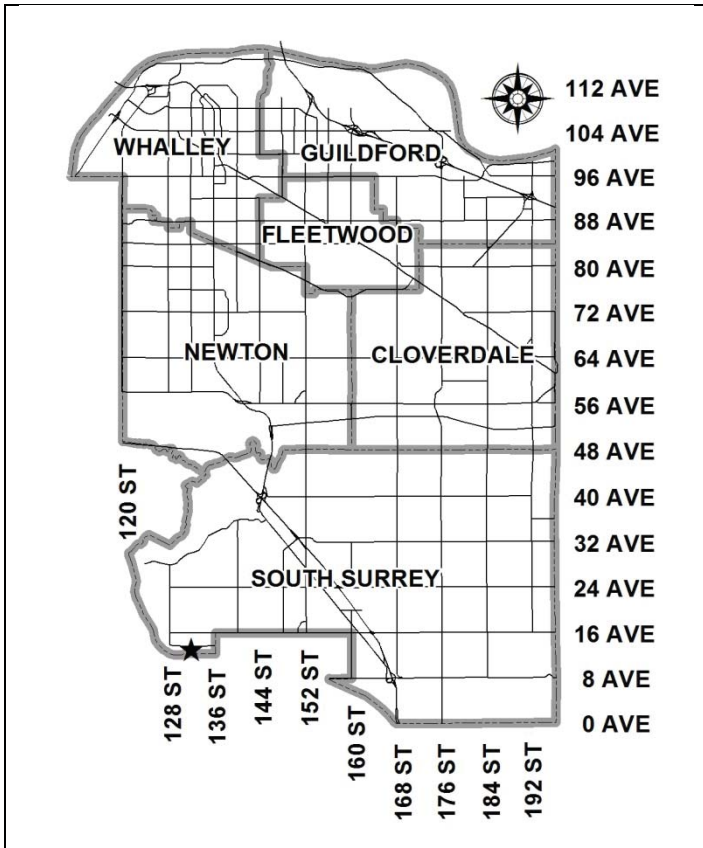


City of Surrey
PLANNING & DEVELOPMENT REPORT

File: 7915-0104-00

Planning Report Date: June 26, 2017



PROPOSAL:

- Development Permit
- Development Variance Permit

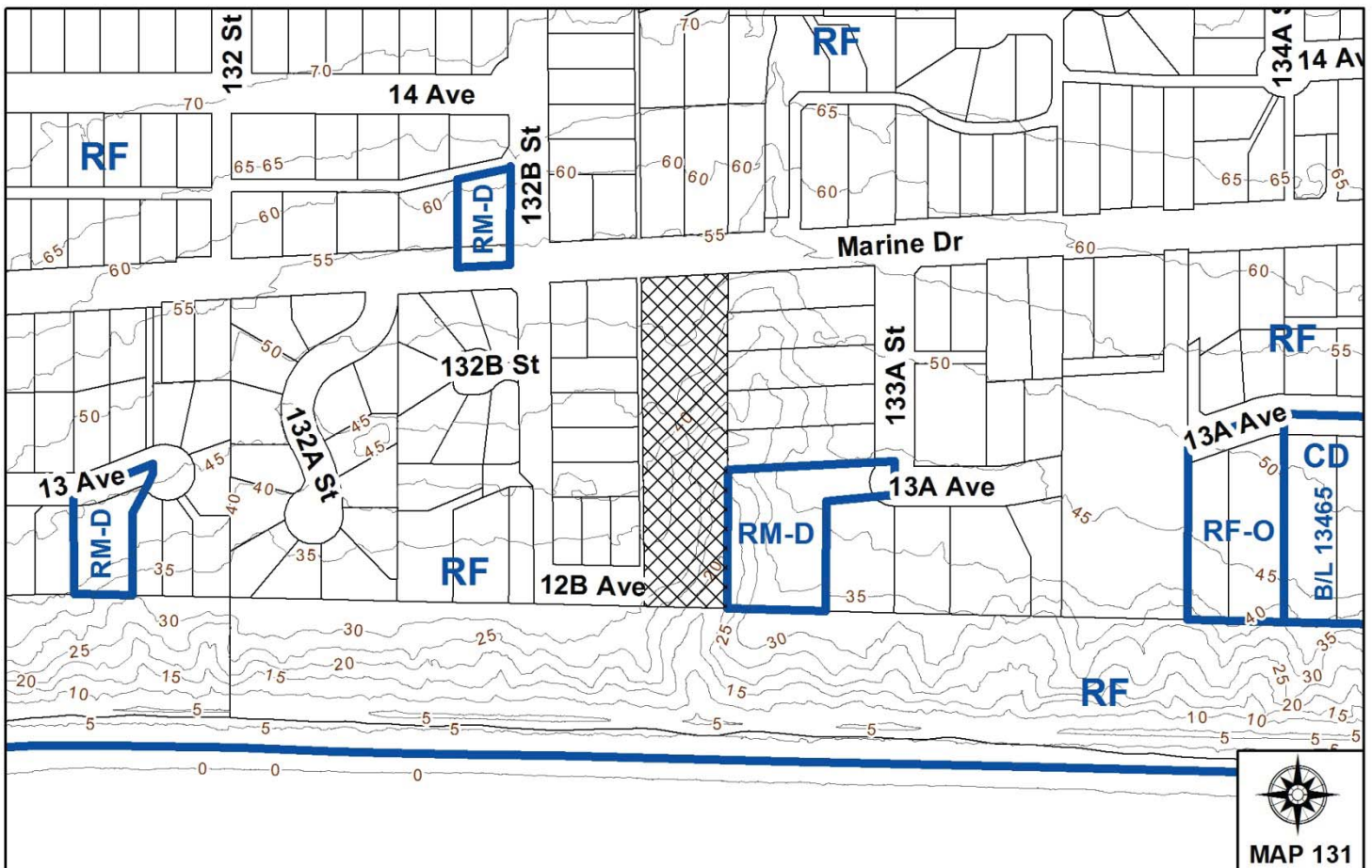
To reduce the minimum streamside setback in order to facilitate subdivision into 2 single family lots.

LOCATION: 13310 - Marine Drive

OWNER: Dirk C De Vuyst
 Flavianne S Sorensen

ZONING: RF

OCP DESIGNATION: Urban



RECOMMENDATION SUMMARY

- Approval to draft Development Permit.
- Approval for Development Variance Permit to proceed to Public Notification.

DEVIATION FROM PLANS, POLICIES OR REGULATIONS

- Seeking a variance to reduce the minimum distance (setback) from top-of-bank for a "Natural Class B Stream" in Part 7A of the Zoning By-law.

RATIONALE OF RECOMMENDATION

- On September 12, 2016, Council gave Final Adoption to Text Amendment By-law No. 18809, which incorporates streamside protection regulations as Part 7A in the Zoning By-law and establishes a minimum 15 metre (50 ft.) setback from top of bank for "Natural Class B Streams".
- The development application was in process prior to the adoption of Part 7A Streamside Protection in the Zoning By-law.
- The proposed development is not in compliance with the Streamside Setback Area requirements of the Zoning By-law, and a Development Variance Permit is required to allow the development application to proceed as proposed.
- The applicant's Qualified Environmental Professional (QEP) has submitted an Ecosystem Development Plan and Impact Mitigation Plan that support the proposed variance and Sensitive Ecosystems Development Permit, and states that the proposed subdivision, even with the reduced streamside setback, will not negatively impact the watercourse or riparian area.
- The proposed development will protect approximately 2,140 square meters (0.53 acres) of the riparian area on the subject site through registering a Restrictive Covenant and Statutory Right of Way. The Statutory Right of Way will also allow the City access to the property for monitoring and maintenance of the existing drainage works that are installed on Knudson Creek.
- In support of the Hazard Lands Development Permit, the applicant has submitted a geotechnical report, which was independently peer reviewed, and accepted by the peer reviewer. The report confirms that the site is considered safe for its intended use, and that the slope meets the accepted requirements for development under both static and seismic conditions, subject to implementation of the recommendations included in the report.

RECOMMENDATION

The Planning & Development Department recommends that:

1. Council approve Development Variance Permit No. 7915-0104-00 (Appendix VIII) to reduce the minimum setback distance from the top-of-bank for a "Natural Class B Stream" in Part 7A of Zoning By-law No. 12000, from 15 metres (50 feet), measured from the top of bank, to 15 metres (50 feet), measured from the high water mark, to proceed to Public Notification.
2. Council authorize staff to draft Development Permit No. 7915-0104-00 for Hazard Lands and Sensitive Ecosystems, generally in accordance with the geotechnical report prepared by GeoPacific Consultants Ltd., and the RAR Assessment Report, Sensitive Ecosystems Development Plan and the Impact Mitigation Plan prepared by Keystone Environmental Ltd.
3. Council instruct staff to resolve the following issues prior to Development Variance Permit issuance:
 - (a) ensure that all engineering requirements and issues including restrictive covenants, dedications, and rights-of-way where necessary, are addressed to the satisfaction of the General Manager, Engineering;
 - (b) submission of a subdivision layout to the satisfaction of the Approving Officer;
 - (c) submission of a finalized tree survey and a statement regarding tree preservation to the satisfaction of the City Landscape Architect;
 - (d) the applicant satisfy the deficiency in tree replacement on the site, to the satisfaction of the Planning and Development Department;
 - (e) registration of a Section 219 Restrictive Covenant to ensure future construction is in accordance with the recommendations in the approved geotechnical report;
 - (f) registration of a Restrictive Covenant and statutory right-of-way on a portion of proposed Lot 2 for the protection, maintenance, monitoring, and access to the riparian area; and
 - (g) approval and issuance of a Development Permit for Hazard Lands and Sensitive Ecosystems.

REFERRALS

Engineering:

The Engineering Department has no objection to the project subject to the completion of Engineering servicing requirements as outlined in Appendix IV.

School District: Projected number of students from this development:

1 Elementary students at Ray Shepherd Elementary School
 0 Secondary students at Elgin Park Secondary School

(Appendix V)

The applicant has advised that the dwelling unit in this project is expected to be constructed and ready for occupancy by Fall 2018.

Parks, Recreation & Culture:

Parks Department’s preference is for the watercourse and riparian area to be conveyed to the City. If these lands are not conveyed, Parks will support the registration of a Restrictive Covenant and Statutory Right of Way over these areas.

SITE CHARACTERISTICS

Existing Land Use: One single family dwelling to be retained.

Adjacent Area:

Direction	Existing Use	OCP Designation	Existing Zone
North (Marine Drive):	Single family dwellings	Urban	RF
East	Single family and duplex dwellings	Urban	RF and RM-D
South	Burlington Northern Railway	Urban	RF
West	Single family dwellings	Urban	RF

DEVELOPMENT CONSIDERATIONS

Background

- The subject property located at 13310 - Marine Drive is approximately 0.71 hectares (1.76 acres) in area and currently occupied by a single family dwelling. The existing home is located in the north portion of the subject property, and has driveway access off Marine Drive.
- The site is designated "Urban" in the Official Community Plan (OCP) and zoned "Single Family Residential Zone" (RF).
- A portion of Knudson Creek runs north to south through the southeastern portion of the subject property. The City’s watercourse mapping classifies the creek as a Class B watercourse (permanent, non-fish bearing).

- The site is also located adjacent to a Green Infrastructure Network (GIN) Corridor and within the Green Infrastructure 50-metre buffer area along the southern portion of the property.
- From July, 1999 to November, 1999, the City of Surrey completed reconstruction of a portion of Knudson Creek located on the subject property, under the Master Services agreement M.S. 4899-002-01. The work addressed bank instabilities and repaired areas of high erosion. The City constructed a high flow diversion pipe along the existing creek alignment, and reconstructed the creek over the pipe. Base storm flows are now directed to Knudsen Creek with high flows directed to the diversion pipe. Fish ladders were also constructed on BNSF lands to enable possible fish passage and to step down the creek through an area which was previously acting like a waterfall.
- At the completion of the project, the City replanted the area to meet Department of Fisheries and Oceans requirements, including the areas used for materials and equipment access down to the ravine.
- City staff reports that this area has experienced some localized stability issues due to high groundwater emergence, vegetation management by residents, and the overall steep embankments that exist in the area. Every 2-3 years the City retains a consultant to inspect all creek systems, looking for signs of instabilities and tracking their progression.

Current Proposal

- The applicant proposes to subdivide the subject property to create one additional RF-zoned lot and to retain the existing house on proposed Lot 1 located on the northern portion of the property (Appendix II). Proposed Lot 2 is located at the southwest portion of the subject property, and will have access from 12 B Avenue.
- The property is located in a Development Permit Area for Hazard Lands (Steep Slopes) and Sensitive Ecosystems (Streamside Protection and Green Infrastructure Network), and therefore will require a Development Permit.
- The proposed development is not in compliance with the Streamside Setback Area requirements of the Zoning By-law, and a Development Variance Permit is required to allow the development application to proceed as proposed.
- The applicant proposes to reduce the streamside setback under the Streamside Protection section of the Zoning By-law from 15 metres (50 ft.), measured from the top of bank, to a minimum of 15 metres (50 ft.), measured from the high water mark.
- The applicant proposes to measure the 15 metre (50 ft.) streamside setback from the high water mark of the watercourse, based on the methodology used under the Provincial Riparian Area Regulations (RAR). Under the Zoning By-law the streamside setback is measured from the top of bank. On this site there is a significant distance between the high water mark and the top of bank. Effectively, the Zoning By-law setback line falls beyond the boundaries of the subject property (Appendix III).

DEVELOPMENT PERMIT FOR SENSITIVE ECOSYSTEMS

- In July 2014, Council endorsed the Biodiversity Conservation Strategy and the implementation measures it recommended to protect Surrey's streamside areas, natural habitats and sensitive ecosystems. This document identifies the use of a Development Permit Area (DPA) as an effective means to protecting Surrey's natural environmental assets.
- On September 12, 2016, Council approved amendments to the Official Community Plan (OCP) and the Zoning By-law (No. 12000) to implement a Sensitive Ecosystem DPA and Streamside Protection Measures, collectively known as Surrey's Ecosystem Protection Measures, for the protection of the natural environment, including riparian areas. These changes were detailed in Corporate Report No. R188, which was approved by Council on July 25, 2016. The amendment by-laws were given final adoption on September 12, 2016.
- The proposed development requires a Development Permit for Sensitive Ecosystems (Streamside Protection and Green Infrastructure Network).
- In support of the Development Permit for Sensitive Ecosystems, the applicant submitted an Ecosystem Development Plan and Impact Mitigation Plan prepared by Keystone Environmental Ltd., dated April 12, 2017.

Green Infrastructure Considerations

- Green Infrastructure Areas are existing or potential areas comprised of environmentally sensitive and/or unique natural areas that are consistent with the Biodiversity Management Areas, Green Infrastructure Network, and Surrey's Biodiversity Conservation Strategy.
- Where a Green Infrastructure Area has been identified, development shall be adjusted to accommodate and be sensitive to the Biodiversity Management Areas, Green Infrastructure Network, and the specific conditions and recommendations for protection listed within Surrey's Biodiversity Conservation Strategy. No development shall occur within a Green Infrastructure Protection Area that has not been identified, addressed, and reviewed by a Qualified Environmental Professional (QEP) to the satisfaction of the City of Surrey or that is not consistent with the submitted and approved Ecosystem Development Plan.
- The City of Surrey Biodiversity Conservation Strategy (BCS) Green Infrastructure Network (GIN) map, adopted by Council on July 21, 2014 (Corporate Report No. R141; 2014), identifies a Regional BCS Corridor within the Burlington Northern Railway lands adjacent to the subject site, in the Sunnyside Acres BCS management area, with a High ecological value.
- The BCS further identifies the GIN area of the subject site as having a Very High habitat suitability rating, derived from species at risk presence, species accounts and known ecosystem habitat inventories. The BCS recommends a target Corridor width of 100 meters.
- Protecting green infrastructure Hubs (large habitat areas) and Sites (smaller habitat areas) are critical to preserving natural habitat refuges and a diversity of habitat features while maintaining/enhancing Corridors ensures connectivity between fragmented hubs for genetic variation throughout the City. The closest Biodiversity Hub connection in the GIN to the subject site is Hub 15, Sunnyside Ares Urban Forest, which is located approximately 2 kilometres away at 20 Avenue and 140 Street.

- The development proposes to conserve 2,140 square meters (0.53 acres) of the subject site through Registering a Restrictive Covenant and Statutory Right of Way, which represents approximately 30% of the total gross area of the site. This will support the adjacent GIN Corridor by assisting in the long term protection of the natural features and allowing the City to better achieve biodiversity at this location consistent with the guidelines contained in the BCS.
- Staff suggested to the applicant that they may wish to convey these lands to the City to facilitate the long-term monitoring and maintenance is in accordance with the Development Permit Area guidelines. However, the applicant has confirmed that their preferred mechanism this through the provision of a Restrictive Covenant and Statutory Right of Way, which is permitted under the OCP.

Streamside Protection Considerations

- The OCP is used to identify the specific types of ecosystems that are intended to be protected including Class A, A/O or B streams, and the Zoning By-law (Part 7A Streamside Protection) is used to identify the specific protection areas that are required to be established for Streamside Setback Areas.
- COSMOS shows Knudson Creek, a Class B watercourse, located to the eastern portion of the subject property. The Ecosystem Development Plan submitted by the applicant confirmed the watercourse classification and determined that the applicable Streamside Setback Area is 15 metres (50 ft.) measured from the top of bank.
- The proposed development encroaches into the Streamside Setback Area of the Zoning By-law and therefore, a Development Variance Permit is required to allow the development application to proceed as proposed.
- In support of the Sensitive Ecosystems Development Permit and Development Variance Permit applications, the applicant has provided the following supporting documents:
 - A Riparian Areas Regulation (RAR) assessment report prepared by Keystone Environmental Ltd. for the on-site Class B watercourse;
 - A RAR peer review conducted by AquaTerra Environmental Ltd., which concluded that the RAR assessment is acceptable; and
 - An Ecosystem Development Plan and Impact Mitigation Plan prepared by Keystone Environmental Ltd., which considered and supported the conclusions of the RAR and peer review reports, arborist report, and the proposed riparian area enhancement.
- The applicant does not propose to convey the riparian area to the City. Alternatively, the applicant will be required to register a combination Restrictive Covenant and Statutory Right-of-Way over a portion of the lot for the protection and maintenance of, and access to, the riparian area.

- Since the riparian area is proposed to be retained as private property, the applicant does not propose invasive species management as part of this development. The development will be isolated from the protected area by a fence, and no public access will be permitted into the protected area.
- The Ecosystem Development Plan proposes to naturalize the area along the top of bank with plantings of native trees and shrubs, in consultation with the City.

DEVELOPMENT PERMIT FOR HAZARD LANDS (STEEP SLOPES)

- The site is subject to a Hazard Lands Development Permit for Steep Slopes due to the presence of steep slopes over almost the entire subject property and particularly adjacent to Knudson Creek.
- The Development Permit guidelines for subdivision within steep slope development areas states that portions of a site with 30% slope or greater should not be included in the lot size calculation. While the subject property has areas with slopes exceeding 30%, most notably within the ravine areas of Knudson Creek, proposed Lot 2 is located on a portion of the property which falls below this threshold.
- The site is bordered by slopes to the east and south, with steeper eastern slopes and an overall gentle southern slope. The typical east to west elevation differentials are between 5 metres (16 ft.) and 15 metres (50 ft.) resulting in average slope grades of about 2H: 1 V. The overall north to south elevation differential is approximately 30 metres (100 ft.) across the entire length of the property. The existing home is located on a relatively flat upper terrace at the north end of the property.
- In support of this requirement the applicant submitted a geotechnical report, prepared by GeoPacific Consultants Ltd., and dated February 3, 2015. Following detailed staff reviews, revised reports were submitted to the City on several occasions (December 14, 2015; April 8, 2016, June 10, 2016), before staff requested an independent peer review.
- The applicant submitted an independent peer review of the geotechnical report, prepared by Braun Geotechnical Ltd., and dated October 17, 2016. Based on the recommendations of the independent review, GeoPacific prepared a revised geotechnical report dated December 13, 2016, which was subsequently reviewed and accepted by the peer reviewer (Braun Geotechnical Ltd.) and the City.
- GeoPacific found no evidence of past failures, deep seated or surficial. However, the report notes that surficial slumping of the vegetated layer and any near surface weathered soils is a common and natural occurrence on steeper portions of the Surrey bluffs, typically occurring randomly. The report notes that this occurred on the property during November, 2015 after one of the driest summers on record, followed immediately in the Fall by heavy rains. The analysis determined that the prolonged dry weather likely weakened the surficial vegetation and root structure, contributing to this event. The report states that structures set back from the slope in accordance with the report recommendations will not be impacted by this periodic phenomenon.

- In 1999, the City of Surrey completed reconstruction of a portion of Knudson Creek located on the subject property. The work addressed bank instabilities and repaired areas of high erosion. The City constructed a high flow diversion pipe along the existing creek alignment, and reconstructed the creek over the pipe. Base storm flows are now directed to Knudsen Creek with high flows directed to the diversion pipe.
- Every 2-3 year the City retains a consultant to inspect all creek systems, looking for signs of instabilities and tracking their progression. City staff reports that this area has experienced some localized stability issues due to high groundwater emergence, vegetation management by residents, and the overall steep embankments that exist in the area.
- The geotechnical report makes recommendations on building setback, site preparation, building foundation, slab-on-grade floors, seismic design of foundations, landscaping, site and foundation drainage, and site excavation.
- The geotechnical report, states that the site is considered safe for its intended use, and that the existing slope meets the accepted requirements for development under both static and seismic conditions subject to the recommendations included in the report related to disturbance on and around the slope.
- Staff have reviewed the geotechnical report, and found it to be generally acceptable, subject to the geotechnical engineer reviewing and accepting the final building and lot grading designs.
- A preliminary lot grading plan was submitted and was found to be acceptable for preliminary planning purposes. However, the lot grading plans will need to be reviewed again at the Building Permit stage.
- The geotechnical report and recommendations, and lot grading plans will be incorporated into the requirements of the Hazard Lands Development Permit (DP), and will be registered on title through a restrictive covenant. Issuance of the DP is required prior finalizing the subdivision and prior to issuance of the Building Permit. Restrictive covenants will also be required for pumped sanitary and storm sewer pump maintenance and for underground irrigation. At Building Permit stage, the Building Division will require Letters of Assurance from a geotechnical engineer to ensure that the building plans comply with the recommendations in the approved geotechnical report.

PRE-NOTIFICATION

- A development proposal sign was erected on October 16, 2015. In response, staff have received phone calls and emails from 9 neighbouring residents, representing 7 adjacent properties (Appendix VII). All respondents have expressed their opposition to the proposed development. Over the past 20 months, staff have remained in contact with these residents to provide periodic project updates and to respond to questions. A summary of the concerns raised by the residents is provided below with staff comments provided in italics:

Slope Stability and Geotechnical Concerns

- All respondents expressed concerns about the potential negative impact that the proposed development could have on the stability of the ravine slope. There was a common belief or understanding among many of the surrounding residents that this area would not or could not be built upon. Neighbouring residents report a history of erosion and landslides in the ravine during periods of wet weather. A video was circulated to staff and Mayor and Council in November 2015 that showed an example of the erosion and landslide activity.

(The applicant submitted a geotechnical report that was subsequently peer reviewed. The peer reviewed geotechnical report states that the site is considered safe for its intended use, and that the existing slope meets the accepted requirements for development, subject to the recommendations included in the report.

The report addresses the erosion and landslide activity described and documented by neighbouring residents. The report classifies the erosion or landslide activity as "surficial slumping of the vegetated layer and near surface weathered soils" and notes that this is a natural occurrence of the Surrey bluff, typically occurring randomly but often associated with periods of heavy rain).

Streamside Protection and Setbacks from Knudson Creek

- Each respondent expressed concerns about the potential negative impact of the proposed development on Knudson Creek. Prior to the adoption of the Streamside Protection Measures of the Zoning By-law, several respondents questioned whether the minimum Riparian Areas Regulations (RAR) setback of 10 metres, measured from the high-water mark, offered sufficient protection of the watercourse from the proposed development. Respondents also expressed concern that the proposed development could negatively impact the reconstruction work that the City undertook on Knudson Creek.

(The applicant submitted a RAR report and RAR peer review report that confirmed the watercourse classification and determined that the minimum setback required under RAR is 10 metres (33 ft.), measured from the high water mark. The applicant proposes a setback of 15 metres (50 ft.), measured from the high water mark.

The required streamside setback area of the Zoning By-law is 15 metres (50 ft.), measured from the top of bank. The entire developable area of proposed Lot 2 lies within the required streamside setback area. The difference between the top of bank and high water mark on this site varies between approximately 18 metres (59 ft.) and 26 metres (85 ft.). The difference between the required setback and the proposed setback ranges between approximately 28 metres (92 ft.) and 36 metres (118 ft.).

The applicant will be required to register a Restrictive Covenant and Statutory Right of Way over approximately 2,140 square meters (0.53 acres) of the riparian area on the subject site. In addition to providing access for maintenance and monitoring of riparian area, the Statutory Right of way will also allow the City access to the property for monitoring and maintenance of the existing drainage works that are installed on Knudson Creek).

Future Subdivision Potential of the Subject Property

- Two respondents questioned whether or not proposed Lot 1, located on the northern portion of the site fronting Marine Drive, could be further subdivided in the future. They questioned why the City is entertaining the current proposed subdivision adjacent to the slope when there is subdivision potential on the relatively flat upper terrace at the north end of the property.

(Staff confirmed that while Lot 1 has sufficient area for potential subdivision into 2 lots that meet the minimum lot dimensions of the RF Zone, subdivision would not be possible unless another variance to the Streamside Setbacks of the Zoning By-law is approved by Council. In this scenario the existing house would have to be removed. These potential lots would be accessed from Marine Drive, and the lots would be consistent in width and area to other existing lots in the immediate vicinity. This portion of the subject property is relatively level.

Staff also noted that any future subdivision applications on this property would be subject to the same Development Permit requirements (Hazard Lands and Sensitive Ecosystems) and review process as the current application).

Tree Retention

- Several respondents expressed concerns about the proposed tree removals on site and the potential impact this could have on slope stability.

(The applicant has submitted a tree survey and an arborist report in support of the proposed tree removals on site. The applicant proposes to remove a total of 5 protected trees. The preliminary staff review of the arborist report stated that the proposed tree removal is not unreasonable given the proposed development. The arborist report was also considered as part of the geotechnical report and ecosystem development plan submitted by the applicant).

Potential Impact on Views

- One respondent expressed concern that the proposed development would impact the existing views from their home. Several nearby properties could potentially have their views to the southeast impacted by a future home on the proposed Lot 2.

(The applicant's design consultant has experience in building scheme design and administration in this neighbourhood and is aware that view amenity preservation is an important consideration. Approval of design guidelines will be a condition of subdivision approval. Staff can work with the applicant and the design consultant to develop building design guidelines that are sensitive to the building height and view concerns of the surrounding property owners).

TREES

- Trevor Cox, ISA Certified Arborist of Diamond Head Consulting Ltd. 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	4	0	4
Deciduous Trees (excluding Alder and Cottonwood Trees)			
Holly	1	0	1
Coniferous Trees			
Douglas Fir	17	5	12
Western Red Cedar	2	0	2
Total (excluding Alder and Cottonwood Trees)	20	5	15
Additional Trees in the Riparian Area	68	3	65
Total Replacement Trees Proposed (excluding Boulevard Street Trees)		5	
Total Retained and Replacement Trees		20	
Contribution to the Green City Fund		\$2,000	

- The Arborist Assessment states that there are a total of 20 protected trees on the site, excluding Alder and Cottonwood trees. 4 existing trees, approximately 17% of the total trees on the site, are Alder trees. It was determined that 15 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.
- Table 1 includes an additional 68 protected trees that are located within the riparian area. The trees within the riparian area will be retained, except where removal is required due to hazardous conditions. This will be determined at a later time, in consultation with the Parks, Recreation and Culture Department. The arborist report recommends the removal of 2 hazardous trees and one fallen tree within the riparian area.
- For those trees that cannot be retained, the applicant will be required to plant trees on a 2 to 1 replacement ratio. This will require a total of 10 replacement trees on the site. Since only 5 replacement trees can be accommodated on the site the deficit of 5 replacement trees will require a cash-in-lieu payment of \$2,000 representing \$400 per tree, to the Green City Fund, in accordance with the City's Tree Protection By-law.

- In summary, a total of 20 trees are proposed to be retained or replaced on the site with a contribution of \$2,000 to the Green City Fund.

SUSTAINABLE DEVELOPMENT CHECKLIST

The applicant prepared and submitted a sustainable development checklist for the subject site on May 31, 2017. The table below summarizes the applicable development features of the proposal based on the seven (7) criteria listed in the Surrey Sustainable Development Checklist.

Sustainability Criteria	Sustainable Development Features Summary
1. Site Context & Location (A1-A2)	<ul style="list-style-type: none"> • The subject property is designated "Urban" in the Official Community Plan (OCP), and located adjacent to Semiahmoo Bay.
2. Density & Diversity (B1-B7)	<ul style="list-style-type: none"> • The proposed density is consistent with the OCP. • A secondary suite is proposed.
3. Ecology & Stewardship (C1-C4)	<ul style="list-style-type: none"> • The proposed development incorporates rain water management design considerations, including absorbent soils, roof downspout disconnection, and dry swales. • A large portion of the property will remain in its natural condition as required by the minimum streamside setback area.
4. Sustainable Transport & Mobility (D1-D2)	<ul style="list-style-type: none"> • N/A
5. Accessibility & Safety (E1-E3)	<ul style="list-style-type: none"> • N/A
6. Green Certification (F1)	<ul style="list-style-type: none"> • N/A
7. Education & Awareness (G1-G4)	<ul style="list-style-type: none"> • Public notification in the form of a development proposal sign have taken place.

BY-LAW VARIANCE AND JUSTIFICATION

(a) Requested Variance:

- To reduce the minimum setback distance from the top-of-bank for a "Natural Class B Stream" in Part 7A of Zoning By-law No. 12000, from 15 metres (50 ft.), measured from the top of bank, to a minimum of 15 metres (50 ft.), measured from the high water mark.

Applicant's Reasons:

- The proposed setback variance is necessary for the subdivision to proceed as proposed.

- The applicant proposes to meet the minimum setback requirements of the Provincial Riparian Area Regulations (RAR) of 10 metres, plus an additional 5 metres for access and maintenance, for a total of 15 metres (50 ft.), as measured from the high water mark of Knudson Creek.

Staff Comments:

- Knudson Creek runs north to south along the eastern portion of the subject property. The City's watercourse mapping classifies the creek as a Class B (permanent, non-fish bearing) watercourse. The Ecosystem Development Plan submitted by the applicant confirmed the watercourse classification.
- The development application was in process prior to the adoption of the Streamside Protection Setbacks in the Zoning By-law.
- In accordance with the Streamside Setback Areas in the Zoning By-law, the minimum required setback measured from the top-of-bank is 15 metres (50 ft.). The requested DVP seeks a minimum 15 metres (50 ft.) setback measured from the high-water mark (Appendix III).
- There is a significant distance between the high water mark (used in the RAR Assessment Report) and the top of bank (utilized in the Zoning By-law) to determine the Streamside Setback Area. As a result, the Zoning By-law creates a more stringent setback requirement for development.
- Most of the developable area of proposed Lot 2 is located below the top of bank. The difference between the top of bank and high water mark on Lot 2 varies between approximately 28 metres (92 ft.) and 36 metres (118 ft.). Additionally, the entire developable area of proposed Lot 2 lies within the required streamside setback area of the Zoning By-law. The difference between the required setback and the proposed setback (the variance being sought), also ranges between approximately 28 metres (92 ft.) and 36 metres (118 ft.).
- The applicant provided a Riparian Area Regulations (RAR) report prepared by Keystone Environmental Ltd. dated February 10, 2015. The report recommends a Streamside Protection and Enhancement Area (SPEA) of 10 metres (33 ft.) measured from the high water mark of the watercourse.
- A Peer Review of the RAR report was conducted by AquaTerra Environmental Ltd., dated July 15, 2015, which concluded that the RAR assessment is acceptable.
- Where a development is proposing to reduce the streamside setback area, a Development Variance Permit is required and is to include an Impact Mitigation Plan. This is intended to ensure that the proposed setback reduction does not create negative impacts on the sensitive ecosystems that are intended to be protected, cause flooding or other negative impacts on the property owners located next to the stream, or increase City of Surrey maintenance costs as a result of the reduced setback.
- The recommendations of the Impact Mitigation Plan submitted by the applicant supports the requested variance:

- The applicant's Qualified Environmental Professional (QEP), Keystone Environmental Ltd., noted that the proposed development, even with the reduced streamside setback, will not negatively impact the watercourse or riparian area.;
 - The Impact Mitigation Plan confirmed that the recommendations of the original RAR Report are applicable;
 - The proposed development and setbacks will be consistent with the Streamside Protection and Enhancement Area (SPEA) requirements of the Riparian Area Regulations report;
 - The applicant proposes an additional 5 metres of setback beyond the required SPEA to allow for access to the riparian area for ongoing maintenance and monitoring;
 - The applicant does not propose to convey the riparian area to the City. Alternatively, the applicant will be required to register a combination Restrictive Covenant and Statutory Right-of-Way over a portion of the lot to ensure safeguarding and maintenance of the riparian area in perpetuity; and
 - Since the riparian area is proposed to be retained as private property, the applicant does not propose invasive species management as part of this development. However, the applicant proposes to naturalize the area along the top of bank with plantings of native trees and shrubs, in consultation with City. The development will be isolated from the protected area by a fence, and no public access will be permitted into the protected area.
- The development protects approximately 2,140 square meters (0.53 acres) of the riparian area on the subject site through registering a Restrictive Covenant and Statutory Right of Way. The Statutory Right of way will also allow the City access to the property for monitoring and maintenance of the existing drainage works that are installed on Knudson Creek.
 - The proposed DVP is required to facilitate the associated subdivision application.

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	Proposed Streamside Protection Area Setback
Appendix IV.	Engineering Summary
Appendix V	School District Comments
Appendix VI	Summary of Tree Survey and Tree Preservation
Appendix VII	Public Notification Map of Responses
Appendix VIII	Development Variance Permit No. 7915-0104-00

INFORMATION AVAILABLE ON FILE

- Geotechnical Study Prepared by GeoPacific Consultants Ltd. dated December 13, 2016.
- Peer Review Geotechnical Study Prepared by Braun Geotechnical Lt. dated October 17, 2016.
- Riparian Areas Regulation (RAR) - Assessment Report Prepared by Keystone Environmental Ltd. dated February 10, 2015.
- Riparian Areas Regulation (RAR) – Peer Review Memo Prepared by AquaTerra Environmental Ltd. dated July 15, 2015.
- Sensitive Ecosystem Plan and Impact Mitigation Plan Prepared by Keystone Environmental Ltd. dated April 12, 2017.

original signed by Ron Hintsche

Jean Lamontagne
General Manager
Planning and Development

RJG/da

SUBDIVISION DATA SHEET

Current Zoning: RF

Requires Project Data	Proposed
GROSS SITE AREA	
Acres	1.76
Hectares	0.71
NUMBER OF LOTS	
Existing	1
Proposed	2
SIZE OF LOTS	
Range of lot widths (metres)	41.5 m – 43.8 m
Range of lot areas (square metres)	2,990 m ² – 4136 m ²
DENSITY	
Lots/Hectare & Lots/Acre (Gross)	2.8 u.p.h. / 1.1 u.p.a.
Lots/Hectare & Lots/Acre (Net)	2.8 u.p.h. / 1.1 u.p.a.
SITE COVERAGE (in % of gross site area)	
Maximum Coverage of Principal & Accessory Building	18.0
Estimated Road, Lane & Driveway Coverage	3.3
Total Site Coverage	21.3
PARKLAND	
Area (square metres)	N/A
% of Gross Site	N/A
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 – Streamside Setback Area	YES

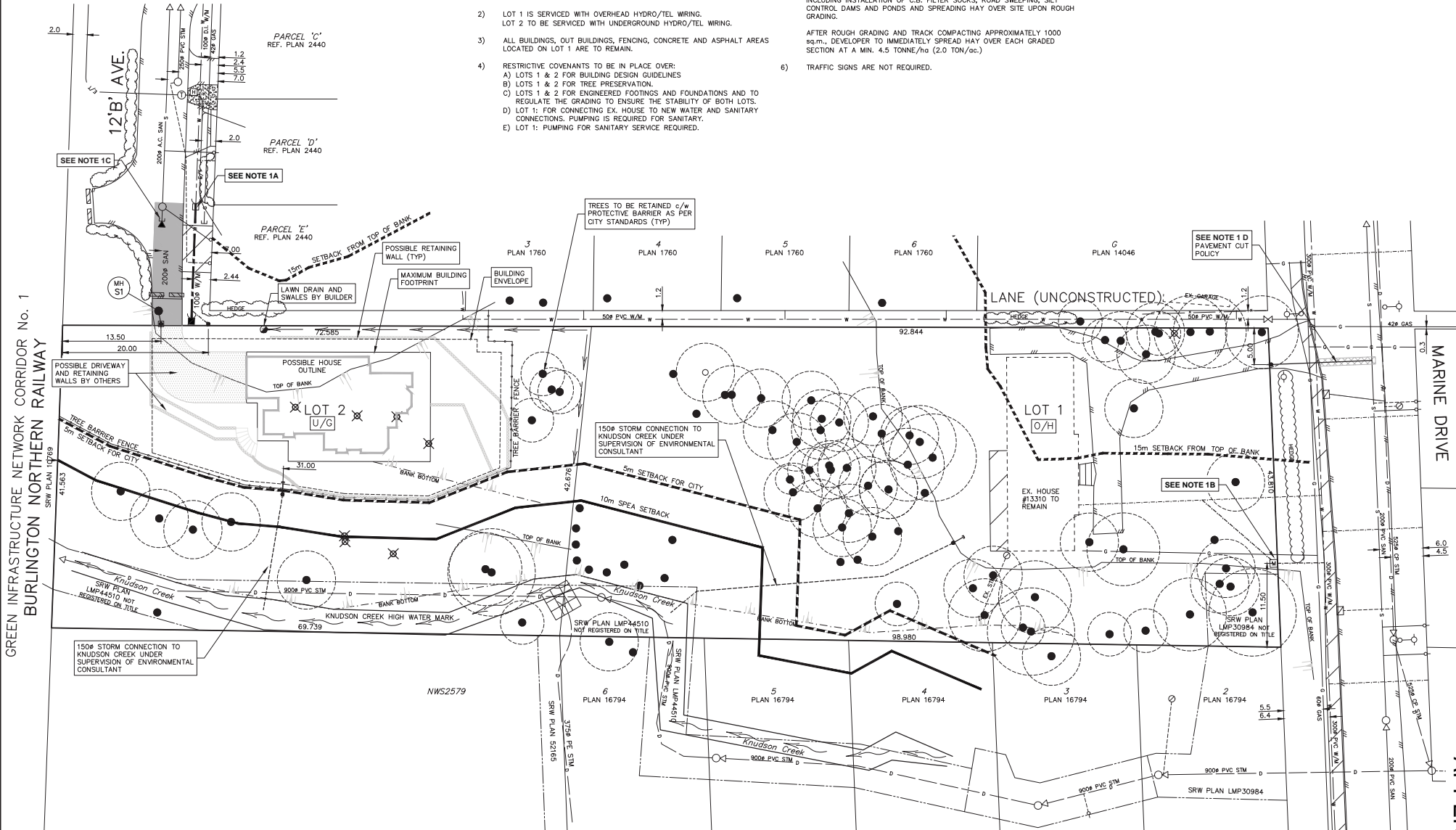


NOTES:

- 1) WORKS BY SURREY AT DEVELOPER'S COST:
 - A) 1 WATERMAIN TIE-IN - 12'B' AVENUE.
 - B) 1 WATER CONNECTION AND METER TO LOT 1 - MARINE DRIVE. (METER CHAMBER BY DEVELOPER)
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- 3) ALL BUILDINGS, OUT BUILDINGS, FENCING, CONCRETE AND ASPHALT AREAS LOCATED ON LOT 1 ARE TO REMAIN.
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DEVELOPER TO PROVIDE SEDIMENT CONTROL DURING CONSTRUCTION INCLUDING INSTALLATION OF C.B. FILTER SOCKS, ROAD SWEEPING, SILT CONTROL DAMS AND PONDS AND SPREADING HAY OVER SITE UPON ROUGH GRADING.

AFTER ROUGH GRADING AND TRACK COMPACTING APPROXIMATELY 1000 sq.m., DEVELOPER TO IMMEDIATELY SPREAD HAY OVER EACH GRADED SECTION AT A MIN. 4.5 TONNE/ha (2.0 TON/gac).
- 6) TRAFFIC SIGNS ARE NOT REQUIRED.



GREEN INFRASTRUCTURE NETWORK CORRIDOR No. 1
BURLINGTON NORTHERN RAILWAY

MARINE DRIVE

APPENDIX II

Benchmark
ALL ELEVATIONS ARE GEODETIC
AND REFER TO SURVEY
MONUMENT NO. 2466
LOCATED AT THE INTERSECTION
OF MARINE DRIVE & 136 STREET,
SURREY
ELEVATION: 67.382m

Legal Description
PARCEL 'H',
(REFERENCE PLAN 8547)
NORTHEAST QUARTER OF
SECTION 8, TOWNSHIP 1,
EXCEPT: PART LYING NORTH
OF MARINE DRIVE,
NEW WESTMINSTER DISTRICT

No	YY.MM.DD	Drn	Ch	Revision
B	2017.03.31	KSH	MEH	CREEK SETBACKS ADDED & WALLS REV'D
A	2016.06.01	KSH	MEH	BUILDING FOOTPRINT & ENVELOPE ADDED
N	YY.MM.DD	Drn	Ch	Revision

Coastland
engineering & surveying ltd.
#101, 19292 - 80th Avenue, Surrey, B.C. V3S 3V2
Telephone: (604) 532-9700 Fax: (604) 532-9701

DIRK C.A. DE VUYST & ASSOCIATES
#1100, 838 WEST HASTINGS STREET, VANCOUVER, B.C. V6C 0A6
CONTACT: JACK GRANT TEL: (604)294-9263 FAX: (604)294-9264

KEY PLAN
13310 MARINE DRIVE

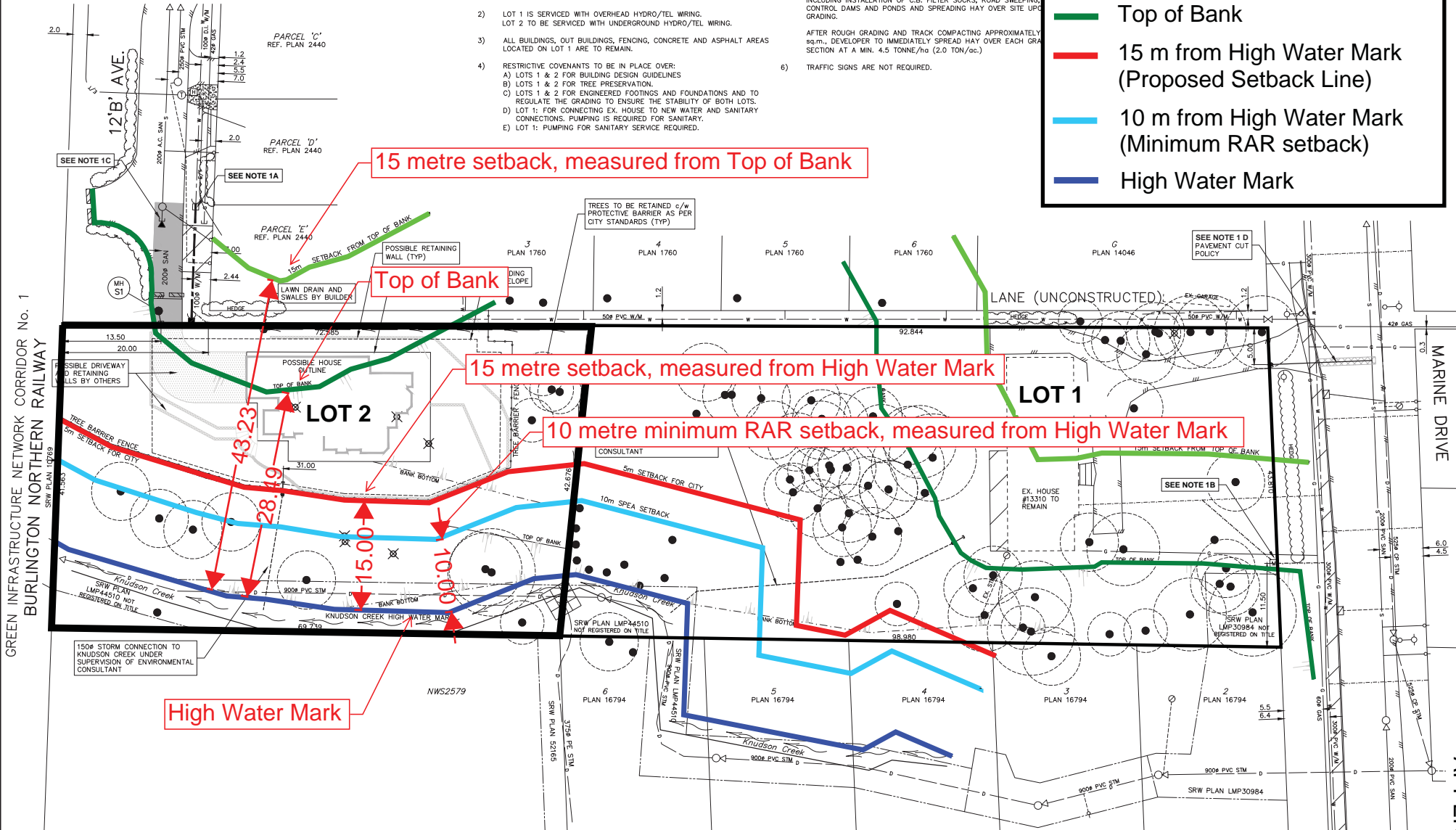
Scale:	1:250	Surrey Project Number:	7815-0104-00	Drawing No:	2
Designed:	MEH	Surrey Drawing Number:		of	4
Drawn:	KSH	Coastland Project Number:	2466	Revision No.:	
P.U.:					
Reviewed:	FRY		2015 SEPTEMBER		



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 - TRAFFIC SIGNS ARE NOT REQUIRED.

- 15 m from Top of Bank
- Top of Bank
- 15 m from High Water Mark (Proposed Setback Line)
- 10 m from High Water Mark (Minimum RAR setback)
- High Water Mark



Benchmark
ALL ELEVATIONS ARE GEODETIC AND REFER TO SURVEY MONUMENT NO. 2466 LOCATED AT THE INTERSECTION OF MARINE DRIVE & 136 STREET, SURREY
ELEVATION: 67.382m

Legal Description	Parcel 'H', (REFERENCE PLAN 8547) NORTHEAST QUARTER OF SECTION 8, TOWNSHIP 1, EXCEPT: PART LYING NORTH OF MARINE DRIVE, NEW WESTMINSTER DISTRICT
B	2017.03.31 KSH MEH CREEK SETBACKS ADDED & WALLS REV'D
A	2016.06.01 KSH MEH BUILDING FOOTPRINT & ENVELOPE ADDED
N	YY.MM.DD. Dnn Ch Revision



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KEY PLAN
13310 MARINE DRIVE

Scale:	1:250	Surrey Project Number:	7815-0104-00	Drawing No.:	2
Designed:	MEH	Surrey Drawing Number:			
Drawn:	KSH	Coastland Project Number:	2466	of	4
P.U.:		Revision No.:			
Reviewed:	FRY	2015 SEPTEMBER			

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

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

DATE: **June 21, 2017** PROJECT FILE: **7815-0104-00**

RE: **Engineering Requirements
Location: 13310 Marine Drive**

SUBDIVISION

Property and Right-of-Way Requirements

- Dedicate 1.942 m along Marine Drive towards 24.0 m Arterial Road allowance.
- Register 0.5 m SRW for inspection chambers and sidewalk maintenance.
- Register a combination restrictive covenant(RC)/SRW document over watercourse and riparian area.

Works and Services

- Provide an updated geotechnical report to analyze the latest detailed design. The applicant is required to incorporate ALL recommendations set out in the geotechnical and environmental reports.
- Provide sustainable drainage measures as recommended in the Ecosystem Development Plan. No drainage to be discharged onto slope.
- The retaining wall must be located outside of the watercourse and riparian area SRW noted above.
- A private easement is required over the City SRW for storm discharge connections on Lot 1 & 2.
- Provide water, storm, and sanitary connections to each lot. A RC for pumped sanitary connection may be required.

A Servicing Agreement is required prior to the Subdivision.

DEVELOPMENT VARIANCE PERMIT

A top-of-bank setback reduction from 15 metres to 10 metres is requested from a 'Natural Class B Stream'. A Development Variance Permit can be supported by the Engineering Department subject to meeting the requirements noted above.

DEVELOPMENT PERMIT

The site is located in the Hazard Land Development Permit Area. As part of this development the applicant must address the objectives, policy recommendations and actions of a Hazard Land Development Permit, as outlined in the Official Community Plan, specifically section DP2.



Rémi Dubé, P.Eng.
Development Services Manager
MB

NOTE: Detailed Land Development Engineering Review available on file



Wednesday, August 12, 2015
 Planning

School Enrolment Projections and Planning Update:

The following tables illustrate the enrolment projections (with current/approved ministry capacity) for the elementary and secondary schools serving the proposed development.

There are no new capital projects proposed at the elementary school and no new capital projects identified for the secondary school. The proposed development will not have an impact on these projections.

THE IMPACT ON SCHOOLS

APPLICATION #: 15 0104 00

SUMMARY

The proposed 2 single family lots are estimated to have the following impact on the following schools:

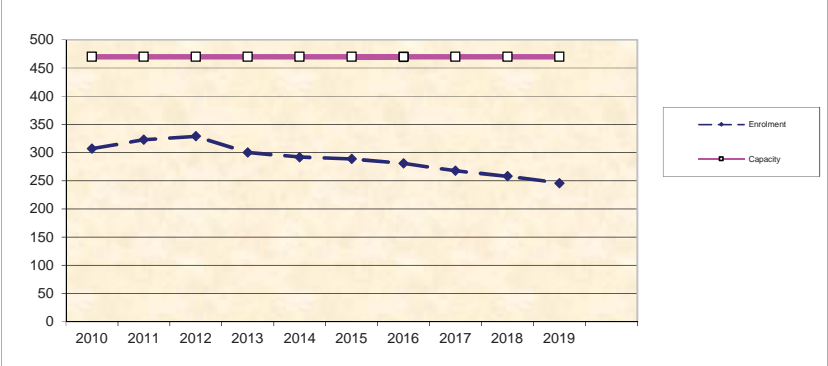
Projected # of students for this development:

Elementary Students:	1
Secondary Students:	0

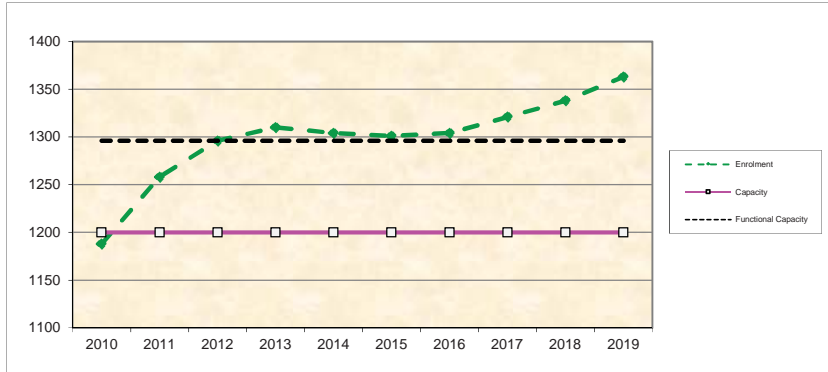
September 2014 Enrolment/School Capacity

Ray Shepherd Elementary	
Enrolment (K/1-7):	23 K + 269
Capacity (K/1-7):	20 K + 450
Elgin Park Secondary	
Enrolment (8-12):	1304
Nominal Capacity (8-12):	1200
Functional Capacity*(8-12):	1296

Ray Shepherd Elementary



Elgin Park Secondary



*Functional Capacity at secondary schools is based on space utilization estimate of 27 students per instructional space. The number of instructional spaces is estimated by dividing nominal facility capacity (Ministry capacity) by 25.

Arborist Report – 13310 Marine Drive, Surrey.

Table 4. Tree Preservation Summary

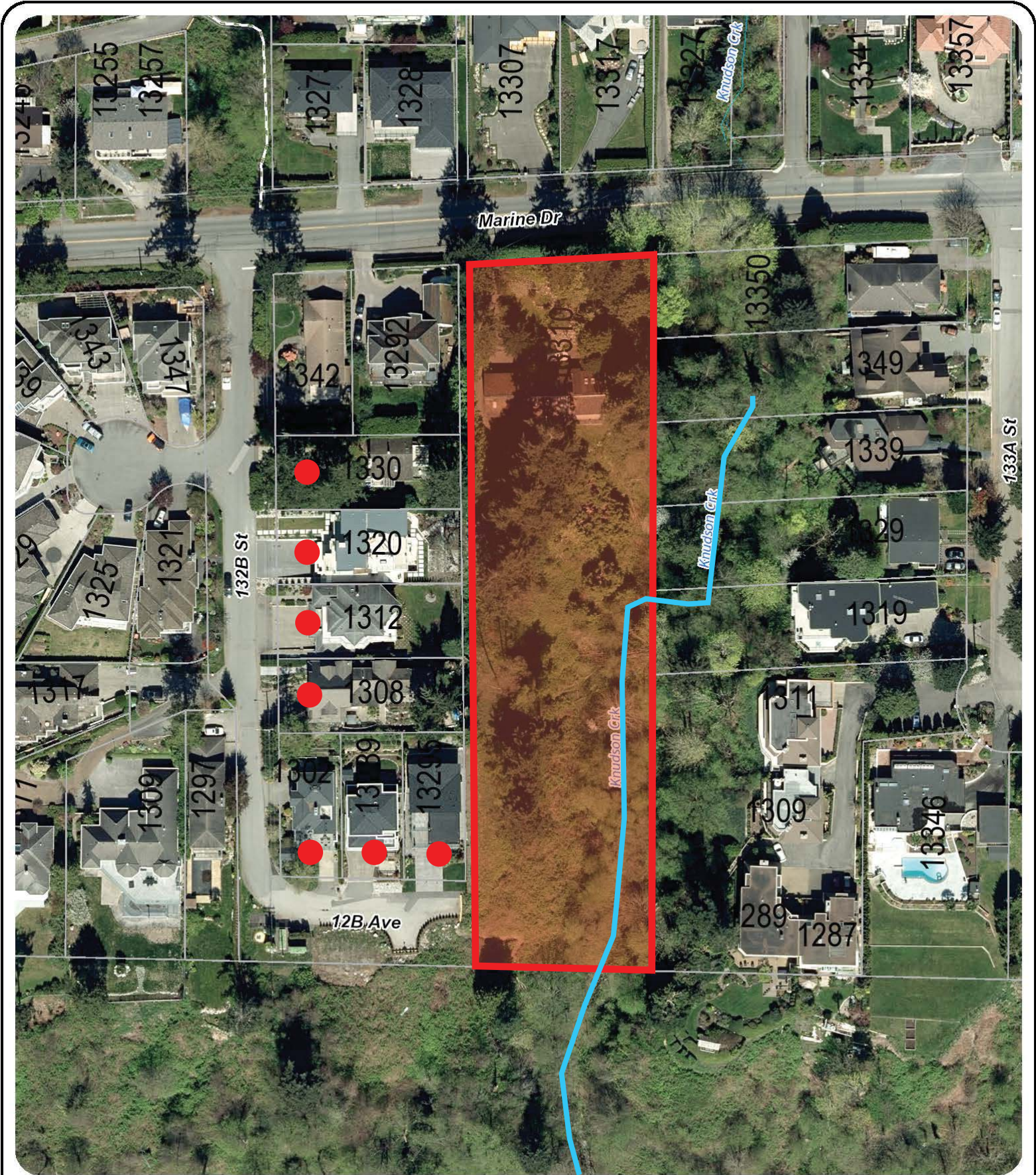
TREE PRESERVATION SUMMARY	
Surrey Project No:	
Address:	13310 Marine Drive, Surrey, BC
Registered Arborist:	Trevor Cox, MCIP ISA Certified Arborist (PN1920A) Certified Tree Risk Assessor (43) BC Parks Wildlife and Danger Tree Assessor
On-Site Trees	Number of Trees
Protected Trees Identified (on-site and shared trees, including trees within boulevards and proposed streets and lanes, but excluding trees in proposed open space or riparian areas)	24
Protected Trees to be Removed	5
Protected Trees to be Retained (excluding trees within proposed open space or riparian areas)	19
Total Replacement Trees Required:	
- Alder & Cottonwood Trees Requiring 1 to 1 Replacement Ratio ___ X one (1) =	10
- All other Trees Requiring 2 to 1 Replacement Ratio 5 X two (2) = 10	
Replacement Trees Proposed	5
Replacement Trees In Deficit	5
Protected Trees to be Retained in Proposed [Open Space / Riparian Areas]	
Off-Site Trees	Number of Trees
Protected Off-Site Trees to be Removed	
Total Replacement Trees Required:	
- Alder & Cottonwood Trees Requiring 1 to 1 Replacement Ratio ___ X one (1) = 0	0
- All other Trees Requiring 2 to 1 Replacement Ratio X two (2) = 0	
Replacement Trees Proposed	
Replacement Trees In Deficit	0

Summary prepared and
submitted by:


 Arborist

September 10, 2015

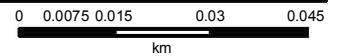
 Date



Enter Map Description

Scale: 1:1,182

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



CITY OF SURREY

(the "City")

DEVELOPMENT VARIANCE PERMIT

NO.: 7915-0104-00

Issued To: Dirk C De Vuyst

(the Owner)

Address of Owner: 740 EYREMOUNT DR
WEST VANCOUVER BC V7S 2A4

Issued To: Flavianne S Sorensen

(the Owner)

Address of Owner: 3459 104 ST
SURREY BC V4A 4J8

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: 013-191-802
PCL H NE SEC 8 T1 REF 8547 (EX PTN N MARINE DR)
13310 Marine Dr

(the "Land")

3. (a) As the legal description of the Land is to change, the City Clerk is directed to insert the new legal description for the Land once title(s) has/have been issued, as follows:

Parcel Identifier:

- (b) If the civic address(es) change(s), the City Clerk is directed to insert the new civic address(es) for the Land, as follows:

4. Surrey Zoning By-law, 1993, No. 12000, as amended is varied as follows:
 - (a) In the table in Section B.1 of Part 7A "Streamside Protection", the minimum distance from top of bank for a "Class B Stream" is reduced from 15 metres (50 ft.) to not less than 1.4 metres (5 ft.).
5. This development variance permit applies to only the portion of the Land shown on Schedule A which is attached hereto and forms part of this development variance permit.
6. The Land shall be developed strictly in accordance with the terms and conditions and provisions of this development variance permit.
7. 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.
8. The terms of this development variance permit or any amendment to it, are binding on all persons who acquire an interest in the Land.
9. 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



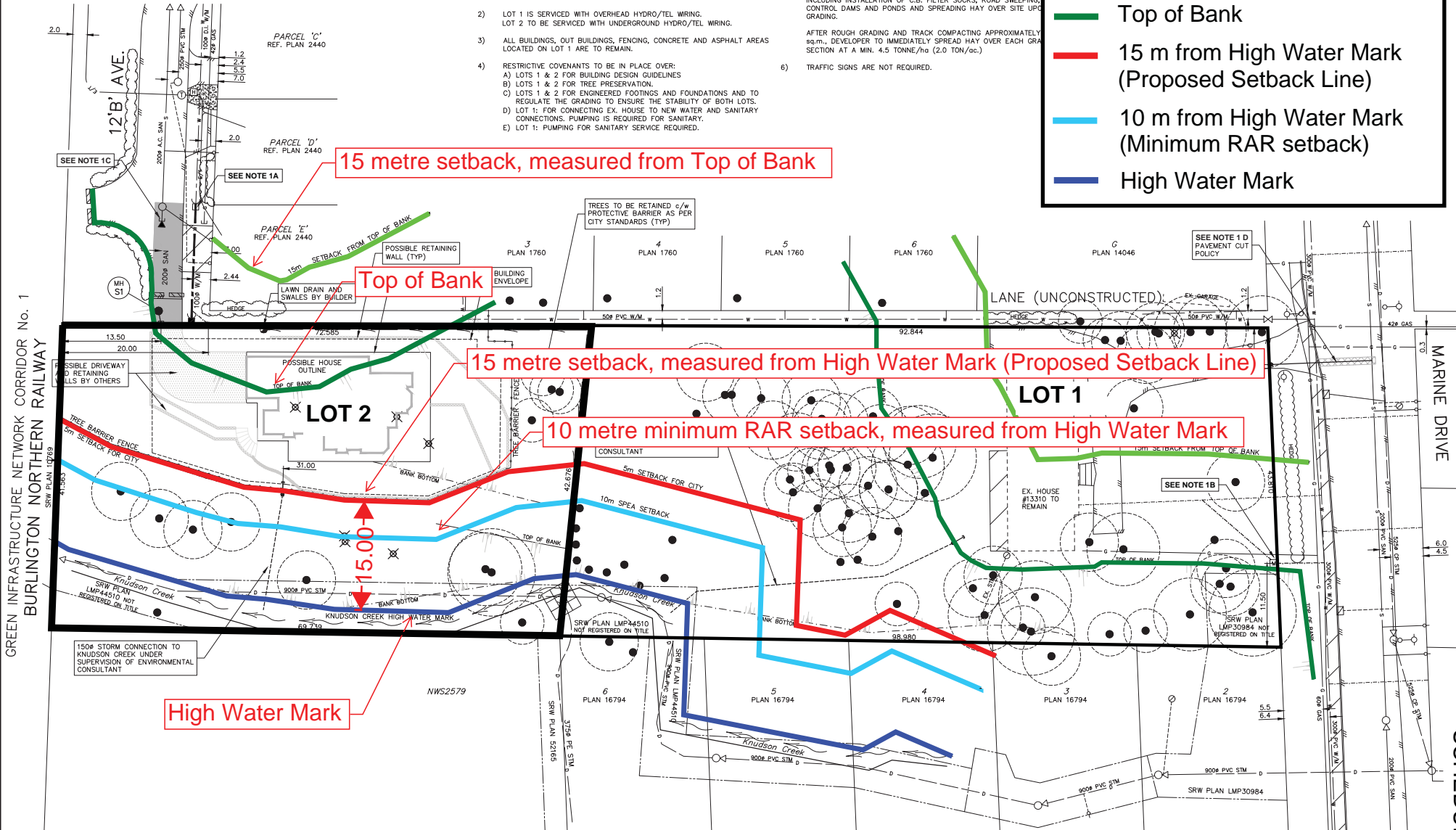
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GREEN INFRASTRUCTURE NETWORK CORRIDOR No. 1
BURLINGTON NORTHERN RAILWAY

MARINE DRIVE

SCHEDULE A

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No	YY.MM.DD	Dwn	Ch	Revision
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KEY PLAN
13310 MARINE DRIVE

Scale:	1:250	Surrey Project Number:	7815-0104-00	Drawing No.:	2
Designed:	MEH	Surrey Drawing Number:			
Drawn:	KSH	Coastland Project Number:	2466	of	4
P.U.:		Reviewed:	FRY	2015 SEPTEMBER	Revision No.

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