SURREY
CITY OF PARKS

Corporate Report

NO: R233

COUNCIL DATE: NOVEMBER 5, 2007

REGULAR COUNCIL

TO:	**Mayor & Council**	DATE:	**November 2, 2007**
FROM:	**General Manager, Engineering**	FILE:	**8630-30(PMH#1)**
SUBJECT:	**Port Mann / Highway #1 – Environmental Assessment Review – Surrey Response**		

RECOMMENDATIONS

The Engineering Department recommends that Council:

1. receive this report as information;
2. direct staff to continue working with the affected communities and the Gateway proponents in addressing concerns regarding impacts related to the proposed Gateway Program projects that will affect the City and its residents; and
3. authorize staff to forward a copy of this report including the appendices and the related Council resolution to the BC Environmental Assessment office and the Gateway Project office as the City's formal comments on the Port Mann / Highway #1 Environmental Assessment Reports.

BACKGROUND

The Port Mann / Highway #1 (PMH#1) Project is part of the overall Gateway Program, which is to assist in the more efficient and effective transportation of people and goods in and through the region. The PMH#1 project involves the twinning and tolling of the Port Mann Bridge in addition to the widening of Highway No. 1 from Hasting Street in Vancouver to 216 Street in Langley. The Port Mann Bridge will become a tolling point to fund the proposed upgrades and the bridge twinning. The major components of the Gateway Program include the twinning of the Port Mann bridge, upgrades to Highway No. 1 between Hastings Street and 216 Street and the construction of the North and South Fraser Perimeter Roads.

The PMH#1 project is subject to the Provincial Environmental Assessment Act and the Federal Canadian Environmental Assessment Act. The two processes are being carried out simultaneously through the BCEA office. The public, First Nations, local governments, and other government organizations are being given 60 days to review all

the environmental reports pertaining to the proposed projects (over 2,500 pages of documentation) and submit comments to the BCEA office for consideration in their final assessment of the project. Comments are to be submitted to the BCEA office by November 13, 2007.

The PMH#1 process includes reports addressing issues pertaining to Agriculture, Archeology, Air Quality (local & regional), Contaminated Sites, Fisheries, Hydrogeology, Noise, Socio-community, Wildlife, Residual Effect, and Cumulative Effects assessment. The reports provide conclusions on the overall impact of the project on the community. Also included in the BCEA process are public information forums. Within Surrey, an open house on the project was held at Pacific Academy School on Saturday, September 22, 2007.

Staff have been involved as stakeholders at BCEA meetings, have attended the open house held within Surrey to record resident concerns, and have reviewed the reports submitted in the BCEA process. Some specific community concerns are being directly addressed through meetings with Surrey staff, resident groups, and Gateway staff.

Although this report concentrates on the environmental and socio-economic impacts of the project, it should be recognized and acknowledged that this project will also result in significant benefits to the City. The widening of Highway #1 and the twinning of the Port Mann Bridge will enable better goods movement across the region, improve transit and pedestrian linkages across the Fraser River, and reduce the significant spillover traffic congestion in North Surrey, resulting from congestion on the Port Mann Bridge. Key concerns about the project range from the impact of tolling at the Port Mann on the Pattullo Bridge traffic to the cumulative impacts on North Surrey residents from all the Gateway construction that will impact their neighborhoods for the next five to seven years.

DISCUSSION

Through the PMH#1 conceptual design process and the environmental assessment review, various community concerns have surfaced. These are being addressed through discussions with Gateway staff, City staff, and local residents. The concerns will not be fully addressed during the BCEA process, but the Gateway Program project office, with assistance from City staff, will continue to work towards solutions or appropriate mitigation.

September 22, 2007 – Public Open House

City Engineering staff attended the open house conducted in Surrey in regard to the PMH#1 project. The open house had information available to the public, with staff present from BCEA and Gateway to answer very specific questions on the process and reports submitted for the project. Very few people attended the open house held in Surrey, with few questions asked in the question period portion of the event. Attendees were mostly interested in improved access to the widened highway through better interchange configurations and were also concerned with the potential for neighborhood shortcutting.

The 192 Street/Harvie Road Open House hosted by the City, which occurred in advance of the PMH#1 project open house, generated more discussion, and in particular, with respect to land use and access in, and through South Port Kells area. A separate corporate report on this matter is being forwarded for Council consideration and will be forwarded to the MoT and the Environmental Assessment office once Council has considered it.

Summary of Environmental Assessment Reports & Staff Comments

Staff has reviewed the set of reports that make up the Environmental Assessment for PMH#1. The Environmental Assessment submission details a range of benefits of the Port Mann Highway One (PMH1) project, including economic opportunities and improved access combined with reduced congestion and travel times. Impacts are generally understated in the submission, and specifics on mitigation measures are limited. For example, the submission states that the alignment is primarily through industrial and commercial properties, which is not the case in the City of Surrey, where the majority of the alignment is adjacent to residential properties, in addition to a number of school sites. It is recognized that the widening project is primarily within the existing freeway road allowance; however, the impacts of the project on adjacent areas and neighbourhoods need to be appropriately addressed.

Appendix I includes a summary of staff findings related to the review of these reports. Key staff concerns are summarized in the following discussion:

- *Noise:* Three locations in Surrey are already detrimentally impacted by noise on Highway No. 1. With the widening of the highway, two and possibly three additional locations will experience noise levels that need to be mitigated. Over the next 10 years, annual monitoring of noise levels related to Highway No. 1 traffic and other provincial projects should be undertaken and should be reported back to the City in a timely manner. The design-build-operator of the project should be required to provide appropriate mitigation as and when it becomes necessary during the life of the project.
- *Community severance from the congregation of a variety of highway projects in the South Port Kells area:* The intersection of 176 Street (Hwy. #15) and Hwy. #1 links four significant highway projects: the Highway No. 15 widening, the Golden Ears Connector, the SFPR and the Highway #1 widening. Impact on local residents from community severance is a concern. The severance of the South Port Kells community is a hindrance to the redevelopment of the South Port Kells area and needs to be addressed through providing reasonable access to the severed parcels in support of reasonable development of the area.
- *Connection points to the community:* The location and/or lack of reasonable road connection points as presented at this time will limit future development potential on developable land in Surrey and will affect some existing uses and parcels. Transportation staff is working with Gateway on community access in general, and in particular, to industrial/commercial areas.
- *Diversion of traffic through Surrey to avoid toll:* The impact of tolling at the Port Mann bridge on traffic patterns has been modeled, and the results indicate that the morning peak traffic flows on the Pattullo Bridge will change as follows:

- northbound - traffic reduces by 9% due to the relief in congestion on the Port Mann Bridge (this has a greater impact than the toll);
- southbound - traffic increases by 11% due to traffic avoiding the toll. There is some remaining southbound capacity on the Pattullo Bridge to draw traffic away from a tolled Port Mann Bridge.

Overall, with the toll in place, the model indicates a relatively small change in net traffic on Highway No. 1; however, the municipal arterials joining and parallel to Highway No. 1 will experience increases in traffic that have not been quantified or addressed in the report. It should be noted that half of the tolls collected at the point toll on the Port Mann Bridge, which funds the entire Highway No. 1 widening project, will be paid by vehicles destined to or from Surrey. This suggests that Surrey citizens will be largely funding the project even though it is part of the broader regional highway system most of which has been constructed to date without point tolls and from revenue sources that have not impacted the citizens of the adjacent communities as directly as tolls.

- *Cultural & heritage concerns with Anniedale School and Charles Perkins Memorial Tree Trunk:* The report does not address the retention of the Charles Perkins Memorial tree nor the impact on the Anniedale school site. The Charles Perkins memorial is significant in respect to its location alone, and being a natural feature, cannot be relocated. Similarly, the noise and access impacts on Anniedale School need to be examined in more detail.
- *Air Quality:* It should be noted that the methodology for the assessment only considers a narrow corridor on either side of the highway alignment. While congestion and idling will be reduced in the corridor on completion of the project, improving air quality in the immediate vicinity, overall traffic volumes are expected to increase over time and additional traffic will likely be experienced on City streets outside of the study area, which will act to decrease air quality in broader areas by some amount.
- *Cumulative impacts from construction of multiple highway projects:* Currently the Golden Ears project, SFPR, Hwy. #15 and the Hwy. #1 projects have overlapping construction schedules. The impacts of construction traffic, combined impacts of construction noise, local air quality, community disruption, and community access need to be identified and managed. Communities that will be impacted the most include Fraser Heights, North and South Port Kells and the Birdland/Riverdale areas.
- *192 Street/Harvie Road Interchange Alignment:* A separate corporate report is being presented to City Council complete with recommendations and a copy of that corporate report along with Council's resolution related to that report will be forwarded to the Gateway office and BCEAO office as input.
- *Pedestrians and Cyclists:* The proponent should be directed to work with the community to plan facilities for pedestrians, cyclists and access to recreation and natural areas affected by the project.

Traffic Analysis

The traffic analysis used for the project and the resulting environmental impacts is based on a number of assumptions including Metro Vancouver's Growth Management Scenario. If traffic/motorists respond differently than anticipated to the expanded Highway No. 1 with a tolled Port Mann Bridge, and if municipalities adopt different land uses than those envisaged in the regional growth plan, then traffic volumes could increase from those currently being predicted. Increased traffic would lead not only to greater environmental impacts, but it could initiate a change in the Transportation Demand Management strategies. Consequently, care will need to be taken by municipalities in dealing with land use changes along the corridor and appropriate region-wide Transportation Demand Measures will have to be implemented to avoid future congestion and increased emissions and impacts. The proponent should be required to conduct appropriate sensitivity analyses in this regard.

CONCLUSION

Based on the above discussion, it is recommended that Council:

- direct staff to continue working with the affected communities and the Gateway proponents in addressing concerns regarding impacts related to the proposed Gateway Program projects that will affect the City and its residents; and
- authorize staff to forward a copy of this report including the appendices and the related Council resolution to the BC Environmental Assessment office and the Gateway Project office as the City's formal comments on the Port Mann / Highway #1 Environmental Assessment Reports.

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PH/JB/CAB/brb/rdd/amr/mpr

Appendix I - Summary of Staff Review of Environmental Assessment Reports
Appendix II - Heritage Sites in the Vicinity of the Highway No. 1 Corridor

Summary Of Staff Review of the Environmental Assessment Reports for the Gateway Projects

Chapter 7 – Soils, Surface Water and Drainage Considerations

- Table 7.3 & 7.4 – Increase in the PMH#1 impervious area discharging to the Serpentine and Fraser River tributaries from the Highway widening are shown to be 21% and 7% respectively. These increases will have effects on the receiving waterways. Table 7.4 tends to minimize the issue as it compares it to whole watershed. The City has documented erosion concerns in the receiving streams from the existing highway, indicating that volume and flow mitigation are required to prevent accelerated loss in downstream stream corridors.
- Section 7.7 - There should be no, or minimal, net increase in runoff to any receiving waterway. All Metro Vancouver communities have signed onto the Liquid Waste Management Plan that states they are all committed to having Integrated Stormwater Management Plans (ISMPs) for their communities. In addition many communities have already completed Master Drainage Plans, which also outline ISMP principles.
- Section 7.8 – The increase in Total Impervious Area, TIA, over a whole watershed looks small but on high-end local tributaries, the effects can be significant. The impact of TIA change on each tributary should be examined individually and appropriate measures taken to minimize impacts.
- Section 7.9 – No mention is made of any of Surrey's Master Drainage and feasibility plans for the area. Copies of all reports were given to the Ministry of Transportation for use in the designs and can be used to help determine appropriate mitigation measures.

Chapter 8 – Local Air Quality and Human Health Assessment

- Two major components relating to local air quality are the reduction of congestion and the improvement of vehicle fuel efficiency and emissions controls over time. Of note are the anticipated reductions in emissions from trucks, particularly reductions in particulate matter, which is responsible for a number of respiratory illnesses.

Chapter 9 – Regional Air Quality and Greenhouse Gas Assessment

- The assessment documents indicate that there will be a minimal impact of 0.4% with respect to total regional air quality and Greenhouse Gas (GHG) emissions as a result of the construction and operation of PMH1, and notes that vehicle fuel efficiency and emissions controls in the region are expected to improve over time, leading to a stabilization in air quality. As GHG emissions are directly proportional to the amount of fuel consumed, without the widespread introduction of new technologies such as hybrid and electric vehicles, GHGs will likely increase as a result of the project, at least until the widespread use of significantly more fuel efficient vehicles is more common.

- It should also be noted that the methodology for the assessment only considers a narrow corridor on either side of the highway alignment. While congestion and idling will be reduced in the corridor on completion of the project, improving air quality in the immediate vicinity, overall traffic volumes are expected to increase over time and

additional traffic would likely be induced on City streets outside of the study area, which would decrease air quality by an indeterminate amount.

- Environmental Advisory Committee comment: There is a concern that the summary write-up has contradictory information:

    - Under Key Findings Bullet 2 – "The reduction of regional traffic-related emissions of most common air contaminants is projected to be slightly less with the Gateway program. This is due to the combination of increased capacity and reduced congestion on the regional road network."

    - Under Key Findings Bullet 3 – "The net increase in regional greenhouse gas emissions due to the Gateway Program will be less than 1%."

Above noted points contradict each other because green house gases are proportional to the fuel consumption and, therefore, bullet 3 is implying that the Gateway Project with the vehicles that run on the new road network will use more fuel. That said, bullet 2 says that there will be increased capacity and reduced congestion on the regional road network, which intuitively implies consuming less fuel. Something that needs clarification and more data to support the commentary.

Chapter 11 – Fisheries and Aquatic Resources Impact Assessment

Although fisheries impacts are under Federal and Provincial jurisdiction, the waterways used for the movement, rearing and spawning of fish are under the management of the local government as they form part of the Surrey drainage network. Key issues from the report review include:

- Section 11.4.1.2 – Hydrologic regime change, the change through higher velocities, runoff rates and volume durations should also be noted
- Section 11.5.8.2 – Bon Accord Creek – it should be noted that this is an area which overlaps with SFPR. SFPR fisheries compensation is proposed in some of the creeks to be located under the proposed bridge alignment. There will be significant alterations and improvements undertaken by SFPR project. The coordination of both projects in this area is critical as there is potential for significant impacts due to the overlap in construction. The GVS&DD is also building a new watermain under the Fraser River in this vicinity.
- Section 11.5.9.1.2 – the current PMH#1 median and ditches provide for infiltration and stormwater retention – reduction of the median width will have an impact which will need to be addressed as part of the drainage mitigation works.
- General – the construction of PMH#1 in 1960 altered many of the streams tributary to either the Serpentine or Fraser Rivers. As such, fish cannot access remnant viable habitat due to the past culvert installation through the highway corridor and interchanges. This project would be a good opportunity to re-establish fisheries corridors to headwater areas where potentially viable fish rearing or spawning habitat exists. Many of the streams in Table 11.8 are of a lower significance due to past isolation from the original Highway construction.
- Section 11.6.3.3 – The City of Surrey requires any parties doing construction within the City limits to obtain an Erosion and Sediment control permit for their project. The permit

also has requirements for all phase sediment control plans and regular submission of monitoring reports.

- Table 11-20 shows that even after mitigation, there are significant projected net losses within Surrey for fish habitat. The City would like replacement habitat for these losses constructed within Surrey. The City has worked hard to retain its fisheries values with the Serpentine River having large returns of salmon yearly. City staff will work with Gateway staff to find suitable replacement habitat within Surrey if required.

Chapter 13 – Water Quality Data Report

The report de-emphasizes the effects on water quality as a result of the proposed road. Since the area is already urbanized, the report refers to it as already being impacted. Key issues surrounding the water quality report include:

- Section 13.1.2.7 – the proposed new bridge is built right over Bon Accord Creek and its significant fisheries tributaries. Runoff from the bridge and elevated road structure may have an effect on the receiving stream and may need appropriate management.
- Section 13.4.1 – should include the City of Surrey's ESC permit requirements.

Chapter 14 – Terrestrial Resources Impact assessment

The report looks at wildlife and vegetation issues along the corridor, in particular in relation to the Federal Species at Risk Act and also the Provincial Wildlife Act. Key findings of staff reviews include:

- Section 14.4.2.3.4 – The raptor data is from a dated study (i.e., over 3 years old). Another assessment should be conducted just before construction commences with the Gateway project providing appropriate wildlife mitigation.
- Section 14.4.2.7 – Bon Accord Creek and its tributaries are often known to have beavers.
- Section 14.5.2.11.1 – the City would like to see trees planted along the highway corridor to help buffer the community and also to provide habitat for wildlife.
- Table 14-40 – 160 Street interchange lands would be a potential area for red-legged frog habitat as it is connected to some north and south of the current highway corridor. Culvert modifications could also be considered at this location.
- Section 14.6.4.1 – proposed 3-year monitoring is suggested – the City is usually required to conduct 5 years of monitoring as often the vegetation problems do not show up for 2-3 years and require replanting at that time. The additional 2 years ensures the plants continue to thrive or those replanted have taken.
- General – when the Golden Ears, SFPR and Border Infrastructure Projects are overlain, fracturing of the terrestrial habitat in Surrey is pronounced with greater combined impacts. The Golden Ears project already underway bisects some of the upland forests said to be retained north of PMH#1 in Surrey. The outline of this road, and soon to be constructed adjoining road systems, should be shown on the terrestrial maps to better show the agency reviewers the potential combined impacts.

Chapter 15 - Noise

The following are concerns with the report findings:

- The Environmental Assessment applied a variety of methods, including those based on absolute noise levels and those based on differences in noise levels between the pre-construction noise level to the anticipated 2021 level. Health Canada, World Health Organization and BC Ministry of Transportation guidelines were considered.
- Baseline noise levels were recorded at 19 locations in Surrey and 588 residences and 2 schools were deemed to be within noise sensitive areas. Over three quarters of the Surrey total of residences in noise sensitive areas are within the area between Port Mann Bridge and 156 Street, most north of the highway. The two schools within the noise sensitive area are Anniedale School in the SE quadrant of H1/H15 and Pacific Academy, approximately in the NW quadrant of H1/H15. This location will also be impacted by the proposed SFPR that will terminate at H1/H15, but the cumulative noise impacts of various highway projects were not included.
- 30% of the total project length of 37 km is within the City of Surrey but almost 50% of the total residences within the baseline noise sensitive area of the entire project are within Surrey.
- Using the 24 Hour Equivalent Sound Level $L_{eq}24$ may give analysts an easily comparable sound intensity scale to work with but it does not really give residents a true indication of worst-case dba readings. The $L_{eq}24$ results listed in the report do not reflect reality because 18 hours of the day there is little traffic and the other 6 hours there may be quite a bit of traffic and noise. Averaging this data out does not show worst-case scenarios for noise. As an example, Site 25 (11000 Block of 152 Street) has a worst-case noise reading of approx 90 dba and an average during traffic above 80, but the report shows an average Leg of approx 66 db. (EAC)
- In general, the methodology calls for mitigation once sound levels reach 65 decibels or "db" for $L_{eq}24$, which is the average 24-hour sound level, or when the difference between the existing ambient sound level and the 2021 level exceeds 5db, which is a significant increase. The reason that 5 db is chosen is that it is considered to be the level at which a community, which is considered to have become adapted to existing sound levels, begins to complain.
- Above 60 dBA, outdoor residential activity is impacted and sleep is disturbed, above 70, indoor speech is disturbed. When $L_{eq}(24)$ is greater than 60 dBA, schools begin to be impacted.
- The existing noise for Surrey areas surrounding the project is 65 to 67 dBA, generally quietening by approximately 10 p.m. and resuming this noise level by 6 a.m. Three areas that are already above this noise level are:
    - 16600 block of 102 Avenue (south of H1),
    - Anniedale triangle, S. of H1, which includes the Anniedale School,
    - 17700 block of Barnston Dr. (north of H1), which includes the Pacific Academy, a private school.
- When the highway is widened, the above noted three locations will experience further increases in noise levels. A fourth area, the 10400 block of 156 Street, will experience a significant, detrimental increase in noise beyond a level appropriate for residential uses.

Anecdotally, the Birdland/Riverview neighbourhood of North Surrey, near the Port Mann Bridge, experiences existing noise problems but the EA application did not report on this. The Anniedale School is already at an unacceptable level, according to Health Canada, and this level will increase with the new Highway 1 widening (and will also be impacted by the widening of Highway 15). Pacific Academy is just below the above noted Health Canada level and will not improve with the widening of Highway 1. Areas within Anniedale and the portion of Fraser Heights on the opposite side of the 152 Street ramp will be pushed to $L_{eq}24$ noise levels just below or at 70 dBA. Generally speaking, all areas within noise sensitive areas will experience an increase in noise levels.

- The applicant will need to indicate whether or not the following areas can be appropriately mitigated.
    - Anniedale triangle including Anniedale School;
    - 16600 block of 102 Avenue;
    - 17700 block of Barnston Drive;
    - 10400 block of 156 Street;
    - Birdland/Riverdale area;
    - Fraser Heights near 152 Street.
- The design/build team should monitor noise levels for the first five years and provide noise contour drawings to the City on an annual basis; these drawings will guide redevelopment in the City and guide any further mitigation work. The design/build proponents should be made aware of this requirement.
- Much of the constructed work is likely to occur in the evenings and overnight to reduce the effects on traffic – extra measures need to be taken for residents living adjacent to the highway. It should be noted that SFPR scheduling, PMH#1 and possibly some Golden Ears works may all overlap with construction noise from all 3 projects impacting the same residents.

Chapter 17 – Socio-Community / Socio-Economic Impact Assessment

PMH#1 runs adjacent to Fraser Heights, Port Kells, and River Heights neighborhoods within Surrey. Even though PMH#1 has existed in these areas for almost 50 years, some of the proposed project designs will have impacts on the local residents and the larger Community of Surrey. Following is a list of concerns:

- A significant direct community impact is the site of the Dogwood RV Park north of 112 Ave and east of Highway 1. Although the submission states, "existing housing units may be affected by potential encroachment of a new retaining wall resulting from a necessity to widen the highway in this area," the current plans for the alignment show that a significant proportion of this property will be required and the remainder will be affected. Approximately 50 trailer pads, some of which are used (against City by-laws) as permanent residences, appear to be directly affected by the currently proposed alignment. There are limited locations for relocation of these units in the Lower Mainland. Additional consultation with campground residents and assistance with relocation is warranted.

- Although there will likely be a number of local construction impacts and congestion delays during construction, the PMH#1 project is anticipated to significantly reduce congestion in the vicinity of the corridor, particularly at the 104 Avenue and 152 Street

interchanges. Travel times for business traffic and those who now commute by private automobile between the Burrard Peninsula and the South of Fraser region and emissions due to congestion will be significantly reduced on completion of the project. The restoration of bus service and the introduction of bicycle and pedestrian facilities on the Port Mann Bridge will provide opportunities for Surrey residents and employees to cycle or take transit as an alternative to driving.

- Goods movement and business traffic will benefit from decreased travel time and improved access, particularly at the 176 Street/Highway 15 and 192 Street interchanges, which will also benefit the Port Kells, Cloverdale and Campbell Heights employment areas. The continued ability of these facilities to support the City's economy will depend on the effectiveness of the toll and other Transportation Demand Management (TDM) measures, in limiting future growth in general purpose traffic that could reintroduce congestion to the area.

- Access to areas in Surrey that are severed by the Highway need to be maintained or enhanced, particularly the Fraser Heights area and the Port Kells area. At this time, Fraser Heights is accessed by 152 Street, 160 Street and 176 Street. The interchange at 160 Street includes a RI/RO movement from the eastbound off ramp and the City would like these ramps to be retained and the adjacent intersection upgraded accordingly.

- The Port Kells Industrial area is proposed to be serviced by an interchange at Harvie Road/192 Street with dedicated ramps. However, this interchange does not serve the areas south of Highway 1 and within eastern Surrey. The City of Surrey would prefer that this interchange be shifted to align with the north south alignment of 192 Street and be open to general-purpose traffic.

- While the proposed widening of Highway 1 as well as the other proposed highway works including South Fraser Perimeter Road, Highway 15 widening, and the Golden Ears Bridge Road currently under construction, will enhance the efficiency of people and goods movement through and around Surrey, these works detrimentally affect the future developability of the South Port Kells neighbourhood. The proposed road works in the vicinity of the Highway 1/Highway 15 Interchange will make access more difficult for the population and employment base that the City of Surrey is planning for the South Port Kells neighbourhood. The Gateway office is aware of the inadequacy of the proposed network, particularly the junction of Highway 15 and the Golden Ears Bridge and Highway 15 and the Highway 1 interchange, to service the General Land Use Plan (GLUP) that Surrey City Council passed in May of 2005. The City is unable to make adjustments to the General Land Use plan or the draft transportation concept plan until MoT has confirmed the ultimate road network in the area.

- Anniedale School. This School is currently located adjacent to Hwy. 1 and Hwy. 15 which is a far from ideal location for a school. The school complex contains the relatively small heritage Anniedale School building. With the widening of both Hwy. 1 and Hwy. 15, this location is further deteriorated in terms of noise and traffic intrusion. The Surrey School District is in the best position to comment on impacts and the need to mitigate these impacts. City staff will work with the School Board and the proponent to determine the best option for mitigating the impact on this school and heritage building.

Chapter 18 – Agricultural Impact Assessment

- The changing of the 192 Street overpass to align with 192 Street on both sides of PMH#1 may require some additional agricultural assessment work in the area.

Chapter 19 – Archaeological Impact Assessment

- The portions of the report pertaining to First Nations issues are best reviewed by the First Nations community.

Chapter 20 – Effects to Cultural and Heritage Features

- This brief chapter states that designated heritage sites have been avoided by the alignment but does not mention mitigation measures for sites close by, such as the Anniedale School, the Charlie Perkins Memorial Tree Trunk, and the Gerow Barn. Of particular concern are the Anniedale School trees where effort needs to be made to save as many of the significant trees as possible. There are a number of additional locations along the alignment that have heritage designations or values that have not been noted in the report and there are concerns regarding limited references by the proponent to mitigation strategies (attached as Appendix II).

Chapter 21 – Tolling

- The widened Highway 1 will be a toll facility and, for ease of use, a point toll at the Port Mann Bridge instead of distance based tolling will be implemented. A point toll at the Port Mann Bridge will not only reduce the demand of traffic crossing that facility but the toll will be used to fund the construction of the entire Highway. In other words, given the Port Mann Bridge users' profile, 50% of the cost of the entire Highway 1/Port Mann Bridge widening project will be funded by residents of Surrey or people conducting business in Surrey while only 30% of the total length of the Highway widening project is within Surrey.
- Generally, the City is more supportive of region wide bridge tolling rather than a single point Port Mann Bridge toll. The long periods of congestion currently occurring on Highway 1 through Surrey suggest a considerable latent demand for access to Highway 1. While the widening project will divert traffic from parallel routes in Surrey to Highway 1, it will also add traffic to connecting routes, such as 152 Street, 160 Street and 176 Street. Tolling and new transit on Port Mann will lessen the demand to access Highway 1. However, the applicant has not quantified the impacts on the Surrey street network that will intersect Highway 1.
- Tolling the Port Mann will also create demand for the free alternative; in this case, the Pattullo Bridge. The applicant acknowledges that the free alternative is currently experiencing levels of congestion. The application certificate report indicates that eastbound/southbound traffic demand across the Pattullo in the morning will grow by 11% and that westbound/northbound traffic will decrease by 9% due to a combination of tolling and reduced Port Mann congestion. All other movements will only vary slightly. The applicant should be required to work with the City of Surrey to ensure that the tolling of the Port Mann Bridge will not create residual traffic impacts due to the presence of the "free alternative" in Surrey.

Chapter 22 – Traffic / Transportation / Road User Assessment

- In general, the City of Surrey supports the widening of Highway 1 and the coincident improvements to people and goods movement capacity. The reduction of queuing on Highway 1 will improve reliability for all Highway 1 users.
- The afternoon peak period for eastbound traffic crossing the Port Mann Bridge now begins at 1 p.m. and westbound travel is approaching one large peak that begins at 6 a.m. and ends at 6 p.m. The diminishment of the mid-day off-peak time is an important indicator of the seriousness of the level of congestion; this is demonstrated by the fact that the 4-lane Port Mann Bridge now carries more traffic per day than the 6-lane San Francisco Golden Gate Bridge. Goods movement delivery, which relies on the off-peak times, is no longer able to predict delivery. As congestion increases over the day, Highway users add an average of 80% additional time in order to ensure their arrival on or before a certain time.
- It is estimated that 50% of the volume of traffic crossing the Port Mann Bridge is originated or destined for Surrey.
- Incidents can be caused by congestion and contribute to congestion. The EA Certificate report indicates that there are 2,000 safety incidents per year on the 37-kilometer section of Highway 1 but no comparison is made to other similar facilities in North America. Surrey supports the installation of a surveillance system to ensure that incidents are dealt with as quickly as possible and the negative impact on the Highway 1 operation is minimized.
- In addition to tolling, which, it is assumed, will be an effective demand management tool, the widened Highway 1 will have provision for transit within dedicated HOV/transit lanes. The planned 156 Street underpass, which will be constructed prior to the widening project, will include on/off ramps for transit only. City staff are currently working with TransLink staff to determine the most appropriate location for a transit exchange.
- With the exception of several notable access changes, such as the removal of the 110 Avenue to 152 Street left turn and the RI/RO to the westbound 160 Overpass, interchange locations and community access points will stay the same or be improved. In addition to the interchange that will be constructed at 156 Street, the applicant is proposing upgrades to the interchange at Harvie Road and 192 Street. The proposed upgrades at this interchange will serve the Port Kells Industrial area but not the residential areas south of Highway 1. The City will inform the applicant that the preferred location for the eastern Surrey interchange will be at the 192 Street alignment, south of Highway 1, and will serve general-purpose traffic. A separate corporate report on this subject will be submitted to Council.
- The City of Surrey will work with the applicant's agent during the preparation of a traffic management plan, to ensure the minimization of impact on the Highway 1 and surrounding network users.
- Construction vehicle access to the site will be limited through adjacent neighborhoods. The amount of construction traffic may lead to infrastructure problems on local road systems; consequently, the City will limit allowable access points and routes.

Chapter 25 – Summary of Impacts and Mitigation Measures

- This chapter of the report is very brief, particularly the sections regarding the operations and maintenance period for the corridor after the end of construction. Of concern is that relatively little importance is assigned to potential air quality, greenhouse gas and noise impacts, due in part to assumptions that there will be little overall traffic growth beyond that which would have occurred with or without the project, that transit, HOV lanes and cycling facilities will attract users and that vehicle technology will improve. There is limited information given as to where noise will be mitigated or how, and only a range of potential measures that may be considered has been cited. There is no analysis of impacts of the project outside of the study area, which is considered to be limited to 500m from the highway alignment.
- Table 25-1 Fisheries – need to re-establish fish passage where viable where original PMH#1 design negatively altered upstream systems.
- Table 25-1 – need to obtain an ESC permit from Surrey for all works in Surrey.
- Table 25-1 – socio – community – need to consult also with municipal governments on impacts to the local transportation
- Table 25-1 – need to re-establish vegetative buffer along highway corridor
- Table 25-1 – need to limit construction traffic to defined routes to lessen impacts on local residents and potential damage to local road systems.
- Table 25-1 – fisheries – need to also inform local governments in the case of a spill as they manage downstream waterways.

Chapter 26 – Other Review Considerations

- Section 26.1.2.3 – need to inform local governments in case of a spill event as they manage downstream infrastructure
- Table 26.3 – rare aquatic insects – SFPR works are to be conducted in Bon Accord Creek area, in which case the combined effect on the insects is a concern.
- Table 26-4 – the SFPR project and Border infrastructure projects both have impacts on mature mixed forests at their edges, which combine with PMH#1. The vegetation along 176 Street is mixed forest.
- Section 26.3.4 – Key issues to be considered for the cumulative effects should include:
    - Social effects by confining communities (S. Port Kells and Fraser Heights) through limited access made worse during and post construction and, in the case of South Port Kells, limiting re-development.
    - Noise from concurrent construction projects (SFPR/PMH#1 and Golden Ears) on the community of Fraser Heights and South Port Kells.
    - Local Air Quality concerns from concurrent construction projects and traffic disruptions
    - Overall loss of fisheries habitat from all projects combined in particular as highlighted in PMH#1 project

Chapter 27 – Environmental Management Program

- Proponent should work with local government on habitat mitigation sites and preservations for long-term community benefits
- Need to coordinate construction routes with local governments
- In Surrey, the project will require an Erosion & Sediment Control permit.

APPENDIX II

Heritage Sites in the Vicinity of the Highway No. 1 Corridor

Sites identified in EIA Report:

This table lists heritage sites in Surrey identified in the Environmental Impact Assessment Report.

Table 4-9: Heritage Sites in Surrey Portion of the Study Area

Name	Location	Nature of Original Use
McCaskill House	16343 – 96th Avenue	Residence
Tynehead Community Hall	9568 – 168th Street	Community Hall
John Holt House (184 and 88th)	18456 – 88th Avenue	Residence
Carl Mathisen House	8553 Harvie Road	Residence
Bulman's Garage	8745 Harvie Road	Automobile Repair
Port Kells Post Office	8764 Harvie Road	Post Office
Port Kells Fire Hall No. 7	18922 – 88th Avenue	Fire Hall
Port Kells Elementary School	19076 – 88th Avenue	School
Anniedale Methodist Church Manse	19131 – 88th Avenue	Residence
Anniedale Methodist Church	19131 – 88th Avenue	Church
Latimer Residence	8534 – 192nd Street	Residence
Pillath House	Northwest of Grosvenor Rd.	Residence
Anniedale school	East of 176th St, south of Highway 1	School
St. Oswald's Trees	190th Street between 95thA Avenue and 96th Avenue	Treed Landscape
St. Oswald's Church	19016 – 96th Avenue	Church
The "Castle" - Baron von Mackensen House	9564 – 192nd Street	Residence

Source: City of Surrey (2004) and BC Designated Heritage Sites Registry (2001)

Additional Heritage Sites Not Included in the EIS Report:

Site	Location	Significance	Mitigation
Harvie Road	Between Fraser Highway and Highway No. 1.	Surrey Heritage Register; Former Great Northern Rail Mainline that now is a country-like road.	Restoration work to restore the historical alignment immediately south of Highway No. 1 and upon removal of overpass.
Charlie Perkins Memorial Tree Stump	Highway No. 1 right-of-way east of the 176 St. interchange.	Significant Tree in the Tree Preservation By-law	Retain its landmark quality, understanding with Province to list this tree stump on the Surry Heritage register and assist in alternative access.
Anniedale School Trees	South of Highway No. 1 and east of 176 St.	Associate with Anniedale School; Identified as Important (Heritage) Tree	Insure not damaged by construction equipment, and grading does not impact root structure.
Preedy House and Cottage	9000 block of Harvie Road	Surrey Heritage Inventory	Assessment may be required.
CP Smith House	8834 189 Street	Surrey Heritage Inventory	Assessment may be required.
Walkington House	18900 block 92 Avenue	Surrey Heritage Inventory	Assessment may be required.
Rae House	9152 189 Street	Surrey Heritage Inventory	Assessment may be required.
Hambridge House	17633 96 Avenue	Surrey Heritage Inventory	Assessment may be required.
Gerow Barn	9641 176 Street	Surrey Heritage Inventory	Assessment may be required.
House	9129 192 Street	Surrey Heritage Inventory	Assessment may be required.
Original Anniedale School site	18078 96 Avenue	Potential heritage property	Assessment may be required.