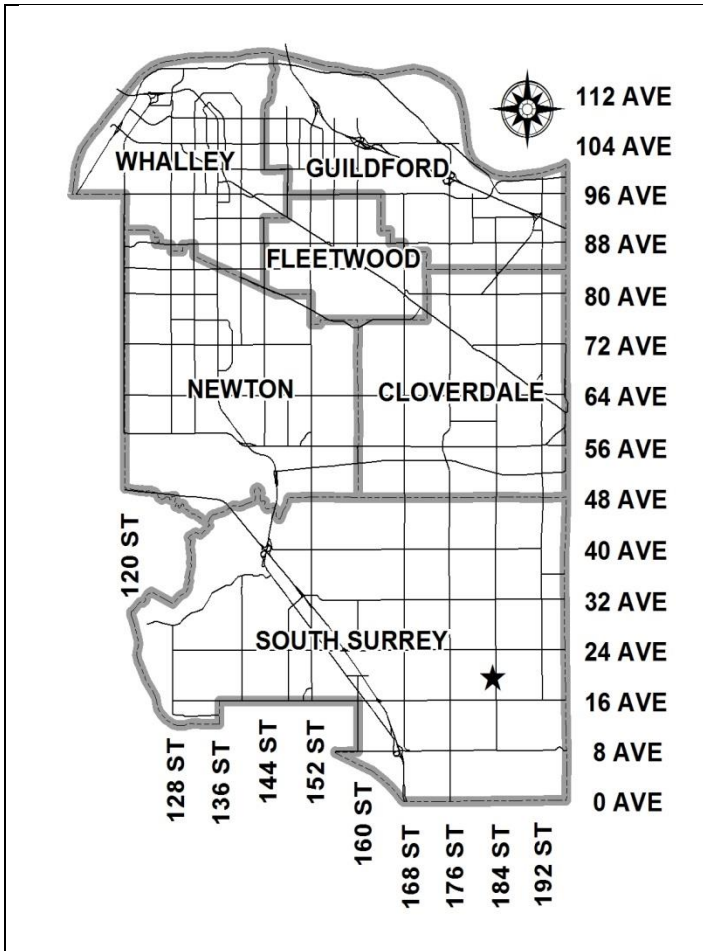


City of Surrey
PLANNING & DEVELOPMENT REPORT

File: 7915-0240-00

Planning Report Date: February 1, 2016



PROPOSAL:

- **Development Variance Permit**

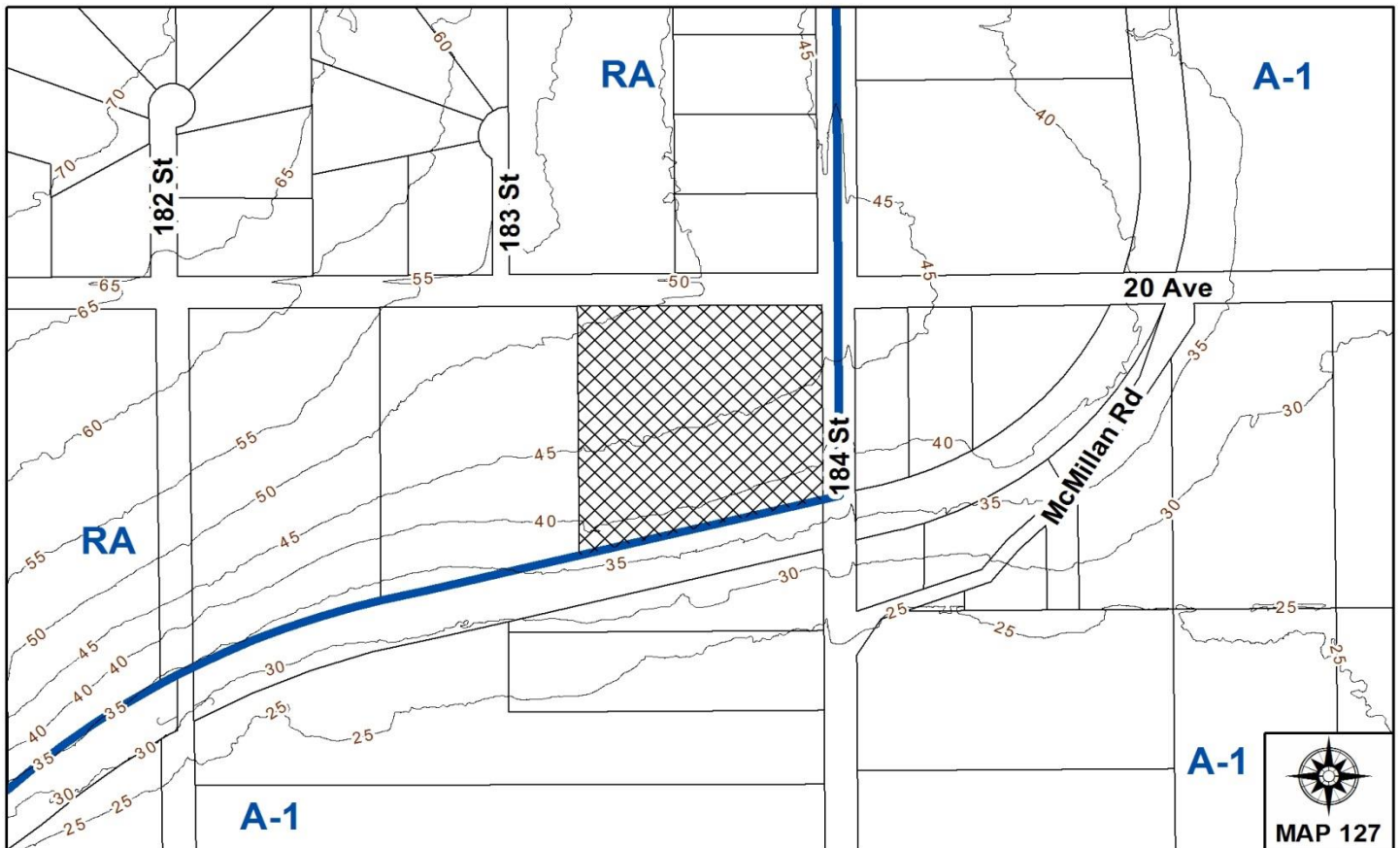
to vary the Subdivision and Development By-law to allow on-site sewage disposal systems on lots smaller than 0.81 ha (2 acres) in order to allow subdivision of the site.

LOCATION: 18386 - 20 Avenue

OWNER: Cindi K Kukler
 Leah J Gabriel

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, 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. 7915-0240-00 (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.

Agricultural and Food Security Advisory Committee (AFSAC): At their January 14, 2016 meeting, AFSAC recommended that Application No. 7915-0240-00 not be supported.

SITE CHARACTERISTICS

Existing Land Use: One Single Family Residential Dwelling.

Adjacent Area:

Direction	Existing Use	OCP Designation	Existing Zone
North (Across 20 Avenue):	Single family residential.	Rural	RA
East (Across 184 Street):	Single family residential.	Agricultural	A-1 (ALR)
South:	Vacant land, City-owned (Douglas Greenway).	Rural	A-1
South (Across Greenway)	Agricultural.	Agricultural	A-1 (ALR)
West:	Single family residential.	Rural	RA

DEVELOPMENT CONSIDERATIONS

Background

- The subject site is a 2.1 hectare (5.14 acre) parcel located on the south 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.
- To the immediate south of the property is a City owned Greenbelt, intended for a multi-use pathway approximately 30 metres (100 ft.) wide. There is a known barn owl nest (BNOW017) located in the southeast quadrant of the site.
- The subject property is identified as within a Hazard Land Development Permit (DP) area in the OCP due to portions of the site exceeding a 15% slope. The site is also subject to a Development Permit (DP) for Farming Protection because it is located within 30 m (100 ft.) of the Agricultural Land Reserve boundary on both the southern and eastern boundaries.
- 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.
- 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.

Current Proposal

- The applicant proposes to subdivide into four (4) RA lots ranging in size from 0.42 ha (1.05 acres) and 0.44 ha (1.10 acres), and to create a Park lot. 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 (1.05 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.

- The site is subject to a Development Permit for Hazard Lands in the OCP, given there are existing slopes on the property in excess of 15% grade. The applicant is required to submit a Development Feasibility Study including a comprehensive geotechnical report providing soil stability analysis in relation to the slope and its ability to accommodate development.
- The site is also subject to a Development Permit (DP) for Farm Protection, given its proximity to the ALR boundary. The DP guidelines in the OCP prescribe a minimum building setback of 30 m (100 ft.) from the ALR boundary. Based on the size and configuration of proposed Lots 2, 3 and 4, it appears that the minimum building setbacks can be achieved in accordance with the DP requirements. However, the issuance of the Farm Protection DP will be in conjunction with the Hazardous Lands DP.
- The required Development Permits will be reviewed in further detail once the number of proposed lots is resolved. The applicant is aware of the DP requirements, and understands that prior to final subdivision approval, the DP requirements must be met and the DP issued.
- On January 14, 2016, the project was reviewed by AFSAC, who did not support the subdivision as proposed.

PRE-NOTIFICATION

- In accordance with Council Policy, a Development Proposal sign was erected on the property on November 25, 2015. Staff did not receive any responses from the public notification.

TREES

- Nick McMahon, 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	36	36	0
Deciduous Trees (excluding Alder and Cottonwood Trees)			
Bigleaf Maple	3	3	0
Norway Maple	1	1	0
Paper Birch	3	3	0
Flowering Cherry	1	1	0
Coniferous Trees			
Deodar Cedar	2	0	2
Norway Spruce	1	0	1
Douglas Fir	2	0	2
Western Red Cedar	2	2	0
Total (excluding Alder and Cottonwood Trees)	15	10	5
Total Replacement Trees Proposed (excluding Boulevard Street Trees)		24	
Total Retained and Replacement Trees		29	
Contribution to the Green City Fund		\$9,600.00	

- The Arborist Assessment states that there are a total of 15 protected trees on the site, excluding Alder and Cottonwood trees. 36 existing trees, approximately 70% of the total trees on the site, are Alder and Cottonwood trees. It was determined that 5 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 56 replacement trees on the site. Since only 24 replacement trees can be accommodated on the site, the deficit of 32 replacement trees will require a cash-in-lieu payment of \$9,600.00 representing \$300 per tree, to the Green City Fund, in accordance with the City’s Tree Protection By-law.
- In summary, a total of 29 trees are proposed to be retained or replaced on the site with a contribution of \$9,600.00 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. 7915-0240-00

original signed by Ron Hintsche

Jean Lamontagne
General Manager
Planning and Development

RJG/ar

Information for City Clerk

Legal Description and Owners of all lots that form part of the application:

1. (a) Agent: Name: Maggie Koka
 Aplin & Martin Consultants Ltd.
 Address: 13450 - 102 Avenue, Unit 1680
 Surrey, BC V3T 5X3

 Tel: 604-639-3456 - Primary
 604-639-3456 - Fax

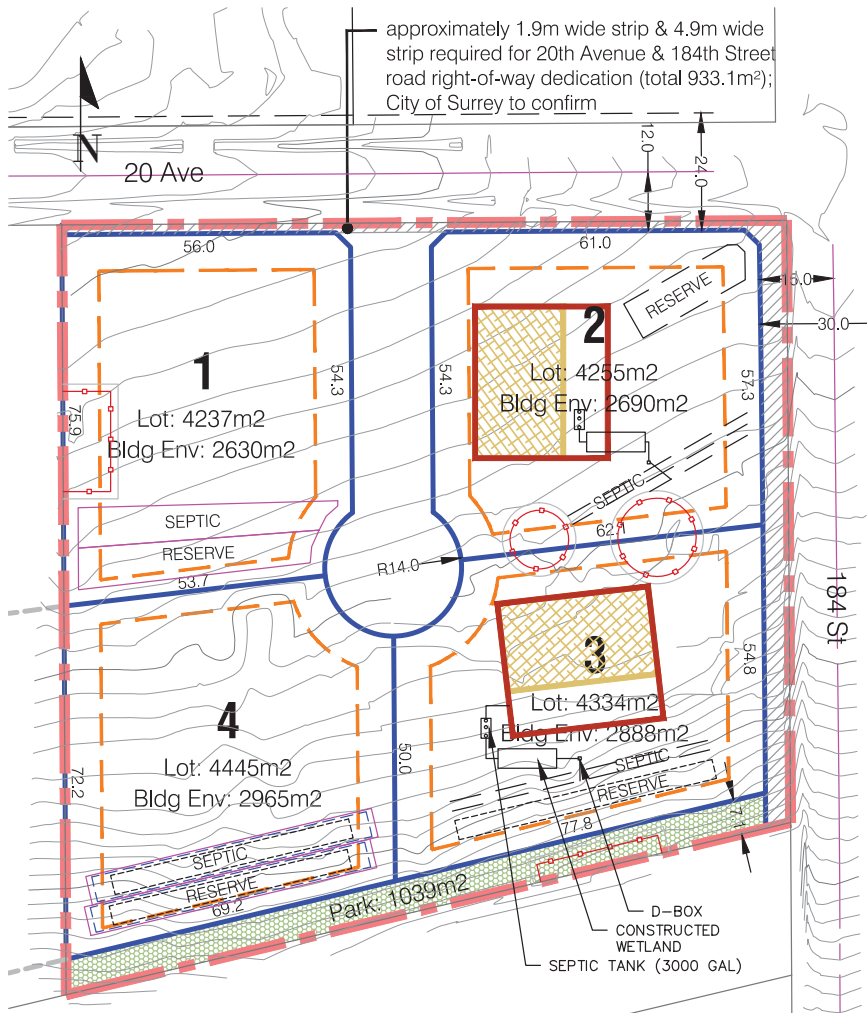
2. Properties involved in the Application
 - (a) Civic Address: 18386 - 20 Avenue

 - (b) Civic Address: 18386 - 20 Avenue
 Owner: Cindi K Kukler
 Leah J Gabriel
 PID: 000-525-685
 Lot 8 Section 17 Township 7 Plan 1719 NWD

3. Summary of Actions for City Clerk's Office
 - (a) If supported by Council, withhold Public Notification for Development Variance Permit No. 7915-0240-00 until Schedule A is provided by Staff, and bring the Development Variance Permit forward for issuance and execution by the Mayor and City Clerk.

SUBDIVISION DATA SHEET

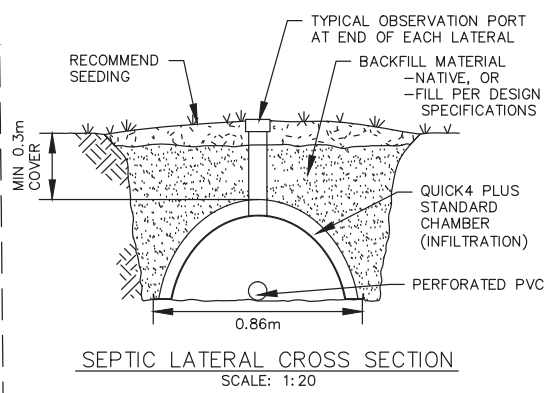
Requires Project Data	Existing Zoning: RA Proposed
GROSS SITE AREA	
Acres	5.14 acres
Hectares	2.1 hectares
NUMBER OF LOTS	
Existing	1
Proposed	4
SIZE OF LOTS	
Range of lot widths (metres)	56.0 m to 69.2
Range of lot areas (square metres)	4237 m ² to 4445 m ²
DENSITY	
Lots/Hectare & Lots/Acre (Gross)	1.90 u.p.h. / 0.78 u.p.a.
Lots/Hectare & Lots/Acre (Net)	2.22 u.p.h. / 0.91 u.p.a.
SITE COVERAGE (in % of gross site area)	
Maximum Coverage of Principal & Accessory Building	20%
Estimated Road, Lane & Driveway Coverage	7.4 %
Total Site Coverage	27.4 %
PARKLAND	
Area (square metres)	1,039 m ²
% of Gross Site	5%
Required	
PARKLAND	
5% money in lieu	NO
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



approximately 1.9m wide strip & 4.9m wide strip required for 20th Avenue & 184th Street road right-of-way dedication (total 933.1m²); City of Surrey to confirm

SCS Consulting
Residential Development Plan
18386 - 20th Avenue, Surrey

CONCEPT with Type 2 Natural Treatment System No Mechanical Components

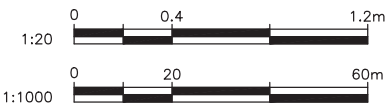


- Building envelope
- 20% maximum lot coverage allowed
- 6 bedroom Bungalow Footprint - 558 m² / 6006 ft²
- Septic field sized based on Vancouver Health Type 1 for 3 Bedroom
- Septic field sized based on SPM Type 1 for 6 Bedroom
- Septic field sized based on SPM Type 2 for 6 Bedroom

Variance to the Subdivision Development Bylaw required to permit alternate sewage disposal system on lots smaller than 0.81 hectares (2 acres)

Farm Protection Development Permit required because of close location to the Agricultural Land Reserve

For clarity not all options are shown on each property. Lot 4 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
2.1 hectares / 5.1 acres (approx.)
NET SITE AREA
1.8 hectares / 4.4 acres (approx.)
(excludes 1539.6m² road right-of-way dedication for new road & 933.0m² for 20th Ave/184 St road right-of-way dedication)

EXISTING DESIGNATIONS
Zoning: RA
OCP: Rural

PROPOSED DESIGNATIONS
Zoning: RA
OCP: Rural

LOT YIELD
Existing Number of Lots: 1
Proposed Number of Lots: 4

REV	DATE	AUTHOR



MSR SOLUTIONS INC.
ENGINEERING DESIGN SOLUTIONS.
201 - 4475 VIEWMONT AVENUE
VICTORIA BC, V8Z 5K8
OFFICE - 250.479.5164
info@msrsolutions.ca
www.msrsolutions.ca

Project 14-278
11 August 2015

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.

FILE COPY

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

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

DATE: **January 27, 2016** PROJECT FILE: **7815-0240-00**

RE: **Engineering Requirements
Location: 18386 20 Avenue**

SUBDIVISION

Property and Right-of-Way Requirements

- Dedicate 1.942 m on 20 Avenue for ultimate 24.0 m wide Collector Road standard.
- Dedicate 5.0 m x 5.0 m corner cut at intersection of 20 Avenue and 184 Street.
- Dedicate 4.942 m on 184 Street for ultimate 30.0 m wide Arterial Road standard.
- Dedicate 15.5 m for 183A Street for ultimate 15.5 m Local Road standard with 14.0 m radius cul-de-sac bulb, including 3.0 m x 3.0 m corner cuts at 183A Street and 20 Avenue.
- Register 0.5 m wide SRW along 20 Avenue, 184 Street and 183A Street, if required.

Works and Services

- Construct south side of 20 Avenue to a modified Collector Road standard with 8.5 m wide pavement, rollover curb and gutter.
- Construct 183A Street to Local Road standard with 6.6 m wide pavement, rollover curb & gutter.
- Construct drainage system for the proposed development.
- Provide onsite sustainable drainage works to mitigate changes to impervious area.
- Construct storm and water mains to service the development.
- Provide sanitary servicing to each lot.

A Servicing Agreement is required prior to Subdivision.

DEVELOPMENT PERMIT (DP)/DEVELOPMENT VARIANCE PERMIT (DVP)

There are no engineering requirements relative to issuance of the DP.

The following issues are to be addressed as a condition of issuance of the DVP:

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.



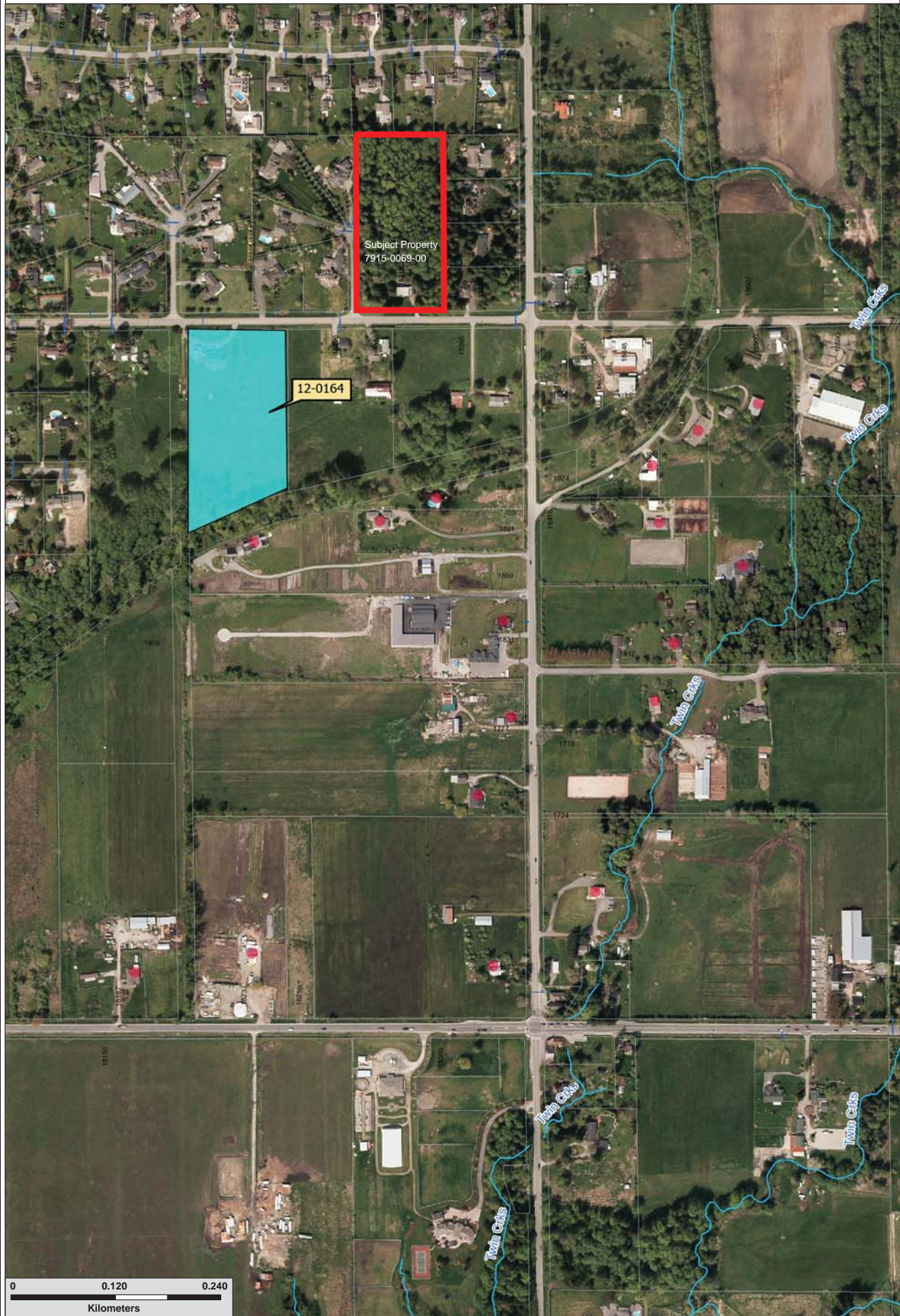
Robert Cooke, Eng.L.
Development Project Engineer

IK1

NOTE: Detailed Land Development Engineering Review available on file



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

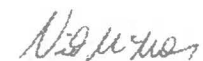
TREE PRESERVATION SUMMARY

Surrey Project No.: _____
 Project Address: 18386 20th Avenue, Surrey, BC
 Consulting Arborist: Nick McMahon

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)	51
Bylaw Protected Trees to be Removed	46
Bylaw Protected Trees to be Retained (excludes trees in Park dedication areas and ESA's)	5
Replacement Trees Required:	
Alder and Cottonwood at 1:1 ratio: 36 times 1 = 36	
All Other Bylaw Protected Trees at 2:1 ratio: 10 times 2 = 20	
TOTAL:	56
Replacement Trees Proposed	24
Replacement Trees in Deficit	32
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:



Nick McMahon, Consulting Arborist

Dated: September 11, 2015

Direct: 604 812 2986
 Email: nick@aclgroup.ca

CITY OF SURREY

(the "City")

DEVELOPMENT VARIANCE PERMIT

NO.: 7915-0240-00

Issued To: Cindi K Kukler
("the Owner")

Address of Owner: 4305-3842 OLD OKANAGAN HWY
WEST KELOWNA BC V4T 3G7

Issued To: Leah J Gabriel
("the Owner")

Address of Owner: 1-1010 PEMBROKE Street
VICTORIA BC V8T 1J2

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: 000-525-685
BK 8 E1/2 SE SEC 17 T7 PL 1719 5.18AC
18386 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