



CITY OF RICHMOND

REPORT TO COMMITTEE

TO: Public Works and Transportation Committee

To Pw & T - September 7, 2000
DATE: July 21, 2000


FROM: Jeff Day, P. Eng.
Director, Engineering

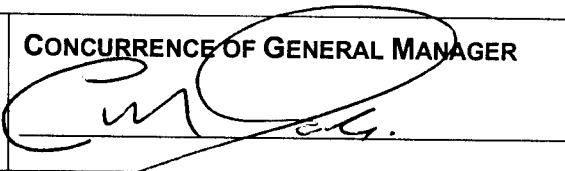
FILE: ~~6340-20~~
0970-05

RE: Mitchell Island Watermain Fraser River Crossing

STAFF RECOMMENDATION

That the Mitchell Island Watermain Fraser River Crossing capital project be deferred from 2000 to 2001 pending approval of an additional \$400,000 from the proposed 2001 Capital Program.


Jeff Day, P. Eng.
Director, Engineering

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Public Works - Water	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	

STAFF REPORT

ORIGIN

The Mitchell Island Watermain Fraser River Crossing project is included in the 2000 Capital Program and was scheduled for construction in the fall of 2000. However, a detailed pre-design report dated July 24, 2000 from a specialist consultant with expertise in pipeline river crossings identified a shortfall in the approved project budget. The original project budget of \$500,000 was based on a 1997 study by the City which staff have now discovered did not anticipate the complications identified in the detailed July 24, 2000 report.

ANALYSIS

This project entails directional drilling under the Fraser River to install a new watermain crossing to Mitchell Island that would be stable under earthquake conditions. Earlier this year, Engineering staff evaluated the project based on a staff report prepared in 1997 and found that the No. 5 Road alignment posed significant complications which were not taken into account during the 1997 study. Items such as the pier foundations of the old No. 5 Road bridge which remain embedded in the river and an environmentally sensitive marsh fronting Mitchell Island on the No. 5 Road alignment will be more costly to avoid than originally anticipated in the 1997 study.

As a result of these complications Engineering staff investigated two alternative alignments. These other potential alignments are located at Shell Road and at Simpson Road. However, these two options involve negotiations with Concert Properties Limited who owns the undeveloped lands on Mitchell Island across from Shell Road and Simpson Road.

In order to evaluate the options and consider the environmental and geotechnical implications, the City retained a consultant team including the necessary specialist expertise to evaluate the various alignments. The consultant team's review resulted in the preferred alignment being Shell Road pending negotiations with Concert Properties Limited. A less intrusive option for Concert Properties could be the Simpson Road alignment, however, other private property right of way implications must be considered at River Road. As a result of the consultant team's recommendation, staff met with Concert Properties Limited on July 14, 2000 to discuss the installation of the watermain through their undeveloped lands. In order to install the watermain, Concert Properties would have to finalize the future road pattern in their development. This will require that Concert Properties Limited evaluate and submit to the City for approval a suggested future road network.

Appended is a sketch of the various possible watermain alignments.

FINANCIAL IMPACT

The estimated cost for the project is \$900,000 based upon the consultant team's evaluation of the various potential alignments. The approved 2000 budget for this project is \$500,000, therefore, an additional \$400,000 must be budgeted for the project in order for it to proceed. The requirement for additional funding is attributable to:

1. Significant complications including addressing environmentally sensitive areas, and buried structures which increase the project scope and risk, which were not identified in the 1997 watermain crossing study.
2. Change in market conditions for directional drilling contractors since 1997. A few of the local directional drilling contractors have sold their operations to larger American companies or have left the Vancouver area for larger markets. The reduced competition has driven up the cost for local large directional drilling projects.
3. Anticipation of dealing with contaminated soils and disposal on Mitchell Island. The original 1997 estimate did not account for contaminated soils. From our recent experience on Mitchell Island, we estimate the cost to dispose of contaminated soil at \$50,000.
4. Pigging stations and appurtenances. The 1997 estimate did not include for pigging stations and appurtenances which are necessary to clean and maintain the watermain. Est. cost \$100,000.

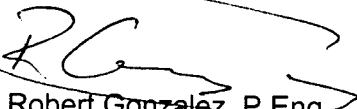
As the additional funds required are significant, we recommend that construction be deferred to 2001 when additional funding can be requested from the proposed 2001 Capital Program.

Earlier this year, the City was turned down for a grant from the Local Grants Act for this project. Deferring this project to 2001 will also allow the City to re-submit an application for a grant.

CONCLUSION

Mitchell Island is currently supplied with water from a single pipeline under the Knight Street Bridge. As emphasized by the recent accident between a barge carrying a crane and the Knight Street Bridge, this water supply is susceptible to disruption. Therefore a second pipeline drilled to Mitchell Island is still highly recommended as it would provide a second water supply to Mitchell Island.

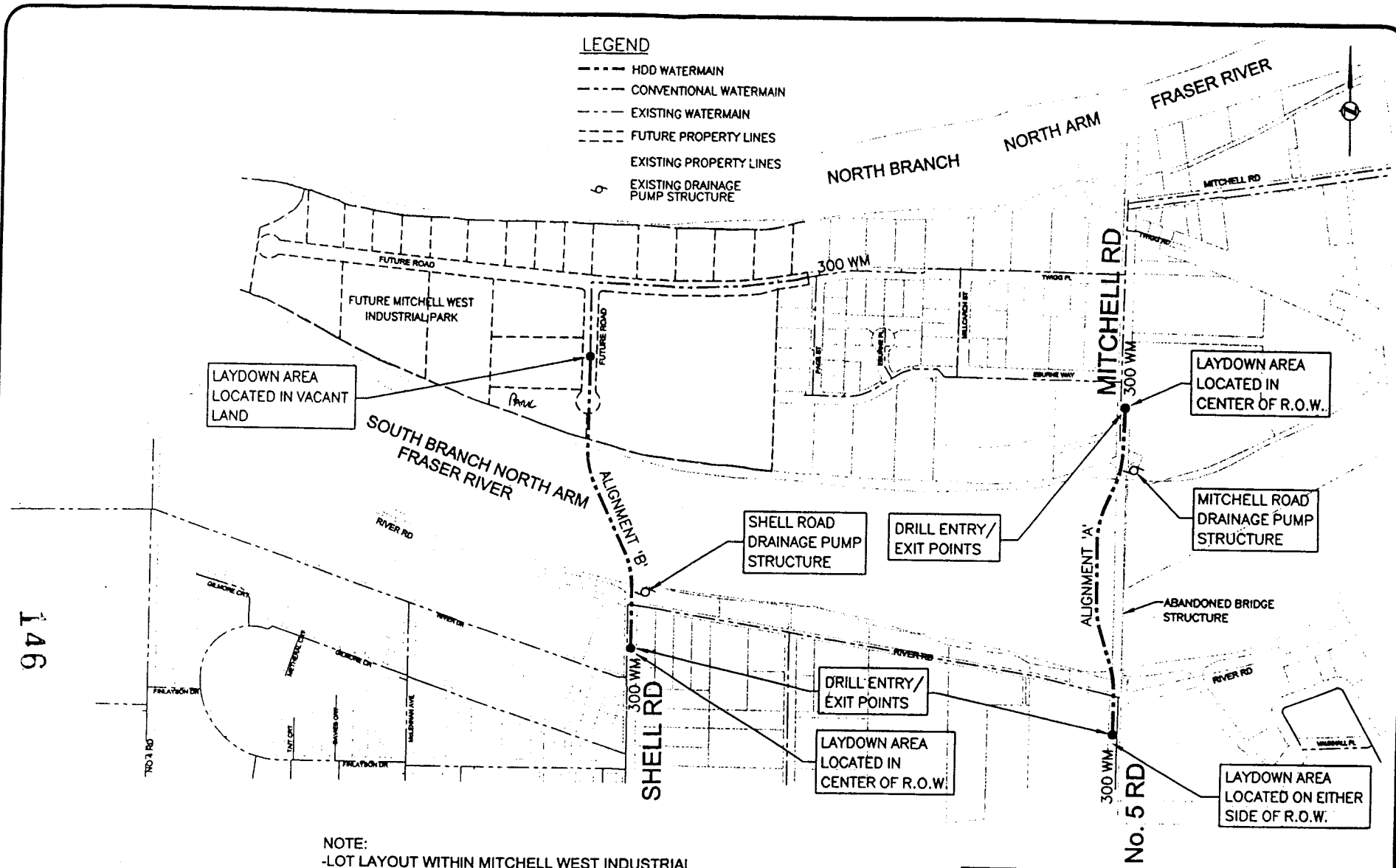
The most practical location for this new watermain crossing is currently under investigation and discussion with Concert Properties Limited. Regardless of the final alignment, an additional \$400,000 (max) will be required to undertake the project. Therefore, we recommend that the project be deferred to 2001 for construction pending approval of additional funds from the proposed 2001 Capital Program.



Robert Gonzalez, P.Eng.
Project Engineer
RG:rg

LEGEND

- HDD WATERMAIN
- CONVENTIONAL WATERMAIN
- EXISTING WATERMAIN
- FUTURE PROPERTY LINES
- EXISTING PROPERTY LINES
- ⊕ EXISTING DRAINAGE PUMP STRUCTURE



146

NOTE:
 -LOT LAYOUT WITHIN MITCHELL WEST INDUSTRIAL PARK IS CONCEPTUAL.
 -LAYDOWN AREA TO BE 100m FROM SHORELINE

Reid
Crowther

SCALE 1:6000	MITCHELL ISLAND WATERMAIN CROSSING REVIEW
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