

NO: **R187** COUNCIL DATE: **October 5, 2009**

REGULAR COUNCIL

TO: **Mayor & Council** DATE: **October 2, 2009**
FROM: **General Manager, Engineering** FILE: **5400-80(08400)**
SUBJECT: **84 Avenue between King George Highway and 140 Street – Supplemental Information to Corporate Report No. R167 - 2009**

RECOMMENDATION

The Engineering Department recommends that Council:

1. Receive this report as information; and
2. Approve the recommendations contained in Corporate Report No. R167 - 2009.

INTENT

The purpose of this report is to provide supplementary information to Council regarding the proposed 84 Avenue connection between King George Highway and 140 Street.

BACKGROUND

The agenda for the Regular Council meeting on September 14, 2009 included Corporate Report No. R167 regarding a proposed extension of 84 Avenue from 140 Street to King George Highway. In that report, the Engineering Department recommended that Council:

1. Endorse the extension of 84 Avenue between King George Highway and 140 Street and authorize staff to proceed with the design of this section; and
2. Direct staff to undertake a stakeholder and public consultation process as part of the design process for this project so that the various interests and priorities are given due consideration in the final design.

Council deferred consideration of the Corporate Report to the October 5, 2009 Regular Council meeting so that Council could hear a delegation from Mr. George Zaklan in relation to the subject of the report. Council also requested that staff provide supplemental information to Council regarding the following matters:

1. Traffic projections on the street system with and without the 84 Avenue connection;
2. Environmental studies that have been completed in relation to the 84 Avenue connection;
3. How the subject extension fits with the City's sustainability objectives;
4. How the 84 Avenue extension will complement transit service in the City; and

5. Whether 84 Avenue will be a truck route.

An illustration of the conceptual alignment of the proposed extension 84 Avenue from 140 Street to King George Highway is attached as Appendix I.

DISCUSSION

The following information is intended to clarify key issues raised by Council and the public

Community Safety

The Community Safety objectives of the Transportation Strategic Plan identify the safe movement of people and goods on the City's road network as a priority. Motor vehicle accidents result in significant personal impact, as well as costs to society and the local economy through increased insurance premiums, delays to traffic, costs for emergency services, short and long term healthcare and rehabilitation costs, and the lost productivity of individuals who are not able to work due to injury from an accident.

- The intersection of King George Highway and 88 Avenue ranks as one of the worst intersections in Surrey based on the number of motor vehicle accidents per year and is in the top ten collision sites in British Columbia. It averaged 192 collisions a year between 2005 and 2008;
- ICBC data shows that on average 42% of collisions or 81 collisions/year (2005-2008) at the King George Highway and 88 Avenue intersection have resulted in injuries;
- One of the main contributing factors related to the collisions is the failing operation of the intersection; and
- Collision modeling results indicate that there would be a substantial collision reduction at the intersection of 88 Avenue/King George Highway with the connection of 84 Avenue between 140 Street and KGH. Although the 84 Avenue intersection at KGH will likely see an increase in collisions, there would still be a significant net overall reduction in collisions as a result of this project.

Potential for improvements to 88 Avenue in lieu of the 84 Avenue extension

The Engineering Department has assessed a number of alternative approaches to respond to both the local and broader network demands and connectivity issues and deficiencies. The conclusion of the assessment is that the 84 Avenue connection provides the most achievable, cost effective and most broadly based improvement to the street system to address current congestion problems in the area.

- Major engineering improvements to the 88 Avenue corridor were generally not supportable. For example, widening of 88 Avenue to a seven-lane cross-section road (3 lanes in each direction with a central median and left turn lanes at intersections) from its current 5-lane cross-section would have a very significant impact to properties along the length of the 88 Avenue corridor and would likely require the dedication of land for 88 Avenue along the northern edge of Bear Creek Park and have impacts on adjacent Bear Creek. The required property acquisitions and related impacts indicate that this is not a viable alternative;
- Urban interchange improvements to the 88 Avenue/King George Highway intersection have been reviewed but are not supportable due to high costs, the significant land acquisition and

related property impacts, including at the north-west corner of Bear Creek Park. Adding capacity at this single intersection on the 88 Avenue corridor would have limited benefit due to capacity constraints at other intersections along 88 Avenue. This view has been confirmed by consultants with international expertise;

- The 88/KGH intersection currently operates poorly with drivers typically waiting 2 to 4 signal cycles (equivalent to about 3 minutes on average) on 88 Avenue during the peak periods before being able to get through the intersection;
- With the proposed 84 Avenue extension, delays on 88 Avenue are expected to be limited to 1 to 2 signal cycles (equivalent to about 1 minute on average) during peak periods; and
- Traffic Operations staff have already made improvements to the operation of the 88 Avenue corridor by modernizing and coordinating the traffic signal system and by installing traffic cameras at the intersection that allow queues at the intersection to be monitored and signal timing to be adjusted on a real time basis. Even with these improvements, there is still a lack of street capacity in this area.

The role of regional road network changes such as SFPR to reduce truck and other traffic volumes on 88 Avenue

Surrey will benefit from several major regional road infrastructure projects that are currently under construction as follows:

- The South Fraser Perimeter Road (SFPR) will provide another east-west “regional” truck route between Highway 1 and Highway 99 at the northern edge of Surrey in addition to those that already exist such as 88 Avenue. Some reduction in truck traffic on 88 Avenue can be anticipated; however, with 85,000 vehicles a day passing through the intersection of 88 Avenue and King George Highway, any reductions in truck traffic on 88 Avenue associated with the SFPR will not have a material impact on the operation of the 88 Avenue corridor or the congestion and accident rate at King George Highway;
- 88 Avenue passes through the Newton Industrial area, home to approximately 1400 businesses and will continue to have a very important role as a truck route;
- King George Highway will continue to be an important north-south route across the City for goods movement and general traffic; and
- 84 Avenue is not proposed to be a truck route.

Growth of the City and the increasing demands on the transportation systems and infrastructure

The transportation system plays a significant role in supporting Surrey’s growth and continued economic well-being. A properly performing system is an important contributor to sustained economic prosperity. Unfortunately, constraints within the existing transportation system are having an impact on the attractiveness of Surrey to investors and business owners.

- The City has grown rapidly with its population growing from 283,000 in 1991 to 462,000 in 2009, an increase of close to 200,000 residents in the last 20 years. The population of the City is projected to increase to 575,000 by 2021, a further increase of 110,000 residents. Traffic volumes on the City’s major corridors such as 88 Avenue and King George Highway have increased in proportion to this overall population growth;
- For the City to continue to accommodate growth in a reasonable manner, a robust road and transportation network is important. The problems that are currently being experienced at

the 88 Avenue and King George Highway intersection are in part due to an incomplete road network; and

- From a business and commercial perspective, the Surrey Board of Trade has advised the City of its support for the 84 Avenue extension project.

The role of transit in reducing traffic on the 88 Avenue corridor

The City will continue to advocate for increased transit service on the 88 Avenue and the King George Highway corridors to reduce the dependency of the City's residents on the private automobile. Studies are underway by TransLink and the City to address the future of transit in Surrey including the development of a rapid transit system along King George Highway and along other key corridors. However, considering that only about 4% of all trips by Surrey residents are currently made by transit it will be some time before improved transit service will have a impact on traffic volumes in Surrey.

In relation to facilitating the introduction of effective transit service in Surrey, links such as the 84 Avenue extension will be critical to ensuring that the transit system operates efficiently and provides a high level of service.

TransLink is supporting the 84 Avenue extension project based on the benefits to travel through the City on the Major Road Network (MRN) as well as its potential as a future transit route. Reduced delays on 88 Avenue will offer improved transit reliability for existing transit services that are routed on this corridor.

Emergency/Fire Response

In the previous Corporate Report, it was erroneously indicated that Fire Hall #1 was the busiest fire hall in the country. The report should have indicated that it is the third busiest Fire Hall in Surrey; however, the issue still remains that Fire Hall #1, located at the corner of 88 Avenue and 132 Street, is one of the busiest in Surrey. A key response route for the equipment at this Hall is along 88 Avenue to locations east of King George Highway. Increased traffic volume on 88 Avenue, especially during peak times, has resulted in Fire Department response times being increased. The 84 Avenue extension will have the effect of improving the Fire Department's ability to respond to points east of the KGH.

All modes of traffic in the community will benefit from better connectivity and routing options and the design of the 84 extension will support automobiles, cycling, pedestrians and transit.

The main purpose of the transportation system is to provide mobility for the City's citizens and businesses and visitors to the City and access to all types of properties. The Transportation Strategic Plan identifies completion of the strategic road network and promotion of a finer grid system of roads in support of providing more options for transit, walking and cycling as a priority.

- Creating the 84 Avenue connection is not just about responding to issues on 88 Avenue; it is creating better community connectivity;
- This new link will provide currently unavailable routing alternatives for all road users and allow traffic to distribute onto other parts of the road network;
- The new connection will eliminate a missing link within the wider network, thereby allowing the road system to move existing traffic more effectively and efficiently;

- The design process for the road will examine the opportunities for enhanced pedestrian and cycling infrastructure for the entire 84 Avenue corridor and through consultation with transit and transportation providers and operators, appropriate provisions will be made for future transit services on this corridor.

Traffic volume changes on 84 Avenue

- Additional traffic will use existing sections of 84 Avenue with the new connection in place; however, there is already a large volume of traffic traveling along 84 Avenue that has to detour around Bear Creek Park on 140 Street, 88 Avenue and King George Highway, to continue their trip on 84 Avenue. Modeling indicates that by 2014 the AM Peak Hour 2-Way Traffic Volumes on 84 Avenue with the connection between 140 Street and King George Highway in place would be:
 - To the west of KGH = 1520 vehicles (an increase of 420 vehicles over current volumes)
 - To the east of 140 Street = 880 vehicles (an increase of 130 vehicles over current volumes)
 - In the section between 140 Street and KGH = 1200 vehicles
- PM peak hour volumes would be about 10 to 15% higher. Additional traffic modeling is being undertaken to enhance current model estimates for link volumes on both 84 Avenue and 88 Avenue further to the east and west of the proposed connection; and
- As part of the 84 Avenue design process, staff will identify and evaluate opportunities for improvements on 84 Avenue beyond the section between King George Highway and 140 Street including street beautification, additional trees and median landscaping, crosswalks, sidewalk condition and continuity, and on-street bicycle lanes.

Environmental Studies

The City has a good understanding of the existing environmental habitat and issues based on ongoing staff involvement in the area as well as environmental studies initiated to establish baseline conditions. There have also been other supplemental environmental studies over the years associated with options to develop the area south of 84 Avenue and with Bear Creek. Staff will be undertaking further detailed investigation for species at risk; however, a 2007 study only identified the Great Blue Heron within this area and noted that any other species at risk would likely be transitory. Other environmental issues that have been identified include floodplain waterways, trees, land fill contamination, active fish spawning creeks and wildlife corridors.

During the consultation and design phase, staff will be able to establish more accurately the actual impacts and mitigation options. It is clear that all regulatory environmental impacts will be fully mitigated to the satisfaction of the related regulatory agencies.

Opportunities for Bear Creek Park

Bear Creek Park is one of the oldest and best known parks in Surrey's park system. For many years, the Park has served the recreational, environmental and cultural needs of residents and visitors. The track and field facilities, the outdoor pool and the Youth Park provide for active pursuits, while the Surrey Arts Centre and the grounds of the Park provide year-round opportunities for cultural experiences, including art exhibitions, theatre, and large cultural celebrations such as the Children's Festival and the Professor Mohan Singh event. The gardens,

the miniature train and the many paved walking trails allow opportunities for passive recreation for residents and visitors alike. All of these facilities and activities take place in the area of the park north of the existing 84th Avenue road allowance.

At the present time, the southern portion of the park has only one parking lot, with a paved trail leading from the parking lot to the developed (Northern) portion of the park. For the most part, the areas south of the 84th Avenue Road allowance are undeveloped, except for Hydro Utility purposes, and are set aside largely as a natural area. There are only a few formal pathways in this portion of the park; a small number of visitors to these southern areas have created informal paths that allow a limited level of access along Bear Creek and King Creek and their associated riparian areas.

The 84 Avenue extension and related traffic will affect the undeveloped southern portion of the Bear Creek Park including some disturbance to the ecosystem in the area. However, it should be noted that this is not a pristine wilderness area: over the years, parts of the area have served as a local landfill, the Hydro utility corridor was logged and has since been kept in a non-forest state to prevent trees from maturing and growing into the power lines and the Parks Division has used areas under the power line for storage of soils and other materials used in the maintenance and ongoing development of the Park.

Based on advice from the Parks Recreation and Culture Department, the proposed road will likely have the following beneficial effects on the Park subject to our public consultation to gauge the desirability of these initiatives:

- Mitigation works will be constructed to offset any impacts to the environment of the existing landfill in the park.
- A major east-west multipurpose pathway will be developed on the north side of the proposed 84 Avenue road connection that will permit cyclists, roller bladers, pedestrians and other users to safely access the northern, developed portion of the Park from the south, thereby increasing access to the Park for those who live in the vicinity of the Park.
- The multi-purpose pathway, being part of the Greenway system, will also allow people to circumnavigate the park on wide, safe pathways. These pathways will be separated from the road by a vegetated buffer, which will enhance the aesthetic experience for users. It is anticipated that a number of the charity walk-runs that currently use the Park will use this longer route for participants.
- Bridge structures will be designed in such a way as to permit wildlife movement in corridors beneath the bridges, and will be wide enough to also accommodate pedestrians during daylight hours. This may have the effect of increasing pedestrian access to the southern, currently undeveloped portion of the park. The bridge structures will also allow the development of appropriately-themed public art in the southern part of the Park, which will tie the southern portion of the park to the northern portion of the park, which currently contains public art and statuary.
- Should the final design of the road incorporate shoulders wide enough for automobiles to park, parking capacity will be increased for Park users attending larger special events, decreasing the problem associated with park patrons parking in neighbouring residential areas at event times.
- Development of the proposed road, complete with service access, will allow park service vehicles and contractor vehicles to enter the park from the south end, thereby keeping them away from the congested areas around the pool, Arts Centre and children's playground.

- The road design will be sensitive to fish, riparian and upland habitat, and wildlife corridors will be preserved. Any loss of parkland for road purposes will be offset by appropriate acquisitions so that there is no net loss of parkland. The design of the road will consider minimizing the footprint of the road through the park. An artist's rendering of the potential features of this road link is shown in Appendix II.

“Do Nothing” Option

The public consultation undertaken during the development of the Transportation Strategic Plan revealed that congestion and intersection delays were considered to be the most important transportation system improvement needs in the City, with 71% of the public holding the view that intersections require “considerable or lots of improvement”. Completion of the City’s road network was also a priority and in particular, the completion of east-west routes through the City was a high priority for the business community.

Without street system improvements such as the 84 Avenue connection, traffic volumes will continue to grow in parallel with population and business growth. This will result in more severe congestion at the 88/KGH intersection that will result in more lengthy delays at intersections, longer travel times, more costly trips and a higher frequency of traffic accidents at this intersection. In addition, the effectiveness of transit in this area will be undermined by the delays experienced at this intersection.

SUSTAINABILITY CONSIDERATIONS

The City’s Sustainability Charter calls for decision makers in relation to any particular decision to examine and balance the social, economic and environmental objectives and priorities of the Charter. This will from time to time require trade-offs so as to maximize the net sustainability benefits from any decision.

For example, with respect to the 84 Avenue connection project, there will be some local impacts to the natural environment (for which compensation can be provided) but the project will improve travel times for people moving through the City that will improve the quality of life and encourage business and other investment in Surrey that may not otherwise occur. Further by reducing traffic congestion, automobile trips will take less time, and there will be less idling time along 88th Avenue which will have the effect of reducing the amount of GHGs that are produced by any particular vehicle trip. Further:

- The high financial, social and quality of life costs associated with the high and growing number of collisions at King George Highway and 88 Avenue will be reduced; and
- The high costs to Surrey businesses and the local economy of congestion will be reduced.

When considering all three sustainability pillars from a broader, City-wide perspective, this project will provide significant sustainability benefits to the City and its citizens.

CONCLUSION

In consideration of the benefits of the 84 Avenue connection between 140 Street and KGH and the fact that the majority of the impacts of this project can be mitigated through careful design and construction, it is recommended that Council approve the recommendations contained in Corporate Report No. R167 – 2009, which is on the same agenda as this report.

Vincent Lalonde, P.Eng.
General Manager, Engineering

PB/brb

Appendix I: Conceptual Alignment of the 84 Avenue Connection (140 Street to KGH)

Appendix II: Artist's rendering of Potential Features of 84 Avenue road link.

APPENDIX I



