



Corporate Report

2004

NO: R027

COUNCIL DATE: February 9,

REGULAR COUNCIL

TO: Mayor & Council DATE: **February 6,
2004**

FROM: General Manager,
Engineering FILE: **6520-20 (Hwy 99
Corridor)
6520-20 (GH)
3150-00**

SUBJECT: **Highway 99 Corridor – Financing of Servicing**

RECOMMENDATIONS

1. That the proposed scope of engineering services as summarized in Section 4 of this report form the basis for the development of the Corridor.
2. That the trunk utility services, and new or upgraded arterial and major collector roads necessary for the development of the Highway 99 Corridor Land Use Plan, be funded through an area specific development cost charge (DCC).
3. That staff be authorized to take the necessary steps to implement the required amendment to the DCC By-law.

1.0 INTENT

The purpose of this report is to:

1. Provide Council with an overview of the engineering servicing and financial strategy for the Highway 99 Corridor Land Use Plan (Corridor).
2. Seek Council support for an area specific DCC.

2.0 BACKGROUND

The Proposed Land Use Concept Plan for the Highway 99 Corridor study area was presented and approved by council on December 8, 2003. This report outlines the engineering servicing concepts and financial strategies to achieve this servicing plus acquire lands for environmental preservation.

3.0 CONTEXT OF SERVICING

As part of the overall evaluation of the viability of developing this Corridor, the feasibility and costs for the provision of municipal infrastructure to support the proposed land uses were reviewed.

One of the key components of this area's servicing strategy is its integration with adjacent lands. The Highway 99 Corridor study area is marked by a number of servicing constraints resulting from topography and the long, narrow shape of the plan area. All services proposed fit within a broader context at a neighbourhood level, as well as at a regional level. This broader context provides both constraints and opportunities for the servicing of the Corridor. The constraints are related to existing infrastructure that must be used to service the Corridor area while the opportunities reflect the concept that new servicing can be constructed as part of development of the Corridor to help facilitate the long term servicing plans for adjacent area .

Lands to the east of the subject Corridor will soon be the subject of an extensive land use planning exercise as part of the Grandview Heights General Land Use Plan. Final details of servicing within the Corridor will need to reflect the ultimate land uses proposed within the broader Grandview Heights General Land Use Plan.

The engineering services discussed in the report relate to major community infrastructure. Only those works, which are trunk or major facilities and normally funded through the City's Development Cost Charge (DCC) programs, are included in the area specific DCC. Interim servicing and local site servicing requirements of individual developments were not analyzed.

4.0 CONCEPTUAL SCOPE OF SERVICING

As outlined above, the topography and geographic extent of the Corridor dictate the servicing strategy for the area. A more detailed description of the servicing issues is provided in Appendix A but summarized here for reference.

4.1 Drainage

The Corridor falls within two distinct watersheds: Morgan (or Titman) Creek for areas north of 24 Avenue; and Fergus Creek which flows into the Campbell River for areas south of 24 Avenue. The area is currently serviced by ditches, culverts, minor storm sewers and an extensive network of natural watercourses. A number of existing drainage studies, as well as more recent environmental reviews of the project area, have lead to the proposed servicing strategy for the site which is aimed at attenuating the post-development flows to ensure protection of valuable aquatic habitat within and downstream of the corridor area. The plan includes a number of ponds, piped and ditched diversions and where possible, low impact development strategies. Natural watercourses are integrated into the plan as these continue to convey drainage flows and provide aquatic habitat as well as green space for the neighbourhood. (Please see Figure A1 - Appendix A.)

4.2 Water

With respect to potable water, the existing reservoir at 24 Avenue has sufficient capacity to supply water for the Corridor. The future pump station needed for the overall Grandview Heights area can be upsized to service the corridor. Some areas will be serviced directly from the pump station while others will be connected to existing infrastructure at King George Highway. The grid system within the Corridor will be looped to ensure the necessary fire flows. (Please see Figure A2 - Appendix A.)

4.3 Sewer

As with drainage servicing, sanitary servicing is driven by the topography of the site and is limited by existing conveyance capacities. Generally, areas north of 24 Avenue will be serviced by gravity sewer to the north and areas south of 24 Avenue will flow by gravity to the south. Sanitary pump capacity at the Semiahmoo Pump Station will be provided to service the corridor area on an interim basis until the ultimate Grandview Heights South Pump Station is constructed in the vicinity of 168 Street and 12 Avenue. A detailed description of the sewer servicing strategy and issues related to interim pump capacity is provided in Appendix A. It should be noted that all interim sewer facilities will be the responsibility of the various proponents and are not included in the corridor infrastructure costs or part of the area specific DCC charge. (Please see Figure A3 - Appendix A.)

4.4 Roads

A number of the key transportation issues were dealt with in the December 8, 2003, Report to Council. These issues included the deferring of a new interchange on Highway 99 as the traffic analysis found it was not necessary for the development of the corridor alone. However, on and off ramps may be added at either 24 Avenue or 16 Avenue in the future.

The road and bridge widenings identified to meet the traffic capacity needs for the corridor at build-out are shown in Figure A4 in Appendix A. The plan calls for the widening of sections of 24 Avenue and 16 Avenue including the freeway overpasses, and the construction / widening of the spine road, together with other more minor road improvements. The cost of the road works assigned to the corridor is net of any eligibility for TransLink MRN funding, existing funding identified in the current 10 Year Plan (2001-2010), and of needs that would apply for the period 2004-2013, should the corridor plan not proceed.

4.5 Environmental Reserve Area

A key component of the overall layout of the corridor is the concept of consolidating a natural environmental reserve area between 12 Avenue and 15 Avenue. Although this natural park feature is independent of the servicing requirements for the corridor, it must be covered within its funding strategy. A detailed description of the area, and the public and agency process that lead to the proposed creation of this reserve, is provided in previous corporate reports.

5.0 FUNDING OPTIONS

5.1 Funding Philosophy

Council has directed that, similar to other NCP areas, this Corridor must be self-financing. This means that the transportation and other servicing infrastructure requirements will be funded on a development pay approach.

5.2 Costs and Revenues for the Area

As this area was not previously designated urban in the OCP, most of the Arterial, Major Roads and other trunk services required for the development in the Corridor are not included in the current DCC program. Also, as outlined previously, the long, narrow shape of the plan area and the fact that it abuts a freeway with any road widenings also requiring widening of the overpasses over the freeway makes the cost of servicing this area higher than other NCPs.

When comparing the costs against current DCCs generated in the area, there is a significant shortfall. This would apply to both the full "build out" condition as shown in the table below and, more importantly, on a cash flow basis as development proceeds.

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	DCC Corridor Costs	DCCs Generated	Shortfall (Surplus)
Arterial Roads	\$16.6 million	\$ 4.6 million	\$12.0 million
Major Collectors	\$ 3.8 million	\$ 1.2 million	\$ 2.6 million
Drainage	\$ 1.9 million	\$ 5.1 million	(\$ 3.2 million)
Sewer	\$ 3.2 million	\$ 0.6 million	\$ 2.6 million
Water	\$ 1.7 million	\$ 0.7 million	\$ 1.0 million
Environmental Preserve Area	\$ 3.0 million	\$ 0.0 million *	\$ 3.0 million
Total	\$30.2 million	\$12.2 million	\$18.0 million

* The current DCC structure for industrial and commercial does not include any DCC for open space / environmental preserve areas.

6.0 FUNDING ALTERNATIVES

The City has a number of alternatives for dealing with this shortfall. The City may:

1. Raise the required funds by imposing a special levy to be charged against the benefiting lands;
2. Choose to include these works in the overall DCC program and adjust overall DCC accordingly;
3. Create an area-specific DCC for the Corridor.

6.1 Special Levy

A special levy to address the shortfall is an option. This levy would be in addition to the regular DCCs and would likely be made a condition of rezoning.

Commercial developments generate significantly more traffic than light industrial / business park uses (approximately 3.4:1 on an average daily basis) thus should bear a proportionately higher share of the road costs.

The proposed levy for the entire Corridor (in addition to DCC's) necessary to cover the shortfall for roads, water, sewer and environmental reserve area is:

- Commercial Areas: \$110,000/acre
- Light Industrial/Business Park Areas: \$ 49,000/acre

As well as requiring the developers to pay the levy in addition to their Development Cost Charges, the initial developers would have to front end the construction of the required infrastructure necessary in advance of their developments. This will be an issue with all the alternatives as the City does not have the funds available to advance the construction.

6.2 Include in Overall DCC Program as Increase Overall DCCs

An alternative to the levy would be for the City to add the additional road works and engineering services to the City's overall DCC program and to collect the funds required over time through the City-wide DCCs. This alternative would still require that a developer front-end the road works and other servicing works required in conjunction with their development.

It is estimated that the City wide Arterial Road Development Cost Charges would have to be increased by about 6 to 8% to allow for the Corridor works proposed in the next 10 years to be included in the DCC program. The Major Collector DCC would likely have to be increased by about 4%. Similarly, overall sewer and water DCC would have

to increase 4 to 6%. Additionally, by including the corridor works in the overall DCC program, the somewhat lower DCCs (compared to Area Specific DCCs) would create more of a cash flow problem for the frontending of servicing plus there is reduced opportunity for initial developers to recover costs from other development through such mechanisms as DCC frontending agreements.

6.3 Area Specific DCCs

An area specific DCC could be established to fund the roads, engineering services and environmental reserve area identified for the corridor. The area specific DCC has the advantage that the works for the corridor do not increase the DCCs elsewhere in the City.

It also has the advantage for the developers in the corridor in that all DCCs collected in this area are to fund works for the corridor.

The area specific DCC was the approach that the City adopted for the Campbell Heights industrial area. The DCCs per acre of development for the corridor would be approximately as follows:

	<i>Industrial</i>	<i>Commercial</i>
Drainage	\$ 7,000	\$ 7,000
Water	6,300	6,300
Sewer	11,800	11,800
Environmental Reserve	12,100	12,100
Transportation	<u>35,600</u>	<u>121,000</u>
Total	\$72,800	\$158,300

It should be noted that this DCC calculation includes the current DCC by-law specified City assist factors of 5% for roads and open space (from City general revenue), and 10% for sewer, water and drainage (from City utilities).

7.0 DISCUSSION OF FUNDING ALTERNATIVES

Of the alternatives available to cover the funding shortfall, the area specific DCC offers the most advantages. It does not increase DCCs in other areas of the City and it provides a greater level of certainty than a special levy payable as a rezoning requirement. Also, the area specific DCC is more consistent with the approach taken for Campbell Heights where an area with greater servicing scope and cost than other NCPs was not added into the overall DCC program but was dealt with separately. The scope of works and the resulting DCC rates have been discussed with the key development proponents in the corridor, and they have a good understanding and appreciation of the costs and servicing needs involved. Initially, it was envisaged that the commercial per acre DCC would be around \$171,000 an acre. The key proponents raised concerns at this per acre rate. Further detail review of servicing components and a more detailed calculation of the DCCs resulted in a reduced per acre commercial DCC of \$158,000.

8.0 CONCLUSION

The servicing needs for the corridor have been summarized in this report and outlined in Appendix A. The servicing study shows that with current City-wide DCC rates, there is a considerable shortfall in funding available for

servicing. To overcome this shortfall, the best funding alternative is an area specific DCC. Council's authority is requested to proceed with the necessary steps, including Provincial approval, to amend the current DCC By-law to include an area specific DCC for the Highway 99 Corridor. Approval of the financing strategy is a necessary precursor to bringing the final NCP document for Council approval which is expected to occur in two weeks.

Paul Ham, P.Eng.
General Manager, Engineering

PH/RD/brb
Attachment

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APPENDIX A

Summary of Servicing Plan for the Highway 99 Corridor

Drainage/Stormwater Management

The project area lies within two very distinct watersheds. Areas north of 24 Avenue drain to Titman (aka Morgan) Creek which is tributary to the Old Logging Ditch system within the Nicomekl Watershed. Areas south of 24 Avenue drain to Fergus Creek which is tributary to the Little Campbell River. Currently drainage servicing is provided by a system of man made ditches and culverts as well as many natural water courses. Environmental aspects of the watercourse network were provided to council in the December 8, 2003 Planning Report.

The Stormwater Management Plan for the study area is aimed at providing drainage servicing to the City of Surrey standard while ensuring protection of the natural aquatic habitat features in and about the plan area. Although the drainage plan is presented for the Highway 99 Corridor area it must be considered in a more regional context of drainage through this area. This regional context is known as a watershed based drainage planning approach.

The Morgan Creek/Old Logging Ditch systems have been the subject of numerous drainage and planning studies and the plan proposed for Corridor area is consistent with the studies. Currently a detention pond at the north end of the Corridor with a network of surface drainage features are being proposed for the area falling within the Morgan Creek/Old Logging Ditch portion of the project.

In order to address concerns raised in previous reports and through the planning consultative process a number of key strategies are proposed for the Fergus Creek portion of the plan area. A system of creek and pipe diversions will provide increased conveyance capacity for the area without compromising the integrity of Fergus Creek. A substantial diversion running along King George Highway from 14 Avenue to the Campbell River is proposed to deal with increased flows originating from areas of Sunnyside that have already been developed. Base flows to Fergus Creek will be maintained at the diversion point in an effort to maintain pre-development hydrologic regimes. The commercial node at 24 Avenue will be expected to provide detention in order to limit peak flows to creek reaches upstream of the diversion point. Open swales located through the BC Hydro right-of-way is proposed to help maintain the integrity of the Fergus Creek headwaters.

Drainage originating from areas outside of the Corridor area north east of the BC Hydro ROW will be conveyed through the site in ditches and pipes. The Drainage plan that will be completed as part of the Grandview Heights General

Land Use Plan will account for this situation.

Hydrogeological reports of the area indicate that there is limited opportunity for groundwater exfiltration best management practices through the corridor. The soil deposits through the area have low infiltration capacities and would not be conducive to infiltration trenches and swales. Nonetheless, it is expected that impacts normally associated development will be mitigated through on site bioretention, surface drainage treatment and other low impact development measures throughout the plan area.

The proposed stormwater control plan for the Corridor area is provided as Figure A.1 attached. Estimated DCC eligible costs are summarized in Table A1.

Sanitary Sewer

Currently, septic fields service existing dwellings and there are no sewers in the corridor area. The topography of the land dictates that gravity sewers run either north or south from the study area's height of land around 24 Avenue. Ultimately, sewers running north will tie into the future North Grandview Gravity Interceptor that will run from approximately 172 Street to Highway 99 along 28 Avenue. This future interceptor will also be able to service the broader Grandview Heights area. Areas to the south of 24 Avenue will ultimately be serviced by gravity sewers to a future pump station (Grandview Heights South PS) anticipated the vicinity of 168 Street south of 12 Avenue. A force main will run from the pump station north to 24 Avenue at which point a gravity sewer will tie into the North Grandview Gravity Interceptor described above. Such a system could also potentially service the broader Grandview Heights area. The sanitary sewer servicing plan is shown on Figure A2.

It is anticipated that lands within the Corridor will develop prior to the availability of the future North Grandview Gravity Interceptor and Grandview Heights South PS. As such, the following interim sanitary sewer servicing strategy is proposed for the corridor area.

As described above, two sewer systems – one running north, the other running south – will be required to service the area. A gravity sanitary sewer system is proposed to serve the Corridor from approximately 24 Avenue southwards to about 16 Avenue, at which point a new gravity sewer can be constructed to cross Highway 99 and tie into an existing trunk at King George Highway. For the area south of 16 Avenue to Fergus Creek at about 12 Avenue, a new lift station will be required to pump the sewage back to the 16 Avenue crossing. Areas south of 12 Avenue will be serviced by another interim pump station directing sewerage to the existing system on 8 Avenue. All of the above-mentioned systems will lead to the existing Semiahmoo Pump Station. This pump station has sufficient capacity to convey the anticipated load from the corridor on an interim basis only. It is anticipated the full capacity of the Semiahmoo pump station will be required to accommodate its own existing catchment as redevelopment progresses. At that point in time, we expect both the North Grandview Gravity Interceptor and the Grandview Heights South PS will be in operation and sanitary sewers from the Corridor will be directed to those systems.

Currently only 40 l/s of pumping capacity has been put aside at the Semiahmoo pump station to service the Highway 99 Corridor on an interim basis. This pumping capacity will be allocated on a first come first serve basis. When the pumping capacity reaches capacity, no further development will be able to discharge to the Semiahmoo pump station. This capacity constraint means that only one section of the corridor can be connected to the Semiahmoo pump station; either the area from 16 Avenue to 24 Avenue or the area from 8 Avenue to 16 Avenue.

Areas to the north of 24 Avenue can discharge by gravity northward to cross Highway 99 at 28 Avenue into the existing system or potentially north to the Morgan Creek pump station. Again, this is an interim system and the sewerage from the corridor will ultimately be directed to the North Grandview Gravity Interceptor.

It should be noted that other than a few trunk sewers that will be used under the ultimate servicing scenario the interim systems described above are the responsibility of the developers. It is anticipated that although the interim plans described above are feasible that other interim plans may be proposed by individual developers. These will be evaluated to ensure the interim strategies will not compromise the overall servicing strategy for the area.

Financial details are provided in Table A2.

Water

The existing reservoir at 24 Avenue has sufficient capacity to supply water for the Corridor. A new pump station at this reservoir will also be needed for the overall Grandview Heights area; consequently, a proportion of the cost of this new pump station has been assigned to the corridor. Areas above the 75 metre contour will be serviced from the pump station directly and the remaining areas will be serviced via the existing 450mm trunk water main along King George Highway with two new grid mains crossing Highway 99. The grid system within the Corridor will be looped to ensure the necessary fire flows.

The water servicing plan is shown on Figure A3 attached and the financial details are provided in Table A3.

Transportation

Based on a detailed traffic analysis, the Major Road requirements to service build-out of the Corridor were determined and are illustrated in Figure A4. Additional auxiliary lanes may be required for specific intersections and road segments relating to specific individual developments. These will be determined through future Traffic Impact Studies for development applications.

The key improvements are widening of 24 Avenue from King George Highway to 164 Street and 16 Avenue from King George Highway to 168 Street to four through lanes plus a median/left turn lane. This work includes new bridges across Highway 99 at 24 Avenue and at 16 Avenue. In addition, an extended, realigned and widened Croydon Drive is required to function as a spine road for the Corridor. The cross-section along this road varies between two and four lanes plus a left turn lane.

The servicing costs are provided in Table A4.

The other key aspect of the road requirements is timing of the road improvements. In order to maintain functionality on the arterial roads with the addition of the significant traffic volumes associated with large scale commercial development within the Corridor, some of the roads will need to be upgraded prior to opening of the commercial areas. This issue is addressed in more detail in the Financing Section.

Development Phasing

Development phasing will be developer driven and will be subject to completion of downstream infrastructure requirements.

CONCLUSION

The Highway 99 Corridor Plan area can be serviced on an interim and under ultimate conditions with the financial strategies described in this report. Interim works are not, however, included in the DCC program, and have to be funded directly by developers.

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