

NO: L002

COUNCIL DATE: October 24, 2016

REGULAR COUNCIL – LAND USE

TO: Mayor & Council **DATE: October 20, 2016**

FROM: General Manager, Engineering **FILE: 7814-0213-00**

SUBJECT: Engineering Infrastructure Potential Servicing Options for 7914-0213-00

RECOMMENDATION

It is recommended that Council receive this report as information.

INTENT

The purpose of this report is to advise Council of the potential servicing options available to support the development of 18147 – o Avenue, 18253 – o Avenue and 18115 – o Avenue (the “properties”) that are included in Development Application No. 7914-0213-00, and how staff intend to work with the Applicant to resolve servicing for this application in advance of any decision on the land use.

BACKGROUND

At its Regular Council – Land Use meeting of June 27, 2016, Council requested that:

- The project be referred back to staff to review the site in terms of future residential development and the feasibility of the proposed septic field and existing soil quality, and to ascertain whether or not a sewer system can be supported;
- The Applicant work with staff to provide a completion of the Hazelmere Golf Course Community in terms of estate lots that are viable for the next 50 years;
- There should not be service connection latecomer agreements along 8 Avenue. The project should be viewed as a completion of the Hazelmere Golf Course Community, while maintaining habitat restoration and agricultural uses; and
- While not required at this time, if the area to the east toward o Avenue is considered for residential development in the future, a full Neighbourhood Concept Plan (NCP) would be expected at that time.

DISCUSSION

Following Council’s consideration of the report, the Applicant’s Engineer has provided a Terms of Reference for an engineering infrastructure study that will need to be undertaken to develop a servicing plan in order to support development of the properties.

The general servicing approach for the properties as suggested by the Applicant's Engineer and staff comments on these approaches are as follows:

Sanitary Sewer

The Applicant's Engineer has suggested that the application could receive sanitary sewer servicing by pumping sewage to either the City's existing Peace Portal Station or Douglas Pump Station before it is pumped to the City's existing Semiahmoo Pump Station for further pumping and additional odour control treatment before being discharged in Metro Vancouver's system in the Panorama Ridge area. Staff do not support this arrangement as pump station improvements will be required, piping improvements will likely be required and existing odour problems in various locations along this route would be exacerbated. In addition, conveying additional sanitary sewer flows to the west may remove opportunities to accommodate future land use changes in the Douglas and Semiahmoo areas.

The Applicant's Engineer has also suggested that the application could receive sanitary sewer servicing by pumping sewage to the north through a new system along 184 Street and discharging into Metro Vancouver's system at Highway 10. It is suggested that this system could also be used to service the Campbell Heights Special Study Area.

Staff are of the opinion that pumping to the north is technically feasible, but given the long length of the proposed forcemain and siphons, odour is likely; therefore, a new odour control facility(s) will be required, increasing the cost of this alignment.

As the area is outside of the Metro Vancouver Regional Growth Strategy Urban Containment Boundary and the Fraser Sewerage Area, Council would be required to forward an application for inclusion of this area to Metro Vancouver for consideration by the Greater Vancouver Regional District Board and the Greater Vancouver Sewerage & Drainage District Board.

In addition to the approach suggested by the consultant and supported by staff, it would be worthwhile for the Applicant's Engineer to investigate the feasibility of a private onsite wastewater treatment plant that the development would own and operate. This approach would forego the need for inclusion of the area into the Metro Vancouver Regional Growth Strategy Urban Containment Boundary and the Fraser Sewerage Area.

Stormwater

The development area drains to the north, following the natural topography via a number of local ditches and natural watercourses to Kuhn Creek, and eventually to the Little Campbell River. There are a few natural watercourses within the area, but open ditches that form the headwaters of these natural watercourses generally service the area. As the proposed development is outside of a completed Integrated Stormwater Management Plan (ISMP), the Applicant's Engineer is proposing to undertake an ISMP for the Kuhn Creek watershed.

Staff agree that an ISMP needs to be developed and that this ISMP will help to establish the appropriate stormwater servicing approach for the watershed. Staff expect that the ISMP will identify the need for both onsite and offsite stormwater management best practices, and will likely require a stormwater detention pond to control the intensity, frequency and duration of runoff from the application.

Water

The Applicant's Engineer notes that the application is currently in the 80 metre Hydraulic Grade Line (HGL) zone, but as the maximum elevation in the proposed development is 70 metres, it will not be possible to service the area from the 80 metre zone; therefore, either a booster pump or a new connection to the high pressure system will be required.

Staff agree that, due to the topography of the area, the City's existing system cannot support the development of this site.

The Applicant's Engineer suggests that the development could receive water servicing by extending a new water main from the Grandview Reservoir/Pump Station on 24 Avenue at 166 Street, or by tying into the proposed water main along 24 Avenue to support development of the Redwood Heights NCP area, should that be constructed first. Staff are of the opinion that extending a water main from the Grandview Reservoir/Pump Station or tying into the future water main at 24 Avenue is technically feasible, but given the long length of the proposed water main and limited population expected from this development, supplemental chlorine dosing may be required. It is not possible to increase the level of chlorine in the City's system at existing Metro Vancouver dosing locations without introducing aesthetic concerns with our water for a significant portion of south Surrey.

The City does not own or operate any chlorine dosing or other water quality treatment equipment, as the level of chlorine Metro Vancouver adds has been sufficient to date. Besides being an increased cost to construct such a facility and ongoing operational costs, supplemental chlorine dosing will result in a reclassification in the City's water system by the Provincial Environmental Operators Certification Program (PEOCP). System reclassification will result in an increase in the ongoing training and certification that City staff working on our water system will be required to complete and maintain.

Staff do not support extending the City's water system if it results in a reclassification in the City's water system by the PEOCP. If this is the case, staff recommended that the Applicant explore opportunities to introduce their own private supplemental chlorine dosing facility, revise the scope of their development or proceed with a private water system to meet their needs.

Transportation

The Applicant's Engineer is proposing to prepare a transportation plan that will assess the adequacy of the existing road network and the offsite improvements necessary to provide acceptable vehicular, pedestrian and bicycle accessibility. The Applicant's Engineer is also proposing to undertake a traffic study to confirm the existing traffic volumes, along with projections of future traffic volumes, from the proposed development. The traffic study will include an analysis of impacted intersections based on the peak traffic volumes generated by the development.

Staff anticipate a need for significant offsite road improvements as a result of the development given the very low likelihood of any transit being provided in the area and the reliance on the car to access places of work, education and retail. Improvements to the roads immediately fronting the proposed development will be required by the City but, the surrounding road network was built to a rural road standard with typically 6.0 metre wide pavement with open ditches. There are no sidewalks or cycling infrastructure. Staff have found that these rural road standards often do not meet the expectations of the residents moving into the area with a corresponding increased demand for offsite road improvements. As these demands will be the direct result of the proposed development, are not identified in the City's 10-Year Servicing Plan and in the absence of any future neighbouring development providing these improvements, offsite upgrades to specific roads will be required as part of the application.

Development to the East of 184 Street

Further to Council's instructions, staff will ensure that the recommended servicing strategy is planned in such a fashion that it is only able to support the development of these properties and that neither the sewer, water nor drainage infrastructure proposed can be used to support the development of the lands east of 184 Street.

Servicing Costs

Based on staff's preliminary review of the Terms of Reference provided, the estimated offsite costs for servicing this site based on the approaches suggested by the Applicant's Engineer could be in excess of \$20 million, or \$130,000 per single family residence. The Applicant has indicated that they have \$20-\$30 million available to invest in infrastructure improvements.

Traditionally, offsite works that support development of an area have been incorporated into the City's 10-Year Servicing Plan. Given the limited scope of this development, offsite works will not be included in future versions of the City's 10-Year Servicing Plan.

As these works would not be included in the City's 10-Year Servicing Plan, the Applicant would not be able to seek reimbursement through a Development Cost Charge Front Ending Agreement. As these works would also only be sized to support the development of these properties, the Applicant would not be able to seek reimbursement through a Latecomer Agreement.

Operational and Maintenance Responsibilities

The development of these properties will increase the total length of pipe infrastructure that the City is required to operate, maintain and eventually replace. The increases to the City's pipe infrastructure categories are as follows:

Infrastructure Type	Existing Inventory	Estimated Increase to Inventory	Increase to Inventory (%)
Sanitary sewer mains	1,576,500 metres	5,500 metres	0.35%
Water mains	1,846,000 metres	5,600 metres	0.47%

The sanitary sewer and water main infrastructure needed to support this increase in population results in the City's infrastructure inventory increasing by 0.35% and 0.47% respectively.

In addition to increases in the City's sanitary sewer and water pipe infrastructure, the development of these properties may result in the addition of one sanitary sewer pump station, one supplemental chlorine dosing facility and two pressure reducing valve (PRV) stations.

Assuming four residents per dwelling, the build-out population estimate of the development is 544 persons which represents a 0.10% increase in the City's population. Therefore, the added infrastructure to support the development of the properties is negatively balanced when compared against the increase in population. Staff expect the balance to be even greater once staffing requirements and operational costs are considered.

This imbalance will result in the broader community subsidizing the cost to operate and maintain the infrastructure necessary for this development; however, this imbalance would be reduced if the Applicant was able to provide their own private sewer and water systems.

Once the full scope of infrastructure improvements to support development of the properties has been established, staff will estimate their long term operational and maintenance costs in order to determine if the City's existing utility rates are sufficient or if area specific utility rates are warranted for these properties.

SUSTAINABILITY CONSIDERATIONS

The development of 18147 – o Avenue, 18253 – o Avenue and 18115 – o Avenue that comprise Development Application No. 14-0213-00 relates to the Sustainability Charter Theme of Infrastructure. Specifically, the development of these properties can influence the following Desired Outcome:

- All Infrastructure Do2: Infrastructure systems provide safe, reliable and affordable services.

CONCLUSION

There are a few servicing options available to support the development of 18147 – o Avenue, 18253 – o Avenue and 18115 – o Avenue that are included in Development Application No. 7914-0213-00. Staff are actively working with the Applicant to resolve servicing for this application in advance of any decision on the land use. Based on the above discussion, it is recommended that Council receive this report as information.

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FS/JA/JB/PB/clr