscaping is necessary. Signs and an information board that clarifies trails and directions and designates park use areas are generally seen as being beneficial.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 10: To what extent do you support the improvements and roundabout entrance?

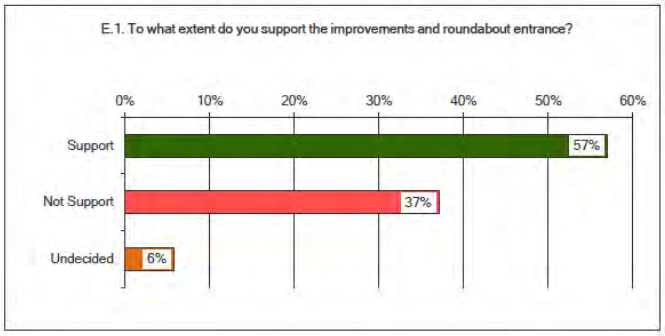
E.1. To what extent do you support or not support the improvements and roundabout entrance included in all three concepts?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Res Co
	15	15	6	6	35	7	3.62	
							answered question	
							skipped question	

E.1. To what extent do you support the improvements and roundabout entrance?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	111	68	25	74	15	2.37	293
red question							293
ped question							13

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	215 57%	140 37%	22 6%	1.84	377



- A total of 377 individuals responded to this question (293 in the online survey and 84 in the workshop survey).
- Just over half, 215 (57%) of respondents strongly support, support or somewhat support the improvements and roundabout entrance.
- Just over one third (140 or 37%) somewhat do not support, do not support or strongly do no support the improvements and roundabout entrance.
- A further 22 (6%) were undecided or not sure.

Question 11: Please explain what you particularly like or dislike about the roundabout entrance.

- The majority of respondents support creating a roundabout at the bottom of the hill, noting looks good and will slow down speeders, direct traffic, ease traffic flow, and increase safety l reducing U-turns, etc.
- About one third of respondents do not support a roundabout, feeling it is unnecessary and a waste of money, unsafe since drivers do not know how to use them properly, and will be a problem for boat trailers to maneuver.
- Other suggestions include improved directional signs, safe pedestrian access/crossing, or use a four-way stop at the intersection instead of a roundabout.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 12: To what extent do you support hardening looping pathways through Buena Vista?

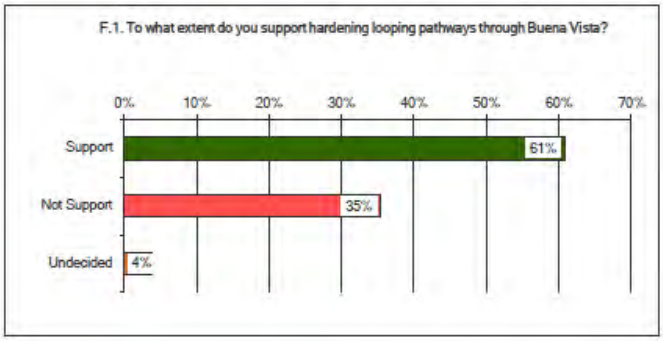
F.1. To what extent do you support or not support hardened surface looping pathways through Buena Vista that are included in all three concepts?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	8	13	12	11	31	4	3.71	79
							answered question	79
							skipped question	15

F.1. To what extent do you support hardening looping pathways through Buena Vista?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	109	83	26	63	10	2.25	291
						answered question	291
						skipped question	15

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	225	131	14	1.84	370
	61%	35%	4%		



- A total of 370 individuals responded to this question (291 in the online survey and 79 in the workshop survey).
- Almost two thirds, 215 (61%) of respondents strongly support, support or somewhat support hardening looping pathways through Buena Vista.
- Just over one third (131 or 35%) somewhat do not support, do not support or strongly do not support hardening looping pathways through Buena Vista.
- A further 14 (4%) were undecided or not sure.

Question 13: Please explain what you particularly like or dislike about the hardened surface for looping pathways.

- While almost two thirds of respondents support a hardened surface for some looping pathways, one third do not.
- Supporters feel that this would improve accessibility for all and trails would be in better condition in the spring and wet weather.
- Concerns were noted about increased conflicts with speeders if trails were hardened, as well as the type of material that would be used for hardening the trails, with many indicating a preference for softer trails of natural materials and a desire not to use asphalt.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 14: To what extent do you support additional and renovated washroom facilities and their identified locations?

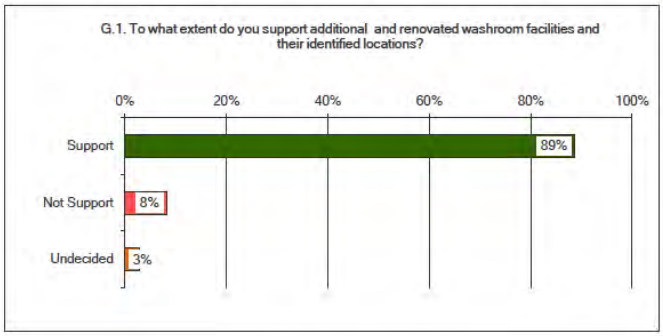
G.1. To what extent do you support or not support additional washroom facilities and their identified locations in the three concepts?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	30	14	21	7	6	5	2.52	83
							answered question	83
							skipped question	11

G.1. To what extent do you support additional and renovated washroom facilities and their identified locations?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	205	61	11	7	6	1.44	290
						answered question	290
						skipped question	16

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	331	31	11	1.84	373
	89%	8%	3%		



- A total of 373 individuals responded to this question (290 in the online survey and 83 in the workshop survey).
- Almost nine tenths, 331 (89%) of respondents strongly support, support or somewhat support additional and renovated washroom facilities and their identified locations.
- Just under one tenth (31 or 8%) somewhat do not support, do not support or strongly do not support additional and renovated washroom facilities and their identified locations.
- A further 11 (3%) were undecided or not sure.

Question 15: Please explain what you particularly like or dislike about the additional washroom facilities.

- Almost all respondents indicated support for additional and improved barrier free washroom facilities, including year round access.
- Concerns were noted related to cost, safety, potential for vandalism, and the need for ensured maintenance.
- Some comments related to location for facilities, with suggestions including that one be located further north within the off leash area and near the bridge.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 16: Which concept do you most support?

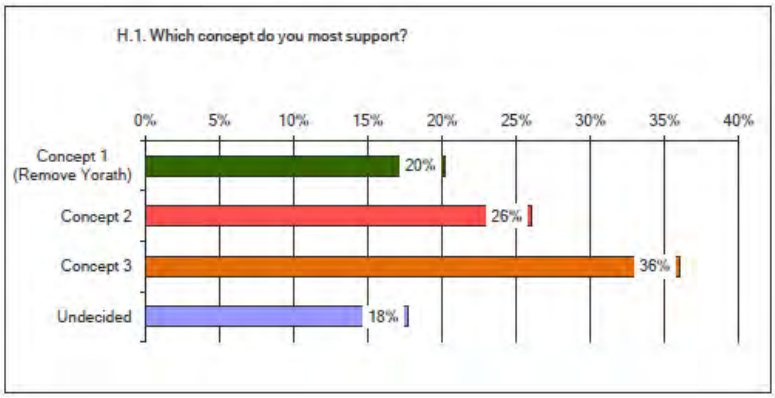
H.1. Which concept do you most support?

Answer Options	Concept 1	Concept 2	Concept 3	Not Sure	Rating Average	Response Count
	31	11	16	15	2.21	73
					answered question	73
					skipped question	21

H.1. Which concept do you most support?

Answer Options	Concept 1 (Remove Yorath)	Concept 2	Concept 3	Undecided	Rating Average	Response Count
	42	83	114	49	2.59	288
					answered question	288
					skipped question	18

Answer Options	Concept 1 (Remove Yorath)	Concept 2	Concept 3	Undecided	Rating Average	Response Count
	73	94	130	64	2.59	361
	20%	26%	36%	18%		



- A total of 361 individuals responded to this question (288 in the online survey and 73 in the workshop survey).
- One fifth, 73 (20%) of respondents supported Concept 1.
- One quarter (94 or 26%) of respondents supported Concept 2.
- Just over one third 130 (36%) of respondents supported Concept 3.
- A further 64 (18%) were undecided or not sure.

Question 17: Please explain what you particularly like about your preferred concept.

- Overall, Concept 3 was noted as the most preferred concept, followed by Concept 2, Concept 1, and undecided.
- Concept 1: Support for this concept related to the least reduction in the off leash area, and removal of Yorath House.
- Concept 2: Support for this concept related to maintaining Yorath House for its heritage value and for developing it as a multi-use facility.
- Concept 3: Support for this concept also related to maintaining Yorath House for its heritage values and developing it as a multi-use facility, enhancing and saving the Yorath grounds and gardens, and seeming to be more user-friendly.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 18: To what extent do you support improvements to the intersections between the shared use path and off leash pathways (i.e. dog legs and rumble strips?

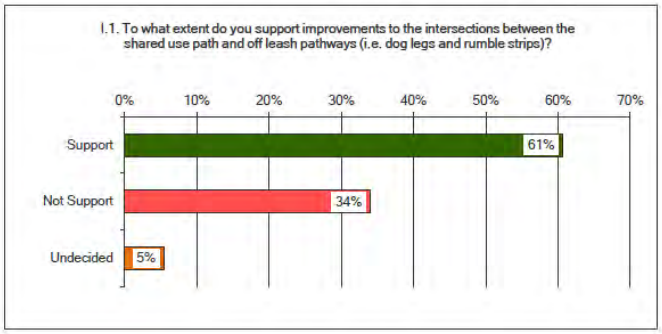
I.1. To what extent do you support or not support changes to the pathways/ off leash interface?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	26	12	8	7	24	2	2.96	79
							answered question	79
							skipped question	15

I.1. To what extent do you support improvements to the intersections between the shared use path and off leash pathways (i.e. dog legs and rumble strips)?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	102	75	31	63	18	2.38	289
						answered question	289
						skipped question	17

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	223 61%	125 34%	20 5%	1.84	368



- A total of 368 individuals responded to this question (289 in the online survey and 79 in the workshop survey).
- Almost two thirds, 223 (61%) of respondents strongly support, support or somewhat support improvements to the intersections between the shared use path and off leash pathways (i.e. dog legs and rumble strips).
- Just over one third (125 or 34%) somewhat do not support, do not support or strongly do not support improvements to the intersections between the shared use path and off leash pathways (i.e. dog legs and rumble strips).
- A further 20 (5%) were undecided or not sure.

Question 19: Please explain what you like or dislike about the addition of dog legs and rumble strips.

- While the majority of respondents support the addition of dog legs and rumble strips, one third do not.
- Increased safety, reduction in conflict between dogs and cyclists/other pedestrians, and clarification of boundaries between on and off leash areas were cited by supporters.
- Concerns included that they are not natural, are unnecessary and a waste of money, are too controlling, would reduce visibility, and would not stop small dogs from getting under the fence.
- Some respondents were unsure related to how dogs were supposed to cross from one side to the other, and some felt that rumble strips were either unsafe or would not slow cyclists down.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 20: To what extent do you support the formalization and expansion of the north end of the off leash area?

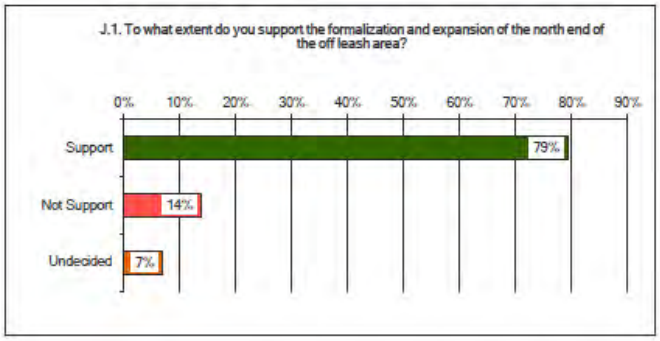
J.1. To what extent do you support or not support the formalization and expansion of the north end of the off leash area?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	57	8	7	0	5	3	1.71	80
							answered question	80
							skipped question	14

J.1. To what extent do you support the formalization and expansion of the north end of the off leash area?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	129	40	7	30	18	1.96	224
						answered question	224
						skipped question	82

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	241 79%	42 14%	21 7%	1.84	304



- A total of 304 individuals responded to this question (224 in the online survey and 80 in the workshop survey).
- Almost four fifths, 241 (79%) of respondents strongly support, support or somewhat support the formalization and expansion of the north end of the off leash area.
- Just over a tenth (42 or 14%) somewhat do not support, do not support or strongly do not support the formalization and expansion of the north end of the off leash area.
- A further 21 (7%) were undecided or not sure.

Question 21: To what extent do you support the Concept 1 off leash boundary adjustment?

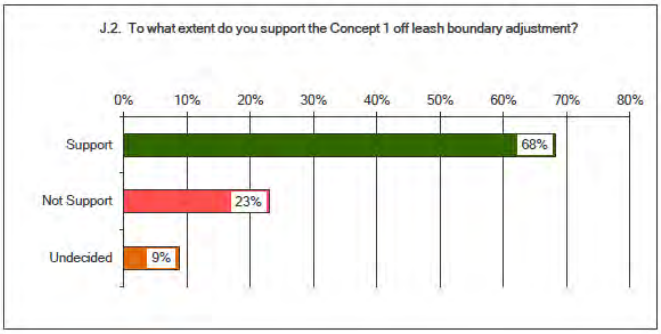
J.2. To what extent do you support or not support the Concept 1 off leash boundary adjustment?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	29	23	5	5	11	6	2.54	79
							answered question	79
							skipped question	15

J.2. To what extent do you support the Concept 1 off leash boundary adjustment?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	134	52	19	47	25	2.19	277
						answered question	277
						skipped question	29

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	243 68%	82 23%	31 9%	1.84	356



- A total of 356 individuals responded to this question (277 in the online survey and 79 in the workshop survey).
- Just over two thirds, (243 or 79%) of respondents strongly support, support or somewhat support the Concept 1 off leash boundary adjustment.
- Just under a quarter (82 or 23%) somewhat do not support, do not support or strongly do not support the Concept 1 off leash boundary adjustment.
- A further 31 (9%) were undecided or not sure.

Question 22: To what extent do you support the Concept 2 off leash boundary adjustment?

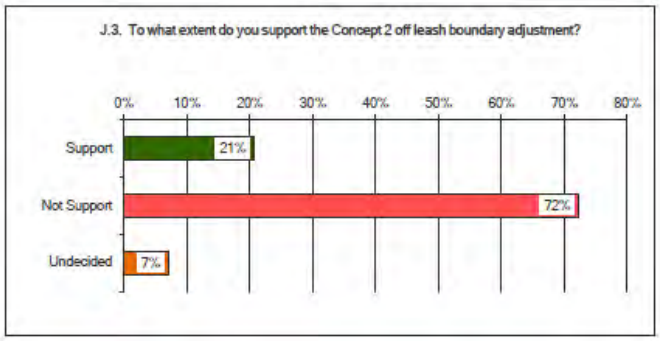
J.3. To what extent do you support or not support the Concept 2 off leash boundary adjustment?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	4	2	4	6	60	3	4.58	79
							answered question	79
							skipped question	15

J.3. To what extent do you support the Concept 2 off leash boundary adjustment?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	37	26	15	174	22	3.43	274
						answered question	274
						skipped question	32

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	73 21%	255 72%	25 7%	1.84	353



- A total of 353 individuals responded to this question (274 in the online survey and 79 in the workshop survey).
- Just under a quarter, (73 or 21%) of respondents strongly support, support or somewhat support the Concept 2 off leash boundary adjustment.
- Almost three quarters (255 or 72%) somewhat do not support, do not support or strongly do not support the Concept 2 off leash boundary adjustment.
- A further 25 (7%) were undecided or not sure.

Question 23: To what extent do you support the Concept 3 off leash boundary adjustment?

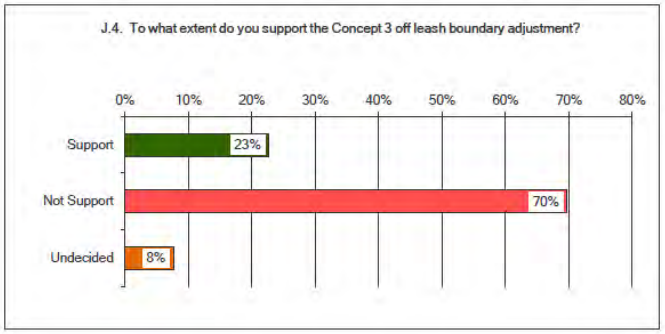
J.4. To what extent do you support or not support the Concept 3 off leash boundary adjustment?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	4	3	5	8	54	4	4.50	78
							answered question	78
							skipped question	16

J.4. To what extent do you support the Concept 3 off leash boundary adjustment?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	23	45	33	151	23	3.39	275
						answered question	275
						skipped question	31

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	80	246	27	1.84	353
	23%	70%	8%		



- A total of 353 individuals responded to this question (275 in the online survey and 78 in the workshop survey).
- Just under a quarter, (80 or 23%) of respondents strongly support, support or somewhat support the Concept 3 off leash boundary adjustment.
- Almost three quarters (246 or 70%) somewhat do not support, do not support or strongly do not support the Concept 3 off leash boundary adjustment.
- A further 27 (8%) were undecided or not sure.

Question 24: Please explain what you like about your preferred concept.

- The majority of respondent support formalization and expansion of the boundaries of the north end of the off leash area.
- Concept 1: This concept received the most support, with respondents noting it provides the largest off leash area, is the closest to what currently exists, provides a natural setting for walking dogs, allows the most off leash access to the river, and appears to be the least expensive option.
- Concepts 2 and 3: The majority of respondents do not support either Concept 2 or 3, with many respondents asking that the off leash remain as is or be expanded in size to reflect the large group of park users represented by dog walkers.
- Key concerns for off leash users are to have as large a space as possible that also provides river access for dogs, and has limited requirement for dogs to be put on leash.

- Supporters of all concepts would like to have clear separation of uses to reduce conflict between dogs off leash and cyclists/walkers, etc., as well as to have on leash on the Shared Use Path and around the rowing club dock.
- See Online Survey & Workshop What We Heard reports for full comments.

CONCEPT 1

Question 25: To what extent do you support the shared use path alignment in Concept 1?

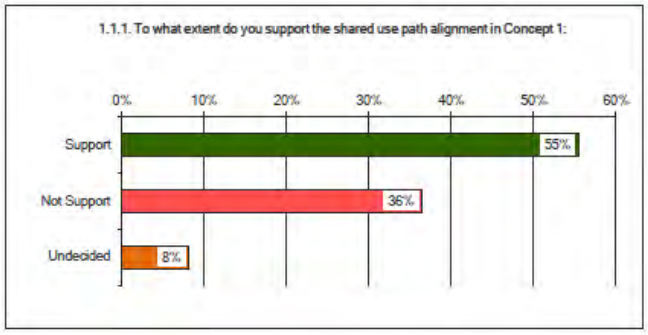
1.1.1. To what extent do you support or not support this option:

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	17	11	6	7	25	4	3.34	70
							answered question	70
							skipped question	24

1.1.1. To what extent do you support the shared use path alignment in Concept 1:

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	80	70	27	62	23	2.53	262
						answered question	262
						skipped question	44

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	184	121	27	1.84	332
	55%	36%	8%		



- A total of 332 individuals responded to this question (262 in the online survey and 70 in the workshop survey).
- Just over half, (184 or 55%) of respondents strongly support, support or somewhat support the shared use path alignment in Concept 1.
- Just over one third (121 or 36%) somewhat do not support, do not support or strongly do not support the shared use path alignment in Concept 1.
- A further 27 (8%) were undecided or not sure.

Question 26: Please explain what you particularly like or dislike about the use of fencing between the pathway and off leash area.

- Slightly more than half of respondents support some fencing to provide clear boundaries between uses, and to reduce conflicts and keep both dogs and cyclists safe.
- Other comments noted that fencing is not necessary and costly, would be intrusive and impact views and aesthetics, and other options such as hedges might create a more natural environment.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 27: To what extent do you support parking lot expansion identified in Concept 1?

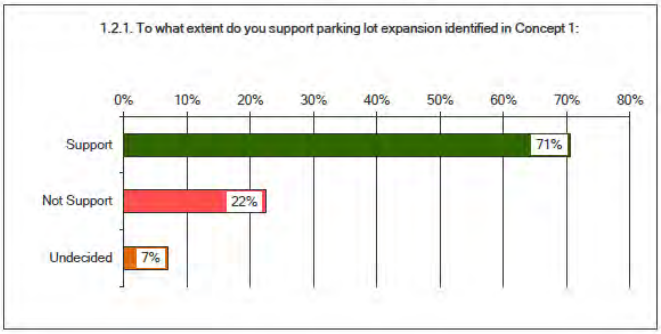
1.2.1. To what extent do you support or not support this option:

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	13	19	10	4	9	6	2.92	61
							answered question	61
							skipped question	33

1.2.1. To what extent do you support parking lot expansion identified in Concept 1:

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	101	87	20	40	17	2.19	265
						answered question	265
						skipped question	41

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	230 71%	73 22%	23 7%	1.84	326



- A total of 326 individuals responded to this question (265 in the online survey and 61 in the workshop survey).
- Almost three quarters, (230 or 71%) of respondents strongly support, support or somewhat support parking lot expansion identified in Concept 1.
- Just under one quarter (73 or 22%) somewhat do not support, do not support or strongly do not support parking lot expansion identified in Concept 1.
- A further 23 (7%) were undecided or not sure.

Question 28: Please explain what you like or dislike about the parking lot expansion identified in Concept 1.

- The majority of respondents support some additional parking, although some questioned the need for quite as much as is suggested near the Rowing Club tank.
- Suggestions were made to locate parking closer to the park edge, and to provide a separate pedestrian path adjacent to it.
- Non-supporters noted that additional parking is not needed, parking should be shared, and people should walk more.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 29: Concept 1 Additional Comments: Please provide any additional comments you may have regarding what you like or dislike about the options identified in Concept 1.

- Additional comments regarding Concept 1 included: look forward to the renovations; it is the least offensive; don't change the park; unnecessary expense; do not demolish Yorath House; concern about on leash restrictions on the Shared Use Path; and mixed views regarding fencing.
- See Online Survey & Workshop What We Heard reports for full comments.

CONCEPT 2

Question 30: To what extent do you support this shared use path realignment (used in both Concepts 2 and 3)?

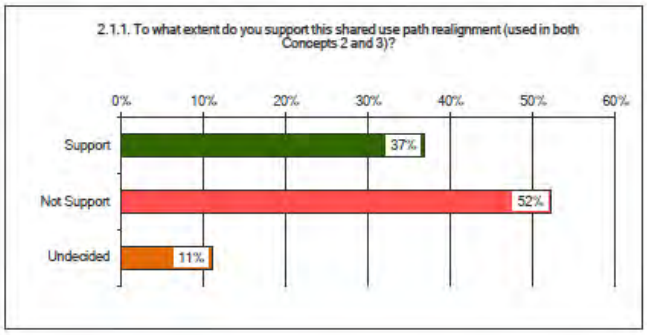
2.1.1. To what extent do you support or not support this pathway option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	8	7	9	2	35	7	4.03	68
							answered question	68
							skipped question	26

2.1.1. To what extent do you support this shared use path realignment (used in both Concepts 2 and 3)?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	48	45	20	109	28	3.10	250
						answered question	250
						skipped question	56

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	117 37%	166 52%	35 11%	1.84	318



- A total of 318 individuals responded to this question (250 in the online survey and 68 in the workshop survey).
- Just over one third, (117 or 37%) of respondents strongly support, support or somewhat support the shared use path realignment (used in both Concepts 2 and 3).
- Just over one half (166 or 52%) somewhat do not support, do not support or strongly do not support the shared use path realignment (used in both Concepts 2 and 3).
- A further 35 (11%) were undecided or not sure.

Question 31: Please explain what you particularly like or dislike about this pathway option.

- The majority of respondents do not support this pathway option, noting cost and environmental concerns with relocating the Shared Use Path, restricting access to the river for dogs, reduction in the off leash area, and fencing of trails.
- Supporters like the new alignment taking more advantage of natural surroundings and providing better separation of uses.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 32: To what extent do you support the fenced off leash area (barrier free and training area)?

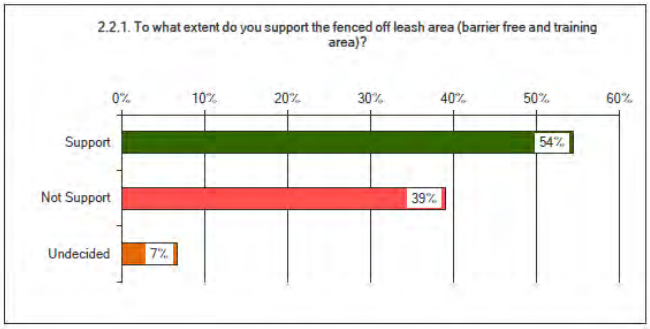
2.2.1. To what extent do you support or not support this fenced off leash area option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Resp Cou
	16	15	17	4	17	6	3.12	7
							answered question	
							skipped question	

2.2.1. To what extent do you support the fenced off leash area (barrier free and training area)?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	81	51	28	80	16	2.61	256
						answered question	256
						skipped question	50

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	180 54%	129 39%	22 7%	1.84	331



- A total of 331 individuals responded to this question (256 in the online survey and 75 in the workshop survey).
- Just over one half, (180 or 54%) of respondents strongly support, support or somewhat supp the fenced off leash area (barrier free and training area).
- Just over one third (129 or 39%) somewhat do not support, do not support or strongly do no support the fenced off leash area (barrier free and training area).
- A further 22 (7%) were undecided or not sure.

Question 33: Please explain what you particularly like or dislike about the fenced leash area (barrier free and training area).

- Most respondents support a fenced off leash barrier free area for training dogs, feeling that would provide access for mobility impaired users who wish to walk dogs off leash in a safe environment, would allow for puppy training as well as service dog training, and would be a unique facility in the City.
- Those not supporting this question the demand for it, do not feel that a separate training are required, and that this would further reduce the off leash area.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 34: To what extent do you support this option for increasing parking?

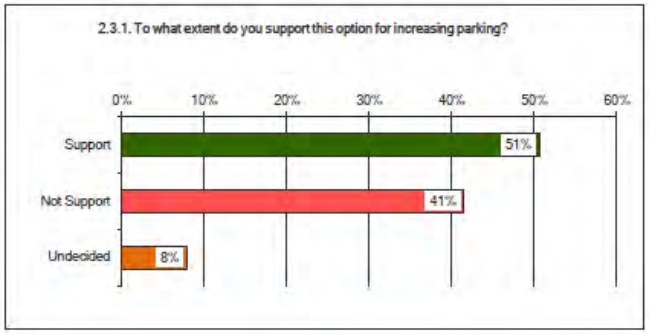
2.3.1. To what extent do you support or not support this parking option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	6	22	10	11	19	6	3.45	74
							answered question	74
							skipped question	20

2.3.1. To what extent do you support this option for increasing parking?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	63	65	33	73	20	2.69	254
						answered question	254
						skipped question	52

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	166 51%	136 41%	26 8%	1.84	328



- A total of 328 individuals responded to this question (254 in the online survey and 74 in the workshop survey).
- Just over one half, (166 or 51%) of respondents strongly support, support or somewhat support this option for increasing parking.
- Two fifths (136 or 41%) somewhat do not support, do not support or strongly do not support this option for increasing parking.
- A further 26 (8%) were undecided or not sure.

Question 35: Please explain what you particularly like or dislike about this parking option.

- There were mixed views regarding this parking option, with 51% support and 41% not support.
- Supporters felt that more parking was needed, although there were concerns that the number of stalls identified was perhaps too much.
- It was noted that additional parking at Yorath House would only be required if it was developed as a multi-use facility.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 36: To what extent do you support Concept 2's boat launch viewpoint area?

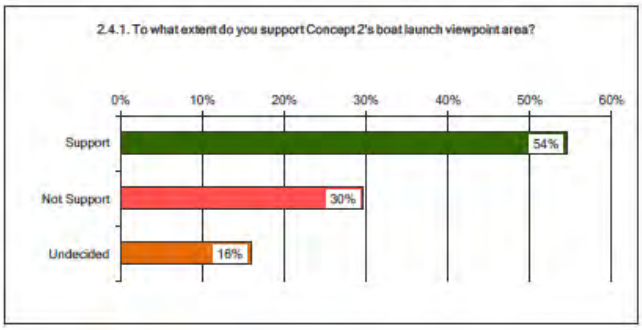
2.4.1. To what extent do you support or not support this boat launch area option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	6	11	22	6	26	8	3.75	79
							answered question	79
							skipped question	15

2.4.1. To what extent do you support Concept 2's boat launch viewpoint area?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	75	68	16	51	45	2.70	255
						answered question	255
						skipped question	51

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	182 54%	99 30%	53 16%	1.84	334



- A total of 334 individuals responded to this question (255 in the online survey and 79 in the workshop survey).
- Just over one half, (182or 54%) of respondents strongly support, support or somewhat support Concept 2's boat launch viewpoint area.
- Just under one third (99 or 30%) somewhat do not support, do not support or strongly do not support Concept 2's boat launch viewpoint area.
- A further 53 (16%) were undecided or not sure.

Question 37: To what extent do you support the addition of a dock that provides water access to the boat launch viewpoint area?

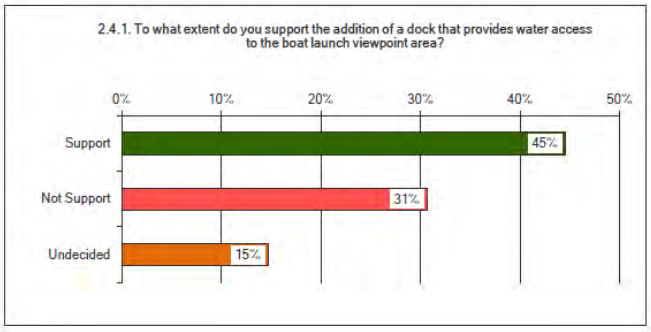
2.4.1. To what extent do you support or not support this boat launch area option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	6	11	22	6	26	8	3.75	79
							answered question	79

2.4.1. To what extent do you support the addition of a dock that provides water access to the boat launch viewpoint area?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	77	65	18	52	41	2.66	253
						answered question	253
						skipped question	53

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	148 45%	102 31%	49 15%	1.84	332



- A total of 332 individuals responded to this question (253 in the online survey and 79 in the workshop survey).
- Just under one half, (148 or 45%) of respondents strongly support, support or somewhat support the addition of a dock that provides water access to the boat launch viewpoint area.
- Just under one third (102 or 31%) somewhat do not support, do not support or strongly do not support the addition of a dock that provides water access to the boat launch viewpoint area.
- A further 49 (15%) were undecided or not sure.

Question 38: Please explain what you particularly like or dislike about this boat launch viewpoint area.

- Just over half of respondents support the boat launch viewpoint area, noting that it would make the river more accessible and allow people to be active and enjoy the river.
- Just under one third of respondents do not support this option, noting concerns regarding need, cost design, and safety.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 39: To what extent do you support improvements to event areas?

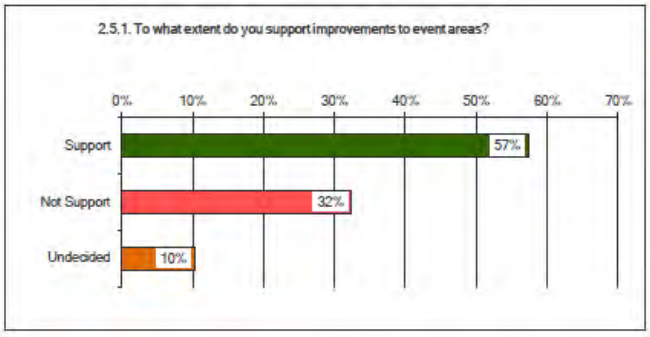
2.5.1. To what extent do you support or not support this event areas option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	6	11	16	7	20	7	3.67	67
							answered question	67
							skipped question	27

2.5.1. To what extent do you support improvements to event areas?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	82	69	27	50	26	2.48	254
						answered question	254
						skipped question	52

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	184	104	33	1.84	321
	57%	32%	10%		



- A total of 321 individuals responded to this question (254 in the online survey and 67 in the workshop survey).
- Just over one half, (184 or 57%) of respondents strongly support, support or somewhat support improvements to event areas.
- Just under one third (104 or 32%) somewhat do not support, do not support or strongly do not support improvements to event areas.
- A further 33 (10%) were undecided or not sure.

Question 40: Please explain what you particularly like or dislike about providing two separate event areas.

- The majority of respondents like the concept of two separate event areas, providing more opportunities for a variety of events.
- Some respondents noted concerns about uses for Yorath House, and non-supporters did not like the idea of encouraging a lot more people to visit BVLP, noting Hawrelak Park just across the river.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 41: Concept 2 additional comments: Please provide any additional comments you may have regarding what you like or dislike about the options identified in Concept 2.

- Comments received included: Save Yorath House and Concept 2 separates off leash from the trail and minimizes chances of conflict.
- Concerns expressed related to: too much development and loss of nature; off leash area is reduced; why change what already exists; and event space is not needed.
- See Online Survey & Workshop What We Heard reports for full comments.

CONCEPT 3

Question 42: To what extent do you support opening access to the roadway north of the existing off leash parking lot and the addition of 40 additional parking stalls?

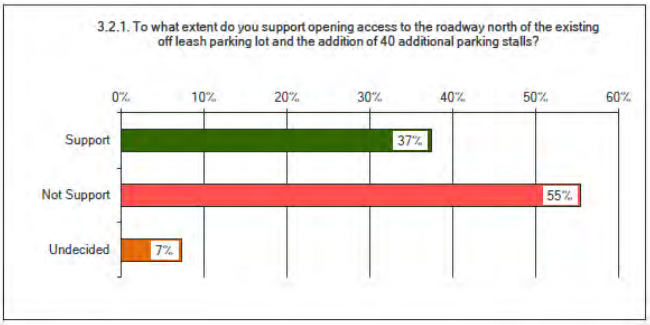
3.2.1. To what extent do you support or not support this parking option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	4	11	9	9	34	3	3.96	70
							answered question	70
							skipped question	24

3.2.1. To what extent do you support opening access to the roadway north of the existing off leash parking lot and the addition of 40 additional parking stalls?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	41	53	34	98	20	3.01	246
						answered question	246
						skipped question	60

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	118 37%	175 55%	23 7%	1.84	316



- A total of 316 individuals responded to this question (246 in the online survey and 70 in the workshop survey).
- Just over one third, (118 or 37%) of respondents strongly support, support or somewhat support opening access to the roadway north of the existing off leash parking lot and the addition of 40 additional parking stalls.

- Just over one half (175 or 55%) somewhat do not support, do not support or strongly do not support opening access to the roadway north of the existing off leash parking lot and the addition of 40 additional parking stalls.
- A further 23 (7%) were undecided or not sure.

Question 43: Please explain what you like or dislike about the parking option.

- Just over half of respondents do not support this option, indicating that additional parking is not needed, the number of stalls seems excessive, the location is too close to the off leash area; and increases the potential for vehicle-dog collisions.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 44: To what extent do you support expansion of the Rowing Club parking lot (140 additional stalls)?

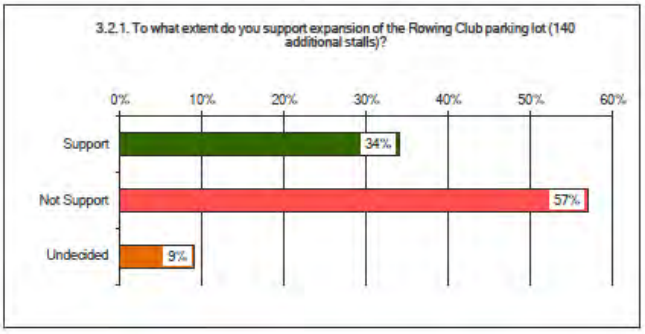
3.2.1. To what extent do you support or not support this parking option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	4	11	9	9	34	3	3.96	70
							answered question	70
							skipped question	24

3.2.1. To what extent do you support expansion of the Rowing Club parking lot (140 additional stalls)?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	38	46	42	96	26	3.10	248
						answered question	248
						skipped question	58

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	108	181	29	1.84	318
	34%	57%	9%		



- A total of 318 individuals responded to this question (248 in the online survey and 70 in the workshop survey).
- Just over one third, (108 or 34%) of respondents strongly support, support or somewhat support expansion of the Rowing Club parking lot (140 additional stalls).
- Just over one half (181 or 57%) somewhat do not support, do not support or strongly do not support expansion of the Rowing Club parking lot (140 additional stalls).
- A further 29 (9%) were undecided or not sure.

Question 45: Please explain what you like or dislike about the parking option (Expansion of the Rowing Club Parking Lot.

- Over half of respondents do not support expanding the Rowing Club Parking Lot by 140 stalls, indicating it is not needed, is excessive, and all parking should be shared parking and not assigned to a specific user group.
- The one third who support the parking option noted additional parking is needed (especially if Yorath House is developed).
- See Online Survey & Workshop What We Heard reports for full comments.

Question 46: To what extent do you support viewpoint and riverside pathway improvements?

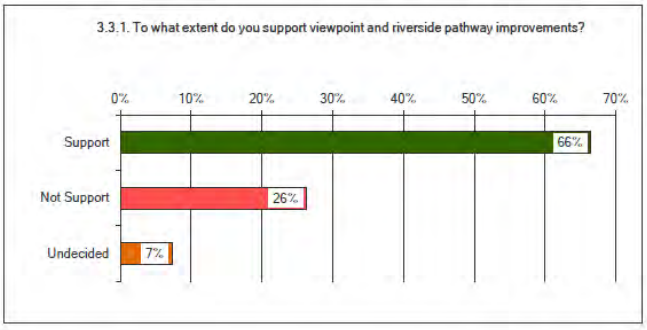
3.3.1. To what extent do you support or not support this pathway and viewpoint improvement option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	17	12	16	7	14	4	3.01	70
							answered question	70
							skipped question	24

3.3.1. To what extent do you support viewpoint and riverside pathway improvements?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	110	55	21	41	19	2.20	246
						answered question	246
						skipped question	60

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	210 66%	83 26%	23 7%	1.84	316



- A total of 316 individuals responded to this question (246 in the online survey and 70 in the workshop survey).
- Two thirds, (210 or 66%) of respondents strongly support, support or somewhat support viewpoint and riverside pathway improvements.
- One quarter (83 or 26%) somewhat do not support, do not support or strongly do not support viewpoint and riverside pathway improvements.
- A further 23 (7%) were undecided or not sure.

Question 47: Please explain what you like or dislike about providing viewpoints and riverside pathway and improvements.

- The majority of respondents support some types of viewpoints and riverside path improvements, noting they would be nice and provide enjoyment to many people, would be a place for sitting and safe viewing of the river for families and those not so able bodied, and would stabilize the bank and trails.
- Non-supporters felt the improvements were not necessary, and concerns were noted regarding erosion, cost, and taking away from the natural experience of the park and trails.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 48: To what extent do you support the Concept 3 boat launch viewpoint area?

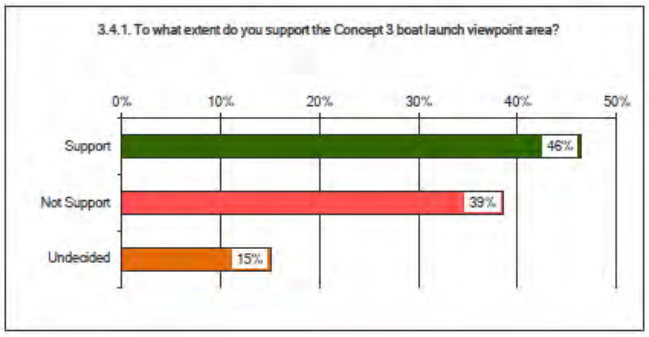
3.4.1. To what extent do you support or not support this boat launch area option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	7	6	10	14	28	6	3.96	71
							answered question	71
							skipped question	23

3.4.1. To what extent do you support the Concept 3 boat launch viewpoint area?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	61	64	22	59	42	2.83	248
						answered question	248
						skipped question	58

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	148	123	48	1.84	319
	46%	39%	15%		



- A total of 319 individuals responded to this question (248 in the online survey and 71 in the workshop survey).
- Almost half, (148 or 46%) of respondents strongly support, support or somewhat support the Concept 3 boat launch viewpoint area.
- Just over one third (123 or 39%) somewhat do not support, do not support or strongly do not support the Concept 3 boat launch viewpoint area.
- A further 48 (15%) were undecided or not sure.

Question 49: To what extent do you support the addition of a dock that provides water access to the boat launch viewpoint area?

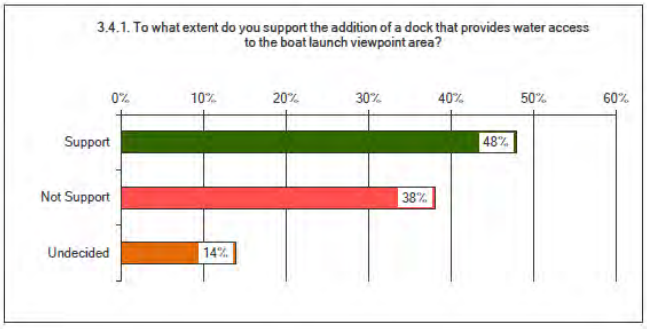
3.4.1. To what extent do you support or not support this boat launch area option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	7	6	10	14	28	6	3.96	71
							answered question	71
							skipped question	23

3.4.1. To what extent do you support the addition of a dock that provides water access to the boat launch viewpoint area?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	62	66	17	61	38	2.78	244
						answered question	244
						skipped question	62

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	151 48%	120 38%	44 14%	1.84	315



- A total of 315 individuals responded to this question (244 in the online survey and 71 in the workshop survey).
- Almost half, (151 or 48%) of respondents strongly support, support or somewhat support the addition of a dock that provides water access to the boat launch viewpoint area.
- Just over one third (120 or 38%) somewhat do not support, do not support or strongly do not support the addition of a dock that provides water access to the boat launch viewpoint area.
- A further 44 (14%) were undecided or not sure.

Question 50: Please explain what you like or dislike about the Concept 3 boat launch viewpoint area.

- Just over half of respondents like the Concept 3 boat launch viewpoint area, noting this design is beautiful and showcases the river valley and provides the most access to the water with the ramped walkway.
- Concerns noted related to cost, safety of the design, and the extensive infrastructure not necessary and inconsistent with the overall intent and use of the park.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 51: To what extent do you support the Concept 3 linked event areas?

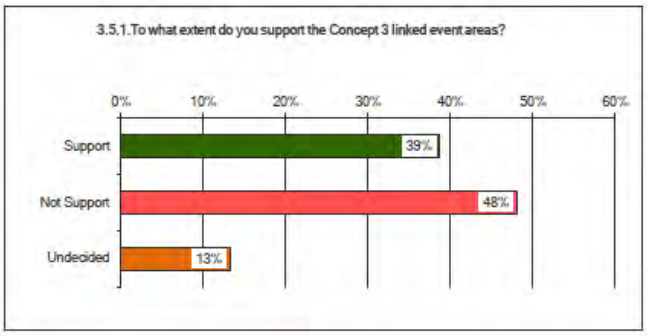
3.5.1.To what extent do you support or not support this event areas option?

Answer Options	Strongly Support	Somewhat Support	Support	Somewhat Not Support	Strongly Not Support	Not Sure	Rating Average	Response Count
	6	8	1	12	31	5	4.10	63
							answered question	63
							skipped question	31

3.5.1.To what extent do you support the Concept 3 linked event areas?

Answer Options	Support	Somewhat Support	Somewhat Not Support	Not Support	Undecided	Rating Average	Response Count
	58	47	28	78	36	2.95	247
						answered question	247
						skipped question	59

Answer Options	Support	Not Support	Undecided	Rating Average	Response Count
	120 39%	149 48%	41 13%	1.84	310



- A total of 310 individuals responded to this question (247 in the online survey and 63 in the workshop survey).
- Just over one third, (120 or 39%) of respondents strongly support, support or somewhat support the Concept 3 linked event areas.
- Almost one half (149 or 48%) somewhat do not support, do not support or strongly do not support the Concept 3 linked event areas.
- A further 41 (13%) were undecided or not sure.

Question 52: Please explain what you like or dislike about this option for the event areas.

- Almost one half do not support the linked event area option, noting concerns regarding impacts on the natural environment, better to have separate event spaces, and a desire not to have large events in BVLP when Hawrelak Park is just across the river.
- Supporters noted this would provide greater connectivity between park spaces, and would provide opportunities for a wider variety of events.
- See Online Survey & Workshop What We Heard reports for full comments.

Question 53: Concept 3 additional comments: Please provide any additional comments you may have regarding what you like or dislike about the options identified in Concept 3.

- Concerns were noted about overdevelopment and keeping it natural, reduction in the off leash area, increase in parking, cost of development, and providing a freeway for bikers.
- See Online Survey & Workshop What We Heard reports for full comments.

ALL CONCEPTS

Question 54: General comments: Please provide any additional comments you may have regarding the entire project and/or its individual elements.

- A range of comments were received.
- Supporters like the ideas and look forward to seeing improvements in Laurier Park, and revitalization of the river valley
- More organized parking, some path improvements and washrooms were noted as positive options; however, others felt that too much parking was proposed and that parking requirements are often over calculated.
- Concerns about cost, keeping the area natural, fencing and reducing the size of off leash areas (preference for expansion), and maintaining river access for dogs were noted.
- Other comments related to how public input would be used in developing the plan, as well as the need for improved signage, bylaw enforcement, better maintenance, and better separation of conflicting uses (e.g.., cyclists, dogs, walkers),
- See Online Survey & Workshop What We Heard reports for full comments.

ABOUT YOU

Question 55: On average, approximately how often do you visit Buena Vista / Sir Wilfrid Laurier Park?

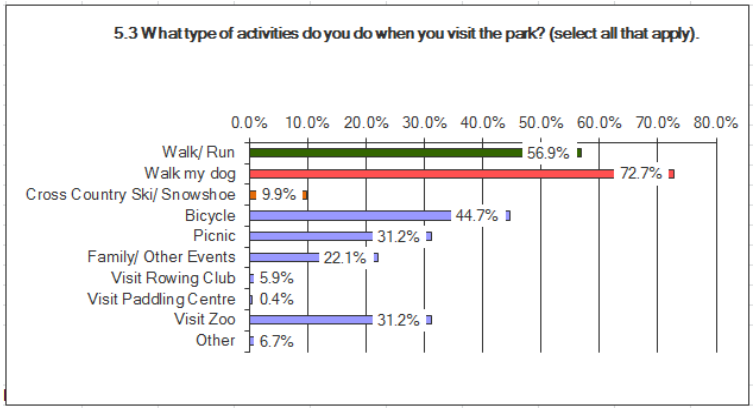
Daily	2-4 times a week	Weekly	Once or twice a month	Regularly on a Seasonal Basis	Once or twice a year	Never	Rating Average	Response Count
60	75	46	33	25	12	4	2.76	255
24%	29%	18%	13%	10%	5%	2%		

Question 56: If you said "Never", please tell us why you don't use the park.

- Non-users indicated they live too far away, didn't realize the park was there or had any amenities, didn't know about the pedestrian bridge, or had used the park in the past but not a lot since being knocked off their bike by a large dog.
- See Online Survey & Workshop What We Heard reports for full comments.

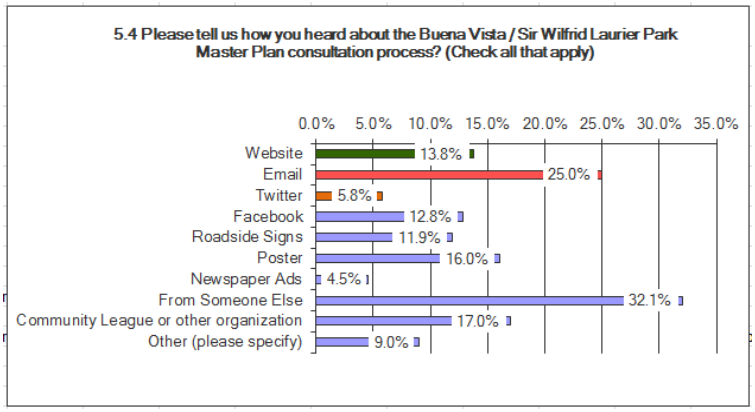
Question 57: What type of activities do you do when you visit the park? (select all that apply).

5.3 What type of activities do you do when you visit the park? (select all		
Answer Options	**Response Percent**	**Response Count**
Walk/ Run	56.9%	184
Walk my dog	72.7%	241
Cross Country Ski/ Snowshoe	9.9%	37
Bicycle	44.7%	146
Picnic	31.2%	90
Family/ Other Events	22.1%	71
Visit Rowing Club	5.9%	20
Visit Paddling Centre	0.4%	1
Visit Zoo	31.2%	95
Other	6.7%	23
Other (please specify)		30
answered question		**329**
skipped question		**63**



Question 58: Please tell us how you heard about the Buena Vista / Sir Wilfrid Laurier Park Master Plan consultation process? (Check all that apply).

5.4 Please tell us how you heard about the Buena Vista / Sir Wilfrid Laurier		
Answer Options	**Response Percent**	**Response Count**
Website	13.8%	43
Email	25.0%	78
Twitter	5.8%	18
Facebook	12.8%	40
Roadside Signs	11.9%	37
Poster	16.0%	50
Newspaper Ads	4.5%	14
From Someone Else	32.1%	100
Community League or other organization	17.0%	53
Other	9.0%	28
answered question		312
skipped question		80



Question 59: In what neighbourhood or community do you live?

Community/ Neighbourhood	Number	Community/ Neighbourhood	Number	Community/ Neighbourhood	Number
Alberta Avenue	2	Grandview	1	Oxford	1
Aldergrove	4	Greenfield	1	Parkallen	5
Antler Lake	1	Groat Estates	1	Parkdale	1
Argyll	1	Grovenor	11	Parkview	25
Belgravia	1	Hamptons	1	Patricia Heights	4
Belmead	1	Hazeldean	1	Pleasantview	1
Blackburne Creek	1	High Park	1	Prince Rupert	2
Britannia	1	Highlands	1	Queen Mary Park	4
Brookside	1	Idylwylde	1	Rio Terrace	6
Buena Vista	5	Inglewood	1	Riverbend	4
Callingwood	3	Jamieson	1	Riverdale	1
Canora	1	Jasper Park	1	Rossdale	1
Capilano	3	Laurier Heights	43	Royal Gardens	1
Castle Downs	5	Lessard	2	Sherbrooke	1
Clareview	2	Lewis Estates	2	Sherwood	1
Crestwood	13	Lymburn	1	Spruce Grove	1
Dechene	3	Lynwood	9	Strathcona	2
Dovercourt	1	Mayfield	4	Strathearn	1
Downtown	8	McKernan	2	Summerlea	1
Duggan	1	McQueen	2	Terwillegar	6
Ekota	1	Meadowlark	8	Thorncliff	1
Elmwood	3	Mill Creek	1	Valleyview	7
Garneau	3	Millwoods	4	Wellington	1
Fulton Place	1	Montrose	1	West Jasper Place	4
Garneau	5	North Glenora	4	West Meadowlark	2
Glenora	16	Old Strathcona	1	Westmount	7
Glenwood	1	Oliver	5	Westwood	1
Goldbar	1	Ormsby	2	Windsor Park	1
Grandin	1	Ottwell	1	Winterburn	1
				Woodcroft	4

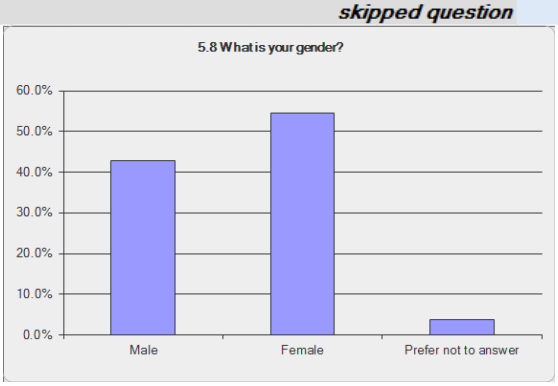
Question 60: What are the first three digits of your Postal Code?

Postal Code	Number	Postal Code	Number	Postal Code	Number
T3R	1	T5S	1	T6J	2
T5B	3	T5T	18	T6K	3
T5G	5	T5W	1	T6L	3
T5H	4	T5X	3	T6M	8
T5J	2	T5Y	2	T6R	7
T5K	7	T6A	4	T6V	3
T5L	3	T6B	1	T6W	2
T5M	16	T6C	4	T7X	1
T5N	42	T6E	7	T8A	2
T5P	13	T6G	11		
T5R	116	T6H	9		

- A total of 307 responses were provided to this question, and 84 respondents skipped the question.

Question 61: What is your gender?

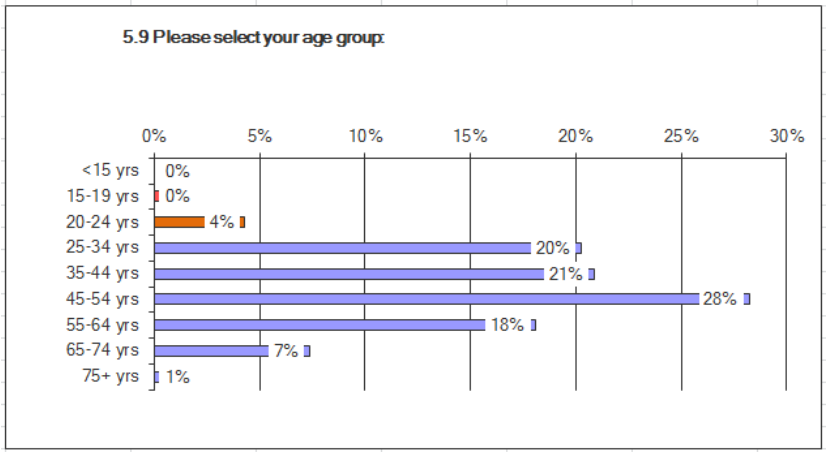
5.8 What is your gender?		
Answer Options	**Response Percent**	**Response Count**
Male	42.8%	140
Female	54.4%	178
Prefer not to answer	3.7%	12
answered question		327
skipped question		65



- 43% of the respondents to the survey were male, accounting for 140 responses
- 54% of the respondents to the survey were female, accounting for 178 responses
- 12 respondents preferred not answer the question.

Question 62: Please select your age group.

5.9 Please select your age group:										
Answer Options	<15 yrs	15-19 yrs	20-24 yrs	25-34 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65-74 yrs	75+ yrs	Rating Average
	0	1	14	66	68	92	59	24	2	11.55
	0%	0%	4%	20%	21%	28%	18%	7%	1%	
										answered question
										skipped question



- The majority of respondents were between 25 and 74 years of age.
- The largest number of respondents were between 45 and 54 years of age (28%), followed by those aged 35 to 44 (21%), and 25 to 34 (20%).
- There were no respondents under 15 years of age, and only 1 aged 15 to 19 years.
- Approximately 8% of respondents were over 65 years of age.
- A total of 66 respondents did not provide their age group.

Appendix G
Rationale for Parking Expansion in BVLP

Rationale for BVLP Master Parking Expansion

1. Introduction

The following document outlines current parking conditions and the rationale for increased parking in BVLP.

Edmonton's population is anticipated to grow by over 50% by 2040 (The Way We Grow, 2010). As the recreational use in river valley parks increase, the pressure on parking is expected to increase in BVLP. It is important to strike a balance between the needs of recreational park users and protecting the environmental quality of river valley parks and natural areas.

Within the BVLP Master Plan, special focus has been given to parking areas in Buena Vista, since this was identified as a major issue during site visits and public consultation activities. As well, public transit is not a viable solution for parking congestion in Buena Vista because off-leash park users, with the exception of service dog owners, are unable to take their pets on ETS buses.

2. Inventory of Existing Parking

Since BVLP consists of two distinct park spaces with separate recreation uses and requirements, separate parking inventories were conducted for Laurier Park and Buena Vista parking areas. As well, the spatial distribution of parking areas and the different pet leashing requirements for these areas make it difficult for all spaces to be available or desirable for users of both park areas.

Both onsite and desktop studies were conducted to count parking stalls and review the condition and qualitative experience of parking in the different parking areas.

Perpendicular parking stall counts were conducted and used curb stops or painted stall lines to determine stalls. A Cadastral base and an aerial photograph were used to determine the number of existing parallel parking stalls along 132 Street, since these stalls have no stall markings. Using AutoCAD for measuring, the parallel parking stalls numbers were determined according to City of Edmonton standard parallel parking dimensions (2.6m x 7.0m).

2.1. Laurier Park

Since Laurier Park provide a large number of picnic areas scattered throughout the large park site, parking is distributed in smaller groups of stalls (typically 10-15 stalls). Parking is predominantly perpendicular with access to stalls directly off of the Laurier Park loop road. Two small lots are located adjacent to the Edmonton Valley Zoo site and contain 25-30 stalls each. Handicap parking is distributed throughout the site at locations near accessible picnic areas.

2.2. Buena Vista

Only the south portion of Buena Vista is accessible by vehicle, not including trailer access to the Rowing Club and Whitewater Paddler. As a result parking is contained within a relatively contained area. Parallel parking is permitted along 132 Street. A small parking lot of 30 stalls is located just off of the Rowing Club access road (79 Avenue). An additional 30-stall parking lot is located adjacent to the Rowing Club tank facility. Approximately 15 stalls are for restricted to Rowing Club use during the club's peak hours. The remaining 15 stalls are for public use at all times. Each parking lot has two designated handicap parking stalls.

2.3. Total Parking Stall Count for BVLP

The following table outlines the number of legal parking stalls available in BVLP:

Table 1: Existing Parking Stalls in BVLP

	Perpendicular Stalls	Parallel Stalls	Boat Trailer Stalls	Total Stalls
Laurier Park	205	0	8	**213**
Buena Vista	60	20	0	**80**
		Total BVLP Parking Stalls		**293**

3. Parking Demand Analysis

Parking demand was analyzed using both quantitative and qualitative methods. Based on site visits and public involvement feedback, the demand for parking in Buena Vista was deemed to be higher than that of Laurier Park. For the purposes of the Master Plan, the qualitative data that was collected for Laurier Park was sufficient to form recommendations. For Buena Vista, additional quantitative analysis was conducted through traffic counts.

3.1 Qualitative Parking Demand Analysis

In addition to the parking counts, numerous site visits and information provided during public involvement activities provides an additional layer of qualitative analysis for parking demands in BVLP.

In general, the majority of parking demand in Laurier Park appears to be relatively satisfied. There were several parking stalls available during most site visits, which occurred at various days and times. The parking areas were busiest during the weekends, especially when group picnic sites were occupied. The distribution of available parking varied based on which picnic areas were used. There is a limited number of handicap parking stalls available, but existing stalls are located near accessible picnic sites. If additional accessible sites are developed, the demand for nearby handicap parking stalls likely will increase.

Parking demand in Buena Vista varies according to the number of users in the park. The busiest times appear to be during evenings and weekends, when the rowing club and off-leash areas are the busiest. During peak hours, driving and parking in Buena Vista requires a great deal of care and attention, because of dead-end parking lots, illegal parallel parking, pedestrians, and off-leash dogs.

3.2. Quantitative Parking Demand Analysis

Traffic counting and parking accumulation calculations were conducted using City of Edmonton standards. Traffic counting was only conducted for Buena Vista, since this is the area with the greatest parking issues and is the only site where parking is being added to account for shortages. Traffic was observed near the intersection of Buena Vista Road and 132 Street. This location allowed the observer to record cars entering and existing 132 Street. Parking counts were conducted on three different days to capture the park in different uses:

- Thursday, June 21,2012 to show usage on a typical weekday
- Saturday, June 23, 2012 to show usage during a well-attended event (Edmonton Summer Cruise Car Show was held on this day)
- Sunday, June 24th, 2012 to show usage on a typical weekend

The following table provides the peak parking accumulation and the parking deficit for Buena Vista:

Table 2: Existing Parking Deficit in BVLP

	Weekday Peak (# of Stalls)	Weekend Peak (# of Stalls)	Event Peak * (# of Stalls)
Parking Accumulation	90	160	530
Existing Parking	80	80	80
Parking Deficiency	10	80	450*

** Note: On event days, excess cars are typically directed to the overflow parking area, accessed off of 132 Street. The overflow parking area is not included in the existing stall count since it is only used for special events and is not typically a designated parking area.*

3.3. Illegal Parking

In order to improve parking conditions in Buena Vista, additional parking is recommended. The existing parking deficit likely will increase as Buena Vista park usage increases. As the deficit increases, the quality of recreational user experience decreases.

Already, the parking shortage is causing people to park illegally along roadways and within green spaces. Illegal parking has been observed on numerous occasions during the summer. This typically occurs along 132 Street, the Row Club parking lot access road, and on the north side lawn area adjacent to the Rowing Club parking lot. The actual number of illegally parked cars or parking tickets issued by bylaw enforcement has not been confirmed; however bylaw officers/ park rangers ticketing cars have been observed. Legalizing these parking practices would have a negative effect on safety because road widths do not accommodate these parking stalls and parked cars blocks visibility of pedestrians and off-leash dogs. In addition, there are negative environmental effects, such as vegetation damage and soil compaction when vehicles park on lawn areas or against forested edges.

Vehicles also park along the Yorath House driveway. It is unclear whether this is legal parking or not, so these stalls have not been included in any counts. In addition, the opening of Yorath House for public uses will require reopening this driveway for two-way traffic. As a result of requiring approximately 3.5m width for each traffic lane, parking would not be legal along this roadway.

3.4. Shared Parking Areas

Though Laurier Park and the Edmonton Valley Zoo parking areas currently support some of Buena Vista's overflow parking, these parking areas cannot relied on as a permanent solution for Buena Vista's parking deficit. Several factors make this approach impractical:

- Because BVLP covers is a large site and the majority of Laurier Park's parking stalls are not centrally located, Buena Vista Park users would be required to walk long distances in order to access the rowing facilities and off-leash areas.
- A current advantage of the existing Buena Vista parking areas is the ability for users to exit and enter vehicles without leashing pets. Laurier Park green spaces and picnic sites do not allow pets. Laurier pathways, roadways and the Edmonton Valley Zoo parking lot require dogs to be leashed.
- Laurier Park is a popular park destination. Though there is little concern over parking shortages in Laurier Park, as Edmonton population increases, pressure on parking is

likely to increase.

- The Edmonton Valley Zoo is currently implementing various facility upgrades and expansions. The number of Edmonton Valley Zoo visitor is anticipated to increase significantly as improvements are made. The current parking lot, which currently accommodates some of Buena Vista's parking overflow, may be filled to capacity. In addition, peak parking at the Edmonton Valley Zoo (weekends) will occur around the same time that Buena Vista experiences its peak parking demands.

4. Master Plan Parking Recommendations

The Master Plan provides recommendations for parking improvements in BVLP. The increase in parking stalls described in the Master Plan are intended to improve current visitor experience and accommodate additional users in the future. The Master Plan also recommends a phased approach to parking increases to match parking quantities with parking demands, rather than creating a surplus of stalls before they are needed by park users.

4.1. Laurier Park

In Laurier Park, the parking increase is limited to a small number of handicap parking stalls. These stalls are located along the currently closed section of Laurier Park's loop road. The handicap stalls are intended to provide vehicle access to accessible picnic site when the road is opened for weekend traffic. During weekdays, these parking stalls will not be available because the roadway will be closed to vehicles.

4.2. Buena Vista

Increasing Buena Vista's parking to the extent that it accommodates event parking requirement is not recommended. The existing field adjacent to Buena Vista is currently used as temporary overflow parking. This is a reasonable strategy for occasional events, but is not recommended for everyday parking overflow, as the lawn space does not support this extent of use, and a permanent parking lot in this area would have an aesthetically negative impact on the park entrance and adjacent residential properties. Should event parking demand or even frequency increase to a level that may cause significant damage to the area, alternative transportation strategies, such as shuttle buses, are recommended.

Instead, the Master Plan recommends that parking increase be limited to the open areas near existing Buena Vista parking areas, modification of existing parking configurations and the

The Master Plan identifies the following improvements to Buena Vista parking areas:

- 132 Street: The existing parallel parking is converted into perpendicular parking. This will require a widen area on the west side of the roadway to provide the additional space required for the perpendicular stalls.
- Overflow Parking Gates: Two gated entrances into the overflow parking area will be added on the west side of 132 Street. This will help direct vehicles in and out of the space more efficiently and limit turf damage to a smaller area.
- "Off-leash Parking Area": The existing parking lot near 132 Street will be expanded north to accommodate additional stalls that are easily accessed from the off-leash area. A small turn-around at the north end of the lot will mitigate the dead-end.
- "Rowing Club Parking Area": The existing parking lot near the rowing club will be significantly expanded and reconfigured to provide additional stalls and remove the existing dead-end. Removal and replacement of existing parking lot likely will be required, in order to reconfigure the parking lot and provide space for the shared-use path. This lot could be developed in phases.

- Yorath Parking Lot: A small parking lot near Yorath will be constructed to accommodate the renovated multi-use facility. As well, this parking area will provide a drop-off/ turn-around and handicap parking close to the facility. Depending on redevelopment bylaws, Yorath house may be required to provide more than the 20 stalls accommodated within the Yorath parking area. Instead of expanding this lot, additional stalls should be provided in the other Buena Vista parking locations as noted in the Master Plan.

The following table outlines the parking stall quantity increase in Buena Vista:

Table 3: Increase of Parking Stalls in Buena Vista

	132 Street	" Off-leash Parking Area"	" Rowing Club Parking Area"	Yorath Parking Area	Total Buena Vista Parking
Proposed Parking	42	60	70	20	192
Existing Parking	20	30	30	0	80
Parking Increase	22	30	40	20	112

The parking increase outlined in the Master Plan is nearly 1.4 times the current summer weekend parking deficit. For this reason the Master recommends a phased approach, where parking is increased when there is a regular peak deficit greater than 50 stalls. The following outlines the recommended phasing order of parking improvements:

- Yorath House (20 new stalls) – developed when Yorath House is renovated
- 132 Street perpendicular stalls (22 additional stalls)
- "Rowing Club Parking Area" (40 additional stalls) - This could be developed in phases
- "Off-leash Parking Area" (30 stalls)

4.3. Additional Parking Recommendations

In addition to physical parking improvements, elements such as parking signage, wayfinding, and pedestrian connections should be included as parking increases are made. This will clarify issues surrounding illegal parking and improve roadway visibility and pedestrian safety.

Handicap stalls will need to be added in appropriate areas as parking stall numbers increase. These should be located where they best accommodate people with mobility challenges. Particular attention should be paid to the parking area near Yorath House and the proposed fenced off-leash training area.

5. Conclusion

BVLP has been used as a recreational destination in the river valley for many decades. It is an important recreational space for a variety of different users, from picnickers to dog-walkers to rowers. Many of the current users of the park require vehicles to access the site as it is not serviced by transit and attracts people from all over the city.

The current demand for parking in Buena Vista greatly exceeds is current parking inventory on a regular basis. During peak hours, safety in Buena Vista may be a concern because a steady stream of traffic enters the site and vehicles are required to back out of dead-end parking lots. This issue, coupled with illegal parallel parking on roadways causes concern for pedestrian and off-leash animal safety.

There are various opportunities, as described in this document, to improve the parking conditions in BVLP. As park usage increases along with Edmonton's population, there will be more pressure on the parking. In other to accommodate and facilitate future park users, the Master Plans parking recommendations should be implemented, since they balance the needs of recreational users with respect for the natural river valley environment.

Appendix H
Detailed Order of Magnitude Cost Estimate

Detailed Order of Magnitude Costs

Item	Section 3.0 Rec. #	Description	Notes	Units	Quantity	Unit Price	
1	1	Park Entrance Enhancements	Incl. Park Entry Signs, Plantings, Information/Wayfinding Sign	Lump Sum	1	$135,000	$135,000
2	2	Park Entrance Round-About	Incl. Curbs, Concrete, Asphalt	Lump Sum	1	$600,000	$600,000
3	3	132 Street Gravel Parking Lot	Incl. Stripping, Grading, Gravel, Landscape Edge Restoration	m^2	685	$78	$53,430
4	3	Gravel Parking Lot Expansion (Off Leash Area)	Incl. Clearing, Grading, Gravel, Landscape Edge Restoration	m^2	900	$84	$75,600
5	3	Gravel Parking Lot Expansion (ERC And Off Leash Parking)	Incl. Stripping, Grading, Gravel, Landscape Edge Restoration	m^2	2350	$78	$183,300
6	5	Overflow Parking Access	Incl. Wood Bollard, Landscaping, vehicle gates	Lump Sum	1	$30,000	$30,000
7	7	Buena Vista Road Refinishing (as part of direction reversal)	Incl. Grading, Shaping And New Toplift Of Gravel	m^2	3680	$45	$165,600
8	8	Accessible Picnic Parking	Incl. Clearing (If Required), Grading, Gravel, 100mm Asphalt Lift,Landscape Edge Restoration	m^2	130	$65	$8,450
9	9	Bike Racks	Incl. Concrete Base and City Standard "Q" Bike Rack	each	21	$750	$15,750
10	10	3.0m Wide Paved Shared Use Pathway - Asphalt Overlay Only	Incl. Granular Base Shaping And Compaction, Asphalt, Line Painting	Lin. M	471	$75	$35,325
11	10	3.0m Wide Paved Shared Use Pathway - Painting Throughout Off-leash Area	Incl. Trail Painting	Lump Sum	1	$2,500	$2,500
12	10	3.0m Wide Paved Shared Use Pathway - Asphalt Overlay Only	Incl. Clearing, Granular Base Shaping And Compaction, Asphalt, Line Painting	Lin. M	1310	$110	$144,100
13	10	3.0m Wide Paved Shared Use Pathway - Realignment	Incl.clearing, excavation, subbase compaction, granular base, asphalt, line painting	Lin. M	220	$120	$26,400
14	12	3.0m Wide Paved Shared Use Pathway - Realignment	Incl. Clearing, Excavation, Subbase Compaction, Granular Base, Asphalt, Line Painting	Lin. M	260	$140	$36,400
15	12	3.0m Wide Paved Shared Use Pathway - New (assessible picnic site area)	Incl. Clearing, Excavation, Subbase Compaction, Granular Base, Asphalt, Line Painting	Lin. M	500	$140	$70,000
16	13	Modified Bike Access To Milton Ravine	Incl. Minor Clearing (If Required), Excavation, Geotextile, Granular Base, Gravel Topping	Lin. M	70	$70	$4,900
17	13	Pathway Reclamation of Former Bike Access	Incl. Gravel Salvage, Aeration, Topsoil, Seeding And Seedling Planting	Lump Sum	1	$10,000	$10,000
18	13	Removal Of Bike Channels And Remediation (Bridge Access Location)	Inc. 1.2 M Ht. Page Wire Fence, Posts and Small Park Identification Signs	Lump Sum	1	$2,500	$2,500
19	14	Pathway Surface Hardening Refinishing	Regrade And Add Gravel (10- Crush Gravel) To Existing Loop	Lin. M	2093	$35	$73,255
20	15	Riverside Pathway Maintenance Improvements	Minor Grading Improvements, Culverts (As Required),10mm Minus Toplift Granular, Geotextile As Required	LM	1800	$40	$72,000

Item	Section 3.0 Rec. #	Description	Notes	Units	Quantity	Unit Price	Total
21	15	Riverside Pathway Maintenance Improvements - Wood Railings	Incl. Railings, Trail Edge Treatments, Minor Retaining Walls	Lump Sum	1	$12,500	$12,500
22	16	Natural Trail Closure Restoration	Incl. Deadfall, signage, barrier, natural vegetation including Tree Whips, Understory Planting	Lump Sum	1	$25,000	$25,000
23	16	Natural Trail Closure Restoration	Incl. Deadfall, signage, barrier, natural vegetation including Tree Whips, Understory Planting	Allowance	1	$15,000	$15,000
24	18	Riverside Pathway Viewpoints	Incl. Grading, Gravel, Landscape Edge Restoration, Wood Decking	Each	4	$15,000	$60,000
25	19	Site Signage	Incl. All signage types described in Recommendation 18 (i.e. trail sign, interpretive, use, roadway, etc)	Allowance	1	$300,000	$300,000
26	20	Laurier Park Central Washroom Upgrade / Replacement (3 season)	Incl. Full renovation of existing washroom facility *	Lump Sum	1	$100,000	$100,000
27	21	Boat Launch Area Vault Toilet	Incl. Single stall M/F Vault Toilet (upgrade existing).	Lump Sum	1	$45,000	$45,000
28	21	Off Leash Meeting Node Vault Toilet	Incl. Prefabricated Double Stall Washroom Building And Vault	Lump Sum	1	$70,000	$70,000
29	21	Off Leash Meeting Area Trail Kiosk	Incl. Grading, Trail Connection, And Built Structure	Each	1	$7,500	$7,500
30	21	Off-leash Meeting Area Water Fountain	Including water fountain and waterline	Lump Sum	1	$5,000	$5,000
31	22	Caragana Removal and Naturalization Restoration	Incl. Mechanical Removal of Caragana / Noxious Weeds, Reestablishment of Natural Vegetation including Tree Whips, Understory Planting,	Lump Sum	1	$100,000	$100,000
32	23	Successional Tree Plantings	Incl. Supply and install caliper size trees to replace trees at the end of life spans. Est. 100 trees	Lump Sum	1	$60,000	$60,000
33	16/24	Naturalization Restoration/Vegetated Bank Stablization	Incl. Reestablishment of Natural Vegetation including Tree Whips, Understory Planting	Lump Sum	1	$40,000	$40,000
34	30	North Shoreline Access Location #1 - Pathway	Incl.Clearing as required, Grading, 2m Granular Pathway, Shoreline Rehabilitation -	Lin. M	60	$75	$4,500
35	30	Shoreline Access Location #2	Incl. 1.5m Access Pathway, Stair Case If Required, Shoreline Rehabilitation	Lump Sum	1	$15,000	$15,000
36	30	Shoreline Access Location #3 - White Water Paddlers Access	Incl. Removal And Disposal Of Existing Creosote Stairs, Install Of PT Wood Stair Case, Shoreline Rehabilitation	Lump Sum	1	$10,000	$10,000
37	30	North Shoreline Access Location #1 - 4m Wide Wood Stairs	Incl. Stair Case, Shoreline Rehabilitation	Lump Sum	1	$35,000	$35,000
38	31	Fenced Off Leash Training Area	Incl. 1.4m Ht. (4 Rail) Split Rail Fencing W/ 750mm Ht Page Wire Mesh Lower Half, Gates (3)	Lin. M	237	$75	$17,775
39	31	Fenced Off Leash Training Area Asphalt Pathway 2.0m	Incl. Clearing, Excavation, Subbase Compaction, Granular Base, Asphalt	Lin. M	260	$70	$18,200
40	32	Boat Launch Area Viewing Deck	Incl. clearing, as required, foundations, structure, furnishings	Lump Sum	1	$350,000	$350,000

Item	Section 3.0 Rec. #	Description	Notes	Units	Quantity	Unit Price	Total
41	34	Upgrade Existing Sites to Accessible Picnic Site	Incl. Clearing (If Required), Grading, Gravel, 75mm Asphalt Lift, Root Barrier, Landscape Edge Restoration, Accessible Picnic Table	Each	25	$4,000	$100,000
42	34	Upgrade Existing Group Sites to include one Accessible Picnic Site	Incl. Clearing (If Required), Grading, Gravel, 75mm Asphalt Lift, Root Barrier, Landscape Edge Restoration, Accessible Picnic Table	Each	8	$4,000	$32,000
43	35	Natural Playground	Incl. Equipment, edger, surfacing - 1 large and 1 smaller play area	Lump Sum	2	$750,000	$1,500,000
						Subtotal	**$4,666,985**
						27% Contingency & Fees	$1,260,086
						Phase II Detailed Design	$246,000
						Phase II Environmental Reporting	$100,000
						PROJECT TOTAL	**$6,273,070**

Item	Section 3.0 Rec. #	Description	Notes	Units	Quantity	Unit Price	
Yorath House Building Improvements							
48	25	Yorath House Building Renovations					
			Design Phase	Lump Sum	1	$176,625	$176,625
			Construction Phase	Lump Sum	1	$732,500	$732,500
			Project Management (City)	Lump Sum	1	$124,460	$124,460
			Soft Costs (Permits, Assessments,etc)	Lump Sum	1	$34,725	$34,725
						Subtotal	$1,068,310
			Design Phase Contingency	Lump Sum	1	$35,050	$35,050
			Construction Phase Contingency	Lump Sum	1	$121,298	$121,298
						Subtotal with Contingency	**$1,224,658**
Yorath House Servicing Improvements							
49	25	Yorath House Building Servicing					
			Sanitary servicing from existing main	Lump Sum	1	$86,750	$86,750
			Servicing tie-in from existing main to property line	Lump Sum	1	$20,000	$20,000
						Subtotal	$106,750
			Engineering and Contingency (30%)	Lump Sum	1	$32,025	$32,025
			Project Management (15%)	Lump Sum	1	$16,012	$16,012
						Subtotal with Contingency and Fees	**$154,787**

Exterior Yorath House Improvements							
50	26	Yorath House -Upper Terrace Landscape Improvements	Incl. Paving Surfacing, Landscaping, Pergola	m^2	775	$200	$155,000
51	26	Yorath House - Lower Terrace Landscape Improvements	Incl. Looping Granular Trail, Orchard, Leveling And Re-Establishment Of Lawn, Landscaping, And Paving Around Yorath Family Cairn, Pergola	Lump Sum	1	$115,000	$115,000
52	26	Yorath House - Stone Wall, Stairs And Ramp	Incl. Rehabilitation And Extension Of The Field Stone Wall (no concrete)	Lump Sum	1	$75,000	$75,000
53	28	Yorath Interpretive Signage	Based On Typical Signage Costs Multiplied By Estimated Number Of Signs including bases, supports and sign. (not including design fees)	Allowance	1	$30,000	$30,000
47	4	Gravel Parking Lot Expansion And Drop Off Loop (Yorath House Area)	Incl. Stripping, Grading, Gravel, Landscape Edge Restoration	m^2	1275	$78	$99,450
						Subtotal	$474,450
						Subtotal with Contingency (14%)	$543,245
						PROJECT TOTAL	**$1,922,690**

Item	Section 3.0 Rec. #	Description	Notes	Units	Quantity	Unit Price	
44	11	Pathway Fencing [1]	Split Rail Fencing With Lower Wire Mesh Section**	Lin. M	400	$85	$34,000
45	11	Static Kissing Gates [1]	Split Rail Fencing With Lower Wire Mesh Section extending to Vegetation each side**	Each	20	$2,500	$50,000
46	21	Boat Launch Area Vault Toilet [2]	Incl. Single stall M/F Vault Toilet. (Option for temporary trial 3-season portapotty in phase one)	Lump Sum	1	$10,000	$10,000

NOTES:

1 This item would will only be pursued if additional off-leash/shared-use pathway mitigation measures are required.

2 This is an optional item that could be pursued if a 3-season pilot project using a temporary basic toilet (port-a-potty) is conducted prior to installing a permanent vault toilet.