

**TO:** CITY MANAGER November 18, 1999

**FROM:** DIRECTOR PLANNING AND BUILDING OUR FILE: 01.215.5.1

**SUBJECT: PROPOSED GVRD LAKE CITY SEWER INTERCEPTOR and  
BRUNETTE - FRASER RIVER REGIONAL PILOT GREENWAY**

**PURPOSE:** To request Council approval in principle of the proposed alignments for the GVRD Lake City Sewer Interceptor and Brunette - Fraser River Pilot Regional Greenway and to propose a partnership arrangement for implementation of the Greenway with the GVRD.

**RECOMMENDATION:**

1. **THAT** Council approve, in principle, the proposed alignments for the GVRD Lake City Sewer Interceptor and Brunette - Fraser River Regional Pilot Greenway as identified in this report and authorize staff to work with the GVRD on a detailed design.
2. **THAT** Council approve, in principle, the proposed arrangement as outlined in Section 5.0 of this report for implementing the Brunette - Fraser River Regional Pilot Greenway with the GVRD including a partnered funding approach, and that a further report to Council be submitted as costing and implementation details are refined.
3. **THAT** a copy of this report be forwarded to the Environment and Waste Management Committee, the Parks and Recreation Commission and the Bicycle Advisory Committee and the Stoney Creek Environmental Work Group.

**REPORT**

**1.0 BACKGROUND**

In early 1999, GVRD staff initiated planning with the City for the proposed Lake City Sewer Interceptor (LCSI) which is intended to intercept sanitary sewage from existing sewer lines along the Lozells Sanitary Trunk Sewer, the Burnaby Lake North Interceptor and the Stoney Creek Trunk Sewer to alleviate existing demand and manage future sewage needs in the area (see *attached* Figure 1).

In a similar time frame and based on the adopted GVRD Greenways Vision, which proposes a network of ecological and recreational greenways to link Green Zone and significant open space areas within the GVRD, the GVRD initiated sector greenway planning involving Burnaby. The opportunity to develop a pilot regional, recreational greenway project linking Burnaby Mountain Park, Squint Lake Park, Burnaby Lake Regional Nature Park, the Brunette River and the Fraser River foreshore in New Westminster was identified through this process.

Recognizing the synergies between utility/ service corridors and greenways, the GVRD identified opportunities for linking the Lake City Sewer Interceptor with the Brunette - Fraser River Pilot Regional Greenway (BFRG) project in areas where utility/service right-of-ways could provide recreational access.

At its 1999 June 14 meeting, Council received a staff report regarding the proposed BFRG which identified initial alignment options which were then presented for review at a public Open House in June. Based on an assessment of the proposed LSCI / BFRG, the purpose of this report is to request Council approval in principle of the preferred alignment for these projects as well as a partnership strategy with the GVRD for implementation of the Greenway.

## **2.0 GVRD LAKE CITY SEWER INTERCEPTOR**

As identified, the LCSI is proposed to intercept sanitary sewage along the existing Lozells Sanitary Trunk Sewer and from the Stoney Creek Trunk Sewer to relieve existing flows and accommodate future growth within the area. The GVRD has noted that the existing Lozells line is at capacity with occasional overflows experienced. Demand studies support the need to upgrade the Burnaby Lake North and Brunette sewer interceptors through twinning in the next 2 to 5 years. By intercepting sewage from the Lozells, Stoney Creek and several municipal trunk sewers, the proposed interceptor would relieve sewage volumes along the existing Burnaby Lake North and Brunette Interceptor lines increasing their design life by approximately 30 - 50 years, or potentially longer. The total length of proposed pipeline is approximately 5,500 m. Pipe diameters range from approximately 450mm (18") to 1050 mm (42"). Excavation depths range from approximately 1.5 - 5.5 m. Preliminary estimated costs for the interceptor are approximately \$8.0 million.

### **2.1 Alignment Options**

An extensive number of potential alignment options for the LCSI were initially identified by the GVRD in early 1999 for assessment and consultation purposes. A comprehensive assessment of these options including environmental, engineering,

social and financial considerations was completed. An environmental consultant was retained to complete a preliminary assessment due to the environmental sensitivities of the Brunette River and Stoney Creek corridors in relation to proposed options.

Extensive consultations including on-site reviews were conducted with City staff, the Stoney Creek Environmental Work Group (SCEWG) which includes members of the Stoney Creek Environment Committee, DFO, MOELP, Burnaby Streamkeepers, Sapperton Fish and Game Club, BC Hydro, Trans Mountain Pipelines, Burnaby Mountain High School and Stoney Creek Community School.

## 2.2 Preferred Alignment

Based on the assessment of alignment options, a number of benefits and opportunities were identified in association with the preferred alignment shown in Figure 1. This alignment utilizes Eastlake Drive with connection to the BNR spur line right-of-way over Tributary 1 of Stoney Creek to Government Street and travels south and east adjacent to the BNR mainline to the Brunette River service access road.

The ability to tie in to an existing manhole along the Stoney Creek Trunk Sewer line on the north side of Tributary 1 is facilitated with this alignment and would provide needed access for maintenance. Development of the LCSi along this alignment would also allow the removal of the existing sanitary sewer line which crosses Tributary 1 within the stream bed where it is a partial barrier to fish and an informal trail crossing of the creek (see Figure 2, *attached*). An informal trail which is significantly eroded and braided due to poor drainage conditions currently extends from the foot of Eastlake Drive to the crossing of Tributary 1. This alignment provides an opportunity to link the proposed sewer line with the Greenway and restore the eroded area through the construction of an appropriate gravel surfaced trail connecting to a proposed wooden bridge crossing Tributary 1, where the bridge would provide maintenance access to the existing manhole.

Based on the initial assessment of alignment options, the preferred alignment was submitted to DFO and MOELP by the GVRD for preliminary assessment as the project would be subject to authorization by environmental agencies under the *Federal Fisheries Act* and the *Provincial Water Act*. DFO and MOELP approved the preferred alignment in principle based on the proposed mitigative and compensation strategy which is discussed in Section 4.0.

## 3.0 BRUNETTE - FRASER RIVER REGIONAL GREENWAY PILOT PROJECT

The proposed Brunette - Fraser Regional Greenway Pilot Project (BFRG) is a 15 km recreational greenway linking a number of components of the GVRD's Green Zone

including Burnaby Mountain Conservation Area, Burnaby Lake Regional Nature Park, Hume Park, and the Brunette River Corridor to the Fraser River (see *attached* Figure 1). The BFRG is considered a regional greenway as it crosses municipal boundaries and connects regionally significant parks and open spaces.

The BFRG is consistent with the adopted Official Community Plan (OCP), the Lougheed Town Centre Plan and the Urban Trail concept. Approximately 8.3 km of the proposed BFRG would be located within Burnaby. The proposed BFRG would support a variety of users including pedestrians, joggers, and recreational cyclists. Equestrian use of the BFRG is not supported due to the high cost of developing a safe equestrian crossing of Cariboo Road and/or Government Street and potential environmental impacts along the Stoney Creek corridor.

Preliminary BFRG alignment proposals were identified in the 1999 June report to Council. The alignment shown in Figures 1 and 2, *attached* is preferred based on input received at a Public Open House held in 1999 June, staff review and the outcome of the initial environmental review by the DFO and MOELP outlined in Section 4.0.

**3.1 Existing Greenway Segments - Maintenance Responsibilities**

The proposed BFRG would be integrated with the City's Burnaby Mountain Urban Trail from Hastings Street to Eastlake Drive. Directional signage would be incorporated into the Urban Trail signage program. Maintenance responsibilities for the portion of the BFRG on the existing Urban Trail would remain the responsibility of the City.

The GVRD service road along the Brunette River would continue to be maintained by the GVRD. In anticipation of additional use, the GVRD proposes to manage public access to the Brunette River through additional native planting and the construction of several formal viewpoints, as well as increase maintenance patrols.

**3.2 New Trail Segments - Construction and Maintenance Responsibilities**

To complete the BFRG in Burnaby, new sections of trail would need to be constructed south of Eastlake Drive in the Stoney Creek/BNR Corridor, along Government Street, Cariboo Road, and Cariboo Place. Two pedestrian road crossing upgrades, an upgrade of an existing at-grade railway crossing and directional signage would also be required.

City staff have participated in preliminary discussions with the GVRD to determine partnership arrangements for implementation and maintenance of the Greenway. Based on these, staff propose that the City would be responsible for construction of and maintenance of:

- 4.0 m wide asphalt Urban Trail along the north side of Government Street between the GVRD service road and Cariboo Road (340m);
- 4.0 m wide asphalt Urban Trail along the east side of Cariboo Road between Government Street and Cariboo Place (150m);
- 4.0 m wide asphalt Urban Trail along the north side of Cariboo Place between Cariboo Road and the terminus of Cariboo Place (220m);
- directional/interpretive signage for the above segments;
- upgrade of pedestrian crossing facilities of the BNR facility on Cariboo Road;
- installation of a painted pedestrian crosswalk of Cariboo Road at Cariboo Place to facilitate access to Burnaby Lake Regional Nature Park;
- a cost shared pedestrian actuated signal and crosswalk at North Road with the City of New Westminister.

The costs for the above works are estimated to be in the order of \$250,000 including the City's share of the pedestrian signal at North Road (\$60,000). Other items required to complete the BFRG in the Stoney Creek corridor, including the proposed bridge over Tributary 1, service road construction, greenway enhancements, pedestrian crossing of the BNR spur line, service road decommissioning, and measures such as fencing to manage public access would be the responsibility of the GVRD and amount to approximately \$509,000.

The above strategy varies only marginally from the City's existing Urban Trail concept. The benefits of linking the City's Urban Trail system to GVRD Regional Parks and the Fraser River foreshore in New Westminister through a regional greenway are seen as significant.

#### **4.0 PRELIMINARY ENVIRONMENTAL ASSESSMENT AND PROPOSED MITIGATIVE/ COMPENSATION STRATEGY**

The following is a summary of the preliminary environmental assessment and proposed mitigative and compensation strategy for the preferred option for the LCSII/ BFRG. Based on this, DFO and MOELP have given approval in principle for the project. Members of the SCEWG have also expressed support for the proposed project and mitigative/ compensation strategy. A detailed review will be required for DFO and MOELP authorizations once detailed plans are completed.

##### **4.1 Burnaby Mountain Golf Course to Lake City Way**

The sewer interceptor is proposed to connect to the existing Lozells Sanitary Sewer at the southeast corner of the Burnaby Mountain Golf Course and travel east to the

intersection of Lake City Way and Broadway Avenue (see *attached* Figure 1). Alternative sites to connect to the Lozells sanitary line were explored, however the downhill grades in this area dictate that connection occur at this location.

Clearing of a 6-8 m wide access route is required to construct the sewer. This would result in the potential loss of two mature trees on the golf course as well as an area of the treed buffer adjacent to Broadway Avenue. Vegetation over the sewer line would be managed for maintenance access.

Eagle Creek is culverted through the golf course at this location so no direct impacts on the creek are anticipated. Revegetation to mitigate any habitat losses and maintain the buffer to the golf course would occur following construction.

Play at two holes of the golf course are expected to be disrupted during an approximate 2 to 4 week construction period. Staff are currently working with the GVRD to determine means for minimizing these impacts. It is evident that construction during the winter months of January and February would result in the least impact to golf play and potential revenue loss. Based on this, the GVRD is exploring the potential of "prebuilding" this section of the Lake City Sewer Interceptor within this time period. The GVRD has also indicated that, in principle, compensation for lost revenues would be negotiated should this not be possible. This issue, as well as aspects regarding negotiation of a GVRD right-of-way will be the subject of a further report to the Parks and Recreation Commission and Council.

#### **4.2 Foot of Eastlake Drive to the Lougheed Highway Crossing**

The environmental sensitivity of this section is recognized as high due to the presence of Tributary 1 and the main stem of Stoney Creek, both high value salmonid streams. Clearing along a 6-8 m wide path from Eastlake to Tributary 1 may be required. Alternatively, this may be minimized if a technique known as pipe bursting is feasible which would minimize surface disruption. A 3-4 m wide wooden bridge over Tributary 1 is proposed for maintenance and public access.

Mitigative strategies include the planting of native riparian vegetation at a 2:1 ratio over vegetation removed to diversify and enhance the existing vegetation. Sediment control measures and the involvement of an independent environmental monitor would be required on-site. Construction would take place during the least sensitive period to fish. The existing sanitary sewer line within the channel of Tributary 1 would be removed to enhance fish access to spawning habitat.

The Greenway trail would be constructed of gravel to enhance permeability and be approximately 3.0 metres wide. Establishment of the Greenway and restoration of the area provide the opportunity to effectively manage public access within this environmentally sensitive area. This is seen as particularly significant in light of the

opening of the new Burnaby Mountain Highschool in September 2000 and the expected increase in use on existing unmanaged pathways around Stoney Creek. Appropriate barriers such as split rail wooden fencing, plant material and chain link fencing (adjacent to the BNR) would be installed as necessary to manage public access to Stoney Creek. Opportunities for public education and interpretation may be incorporated into the design of the site to raise awareness of the environmental sensitivity and significance of Stoney Creek.

#### **4.3 Loughheed to Government Street**

The sewer line and greenway are proposed along the western side of the BNR tracks to minimize disruption to the sensitive and highly erosive streambank area immediately adjacent to the mainstem of Stoney Creek. Clearing of an approximate 6-8 m wide area of marginal vegetation and potentially some cutting of the toe of the bank would be required.

Replacement planting with native species to enhance the existing diversity and wildlife value of vegetation is proposed to mitigate impacts. Relocation of the sewer access road to the western side of the BNR tracks, subject to BNR approval, would facilitate riparian restoration and future slope stabilization along the streambank area of Stoney Creek. This restoration would result in an overall environmental gain from the existing condition.

The opportunity to construct a wetland channel to provide habitat for the rearing of juvenile salmonids is also currently being explored by the GVRD as an option for habitat compensation (see *attached* Figure 2). This project would require the support of partners due to the associated costs which would exceed the GVRD's habitat compensation requirements. Members of the SCEWG, DFO and MOELP have expressed great support for this project due to the inherently high environmental value and current lack of off-channel habitat within Stoney Creek.

#### **4.4 Government Street to the Brunette River at North Road**

Environmental impacts within this section of the proposed LCSi are limited to some vegetation loss outside of the fisheries sensitive zone and are assessed overall as relatively minimal. Staff would work with the GVRD during detailed design to minimize impacts to trees and more significant vegetation and resolve any required restorative planting requirements.

### **5.0 IMPLEMENTATION STRATEGY / FUNDING REQUIREMENTS**

#### **5.1 Lake City Sewer Interceptor**

Following approval of the proposed alignment, the GVRD proposes to complete detailed design, cost assessment and secure strategies for the acquisition of necessary

right-of-ways early in 2000. Initial discussions between the GVRD and BNR have taken place regarding necessary rights-of-way and have been progressing. Implementation of Phase 1 of the project, from Burnaby Mountain Golf Course to Government Street, is proposed to commence in 2000. Completion of Phase 1 of the Lake City Interceptor will provide immediate relief to the Lozells sanitary line.

Phase 2 would include the section from Government Road to the Brunette River at North Road. Completion of this section is proposed in 2001. Funding of the LCS I would be through the GVRD's Capital Budget.

### **5.2 Brunette - Fraser River Pilot Greenway**

Implementation of the BFRG would be coordinated in the same time frame as the LCS I where alignments coincide. Where interceptor and greenway alignments differ, opportunities to start implementation of the greenway in the immediate future would be pursued, with emphasis on eliminating the gap between the Burnaby Mountain Urban Trail and the Brunette River service road. This approach received approval from the GVRD Board in 1999, October.

### **5.3 Funding Requirements: Brunette - Fraser River Pilot Greenway**

The GVRD has indicated that it will fund portions of the Greenway that are to be constructed as part of the LCS I project, as well as Greenway portions that are on property owned by or leased to the GVRD. Section 3.2 of this report outlines the extent of work requiring City funds. Staff have assigned an order of magnitude cost of \$250,000 to complete this work and would seek to include this amount within the Urban Trail component of 2000 - 2004 Provisional Budget if approved in principle by Council. The City would be providing the use of the Brunette Service Road right-of-way (owned by the City) at no cost to the GVRD in recognition of their construction and maintenance of the Greenway.

As the pilot greenway project proceeds and gains necessary approvals, detailed cost implication and responsibilities would be developed and brought back to Council for review and approval. Advancement of the BFRG does not commit the City to implementation costs outside of the normal Capital budgeting process.

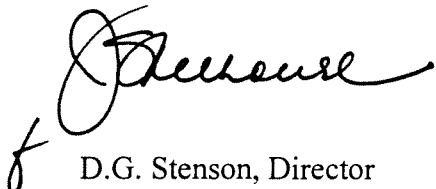
## **6.0 CONCLUSIONS AND RECOMMENDATIONS**

Planning for the LCS I/ BFRG has been underway by the GVRD since late 1998. The process has involved extensive consultation and site reviews with City staff and representatives of the SCEWG. As well, members of the public provided input and generally supported the project at a public Open House held in 1999 June. The main purpose of this process has been



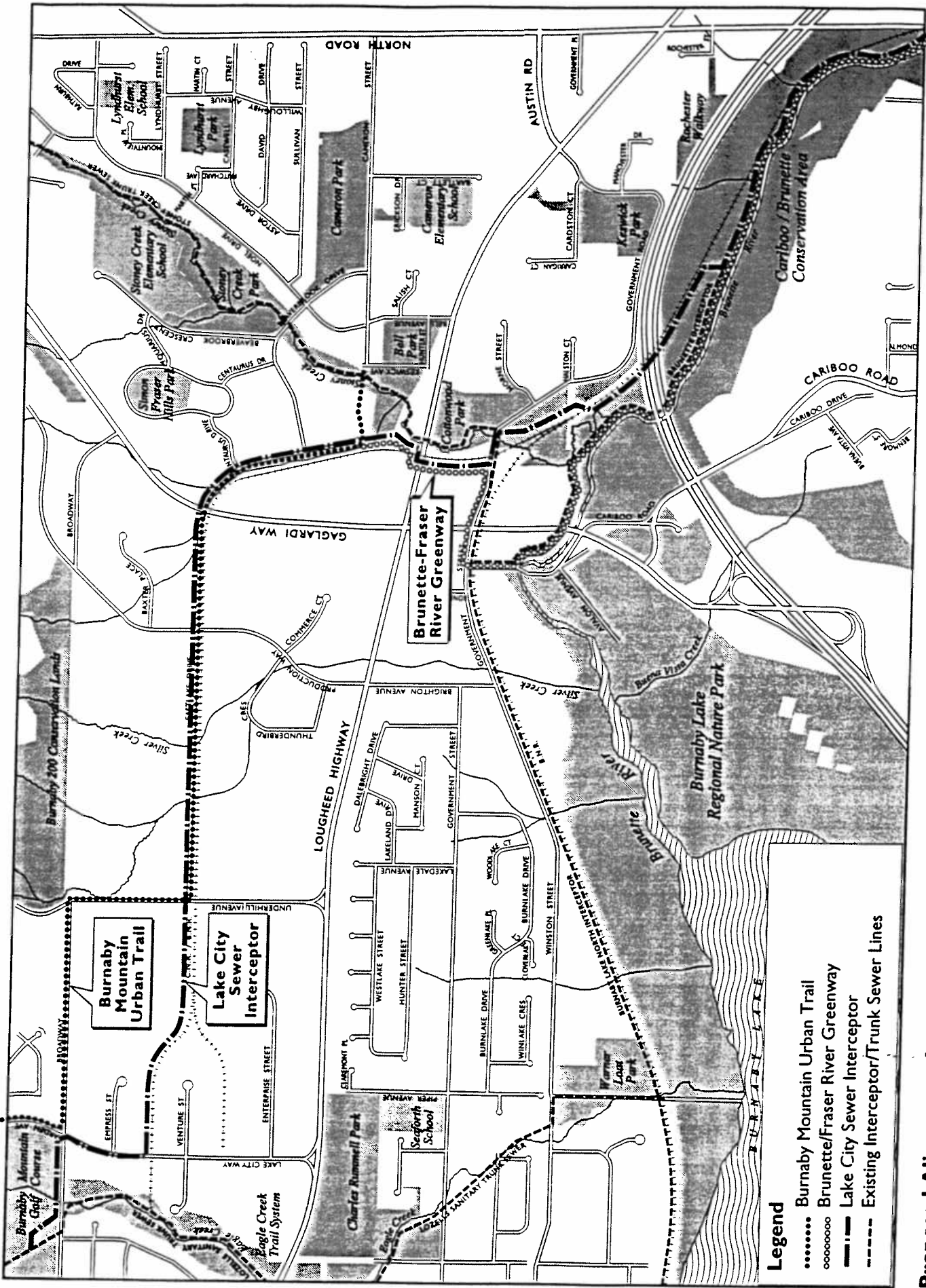
to determine appropriate alignments for both projects which have been linked due to the inherent opportunities associated with utility/ service corridors and recreational greenways. This report recommends an alignment for the LCSI/ BFRG based on an assessment of environmental, engineering, social and financial considerations. This proposal has been supported in principle by DFO and MOELP. Based on this review, staff recommend that the alignments indicated in Figures 1 and 2 be approved in principle so that detailed design by the GVRD may proceed. This alignment and the proposed mitigative and enhancement strategy is also supported by members of SCEWG.

The Pilot Greenway is consistent with the Liveable Region Strategic Plan, Council adoption of the GVRD's Greenways Vision, the City's OCP and the Lougheed Town Centre Plan. The BFRG incorporates City Urban Trails and utility and service corridors to link Burnaby Mountain to Burnaby Lake, the Brunette River and the Fraser River for recreational trail use. A strategy for implementing the Pilot Greenway is discussed including preliminary funding implications to the City. These represent a marginal addition the City's adopted Urban Trails program for the area. Based on this, staff recommend Council approve the proposed alignment for the BFRG and the preliminary partnership arrangement for its implementation.

  
D.G. Stenson, Director  
PLANNING AND BUILDING

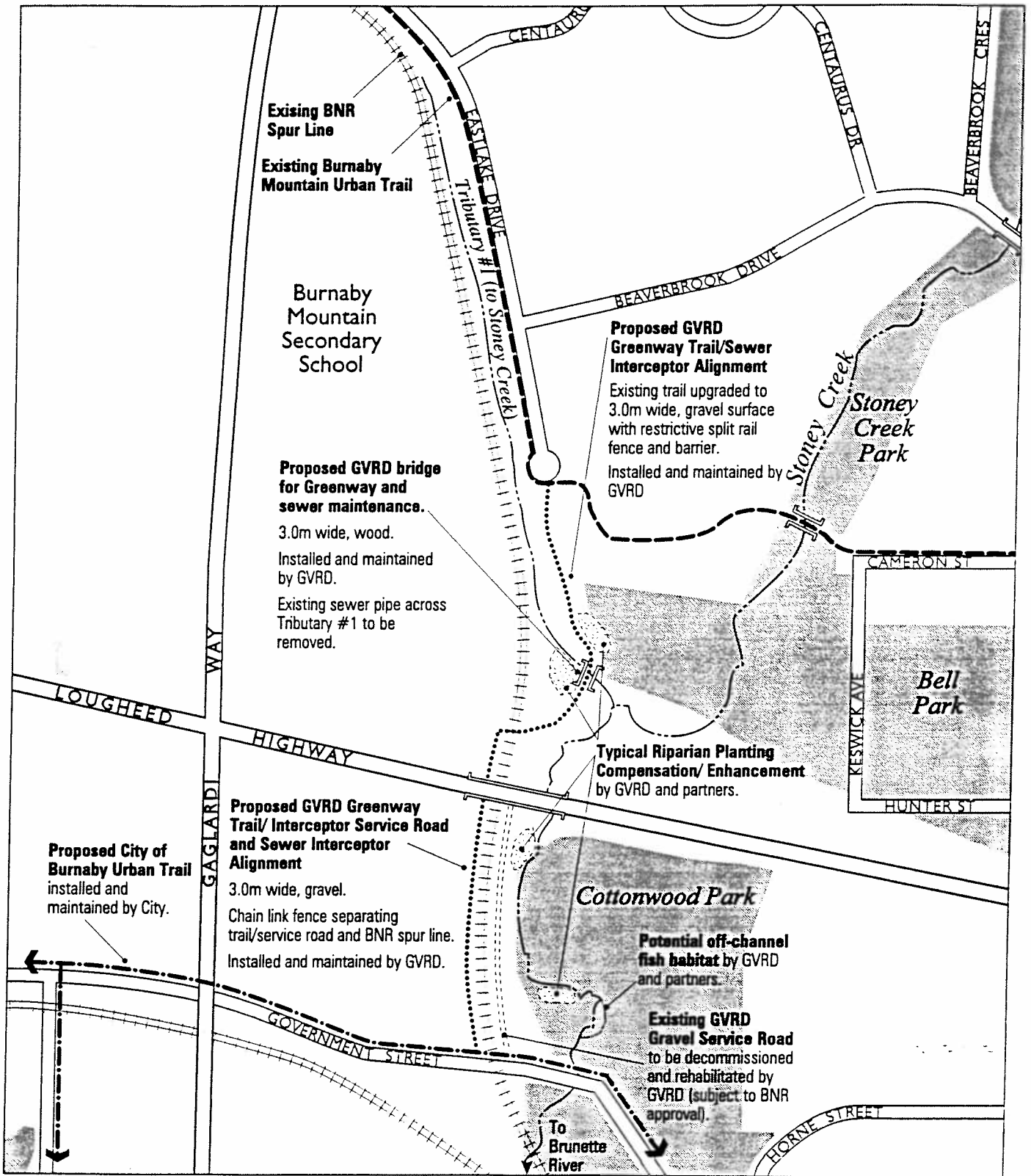
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cc: Director Engineering  
Director Parks, Recreation and Cultural Services  
Director Finance



**Proposed Alignments for the GVRD Lake City Sewer Interceptor / Brunette-Fraser River Regional Greenway Pilot Project (LCSI/BFRG)**





**Proposed GVRD Greenway Trail and Lake City Sewer Interceptor Alignment**  
Eastlake Drive to Government Road Section



**Figure 2**

