

Fergus Watershed Biodiversity Preserve Park

Management Plan



Parks, Recreation & Culture
City of Surrey
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1. INTRODUCTION

1.1 PURPOSE

The purpose of this management plan is to provide a guide to the long term management of the Fergus Watershed Biodiversity Preserve. The vision and goals establish the principles of protection and enhancement that are to be the paramount considerations in managing this site.

1.2 VISION

Fergus Watershed Biodiversity Preserve will be an ecological sanctuary composed of a variety of healthy habitats for native flora and fauna. The Biodiversity Preserve will protect and enhance biodiversity in the neighbourhood, city and region, compensating for habitat losses due to development of upstream areas in the Highway 99 Corridor. Carefully designed access to the Biodiversity Preserve will provide opportunities for ecological stewardship and environmental education. The Biodiversity Preserve will be a model for managing public access where the priority is habitat conservation and protection.

1.3 SITE OVERVIEW

The subject of this Management Plan is a City-owned site of just over 27 hectares (67 acres). The Biodiversity Preserve is located in a rural area of South Surrey. Immediately across 168th St are large private properties in the Agricultural Land Reserve (ALR). To the south are private properties that are bisected by Carlson Creek and its tributaries that feed Fergus Creek. It is fronted primarily by 168th Street, which is designated a future arterial, and by 12th Avenue to the south and 15th Avenue to the north, both local roads. Highway 99 runs the length of the site's western boundary. Land to the north and south is privately owned, with one provincially-owned parcel at the south-west border of the site.

The Highway 99 Corridor Local Area Plan (LAP), adopted in 2004, outlines the development pattern for the overall area, including the designation of the Fergus Watershed Area as a protected hub for habitat and biodiversity conservation. This designation as a hub for compensation of the environmental impacts of surrounding developments is a unique approach for the City. To the north are private properties that are designated Commercial/Business Park in the Highway 99 LAP, and the properties to the south are designated Open Space and Business Park.

The City acquired the site over four years between 2005 and 2009. Additional areas identified in the LAP are targeted for protection and inclusion in the plan as development in the area continues.

The north-west corner of the property is bisected by a BC Hydro right-of-way with two large capacity towers for high voltage lines. There are plans for a sanitary pump station in the far north-east corner of the property to service developments to the north in the Sunnyside Heights area.

A 5m-wide strip of site land along 168th Street will be dedicated for the road allowance. This land will not be part of the actual road, but rather will accommodate tree planting and a portion of the trail network.

1.4 PLANNING PROCESS

The planning process for the Biodiversity Preserve began in 2011 with the completion of an environmental assessment report. The report consists of an inventory of existing soil types and condition, hydrogeological conditions, wetlands and watercourses, vegetation communities, wildlife habitat and the existence of, or potential for species at risk as well as recommended habitat compensation projects in the Biodiversity Preserve.

The next steps involved a community engagement process to invite a broad range of voices and interests to provide input into the plan. Planning work was guided by a Steering Committee formed of representatives from the Parks Division (Parks Planning, Operations and Natural Areas) and the Engineering Department (**Appendix I**). This Steering Committee brought together those with unique interests in the Biodiversity Preserve for their relevant expertise and knowledge. The Steering Committee met during the planning process and will continue to provide input and feedback throughout the planning and operation of the Biodiversity Preserve Management Plan.

The first open house/workshop was held in June 2013 and provided some background information on the context and the environmental attributes of the Biodiversity Preserve. It sought to understand the general interest in the Biodiversity Preserve and to establish a vision and possible uses or levels of development. A second open house was held in October 2013; it provided a summary of the feedback from the first open house and three concept plans for review and comment (**Appendix II**). For both of these sessions, information was prepared based on analysis of previous documents, site visits, and discussions with the City Steering Committee and other departments and agencies.

Following the open houses, further investigation into the history, purpose and intended function of the site was completed. An Advisory Committee of concerned citizens was formed (**Appendix I**). The Advisory Committee and City staff agreed to uphold the original intent of the acquisition of the Biodiversity Preserve as a biodiversity and habitat hub, and active recreation activities (e.g., disc golf, extensive trails) were eliminated from consideration or significantly reduced.

This Advisory Committee met five times, including a walk-through of the Biodiversity Preserve. The group worked with the City to prepare the management plan and provided valuable context and background information, and unique specialized knowledge and history of the area. Feedback from the advisory committee after working through the creation of the management plan is attached (**Appendix II**).

1.5 GOALS

The goals for the management plan are guided by the vision for the Biodiversity Preserve and are intended to address the opportunities and constraints of this open space.

1. Protect and enhance sensitive ecosystems and critical habitats for wildlife and vegetation.
2. Provide for and maintain appropriate access to the Biodiversity Preserve in conjunction with interpretive opportunities that promote an understanding of the wildlife and vegetation.
3. Educate and engage visitors on the importance of the biodiversity and habitat in the Biodiversity Preserve, including the need for protection.
4. Integrate First Nations history including practices and knowledge.

1.6 MANAGEMENT STRATEGIES

It is difficult to protect and enhance biodiversity on a site that is surrounded by increasing development pressures. The following are three high-level management strategies that are seen as necessary to achieve the goals,

1. Designate and maintain the most sensitive areas of the Biodiversity Preserve as 'off limits' to public access, through planting, fencing, signage, education, enforcement and adaptive management.
2. Designate and maintain the entire Biodiversity Preserve as 'no dogs' through education, signage and enforcement.
3. Establish an ongoing Advisory Committee or group to foster stewardship and education about the Biodiversity Preserve and management of its assets.

Section 3.1 provides more detailed information on the management strategies for the Biodiversity Preserve.

1.7 NAME

In 2010, Council adopted the name 'Fergus Watershed Park' in recognition of the park's location along the main stem and tributaries of Fergus Creek. Through the preparation of this management plan, and working with the Advisory Committee and stakeholder groups, a new name was chosen that reflects the importance and special nature of the site. **Fergus Watershed Biodiversity Preserve Park** was chosen as the new name as it reflects the unique nature of this site and signals to all that this is a place where biodiversity and diverse habitats will thrive and grow in perpetuity. This new name is a first for Surrey and highlights the City's intention to promote biodiversity.

2. SITE DESCRIPTION

2.1 SITE HISTORY

The history of this land stretches back thousands of years. It was used by the Semiahmoo First Nation for hunting and gathering. Fergus Creek was and is important to First Nations communities as it is one of a number of tributaries that feed the Little Campbell River (Tat-a-lu in the Semiahmoo language), a fish-bearing river that drains to Semiahmoo Bay.

In 1859, Coast Meridian Road (now 168th Street) was the first north-south trail established in Surrey as land surveying of the area began. In the 1880's, Coast Meridian Road was completed through to the US border. Subsequently, the land was homesteaded by different families, establishing the pattern of settlement and the grid of roads that we have today. The McMillan family were the first Europeans to settle what is now the Fergus Watershed area, clearing the land for farming and grazing operations.

Over the past century, other projects have had an impact on this land. The completion of Highway 99 in 1962 created a defined western boundary. The installation of high voltage transmission lines has affected the types of vegetation possible under the lines. Prior to the City acquiring the land, it was used for decades by a private farmer for cattle grazing. There had been little change in the area over the past several decades until recently when several land use plans were approved and urban development commenced.

2.2 PREVIOUS STUDIES

There are a number of land use plans and other City plans and policies that play a role in shaping the Biodiversity Preserve and the surrounding area. These are summarized below.

City of Surrey Sustainability Charter (2008)

The Sustainability Charter is the overarching policy document for the City of Surrey. It provides a framework and reference for all other policies and City actions. The Fergus Watershed Biodiversity Preserve Management Plan complements and realizes several objectives of the Sustainability Charter including:

- SC8—Municipal Outreach, Public Education and Awareness



Figure 1: Fergus Watershed Biodiversity Preserve

- EN12—Enhancement and Protection of Natural Areas, Fish Habitat and Wildlife Habitat
- EN13—Enhancing the Public Realm
- EN17—Enhancing Biodiversity

Official Community Plan (OCP, 2014)

This Management Plan supports the objectives of the OCP by adhering to several of its policies including:

- D1.2—Establish plans, strategies and policies to enhance and manage the green infrastructure network
- D1.4—Preserve riparian areas and watercourses in their natural state and link them with upland natural areas to develop a connected network of natural areas throughout Surrey
- D1.9—Encourage ecological restoration of riparian and/or significant natural areas to improve stream health, to support biodiversity and to improve the ecological health of the green infrastructure network
- F.1.1—Continue to encourage citizen involvement by actively coordinating the planning process with relevant community organizations, agencies, neighbourhood and volunteer groups

Biodiversity Conservation Strategy (BCS, 2014)

The BCS builds on the 2011 Ecosystem Management Study (EMS) that identifies all key habitats in the City. The BCS identifies Fergus Watershed as a critical hub with several regionally significant habitat corridors linking to and through the area. The hub is identified as high value with a variety of important habitat communities.

The identified corridors are critical components of the Green Infrastructure Network (GIN); these corridors have high ecological values that support species at risk. The GIN is an interconnected network of protected open space and natural areas that conserves ecosystem values and functions and provides benefits to people and wildlife. The relevant recommendations from the BCS are listed below in Table 1.



Figure 2: BCS Hub F

Label	Ecological Value	Target Width	Recommendation
Hub F	High	n/a	Large natural area with important aquatic and riparian habitat for species at risk. Pockets of forest and shrub communities fragmented by old fields. Protected areas, including Fergus Park, are located in this hub. Protect additional lands through acquisition to create larger contiguous natural area. Restore forest communities along creeks. Create wetlands in old fields adjacent to forests.
Corridor 33	Moderate	50m	Edge buffer for ALR. Highly disturbed area through low density residential area. Runs adjacent to 168 th Street. Provides important edge habitat to ALR field habitat. Expand on existing hedgerow and protect a forested corridor adjacent to 168 th Street. Work with adjacent landowners to naturalize adjacent private land and remove barriers to movement. Traffic calming and signage for crossings along 168 Street.
Corridor 34	High	100m	Riparian corridor within proposed Hub F. Supports species at risk. Enhance/expand riparian habitat. Traffic calming and signage for crossings at 16 th Ave.
Corridor 35	High	100m	Riparian corridor within proposed Hub F. Supports species at risk. Enhance/expand riparian habitat. Traffic calming and signage for crossings at 16 th Ave.

Table #1 – BCS Information



Ecosystem Management Study (EMS, 2010)

Adopted in 2011, the EMS identifies and ranks all the habitat hubs, corridors and sites in the City. Identifying the green infrastructure in the City was the first step in being able to protect and enhance green infrastructure in perpetuity. The study ranks the natural areas with a weighted scale to provide an ecological significance score. Some of the metrics used to calculate the weighted score include vegetation naturalness, habitat size, diversity and integrity, and total impervious area. The report identifies the corridor between the upper and lower Fergus reaches near 168th Street as one of the five highest ranked corridors in the City. Figure 3 shows a map of the Fergus site in the EMS.

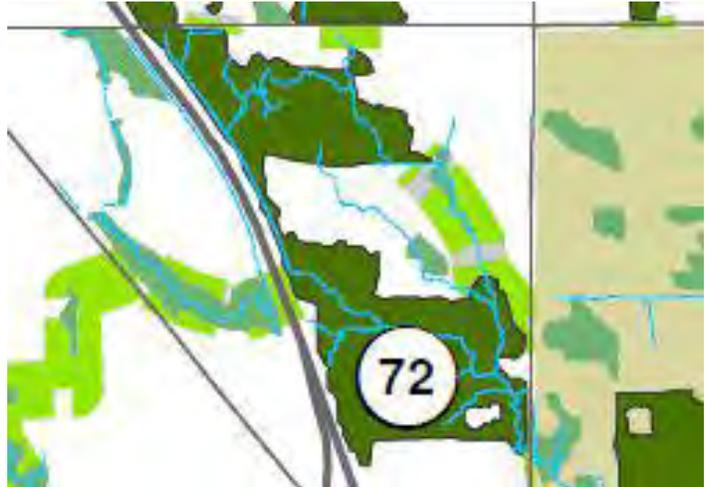


Figure 3: EMS Information

Fergus Creek Integrated Storm Water Management Plan (ISMP, 2010)

Completed in 2010, this plan addresses the overall Fergus watershed that extends north to approximately 16th Ave, west to 152nd Ave, east between 168th and 172nd and south to 8th Ave. A map of the entire watershed with the Fergus Watershed Biodiversity Preserve highlighted is shown in Figure 4.

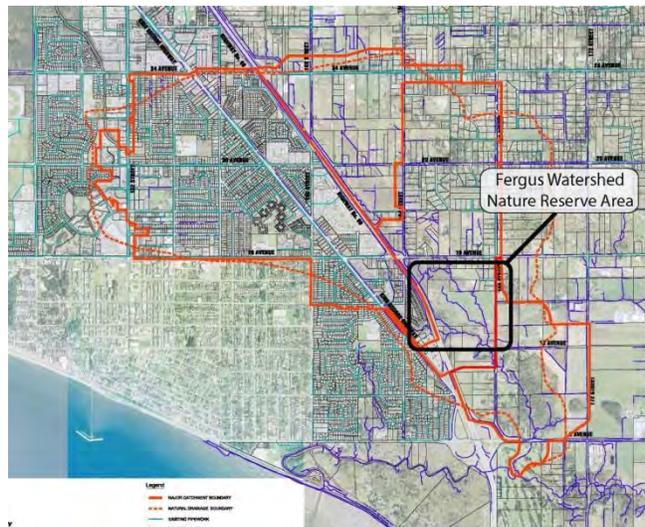


Figure 4: ISMP Information

The ISMP is an overarching document with the objectives of providing integration of planning and drainage for development. It looks at the existing watercourses, soils, surficial geology, fish and wildlife habitat, recreational amenities and existing planning documents to arrive at comprehensive recommendations for development in the ISMP area considering stormwater management values.

The ISMP recommends numerous measures that can help create a sustainable watershed over time. It advocates for adaptive management so that development can evolve to meet the changing needs of the watershed as the impacts of development are understood over time.

Grandview Heights General Land Use Plan (GLUP, 2005)

Adopted in 2005, the GLUP establishes an overall vision for development in the Grandview area. It highlights the importance of tree and vegetation retention as well as the protection of riparian areas and other natural features. The Fergus Watershed is located just outside the GLUP but the conditions within that plan area have direct and immediate impact on the watershed area.

Highway 99 Corridor Local Area Plan (LAP, 2004)

Adopted in 2004, the LAP establishes the land use and transportation network for the entire plan area. The Fergus Watershed area is located within the LAP and is identified as future parkland to serve as the location for compensation and restoration works due to development in the LAP. This is a novel approach to habitat protection in the City, focussing the protection and

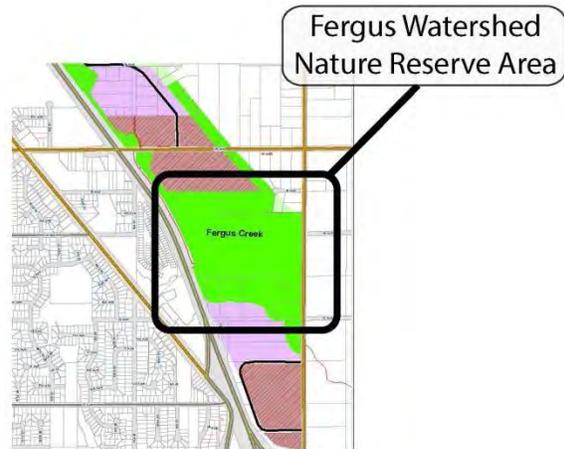


Figure 5: Hwy 99 LAP Information

restoration of habitat and biodiversity in one contiguous hub rather than being scattered throughout the LAP. To support this approach, an area-specific Development Cost Charge (DCC) was placed on development in the LAP to acquire parkland above and beyond the standard requirements, acknowledging the importance of the Fergus Watershed area and the need to protect it.

The compensation and restoration works identified in the LAP include riparian restoration and enhancement, and preservation and enhancement of representative habitat types and wildlife species, paying particular attention to habitat for the Pacific Water Shrew and other Species at Risk. One of the recommendations of the LAP is the establishment of a 'habitat management plan that maximizes habitat diversity within areas to be protected as wildlife habitat'.

2.3 FERGUS WATERSHED PARK ENVIRONMENTAL ASSESSMENT REPORT

In 2011, Phoenix Environmental Services was commissioned to conduct an environmental assessment for the newly acquired property. The report summarizes the existing environmental conditions on the property and provides recommendations for restoration and enhancement projects. The following is a summary of the key findings.

Soil Types and Condition

The dominant soil type in the Fergus Watershed area is Heron, described as coarse-textured littoral deposits over moderately coarse glacial till or moderately fine textured glaciomarine deposits. Within the area, six different soil types are detailed, per Table 1.

Soil Type	Area	Description	Drainage
Heron-Scat	8.55 ha	Primary: Coarse-textured littoral deposits over moderately coarse glacial till or moderately fine textured glaciomarine deposits Secondary: Moderately fine textured glaciomarine deposits	Poor drainage, perched water table
Sunshine-Summer Heron	8.45 ha	Primary: Sandy littoral and glacial outwash deposits Secondary: Less than 100cm of coarse textured littoral and glacial outwash deposits over moderately fine or fine textured glaciomarine and marine deposits Tertiary: Coarse-textured littoral deposits over moderately coarse glacial till or moderately fine textured glaciomarine deposits	Primary: Well to moderately well drained Secondary: Imperfect drainage, perched water table Tertiary: Poor drainage, perched water table
Heron-Sunshine	4.9 ha	Primary: Coarse-textured littoral deposits over moderately coarse glacial till or moderately fine textured glaciomarine deposits Secondary: Sandy littoral and glacial outwash deposits	Primary: Poor drainage, perched water table; Secondary: Well to moderately well drained
Heron-Summer-Cloverdale	2.3 ha	Primary: Coarse-textured littoral deposits over moderately coarse glacial till or moderately fine textured glaciomarine deposits Secondary: Less than 100cm of coarse textured littoral and glacial outwash deposits over	Primary & Tertiary: Poor drainage, perched water table Secondary: Imperfect drainage, perched water table

		moderately fine or fine textured glaciomarine and marine deposits Tertiary: Moderately fine to fine-textured marine deposits	
Bose	1.6 ha	30 to 160cm of gravelly lag or glacial outwash deposits over moderately coarse textured glacial till and some moderately fine textured glaciomarine deposits	Well to moderately well drained; telluric seepage
Heron-Scat-Sunshine	1.3 ha	Primary and Secondary: Coarse-textured littoral deposits over moderately coarse glacial till or moderately fine textured glaciomarine deposits Tertiary: Sandy littoral and glacial outwash deposits.	Primary and Secondary: Poor drainage, perched water table; Tertiary: Well to moderately well drained.

Table 2: Soil Types in the Biodiversity Preserve

Soil pits were dug to determine nutrient levels and in five of the six test pits, the soils met the BCSLA/BCLNA standards for plant grown medium regarding percentages of sand, silt, clay and silt/clay.

Hydrogeological Conditions

The ground surface throughout most of the Fergus Watershed area with the exception of the riparian forest along the main Fergus Creek stem was soft and wet at the time of study. Both the topsoil and sub-soils were also wet at the test pits. The area sits on a seasonally shallow aquifer that provides additional flow to the Fergus Creek tributaries but dissipates in the summer. The study team suspects the main stem of Fergus Creek intersects with a deeper aquifer that feeds the creek year round.

As the entire site slopes to the south-east towards the main stem of Fergus Creek, the assessment recommends any wetland compensation opportunities are best located in the northern portion of the area while fish accessible pond habitat should be located in the southern portion of the area.

Aquatic Assessment and Conditions

Multiple watercourses are located in the area including the main stem of Fergus Creek that travels south/south-west to the Campbell River before draining into Semiahmoo Bay.

Fergus Creek is a fish-bearing class A stream indicating year-round fish presence. Fergus Creek has been known to and can still support:

- Chinook
- Chum
- Coho
- Cutthroat and Rainbow Trout
- Steelhead
- Lamprey
- Prickly Sculpin
- Threespine Stickleback

According to the assessment, there are three tributaries off the main stem of Fergus Creek. Tributary 4.1 East runs south from a culvert at 16th Avenue south into the site. It travels through a forested area north of the site before becoming more poorly defined on site due to past cattle grazing impacts. It meets tributary 4.1 West as it regains a more formalized channel before its confluence with Fergus Creek. It is considered class A up to approximately 100m south of the northern edge of the park property. The upper 100m are currently class B due to the poorly formed channel and past agricultural impacts.

Tributary 4.1 West forms at the north-west of the site, the result of multiple, narrow poorly defined channels and small seasonal ponding areas coming together. It becomes defined approximately 20m before it emerges from the forested area. It meanders south-east through the site in poorly defined channels before its confluence with tributary 4.1 East where the channel is more defined. In the centre of the site, where the channel characteristics improve and the vegetation is more predominant, the watercourse is considered class A. As the watercourse travels north it loses the ability to support fish passage and it turns into a class B stream.

The final tributary is 4.2 that runs adjacent to Highway 99 south of 16th Avenue. It has recently been relocated to accommodate the 16th Avenue interchange and improvements to the channel north of the site are complete. Adjacent to the site, it runs parallel to the freeway before making a sharp turn east into the site. Once it enters the site it becomes a much more defined channel with significant riparian vegetation. It is joined by Carlson Creek that travels

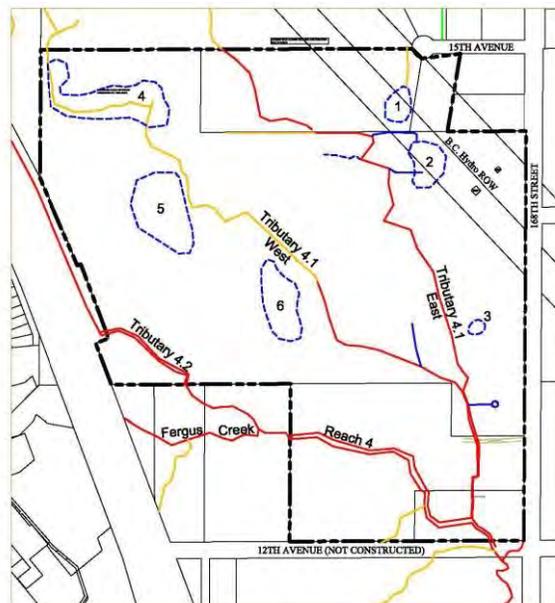


Figure 6: Watercourse Map

under Highway 99 and west of the property before joining the tributaries at the south-east of the site and flowing south.

There are no well-defined ponds on the site; however, there are several wetted areas and wetlands that are both natural and manmade.

Vegetation Communities and Conditions

The assessment identifies this site as within the Coastal Douglas Fir, moist maritime biogeoclimatic subzone with no areas of historic old growth forest ecosystem remaining. Prior to logging and agricultural activities, the site would have hosted several native species including:

Trees

- Douglas Fir (*Pseudotsuga menziesii*)
- Western Redcedar (*Thuja plicata*)
- Western Hemlock (*Tsuga heterophylla*)
- Big Leaf Maple (*Acer macrophyllum*)

Understory

- Salal (*Gaultheria shallon*)
- Vine Maple (*Acer circunatum*)
- Indian Plum (*Oemleria cerasiformis*)
- Salmonberry (*Rubus specatbilis*)
- Sword Fern (*Polystichum munitum*)
- Spiny Wood Fern (*Dryopteris expansa*)
- Red Huckleberry (*Vaccinium parvifolium*)
- Baldhip Rose (*Rosa gumnocarpa*)
- Ocean Spray (*Holodiscus discolor*)

The assessment identifies four primary vegetation types: old field, deciduous forest, mixed forest, and riparian habitat. The old field areas are primarily grasses, common rush, blackberry thickets and patches of trees and shrubs. The deciduous forest in the north/north-west of the site is dominated by Red Alder and Black Cottonwood trees with the occasional Douglas Fir and Big Leaf Maple. The mixed forest is dominated by Douglas Fir, Western Hemlock and Big Leaf Maple with an understory of primarily Snowberry and Indian Plum.

Finally, the riparian vegetation type includes areas along Fergus Creek and its tributaries. This type cuts through the above mentioned vegetation types as the watercourses traverse the property. Where the riparian area crosses the old field habitat, it is dominated by reed canary grass, blackberry, Canada thistle, dandelion and other invasive species with small patches of mature trees. The riparian area through the mixed forest area contains Douglas Fir and Big Leaf Maple with

abundant coarse woody debris cover. In the deciduous forest, the dominant trees are Red Alder and Black Cottonwood with limited coarse woody debris cover.

Species at Risk--Wildlife

No wildlife Species at Risk were identified on site however it was determined that six federally and/or provincially listed wildlife species may occur on site. These include:

- Pacific Water Shrew (*Sorex bendirii*)
- Snowshoe Hare (*Lepus americanus washingtonii*)
- Trowbridge's Shrew (*Sorex trowbridgii*)
- Dun Skipper (*Euphyes vestries*)
- Oregon Forestsnail (*Allogona townsendiana*)
- Pacific Sideband (*Monadenia fidelis*)
- Northern red-legged frog (*Rana aurora*)

Species at Risk--Vegetation

No vegetation communities or Species at Risk were identified on site however it was determined that the federally and provincially listed Vancouver Island Beggarticks may occur along the banks of the watercourses in this area. A plant survey during the appropriate season is recommended to determine if this species is in fact present on site.

A list of all vegetation and wildlife species is attached as **Appendix III**.

Habitat Enhancement Projects

The report makes recommendations for restoration and enhancement projects that are consistent with the intent of the LAP. Thirteen different habitat enhancement projects are listed. The projects are intended to improve forest, riparian and aquatic habitat, fish passage, base flows, and water quality, and to stabilize and enhance the stream banks and channels. Proposed projects from the 2010 report are shown in Figure 7.

The habitat enhancement projects have been updated in response to the Management Plan in consultation with Phoenix Environmental Services. New project boundaries are illustrated on the concept plan, and updated project descriptions are included in the management plan.

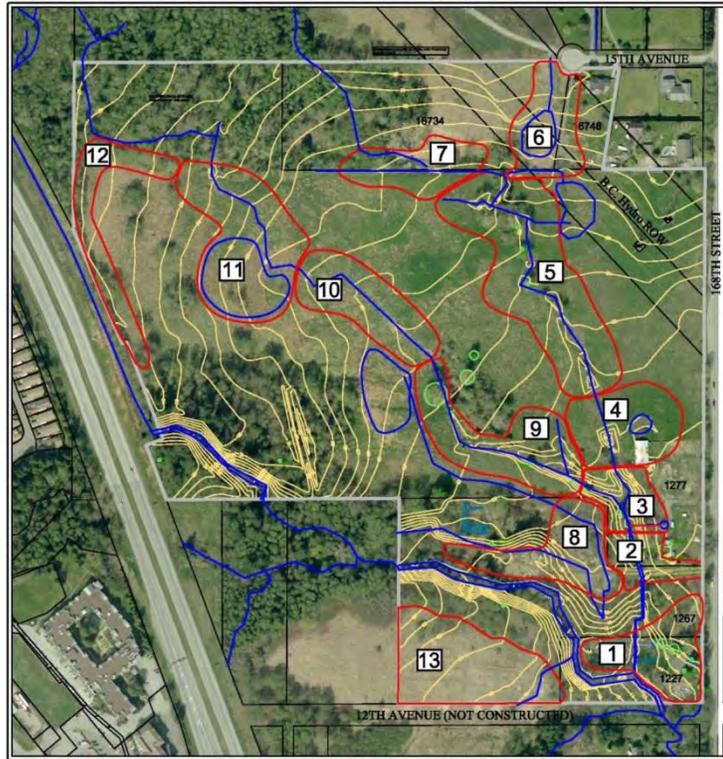


Figure 7: Habitat Compensation Projects

2.4 RECENT STUDIES AND INFORMATION

Some recent studies and information that are relevant to the Management Plan have become available since the environmental assessment was completed.

Habitat Preferences for Northern Red-legged Frog (Draft--2014)

This report outlines work on habitat restoration projects in the Little Campbell Valley watershed and their impacts on the red-legged frog populations. The report also highlights work undertaken in 2013 in which ephemeral wetlands were created to support breeding of the red-legged frog. The Little Campbell River watershed is an important and valuable area for the red-legged frog due to the quantity and quality of suitable habitats in the watershed.

Results from the report indicate that the restoration work of 2013 has had no impact on red-legged frog egg counts, but cautions that, given the short time span since the restoration work was done, the opportunities for a successful result still exist. The report also suggests that while the created wetlands and ephemeral pools have value, permanent pools in the Little Campbell River watershed have been found to be more readily used as breeding habitat.

Pacific Water Shrew

The Pacific Water Shrew (PWS) has been designated as 'Endangered' by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). It has also been listed in the *Species at Risk Act* (SARA) and 'red-listed' in British Columbia, meaning it is a candidate for legal protection under the *BC Wildlife Act*. The applicable legislation mandates that PWS cannot be killed, collected, held in captivity or harassed without a permit and requires planning and implementation of recovery actions.

One recorded occurrence exists for the PWS in Fergus Creek. The PWS was captured in September 1992. As such, the Fergus Creek area is considered critical habitat for the PWS and subject to the provincial and federal legislation.

Best management practices for PWS habitat will be implemented in the Fergus Watershed Biodiversity Preserve where applicable. The most effective measure to protect PWS is to provide a 100m zone of protective habitat. Within this 100m, best management practices allow for some trail construction as long as trails follow the guidelines set out in the best practices document. Effective protection will be a cornerstone of this Management Plan in the relevant management units. Reconstruction and/or rehabilitation of critical habitat within the 100m zone is also important for the PWS.

3.0 MANAGEMENT RECOMMENDATIONS

3.1 MANAGEMENT STRATEGIES

Through consultation with the Steering Committee, Advisory Committee and the public, the following management strategies were identified as a guiding framework for the management plan.

Protection and Enhancement

The primary purpose of the management plan is the protection and enhancement of the riparian areas and other habitats. Of specific importance is the protection and enhancement of habitats for Species at Risk, including the Pacific Water Shrew (PWS), a provincially listed Species at Risk. The 2011 environmental assessment identifies this area as ideally suited for PWS habitat and the 2014 Federal recovery strategy identifies this site as critical habitat. The identification of this site as a critical habitat requires effective protection of the park to the satisfaction of Environment Canada.

In Fergus Watershed Biodiversity Preserve, effective protection will include:

- Dedication by bylaw of the Biodiversity Preserve for habitat protection;
- Ensuring existing PWS habitat remains undisturbed;
- Signage and fencing; and
- Awareness of PWS and other SARA listed species during operational activities on site.

While the main stem of Fergus Creek is class A or fish-bearing throughout the Biodiversity Preserve, there are tributaries that are class B or food and nutrient sources due to blockages or other impediments to fish passage. Returning as much as possible of these class B streams to class A is a priority for this management plan. To accomplish this, P-15 areas (habitat compensation policy areas) are proposed throughout the Biodiversity Preserve along riparian corridors. These P-15 areas are compensation for development in other portions of the Highway 99 LAP.

Other enhancement opportunities identified in the environmental assessment include the creation of bird houses, boxes and other structures, and approaches to help create habitat and safe locations for raptors, owls and other avian species.

Riparian Improvement

Riparian area compensation and enhancement projects offer particular opportunities for inclusion of unique elements. These will include:

- Species of plants that are traditionally used by First Nations for medicinal or other benefits;
- Tree selection that promotes and enhances habitat for birds and other wildlife traditionally found in the habitat types in this Biodiversity Preserve; and
- Managing for succession as per the 2009 Restoration Prescription for Municipal Detention Ponds and Riparian Ecosystems document.

First Nations

In recognition of the history and importance of First Nations to this area and the City, the Biodiversity Preserve will contain demonstration gardens showcasing native edible plants. Planting plans in the riparian areas will be tailored to include plant species that are important and traditionally used by First Nations.

Public Access & Education

Carefully managed public access and education are critical to the Management Plan. Public access to the Biodiversity Preserve is important for the purposes of education, birding, nature appreciation, and walking opportunities. However, the plan calls for certain areas of the Biodiversity Preserve to be 'off-limits' to ensure

the protection and sustainability of critical habitats and other unique natural features. This will be achieved through a variety of measures including strategic planting, fencing, boardwalks, signage, education, enforcement and adaptive management.

Other elements of public access and education will include information kiosks and interpretive signage, detailed guidelines on fencing types and locations, detailed guidelines on path widths, surfacing and locations, as well as the inclusion of garbage and recycling containers to help keep the Biodiversity Preserve free of garbage.

Dogs

In recognition of the importance of this site for habitat protection and enhancement, the Biodiversity Preserve will be designated as 'no dogs allowed' on or off leash. The authority for this designation rests within the City of Surrey Parks, Recreation and Cultural Facilities Regulation By-law 1998, Number 13480. Part 7, Number 56 empowers the General Manager, Parks, Recreation and Culture to designate and post precise locations and dates where dogs are not permitted within a park. It states 'No person owning or having custody, care or control of a dog shall allow the dog to be within a park in a designated 'no dogs permitted' area'. This bylaw will designate the entire site, at all times of the day and year, as 'no dogs permitted'.

Management of this unique designation will require a multi-faceted approach to ensure the site is respected as a 'no dogs' Biodiversity Preserve. This approach will require specific management steps before and after the plan is adopted to ensure that residents and users of the Biodiversity Preserve understand not only that dogs are not allowed, but the rationale and reasoning behind that rule.

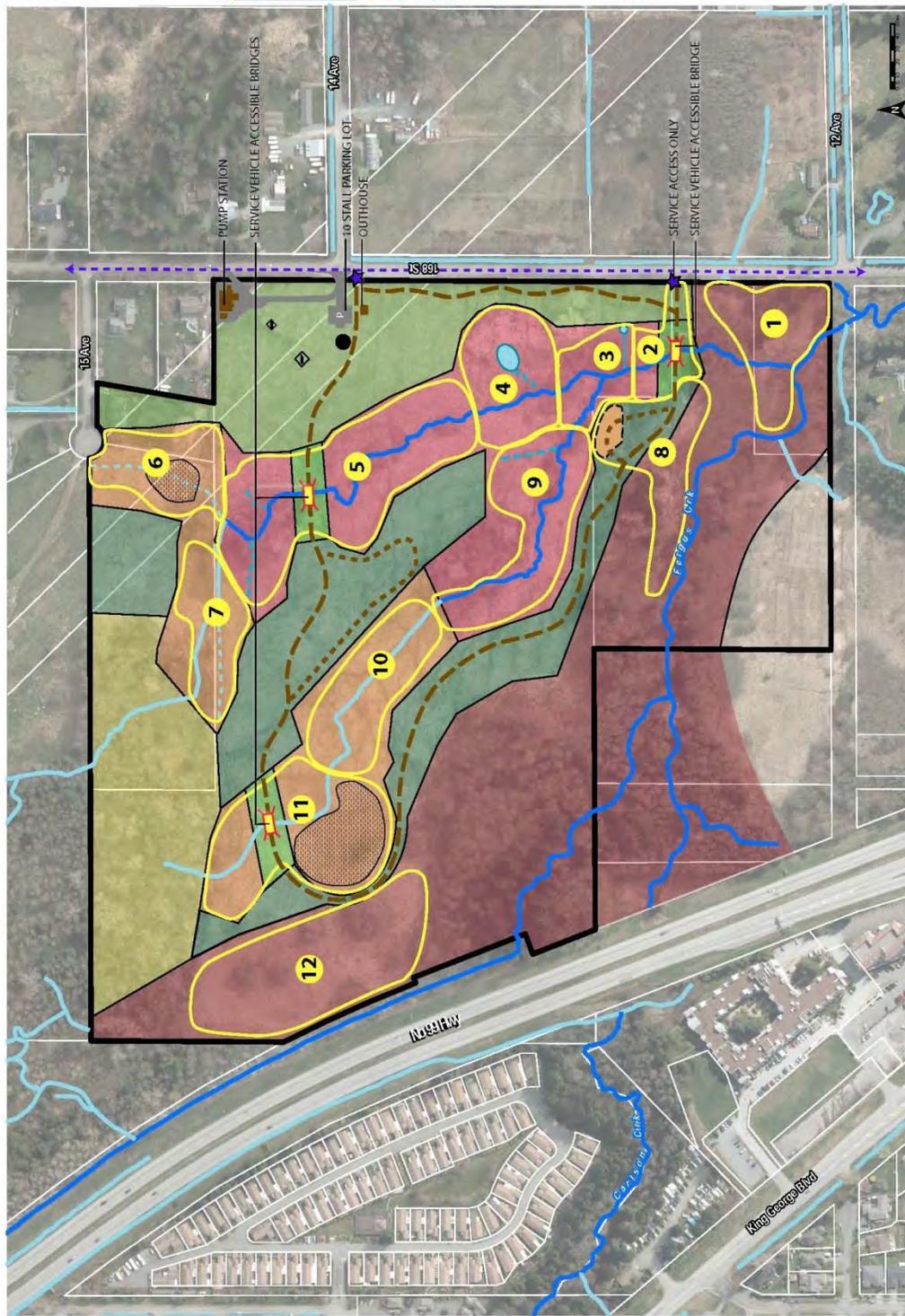
At the forefront of this will be education. An educational campaign will be launched prior to the opening of the Biodiversity Preserve to make residents aware of the Biodiversity Preserve as a distinct City of Surrey management model along with its unique characteristics and features. This campaign will include newspaper advertising, a social media campaign, bylaw enforcement, other public notifications, and strategic mailings to adjacent residents, the SPCA, local dog walking groups, kennels and dog daycare providers.

Signs in the Biodiversity Preserve will clearly post the area as off-limits to dogs, and provide information on alternative dog-friendly sites. Fencing will be enhanced along 168th to direct access to a specific point where signage and information will be present.

3.2 CONCEPT PLAN

The concept plan (Figure 8) identifies seven management units within the Biodiversity Preserve. Each unit has unique objectives and recommendations for public access and proposed features. . The projects or specific works within each management unit are based on the habitat enhancement projects in the environmental assessment. A full description of these projects is in **Appendix IV**.

Fergus
Watershed
Biodiversity
Preserve
Management
Plan



LEGEND

- Management Unit A
- Management Unit B
- Management Unit C
- Management Unit D
- Management Unit E
- Management Unit F
- Management Unit G
- Habitat Enhancement
- Projects
- Class A Watercourse
- Class B Watercourse
- Ephemeral Watercourse
- Proposed Wetland
- Enhanced Pond/Spring
- Existing Hazelnut Grove
- Primary Path (3m)
- Secondary Path (1.2m)
- On-street Bike Route
- Building
- Parking
- Seating Area
- Entry
- Creek Crossing
- Preserve Boundary

Note: All paths will be wheelchair accessible. Service vehicle accessible bridges, stalls, parking area, and seating area will be included throughout. Aquatic riparian forest and old field habitats will be restored according to the recommendations from the 2011 Environmental Assessment Report. The numbers on the plan correlate with the updated habitat enhancement project descriptions in the Biodiversity Preserve Management Plan Report.

Figure 8: Concept Plan

Management Unit A

Location: This unit encompasses the main reach of Fergus Creek covering the southern and eastern portions of the site. Adjacent to Highway 99, the width of the management unit will adhere as best as possible to the 100m setback recommended by both the PWS best practices and the BCS. The south-east corner of the site will be part of this unit with the northern limit at the proposed creek crossing. The unit also extends south-west of the existing City-owned properties, acknowledging those lands that will form part of management unit A when they are brought into the City's land inventory.

Objectives: The primary objective of this management unit is riparian area protection and enhancement. Some invasive species removal, reforestation and riparian planting are required in this area. Limited in-stream works are necessary.

Public Access: There is no public access to management unit A. Education, strategic fencing and planting along with signage is used to prevent the public from entering this important habitat.

Management Unit B

Location: The class A portions of Tributaries 4.1 East and 4.1 West with the associated 30m riparian setbacks form management unit B. The class A streams currently flow primarily through old field habitat. The riparian area on both tributaries is degraded due to past agricultural and grazing activities on site.

Objectives: The primary objectives of this management unit are riparian area restoration and fish passage improvement. As the environmental assessment indicates, these two tributaries have numerous potential compensation projects including realigning straightened sections of the tributary, bank stabilization where required, significant reforestation, riparian planting opportunities, and the creation of red-legged frog habitat.

Public Access: There is no public access permitted in this management unit. Education, strategic fencing along with signage is used to prevent the public from entering this important habitat.

Management Unit C

Location: This management unit consists of the two northern sections of Tributaries 4.1 East and 4.1 West. They are class B streams as they currently do not support fish passage. The creeks flow through old field habitat with an ephemeral eastern branch running under the BC Hydro power lines.

Objectives: The primary objectives of this management unit are riparian area restoration and in-stream works to allow fish passage, providing more class A creek where possible. This management unit also offers opportunities for establishment of wetlands in conjunction with stream enhancements. The areas shown as management unit C may change as detailed design will determine where this type of work will be possible.

Public Access: There is no public access permitted in this management unit. Education, strategic fencing along with signage is used to prevent the public from entering this important habitat.

Management Unit D

Location: This management unit is composed of the forested north-west area of the site.

Objectives: The objectives for this management unit are forest protection, invasive species removal, and enhancement of the riparian areas within the forest. Future development north of the Biodiversity Preserve may have significant impact on this management unit. Coordination with up-stream development will be critical to improving the hydrology of this management unit (and the entire Biodiversity Preserve) as well as protection of its habitat.

Public Access: There is no public access permitted in this management unit. Education, strategic fencing along with signage will be used to prevent the public from entering this important habitat.

Management Unit E

Location: This management unit consists of the old field habitat and forest edges between the riparian areas of the main stem of Fergus Creek, Tributary 4.1 West, and Tributary 4.1 East. It also includes area near the north property line, under the BC Hydro transmission lines.

Objectives: The objectives for this management unit are old field and forest edge habitat preservation, and provision of visitor access. Works within this management unit include invasive species removal, and reforestation of edges and pockets within the old field habitat. There are also opportunities for bird boxes, owl barns and other features to enhance avian habitat. A hazelnut grove exists at the southern end of this management unit. Maintenance of this unique feature is a key element of this management unit.

Public Access: Public access is permitted in this management unit. It includes the western side of the large walking loop within the site. This loop serves as the access to areas for maintenance and monitoring. Strategic fencing, plantings,

signage and other educational tools are used to ensure visitors stay on paths and do not venture into other management units.

The path through this management unit is designed with consideration for:

- Ongoing research on habitat and ecosystem function to minimize impact;
- Seasonal flooding; and
- Accessibility.

This main looping path is 3 metres wide with a gravel surface to minimize impacts to the hydrology of the site while allowing maintenance access to the habitat enhancement areas. There are also opportunities for small viewing platforms, benches, interpretive signage and other small features to enhance the experience and provide education for visitors. There is an opportunity for small spur trails to explore the hazelnut grove and to view habitat enhancement projects after construction and during succession.

Management Unit F

Location: This management unit is the eastern side of the Biodiversity Preserve, running along 168th Street and 15th Avenue. It is bordered on the west by management units B, C, and G.

Objectives: The objectives for this management unit are old field habitat preservation, and provision of visitor entries to the site. It is the place for visitors to arrive, rest, read and learn about the site and its importance to the City and region. The entrances include interpretive signage about the site, the rules including no dogs, and other information. Visitor amenities include garbage and recycling facilities, a washroom building, benches, vehicle and bike parking, and other elements to be determined.

An optional element that could be located near the entrance is a First Nations demonstration garden plot, with native plants that were traditionally used by First Nations for medicinal and/or sustenance purposes.

Public Access: There is one public entrance to the Biodiversity Preserve located within this management unit. The public entrance is at the 14th Avenue intersection. It also serves as the entrance to the planned pump station at the far north-east corner of the site, and has a small parking lot. The design of the parking lot minimizes impacts to the old field habitat and restricts vehicle speed. A secondary entrance is for City staff access only at the southern end of the site on 168th St.

Fencing along the 168th Street edge of the site is 1.2 metre high split rail fence with page wire to help direct visitors to enter the site at appropriate location to minimize impacts to sensitive habitats.

Management Unit G

Location: This management unit consists of the three creek crossings in the Biodiversity Preserve.

Objectives: The objective of this management unit is to provide ecologically sensitive creek crossings for access to habitat compensation projects, site maintenance and monitoring, and to accommodate visitors on the main loop path.

Public Access: The crossing at the south of the site currently exists as a driveway culvert, a remnant of the former private residence on site. As part of the habitat compensation project in this area, the culvert is replaced with a bridge to improve fish passage, habitat and biodiversity adjacent to the crossing. The other two tributaries are part of the habitat compensation projects in those areas.

At all three crossings, railings on the bridge and fences leading to the bridge, along with strategic planting, provide visual cues that visitors are to remain on designated trails. The bridges will be designed to be resilient, attractive and most importantly have minimal footprints in the riparian areas.

3.3 IMPLEMENTATION STRATEGY

Work within the Biodiversity Preserve will take place over several years through different mechanisms. All work will be conducted during appropriate times, per fisheries windows, nesting and other considerations, to minimize impacts to the habitat values. The implementation mechanisms are described below.

Policy P-15

Policy P-15 is a legal agreement between a developer and the City outlining the conditions on which the City will allow riparian compensation works on City land. It was adopted by Council in 2006 with the intention of ensuring the City does not convey a benefit to a private property owner or developer by locating habitat compensation works on public lands. These agreements outline requirements, including applicable fees, detailed planting plans, plans for any in-stream works, cost estimates, maintenance requirements and monitoring reports throughout the term of the agreement. This approach to habitat compensation is being used throughout the City and is supported by the Department of Fisheries and Oceans.

In Fergus Watershed Biodiversity Preserve, the riparian area compensation projects will be implemented as development upstream requires it. Each development in the LAP area that requires compensation in the Biodiversity Preserve will be required to enter into a P-15 agreement.

P-15's in Fergus Watershed Biodiversity Preserve will require additional conditions not normally required, in recognition of the sensitivity and uniqueness of the area. The planting plans will be uniquely tailored to the native flora and fauna of the area so that they are resilient in the face of climate change while also respecting the history of the First Nations where possible. The compensation projects will also be required to show how they will access the compensation areas for maintenance and monitoring. Annual monitoring reports will be required to confirm the plantings are reaching the survival thresholds.

Through development of the P-15's and the requirements to maintain and monitor the sites, the path network will be constructed as the P-15's are completed. Detailed design and planning for the trails will be part of the P-15's to ensure they minimize impacts to the habitat while providing necessary access.

Inter-Departmental Work

Given this Biodiversity Preserve is a 'no dog park', increased by law enforcement and signage will be paramount. A commitment of this management plan will be an increased presence in the Biodiversity Preserve by Parks and By-Laws staff to educate visitors and the public about the unique nature of this Biodiversity Preserve, and that no dogs are allowed on or off leash. Signage will be located at all entrances to indicate that no dogs are allowed on site, along with directions to the nearest dog-friendly parks and off-leash areas.

Partnerships -- Replanting & Education

While public access to the Biodiversity Preserve will be allowed, large areas will remain 'off limits' to all in recognition of the importance of the natural areas. While some of the education and information will be 'static', an ongoing Advisory Committee will be created to foster adaptive management in this Biodiversity Preserve. The Advisory Committee will be a voice of advocacy for the Biodiversity Preserve, providing educational opportunities, promotional support and ongoing help in managing the unique nature of the Biodiversity Preserve.

Ongoing Operations

The Biodiversity Preserve will be operated based on the Natural Areas Management Plan that guides operational efforts within Surrey's natural areas. The specific management units within the Biodiversity Preserve will have unique operational requirements. Fergus Watershed Biodiversity Preserve will be operated as an 'A' class natural area park, the highest class of park in the Park Natural Area system.

Phasing

The phasing of the implementation of the Biodiversity Preserve concept plan is dependent on a number of external factors.

The proposed pump station is development driven and while to date there have been some interested parties; there is no commitment to build the pump station. When the pump station and parking lot move forward, the design and construction will adhere to the management plan.

The widening of 168th Street between 12th Avenue and 16th Avenue is in Engineering's 10 year Servicing Plan; however, it is tied to NCP/LAP development so the timeframe is unknown. The fencing along 168th Street will be installed prior to the road widening, to direct access and promote protection of the Biodiversity Preserve.

The development of the P-15's will be conditional on development upstream in the LAP. There is already one P-15 built on site that was approved prior to the planning process; it is consistent with the objectives within this management plan. As the P-15's will be responsible for the development of the path network, the time frame at this point is unknown.

Other works such as bird boxes, kiosks/interpretative information, benches and other smaller improvements will be built as enhancements in the Biodiversity Preserve are completed.

Future Planning around the Biodiversity Preserve

In accordance with the LAP, there will be future development immediately adjacent to the Biodiversity Preserve. The City will uphold the intent of the LAP and work to protect and expand the Fergus Watershed Biodiversity Preserve where shown in the LAP. All new land acquired by the City for protection as part of this habitat hub will be subject to this management plan.

Although this management plan is for the Biodiversity Preserve itself, the interface with adjacent development will help to sustain and enhance the ecological values of the area. Adjacent developments should:

- Require arborist reports to include all trees 10m into the Preserve. No trees are to be impacted by adjacent development;
- Provide on-site landscaping that complements the watershed and its objectives;
- Design and construct on-site drainage and hydrological work to positively affect the watershed and enhance the long-term stability and function of the watercourses, vegetation and habitats that rely on the upstream water;
- Minimize light pollution adjacent to the Biodiversity Preserve; and

- Provide appropriate fencing and signage on site to educate employees and customers of the existence and importance of the adjacent Biodiversity Preserve.

Dedication by By-law

The dedication by bylaw of Fergus Watershed Biodiversity Preserve as 'Park' is supported by stakeholder groups and Environment Canada. The intent of Park dedication by bylaw is to layer another level of protection on these lands as protected habitat and to further demonstrate the City's interest in protecting this site as a Biodiversity Preserve.

As provided for under Section 30 of the Community Charter, the dedication by bylaw must have at least 2/3 support by vote in Council. Once adopted, the bylaw can only be rescinded through referendum or the alternative approval process. The purpose of the bylaw is defined as "Lands held by the City of Surrey for the public's use and enjoyment and for the management, conservation and enhancement of the native flora and fauna".

This bylaw will initially cover the lands under City ownership at the time this plan is adopted. In the future, the intention is to draft new bylaw(s) to include any new lands acquired by the City as part of the Biodiversity Preserve so that all of the site is protected by bylaw. The wording and intent of the new bylaws will be the same as the original.

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Appendix I

City Steering Committee Members

- Neal Aven, Natural Areas Manager
- Nadia Chan, Parks Operations Coordinator
- Stephen Godwin, Environmental Coordinator
- Doug Merry, Parks Planning Analyst
- Ted Urich, Parks Planning, Research & Design Manager

Advisory Committee Members

- Joanne Charles
- Margaret Cuthbert
- Deb Jack
- Christy Juteau
- Ron Meadley
- Phillip Milligan
- Dave Riley
- Al Schulze
- Roy Thomson

Consultants

The following consultants contributed to this Management Plan as described:

- Urban Systems – preparation of materials for and attendance at first two public engagement sessions, assistance in preparation of the Management Plan text and graphics
- Phoenix Environmental Services – preparation of the environmental assessment and follow-up work on the Management Plan
- David Nairne + Associates Ltd. – conceptual design and cost estimates for bridge crossings

Appendix II

Public Open House #1 Feedback

FERGUS WATERSHED PARK MASTER PLAN

Summary of Input from Public Workshop and Open House Comment Forms – June 2013

On June 25, 2013, an open house and workshop were held regarding the master plan for Fergus Watershed Park. The purpose of this public engagement was to inform participants about the planning process, and to request their input on the vision, objectives, and future amenities in the parks. There were 57 people signed in at the session. Comment forms were provided at the open house and they were also posted on Surrey's website for submission until July 9, 2013.

Public Workshop

The following is the input from the workshop, with each bullet representing an idea put forth during brainstorming for the topics on the left. The participants were first asked how they want to use the park. The lists for Vision, Objectives and New Amenities were prepared by synthesizing the input from brainstorming in collaboration with the entire group. Participants selected their top three priorities in each list by "voting" using audience response technology (clickers). The numbered sections are listed in order of priority, as determined by the voting. The numerical results of the voting (% of all responses) are included to indicate relative emphasis, but these numbers have no statistical validity. The unnumbered bullets are other ideas put forward, in the general order of importance based on the number of times a topic was mentioned.

- 50 participants

Desired use of the park	<ul style="list-style-type: none"> • Walking • Appreciating nature • Bird watching • Running • Dog walking • Family outings • Photography • Star gazing • Let other creatures use it
Vision	<ol style="list-style-type: none"> 1. Wildlife refuge (24%) 2. Demonstration old field / riparian habitat (14%) 3. Biodiversity hub of protection (14%) 4. Stream stewardship (13%) 5. Low impact / passive recreation (11%) 6. Nature education (9%) 7. Minimal human intervention (9%) 8. Education re: land use planning

	<ol style="list-style-type: none"> 4. Parking lot (24) 5. Nature education / interpretation (20) 6. Creek viewing platforms (18) 7. Multi-use paths (12) 8. Community gardens (or other urban agriculture) (9) 9. Disc Golf (7) 10. Gathering / event spaces (5) 11. Off-leash dog area (4) 12. Off-road cycling facilities (3) 13. Equestrian trails (3) <p>Other:</p> <ul style="list-style-type: none"> • Picnic area (2) • Food forest (2) • Bird watching blinds • Hatchery • Park benches • Modest waterfront habitat • Plan to maintain old field habitat (prevent from reverting to forest) 																									
<p>What level of park development or use do you think is acceptable in the identified habitat zones?</p>	<table border="1" data-bbox="634 842 1289 995"> <thead> <tr> <th>Habitat Zone</th> <th>None</th> <th>Low</th> <th>Moderate</th> <th>High</th> </tr> </thead> <tbody> <tr> <td>Creek</td> <td>2</td> <td>17</td> <td>7</td> <td>2</td> </tr> <tr> <td>Riparian</td> <td>1</td> <td>16</td> <td>10</td> <td>2</td> </tr> <tr> <td>Forest</td> <td>1</td> <td>12</td> <td>11</td> <td>4</td> </tr> <tr> <td>Old Field</td> <td></td> <td>13</td> <td>8</td> <td>6</td> </tr> </tbody> </table>	Habitat Zone	None	Low	Moderate	High	Creek	2	17	7	2	Riparian	1	16	10	2	Forest	1	12	11	4	Old Field		13	8	6
Habitat Zone	None	Low	Moderate	High																						
Creek	2	17	7	2																						
Riparian	1	16	10	2																						
Forest	1	12	11	4																						
Old Field		13	8	6																						
<p>How did you hear about the open house?</p>	<ol style="list-style-type: none"> 1. Mail-out flyer or email (14) 2. Newspaper ad (9) 3. Posters in your neighbourhood (2) 4. From a friend (2) <p>Other:</p> <ul style="list-style-type: none"> • BC Disc Sports Society (2) • Little Campbell Watershed Society 																									

Public Open House #2 Feedback Summary

The draft vision and objectives are on panel #6 based on community input from the first open house. What is your response to the vision and objectives?

Draft Vision	Great 52 (71%)	Minor 17 (14%)	Major 4 (6%)	73 Total
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Looking at the three options, which option do you prefer in general?

3 Concepts	A 14 (18%)	B 4 (5%)	C 62 (78%)	80 Total
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Please let us know which concept plan you prefer for each of these elements.

Amenity	Concept Plan A	Concept Plan B	Concept Plan C	Total
Infrastructure & Recreation	13 (18%)	2 (3%)	59 (80%)	74
Perimeter Path	17 (23%)	5 (7%)	53 (71%)	75
Secondary Paths	9 (12%)	12 (16%)	52 (71%)	73
Viewing Deck/Bird Watching	6 (9%)	8 (11%)	57 (80%)	71
Boardwalks	10 (14%)	9 (13%)	52 (73%)	71
Parking	6 (8%)	8 (11%)	60 (81%)	74
Washroom	8 (11%)	5 (7%)	59 (82%)	72
Other Buildings/Structures	6 (9%)	2 (3%)	62 (89%)	70

Comments on the Vision

- Excellent use of this area.
- Why disc golf? Why not keep park with fewer man made structures/poles?
- Keep it as close as practical to natural.
- The frisbee golf plan is silly but Surrey should be able to provide a 50 m by 20 m grass strip for electric model air plane flyers.
- Add land bottom left hand corner
- Surprised by disc golf - believe it will make the park for more multi-use with minimum environment impact.
- A low impact sport would be a great compliment to Fergus Water Shed Park, like disc golf. It would be great to see Surrey install a 18 hole disc golf course to encourage physical activity and to support a growing sport.
- Looks like a bunch of work has gone into drafting a positive vision. The objectives laid out are in line with the communities spirit.
- Excellent as stands, but even more emphasis on recreation would be welcomed. South Surrey needs greater recreational opportunities and these plans (at least B and C) appear to offer that.

- As an avid disc golf player, I would love to see an 18 hole course. I have seen a lot of courses developed in parkland and in close proximity to environmentally sensitive areas. (Robert Burnaby Park & Thornhill in Maple Ridge for example). Disc golf has very minimal environmental impact as a recreational sport, and course maintenance is usually performed by the DG community and registered clubs. It's also a good way to protect and monitor an area, as an active body of recreational users keep away elements that may damage or abuse the park - Conservation is in our best interests. It also adds security for walkers and others who use the area, to have recreational users in the proximity. I am not currently a resident of Surrey, but I would visit and support the city more often if there was a course, and there would be small economic benefits to local businesses. From a disc golfers point of view. Thanks.
- I believe Disc Golf is the way of the future for family recreation. It is simple to install, easy to play, and free for every user group in BC, the world. I believe that concept plan C brings forward the best possible use of the land. Not only does it get people into the area to learn about the sensitive watershed areas, it provides an opportunity to educate people on the importance and sensitivities around these amazing areas. Thank you for including disc golf into your master plan. I personally, as well as my wife and family, would certainly travel to enjoy this amazing park, just to play disc golf. Thank you. I hope this finds you well.
- I feel that the proposed disc golf course would be a great draw to the park, not only from local residents, but from all around BC and beyond.
- Too much emphasis on human recreation and intrusion into the conservation area.
- Looks great, more parks are needed to help develop growing minds and get people out of the house and enjoy nature.
- The 18 hole disc golf course will be amazing. The sport is growing like crazy and this could put the area on the map.
- There are many Professional Disc Golfers such as myself (top ranked in Canada) that would be available to run programs there. A great way to get kids and adults out playing. Could be community programs offered to local communities and school programs. PUT A DISC GOLF COURSE IN ! Large with multiple pin placements, professional PDGA sanctioned tee pads, baskets and tee signs.

Additional Comments Provided (Verbatim)

- Project is great but what about the mound farm. It has been sitting there for over a decade with no public access. Why are we waiting so long?
- Should a fergus creek water shed park volunteer group be struck to help maintain the part I would be interested in helping out.
- Opportunity for public to provide funding for memorial benches? Appreciate the public consultation process What will be in place to ensure safety and security on paths, especially for solo women and to prevent partying at night and reduce risk of vandalism?
- Like the bird viewing stations/platforms
- This park does not need a golf course. It should be an area to view nature. There are deer in this area.
- I do not wish to see golfing in the park. I wish to see lots of bird and fish habitat areas.
- Keep it simple but please get something done in my lifetime.
- I am impressed with concepts/presentations. I support a low impact park with a focus on environmental. Pleased to see bike paths included on future greenway (drive by paths). Have you considered security issues - is park open at all times, does it need to be lit?

- With an emphasis on nature, low impact physical activity and preservation this park will prove to be a gem for the area. A 18 hole disc golf course would encourage the growth of the game with Surrey residents and disc golfers across the lower mainland.
- Will dogs on leashes be allowed? Could pump station be put on commercial land?
- I think that mixed concept of Plan B and C would draw all types of nature lovers into the park. Informative signage will draw more attention to park highlights. Birding and disc golf perfect combo. 18 hole layout would make this park a destination for disc golfers around the lower mainland and beyond.
- I particularly appreciate the presence of disc golf. Surrey is one of the few major cities in the GVRD without a course. Option C is my strong preference because of the proposed quality of facilities and the 18 hole course. South Surrey needs greater recreational opportunities, which is why I support option C.
- I would be quite happy to see an 18 hole disc golf course.
- I wasn't able to pull up the various concept plans so I can't make an educated comment. Is Surrey going to add ground water to Fergus creek to supply water for the fish year around? Will they be using the Old Wells on 14 Ave.?
- I very much support the plan C disc golf course. I feel a well designed and constructed course could make Ferguson park and Surrey a disc golf destination for years to come. Thank you for considering a serious 18 hole course.
- Disc golf is growing every year .More 18 hole courses will definitely help player development as well as further growth of the sport.
- I think plan C fill all the requirement of a ultimate recreation playground. Well done!
- I think the best concept is plan c. It looks to propose the most user friendly plan and upkeep. My thoughts are towards an 18 hole disc golf course and secondary pathways. I am fully behind such a course. For a course to work really well, fewer walkways throughout a park are preferable, as people walking, or families coming in, are not always fully aware of discs flying in the area. Good and proper signage are very helpful, as well as efforts for minimizing potential criss-crossing of various activities and amenities.
- I thank you from the bottom of my heart for making this at all possible to all in our communities. Cheers!~
- I didn't notice any bird watching platforms in the other 2 plans... seems C is the only option there. I love option C for many reasons: a) Surrey is one of the biggest cities in Canada and yet has ZERO disc golf courses - as a city who's motto is: "the future lives here", this growing and fun, family sport, deserves a gem of a course to call our own. (The only other Surrey park spaces for an 18-basket location seem to be either Joe Brown Park, or Tynehead Park... although those avenues haven't seem to have panned out) b) Up until this year, there has been only 1 full 18-basket, championship layout in the Lower Mainland (@ Langley Passive Park). This Summer, an 18-hole (Summer only) course was added to the top of Grouse Mountain... but these 2 courses completely under-serve a growing community of discers. Many existing courses are 9 holes, and are only beginner friendly... In the last 10 years or so, changes to the equipment (ie discs) have allowed them to fly much further; and development of player's abilities through clinics and competition have rendered many existing courses inadequate for current needs. c) Disc golf seems to have been supported x10 by our American neighbours... there are many more courses and events South of the border, and so this location would serve as a feature attraction for visitors. d) Disc golfers are typically quite a responsible, outdoorsy, community-oriented group... much like golfers, we are passionate about our sport - our regular presence would help ensure the safety of other visitors to the park. I noticed that Plan C is the

only option to include a lower parking lot - I believe all the plans should include this... and yet I feel that the proposed 10 spot lot for this plan is inadequate. If a PDGA-sanctioned event were to be held here (likely once a year), there would be 100+ people in the park playing for those 2 days. Although this would be an infrequent occurrence, I believe a lot sized to hold at least 20 vehicles would serve the needs of visitors much more effectively. Thank you for presenting these options to us! I love seeing more green-spaces developed for our enjoyment!

- The area could really use another disc golf course, especially one that is 18 holes.
- Can only support portions of Concept A and not either of B or C. The original vision for this park as a conservation area must be maintained. The concept plan needs to reduce the trails intruding into the site. We cannot support any recreation in the conservation area other than one narrow perimeter walking only trail and one narrow trail for walking across/through the park. All amenities should be placed in one corner (northeast) to minimize disturbance. We can also support a viewing deck/birding platform, possibly in the centre of the cross trail and a few benches at strategic intervals for more senior walkers. Absolutely no dogs, horses, ATV's, bicycles etc. Surrey has numerous recreational parks but how many conservation areas? Our organization will be happy to participate in stewardship project work to enhance habitat for wildlife and interpretation in the gateway/parking area. In summary, it was with shock and great disappointment at the second open house to see so much thought and planning go into more human/entitlement/planning for people instead of a focus on the park as a conservation area with minimal intrusion. Thank you for the opportunity to comment, MC
- I am a disc golf player and would visit to play the course.
- I think option C provides the best use of keeping things natural but also providing great recreational and educational resources. My kids and I love going to places where you can learn and see information on your surroundings.
- As a disc golfer in Surrey I believe a course in the Fergus water shed would not only help promote the sport, but provide excellent opportunities to show that Surrey is committed to providing lower cost, healthy activities for all of Surrey residents
- I prefer option A on the merit that it offers the greatest network of trails, something that is dearly needed in this area. It would however be great if some kind of viewing platform could be added: it would make the most of the natural setting, without adding too much cost or impact. (no opinion on the other features)
- DISC GOLF. Shelter, washrooms
- A disc golf park much needed in Surrey as residents need to travel to other areas to play.



Councillor Linda Hepner, Chairperson

10 November 2013

And Committee Members

Parks, Recreation and Sport Tourism Advisory Committee,

City of Surrey

Re: **Fergus Watershed Park Master Plan**

Dear Councillor Hepner and Committee Members:

I am writing you on behalf of Surrey Environmental Partners (SEP), an organization comprised of 10 Partner Groups and listed Supporters, totaling approximately 1200 people. SEP's Vision is: A community where nature will flourish.

The questionnaires for the open houses held on June 25, 2013, and October 22, 2013, have proven inadequate for a proper and thorough response for development of the master plan for the Fergus Creek watershed.

We, the community of Surrey, face a dilemma which is evident in the proposed park objectives and the vision which is 'hoped to be how the Park will be described in the future', "... Is an ecological sanctuary composed of a variety of healthy habitats for native plants and wildlife. The Park helps to protect biodiversity in the neighborhood, city and region, balancing habitat impacts in the development of upstream areas. Carefully designed access to the Park provides opportunities for ecological stewardship, environmental education, and environmentally- respectful outdoor recreation." This assumes and defines types of human impacts whereas the City website refers to yet to be determined "appropriate" human activities.

The 5 objectives for the Park have only one, the first, which addresses the fact that this watershed area is an ecological sanctuary. The remaining four all have to do with human utilization of the watershed area. The intents are in conflict, representing a conflict of interests facing Parks. SEP has addressed this circumstance in the past with reference to implementation of the Green Infrastructure Network (GIN) and realization of the Biodiversity Conservation strategies (BCS).

It should be clear that this area is not to balance the destruction of ecosystems to the North for development, but is the intended result of a levy to compensate for absolute ecosystem and biodiversity loss, and was "acquired primarily for habitat protection as per Highway 99 Corridor Land Use Plan". This area was to have been 100 acres, it is 67 acres; land to the north and south ought to be added to more adequately protect as much of the watershed as possible.

It is not clear from where, for the first open house, suggested activities arose, such as, cycling, dog activities, arts and culture activities, community events. Further, a proposed question for new activities or amenities that "should be included in the park" included: off-road cycling facilities, community gardens or other urban agriculture, disk golf, off-leash dog area, parking lot, equestrian trails. (Interestingly, also listed was "pond/wetland" which gives rise to the concern that this was considered a matter of choice in a watershed ecological sanctuary with a variety of healthy habitats which are to help to protect biodiversity.)

The above listed activities are completely incompatible with an ecological sanctuary. This area is identified in the Ecosystem Management Study and the Biodiversity Conservation Strategy as a Hub of ecological and biodiversity importance. It is also important as it is part of a Hub and Corridor route for the movement of wildlife. Therefore, any planning for this area must begin and end with that reality. Because such areas are of such great value, increasingly rare as Surrey loses more and more of its Natural Capital to development, human encroachment must be planned to be minimal, and closely monitored.

This is all the more important because, very sadly and regrettably, Surrey is experiencing human-caused disrespectful and destructive behavior in many of its natural areas. A few examples observed by Partner Group members and SEP Supporters include: damaging of fish bearing watercourses and riparian setbacks by humans and their dogs off-leash as exemplified in the Campbell Heights area where there is also off-road cycling and recreational vehicle damage; bark-stripping and killing of cedar trees in Hazelnut Meadows Park; at Blackie Spit, damage to, if not destruction of, spawning beds at the foreshore, human and dog off-leash degradation of the environmental sensitive/conservation area, behaviour including terrorizing wild birds many of which are in the process of migration and ill able to expend unnecessary energy fleeing aggressive behavior; dogs off-leash at the Serpentine Fen.

The City website states about Fergus Creek Watershed park: Take care as you explore as the streams are fish-bearing and (it is) home to important and sensitive habitat.

A nine or 18 hole Frisbee/disc golf course is proposed in the Fergus Creek Watershed Park – it is not suitable. Requirements for such an area include: 1 acre per hole, 15 to 20 acres for 18 holes. Courses need to have equal numbers of straight, to the left, and to the right doglegs for holes. Each tee requires a pad, 32 ft.² for a small course and 60 ft.² for a larger course, each tee requires signs located as recommended at least 4 feet away from the edge of the tee slab. Numerous other signs are advised. The distance between holes ranges from 183 to 280 feet. It is recommended that a course also have a "putting green" for warm-up, poles located 30 to 50 feet apart and separate from the rest of the course. The presence of V-shaped trees and substantial bushes, even large trees, through which the device can

be thrown through or around are desirable. Flight paths need to be wide enough to "allow errant shots safe passage." It is easy to understand that many discs/Frisbees would wind up in wooded and shrubby, possibly water, areas so that retrieval would cause damage to both wildlife and certainly field and riparian habitat. It is evident that a Frisbee/disc golf course would be intrusive and inappropriate for an ecological sanctuary. Surrey has other sports-oriented parks for such an activity.

The Sustainability Charter states: "Protect Surrey's groundwater and aquatic ecosystems for current and future generations considering: creeks, streams, and River systems... Natural riparian systems,... freshwater habitats." The Biodiversity Conservation Strategy draft notes that parkland for active recreation may not be compatible with biodiversity preservation. [It also notes that parkland remaining after active recreation has been accounted for is insufficient to manage for biodiversity.] It proposes a management objective to increase the number of wetlands and ponds noting that few intact natural areas remain in Surrey. In addressing the Green Infrastructure Network (GIN), set out in the Ecosystem Management Study (EMS) adopted by Surrey Council, the BCS states, "due to the degree of habitat fragmentation at present, a long-term process involving systematic protection, enhancement, restoration and re-development, will be required to achieve the proposed GIN."

The BCS also notes that "with continued climate change and northerly expansion of range... it is imperative that the importance of a particular habitat type is not devalued if it does not currently support species at risk. Rather, it is the potential of a particular habitat to support a variety of species that should be considered."

"Surrey values and protects its natural environment through.... enhancement of its natural areas and biodiversity", aiming to "be a model for the Protection and Conservation of the Natural Environment and Trees and Enhancement of Natural Areas and Biodiversity ...celebrating its rich biodiversity, protected fish bearing streams and its corridors connecting areas of natural habitat." (Charter, 2008)

Our present activities including the EMS and BCS are in line from the United Nations Convention on Biological Diversity ratified in 1992 at the Rio Earth Summit, followed by a Canadian response in 1995, The Canadian Biodiversity Strategy, leading to 2008 The Status of Biodiversity in British Columbia which identifies specific threats including human activities.(source:BCS)

With respect, the three alternatives suggested for the park are not sufficient. Of the three, Concept A is generally the least human-intrusive but requires further work – see below.

Because this proposed park development occurs at a critical juncture and timing, it is recommended that further planning for the Fergus Creek Watershed Park as an ecological sanctuary, with minimal human activity, be postponed. Our recommended decision is to establish an ad hoc advisory committee for Fergus Creek Watershed Park/ecological sanctuary comprised of representatives of various natural area organizations. This group would work with City Parks' staff and the City Environmental Planner to determine what, if any, and where, conservation/restoration would be located. Also, how riparian areas and wetlands, etc., can be protected. Finally, once all conservation measures are determined, to consider appropriate, if any, (minimal-impact) human access and related infrastructure, possibly an outhouse, select few and significant nature trails with benches, a viewing platform.

SEP would be pleased to participate in such an advisory group. Indeed, this might replicate the group which developed during the Sustainability Charter creation about the living environment aspect.

Addressed as an essential component of planning would be the matter of appropriate and sufficient monitoring of this and other natural area parks by staff authorized to issue tickets for by-law infractions. It is sadly evident that polite education and cautions are not having great success, despite the very best intentions of staff and volunteers.

The issue of Parks' conflict of interests between Green Infrastructure Network provision/Biodiversity Conservation and human recreation needs to be recognized, defined and solved. Not all natural areas, or perhaps many, should be expected to support and accept recreation purposes. Walking and running cannot necessarily be seen to fulfill the definition of "passive recreation" if that is intended to define low-impact/non-intrusive activities.

Thank you for the opportunity to provide comments about the development of a Master Plan for the Fergus Creek Watershed Park.

Respectfully,

Deb Jack, President, Surrey Environmental Partners

c/o 7680 – 143 Street, Surrey, V3W 9Y4

dbiaq@telus.net 604-590-3037

Cc: Ted Uhrich, Mngr. Parks Planning, Research & Design Ben Mulhall, Urban Systems Ltd.
Cnclr. Bruce Hayne, Chair, Environmental & Sustainability Advisory Committee (ESAC)
Bob Campbell, Vice-Chair, ESAC
Owen Croy, Manager of Parks Carrie Baron, Drainage & Environment Manager
Stephen Godwin, City Environmental Coordinator Neal Aven, Manager of Parks' Natural Areas



Little Campbell Watershed Society

"Understanding, restoring and enhancing the Little Campbell River and its Watershed and fostering community" stewardship."

Urban Systems
Suite 1250, 13401 - 108th Ave.
Surrey, BC
V3T 5T3
604 235-1701
bmulhall@urbansystems.ca

2013-11-05

Input Re: Fergus Creek Watershed Park

Ben,

This letter is in response to the Community Open House for Fergus Watershed Park Master Plan on October 22, 2013 in the City of Surrey. For your perusal I have attached an earlier letter outlining some of our concerns which was in response to the Open House for Fergus Watershed Park Master Plan on June 25, 2013.

At this stage in the process we are beginning to wonder if the concept plans for this park are too weighted in favor of public access when we should be thinking in terms of a watershed that limits public access to protect the headwaters of Fergus Creek. While we certainly agree with protecting and enhancing the ecological features of the park lands we think some recreation and social activities, like a golf course, off leash dog walks, equestrian trails and event spaces would be out of place and not in harmony within a watershed and nature reserve.

The lands that have been purchased for Fergus Watershed Park are unique in the fact that they could, in the near future, be one of few remaining undeveloped tracks of land in South Surrey left for wildlife to live relatively undisturbed, but reality could be much different if unfettered public access and all their domesticated animals are allowed to roam about unchecked.

Should the lands in this proposed Fergus Creek Watershed be Parklands under the auspicious of Parks or should it be under the auspicious of Engineering to ensure the proper management of storm water and therefore very limited to public access?

South Surrey residents were concerned with the announcement by the former Mayor Doug MacCallum that the "Corridor" would be rezoned for industrial and commercial usage as the "Corridor" was a big part of the Fergus Creek watershed.

The resultant response from both residents and community groups like the Little Campbell Watershed Society lead the Mayor to commission Envirowest to study the sub watershed and produce a report. We believe that all personnel involved in the planning for this watershed should read this study.

After the study was completed and reviewed, Council, in their wisdom, mandated an extra levy on all developments within the Corridor to compensate for the inevitable habitat loss that a full build out in the

Corridor would incur. The land that Surrey was/is able to purchase within the corridor will be the only land that was/is not fully built out to full industrial/commercial usage.

Without exception the Fergus Creek Watershed has and will inevitably suffer significant habitat losses.

Even if additional huge sums of money are spent on property acquisitions or land swaps are agreed upon in the watershed, there is no way that overall productivity in this sub watershed will not decline in coming years. Thus it is absolutely essential that the property that Surrey has acquired be optimized as an ecological sanctuary composed of a variety of healthy habitats for native plants and wildlife in every way possible. This is unlikely to happen with a multi-use park. "Protect, enhance and restore", "ecological sanctuary", and "low-impact recreation activities" are meaningless terms once access is comprehensive and usage is simply regulated by nice signs.

All of this was outlined in our first input letter to this process and all three concepts are somewhat ignoring our input in this planning process. This is akin to planning buildings as though fire, wind, rain and earthquakes did not exist.

In the era of wanton entitlement, multiple pathways, and destination uses like disc golf, pitch and putts, off leash dog areas and horse trails are going to cause nothing but problems. The members of the Little Campbell Watershed Society actively volunteer in other parks in South Surrey and we see what goes on and how signs and regular walking trails are ignored. We cannot pretend this will not happen in these new parklands.

With these plans, dogs will be running through spawning gravels and park users will be abusing the fish habitat and wandering off established trails disturbing sensitive wildlife areas as they will have easy unmonitored access to the whole area. We all need to spend more time reviewing measures to protect and enhance fish and wildlife habitat in this area.

We think our first input letter has been completely ignored. Please re-read that letter. More time needs to be spent consulting with the Surrey Engineering Department for their feedback on protecting fish habitat first and then working in conjunction with parks on the lowest impact possible in the different habitat zones. Since this is City of Surrey owned land, we could easily set an example and have wider setbacks from any of the fish bearing streams, as opposed to the minimum standards.

An uninformed public, without thinking of the possible negative consequences, find it too easy to tick off a box saying, yes, let's have equestrian trails, off-leash dog areas, mini golf, baseball diamonds, and football fields which we believe are incompatible with a combination nature and water reserve.

Concept Plan Option A with revisions and deletions is closer to what we would envision.

Thank you,

Phillip Milligan
President
Little Campbell Watershed Society
1284-184th Street
Surrey, BC V3S 9R9
604-538-4677



Friends of Semiahmoo Bay Society
www.birdsonthebay.ca

COPY TO TED

of

November, 5, 2013

Ben Mulhall
Urban Systems Ltd
550 – 1090 Homer St,
Vancouver, BC, V6B 2W9

SURREY PARKS, RECREATION
& CULTURE DEPARTMENT
6140-20/F ✓
NOV 13 2013
RECEIVED BY
Per _____

Dear Ben,

We concur with all of the points made in the letter from the Little Campbell Watershed Society.

It is with great disappointment attending the second open house, to see planning for people in full form. Our understanding is that this park was land to be a conservation area to compensate for industrial/commercial development in the Grandview corridor. That means wildlife and natural habitat first. This is a small park area compared to the lost forests of the Grandview area and the extensive residential, recreational facilities still being built there.

A Conservation Area/Park does not have dogs, horses, bicycles, ATV's etc in the natural area and we do not support any of those activities. If Planning does plan for these recreational activities, have they also planned for 24 hour surveillance and enforcement of fines for disturbance?

We are in the parks conducting stewardship activities such as non-native invasive plant removals, litter cleanups and planting of native trees, shrubs, marsh and herbaceous plants and we see what insensitive, disrespectful people do in the parks. Is it just ignorance and educational signs will make a difference? Maybe just a little.

We watch people with full knowledge do as they please regardless of consequences to a park. We all have a responsibility to provide and protect wildlife habitat in Surrey.

We do support a narrow, discreet perimeter trail and possibly one cross trail, again narrow and discreet for passive wildlife viewing by walkers only. In our view all amenities and parking in the northeast corner only.

Our organization will be happy to participate in stewardship project work to increase wildlife habitat values and input on interpretation in the gateway/parking area.

Thank you for the opportunity to input.

Margaret Cuthbert
President
604.536.2636

ESAG
for
CRS
Aullin
XC: JB / GM, Planning
GM Parks, Rec & Culture

CLERKS DEPT.
6140-20
NOV 12 2013

15425 Columbia Avenue, White Rock, BC, Canada, V4B 1K1
Ph: 604-536-3552 Fax: 604-542-9882
www.birdsonthebay.ca

Letters received from the stakeholder group following completion of the management plan

Mayor and Council, City of Surrey
13450-104 Avenue, Surrey, BC, V3T

23 February 2015

Re: Support for primary Management Plan for Fergus Creek (watershed) Biodiversity Preserve
Dear Mayor and Council:

Surrey Environmental Partners (SEP) supports the primary Management Plan for the Fergus Creek (Watershed) Biodiversity Preserve.

Our letter of November 2013 (attached for your reference) to the Chair of the Parks, Recreational and Sports Tourism Advisory Committee expressed concern about the process of developing the plan, placing it in the context of the Sustainability Charter, the (then) draft of the Biodiversity Conservation Strategy (BCS), Green Infrastructure Network (GIN), Highway 99 Corridor Land Use Plan as well as the lamentable treatment experiences of our parklands by Surrey residents and others.

We proposed an ad hoc advisory group to work with City staff on planning for all conservation measures prior to consideration of appropriate, if any, (minimal impact) human access. SEP has been pleased to participate in the ad hoc advisory group put together by staff.

It is a good primary Management Plan. It is not complete and work needs to be done on issues including: acquisition of the additional lands; specifications for lighting (private and public) in surrounding areas, buffer-protection in boundary areas; road design to maximize minimal effect on the Preserve; location and configuration of any structures; parking area specifications to include state-of-the-art stormwater drainage treatment with/or replaced by stormwater/rain garden. Frequent By-law monitoring will be required for this Preserve to remain intact and based on experiences in other parks.

Staff involvement, particularly Doug Merry's, has been exemplary. This has been a lengthy, complex and detailed process to date. We look forward to continued involvement with the Fergus Creek Preserve ad hoc group and City staff.

With this Preserve, the first of its kind in Surrey, the City can be proud of its actions as it proceeds towards fulfillment of the BCS and GIN visions.

Respectfully,

Deb Jack, President, Surrey Environmental Partners



24 February 2015

Mayor and Council
City of Surrey City Hall
13450 104 Avenue
Surrey BC V3T 1V8

RE: Letter of Support for the Fergus Watershed Biodiversity Preserve (Park)

Dear Mayor and Council,

On behalf of A Rocha Canada¹ I write to give my support of the Management Plan for the Fergus Watershed Biodiversity Preserve (FWBP). Surrey Parks staff have been diligently collaborating with conservation partners in the city to develop this document, outlining the steps to protect a portion of the Fergus Watershed.

Fergus Creek is a key tributary to the Little Campbell River, providing spawning and rearing habitat for salmonids, as well as critical habitat for the endangered Pacific Water Shrew and other species at risk. We approve of the City's commitment to protect 100 acres of natural landscape in the midst of the swiftly developing Hwy 99 Corridor.

Establishing the Fergus Watershed Biodiversity Preserve as a "protected hub for habitat and biodiversity conservation" is a significant step in implementing Surrey's commitments in the Hwy 99 LAP and also the Biodiversity Conservation Strategy, as a sizeable section of green hubs/corridors are protected within this park. We applaud you for accepting and supporting this very important, forward-looking strategy.

We have appreciated the opportunity to participate and provide feedback on the development of the FWBP Management Plan alongside other conservation partners and we appreciate the thoughtful approach the Parks staff have shown to incorporate our concerns into the plan.

We acknowledge that there is much more work to be done to protect the Environmental Preservation Areas outlined in the Hwy 99 LAP, and also the Green Infrastructure Network within the Biodiversity Conservation Strategy. We are committed to working alongside the City and other stewardship partners to ensure that conservation priorities are upheld, particularly in the Little Campbell River watershed, our study area.

Thank you for listening! If you have any questions, please feel free to contact me at 778-980-4344, or by email at christy.juteau@arocha.ca.

Kind Regards,



Christy Juteau, RPBio.
Watershed Stewardship Coordinator
A Rocha Canada



Little Campbell Hatchery
1284 184th Street
Surrey, B.C.
V3S 9R9

Mayor and Council

City of Surrey
13450-104th Ave
Surrey, BC V3T 1V8
February 18, 2015

Re: Support for the Fergus Watershed Biodiversity Preserve (Park)

The Directors and 700 members of the Semiahmoo Fish & Game Club and our Little Campbell Hatchery wish to declare our strong support for the Fergus Watershed Biodiversity Preserve. We feel we are uniquely qualified to express an opinion on this decision.

Since our incorporation in 1957 the Semiahmoo Fish & Game Club has been dedicated to the restoration and preservation of the Little Campbell River and its tributaries including Fergus Creek. This dedication was further demonstrated in 1978 when the club acquired 30 acres of land on the banks of the river in South Surrey. Soon after, the club members built the first community salmon hatchery in the province and set aside an area as habitat for wildlife. Today over 60 species of birds, 12 different animals and thousands of spawning salmon and trout can be seen on the club grounds.

Setting aside this land as a preserve would be a bold step in protecting a small piece of our natural heritage in the face of the accelerated development now taking place in the watershed. Protecting this area would also compliment the excellent work already done by the City of Surrey; the Province of British Columbia; community groups and landowners in returning salmon and trout to the full extent of the section of Fergus Creek located west of Highway 99.

We encourage the Mayor and Council to approve this proposal.

Bob Donnelly
President
Semiahmoo Fish & Game Club / Little Campbell Hatchery
604 535-8366



Friends of Semiahmoo Bay Society
www.birdsonthebay.ca

February 18, 2015

Mayor and Council
City of Surrey City hall
13450 104th Avenue
Surrey, BC, V3T 1V8

Dear Mayor and Council,

On behalf of the Friends of Semiahmoo Bay Society I am writing to express our support for the direction Parks Staff have taken with regards to the Surrey lands in the HWY 99 corridor.

Fergus Creek is a keystone tributary in the Little Campbell River watershed and the planned 100 acres for habitat preservation will support retention of biodiversity and productivity within this kind of developmental context if enough care is taken. That has been proven in other jurisdictions and Surrey is showing its mettle by approaching this opportunity with thoughtful planning.

We have appreciated the opportunity to represent community volunteers at meetings with staff and other stakeholders and have found staff listening and being truly responsive to the crucial importance of appropriate management to protect, preserve and enhance this area for wildlife and species at risk.

This preserve is an important piece of critical habitat in the green hub/corridor complex in the Biodiversity Conservation Strategy (BCS). The BCS is visionary and key to the City of Surrey retaining any wildlife and natural areas under the pressure of rapid development. Thank you for supporting and adopting it.

Going forward we still have concerns. In our view the perimeter trail needs to be less intrusive and the final width be reworked from 4m to 3m. Also with our on the ground experience in parks and this area being specifically a wildlife conservation preserve, we hope close monitoring will check any and all kinds of disturbances which now plague Surrey's "multi-use" Parks.

This letter though is to inform Council of our support for the Management Plan for the Fergus Creek Biodiversity Preserve and our feeling that the process of stakeholder consultation that parks is currently employing, when continued, should help address ongoing concerns.

Thank you for the opportunity to input.

Margaret Cuthbert

President
Email: blueheron@birdsonthebay.ca
604.536.2636



Little Campbell Watershed Society
"Understanding, restoring and enhancing the Little
Campbell River
and its Watershed and fostering community stewardship."

Mayor and Council

City of Surrey
13450 104th Avenue,
Surrey, BC, V3T 1V8
February 8, 2015

Re: Support for the Fergus Watershed Biodiversity Preserve (Park)

Dear Mayor and Council,

This letter is to inform Council of our support for the Management Plan for the Fergus Creek Biodiversity Preserve.

As an on-the-ground organization we have not been shy in publically advocating on behalf of certain values from the time since the Highway 99 Corridor Local Area Plan (LAP) was announced in February 2004.

Since the LAP went into effect we have been keenly attentive to how the planned 104 acres for habitat preservation would come about and more importantly, how effective this important set aside would be in assuaging resident concern for the decline in habitat values that usually accompanies development.

To date the Parks department has been responsive in a number of ways by recognizing the original impulses that led to the conservation aspects of (LAP), by recognizing the critical importance of appropriate management in this corridor to preserve, protect, and enhance the biodiversity, by recognizing and implementing concepts within the Biodiversity Conservation Strategy (BCS), adopted in 2014, by recognizing and listening to all of our concerns about short and long term strategies for achieving habitat goals in the Preserve and being able to sort them out, and by embedding the concept of adaptive management into the Plan as a strategy for learning.

We salute the job that Parks has done to date and we want you to know that!

We also want to acknowledge the work and exemplary management skills Doug Merry demonstrated over many months working with so many groups.

While we support the current management plan we realize that there is much work yet to be done so we look forward to providing advice in the future as more acreage is added to bring it up to the full complement.

Thank you,

Phillip Milligan
President
Little Campbell Watershed Society
1284-184th Street, Surrey, BC V3S 9R9

Appendix III

Vegetation and Wildlife on Site from the Environmental Assessment (2011)

Vegetation species detected within the study area (April 1, 2010).

Species	Scientific Name*	Mixed Forest Vegetation Type	Deciduous Dominated Vegetation Type	Pasture Vegetation Type	Riparian Vegetation Type
Tree Layer¹:					
Bigleaf Maple	<i>Acer macrophyllum</i>	X	X		X
Black Cottonwood	<i>Populus balsamifera ssp. trichocarpa</i>	X	X	X	X
Douglas-fir	<i>Pseudotsuga menziesii</i>	X	X		
Paper Birch	<i>Betula papyrifera</i>	X	X		
Red Alder	<i>Alnus rubra</i>	X	X	X	X
Western Hemlock	<i>Tsuga heterophylla</i>	X			
Western Redcedar	<i>Thuja plicata</i>	X	X		
Shrub Layer²:					
Beaked Hazelnut	<i>Corylus cornuta</i>	X			
Black Cottonwood	<i>Populus balsamifera ssp. trichocarpa</i>	X	X	X	X
Black Gooseberry	<i>Ribes lacustre</i>	X			
Douglas-fir	<i>Pseudotsuga menziesii</i>	X			
English Holly	<i>Ilex aquifolium</i>	X			
Himalayan Blackberry	<i>Rubus discolor</i>	X	X	X	X
Indian-plum	<i>Oemleria cerasiformis</i>	X	X		
Paper Birch	<i>Betula papyrifera</i>	X	X		
Red Alder	<i>Alnus rubra</i>	X	X	X	X
Red Elderberry	<i>Sambucus racemosa</i>	X	X		
Salmonberry	<i>Rubus spectabilis</i>	X	X		
Snowberry	<i>Symphoricarpos albus</i>	X	X		
Western Redcedar	<i>Thuja plicata</i>	X	X		X
Herb Layer:					
Bleeding Heart	<i>Dicentra formosa</i>	X	X		
Canada Thistle	<i>Cirsium arvense</i>			X	X
Chickweed	<i>Cerastium arvense</i>			X	
Common Cattail	<i>Typha latifolia</i>			X	X
Common Dandelion	<i>Taraxacum officinale</i>			X	
Common Horsetail	<i>Equisetum arvense</i>	X	X	X	X
Common Plantain	<i>Plantago major</i>			X	
Common Spike-rush	<i>Eleocharis palustris</i>			X	X
Creeping Buttercup	<i>Ranunculus acris</i>		X	X	X
Curled Dock	<i>Rumex crispus</i>			X	
False Hedge Bindweed	<i>Calystegia sepium</i>	X			
Grasses	<i>Graminoid spp.</i>	X	X	X	X
Herb-robert	<i>Geranium robertianum</i>	X			
Lady fern	<i>Athyrium filix-femina</i>	X	X		
Licorice Fern	<i>Polypodium glycyrrhiza</i>	X			
Narrowleaf Plantain	<i>Plantago lanceolata</i>			X	
Northern Bedstraw	<i>Galium boreale</i>	X			
Bluegrass	<i>Poa spp.</i>			X	

Species	Scientific Name*	Mixed Forest Vegetation Type	Deciduous Dominated Vegetation Type	Pasture Vegetation Type	Riparian Vegetation Type
Red Clover	<i>Trifolium</i> spp.			X	
Reed Canarygrass	<i>Phalaris arundinacea</i>			X	X
Siberian Miner's - lettuce	<i>Claytonia sibirica</i>		X	X	
Skunk Cabbage	<i>Lysichiton americanus</i>		X		X
Stinging Nettle	<i>Urtica dioica</i>	X			
Sword Fern	<i>Polystichum munitum</i>	X	X		
Mosses:					
Electrified Cat's-tail Moss	<i>Rhytidiadelphus triquetrus</i>	X			
Glow Moss	<i>Aulacomnium palustre</i>	X	X		
Haircap Moss	<i>Polytrichum</i> spp.	X			
Lanky Moss	<i>Rhytidiadelphus loreus</i>	X	X		
Pipecleaner Moss	<i>Rhytidiopsis robusta</i>	X			
Rock Moss	<i>Racomitrium</i> spp.	X	X	X	X
Sphagnum Moss	<i>Sphagnum</i> spp.			X	

¹ Tree Layer: Woody plants >2m in height

² Shrub Layer: Woody plants 0-2m in height

*Scientific and common names from Klinkenberg 2006 (E-Flora BC)

**Blue-listed (Special Concern Provincially)

Wildlife species detected within the study area (April 1, 2010).

Species	Scientific Name	Mixed Forest Vegetation Type	Deciduous Dominated Vegetation Type	Pasture Vegetation Type	Riparian Vegetation Type
Birds:					
American Robin ^{1,2}	<i>Turdus migratorius</i>	X	X	X	X
Bewick's Wren ^{1,2}	<i>Thryomanes bewickii</i>			X	X
Black-capped Chickadee ^{1,2}	<i>Poecile atricapillus</i>	X	X		X
Brown Creeper ^{1,2}	<i>Certhia americana</i>	X	X		
Cooper's Hawk ^{1,2}	<i>Accipiter cooperii</i>	X			
Dark-eyed Junco ^{1,2}	<i>Junco hyemalis</i>			X	X
Golden-crowned Kinglet ¹	<i>Regulus satrapa</i>	X			
Golden-crowned Sparrow ²	<i>Zonotrichia atricapilla</i>		X		
Hairy Woodpecker ^{1,2}	<i>Picoides villosus</i>		X		
House Finch ^{1,2}	<i>Carpodacus mexicanus</i>			X	X
Killdeer ¹	<i>Charadrius vociferus</i>			X	
Mallard ²	<i>Anas platyrhynchos</i>			X	
Northern Flicker ¹	<i>Colaptes auratus</i>		X		
Northwestern Crow ^{1,2}	<i>Corvus caurinus</i>	X	X	X	X
Pileated Woodpecker ³	<i>Dryocopus pileatus</i>	X	X		
Pine Siskin ^{1,2}	<i>Spinus pinus</i>	X			
Purple Finch ¹	<i>Carpodacus purpureus</i>			X	
Red-tailed Hawk ^{1,2}	<i>Buteo jamaicensis</i>		X	X	
Ruby-crowned Kinglet ¹	<i>Regulus calendula</i>	X	X		
Rufous Hummingbird ^{1,2}	<i>Selasphorus rufus</i>	X	X		X
Red-winged Blackbird ^{1,2}	<i>Agelaius phoeniceus</i>			X	
Savannah Sparrow ^{1,2}	<i>Passerculus sandwichensis</i>			X	
Song Sparrow ^{1,2}	<i>Melospiza melodia</i>			X	X
Spotted Towhee ^{1,2}	<i>Pipilo maculatus</i>			X	X
Steller's Jay ^{1,2}	<i>Cyanocitta stelleri</i>	X	X		X
Yellow-rumped Warbler ¹	<i>Dendroica coronata</i>		X		
Varied Thrush ^{1,2}	<i>Ixoreus naevius</i>	X	X		
White-crowned Sparrow ¹	<i>Zonotrichia leucophrys</i>			X	X
Wilson's Snipe ^{1,2}	<i>Gallinago delicata</i>			X	
Winter Wren ¹	<i>Troglodytes troglodytes</i>	X			
Mammals:					
Coast Mole ⁴	<i>Scapanus orarius</i>			X	
Coastal Black-tailed Deer ^{5,6}	<i>Odocoileus hemionus columbianus</i>	X	X		X
Coyote ^{5,6}	<i>Canis lanrans</i>	X	X	X	X
Eastern Cottontail ³	<i>Sylvilagus floridanus</i>		X		
Eastern Grey Squirrel ^{1,2}	<i>Sciurus carolinensis</i>	X	X		
Townsend's Vole ¹	<i>Microtus townsendii</i>			X	

Wildlife species detected within the study area (April 1, 2010).

Species	Scientific Name	Mixed Forest Vegetation Type	Deciduous Dominated Vegetation Type	Pasture Vegetation Type	Riparian Vegetation Type
Amphibians:					
Pacific Chorus Frog ¹	<i>Pseudacris regilla</i>	X			
Invertebrates:					
Banana Slug ²	<i>Ariolimax columbianus</i>	X			
Chocolate Arion ²	<i>Arion rufus</i>	X	X	X	
Cyanide Millipede ²	<i>Harpaphe haydeniana</i>	X			

¹Heard ²Seen ³Forage Sign ⁴Mounds ⁵Tracks ⁶Scats
⁷Burrows

Appendix IV

Habitat Enhancement Project Summaries

The following are potential compensation projects with high habitat enhancement values. The projects have been updated from the 2010 Environmental Assessment Report. Each project includes a description of the potential aquatic and riparian habitat gains, a brief description of the project location and scope, and the applicable Revegetation prescriptions. The revegetation prescriptions are based on Restoration Prescriptions for Municipal Detention Ponds and Riparian Ecosystems, 2009. The approximate project locations are illustrated on the concept plan (Figure 8). Projects are numbered in order of priority for implementation, beginning in the lower reaches of a watercourse and moving upstream.

Project 1:

Reforestation of residential site at 1227 168th Street and restoration of Trib 4.1 channel

Aquatic habitat restoration: 40 linear metres, Class A watercourse

Riparian habitat restoration: Up to 4400 square metres

Other reforestation (non- riparian): Up to 1,700 square metres

Description:

This area currently has fill, remnants of former structures, invasive species, and un-forested yard areas. There is an existing foot bridge, fences, and debris. The channel of Tributary 4.1 through this property has been channelized/straightened and has poor habitat quality. This restoration project includes removal of structures and debris, invasive species control (blackberries, reed canary grass), restoration of the watercourse channel where necessary, restoration of topsoil where necessary, and reforestation.

Revegetation Prescriptions:

RT6 within the active floodplain of the creek

RT10 for the remainder of the area

Project 2:

Remove driveway and culvert on Tributary 4.1 at 1267/1277 168th Street and replace with clear span bridge, remove invasive species, and revegetate

Aquatic habitat gain: 6 metres of new channel (culvert removal) and 40 linear metres of channel restoration, Class A watercourse

Riparian habitat gain: 3,000 square metres of riparian habitat restoration

Description:

Remove the culvert for the old gravel and log bridge approximately 75 metres upstream of the confluence of Tributary 4.1 and Fergus Creek. Restore the channel. Construct a clear span bridge suitable for maintenance vehicles that accommodates fish passage. Remove the blackberry thickets on the banks of the creek within this project area and revegetate.

Revegetation Prescriptions:

RT6 within the active floodplain of the creek

RT10 for the remainder of the area

Project 3:

Reforestation of former residential site at southeast corner of 1277 168th Street and connection of artesian well to Tributary 4.1

Aquatic habitat gain: 10 metre connection between artesian well and Tributary 4.1

40 metres of channel restoration and enhancement (Trib 4.1 & 4.2)

Riparian habitat gain: 3,500 square metres of riparian habitat restoration

Description:

This area currently has fill, remnants of former structures (e.g., hole left from foundation removal), and unforested yard areas. There is also an existing artesian well that drains to Tributary 4.1. This restoration project includes restoration of topsoil where necessary and revegetation. A formal connection between the artesian well and Tributary 4.1 will enhance base flows without causing erosion to the stream banks (top of bank is approximately 2 metres above the stream bottom at this location).

Revegetation Prescriptions:

RT6 within the active floodplain of the creek

RT10 for the remainder of the area

Project 4: Create red-legged frog breeding pond and restore riparian vegetation

Aquatic habitat gain: Current pond/wetland is 270 square metres; it would remain inaccessible to fish

Riparian habitat gain: 6,480 square metres of riparian planting, including the pond riparian area

Description:

Create a breeding pond for red-legged frogs. Ensure that the breeding pond is well vegetated with native trees and shrubs along its periphery to provide security and aid in the regulation of water temperatures. Combine this with restoration of Tributary 4.1 East.

Revegetation Prescriptions:

RT6 within the active floodplain of the creek

RT10 for the riparian areas

Additional planting specifications required for emergent vegetation at pond edge

Project 5: Restore Tributary 4.1 East riparian habitat, construct clear span bridge

Riparian habitat gain: 16,000 square metres

Description:

Remove blackberries and revegetate the riparian habitat, including minor channel improvements such as repair of eroding banks. Construct a clear span bridge suitable for maintenance vehicles that accommodates fish passage.

Restoration Prescriptions:

RT6 within the active floodplain of the creek

RT10 for the riparian areas

Project 6:

Restore Class B watercourse connection to Trib 4.1 East and enhance existing wetland

Aquatic habitat gain: 80 metres of channel restoration and realignment, Class B

800 square metre wetland enhancement area

Riparian habitat gain: 4,800 square metres of riparian habitat restoration

Description:

This project converts the Class B watercourse at 15th Avenue from a channelized ditch with no riparian forest to a meandering creek with vegetated banks. Enhance and revegetate the existing wetland with a greater diversity of plants. Restore some areas of 16746 15th Avenue. The remainder of 16746 can be used for other park programming.

Restoration Prescriptions:

RT6 within the active floodplain of the creek

RT10 for the riparian areas

Additional planting specifications required for emergent vegetation at pond edge

Project 7:

Reconnection of the upper and lower reaches of Tributary 4.1 East

Aquatic habitat gain: Approx. 100 linear metres of channel recreation/enhancement

Riparian habitat gain: 4,000 square metres

Description:

The upper reach of Tributary 4.1 East starts at an outfall from 16th Avenue. The channel continues through a deciduous forest, but the channel becomes degraded and dispersed due to livestock impacts, as noted in the ISMP. The tributary converges in a ditch along the fence-line south of 15th Avenue and becomes a more naturalized channel approximately 60 metres to the east. This project entails reestablishing a natural channel for Tributary 4.1 East that connects the channel within the forest to the natural channel that flows through the old field habitat in the centre of the site. Revegetate the riparian area where necessary.

Restoration Prescriptions:

RT6 within the active floodplain of the creek

RT10 for the riparian areas

Project 8:

Reforestation of riparian and non-riparian areas between Fergus Creek and Trib 4.1, enhancement of hazelnut grove

Riparian habitat gain: 4,150 square metres

Non-riparian habitat gain: 2,600 square metres

Description:

A large portion of the area north of Fergus Creek and south of Tributary 4.1/4.1 West has been disturbed by past land uses. Although portions of this project area are outside the 30 metre setback, enhancement will contribute to the overall habitat by creating more interior forest habitat and reducing invasive species (blackberries). Enhance the hazelnut grove by protecting the trees and providing a path from the bridge through the grove.

Restoration Prescriptions: RT10

Project 9:

Restoration of Trib 4.1 West channel and reforestation of the riparian area

Aquatic habitat gain: 200 metres of channel restoration

Riparian habitat gain: 9,000 square metres, including some removal of blackberries

Description:

Redefine the low-flow channel, restore gravel substrates, and repair small areas of erosion and bank slumping along Tributary 4.1 West. Remove small pockets of blackberries and revegetate with native trees and shrubs.

Restoration Prescriptions:

RT6 within the active floodplain of the creek

RT10 for the riparian areas

Project 10:

Realign straightened section of Tributary 4.1 West

Aquatic habitat gain: 160 linear metres of channel realignment

Riparian habitat gain: 7,100 square metres

Description:

Realign the section of straightened channel (ditch) to add meanders and create a defined channel. This segment can potentially be enhanced to support fish populations. Revegetate the riparian area within 30 metres of the watercourse to provide adequate shading of the channel. Additional base flows for this watercourse could be gained by enhancing the connection to the wetland forest in the north-west corner of the site (see Project 11).

Revegetation Prescription RT6 and RT10

There is no defined floodplain for the creek because of its small size and the high water table in the surrounding area. As such, it is recommended that prescription RT6 (banks and floodplain of the watercourse) be applied within approximately 5 metres of the watercourse and RT10 (non-floodplain areas of seasonal saturation due to high water table) be applied beyond 5 metres from the water course.

Project 11:

Enhance wetland and Class B watercourse from the existing forest to Project 10

Aquatic habitat gain: Up to 4,000 square metres of wetland enhancement

150 linear metres of channel realignment and restoration

Riparian habitat gain: 7,000 square metres of riparian habitat

Description:

This project offers the opportunity to take advantage of the high water table by enhancing the existing saturated areas, creating a greater variety of wetland and pond habitats, and connecting it to Tributary 4.1 West. Define, meander, and enhance the Class B watercourse from the forest to Project 10. Construct a clear span bridge suitable for maintenance vehicles that accommodates fish passage.

Revegetation Prescription RT6 and RT10

There is no defined floodplain for the creek because of its small size and the high water table in the surrounding area. As such, it is recommended that prescription RT6 (banks and floodplain of the watercourse) be applied within approximately 5 metres of the watercourse and RT10 (non-floodplain areas of seasonal saturation due to high water table) be applied beyond 5 metres from the water course.

Project 12:

Remove blackberries and expand existing forest

Riparian habitat gain: 13,500 square metres

Description:

The forest at the north-west corner has blackberry thickets along the southern edge. The portion of Tributary 4.2 flowing along Highway 99 is also edged with blackberries and few trees. Remove blackberries and revegetate with native trees and shrubs.

Revegetation Prescription: RT10

Project 13:

Enhance bird and bat nesting and roosting habitat

Description:

This project will not be undertaken at the location identified in the 2010 report. The land identified in project 13 is earmarked for land trade to gain creek and riparian area elsewhere for the Biodiversity Preserve. Bird and bat nesting and roosting can be enhanced throughout the Biodiversity Preserve.

ⁱ A Rocha is an international nature conservation organization, founded in 1983. A Rocha Canada, based in BC's South Coast Region since 1999, works out of its environmental centre in South Surrey – engaging the community and residential, post-secondary interns in environmental education, community gardening, sustainable living and conservation science. A Rocha works in partnership with many local conservation groups and agencies to improve water quality, enhance fish and wildlife habitat, study biodiversity and species at risk in the Little Campbell River watershed. arocha.ca