

NO: R168

COUNCIL DATE: July 26, 2010

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **July 23, 2010**

FROM: **General Manager, Engineering
Fire Chief**

FILE: **7130-01**
XC: **8710-01**

SUBJECT: **Emergency Access to Crescent Beach Neighbourhood**

RECOMMENDATIONS

The Engineering Department and the Fire Department recommend that Council:

1. Receive this report as information;
2. Determine that the City will not pursue the provision of an emergency access road under the wooden trestle bridge located at Crescent Beach Marina for the reasons cited in this report; and
3. Authorize staff to forward a copy of this report and the related Council resolution to the Crescent Beach Home Owners Association (CBPOA).

INTENT

The purpose of this report is to advise Council of the findings of a staff review related to the provision of an emergency access road to the Crescent Beach neighbourhood by way of a road under the wooden trestle bridge located at the Crescent Beach Marina and to seek a determination from Council not to pursue the construction of such an emergency access road, which has been requested by Crescent Beach residents who are concerned about access to their neighbourhood being interrupted by a stopped train.

BACKGROUND

The Crescent Beach community is located on a peninsula that is approximately 142 acres in area containing some 390 properties, most of which are single family residences. Access to and from the community requires the crossing of a rail line which has been in operation since ca.1891, which predates the majority of development in Crescent Beach. The line connects Vancouver to the US Border and beyond, and is operated by the Burlington Northern Santa Fe (BNSF) Railway who provides freight services. A service agreement also allows AMTRAK to operate a passenger rail service along this route.

Crescent Beach has two at-grade access roads which cross the rail line, with the primary route running along Beecher Street/Crescent Road (access 1) and McBride Avenue (access 2) serving as a secondary access point. These are illustrated on the map in Appendix I. Due to their close

proximity to one another (approximately 500m) both access points are often blocked simultaneously by a passing train.

Crescent Beach residents have for some time petitioned for the rail line to be relocated away from the coast line, citing concerns over the dangerous goods being transported in close proximity to the community and the inconvenience of multiple daily blockages at the access points as trains pass along the track. City staff has looked into the relocation of the rail line in the past through studies and discussions with other agencies. Due to the very high cost (2002 study estimated \$65 million but it is believed it would be more in the order of \$300 to \$500 million today) no external agencies are prepared to pursue such a relocation at this time.

In 2007, a BNSF train temporarily blocked both access roads into the community due to a pressure hose failure. This incident led to concerns being raised from Crescent Beach community members regarding emergency service access during train passage and/or train failures and requests from the community for an alternative emergency access to be provided. The City's Engineering Department and Fire Department staff have been investigating the concerns and have been involved in ongoing discussions with BNSF and the Crescent Beach residents.

DISCUSSION

BNSF Operations and Reliability

BNSF Railway is a rail freight provider in North America. They operate over 50,000 route km of rail network, operating 6,600 locomotives and transport 8.4 million carloads annually (2009).

BNSF services pass through south Surrey and block access to Crescent Beach approximately 6-7 times per day for periods of between 12-15 minutes.

Discussions with BNSF indicated that the ruptured hose incident in 2007 required replacement parts to be brought out to the train. BNSF explained to City staff that such a failure occurs approximately once per year system wide throughout North America, with the probability of this happening again at this location being very remote.

Crescent Beach Emergency Access

Three work streams have been pursued by staff in assessing the ability to improve access to Crescent Beach. These were:

- Infrastructure improvements;
- Insurance costs and risks; and
- Safety assessment

Infrastructure Improvements

Engineering staff conducted a preliminary design review of an alternative emergency access road into the community by means of a route that passes under the existing wooden trestle bridge at the Crescent Beach Marina, which would link into the existing lane on the north side of the track.

Construction costs for this connection were estimated as follows:

- \$550,000: For a single lane access passing under the trestle bridge connecting to the existing gravel path on the north side of the track; and
- \$1,100,000: As above, but including widening of the existing gravel path and repaving to accommodate two-way traffic (as illustrated in Appendix B).

Detailed design, geotechnical and structural analysis could result in costs above the construction estimates that are noted above. BNSF has 'in-principle' indicated support for the proposed engineering solution but on condition that others pay for the costs, the engineering designs and supporting analysis meet their requirements and that access would be restricted to emergency vehicles only. BNSF will not support any access under the bridge if it is pursued for general public use.

Insurance Costs and Risk

The City has been involved in ongoing discussions with BNSF and insurance brokers to determine the City's insurance requirements and to quantify the risks associated with the provision of an emergency access under the BNSF trestle bridge.

BNSF have been clear in their discussions that access is to be limited to emergency vehicles only and fundamentally that all risks must be transferred to the City. On this basis, the following requirements and costs have been determined:

- Insurance during construction (one-off cost): \$20,000
- Annual General \$10,000,000 liability insurance coverage (supplied by BNSF) : \$40,000-\$50,000
- BNSF requires the City to accept and provide additional insurance for risk associated with bridge collision and damage and vandalism including loss of revenue.

Discussions with insurance brokers have indicated that premiums exclude environmental liabilities, such as environmental clean-up costs from chemical spillages. They have cited that environmental incidents cannot be quantified. Therefore, risk and insurance coverage amounts cannot be confirmed.

Given that BNSF primarily focuses on the transportation of natural resources including chemicals, de-railment (through vandalism, bridge damage, etc.) is possible with a substantial level of risk exposure for the City.

Safety Assessment

The City's Fire Department, through the Surrey Emergency Program (SEP), has been actively involved with the Crescent Beach community and the Crescent Beach Property Owners Association (CBPOA) to address their emergency service access concerns. The following actions have been taken:

(a) *Neighbourhood Emergency Preparedness Program (Phase 1):*

Members of the CBPOA were instructed in Phase 1 of the 'Neighbourhood Emergency Preparedness Program (NEPP)'. This level of instruction focuses on Personal Preparedness during an emergency and builds the groundwork for Phase 2 of the program.

(b) *Neighbourhood Emergency Preparedness Program (Phase 2):*

The Surrey Emergency Program is currently working with the CBPOA for delivery of Phase 2. This course focuses on community teams' response and the responsibilities and skills required for the Neighbourhood Response during an emergency.

(c) *Stopped Train Protocol (STP):*

The BNSF, the RCMP, Surrey Fire Service, and B.C. Ambulance Service are being coordinated by the Surrey Fire Service to implement the "Stopped Train Protocol", which:

- Provides expedient notification to BNSF of a request for any Emergency Services call-out to the Crescent Beach community. BNSF will stop any trains approaching the Crescent Beach crossing to ensure that access is maintained into and out of the area during the emergency; and
- In cases of train failures, identifies required actions (based on severity and duration) by BNSF and RCMP to ensure access into and out of the community.

This protocol has been implemented successfully in other similar communities in North America and provides an effective mechanism to ensure access is retained during emergencies and minimises impacts resulting from train failures.

(d) *Tsunami Contingency Plan:*

The CBPOA has more recently requested a contingency plan specifically related to a tsunami event. The Surrey Emergency Program referred to research by the Provincial Emergency Program Seismic Division, Natural Resources Canada, Fisheries and Oceans Canada, and local authorities. Crescent Beach is located in Tsunami Zone E (Strait of Georgia) in relation to the Tsunami Planning Levels for British Columbia published by the Provincial Emergency Program. The projected wave height is 0.5 m with a recommended planning level of 2.0 m. The dyke levels along Crescent Beach are constructed to an elevation of 3.53 m.

The Provincial Emergency Programs seismologist suggested that:

- Close proximity seismic events (which are felt locally) could result in very little notice of an approaching wave.
- Distant events would trigger early warning systems that would provide sufficient evacuation notice, dependant on the distance from the epicentre.
- Signage and audible warning systems are not required in Zone E (Strait of Georgia).

CONCLUSION

Based on the above discussion, it is recommended that Council

- Determine that the City will not pursue the provision of an emergency access road under the wooden trestle bridge located at Crescent Beach Marina for the reasons cited in this report; and
- Authorize staff to forward a copy of this report and the related Council resolution to the Crescent Beach Home Owners Association.

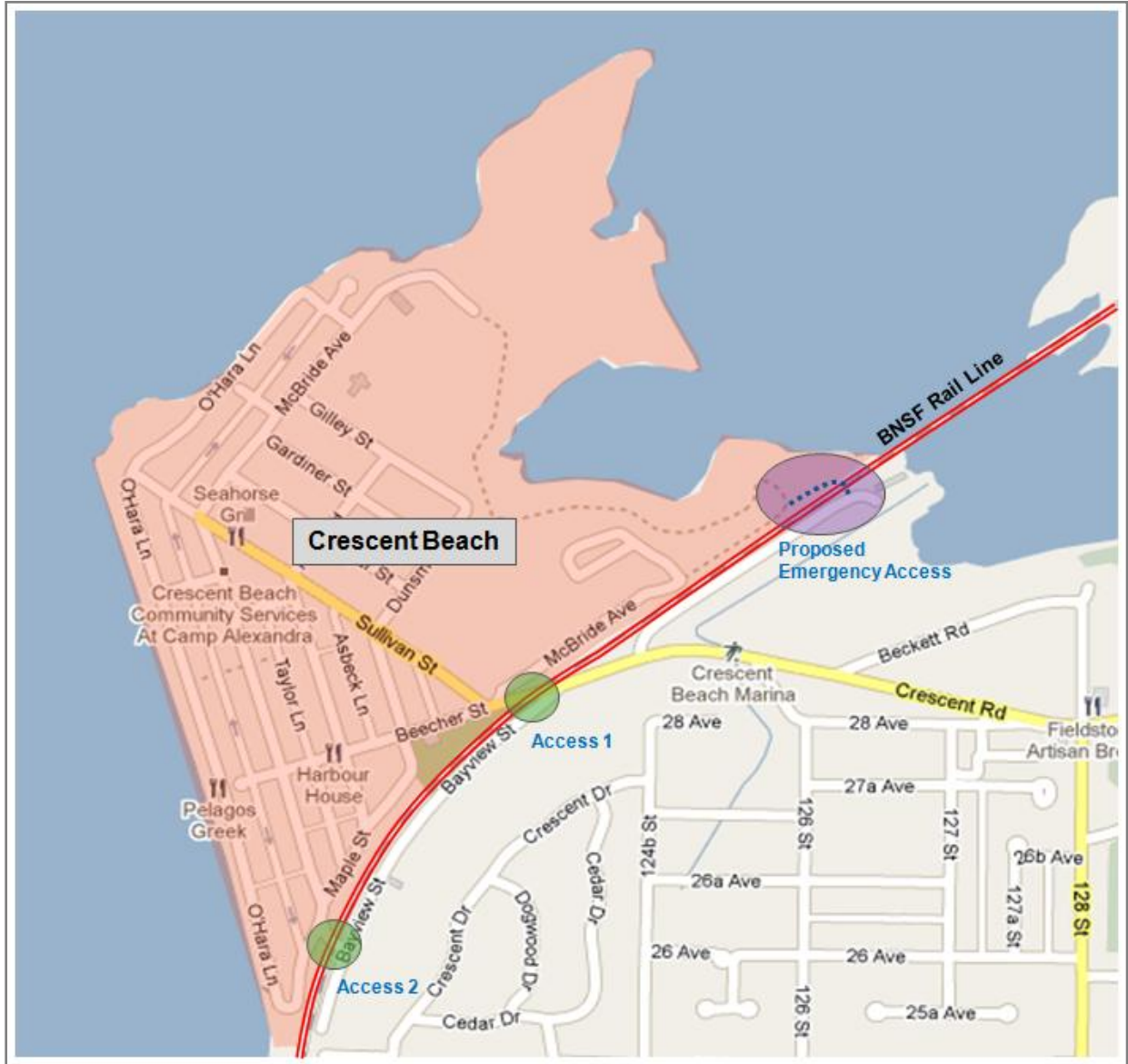
Len Garis
Fire Chief

Vincent Lalonde, P.Eng.
General Manager, Engineering

VL/JB/PB/MD/brb

Appendix I – Crescent Beach Map
Appendix II – Plan: Proposed Engineering Solution

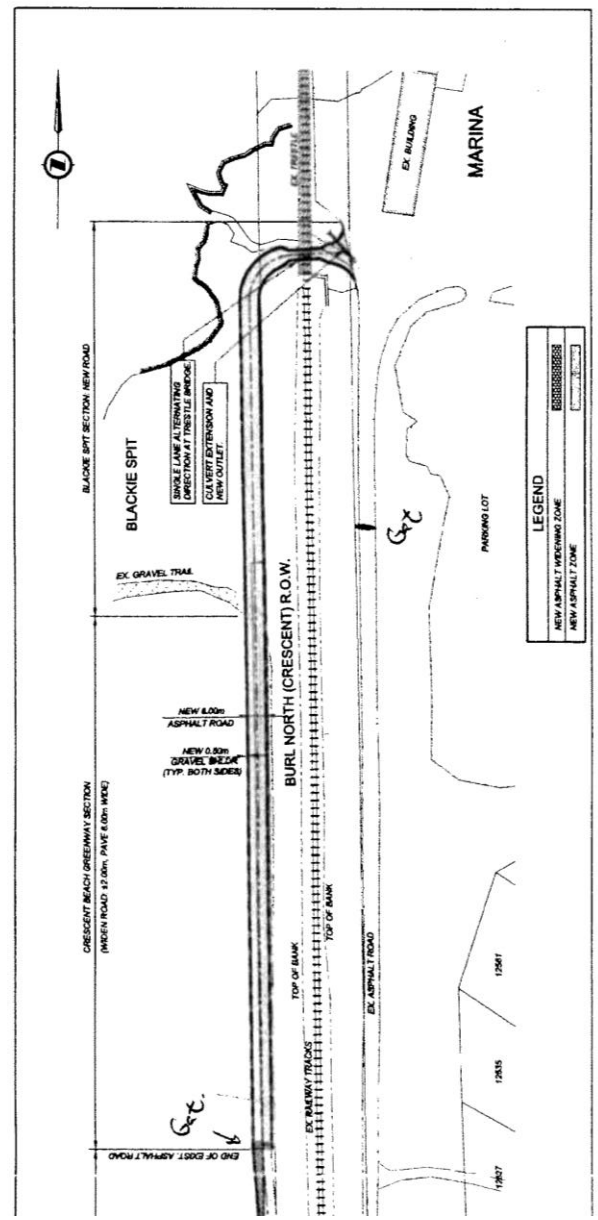
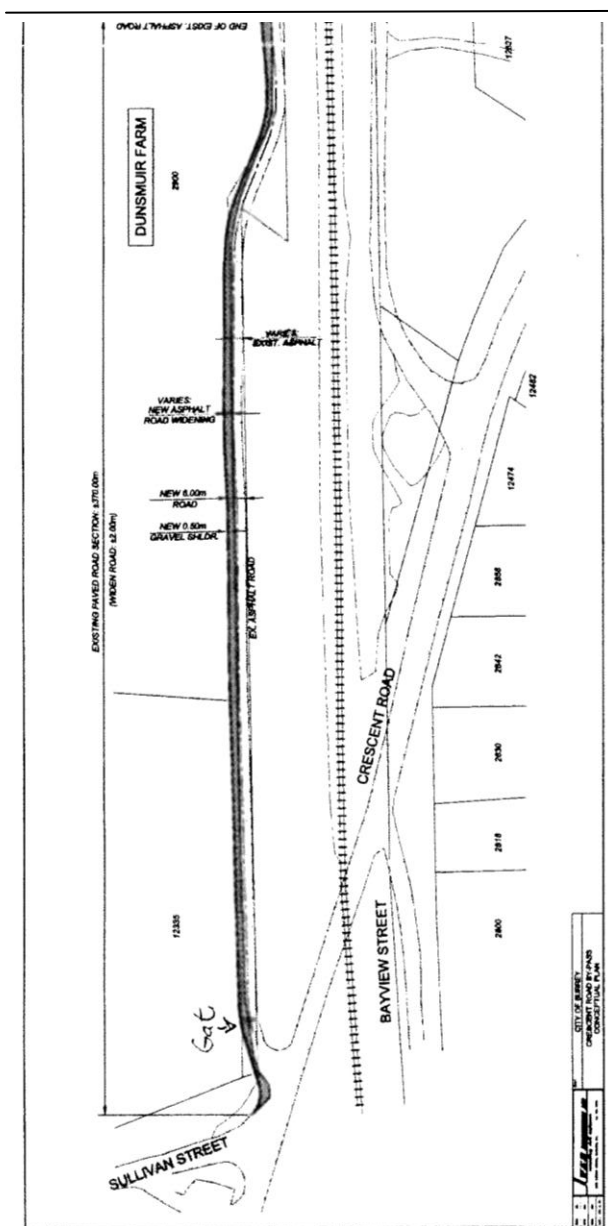
Crescent Beach Map



APPENDIX II

Plan: Possible Emergency Access Road Under Wooden Trestle

Section A



Section A