



**Sunbury Neighbourhood
Association**

www.sunburyneighbourhood.ca

**SUNBURY NEIGHBOURHOOD
ASSOCIATION**

**PRESENTATION TO
DELTA COUNCIL
MAY 30, 2005**

**KENNEDY HOUSE
DELTA**



Sunbury Neighbourhood Association

www.sunburyneighbourhood.ca

1.0 SOCIO-COMMUNITY AND ENVIRONMENTAL ISSUES

- 1. Corporation of Delta's Official Community Plan**
- 2. Comments re: Socio-Community Impact Assessment, South Fraser Perimeter Road**
- 3. Social Impacts**
 - River Road**
 - a. Traffic**
 - b. Design**
 - c. Safety**
- 4. Environmental**
 - a. Air Quality**
 - b. Noise**
 - c. Health Issues**
- 5. Expropriation**

2.0 SOCIO-ECONOMIC ISSUES

3.0 ENGINEERING

- 1 Preliminary Design Associated Engineering – Fraser River Option**
- 2 Nordel Alignment**
- 3 Alternative Option**
- 4 Summary**

Corporation of Delta's Official Community Plan

Livable

Create a sustainable, healthy and safe community in which today's quality of life will also be enjoyed in the future.

Green

Protect the natural environment, agricultural lands, and heritage features.

Involved

Balance competing interest and values, maintain fairness and equity and involve all residents and stakeholders in decision-making processes.

Section 2.8 Community Services

- 2.8.10 Work with the School District to ensure streets around schools are safe for students.**

Section 2.9 Transportation

- 2.9.6.1 Work with the Ministry of Transportation, Translink and other agencies on planning for the South Fraser Perimeter Road and improvements to the River Road corridor, and ensure new roads have minimal impact on agricultural lands, environmentally sensitive areas or residential neighbourhoods.**

2. Comments In Response to:

Socio-Community Impact Assessment South Fraser Perimeter Road May, 2005 Executive Summary

The report states that the **general profile** of the population affected is generally older and with lower incomes than the respective municipalities in which they are situated with the exception of Tsawassen. **Does this make it easier to push a road through because the population profile is older and does not have the tax base of other municipalities?**

The land use section does not even mention the residential areas of Annieville and Sunbury, only the residential area of Ladner. They mention that four schools in Delta are located within 500 m of the proposed SFPR, but fail to mention Brooke Elementary and Devon Gardens - Ladner schools are the only other two mentioned.

Potential Socio-community Impacts

Proposed road changes which include extensions, new access roads, and frontage and secondary roads. What specifically are you proposing? What is the River Road extension? And where is a secondary road at the Nordel Interchange going to be positioned?

Page 64 “A high impact indicates that residential or other visually sensitive areas will be extensively changed, and that additional factors, such as elevation, complex interchanges or high-level lighting will dramatically change the existing condition.”

Our area from the Alex Fraser Bridge to Elevator Road is rated as a high visual impact area. What mitigation is in place to deal with this? Only 20% of the whole designated route is high visual/noise impact and it is our neighbourhoods that are being affected.

“Official Community Plans (OCPs) for municipalities along the proposed SFPR route acknowledge the need for truck (goods) movement initiatives and plans to encourage traffic onto arterial routes from local roads. For example, Surrey supports the SFPR and the recent Delta OCP supports it in principle, but not some of the options under consideration.” **What options are you supporting and what are under consideration?**

We have been told that these connectors have been eliminated. Figure 6.5 dated May 2005 still indicate ramps on Delwood, River Road at 92A Avenue and River Road just east of Arpe Rd. and Centre St.

Does Delta have any further updates on the connectors through our neighbourhood? What position will Delta take if they are still going through our neighbourhood?

We understand that the proposed tiering of the road is being considered on a financial basis only. Tiering the freeway is not the only option and will have adverse ramifications on our neighbourhood. We would like to propose that the freeway not be tiered, that it be put as low and as close to the railway tracks as possible so that it will not have such a high impact on our neighbourhoods.

3. Social Impacts

River Road

A. Traffic

- There are currently 4000 trucks per day on River Road
- Fraser Port container traffic has increased by 475% in 3 years and is still increasing
- Vancouver Port container traffic is at approximately 1000 container trucks per day down River Road and will increase with port expansion
- Van Kam Trucking Company has their premises on Grace Road and container storage on River Road in Tilbury adding to the truck traffic
- When traffic is backed up on River Road or Nordel Way, cars rat race through our neighbourhood to get to the other road
- Speed bumps and traffic circles are not a deterrent through Sunbury and Annieville neighbourhoods
- Residents cannot turn westbound onto River Road from side streets such as Brooke Rd., Delwood Dr., and Terrace Dr. as there are no traffic lights
- North side River Road residents can't turn eastbound out of their driveways due to traffic volumes
- River Road is being used mainly by other neighbourhoods such as Surrey cutting through Annieville and Sunbury on their way to the Tunnel and Tilbury

- Traffic is currently cutting through Sunbury from Nordel Way via Dunlop and Centre Street and onto River Road to avoid congestion on Nordel Way
- When the train backs up traffic on River Road, traffic diverts up Centre Street to Dunlop to Brooke Rd. to Nordel Way

B. Design

- No connectors on River Road through the Sunbury/Annieville areas
- Cut off access completely to River Road eastbound or redirect to old River Road in Surrey
- Connect River Road westbound to Nordel Way at a location away from the Nordel Way interchange or cut off access completely
- Take the truck route status off River Road
- After the SFPR is built, River Road should be a 2 lane residential road for local residents only

Under 6.8 Dangerous Goods Movement

- “Delta does not have any routes designated specifically for dangerous goods, although it does have designated truck routes. River Road, as a major truck route, will have dangerous goods movements, but no specific route requirements exist. The future capacity for River Road as a route for dangerous goods should not be affected, **since it will continue as a local access route to the industrial areas.**”

C. Safety

- Brooke Elementary School is within 500 meters of the proposed SFPR
- Children live on and near River Road and walk to Brooke Elementary on Delwood Drive, Devon Gardens Elementary on Russell Drive, Sands Secondary on 82nd Avenue and North Delta Secondary School also on 82nd Avenue.
- There needs to be measures in place to ensure that the elementary schools (Brooke Elementary, Devon Gardens Elementary and Annieville Elementary) and playgrounds and parks (Sunbury Park, Annieville Park) in the neighbourhood are not adversely affected by the proposed road

- Descriptions of the types and amounts of air pollutants associated with the project, and their impact on public health, including: excessive diesel exhaust fumes (cancer risk), sensitive areas (playgrounds, schools and hospitals), air toxics and a risk assessment for effects of PM2.5 and PM10 from traffic emissions need to be recorded and publicly presented
- **There are no pedestrian controlled intersections anywhere on River Road within the Sunbury area**
- Residents walk through our neighbourhoods at all times of the day including afternoons, evenings and weekends
- Increased traffic means increased accidents and will increase to a high risk area for children and families
- Bicycle safety
- Increased risk of child abductions and accidents with connectors from SFPR to River Road and our neighbourhoods

3. Environmental

Air Quality

- Air quality decreases with increase in traffic.
- The air quality study for our neighbourhoods will not include actual measurements of the ambient air quality but will include data on what the current air quality likely is and what would be expected with the new road

Re: Fraser Health Authority letter dated February 28, 2003 from Tara Abraham, Environmental Health Officer to Vicki Carmichael, Project Assessment Officer, EAO (see attachment)

- states “that the air quality impact assessment fails to adequately address particulate emissions and ozone formation resulting from the proposed road. Both of these are recognized air contaminants known to have adverse health effects”.
- “Fails to address localized air quality impact and how it will affect the communities that are located directly adjacent to the proposed road and along the dispersion path of the contaminants of concern”.



Environmental Health Protection
11245 – 84th Avenue
Delta, British Columbia V4C 2L9
Tel: 604-507-5478 Fax: 604- 507-5492

Serving the residents of Fraser North, Fraser South and Fraser East

February 28, 2003

Vicki Carmichael
Project Assessment Officer
Environmental Assessment Office

Dear Vicki,

RE: South Fraser Perimeter Road Air Quality Impact Assessment

We have had a chance to review the air quality impact assessment. From a health perspective the following concerns/deficiencies were noted in the document.

- The document fails to adequately address particulate emissions and ozone formation resulting from the proposed road. Both of these are recognized air contaminants known to have adverse health effects.
- The document fails to address localized air quality impact and how it will affect the communities that are located directly adjacent to the proposed road and along the dispersion path of the contaminants of concern.

Particulate Matter and Ozone

A significant omission in the report is the investigation of particulate matter and ozone both of which are recognized air contaminants.

Automobile engines and in particular, diesel engines, are significant contributors to particulate matter emissions. Particulate matter exposure has been associated with:

- Increased respiratory symptoms,
- Decreased lung functions,
- Increased hospital visits and
- Premature deaths.

Heavy-duty diesel vehicles are expected to frequent the SFPR; these vehicles release diesel particulate matter (DPM). DPM is a complex mixture of gases and fine particles the majority of which are less than 2.5 microns in diameter. Particles less than 2.5 microns are termed fine particles and are capable of traveling to deeper regions of the lung and cause greater tissue damage. Diesel exhaust also contains inherently toxic substances.

Ground-level ozone is a secondary pollutant that is produced through the reaction of nitrogen oxides and volatile organic compounds in sunlight. On road vehicles are contributors to both precursors. Ozone can cause a range of health effects including:

- Irritation to the respiratory system
- Reduced lung function
- Aggravated asthma
- Inflammation and damage to cells that line the lung
- Permanent lung damage.

Without going into further detail it is important to recognize that these parameters constitute a critical part of health impact assessment. There is no threshold level established for either of these parameters. But there is sufficient evidence that confirms a direct relationship between increasing levels and adverse health effects. The elderly, children and the immuno-compromised are most sensitive to increased levels of these pollutants.

Local Air Quality Impact

People living close to the SFPR are most likely to suffer adverse health effects as a result of exposure to increased air contaminants. Hence a more localized estimation of air quality impact from the SFPR, especially in residential neighborhoods, is warranted. Information that will aid in assessing the health risks involved with exposure of the susceptible population includes:

- Identification of residences, schools, care-facilities that will be impacted or will potentially be impacted based on their proximity to the road.
- Projected maximum level of contaminants that these populations could be exposed to. This should take into consideration variations in time-of-day peaks of contaminants, seasonal dependence of some contaminants, etc.

Although the proposed road will likely resolve traffic congestion issues in parts of the South Fraser area, from a public health perspective further study is needed to address the concerns outlined above.

Please contact me if you have any questions. I can be reach at 604-507-5476.

Sincerely,

Tara Abraham, CPHI(C)
Environmental Health Officer
Fraser Health Authority

Re: Letter to Christina DeMarco, Planning Coordinator from Kenneth P. Stubbs, QEP, Air Quality Monitoring and Assessment Division Manager (see attachment)

- “Neither the current report nor the Terms of Reference address the issue of particulate emissions. Particulate from diesel (specifically PM10 and PM2.5) is considered a “toxic” in Canada and has been the focus of numerous air quality and health effect studies in recent years. To ignore these issues within the context of an air quality evaluation of a proposed traffic route for heavy duty vehicle movement is a fundamental omissions. Therefore, prior to any further analysis being done, particulate emissions must be included within the air quality modeling and assessment report.”
- It is recommended that “more emphasis be placed on local impacts along the proposed route (rather than regional) using available information from specific air quality monitoring stations located nearest the proposed development”.
- “If the current report had been submitted in support of a project requirement regulated by the GVRD, it would have been determined to be deficient in a number of areas and, as presented, would not meet the GVRD technical requirements for such work.”

TO: Christina DeMarco
Planning Coordinator

FROM: Kenneth P. Stubbs, QEP
Air Quality Monitoring and Assessment Division Manager

DATE: February 21, 2003

RE: South Fraser Perimeter Road
Air Quality Impact Assessment

Staff within the AQ Monitoring and Assessment Division have had a chance to review the above noted document, and in particular *Section 5.0: Air Quality Evaluation*. While a number of detailed technical questions arise with respect to the work conducted, some fundamental issues need to be addressed before further evaluation of the work conducted can continue.

Neither the current report nor the Terms of Reference address the issue of particulate emissions. Particulate from diesel (specifically PM10 and PM2.5) is considered a "toxic" in Canada and has been the focus of numerous air quality and health effect studies in recent years. To ignore these issues within the context of an air quality evaluation of a proposed traffic route for heavy duty vehicle movement is a fundamental omission. Therefore, prior to any further analysis being done, particulate emissions must be included within the air quality modeling and assessment report.

The report states that it assumes that existing Canadian air quality objectives are protective of public health. Professionals working in the field recognize that the 20-30 year old objectives are not totally protective of public health based upon our current understanding and knowledge of human health impacts. While still in existence and referenced in numerous documents, they are generally utilized in today's environment as guideposts against which to compare measured values and to judge our progress on air quality management issues. Canada-Wide Standards are long-term goals for air quality and are not meant to be applied as a comparison for short-term impact analysis.

Numerous references are made throughout the document to generalized information on regional and local air quality. While the quotes relating to annual regional "air quality index" trends are correct, they are for public information purposes only and should not be used as a technical justification (or non-justification) in evaluating potential local air quality impacts such as those being addressed in this study. The report should utilize more tables and figures illustrating baseline air quality in the local area of concern (eg: North Delta – monitoring station T13) and what changes in local air quality are predicted based upon the modeling study.

While references to US standards and regulatory procedures, and Canadian standards and objectives, are interesting the ultimate test of risk-based impacts are reliant upon the predicted local impacts. The report needs to present more detailed tabular and graphic



information on the predicted incremental levels of the various modeled pollutants on local air quality. References to “reasonable differences” do not adequately describe the issues relative to existing populations, facilities or other potentially sensitive receptors.

The Terms of Reference note that the successful contractor is expected to liaise with the relevant regulatory agencies as required in carrying out the work. To the best of my knowledge, GVRD air quality staff was not approached with respect to this modeling work and were not asked for any air quality monitoring data to use in the evaluation and assessment. For the requested further work, it is hoped that ~~GVRD~~ staff will be involved in working with the contractor to supply the necessary data and technical feedback on the modeling work. This will help to ensure that issues of technical concern will be addressed in the planning stages and that any additional modeling work can proceed based upon a consensus of the input variables.

In summary, it is recommended that:

- Further modeling be conducted (ie: is required) to address particulate emissions from the proposed project, specifically as it relates to diesel emissions from heavy duty vehicles, and that this be done prior to any further detailed assessment of the technical merits of the modeling exercise;
- More detailed results be presented with the appropriate level of tabular and graphic background information, in areas where the modeling indicates a potential for local health-risk based impacts;
- Results be presented to indicate specific incremental impacts and the meteorological conditions under which they are predicted to occur, including the relative potential for such occurrences based upon a review of local meteorological history;
- More emphasis be placed on local impacts along the proposed route (rather than regional) using available information from specific air quality monitoring stations located nearest the proposed development; and
- The contractor meet with GVRD staff to discuss various aspects of the further work with the aim of reaching consensus on the appropriate model inputs and other information to be used in the modeling and assessment work.

If the current report had been submitted in support of a project requirement regulated by the GVRD, it would have been determined to be deficient in a number of areas and, as presented, would not meet the GVRD technical requirements for such work.

Re: Environmental Assessment Office, Application Terms of Reference for South Fraser Perimeter Road with respect to An Application for an Environmental Assessment Certificate Pursuant to the BC Environmental Assessment Act, S.B.C.2002, c.43 December 29, 2004

Section 7 7.2 Air Quality Local & Regional

The local assessment of the project will include:

- Agreement with GVRD and health authorities over the methodologies, modeling parameters and measures of health effects from emissions used in the assessment;
- Presenting baseline air quality information collected at **appropriate locations** for the SFPR corridor
- Analysing and discussing worst-case air quality scenarios for areas that experience worst air quality due to topography, meteorology, congestions and density
- Assessing impacts of the predicted emissions on ambient air quality and human health using recognized standards (see also section 8.4).

The truck emissions are already exceeding the acceptable parameters. With the increase in traffic, emissions will also increase, thus increasing our risk to lung diseases, asthmas, and cancers.

Air quality assessments must be done and be done at reasonable locations along the proposed designated route of the SFPR. Mitigations must then be put in place for present and future predicted increases.

Our playgrounds and schools are at high risk when you increase traffic flow through neighbourhoods

With the proximity of this road so close to our neighbourhood, we will increase the health risk of our children, our seniors, and every person within these neighbourhoods.

B. Noise

Taken from the Noise Impact Assessment – SFPR

Health Canada recommendations for exterior noise levels in residential areas

- **55 dBA daytime** (0:700 to 23:00)
- and **50 dBA nighttime** (23:00 to 7:00), which prorated over 24 hours is $L_{eq}(24)$ 54dBA.

- Canada's National Guidelines for Environmental Noise Control states that
- **65 dBA or greater** ($L_{eq}(24)$) is a serious noise problem (HC1989).

- U.S. FTA - **75 dBA or greater** (L_{dn}) is a severe impact (HMMH, 1995).

- US FHWA - **67 dBA or greater** (L_{eq} peak hour) requires consideration of mitigation on federally funded or cost-shared highway projects (FHWA, 1995).

- Continuous or quasi-continuous noise approaching **60 dBA** will cause interference with speech communication at a distance of 1 to 2 metres. **Noise levels should not exceed 40 dBA for 100% speech intelligibility.**

- Speech interference may be **experienced indoors when noise levels outdoors reach the 70 to 75 dBA range.**

Taken from Table 4.1 Results of baseline sound monitoring program – summary

Site Nos	Section	Monitoring Dates	L_{eq} range (dBA)	L_{dn} range (dBA)	Significant noise sources
16-23	North Delta	Feb 24 – Mar 2/04	56.3 – 67.1	60.9 – 71.4	River Road traffic, rail traffic, industrial noise

Table D.4: Results of baseline sound monitoring program – North Delta

Site No.	Site address	Monitoring dates	Duration (hrs)	L_{eq} (dBA)	L_{dn} (dBA)	Significant noise sources
16	10275 Sheaves Crt.	Feb 26-27/04	24	60.1	64.8	Rail traffic, Alex Fraser Bridge traffic, local traffic
17	10336 River Rd.	Feb 26-27/04	24	67.1	71.4	River Road traffic, Alex Fraser Bridge traffic
18	10515 River Rd.	Feb 26-27/04	24	60.0	65.0	River Road traffic, rail traffic, dog
19	8974 Nelson View	Mar 1-2/04	24	59.0	66.1	Industrial noise, rail traffic, River Rd., birds, aircraft
20	10943 Norum Place	Feb 25-26/04	24	56.9	62.8	Industrial noise, rail traffic, birds, aircraft
21	11142 River Rd.	Feb 26-27/04	24	61.2	65.3	River Rd traffic, industrial noise, rail traffic

Re: Environmental Assessment Office, Application Terms of Reference for South Fraser Perimeter Road with respect to An Application for an Environmental Assessment Certificate Pursuant to the BC Environmental Assessment Act, S.B.C.2002, c.43 December 29, 2004

Section 8 Existing Environment and Assessment of Impacts – Socio-economic and Community Issues

8.1 Acoustic/Noise

- An assessment of existing acoustic and vibration conditions in the vicinity of the proposed project, determining sensitive receptors and defining an appropriate study area;
- Predictions of the acoustic and vibration conditions associated with the construction and operation of the proposed project
- An evaluation of the effectiveness of proposed noise mitigation measures, including an assessment of projected noise levels after mitigation (residual, post-mitigation noise impacts).
- According to Health Canada, 55 dBA during the day and 50 dBA at night is the acceptable limit for noise, 65dBA is a serious health risk and 75 dBA is a severe impact. Our acoustic readings on River Road were between 62 and 71 dBA, already over the recommended safety parameters.
- Mitigations must be put in place for current noise levels and future foreseeable noise increases. Moving the trucks from River Road to the proposed location of the SFPR will not change the noise problems. As a matter of fact, it will increase and possibly double the noise problem as traffic will be on River Road and the SFPR.

C. Health Issues

Re: Environmental Assessment Office, Application Terms of Reference for South Fraser Perimeter Road with respect to An Application for an Environmental Assessment Certificate Pursuant to the BC Environmental Assessment Act, S.B.C.2002, c.43 December 29, 2004

Section 8

8.4 Human Health

a. Information from a human health risk assessment will be included in the Application and will detail the following issues:

- Characterization of existing air quality and meteorology, using monitoring data representative of the study areas, and any available federal, provincial and other guidelines
- Descriptions of the types and amounts of air pollutants associated with the project, and their impact on public health, including: excessive diesel exhaust fumes (cancer risk), sensitive areas (playgrounds, schools and hospitals), air toxics and a risk assessment for effects of PM2.5 and PM10 from traffic emissions
- A prediction of the additive effect of project-related traffic emissions relative to measured concentrations of pollutants in the air shed;
- Mitigation options for both the construction and operational phases focusing on reducing air contaminants and greenhouse gas emissions;
- The residual public health effects after mitigation for inclusion in the cumulative effects assessment (section 10.3) and
- Other information relevant to public health and included in other sections will be cross-referenced.

4. Expropriation

- Many of the homes on River Road will be expropriated for the proposed location of the SFPR
- Keeping the elevation of the road as low and as close as possible to the railway tracks will prevent some expropriations
- Many residents, especially on River Road, are long time residents of North Delta and many can trace their roots back to when this area was first settled
- If mitigation cannot provide solutions to concerns such as air quality, noise and health issues, then it might be more humane to expropriate the entire length of River Road and surrounding areas.

SOCIO-ECONOMIC ISSUES

The SFPR as proposed will **destroy** the only waterfront view property on the North Delta Escarpment that is worth **millions** to some and **priceless** to others – the residents.

Our slides show the boarders of monetary loss to Families, property values and Corporation Residential Tax revenues in the Sunbury and Annieville neighbourhoods.

The destruction of the only Waterfront view property in North Delta would be a tragedy and is unprecedented in all of the Lower Mainland.

Millions of dollars in equity will be lost forever to homeowners in Sunbury and Annieville to which homeowners rely on as part of their way of life retirement.

In dollars and cents, we have up to \$116,000,000 in lost homes and property values.

Surrounding Sunbury and Annieville with high volume traffic corridors in time will erode the residential appeal for families an they will move out.

In time, we will see numerous rental properties and a downturn in the demographics in North Delta.

There are similar cases in Greater Vancouver, Burnaby and Coquitlam.

The above information and percentages were obtained through the Real Estate Board of Greater Vancouver and the Fraser Valley Real Estate Board.

SFPR ALIGNMENT REVIEW AND COMMENTS

Engineering

1. Preliminary Design Associated Engineering (Year 2000) – Fraser River Option

Overview

The proposed alignment of the South Fraser Perimeter Road (SFPR) will direct traffic from the east side of Nordel along the Hydro easement, south to River Road, then follow the rail line along the back of the Fraser river to the Surrey border. The preliminary design drawings prepared by Associated Engineering in 2000 show a tiered roadway structure above the current rail line elevation, along with several on/off ramps connecting North Delta to the SFPR.

MOT has advise the 2000 concept plans prepared by Associated Engineering are “preliminary” and have agreed to review the requirement for on / off ramps within the residential areas of North Delta. Residents of this area have clearly indicated they do not support the construction of highway ramps connecting to the residential area as they will attract commuter traffic through the neighborhood and past Brooke Elementary

Cost

MOT has indicated the cost for this section of roadway is in the order of \$165M, exclusive of property acquisition costs, environmental cost or social costs. The Sunbury Community Association has estimated these costs in Table 1-1 below

Item	Estimated Cost
Hard Construction Costs	\$165M
Expropriation Costs	\$24M to \$40M
Environmental Compensation (X4)	\$20M to \$60M
Loss of Home Owner Equity on River Road	\$48M
Loss of Home Owner Equity 1 block up from SFPR (30%)	\$149M
Estimated Construction, Environmental, Social, and Property Costs	\$406M to \$462M

Contracting Strategy

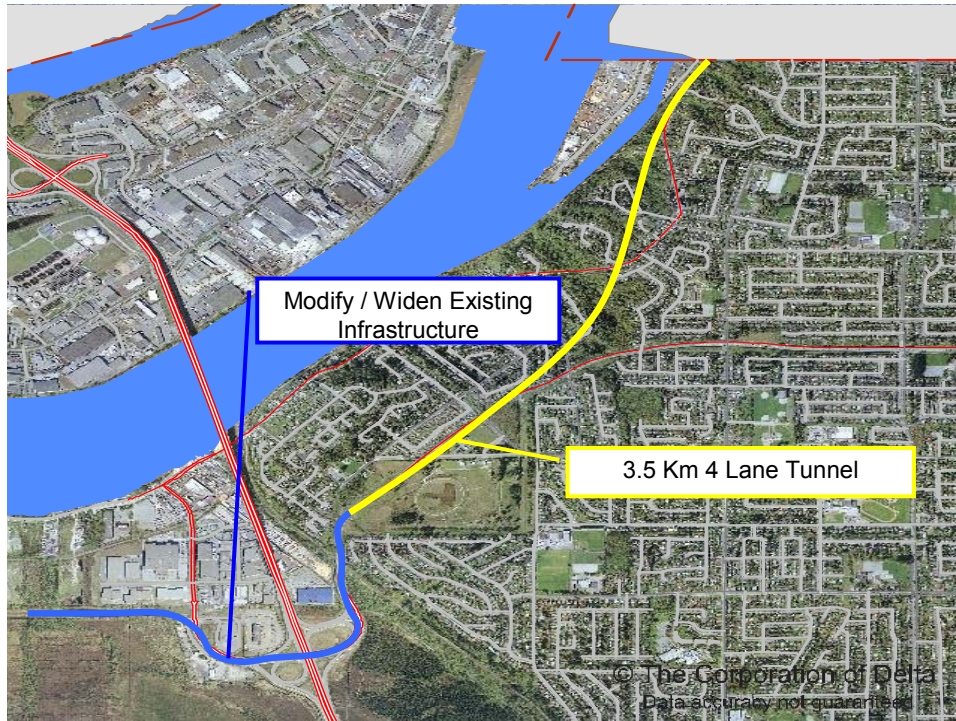
Although it has not been expressly stated, draft reports on the SFPR indicate that the project might be constructed as a design/build project. If design/build is the delivery mechanism selected by the MOT, the Sunbury Neighbourhood Association, either directly or through the Corporation of Delta, request the opportunity to review and comment on the Request for Proposal Document prior to it being released to proponents for tender. This will ensure the communities' interests (social, economic, environmental) are clearly reflected. Ideally the Sunbury and surrounding communities would like to see the SFPR follow an alternate alignment, therefore a design/build format should leave open all possibilities within the North Delta area to allow proponents to develop creative solutions that minimize social and environmental impacts while minimizing cost. It is important that parameters or constraints defined in the RFP provide for design flexibility, while meeting social and environmental objectives. In support of this approach the Sunbury Neighbourhood Association has assessed an alternative option – “Nordel Alignment” that offers several advantages over the conceptual design, and is discussed in the following section.

2. Nordel Alignment

As highlighted in Figure 1-1 the proposed Nordel Alignment would swing south from the proposed Hydro Easement and make significant use of existing highway infrastructure. Although Figure 1-1 does not provide sufficient detail to show how the SFPR is accommodated, detailed sketches have been prepared and are available. In general this option involves:

- The widening of Nordel Way between the Hydro Easement to the tunnel entrance by anywhere from 1 to 3 lanes;
- A change in road profile to allow WB Nordel or SFPR traffic access to Hwy 91 SB. Alternatively this exit ramp could be elevated;
- Re-alignment of the Hwy 91 SB off ramp is likely required
- Widening of the Hwy 91 Overpass by 3 lanes;
- Re-alignment of the Hwy 91 NB to Nordel / SFPR off ramp;
- Widen (extend) Hwy 91 NB to Nordel/SFPR on ramp to be combined with exit ramp from Nordel / SFPR to Hwy 91 NB;
- New road under existing rail line overpass looping around to tie into Alex Fraser NB on ramp;
- Widen rail overpass by 3 lanes.
- Construct two 2-lane tunnels (3.5KM) near the base of Nordel Hill that generally follow the Nordel road right of way, then gradually swing north to meet up with the River Road near the Surrey Docks.

Figure 1-1 Nordel Alignment



Cost

The cost of this option including all items above but without tunneling cost is estimated at \$9,558,400. Table 1-2 below provides a preliminary breakdown of the key elements.

Table 1-2 Estimate Cost of Nordel Option

Item	Unit Cost	Unit	Quantity	Extension
3500m tunnel 13m diameter	\$?	km	7	?
Hwy 91 Overpass	\$ 2,500	sq. m	697	\$1,742,500
Rail Line Overpass	\$ 2,500	sq. m	1625	\$4,062,500
Nordel/SFPR exit ramp to 91 SB	\$ 1,500	sq. m	1200	\$1,800,000
Widen Nordel	\$ 145	sq. m	7200	\$1,044,000
Re-align 91 SB exit ramp	\$ 145	sq. m	1000	\$145,000
Re-align 91 NB exit ramp	\$ 210	sq. m	1240	\$260,400
Nordel/SFPR exit ramp to 91 NB	\$ 210	sq. m	2400	\$504,000
Total				\$9,558,400

The cost estimate is based on discussions with local contractors and consulting engineers. Considering the lack of detail the cost estimate is considered somewhat conservative, therefore a contingency allowance has not been provided.

Benefits

Benefits of the Nordel Alignment Option:

- This alternative makes use of the exiting highway corridor to bring together the SFPR, Nordel Way, and Hwy 91 at one major interchange. The space and ability exists to connect all traffic stream in this area. This offers a significant advantage of the current conceptual alignment along the Fraser River, that current provides poor interconnectivity between major roadways;
- River Road could be left as is and used for local commuter traffic only (no trucks) that would add capacity to the overall network, the monetary value of this asset and capacity it provides could be valued at over \$100M in saving to commuters on an annual basis;
- Eliminate the proposed S-curve from the Hydro easement to River Road;
- Minimal environmental impact versus the conceptual design;
- Minimal social impacts versus the conceptual design;
- Significant reduction in the way of property acquisition.

Negatives

- The estimated cost of tunneling is high. Costs might be reduced if more conventional construction methods are employed rather than boring with a TBM.
- Impact to existing traffic during construction
- Property Easements will be required where the tunnel travels beneath existing homes. This is estimated at 26 properties.
- Current environmental impact assessment does not address this alignment.

3. Alternative Option

In the event that the MOT approaches the SFPR project as a design, tender, construct project and insists the alignment follow the Fraser River, then the Sunbury Neighbourhood Association would request the opportunity to provide input at the various design stages to ensure the communities' social, environmental and economic issues are addressed. In general if the road is to follow the Fraser River:

- No on/off ramps are to connect the SFPR to the residential areas of Sunbury or Annieville;
- The SFPR elevation for the entire width should be kept at the same elevation as the rail line (as low as possible);
- To mitigate noise, street lighting and the unsightly view of a four-lane highway it is proposed that the roadway be capped with a canopy structure that could be seeded to provide walking and cycling paths along the river.
- The area from Centre Street to the Cannery could be landscaped in front of noise barrier walls.
- Overall, this option would only cost an additional \$8M

4. Summary

The Nordel alignment, although costly addresses key design issues, while preserving the Fraser River foreshore, and sparing North Delta Residents from another unsightly, noisy 4 lane highway in the back yard of a residential community. The economic benefit of maintaining River Road for commuter traffic significantly enhances capacity of the road network, which could translate into hundreds of millions of dollars a year in annual saving. This alignment option is only one example of an alternative that could be considered.

Other alternatives that have not been estimated could include a water-crossing tunnel to Annacis Island west of Nordel and a second tunnel connecting to the Surrey Docks. It is recognized that space is limited on Annacis Island; alternatives could also exist on the existing alignment that balance construction cost with environmental and socio-economic issues. Nonetheless other alternatives do exist and should be explored in the context of overall cost; construction, environment, socio-economic, and long term capacity and efficiency (performance). Decisions should not be made solely on construction costs.