

TO: CITY MANAGER 2000 January 05

FROM: DIRECTOR PLANNING AND BUILDING OUR FILE: 08.230.3

SUBJECT: ENVIRONMENTAL CONSIDERATIONS REGARDING DEVELOPMENT OF THE SKYTRAIN GUIDEWAY AT THE STONEY CREEK CROSSING

PURPOSE: To provide information to Council regarding the design and environmental management program for the SkyTrain guideway at the Stoney Creek crossing.

RECOMMENDATIONS:

1. **THAT** a copy of this report be forwarded to the Lougheed Mall Residents Association, the Stoney Creek Environment Committee and the Environment and Waste Management Committee for their information.

REPORT

1.0 BACKGROUND

At its meeting 1999 December 13, Council received a delegation from the Lougheed Mall Residents Association which expressed concerns regarding the development of SkyTrain in the vicinity of the Lougheed Town Centre area. Amongst the concerns expressed were issues associated with the development of the SkyTrain guideway over Stoney Creek and potential environmental impacts associated with construction occurring during the wet winter months of January and February. Council also discussed under New Business, concerns recently expressed by the Stoney Creek Environment Committee through previous correspondence to Council and a recent newspaper article in the Vancouver Sun which highlighted potential environmental impacts associated with the timing of construction during the wet winter months and the location of guideway footings in proximity to Stoney Creek. Arising from the above, Council requested that staff provide a status report on the proposed schedule and implications of footing construction of the SkyTrain guideway in the vicinity of Stoney Creek. This report provides the requested information.

2.0 PROPOSED DEVELOPMENT OF SKYTRAIN GUIDEWAY - STONEY CREEK CROSSING

Staff have been working with the Rapid Transit Project Office (RTPO) over recent months to identify environmentally sensitive areas along the SkyTrain route in Burnaby and minimize environmental impacts through environmental design and management measures. Recently, under the Canadian Environmental Assessment Act (CEAA), the Department of Fisheries and Oceans (DFO) granted the RTPO an authorization under the Federal Fisheries Act (Section 35-2) for the entire SkyTrain project based on an assessment of potential impacts to fish habitat and proposed mitigative and compensation measures.

Stoney Creek has been identified as the most environmentally sensitive site along the proposed project alignment. Staff have been working with RTPO, DFO and the Stoney Creek Environmental Work Group to provide input into the design and management measures for this area. The proposed plan for the SkyTrain guideway construction includes the following measures to minimize environmental impacts:

2.1 Guideway Design

The design for the proposed crossing of the SkyTrain guideway over Stoney Creek is shown in the *attached Figure 1*. This design was approved by DFO. Minor modifications to the design, which will not result in any additional impacts to fish habitat, are anticipated as detailed design for this section is completed. As indicated in Figure 1, the guideway crossing will involve a series of piers located on the north side of the Lougheed Highway to support the guideway. Based on recent discussions with RTPO, all of the proposed piers within the Stoney Creek ravine area will have caisson foundations. Caisson-type piers involve deeply drilled and poured foundations which are contained within the pier structure thereby minimizing their footprint and disruption to riparian habitat. Some riparian vegetation, as approved under the DFO authorization, will be permanently lost at locations of caisson footings. As indicated on the drawing, piers numbered 036 and 037 are located nearest to the main channel of Stoney Creek and are estimated to be set back approximately 6 and 14 m respectively from the creek. Pier 036, the closest pier to the main stem of Stoney Creek, is located on top of the existing access road adjacent to the creek and will not result in further loss of riparian vegetation. These setback distances are significantly greater than those recently mentioned in the newspaper article.

Pier number 040 on the east bank of Stoney Creek is located in close proximity to a small, non-fish accessible tributary of Stoney Creek. Based on DFO's requirements,

RTPO has indicated that this tributary will be diverted during construction to avoid the release of sediments into Stoney Creek.

2.2 Sediment Control

Sediment control requirements for the construction of SkyTrain have been defined by DFO in the authorization for the project. Any contravention of sediment control requirements may result in the laying of charges by DFO under the Federal Fisheries Act. Due to the inherent environmental sensitivity and the proposed timing of construction, sediment control requirements defined for Stoney Creek are the most stringent for the entire SkyTrain project. No release of sediment or a zero tolerance for the release of total suspended solids (TSS) above background levels is permitted in the Stoney Creek area under the DFO authorization.

Conceptual sediment control measures are shown in Figure 1 where a series of containment berms are located around guideway piers. Detailed sediment control plans have been recently prepared by RTPO's contractors and are currently being reviewed by Burnaby Engineering, Environmental Services Division. Based on the concept of containment berms, sediment laden waters associated with construction of the guideway piers will be contained within berm areas and pumped off site via pumper trucks. Additional sediment control measures will include the placement of silt fencing and haybales and covering of exposed soils with geofabric, polyethylene or washed gravels as required on site.

2.3 Vegetation Management

Clearing and selective grubbing of an access corridor is planned within the area as indicated in Figure 1. RTPO's contractors are currently exploring the potential of reducing the extent of clearing and grubbing between piers numbered 037 and 039 depending on the extent of access which can be gained from the Lougheed Highway.

A qualified arborist is currently assessing the vegetation within and adjacent to the area to be cleared to retain as many trees as possible. Trees adjacent to the access corridor which could impact the safety of the guideway will be topped and pruned to retain these trees for wildlife habitat where possible. The root systems of trees and shrubs along the construction access corridor will be maintained in the ground to the greatest extent possible to avoid disturbing surface soils leading to sedimentation risks.

Compensation for vegetation which is removed due to guideway construction has been proposed by RTPO and approved by DFO. It includes revegetation along the access corridor with a diversity of native species which will not interfere with the guideway and planting along a tributary of Stoney Creek further up Burnaby Mountain for the permanent loss of riparian vegetation. Compensation planting is based on a 2:1 ratio for permanently lost riparian vegetation. Enhancement of vegetation adjacent to the construction access corridor will also take place following construction.

2.4 Environmental Monitoring

As outlined in the Canadian Environmental Assessment Act (CEAA) Screening report and subsequent DFO authorization for the SkyTrain project, independent environmental monitoring is required in environmentally sensitive areas throughout the project. Environmental monitoring requirements in the Stoney Creek area are the most rigorous of the entire project due to its environmental sensitivity. Full time environmental monitoring is required in the Stoney Creek area when construction is occurring. Golder and Associates has been retained in this capacity. Periodic checks of the site will also take place when construction is not active. The site is to be secured in terms of potential release of sediment discharge during these inactive periods. The environmental monitor must complete regular assessments of water quality including approved locations upstream of construction, at the location of construction and downstream of construction activities. Monitoring reports will be regularly forwarded to DFO and the City of Burnaby. The monitor has the authority and must stop all construction activities and take remediation measures if any sediment is discharged into Stoney Creek or contraventions of the DFO authorization occur. Contingency plans have been developed by the project environmental consultants in the event of any spills associated with the project. Emergency phone numbers are to be posted on site for after hour reports.

2.5 Construction Schedule

Based on the construction methodology of the SkyTrain piers and guideway which involves an interconnected east to west installation, as well as contractual and budgetary obligations of the project, RTPO anticipates that construction of the Stoney Creek crossing will commence in the coming weeks and occur within an approximate 8 - 10 week period followed by approximately 2 weeks for site restoration. These estimates are conservative and may be reduced depending on site conditions. Design details are currently being resolved for this section and once completed, clearing and grubbing is expected to proceed.

DFO, City staff and members of the Stoney Creek Environmental Work Group have expressed extensive concern to RTPO regarding the environmental sensitivity to fish habitat associated with the spawning and overwintering period and increased risks of sedimentation during the proposed construction period. RTPO and its contractors share these concerns, however are constrained by the technical construction methodology, contractual and budgetary obligations of the project. Due to these significant concerns and risks, DFO has defined extremely stringent environmental requirements for this section of the project as outlined in the above sections. Based on DFO's review of RTPO's plans under the authorization process, it was deemed that given the comprehensive environmental management measures defined by RTPO, environmental impacts could be adequately mitigated and compensated for.


2.6 Communications

Representatives from RTPO and their contractors recently met on site with City staff and members of the Stoney Creek Environmental Work Group to go over proposed plans for construction of the Stoney Creek crossing. A variety of input was provided by members of the Work Group and staff. It was evident that RTPO's contractors and representatives who will be involved with construction of the Stoney Creek section are aware of the environmental sensitivity of the creek and challenges of construction and sediment control during the wet season. Refinement of the proposed design and sediment control plan has been recently completed by RTPO's environmental consultants and submitted to the City for review. Ongoing communications between the City, the Stoney Creek Environmental Work Group and RTPO are proposed to ensure stakeholders are aware of current activities around Stoney Creek and to work towards the protection of fish and wildlife habitat in the Stoney Creek corridor.

3.0 CONCLUSIONS

As requested by Council, this report provides an update regarding the proposed construction of SkyTrain guideway within the Stoney Creek area. As outlined, construction is expected to commence in this area within the next few weeks following the completion of detailed plans and to continue for an approximate 8 - 10 week period prior to site restoration. The environmental sensitivity of fish habitat due to spawning and overwintering and risks of sedimentation associated with construction during the wet winter months are well recognized by RTPO based on extensive input by DFO, the City of Burnaby and the Stoney Creek Environmental Work Group. The timing of construction is, however, constrained by

significant technical, contractual and budgetary factors. Due to these circumstances, DFO's authorization for the project contains extremely stringent environmental requirements and RTPO has developed a comprehensive environmental management program to achieve these. Staff have met on numerous occasions with DFO, RTPO and members of the Stoney Creek Environmental Work Group to provide input on the design and environmental management program. Staff will continue to work in this manner to protect Stoney Creek.


D.G. Stenson, Director
PLANNING AND BUILDING


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Attach.

cc. Director Engineering
Director Parks, Recreation and Cultural Services

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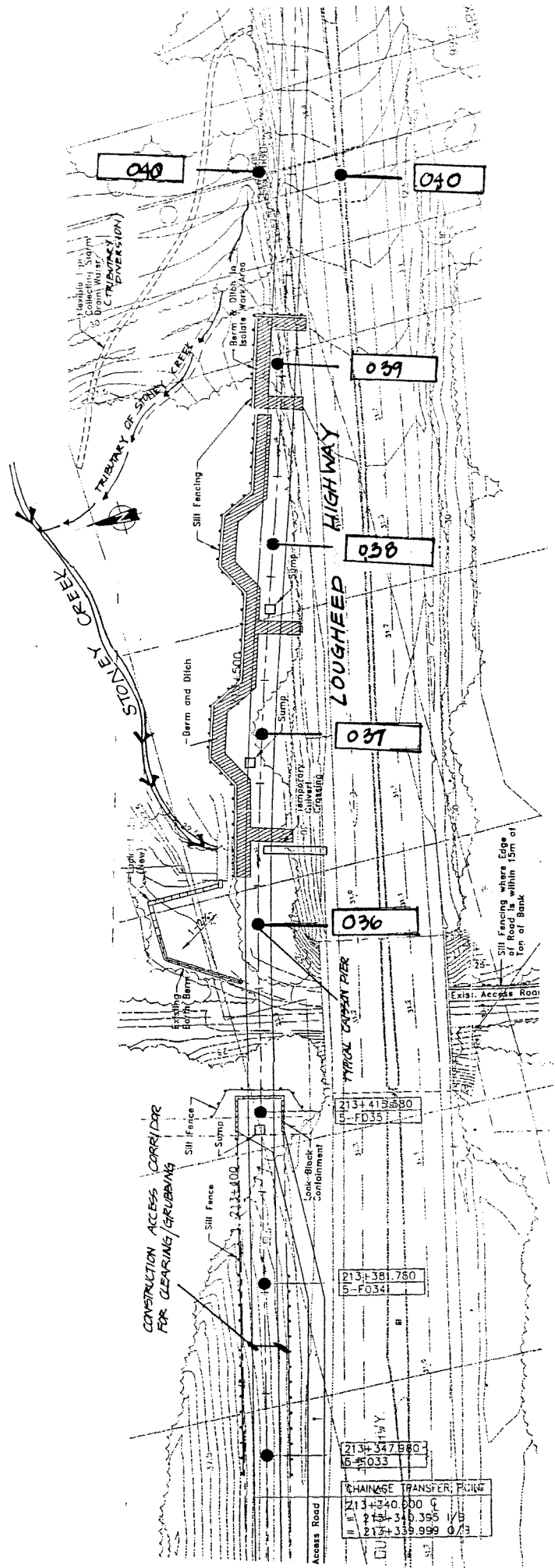


Figure 1 - Proposed Skytrain Guideway Development and Sediment Control Plan for the Stoney Creek Crossing

Note: This plan is based on those recently submitted by RTPO's environmental consultants and may be subject to minor revisions. Additional labels have been added by the City of Burnaby to reference the attached staff report.

