

TO: CITY MANAGER

September 8, 1999

FROM: DIRECTOR PLANNING AND BUILDING

SUBJECT: Canadian Environmental Assessment Act (CEAA)
Screening Report, SkyTrain Extension Project

PURPOSE: To provide information regarding the CEAA Screening Report as requested by Council.

RECOMMENDATION:

1. **THAT** a copy of this report be forwarded to the Environment and Waste Management Committee; Mr. Dave Carter, Department of Fisheries and Oceans (DFO), Habitat Enhancement Branch; and Mr. Elmer Rudolph, Burnaby Streamkeepers Coordinator.

REPORT

1.0 BACKGROUND

At its meeting, 1999 August 23, Council inquired on the status of the CEAA Screening Report on the Skytrain Extension Project released by the Department of Fisheries and Oceans on 1999 July 23. Council discussed the concerns of local stream stewardship groups regarding the limited public review period (30 days) during the summer period as well as difficulties in accessing the report on the Internet or through public libraries due to the significant costs associated with copying the report. Arising from the discussion, Council adopted the following motion:

"**THAT** the Department of Fisheries and Oceans be requested to extend the deadline for public input on the CEAA Screening Report regarding the Skytrain Extension Project so that adequate public review may take place and information be made more readily available to members of the public, in particular Burnaby environmental stewardship groups such as Streamkeepers."

In addition, Council requested information regarding staff's review of the CEAA Screening Report, particularly in regard to potential environmental impacts associated with riparian areas at stream crossings.

Council's motion has been directed to the Minister of Fisheries. To date, the City has not received a response to the request. This report provides the requested information on the CEAA Screening Report.

2.0 CEAA SCREENING REPORT

The Skytrain Extension Project proposal was submitted by the Rapid Transit Project Office (RTPO) for a Screening level review of the project pursuant to the Canadian Environmental Assessment Act (CEAA). DFO has acted as the lead Federal agency in coordinating the CEAA review as the Federal approvals required for the project under CEAA are related to DFO's mandate.

The CEAA Screening assesses the potential environmental impacts of the Skytrain extension project based on the preliminary design. It is not based on detailed design and construction plans which are currently not available as the project will be implemented through a "Design/Build" approach.

Although the report identifies the difficulties of completing the assessment without sufficient detail, it is emphasized that more detailed environmental reviews will be required in streamside areas where authorization may be required by DFO (under section 35(2) of the *Fisheries Act* associated with any potential harmful alteration of fish habitat) as well as by MOELP (under Section 9 of the *Water Act* regarding works in and about streams). Specific mitigative or compensatory strategies will be determined as part of these reviews. The Regulatory agencies have not accepted the levels of potential impact considered for the CEAA assessment, for the purposes of permitting and authorization.

Overall, the CEAA Screening Report identifies potential impacts to the biophysical environment directly or related to the construction and operation of the project as:

- loss of trees and vegetation along the alignment right-of-way;
- disturbance of riparian habitat at stream and river crossings;
- potential impacts to water quality and fish habitat;
- increased noise at localized sites.

These are summarized briefly below along with the conclusions of the report for the Burnaby section of the line:

2.1 Vegetation Management

Areas where the loss of vegetation is anticipated along the Skytrain corridor are identified within the report. The loss of some trees along Lougheed Highway is anticipated. These are noted as small localized areas often in remnant vegetation within highly developed areas.

Revegetation plans will be required and implemented to ensure vegetation is replaced in areas disturbed by construction. These plans are to generally include vegetation communities which are improved, relative to existing vegetation, and which have enhanced value for wildlife habitat.

Revegetation in riparian areas will be associated with agencies' detailed reviews and authorizations. Unless otherwise specified in these environmental approvals, all disturbed riparian areas shall be revegetated in accordance with the MOELP Tree Replacement Criteria, and at a density consistent with the Guide to Riparian Planting (MOELP and DFO). All permanent vegetation losses will be offset by plantings in and adjacent to the right-of-way in the immediate area of impact.

With regard to on-going vegetation management beneath the guideway, the CEEA Screening Report notes that areas impacted need to be included in RTPO's calculations of compensation measures.

City staff are currently working with RTPO staff to minimize loss of vegetation as much as possible through consideration of different design geometrics as part of the detailed design process.

2.2 Riparian Areas Associated With Skytrain Stream Crossings

The extension of Skytrain in Burnaby will require crossings of Stoney Creek, Eagle Creek, Beecher Creek and Chub Creek as shown in Figure 1. Streams and riparian areas were recognized as the most sensitive areas from an environmental perspective and a number of measures by RTPO were identified to avoid, mitigate or compensate for any impacts to streams and riparian areas. The outcome of the CEEA Screening in regard to stream crossings follows:

Chub Creek

Chub Creek is recognized as a relatively high value salmonid stream. The riparian area adjacent to Chub Creek is narrow in width and vegetation limited in height. According to the CEEA Report, there will be an elevated guideway crossing of the creek with a 35 m span. Support columns are proposed approximately 12m from the creek. Footings are to be located outside existing riparian area within a cleared area. The zone of disturbance for construction will also be away from the riparian area. No clearing is required for construction of the guideway at Chub Creek or any on-going vegetation management within the right-of-way.

The Screening report indicates that construction impacts can be mitigated through proper environmental management including handling of topsoil, sediment control and revegetation following construction. Staff have been working with the RTPO on detailed design in the vicinity of Chub Creek. Staff will continue to work with RTPO on detailed design to minimize impacts on the riparian habitat.

Beecher Creek

Beecher Creek is recognized as a relatively high value salmonid stream. The Skytrain guideway will be elevated at the Beecher Creek crossing and located approximately 5 m south of the Lougheed Hwy. The bridge is to have a 35 m span with one support column located within the riparian habitat.

The total area to be cleared is expected to be 170 m² including areas cleared for footings and access. Ongoing vegetation management under and adjacent to the guideway will be needed thereby limiting the height of trees.

DFO has determined that the loss of riparian habitat will require authorization under Section 35 (2) of the *Fisheries Act*. A detailed environmental review of this site will be required once detailed design and construction plans are submitted. Appropriate habitat compensation will be required and form part of the agency authorizations. RTPO proposes to create similar habitat in the vicinity of the guideway crossing of Beecher Creek. The report assesses that most construction impacts can be mitigated through proper management of the site during construction.

Staff have been working with RTPO on detailed design in the vicinity of Beecher Creek. An Urban Trail along the south side of Lougheed Highway forms part of the current design. Potential impacts on the riparian area still need to be addressed as part of the detailed design process. Staff will work with RTPO to minimize these.

Eagle Creek

Eagle Creek is recognized as a high value salmonid creek. The CEEA Report notes that the guideway will be elevated and located in the median of Lougheed Highway where it crosses Eagle Creek and the highway will have to be widened on either side to accommodate the guideway. The location of footings and support columns are not expected to have a direct impact on the riparian habitat of the creek. The RTPO has committed that no extension of the culvert which passes Eagle Creek under the highway will be required. Any temporary loss of riparian vegetation at the site will be replanted.

Staff have been working with RTPO staff on detailed design in this area. The current design anticipates a retaining wall located approximately 5-6m from the highway edge. Maintenance access to the culvert at Eagle Creek is presently undetermined. Staff will continue to work with RTPO on detailed design to minimize impacts at Eagle Creek. Agency authorization may be required at this crossing.

Stoney Creek

Stoney Creek is recognized within the report as a high value salmonid stream and one of the critical sites potentially impacted by the guideway where best efforts must be undertaken to minimize the impacts to the creek and to provide sufficient compensation

for any residual impacts. The preliminary design layout indicates there will be one footing immediately west of Stoney Creek within the floodplain of the creek. Two footings to the east of the crossing will be located within riparian habitat adjacent to the creek. The third footing to the east will be located near the top of slope at which point the footing will be approximately 30 m from the creek channel. This third footing will be located in a wetland area that is associated with a storm outlet and small tributary of Stoney Creek and will require mitigation to avoid erosion and runoff. Construction access to the three eastern footings will be from Loughheed.

The total clearing to access and construct footings based on the preliminary design is estimated to be approximately 660 m². Ongoing vegetation management under the guideway will limit the height of vegetation. The CEAA report indicates that a number of tall mature trees that currently exists between the creek and the top of the fill slope will either be reduced to a relatively narrow strip next to the creek or removed completely if wind throw is deemed to be a risk.

Based on the above, DFO will require review and authorization of detailed plans. RTPO has committed to a compensation plan for the construction and operation of the guideway at this location that is satisfactory to DFO. The compensation plan is to involve the planting of appropriate native vegetation in a 2:1 ratio along a tributary to Stoney Creek that is currently lacking riparian vegetation. The RTPO has also committed to the placement of cabled rock and log structures within the channel of Stoney Creek near the crossing site which would enhance fish habitat.

As part of the detailed design process, staff are evaluating, with the RTPO, the location and type of footings to minimize impacts on Stoney Creek and its riparian area. The potential for using deeper caisson footings, which would be constructed from approximately the top-of-bank of Stoney Creek, rather than the shallow spread-type footings proposed in the preliminary design, is currently being explored by the RTPO to minimize impacts on Stoney Creek and its riparian area. Staff have also expressed the need to involve the City in the detailed environmental assessments and compensation plans which will be conducted as part of the agency authorization reviews at specific stream crossings. DFO has also indicated that it will be involving the Streamkeeper Groups in their environmental assessment and development of compensatory plans.

2.3 Water Quality

Sediment Control during Construction

The report indicates that sediment control systems are to be designed and built in accordance with the *Land Development Guidelines for the Protection of Aquatic Habitat* and to the satisfaction of environmental agencies. Review of sediment control strategies will form part of agency authorizations. Run-off from any part of the site is to comply with the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for Freshwater Aquatic Life. These standards are considered

relatively stringent and exceed those commonly used based on the *Land Development Guidelines*.

As part of the detailed design process with RTPO, staff will review sediment control plans for the project.

2.4 Noise

The CEAA Report indicates that the assessed noise impacts from normal Skytrain operations are projected not to be significant in most locations. At the preliminary design stage, some of the assessed locations warrant mitigation in the form of guideway noise barriers. Included in these is the area in the vicinity of the Austin - Bell Street section. During the detailed design phase, the physical extent of these mitigative works is to be determined. In addition, more detailed impact assessment would be used to identify other locations warranting mitigation.

Construction noise impacts will need to be controlled through scheduling and hours-of-work restrictions.

Staff are working with RTPO to address the City noise requirements during construction. Since the completion of the CEAA Screening Report, the Skytrain alignment for the Austin to Bell Street section has been revised. Mitigative features will be reviewed by staff once their detailed design is initiated by RTPO.

2.5 Contaminated Sites

Based on a preliminary environmental evaluation, it is noted that most of the area traversed by the project has low risk potential for encountering environmental contamination. Site investigations are recommended for all sites where the risk of contamination is considered moderate to high. Site remediation and disposal of contaminated materials will be implemented where necessary.

According to the Screening Report, the information supplied to date is not specific and implies the issues arising from contaminated soils will be dealt with when encountered. Such an approach may give rise to project delays given the complexities of some problems of this nature and the time needed to resolve them. In addition, construction on contaminated lands, regardless of ownership, could give rise to *Fisheries Act*, Section 36 issues relating to groundwater and storm drainage.

These concerns were also expressed by staff at the Special Commission Technical Workshops in 1999 February.

2.6 Environmental Monitoring

Regulatory agencies require that there be a "third party" approach for environmental

monitoring of the project where the Environmental Monitor will report directly to environmental agencies as well as to the proponent. Environmental monitors will ensure that work is conducted in accordance with the environmental construction specifications in the Construction Environmental Management Program, as well as with agency permits, guidelines, rules and regulations and/or RTPO policy.

The City previously identified the need for independent environmental monitoring at the Special Commission Technical Workshops held in 1999 February. In this regard, staff will continue to pursue that the Environmental Monitors maintain a "third party" objectivity in overseeing the work.

2.7 Cumulative Effects

The CEAA Screening Report assesses the project in terms of any residual impacts following mitigation and compensation efforts and with respect to other projects which may relate to the Skytrain Extension project leading to additional potential environmental impacts. The impacts to terrestrial habitat due to vegetation loss are not considered significant in the context of the project overall. No residual impacts on aquatic habitat in Beecher, Stoney, Eagle and Chubb creeks are anticipated. Overall, the project is assessed as making a small, incremental contribution to the trend of urbanization and increase in impervious surface in the watershed in the order of 0.01 - 0.2%. Water quality effects associated with this increase are anticipated to be negligible

2.8 Conclusions of CEAA Screening Report

The CEAA Screening report concludes that potential impacts of the Skytrain extension project may be avoided and/or mitigated to the extent possible through the implementation of environmental management techniques. Compensatory measures will be applied in relation to environmental effects where unavoidable residual impacts are anticipated. The RTPO has set out a series of mitigation and compensation measures that if implemented during the detailed design stage as well as during project construction and operation, should address impacts identified in their report.

The DFO will defer making a determination regarding the significance of environmental effects associated with the project until the public review period is complete and all public comments are taken into consideration.

3.0 CONCLUSIONS

Overall, staff accept the conclusions of the CEAA report that the potential impacts associated with the project based on its preliminary design, may be avoided, mitigated or compensated for through appropriate environmental management and compensatory works. However, as indicated in the report, further environmental assessment based on detailed design and construction plans is critical to effectively assess and manage potential environmental impacts in sensitive riparian areas. Further, given the tight schedules associated with RTPO's

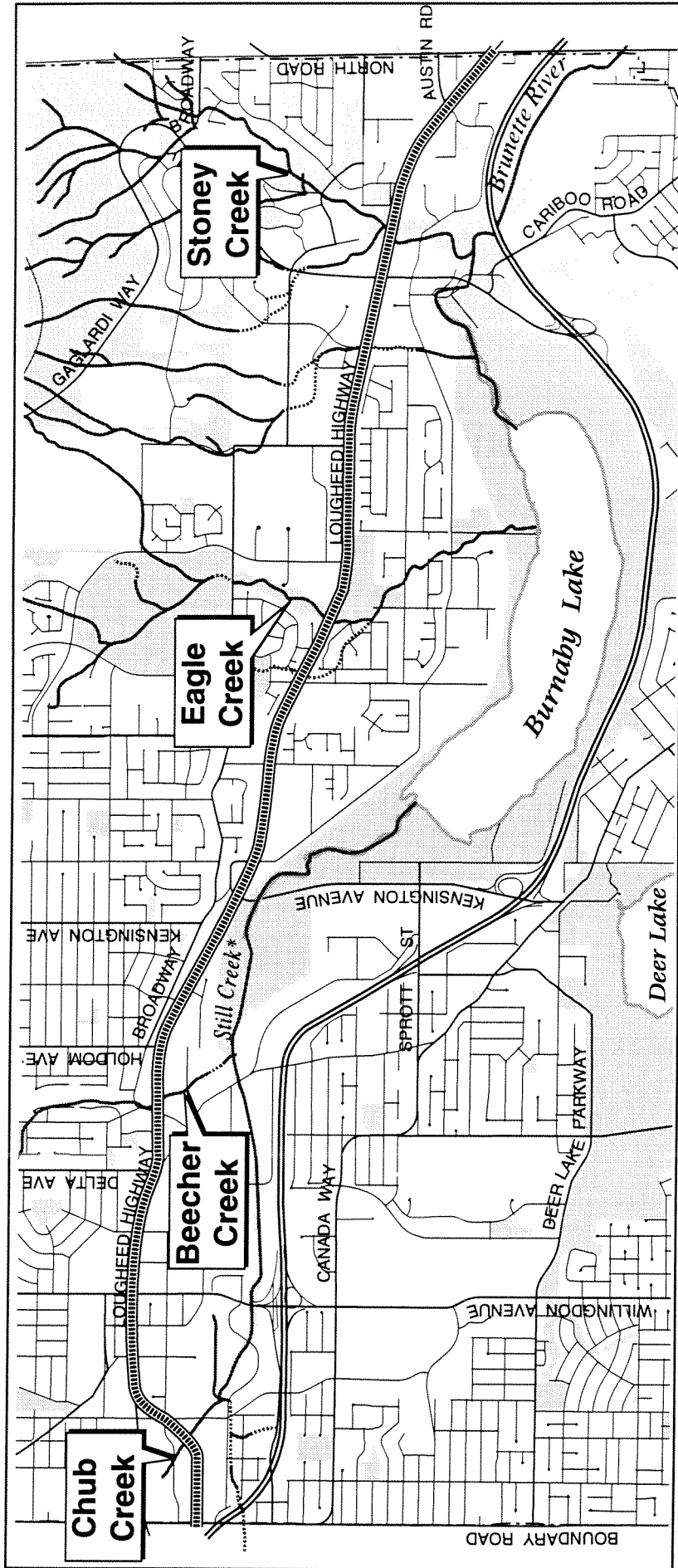
Design /Build approach, it is essential that the detailed environmental reviews associated with areas where agency authorizations are required are subject to adequate processes which facilitate the input of the City and community stewardship groups, particularly Burnaby Streamkeepers.

To this end, staff will continue to participate in the design process of the Skytrain Extension to identify potential environmental impacts and solutions on Burnaby sections of the project so that rigorous environmental design and management measures are implemented in environmentally sensitive areas.

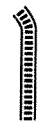
B. Rukow 1
for D.G. Stenson, Director
PLANNING AND BUILDING

D SH/sla

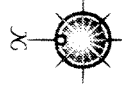
- cc. Director Engineering
- Director Parks, Recreation and Cultural Services



**Figure 1:
Diagrammatic SkyTrain Alignments Relative to Burnaby Stream Crossings**



SkyTrain Alignment



City of Burnaby
Planning & Building Dept.
1998 09 08

