

ITEM 17  
MANAGER'S REPORT NO. 7  
COUNCIL MEETING 89/01/23

RE: STILL CREEK STREET ROAD CONNECTION  
DOUGLAS ROAD TO WILLINGDON AVENUE

MUNICIPAL MANAGER'S RECOMMENDATION:

1. THAT the recommendation of the Director Engineering be adopted.

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TO: MUNICIPAL MANAGER 1989 JANUARY 12

FROM: DIRECTOR ENGINEERING

SUBJECT: STILL CREEK STREET ROAD CONNECTION  
DOUGLAS ROAD TO WILLINGDON AVENUE

PURPOSE: TO PROVIDE COUNCIL WITH INFORMATION  
ON THE EXTENSION OF STILL CREEK STREET  
BETWEEN DOUGLAS ROAD AND WILLINGDON AVENUE

RECOMMENDATION:

1. THAT a copy of this report be provided to the four parties who have corresponded with Council on the extension of Still Creek Street.

REPORT

1.0 PREAMBLE

Council has previously received a report on the incomplete portions of Still Creek Street between Douglas Road and Willingdon Avenue. The original report, which was written in response to two letters of enquiry to Council, was referred back to staff for additional information. Subsequently, two additional parties have corresponded with Council on this subject. The following report encompasses the contents of the original report, plus the additional information requested by Council. The correspondents had written to Council expressing a desire to see the completion of the Still Creek Street link which would ameliorate the problem of delays occasioned by the at-grade rail crossing on Douglas Road.

2.0 TRANSPORTATION BACKGROUND

The Central Burnaby Industrial Area is located in West Central Burnaby in an east-west corridor generally confined between the Lougheed Highway, a provincial controlled access highway, on the north and the Trans Canada Highway, a freeway facility, on the south. This area is further divided longitudinally by the Burlington Northern Railway.

The need for a major east-west collector roadway through the Central Area was seen to be necessary in order to integrate the several semi-isolated pockets of industrial development confined between the Burlington Northern Railway and the Trans Canada Highway from Sproutt Street on the east to Boundary Road on the west. A central east-west collector roadway linking the industrial development to major north-south streets would provide the area with a high degree of accessibility and provide circulation which to date has not been available.

**2.0 (Continued)**

Completion of the various segments of Still Creek Avenue from <sup>147</sup> east to west would interconnect this major commercial/industrial collector street with facilities such as Sprott Street (major arterial); Douglas Road (secondary arterial) and future realignment overpassing the railway to the Lougheed Highway; Willingdon Avenue (major arterial) and loop road connections; Gilmore Avenue (secondary arterial) and Boundary Road (major arterial). Although the majority of this route has been constructed (see Figure 1 attached), there remain two incomplete segments:

Segment A - Still Creek/Willingdon Loop under Willingdon Overpass

Segment B - Westminster Avenue to Eastbrook Parkway

Figure 1 also shows the creek in relation to the roadway.

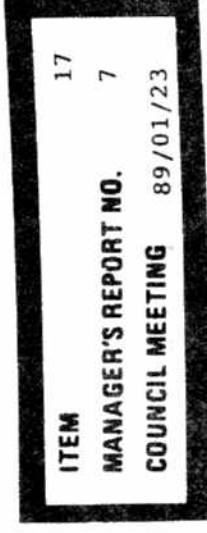
**2.1 SEGMENT A**

The Willingdon Loop under the overpass requires property acquisition to obtain sufficient right-of-way for road construction. Staff are pursuing the most equitable means by which the property may be obtained, either by land exchange or outright purchase. Following right-of-way acquisition, road construction could proceed subject to Council approval.

**2.2 SEGMENT B**

Segment B, which is shown in more detail in Figure 2 attached, is crossed diagonally by the BC Hydro right-of-way and bisects a Municipally owned site on the east side and the privately owned Eastbrook Industrial Park on the west side. The Municipally owned site has historically been considered to be a site for a future Works Yard. As can be seen from Figure 2, the road right-of-way through this property has yet to be finally determined.

This segment is underlain by sensitive and highly compressible soils which are characterized by peat, silts and clays, combined with a high water table. These conditions dictate that specialized geotechnical engineering techniques be employed during development in order to preclude unacceptable levels of post construction settlement. Such difficulties of construction were encountered in the initial overly-intensive filling of the Eastbrook Industrial area where soil failures further reduced the bearing capacity of the soil. The Corporation has retained a Geotechnical Consultant to advise on the development of the Municipal site and, although filling has taken place, the area requires staged preloading in order to permit future construction. Ideally, the road construction and the site development should take place concurrently in order to ameliorate differential settlement. Development of a future Works Yard would be a major project for which no budget funds are in place. Staff will pursue with our Geotechnical Consultant the possibility of constructing the roadway in isolation of the remainder of the site. Regardless of this Municipal section, the road link will remain incomplete without private sector commitment on the portion between the BC Hydro right-of-way and Eastbrook Parkway. Recently, the developer has given indications that he wishes to complete development of this site and has taken out a fill permit to commence preloading. The incomplete sections under Municipal control, namely the easterly portion of Segment A and Segment B, are included in the 1988-1992 Capital Budget.



### 3.0 STILL CREEK CHANNEL

Council requested inclusion of the Municipal policy on Still Creek in this report and we would advise that Council has taken several specific actions pertaining to the watercourse.

### 3.1 COUNCIL POLICY

Notwithstanding that Still Creek is a regional facility under the jurisdiction of the Greater Vancouver Sewerage and Drainage District, Council in August 1973 approved the following recommendations:

- "(a) Council pursue a policy aimed at the future establishment of such a walkway between Burnaby Lake and Boundary Road, as shown more particularly on an attached map, with the long term objective of its inclusion in municipal and intermunicipal trail and parkway systems;
- (b) where ever possible, the required easements for the walkway, which would be to a minimum depth of 20 feet along Still Creek, be obtained through rezoning and plan approval procedures:"

Two additional recommendations pertaining to the retention of Still Creek as an open waterway were tabled at the August 6th meeting, however, on 1973 December 10, Council approved the following recommendations:

- "1. THAT Still Creek be retained as an open waterway in the area between Boundary Road and Burnaby Lake; and
- 2. THAT this policy be reviewed for that portion of the Still Creek drainage channel in the area between Madison Avenue and Boundary Road upon completion of the following studies:
  - a) The sampling and testing survey of the Still Creek waterway.
  - b) A report on the preservation and conservation of streams in the Municipality."

Council subsequently adopted a policy aimed at the preservation of the existing waterways in the Municipality. This has been applied to Still Creek, as well as to other watercourses. Where development approval or subdivision is involved, for example, all proposals which affect an existing open streamcourse are reported on and referred to Council for consideration.

Two enclosures of the Still Creek watercourse in this Municipality had been installed prior to the adoption of the Council's policy with respect to open retention of the creek, on 1973 December 10. These include a 480 foot portion through Dick's Lumber and Building Supplies property at 3850 Gilmore Avenue, and a 265 foot section on the Public Freightways 3985 Still Creek Street, to provide a total of 745 feet or about 4.1% of the overall watercourse length between Boundary Road and Burnaby Lake (approximately 18,200 lineal feet).

**3.1 (Continued)**

In response to a specific proposal to enclose a further portion of the channel at 3985 Still Creek Street, Council on 1976 February 02 adopted recommendations:

- "1. THAT Council reaffirm its previously-expressed position of preserving the Still Creek waterway in an open condition; and
2. THAT the present request for enclosing a further 240-foot section of creek in conjunction with PPA #3505 not be approved."

In 1981, Council received a further request to culvert this portion of the creek and at its meeting of 1981 February 09, Council adopted a recommendation:

- "1. THAT Council approve, as an alternative solution to the culverting proposal, the lining of the open portion of the Still Creek channel on the Public Freightways' property, with the provision of removable roof slabs over the waterway, all at no cost to the Municipality."

**3.2 GVRD POLICY**

As stated at the outset of this section, Still Creek channel is a regional facility and the Greater Vancouver Sewerage and Drainage District Administration Board at its meeting of 1987 January 28 adopted a motion:

"That the Board approve Amendment No. 16 to the Rawn Report to formalize the present open channel policy on Still Creek."

This amendment to the Rawn Report deleted the following:

"It is proposed that Still Creek be eventually enclosed in suitable conduits from the vicinity of Renfrew Street in Vancouver to the vicinity of the upper end of Burnaby Lake."

and substituted therefore:

"It is proposed that Still Creek from Renfrew Street to the vicinity of the upper end of Burnaby Lake not be further enclosed unless specifically requested by the City of Vancouver or the Municipality of Burnaby. Drainage requirements for the tributary area will be satisfied by enlarging the existing creek and other improvements but still will maintain the creek as an open waterway."

It thus can be seen that the current policies of Burnaby Council and the GVRD are in harmony and both express a desire to see Still Creek retained in an open channel.

**4.0 SITE DEVELOPMENT**

The Municipal site, which is bisected by the extension of the existing paved Still Creek Street, is shown in more detail on the attached sketch No. 2. As previously stated, this site is situated in an area characterized by extremely sensitive soils and, as such, must be developed in strict accordance with prescribed geotechnical techniques.

#### 4.0 SITE DEVELOPMENT

The site area was filled in a staged controlled manner between 1979 and 1982. The fill toe was set back approximately 100 feet from the creek banks based on stability considerations and the necessity to preserve a vegetation buffer adjacent to the creek. A low permeability berm was constructed along the southern fill extremity to control seepage discharge from the fill. Examination of the buffer area shows that the vegetation is growing extremely vigorously.

The filling of this site was undertaken in accordance with the requirements of a permit issued by the Ministry of Environment, Waste Management Branch. The permit is still open and the site is subject to regular inspections by Provincial staff. The last inspection, which was undertaken on 1988 July 20, advised that the Municipality is in compliance status with the permit. The inspection further expanded that:

- "- no further activity apparent since the last inspection conducted on 1986 September 24.
- appears to be no leachate escapement from the landfilled property north of Still Creek.
- District has not preloaded the landfilled property."

The next logical step in site development is preloading or surcharging the area prior to construction. As previously stated, the site has historically been designated as the location of a future Works Yard, however, this concept is being re-examined as a result of the findings of the preliminary report on the Earthquake Damage Prediction Study. This study, which was conducted on behalf of the GVRD, indicates that the Central Valley of Burnaby could be prone to an increased period of ground shaking. A Works Yard would play a key role in the event of a civic emergency such as an earthquake; therefore, it may not be appropriate to locate such a facility in an area where extended shaking could have an adverse effect on structures and bridges which in turn could jeopardize response capabilities of vehicles being called to an emergency. Staff are reviewing this site and other locations with a view to determining the optimum location for a future Works Yard. Staff will report back to Council once these deliberations have been concluded.

#### 5.0 WATER TABLE

The previous section advised that the filling operation had not had any adverse effect on water quality or vegetation. Council had also requested a statement on how the water table is influenced by the filling operation.

#### 5.1 GENERALIZED PRINCIPLES

Our geotechnical consultant has provided the following generalized statement in this regard:

"Filling of a site can result in modification of the drainage conditions and ground water levels on and adjacent to the site as follows:

- Modification of the topography, including blockage of drainage courses, can have a significant impact on the drainage characteristics of adjacent areas.

5.1 (Continued)

- Placement of fill generally results in a significant temporary rise in ground water pressures beneath, and immediately adjacent to, the fill area. These higher pressures are dissipated as consolidation occurs, and water is expelled from the underlying soil. This is a slow process in swampy peat areas, typically occurring over a period of several months. The expelled water tends to flow towards the site perimeter, and discharge close to the fill toe, unless specific drainage control measures are in place to modify this pattern.
- Some "mounding" of the permanent ground water level above the initial level prior to filling generally occurs within the site area. The magnitude of this permanent increase in ground water level depends on several factors, including the type of fill and grade increase. In our experience, the maximum increase in permanent ground water level within the fill area is generally between about 0-.5 and 1.0 m for conditions similar to those at the Works Yard site.

These effects can have a significant impact on adjacent properties, particularly those which are lowlying and already have high ground water levels. The effects can be compounded by settlement of the ground surface immediately adjacent to the fill toe. Adequate drainage control must be provided by means of ditches, storm drains and proper site grading.

Construction operations, including fill placement, can result in deterioration in water quality in adjacent water courses if adequate controls are not in place. It is sometimes necessary to control surface run-off and seepage from the fill, by means of adequate grading, siltation ponds and berms, to ensure that the adjacent water courses are not adversely affected."

5.2 SITE SPECIFIC IMPACT

With specific reference to the Still Creek site, our Consultant has advised:

"Fill has been placed at the Still Creek Avenue Works Yard site between 1979 and 1982. As far as we are aware, the fill operations have not had any significant effect on the ground water levels or drainage within adjacent properties, nor on the water quality within the adjacent Still Creek.

Significant effects, as discussed above, were not expected since the adjacent properties had already been developed to grades equal to, or greater than, those proposed for the site, and because adequate perimeter drainage control ditches were already in place.

Piezometers installed to monitor water levels at the site indicated an expected rise in ground water pressures within the site area as a result of fill placement, followed by a slow gradual return to levels slightly above initial levels. Although it was expected that water levels within the lowlying unfilled area immediately adjacent to Still Creek might also rise as a result of filling, no flooding of this area was ever observed during the construction and monitoring period."

## 6.0 RAIL CROSSING

One of the submissions to Council enquired whether there was any law which prohibits a train from blocking a roadway for a certain length of time.

Staff contacted Mr. Herman Gebhardt of the National Transportation Agency (N.T.A.) who advised that the Federal Railway Act prescribes that the maximum time a train may obstruct a level crossing is five minutes. The key measure is the length of obstruction whether caused by a stationary or moving train. This Act is enforceable by any law officer but has some obvious difficulties in application. Mr. Gebhardt suggested that the specifics of each incident including engine number, date and time, location and direction of travel, and of Railway Company be provided to the N.T.A. who can then take issue with the company involved. Penalty for violation, under new regulations, is in the \$5-10 thousand range.

## 7.0 SUMMARY

The extension of Still Creek Street between Douglas Road and Willingdon Avenue would provide an extremely desirable east-west transportation link. Although construction of this link does not impinge directly on Still Creek Channel, it nonetheless requires careful consideration of existing soil conditions. Construction of the roadway extension is integrally connected with adjacent development, both Municipal and private. These developments are not sufficiently advanced to permit immediate construction of the road, however, it is felt that resolution of outstanding issues could evolve during 1989. Staff will provide further reports to Council as appropriate.

It is recommended that a copy of this report be sent to the four parties who have corresponded with Council, namely:

- (a) Burnaby Chamber of Commerce  
6525 Sprout Street  
Burnaby, B.C. V5B 3B8
- (b) Norm Fieldgate Ltd.  
5325 Still Creek Street  
Burnaby, B.C. V5C 5V1
- (c) Cassola Holdings Ltd.  
5180 Still Creek Street  
Burnaby, B.C. V5C 4E4
- (d) Canadian Broadcasting Corporation  
P.O. Box 4600  
Vancouver, B.C. V6B 4A2

Attention: Mr. D. Newbury  
Assistant Regional Engineer

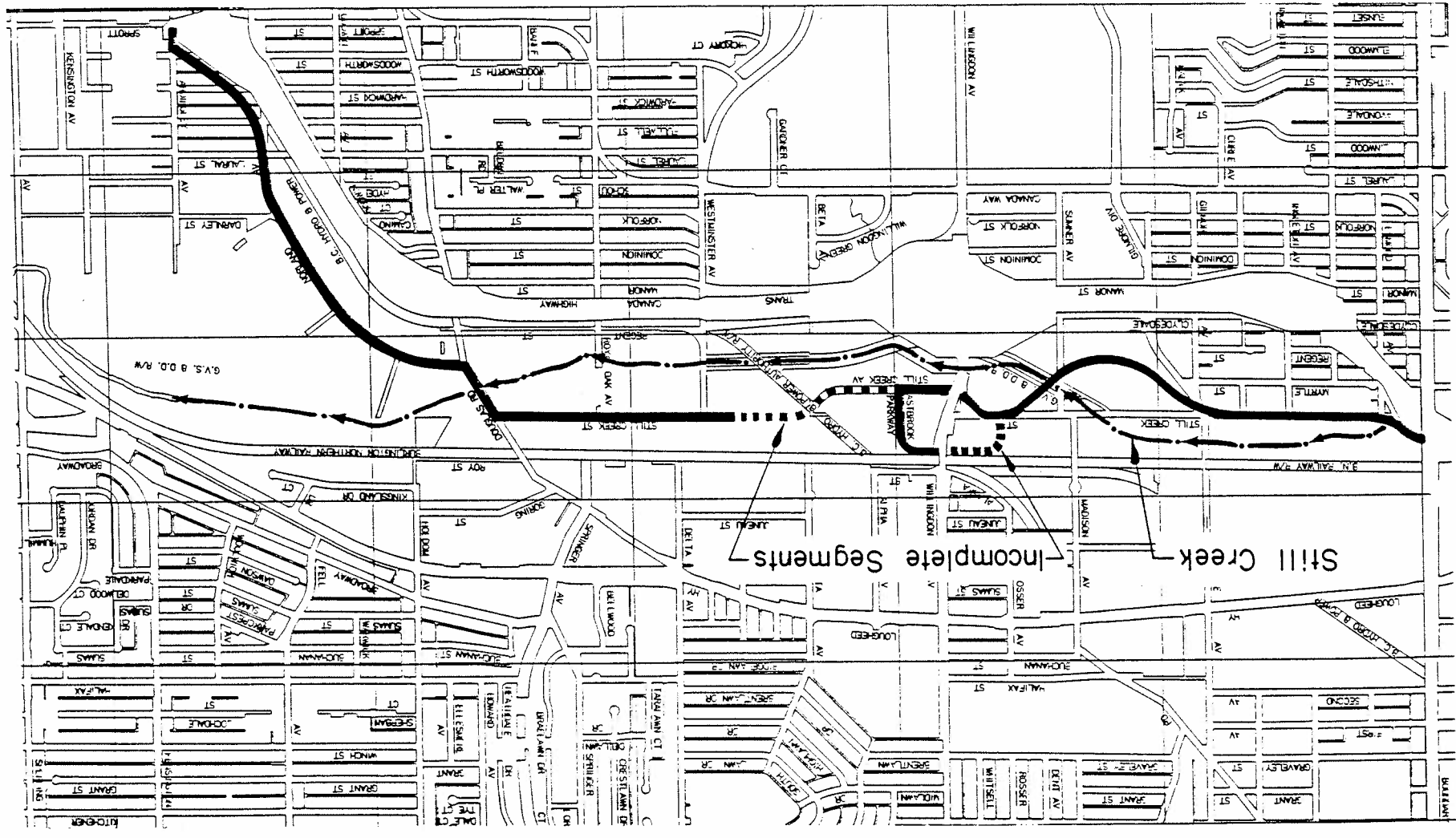
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Attach.

  
E. E. Olson, P. Eng.  
DIRECTOR ENGINEERING

CORPORATION OF THE DISTRICT OF BURNABY  
 ENGINEERING DEPARTMENT  
 DIVISION

DESIGNED BY D.R. Colocero  
 DRAWN BY D.R. Colocero  
 CHECKED BY  
 DATE 89-01-16  
 SCALE N.T.S.  
 DRAWG NO. 2114

SKETCH NO. 1



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# SKETCH NO. 2

APPR'D BY

CHECKED BY

DRAWN BY

DESIGNED BY

D.R. Calocero

DRWG NO. 2126

DATE 89-01-16

SCALE N.T.S.

DIVISION

CORPORATION OF THE DISTRICT OF BURNABY  
ENGINEERING DEPARTMENT

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