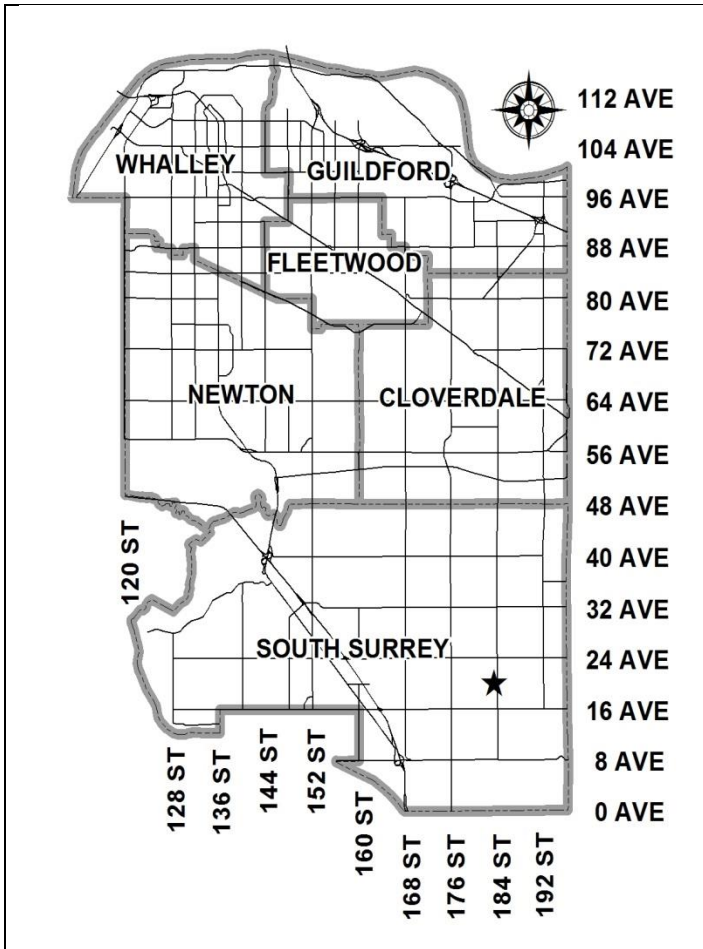


City of Surrey
PLANNING & DEVELOPMENT REPORT

File: 7915-0069-00

Planning Report Date: February 1, 2016



PROPOSAL:

- **Development Variance Permit**

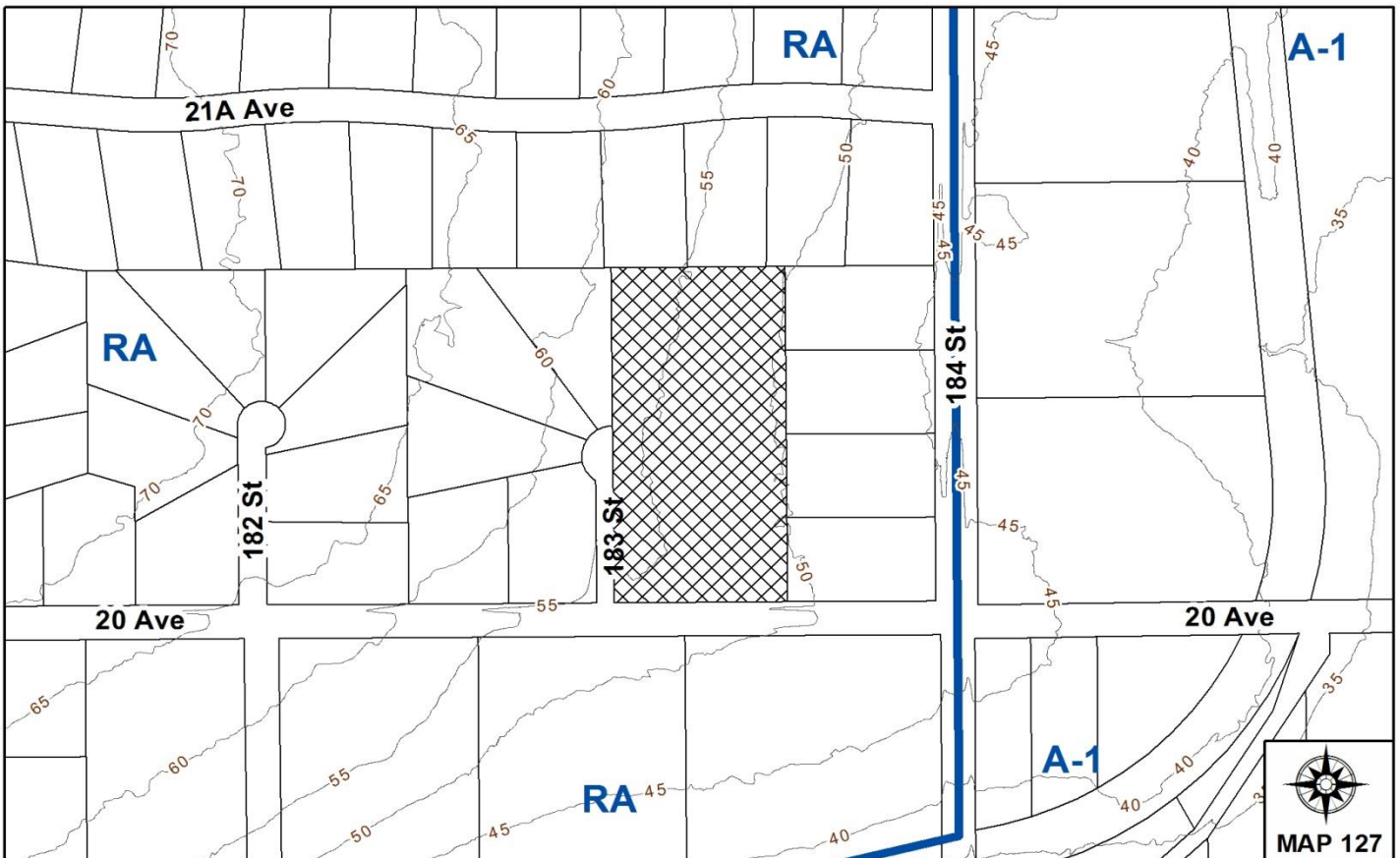
to vary the Subdivision and Development By-law to allow on-site sewage disposal systems on lots smaller than 0.81 ha (2 acres) in order to allow subdivision of the site.

LOCATION: 18319 - 20 Avenue

OWNER: Gordon C Hamilton

ZONING: RA

OCP DESIGNATION: Rural



RECOMMENDATION SUMMARY

- Approval for Development Variance Permit to proceed to Public Notification, once the ultimate number of lots for the proposed subdivision of the subject property is confirmed.

DEVIATION FROM PLANS, POLICIES OR REGULATIONS

- Does not comply with the Subdivision and Development Bylaw (No. 8830), which requires a minimum lot size of 0.81 ha (2 acres) for on-site sewage disposal systems.

RATIONALE OF RECOMMENDATION

- Subject to detailed design that minimizes the impacts of on-site sewage disposal, the Engineering Department is prepared to support a variance to reduce the 0.81 ha (2 acre) lot size requirement in the Subdivision and Development By-law No. 8830, to permit a 3-lot subdivision. However, at this time, the applicant is seeking a variance to permit a 4-lot subdivision.
- The applicant has retained MSR Solutions to provide an assessment of the impact on the groundwater and to certify that the proposed septic systems can be supported for a 4-lot subdivision. Engineering staff have reviewed the MSR Solutions report and have identified a number of concerns and issues.
- Once the ultimate number of lots is resolved with the applicant, public notification can proceed. The City Clerk will be requested to withhold the public notification process until Staff provide Schedule A to the Development Variance Permit. Schedule A will indicate the ultimate number of proposed lots.

RECOMMENDATION

The Planning & Development Department recommends that:

1. Council approve Development Variance Permit No. 7915-0069-00 (Appendix VI) varying the minimum lot size required for on-site sewage disposal systems of 0.81 ha (2 acres), and that the variance proceed to Public Notification once the number of lots in the proposed subdivision is confirmed between the applicant and the Engineering Department.

REFERRALS

Engineering: The Engineering Department, Sanitary Section, does not support the varying of the Subdivision and Development By-law’s on-site sewage disposal requirement in order to permit a 4-lot subdivision. The Engineering Department is prepared to support a variance to permit a 3-lot subdivision, subject to detailed design that minimizes the impacts of on-site sewage disposal.

Parks, Recreation & Culture: Parks has no objections the proposed development.

Agricultural and Food Security Advisory Committee (AFSAC): At their January 14, 2016 meeting, AFSAC recommended that Application No. 7915-0069-00 be supported as proposed.

SITE CHARACTERISTICS

Existing Land Use: One Single Family Residential Dwelling.

Adjacent Area:

Direction	Existing Use	OCP	Existing Zone
North:	Single family residential	Rural	RA
East:	Single family residential	Rural	RA
South (Across 20 Avenue):	Single family residential	Rural	RA
West (Across 183 Street):	Single family residential	Rural	RA

Background:

- The subject site is a 2 hectare (5 acre) parcel located on the north side of 20 Avenue, in the area known as "Redwood Estates". It is currently zoned "One-Acre Residential Zone" (RA) and designated as "Rural" in the Official Community Plan. There is no Neighborhood Concept Plan (NCP) for this area.
- The Planning & Development Department is currently engaged in planning processes for the Grandview Heights Area #4 NCP. The subject property and surrounding areas have been specifically excluded from the study area for this NCP, as per the requests of a majority of area residents. Therefore, the long term land-use of this area is intended to remain as rural.
- The subject property lies within an area of parcels ranging from 0.4 – 2 hectares (1 – 5 acres) in size. The subject property was created in 1966. The existing 1 acre parcels within the vicinity of the subject property were created between approximately 1977 and 1988, including those located on the west side of the 183 Street cul-de-sac.
- The properties in the Redwood Estates area are serviced with domestic city water, provided by a watermain extending down 20 Avenue. There are no sanitary services within the vicinity of the subject site. The closest sanitary services are at the cross-streets of 188 Street and 24 Avenue.
- There is a Class B watercourse (ditch) located entirely offsite along the north side of 20 Avenue along the south boundary of the subject property. The applicant will be required to widen 20 Avenue by 1.2 metres, which will necessitate the relocation of the ditch to comply with the standard road frontage requirements. The relocation of the ditch requires both sides of the watercourse to be compliant with Riparian Areas Regulations (RAR). The applicant retained Envirowest Consultants Ltd. to prepare a Riparian Area Regulation (RAR) report. The RAR report was subsequently peer reviewed by Dillon consulting. Both the RAR report and peer reviewed RAR report were found to be acceptable by the City's Environmental Manager.

Current Proposal

- The applicant proposes to subdivide into four (4) RA lots ranging in size from 0.42 ha (1.04 acres) to 0.55 ha (1.36 acres) (Appendix II). The proposed parcels all meet the minimum width, depth and area requirements of the RA zone.
- The applicant has applied for a Development Variance Permit (DVP) to vary the minimum lot size requirements of the Subdivision and Development Bylaw (No. 8830) for on-site sewage disposal systems from 0.81 ha (2 acres) to not less than 0.42 ha (1.04 acres).
- All four lots are proposed to utilize Type II septic fields with either a wetland treatment and ground discharge, or a recirculating sand filter treatment and ground discharge.
- The applicant retained MSR Solutions to provide an assessment of the impact on the groundwater and to certify that the proposed septic systems can be supported within the confines of a 1 acre parcel.

PRE-NOTIFICATION

- In accordance with Council Policy, a Development Proposal sign was placed on the property.
- In response, staff received two phone calls from area residents. One resident expressed opposition to the development and requested copies of the subdivision plans and septic system designs of prior to the application going before Council. The other area resident expressed concerns regarding the potential loss of trees on this site.
- The applicant has responded to these concerns in the following ways:
 - The applicant provided a detailed subdivision plan illustrating the site layout and proposed onsite sewage disposal system (septic fields). These plans were passed along to the inquiring resident.
 - The applicant has completed a tree survey and provided an arborist report outlining which trees will be retained in the proposed subdivision. These submissions were reviewed by staff and are summarized below. The subject site is almost entirely treed, and therefore significant tree removal will be required as part of any subdivision and redevelopment of the site.

TREES

- Norman Hol, ISA Certified Arborist of Arbortech Consulting prepared an Arborist Assessment for the subject property. The table below provides a summary of the tree retention and removal by tree species:

Table 1: Summary of Tree Preservation by Tree Species:

Tree Species	Existing	Remove	Retain
Alder and Cottonwood Trees			
Alder & Cottonwood	141	141	0
Deciduous Trees (excluding Alder and Cottonwood Trees)			
Big Leaf Maple	49	49	0
Paper Birch	5	5	0
Bitter Cherry	13	13	0
Coniferous Trees			
Grand Fir	2	1	1
Shore Pine	1	1	0
Western Hemlock	2	2	0
Western Red Cedar	192	148	44
Total (excluding Alder and Cottonwood Trees)	264	219	45
Total Replacement Trees Proposed (excluding Boulevard Street Trees)		31	

Total Retained and Replacement Trees	76
Contribution to the Green City Fund	\$75,000.00

- The Arborist Assessment states that there are a total of 264 protected trees on the site, excluding Alder and Cottonwood trees. 141 existing trees, approximately 35% of the total trees on the site, are Alder and Cottonwood trees. It was determined that 45 trees can be retained as part of this development proposal. The proposed tree retention was assessed taking into consideration the location of services, building footprints, road dedication and proposed lot grading.
- For those trees that cannot be retained, the applicant will be required to plant trees on a 1 to 1 replacement ratio for Alder and Cottonwood trees, and a 2 to 1 replacement ratio for all other trees. This will require a total of 581 replacement trees on the site. Since only 31 replacement trees can be accommodated on the site, the deficit of 550 replacement trees will require a cash-in-lieu payment of \$165,000.00 representing \$300 per tree, to the Green City Fund, in accordance with the City’s Tree Protection By-law. However, the By-law caps the Green City Fund at \$15,000 per gross acre, therefore the applicant’s contribution will be \$75,000.00.
- In summary, a total of 76 trees are proposed to be retained or replaced on the site with a contribution of \$75,000.00 to the Green City Fund.

BY-LAW VARIANCE AND JUSTIFICATION

(a) Requested Variance:

- To vary Section 24. (a) 5. of the Subdivision and Development Bylaw (No.8830) to allow lots smaller than 0.81 hectares (2 acres) to utilize septic field type sewage disposal systems.

Applicant’s Reasons:

- The current RA zoning supports the proposed subdivision layout.
- There are many other 0.4 hectare (one-acre) parcels within the vicinity of the subject site that utilize similar onsite septic field sewage disposal systems.
- The applicant retained MSR Solutions to provide an assessment of the impact on the groundwater posed by additional onsite septic systems created by the proposed development density.

- The MSR Solutions report states that concerns related to nitrate loading, and fecal coliforms can be addressed on 0.4 ha (1 acre) properties, with conventional septic tanks and disposal fields as the lowest maintenance method. The report also identified enhanced treatment technologies, such as constructed wetland systems or recirculating sand filters, and states that these technologies are capable of reducing the nitrogen by approximately 50% and fecal coliforms by approximately 95%. The report argues that these enhanced treatment technologies will fully mitigate any concerns and that the additional density proposed will result in no net increase in Nitrogen and will result in fecal coliform reduction.
- The MSR report states that there is sufficient area to provide a septic disposal field and 100% reserve, to accommodate a 6 bedroom home with 9 occupants. It is proposed that each home would be provided with either a wetland treatment and ground discharge, or a recirculating sand filter treatment and ground discharge in accordance with the above recommendations, should the ability to subdivide to one acre lots be supported.
- Lastly, the MSR report states that the nearby agricultural activities have a higher potential of environmental impact on the groundwater and nearby Twin Creek in comparison to the residential onsite systems. The report concludes that the proposed higher density development will not result in a negative impact to the receiving environment.

Staff Comments:

- Due to the context and limited future subdivision potential in the area, the variance would allow the area to further develop to a proposed lot size consistent with the surrounding rural neighborhood.
- The Subdivision and Development Procedures Bylaw (No. 8830) limits the size of lots with onsite sewerage systems to a minimum of 0.8 hectares (2 acres).
- The intent of this regulation is twofold: Firstly, it is to ensure adequate and ample space on a lot for a replacement septic system should the primary system fail. Secondly, it is to prevent the concentration of septic fields in a given area, in order to reduce the impacts of septic waste on groundwater sources.
- Staff's concerns with this variance include the potential unplanned extension of City services as result of septic failure, the cumulative effects of concentrations of septic fields, and the impacts of failing and improperly maintained septic systems on the natural environment.
- The Engineering Department, Sanitary Section, does not support the servicing of the proposed lots via onsite septic systems as they do not meet the minimum parcel size for septic systems. The Engineering Department is prepared to consider a variance to allow a 3 -lot subdivision rather than a 4 -lot subdivision proposed by the applicant.
- Staff reviewed the MSR Solutions report provided by the applicant, which assessed the impact on the groundwater by additional onsite septic systems created by the proposed development, and provided the following comments:

- For the proposed treatment system to remove all nitrates, it will require maintenance. If the system is not properly maintained, it will not function in the way in which it is intended.
- The high count of coliform downstream that exists presently is an indication of failing on-site septic field systems. Adding a wetland area to the treatment system will increase the likelihood of more failures.
- Finally, there are downstream dwellings that are on well water supply. Appendix IV is a map showing the downstream dwellings that are on well water supply, which would be impacted should upstream septic fields begin to fail.
- There are no regulatory bodies, whether Federal, Provincial, or local, that monitor the cumulative effect of nitrates on the groundwater system. Staff are specifically concerned that the loading of nitrates into groundwater systems may have negative effects on the quality of groundwater in parts of the City and neighbouring jurisdictions.
- The human health hazards associated with increased levels of nitrates in drinking water sources are severe. Research has demonstrated that in order to maintain nitrates to levels within current drinking water standards, a lot size of two acres or larger is generally required.
- Staff have concerns over the maintenance of privately owned on-site septic disposal systems. Regardless of whether the soil on the subject site can support a septic field disposal system, or whether there is adequate room for a replacement system, there is no regulatory body that monitors or enforces regular maintenance of privately owned septic systems on private property.
- In addition to the issues with nitrates, failing and improperly maintained septic systems release fecal coliforms into groundwater and surface water sources, potentially further contaminating aquatic habitat and drinking water sources. Testing conducted as part of the Boundary Bay Monitoring Program (BBAMP), a joint initiative between the City of Surrey, Metro Vancouver and the Washington State Department of Ecology, have identified human fecal matter in the Little Campbell River watershed and its tributaries. The exact sources of fecal matter have not been identified, however it is suspected that failing and poorly maintained septic fields are the source.

INFORMATION ATTACHED TO THIS REPORT

The following information is attached to this Report:

- Appendix I. Lot Owners, Action Summary and Project Data Sheets
- Appendix II. Proposed Subdivision Layout
- Appendix III. Engineering Summary
- Appendix IV. Map of Downstream Dwellings on Well Water
- Appendix V. Summary of Tree Survey and Tree Preservation
- Appendix VI. Development Variance Permit No. 7915-0069-00

original signed by Ron Hintsche

Jean Lamontagne
General Manager
Planning and Development

RJG/ar

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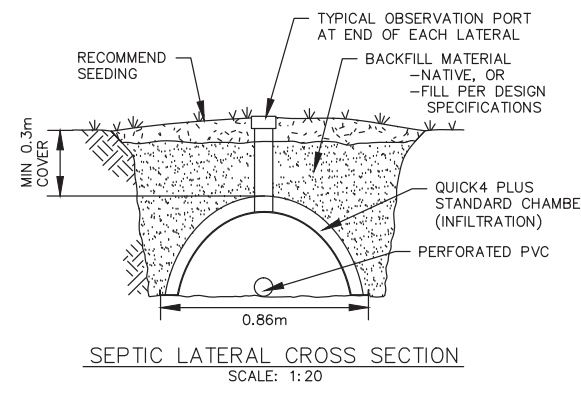
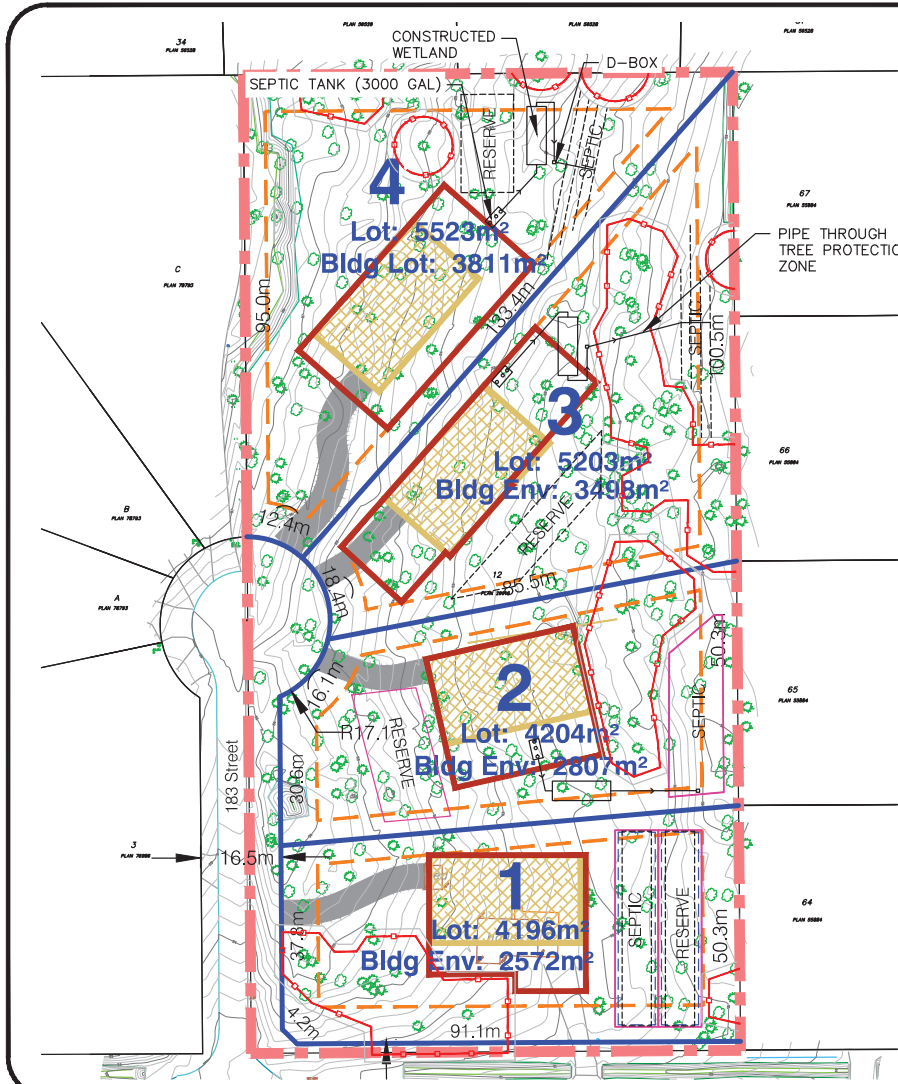
SUBDIVISION DATA SHEET

Existing Zoning: RA

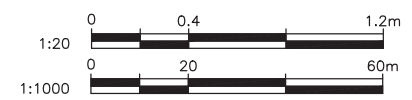
Requires Project Data	Proposed
GROSS SITE AREA	
Acres	5.0 acres
Hectares	2.0 hectares
NUMBER OF LOTS	
Existing	1
Proposed	4
SIZE OF LOTS	
Range of lot widths (metres)	50.3 m – 100.6 m
Range of lot areas (square metres)	4196 m ² – 5523 m ²
DENSITY	
Lots/Hectare & Lots/Acre (Gross)	2.0 u.p.h. / 0.8 u.p.a.
Lots/Hectare & Lots/Acre (Net)	2.1 u.p.h. / 0.83 u.p.a.
SITE COVERAGE (in % of gross site area)	
Maximum Coverage of Principal & Accessory Building	20%
Estimated Road, Lane & Driveway Coverage	5%
Total Site Coverage	25%
PARKLAND	
Area (square metres)	
% of Gross Site	
	Required
PARKLAND	
5% money in lieu	YES
TREE SURVEY/ASSESSMENT	
	YES
MODEL BUILDING SCHEME	
	YES
HERITAGE SITE Retention	
	NO
FRASER HEALTH Approval	
	NO
DEV. VARIANCE PERMIT required	
Road Length/Standards	NO
Works and Services	NO
Building Retention	NO
Others: Subdivision and Development Bylaw (No.8830) to reduce minimum lot size to permit on-site septic field type sewage disposal systems.	YES

SCS Consulting
Residential Development Plan
18319 - 20th Avenue, Surrey

**CONCEPT with Type 2
Natural Treatment System
No Mechanical Components**



- Building envelope
- 20% maximum lot coverage allowed
- 6 bedroom Bungalow Footprint - 558 m² / 6006 ft²
- Septic field sized based on Vancouver Health Type 1 for 3 Bedroom
- Septic field sized based on SPM Type 1 for 6 Bedroom
- Septic field sized based on SPM Type 2 for 6 Bedroom
- For clarity not all options are shown on each property. Lot 1 shows all options
- Tree Protection Zone
- Site Boundary



LEGAL DESCRIPTION PID 009-142-304 Lot 12, Section 17, Township 7, Plan 29916, New Westminster District	GROSS SITE AREA 2.0 hectares / 5.0 acres (approx.) NET SITE AREA 1.9 hectares / 4.7 acres (approx.) (excludes 1103.9m ² road right-of-way dedication for 183 Street & 20 Avenue)	EXISTING DESIGNATIONS Zoning: RA NCP: not in NCP OCP: Rural PROPOSED DESIGNATIONS Zoning: RA NCP: not in NCP OCP: Rural	LOT YIELD Existing Number of Lots: 1 Proposed Number of Lots: 4
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NOTE: Conceptual layout only, subject to change without notice. Property of Aplin & Martin Consultants Ltd. and not to be reproduced or used without written permission by the Company.



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TO: **Manager, Area Planning & Development
- South Surrey Division
Planning and Development Department**

FROM: **Development Services Manager, Engineering Department**

DATE: November 10, 2015

PROJECT FILE: **7815-0069-00**

REVISED: **January 27, 2016**

RE: **Engineering Requirements
Location: 18319 20 Ave**

SUBDIVISION

Property and Right-of-Way Requirements

- dedicate 6.50 m for ultimate 16.50 m road allowance with 14.00 m radius cul-de-sac bulb;
- dedicate 1.942 m for ultimate 24.00 m road allowance; and
- dedicate a 3 m x 3 m corner cut at 183 St/20 Ave intersection.

Works and Services

- construct east side of 183 Street to unique standard with 7.3 m ultimate pavement and rollover curb & gutter;
- construct north side of 20 Avenue to 8.50 m ultimate pavement (4.25 m from centreline) and rollover curb & gutter;
- construct storm and metered water service connections to each lot; and
- provide sanitary servicing for each lot.

A Servicing Agreement is required prior to Subdivision.

DEVELOPMENT VARIANCE PERMIT

The Engineering Department does not support the varying of the Subdivision and Development Bylaw's on-site sewage disposal requirement in order to permit a 4 lot subdivision. Compliance with the Bylaw would permit a 2 lot subdivision. The Engineering Department is prepared, subject to detailed design that minimizes the impacts of on-site sewage disposal, to support a variance to permit a 3 lot subdivision.

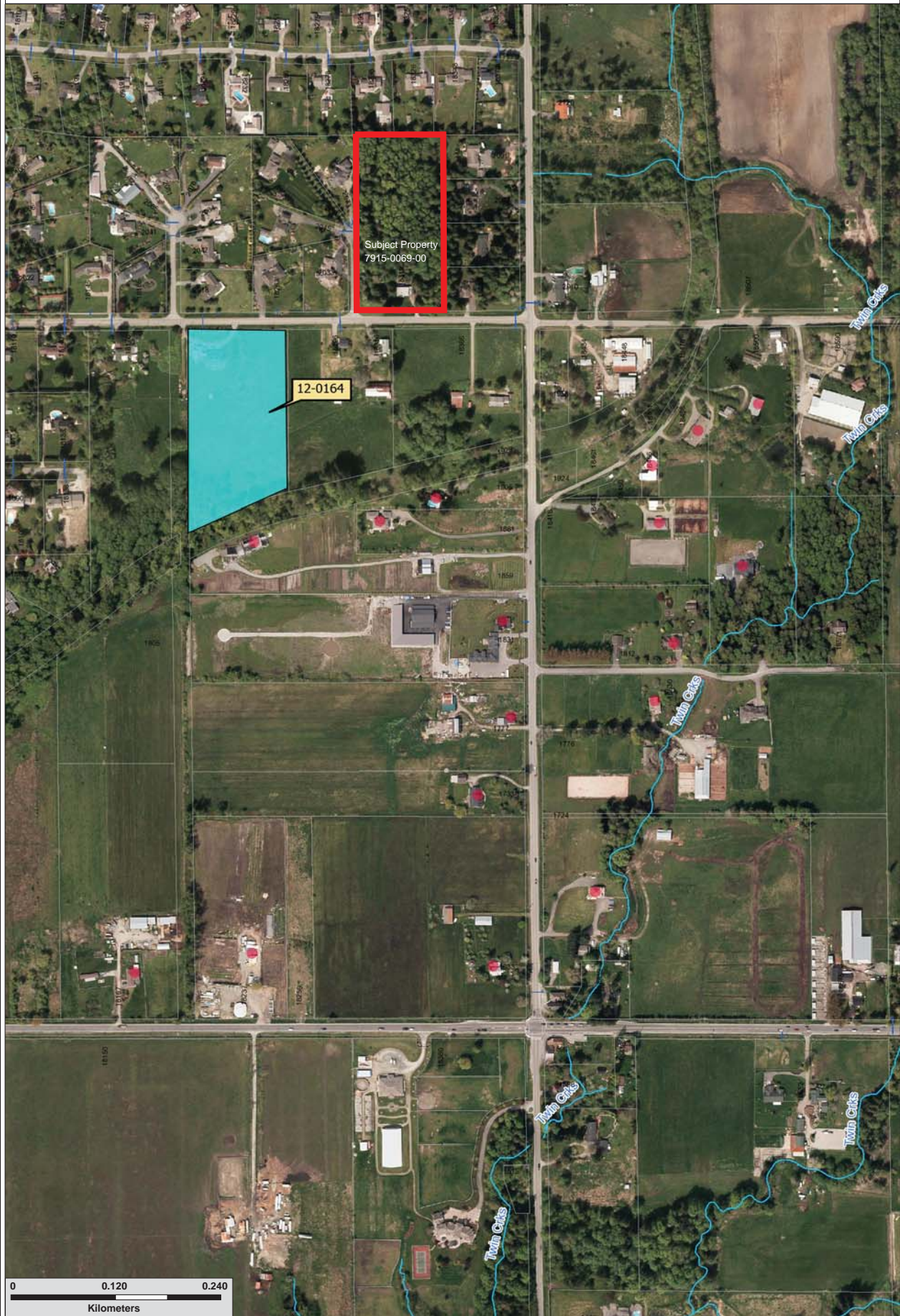


Robert Cooke, Eng.L.
Development Project Engineer

MS



Appendix 1 - Proposed Development 12-0164 in relation with the downstream farmhouses on well water



The data provided is compiled from various sources and is NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office. Use and distribution of this map is subject to all copyright and disclaimer notices at cosmos.surrey.ca.

Enter Map Description

 Scale: 1:4,000
Map created on: July-16-12



a division of:

ACL GROUP

ARBORTECH CONSULTING

Appendix _____

TREE PRESERVATION SUMMARY

Surrey Project No.: _____

Project Address: 18319 20 Ave Surrey, BC

Consulting Arborist: Norman Hol

ON-SITE TREES:	QUANTITY OF TREES
Total Bylaw Protected Trees Identified (on-site and shared trees, including trees within boulevards and proposed streets and lanes, excluding Park and ESA dedications)	405
Bylaw Protected Trees to be Removed	361
Bylaw Protected Trees to be Retained (excludes trees in Park dedication areas and ESA's)	44
Replacement Trees Required:	
Alder and Cottonwood at 1:1 ratio: 141 times 1 = 141	
All Other Bylaw Protected Trees at 2:1 ratio: 220 times 2 = 440	
TOTAL:	581
Replacement Trees Proposed	31
Replacement Trees in Deficit	550
Protected Trees Retained in Proposed Open Space/ Riparian Areas	0

OFF-SITE TREES:	QUANTITY OF TREES
Bylaw Protected Off-Site Trees to be Removed	0
Replacement Trees Required:	
Alder and Cottonwood at 1:1 ratio: 0 times 1 = 0	
All Other Bylaw Protected Trees at 2:1 ratio: 0 times 2 = 0	
TOTAL:	0
Replacement Trees Proposed	0
Replacement Trees in Deficit	0

This summary and the referenced documents are prepared and submitted by:

Norman Hol, Consulting Arborist

Dated: July 28, 2015

Direct: 604 813 9194

Email: norm@aclgroup.ca

CITY OF SURREY

(the "City")

DEVELOPMENT VARIANCE PERMIT

NO.: 7915-0069-00

Issued To: Gordon C Hamilton

("the Owner")

Address of Owner: 460-19567 FRASER HWY
SURREY BC V3S 9A4

1. This development variance permit is issued subject to compliance by the Owner with all statutes, by-laws, orders, regulations or agreements, except as specifically varied by this development variance permit.

2. This development variance permit applies to that real property including land with or without improvements located within the City of Surrey, with the legal description and civic address as follows:

Parcel Identifier: 009-142-304
LT 12 LS 9 SEC 17 T7 PL 29916
18319 20 Ave

(the "Land")

3. Surrey Subdivision and Development By-law, 1986, No. 8830, as amended is varied as follows:

(a) In Section 24 (a) 5. is varied to allow a reduction in the minimum lot size required for on-site sewage disposal systems from 0.81 ha (2 acres) to a size in compliance with the subdivision layout shown in Schedule A.

4. This development variance permit applies to only that portion of the buildings and structures on the Land shown on Schedule A which is attached hereto and forms part of this development variance permit. This development variance permit does not apply to additions to, or replacement of, any of the existing buildings shown on attached Schedule A, which is attached hereto and forms part of this development variance permit.

5. The Land shall be developed strictly in accordance with the terms and conditions and provisions of this development variance permit.

9. This development variance permit shall lapse if the Owner does not substantially start any construction with respect to which this development variance permit is issued, within two (2) years after the date this development variance permit is issued.

11. This development variance permit is not a building permit.

AUTHORIZING RESOLUTION PASSED BY THE COUNCIL, THE DAY OF , 20 .
ISSUED THIS DAY OF , 20 .

Mayor – Linda Hepner

City Clerk – Jane Sullivan