ELECTORAL AREAS SERVICES COMMITTEE - NOTICE OF MEETING

Printer Version

Wednesday, November 5, 2025

Strathcona Regional District office located at 990 Cedar Street, Campbell River, BC commencing at 10:00 a.m.

The purpose of the meeting is to permit consideration of matters listed on the agenda below and, where appropriate, to provide recommendations to the Regional Board. Unless otherwise noted, all resolutions will be decided pursuant to section 208(1) of the Local Government Act, which requires that all Committee members in attendance vote and each member receives one vote.

Hide Notes

A. CONFIRMATION OF QUORUM

The Chair will determine that a quorum is present and have the names of the directors present recorded in the minutes. [Add Note]

B. CALL TO ORDER

The Chair will call the meeting to order following confirmation of a quorum. [Add Note]

C. FIRST NATIONS TERRITORIAL ACKNOWLEDGEMENT

The Chair will acknowledge that we are located on the traditional territory of the Laichwiltach people. [Add Note]

D. ADOPTION OF PUBLIC AGENDA

THAT the agenda for the November 5, 2025 regular meeting of the Electoral Areas Services Committee be adopted as presented. [Add Note]

E. PETITIONS AND DELEGATIONS

There are no petitions or delegations scheduled for the current meeting of the Electoral Areas Services Committee. [Add Note]

F. ADOPTION OF PREVIOUS MEETING MINUTES

THAT the minutes of the regular meeting of the Electoral Areas Services Committee held on October 8, 2025 be adopted. [Item] [Add Note]

G. BUSINESS ARISING FROM THE MINUTES

Following adoption of the previous meeting minutes the Chair will provide an opportunity for directors to introduce further resolutions in respect of matters contained in the minutes that are not otherwise scheduled for consideration on the current agenda. [Add Note]

H. PUBLIC CONSIDERATIONS

There are no public considerations scheduled for the current meeting of the Electoral Areas Services Committee. [Add Note]

I. NOTICES OF MOTION

J. CHAIRS' REPORTS

K. STAFF REPORTS

1. Electoral Area C Official Community Plan Project Update [Add Note]

THAT the report from the Chief Administrative Officer be received. [Item] [Add Note]

2. Electoral Area D Development Cost Charges Bylaw - Project Update [Add Note]

THAT the report from the Chief Administrative Officer be received. [Item] [Add Note]

3. Development Cost Charges and Amenity Cost Charges [Add Note]

THAT the report from the Chief Administrative Officer be received. [Item] [Add Note]

4. Transit Shelter Update - Electoral Area D [Add Note]

THAT the report from the Chief Administrative Officer be received. [Item] [Add Note]

5. Electoral Area D Stormwater Management [Add Note]

a) THAT the report from the Chief Administrative Officer be received. [Item] [Add Note]

b) THAT the Committee recommend that the contract for the Electoral Area D Stormwater System Design Catchment C and Oyster River Rest Area be awarded to ISL Engineering and Land Services Ltd in the amount of $136,674 (excluding GST) for the core project and Option Scope 1. [Add Note]

L. BYLAWS

M. CORRESPONDENCE

N. DIRECTORS' REPORTS

O. NEW BUSINESS

P. ADDENDUM ITEMS

Q. CLOSED SESSION

R. TERMINATION

THAT the November 5, 2025 regular meeting of the Electoral Areas Services Committee be terminated. [Add Note]

ELECTORAL AREAS SERVICES COMMITTEE

Printer Version

Minutes of the regular meeting of the Electoral Areas Services Committee held on Wednesday, October 8, 2025 at the Strathcona Regional District office located at 990 Cedar Street, Campbell River, B.C.

A quorum having been confirmed, the Chair called the meeting to order at 10:00 a.m. with the following directors physically in attendance or participating electronically:

Chair:	G. Whalley	Electoral Area A (Kyuquot/Nootka-Sayward)
Directors:	R. Mawhinney	Electoral Area C (Discovery Islands-Mainland Inlets)
	J. Rice	Electoral Area D (Oyster Bay-Buttle Lake)
	M. Vonesch	Electoral Area B (Cortes Island)

FIRST NATIONS TERRITORIAL ACKNOWLEDGEMENT

The Chair acknowledged that we are located on the traditional territory of the Laichwiltach people.

ADOPTION OF PUBLIC AGENDA

Mawhinney/Rice: EASC 228/25

THAT the agenda for the October 8, 2025 regular meeting of the Electoral Areas Services Committee be adopted as presented.

CARRIED

ADOPTION OF PREVIOUS MEETING MINUTES

Mawhinney/Rice: EASC 229/25

THAT the minutes of the regular meeting of the Electoral Areas Services Committee held on September 3, 2025 be adopted. [Item]

CARRIED

STAFF REPORTS

Development Permit DP 2D 23 (DBS Resources)

Rice/Mawhinney: EASC 230/25

THAT the report from the Chief Administrative Officer be received. [Item]

CARRIED

Rice/Mawhinney: EASC 231/25

THAT the Committee recommend that Development Permit DP 2D 23 be rescinded.

CARRIED

Electoral Area C Official Community Plan - Project Update

Mawhinney/Vonesch: EASC 232/25

THAT the report from the Chief Administrative Officer be received. [Item]

CARRIED

Wharf Regulation, Usage, and Fee Structure

Mawhinney/Rice: EASC 233/25

THAT the report from the Chief Administrative Officer be received. [Item]

CARRIED

Mawhinney/Vonesch: EASC 234/25

THAT a report on potential wharf fee structures and cost-effective, creative implementation for all Area C wharves managed by the Regional District be prepared for consideration of the Electoral Area Services Committee, and

THAT the report include an analysis of the current Granite Bay wharf fees and comparison with fees of the Quadra Island Harbour authority managed wharves of Quathiaski Cove and Heriot Bay.

CARRIED

Cortes Island Septage Study

Vonesch/Rice: EASC 235/25

THAT the report from the Chief Administrative Officer be received. [Item]

CARRIED

Vonesch/Mawhinney: EASC 236/25

THAT staff continue communication with the Klahoose First Nation leadership regarding a potential partnership to process on-island waste at a facility that is either owned by the Nation or developed jointly with the Regional District.

CARRIED

Electoral Area D - Water Meter Installation Contract Amendment

Rice/Mawhinney: EASC 237/25

THAT the report from the Chief Administrative Officer be received. [Item]

CARRIED

Rice/Vonesch: EASC 238/25

THAT the Committee recommend that the contract amendment with Edgett Excavating Ltd. for Phase 2 of the Electoral Area D Universal Water Meter project be approved.

CARRIED

Climate Resiliency Service Proposal - Electoral Areas B and C

Mawhinney/Rice: EASC 239/25

THAT the report from the Chief Administrative Officer be received. [Item]

CARRIED

Mawhinney/Rice: EASC 240/25

THAT the woodchipping and climate resiliency service proposal be forwarded to the Board for consideration of seeking elector approval via a referendum in 2026.

CARRIED

Electoral Area Financial Assistance (Grant in Aid) Service

Vonesch/Rice: ESC 241/25

THAT the report from the Chief Administrative Officer be received. [Item]

CARRIED

Request for Financial Assistance - Sayward Secret Santa

Mawhinney/Rice: EASC 242/25

THAT the report from the Chief Administrative Officer be received. [Item]

CARRIED

Mawhinney/Rice: EASC 243/25

THAT the Committee recommend that a grant in aid for the Sayward Secret Santa c/o the Village of Sayward in the amount of $200 to assist with providing 2025 Christmas hampers and gifts to Sayward families in need be paid from the Electoral Area A grant in aid budget.

Mawhinney/Rice: EASC 244/25

THAT the motion be amended to remove the words 'c/o the Village of Sayward'.

CARRIED

BYLAWS

Bylaw No. 611 - Electoral Area D Rezoning (Lindenbach)

Rice/Mawhinney: EASC 245/25

THAT the report from the Chief Administrative Officer be received. [Item]

CARRIED

Rice/Mawhinney: EASC 246/25

THAT as notice will be given in accordance with Section 467(1) of the LGA, the Committee recommend that Bylaw No. 611 be forwarded to the Board for first, second, and third readings and adoption.

CARRIED

Bylaw No. 625 - Oyster River Bank Protection

Rice/Mawhinney: EASC 247/25

THAT the report from the Chief Administrative Officer be received. [Item]

CARRIED

Rice/Mawhinney: EASC 248/25

THAT the Committee recommend that Bylaw No. 625 be submitted for approval of the electors using an alternative approval process.

CARRIED

TERMINATION

Vonesch/Rice: EASC 249/25

THAT the October 8, 2025 regular meeting of the Electoral Areas Services Committee be terminated.

CARRIED

Time: 10:52 a.m.

Certified Correct:

_____
Chair

_____
Corporate Officer

Strathcona REGIONAL DISTRICT

STAFF REPORT

DATE: October 27, 2025

FILE: 0540-04 EASC / PJ 1C 24

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: David Leitch
Chief Administrative Officer

RE: **ELECTORAL AREA C OFFICIAL COMMUNITY PLAN - PROJECT UPDATE**

PURPOSE

To provide an update regarding the *Electoral Area C Official Community Plan* project.

EXECUTIVE SUMMARY

The Area C Official Community Plan (OCP) Review Project continues to move through four phases of plan development, in accordance with the *Local Government Act (LGA)*, since its launch in October 2024. Information to inform this monthly update includes the following:

Progress Since Last Update Report

- Updated comments received from Island Health
- Finalizing effective community engagement strategies for next steps
- Continued development of initial draft policy direction for community feedback
- Final summarization of written comments from community groups
- Provided consultation materials to SNCA OCP Committee and awaiting comment and feedback prior to scheduling subsequent consultation meetings
- Preliminary development of a workbook for circulation to residents of outer islands and remote areas (~300 residents).

Phase 1: Project Initiation

- Complete

Phase 2: Engagement (Progress Made)

- Engage and meet with First Nations and key interest groups
- Conduct a variety of community consultation and engagement methods
- Use feedback to develop draft content including policies and objectives
- Continue to refine consultation plan

Phase 3: Drafting

- Take learnings from Phase 2: Engagement and develop Policies and Objectives
- Complete mapping based on community consultation findings
- Share key draft sections of the OCP and mapping for community input
- Ensure the draft meets the requirements of the LGA

Phase 4: Revisions and Approvals

- Complete formal referral process with government agencies & First Nations
- Present draft to Committee and Board for 1st and 2nd reading of bylaw
- Conduct a public hearing to allow for community input
- Present the OCP Bylaw to the Board for final consideration and adoption

Next Steps
Continuation of Phase 2 activities, including but not limited to the following:

- Continue preparation for upcoming public engagement activities on Quadra Island and outer areas.
- Continue receiving public comments and feedback from residents and community groups.

Overview of Bylaw Review Long Range Process
Tasks listed below marked with a check mark are either complete or in progress. Tasks marked with an X are not yet started.

Status	Activity	Phase	Date	Participants	Objective
✓	Focus Groups	2	April/ May 2025 Ongoing	SRD Planning Dept. Completed: 16 Invites sent: 58	• Received written feedback and comments from groups
✓	Compile preliminary focus group findings	2	July 2025 Ongoing	SRD Planning Dept.	• Synthesized common themes • Refined topics in alignment with legislative requirements
✓	Outer Islands Meeting	2	September 2025	SRD Planning Dept. SNCA Remote Off-grid Residents Group	• Held a virtual community meeting with Remote Off-grid Residents group. • Discussed key topic areas and ways to support community-led engagement in the outer islands. • Sent consultation materials to the SNCA OCP Committee
✓	Government Agency Feedback	2	October 2025	VIHA	• Received early referral comments from various departments including: public health, injury prevention, nutrition, and built environment.
✓	OCP Open House Preparation	2	Ongoing	SRD Planning Dept.	• Prepare materials for future in person community consultation events

RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

David Leitch
Chief Administrative Officer

Prepared by: *Annie Girdler, Land Use Planner II*

Strathcona
REGIONAL DISTRICT

STAFF REPORT

DATE: October 31, 2025

FILE: 0550-04 EASC

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: David Leitch
Chief Administrative Officer

RE: **ELECTORAL AREA D DEVELOPMENT COST CHARGES BYLAW – PROJECT UPDATE**

PURPOSE

To provide an update on the progress of a Development Cost Charges bylaw project for Electoral Area D.

POLICY ANALYSIS

At the April 23, 2025 Board meeting, the attached report was considered and the following motion was passed:

> Rice/Walley: SRD 273/25
>
> THAT the Regional District proceed with the development of a development cost charge (DCC) bylaw for Electoral Area D.

EXECUTIVE SUMMARY

Following the Board's direction, the Area D Development Cost Charges (DCCs) project was commenced and has undergone the following steps to date:

1) Background research
2) Best practices review and review of new guidance from Province (April 2025)
3) Peer review of recent projects
4) Outreach regarding scope of work
5) Determination of study required for:
   a. future growth projection
   b. infrastructure needs
   c. calculation of charges based on needs
6) Initial drafting of request for proposal documentation for a DCC study in advance of a bylaw
7) June 2025 launch of the Parks and Trails Plan / Active transportation network plan

Best practices and dialogue with consultants indicate that to advance the DCC project the Area D the Park and Trails Plan must be completed prior as it is one of the key charges, in addition to Area D water, that would be included in a DCC bylaw. The parks plan will identify capital planning and prioritization recommendations so that DCC eligible projects can be included in calculations of rates.

The Area D parks project is in the engagement phase to produce a draft of the Parks and Trails Plan in coordination with the Active Transportation Network Plan. The parks plan is scheduled to be completed in the second quarter of 2026. When the parks plan is complete, the DCC project will resume with the benefit of additional information on which to base the study and potential charges.

RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

David Leitch
Chief Administrative Officer

STRATEGIC PLAN PRIORITIES AND AREAS OF FOCUS

Good Governance.
Build sound and efficient systems to protect the region's assets and deliver services in a reliable, and fiscally responsible way.

Prioritize good governance that recognizes the diversity of our region and focuses on areas of common interests.

FINANCIAL IMPLICATIONS

The costs associated with the DCC study will relate to Area D water and parks and the related expense shared between Engineering and Community Services budgets.

LEGAL IMPLICATIONS

A DCC bylaw must be approved by the Inspector of Municipalities in compliance with the *LGA*.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS

Should direction to impose a DCC bylaw based on the study findings in Area D be given by the Board, public consultation/notification in accordance with the *LGA* will be required. The SRD will lead communication and engagement needs of the project with technical support where needed.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS

Multiple departments, including Finance, Engineering, and Planning, would be responsible for aspects of the DCC bylaw process. Additionally, Corporate Services staff resources will be required during the adoption of the bylaw.

Prepared by: *Aniko Nelson and Keltie Chamberlain, Development Planner II*

Attachment: Staff Report, dated February 14, 2025

Strathcona
REGIONAL DISTRICT

STAFF REPORT

DATE: February 14, 2025 **FILE**: 0550-04 Board

TO: Chair and Directors,
Regional Board

FROM: Dave Leitch
Chief Administrative Officer

RE: DEVELOPMENT COST CHARGES - ELECTORAL AREA D

PURPOSE

To consider a recommendation from the Electoral Areas Services Committee that the Regional District proceed with a development cost charge bylaw for Electoral Area D

EXECUTIVE SUMMARY

The attached report was considered at the February 5, 2025 meeting of the Electoral Areas Services Committee at which time the following recommendation was passed:

> Rice/Vonesch: EASC 19/25
>
> THAT the Committee recommend that the Regional District proceed with the development of a development cost charge (DCC) bylaw for Electoral Area D.

The actions outlined below are offered in support of the Committee's recommendation.

RECOMMENDATIONS

1. THAT the report from the Chief Administrative Officer be received.
2. THAT the Regional District proceed with the development of a development cost charge (DCC) bylaw for Electoral Area D.

Respectfully:

David Leitch
Chief Administrative Officer

Prepared by: *T. Yates, Corporate Services Manager*

Attachments: Copy of January 29, 2025 report to the EASC

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STAFF REPORT

DATE: January 29, 2025

FILE: 0550-04 EASC

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: David Leitch
Chief Administrative Officer

RE: **DEVELOPMENT COST CHARGES IN ELECTORAL AREA D**

PURPOSE

To consider further information regarding the potential establishment of development cost charges (DCC's) in Electoral Area D.

POLICY ANALYSIS

At its November 6, 2024 meeting the Committee considered the attached report and passed the following resolution:

> Ruce/Mawhinney: EASC 403/24
>
> THAT staff prepare a report outlining current charges and additional budget required by Area D, and
>
> THAT it include the impact of these charges on developers.

EXECUTIVE SUMMARY

Development cost charges (DCC's) are a development finance tool created to enable local governments to raise funding to cover the incremental infrastructure costs that accompany new development and are typically used in areas of high growth that demand new infrastructure. DCC bylaws can only apply to projects owned or controlled by the local government; areas that do not have a service established may not impose a DCC.

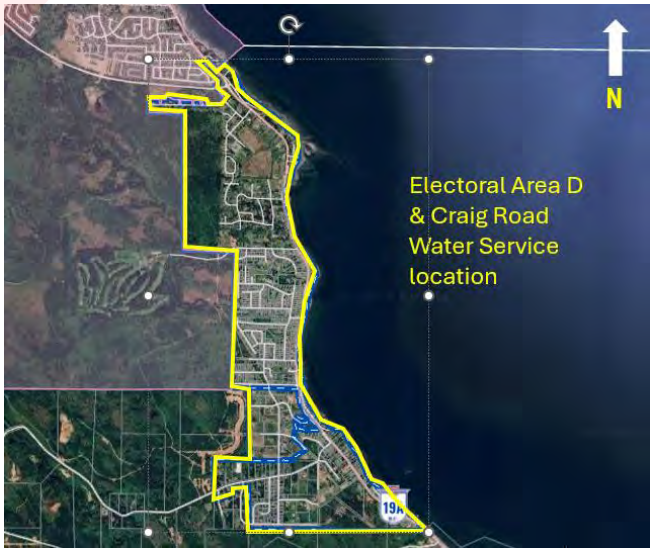


Figure 1. Water Service Aree for potential DCCs

DCC's may only be applied at the time of subdivision or building permit approval, and only toward an existing service for sewage, water, drainage, fire protection, police, highway, and solid waste and recycling facilities that are under the authority of the local government.

In Electoral Area D, this means that DCC's could be levied to support capital costs related to water, parks and street lighting. For example, DCC's may be applied to upgrade or expand

community water services to accommodate an increase in building lots created through subdivision or dwelling units at the time a building permit is being sought. The existing water service areas where DCC charges could be applied are shown in *Figure 1* above.

Currently, and in the absence of DCC's, developers within the water service areas are limited to costs for connection fees for water, being a fixed fee of $2500 plus a $200 application fee. Developers anywhere within Electoral Area D are also required to provide parkland dedication in the form of land or cash in lieu at the time of subdivision provided the subdivision creates more than three parcels with the smallest lot being less than 2.0 hectares in area. In absence of a DCC bylaw, developers are not burdened with additional fees associated with the provision of water, streetlighting or parks.

Any future enactment of a DCC bylaw would result in additional costs to the developer in the amount of the applicable DCC's. These future costs will remain largely unknown until the completion of a study for each of the applicable services. For context and consideration, information on the DCC's applicable in the neighbouring Comox Valley Regional District (CVRD) is provided in the analysis section of this report. Although the CVRD's DCC's provide a general idea as to potential charges, a full review of the Electoral Area D requirements and capital costs for a service would be needed to create a new DCC bylaw and establish appropriate charges. Although more costly to the developer, the collection of DCC's would more accurately recover the costs of service delivery.

Should the establishment of a DCC bylaw be pursued by Electoral Area D, there would also be front end costs born by the SRD associated with the initial creation of a new DCC bylaw for Electoral Area D as this will require extensive research and cost estimating to determine what DCC's are appropriate, the required process for imposing the DCC's, when the DCC's would apply and the exact rate calculations for each eligible service. The total projected costs associated with the development and approval of a DCC bylaw(s) is not available at this stage in the process, but costs to engage a consultant to complete the DCC study are estimated to range between $20-$30K.

ALTERNATIVES

Option A – THAT the Committee recommend that the Regional District proceed with the development of a development cost charge (DCC) bylaw for Electoral Area D.

Option B – THAT the Committee recommend that development of a development cost charge bylaw for Electoral Area D not be pursued at this time.

RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

David Leitch
Chief Administrative Officer

BACKGROUND

Information was brought to the Committee meeting in November 2024 to introduce information regarding DCC's (attached). At that time the Committee requested an additional report to provide further details regarding the potential establishment of DCC's within Electoral Area D.

PLANNING ANALYSIS

The SRD can consider the establishment of a DCC bylaw to collect fees to address the additional burden or load development has on the services provided to Electoral Area D. Should the Board determine that the establishment of a bylaw is an appropriate a study would provide the necessary details to inform the bylaw and meet the requirements of Provincial legislation as noted below.

Establishment of DCCs requires the following:

1. Projection of future growth
2. Identification of required works
3. Estimate of infrastructure costs (involves variety of separate costs)
4. Allocate costs to growth or existing users
5. Assign costs to land use types (residential, commercial, industrial)
6. Convert costs into DCC rates
7. Apply assist factor (existing population assist future growth – 1%)

DCC Best Practices Guide provides direction when establishing a DCC bylaw. Local governments must also properly consider whether the proposed DCCs will:

1) be excessive in relation to the capital cost of prevailing standards of service;
2) deter development; or,
3) discourage the development of reasonably priced housing or reasonably priced serviced land.

To provide a comparison regarding DCC charges in neighbouring regional districts, the CVRD collects DCCs for water supply, sewerage service and parkland under separate bylaws. The water supply DCC is imposed at time of subdivision for single dwelling units and at building permit for other uses as shown in Table 1, while Parkland DCC collection in the CVRD is at time of building permit as shown in Table 2.

Table 1. CVRD Water Service DCCs

Type of Development	Upon Subdivision Approval	Upon Issue of Building Permit
Single family residential	$3,389 per building lot being created	Not applicable
Single family residential second dwelling	Not applicable	$3,389 per unit
Multi-family residential	Not applicable	$2,772 per dwelling unit
Congregate care facility	Not applicable	$1,492 per sleeping unit
Commercial	Not applicable	$12.00 per square meter of gross floor area
Institutional	Not applicable	$13.10 per square meter of gross floor area
Industrial / utility	Not applicable	$10.31 per square metre of gross floor area

Table 2. CVRD Parkland DCCs

	Type of Development	Parkland DCC	Units	When Payable
a.	Single Detached Dwelling	$1,417.63	Per dwelling unit	Building permit
b.	Multi-residential	$1,181.36	Per dwelling unit	Building permit
c.	Tourist accommodation	$212.64	Per bedroom	Building permit

STRATEGIC PLAN PRIORITIES AND AREAS OF FOCUS

Good Governance

Build sound and efficient systems to protect the region's assets and deliver services in a reliable, and fiscally responsible way.

Prioritize good governance that recognizes the diversity of our region and focuses on areas of common interests.

FINANCIAL IMPLICATIONS

There are no financial implications at this time. Should the Board wish to proceed with the establishment of a DCC bylaw, there would be upfront costs borne by the SRD as part of the required research, bylaw drafting and adoption process.

LEGAL IMPLICATIONS

The *Local Government Act (LGA)* has provisions for DCC's (Part 14, Division 19 – Development Costs Recovery) stating a local government may, by bylaw, impose development cost charges on every person who obtains approval of a subdivision or a building permit. A DCC bylaw must be approved by the Inspector of Municipalities in compliance with the *LGA*.

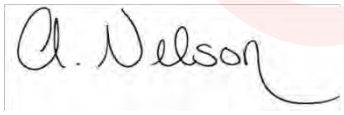
CITIZEN/PUBLIC RELATIONS IMPLICATIONS

Should direction to impose a DCC bylaw in Electoral Area D be given by the Board, notification in accordance with the *LGA* will be required.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS

Multiple departments, including Corporate, Finance, Engineering, Planning and Parks would be responsible for aspects of the bylaw establishment process.

Submitted by:



Aniko Nelson
Senior Manager, Community Services

Prepared by: *K. Chamberlain, Development Planner II and*
A. Nelson, Senior Manager, Community Services

Attachment: Staff Report, November 6, 2024

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STAFF REPORT

DATE: November 6, 2024

FILE: 0550-04 EASC

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: David Leitch
Chief Administrative Officer

RE: **DEVELOPMENT COST CHARGES AND AMENITY COST CHARGES**

PURPOSE

To consider additional information on Development Cost Charges (DCCs) and Amenity Cost Charges (ACCs) for Electoral Areas B, C and D.

POLICY ANALYSIS

The attached report was considered at the July 24, 2024 Board meeting at which time the following resolution was passed:

> SRD 615/24
>
> THAT a report be prepared for further consideration that investigates development cost charges for Electoral Area D and an amenity contribution policy for Electoral Areas B and C.

The *Local Government Act (LGA)* has provisions for both DCCs (Division 19) and ACCs (Division 19.1) stating a local government may, by bylaw, impose development cost charges and amenity cost charges on every person who obtains approval of a subdivision or a building permit. Amenity cost charges imposed [n accordance with ss. 570.1 - 570.95 of the *LGA* are imposed by bylaw and not by policy. Official Community Plans (OCPs) include identified community amenities in policy that can be used to influence contributions at the time of development and further considered within ACC bylaws with charges collected for such amenities.

EXECUTIVE SUMMARY

Development Cost Charges (DCCs) can be collected to help pay for specific infrastructure needed to service new development, while Amenity Cost Charges (ACCs) are a tool to fund community amenities needed for growth. The purpose of these development finance tools is to support local governments in meeting the expanded service and infrastructure needs that may accompany new development. The new ACC tool enables local governments to levy fees for new development to fund the capital costs of amenities such as community centres, libraries, and childcare facilities, if identified in the electoral area OCP as amenities that are needed in the community. Interim guidance has been provided by the Province of BC to assist local government in implementing ACCs; however, an anticipated update to this guide has not been published at this time.

Although ACCs can be highlighted through policy within individual OCPs and used to encourage the provision of specific amenities by a developer at the time of development, the requirement to provide either a DCCs or ACCs can only be administered through a bylaw. Regardless of the electoral area, the process for imposing either DCCs or ACCs under separate bylaws must specifically outline any DCC and ACC amounts. ACCs are charged in relation to amenities that are required as outlined within an electoral area's Official Community Plan (OCP). Prior to creation of a new bylaw to impose DCCs, a service area must first exist. Financial and engineering review

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of the electoral area demands and capital costs for a service are required to create a new DCC bylaw. The creation of a new DCC bylaw would require extensive research, cost estimating and approval from the Inspector of Municipalities, while an ACC bylaw would require research and alignment with the electoral area's OCPs as well as public consultation.

Both DCCs and ACCs must be set by bylaw and are imposed at the time of subdivision or building permit. Based on initial review of the number of subdivision and building permit applications in Electoral Area D, it may be beneficial to impose DCCs at building permit application for Area services. However, ACCs in Electoral Area B and C could only be charged at time of subdivision as a building service has not been established.

RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

David Leitch
Chief Administrative Officer

BACKGROUND

DCC bylaws only apply to projects owned or controlled by the local government. Establishing bylaws are required to provide services, and they must include the scope of the service, the method by which the service is to be funded, the way in which service-related decisions are to be made and by whom. Areas that do not have a service established may not impose a DCC. Each electoral area has a discrete revenue and cost specific to each service and fund. Some costs are clearly related to one specific service and others are not, such as general administration. Development finance tools, such as DCCs, are used in areas of high growth that demand new infrastructure. ACCs, a new development finance tool created in relation to Bill 46, enables local governments to levy fees from development to fund amenities identified in an OCP that provide social, cultural, heritage, recreational or environmental benefits to a community.

PLANNING ANALYSIS

The electoral areas differ in their choices of specific service provisions. Some services are mandated by legislation; general administration, planning, and solid waste management, and some are not; water and sewer utilities, recreation programs and facilities, community and regional parks, libraries, animal control and building inspection, E-911 and fire protection, economic development, regional growth strategies, and airports. Prior to Bill 46, DCCs could only be collected to fund capital costs for infrastructure related to sewage, water, drainage, highway facilities, and the acquisition of parkland. Eligible infrastructure categories have now been expanded to include capital costs related to fire protection, police services, solid waste and recycling facilities. Both DCCs and ACCs require continuous monitoring, financial administration and reserve fund allocation in addition to financial reporting.

Development Cost Charges

A DCC fee may only be administered through a bylaw, as approved by the Inspector of Municipalities and must outline amounts that apply to land use and development, among other considerations. DCC Best Practices Guide provides direction when establishing a DCC bylaw.

Local governments must also properly consider whether the proposed DCCs will:

1) be excessive in relation to the capital cost of prevailing standards of service;
2) deter development; or,
3) discourage the development of reasonably priced housing or reasonably priced serviced land.

Establishment of DCCs requires the following:

1. Projection of future growth
2. Identification of required works
3. Estimate of infrastructure costs (involves variety of separate costs)
4. Allocate costs to growth or existing users
5. Assign costs to land use types (residential, commercial, industrial)
6. Convert costs into dcc rates
7. Apply assist factor (existing population assist future growth – 1%)

As an example, in Electoral Area D specifically, services for which a DCC could possibly be charged, by bylaw, are:

1) Parks acquisition / development
2) Northern Area D Water
3) Street lighting

In Electoral Area D, a total of four subdivision applications were received by the MOTI in 2023, resulting in nine new lots in the SRD. In comparison, 17 building permits for Area D were received in 2023 that could potentially be subject to a DCC bylaw. The subdivision and building permit applications and services are detailed in Table 1 and 2 below.

Electoral Area D Subdivision Applications 2023. Table #1

Application No.	No. of new lots	Possible DCC Bylaw charges for Service Area	DCC Bylaw charges not applicable
00301 D 24 2338 Glenmore Rd	1	Parks	No Water Service – BC/OB No Street Lighting No Sewer CR Wasteshed MOTI Road
01285 D 24 3751 Shoreline	1	Area D Water (north) Parks	No Street lighting No Sewer CR Wasteshed MOTI Road
02688 D 24 3041 Vaughn Rd	3	Area D Water (north) Parks	No Street Lighting No Sewer BC/OB Fire CR Wasteshed MOTI Road
03498 D 24 2986 Paul Rd	4	Area D Water (north) Parks	No Street Lighting No Sewage BK OB Fire CR Wasteshed MOTI Road

Electoral Area D Building permit applications, 2023. Table #2

Building Use	No. of building Applications 2023	Potential Service Area	Notes
Commercial / Industrial	1	Water Parks	DCCs charged by building area
Institutional	1	TBD	Further research into service areas by building / planning required.
Residential	16	TBD	
Other	21	NA	Renovations, etc., DCCs don't apply

The noted properties in Table 2 are examples of the applications to which DCCs could have possibly been applied at building permit in 2023. If DCCs were collected at building permit there are potentially a total of 17 properties where DCCs (or partial DCCs) would be applicable. However, a bylaw must specify that residential buildings that contain fewer than four units will be subject to DCCs. Different areas in the electoral area could have varying and specific DCCs imposed and a DCC bylaw would outline the appropriate cost charged to development.

Amenity Cost Charges

ACCs are also administered through a bylaw. Additional information is expected from the Province this fall, however interim guidance states that the principles and practices that apply to DCCs should also be used when developing an ACC program. ACCs can be collected on subdivision approval or prior to the issuance of a building permit from any new development that results in an increase in the population of residents or workers in areas where a local government is planning for growth. Electoral Areas B and C do not have a Building Service, therefore ACCs could only be charged at subdivision, for which the approving authority is MOTI. For reference, there were a total of two subdivision applications in Area B and five in Area C in 2023 resulting in 4 and 24 lots respectively (MOTI confirmation of final approval has not been received on all applications at this time).

To impose ACCs a local government must pass a bylaw that identifies the:

1) Area or areas in which the charge(s) apply;
2) Amenity projects for which a charge will be imposed; and,
3) Amount of the charges that will be imposed, which must be set as a flat rate per unit and/or per square metre of floorspace.

To determine charge amounts a local government must consider:

1) the capital costs of the amenities in each area;
2) the phasing of amenity projects (e.g., the different stages/timelines of the construction of an amenity project)
3) whether the charges are excessive in relation to existing standards of services; and
4) whether the charges would deter development or discourage construction of reasonably priced housing;

To consider an ACC bylaw in an Electoral Area also necessitates analysis of the impact of charges on development viability. ACCs are meant to assist local governments with capital costs or amenities required to support population growth. Any current funding and grants, portion of costs allocated to the existing populations, and the 'assist factor' or what the SRD is expected to provide would be reviewed as part of creation of an ACC Bylaw.

STRATEGIC PLAN PRIORITIES AND AREAS OF FOCUS:
Good Governance.
Build sound and efficient systems to protect the region's assets and deliver services in a reliable, and fiscally responsible way.

Prioritize good governance that recognizes the diversity of our region and focuses on areas of common interests.

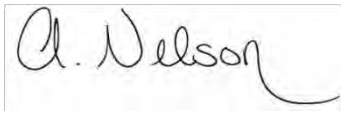
FINANCIAL IMPLICATIONS
The DCCs and ACCs bylaw creation would require project resources. The ACC bylaw would also require public consultation and advertising.

LEGAL IMPLICATIONS
A DCC bylaw must be approved by the Inspector of Municipalities in compliance with the *LGA*.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS
Should direction to impose a DCC bylaw in any Electoral Area be given by the Board, notification in accordance with the *LGA* will be required. Should direction be given to proceed with a project to determine viability of an ACC bylaw in any Electoral Area, notification and public consultation would be required in accordance with the *LGA*.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS
Multiple departments, including Finance, Engineering, and Planning, would be responsible for all aspects of any bylaw process. Additionally, Corporate Services staff resources would be required during the adoption of the bylaw.

Submitted by:



Aniko Nelson
Senior Manager, Community Services

Prepared by: *Keltie Chamberlain, Development Planner II*

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Strathcona REGIONAL DISTRICT

STAFF REPORT

DATE: July 12, 2024 **FILE:** 0550-04 Board

TO: Chair and Directors,
Regional Board

FROM: Dave Leitch
Chief Administrative Officer

RE: **AMENITY COST CHARGES & DEVELOPMENT COST CHARGES**

PURPOSE/PROBLEM

To consider a recommendation from the Electoral Areas Services Committee that the Regional District investigate amenity cost charges and development cost charges for some of its electoral areas.

EXECUTIVE SUMMARY

The attached report was considered at the July 10, 2024 meeting of the Electoral Areas Services Committee at which time the following recommendation was passed:

> Vonesch/Rice: EASC 235/24
>
> THAT a report be prepared on a bylaw addressing Amenity Cost Charges and Development Cost Charges for Electoral Area D; and
>
> THAT a report be prepared on a policy addressing Amenity Cost Charges for Electoral Areas B and C.

The actions outlined below are offered in support of the Committee's recommendation.

RECOMMENDATIONS

1. THAT the report from the Chief Administrative Officer be received.
2. THAT a report be prepared for further consideration that investigates development cost charges for Electoral Area D and amenity cost charges for Electoral Areas B, C and D.

Respectfully:

Dave Leitch
Chief Administrative Officer

Prepared by: *T. Yates, Corporate Services Manager*

Attachment: Copy of July 2, 2024 report to the EASC

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Strathcona
REGIONAL DISTRICT

STAFF REPORT

DATE: July 2, 2024

FILE: 0550-04

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: David Leitch
Chief Administrative Officer

RE: **BILL 46, HOUSING STATUTES (DEVELOPMENT FINANCING) AMENDMENT ACT, 2023**

PURPOSE

To provide an update and clarity on Bill 46, *Housing Statutes (Development Financing) Amendment Act, 2023,* which changes provincial legislation related to Development Cost Charges (DCCs) and Amenity Cost Charges (ACCs).

POLICY ANALYSIS

The Board passed the following motions at its February 28, 2024 meeting:

> SRD 94/24 THAT staff prepare a report for the Electoral Areas Services Committee providing information, background and options on amenity contribution policies for regional districts.
>
> SRD 96/24 THAT a report be prepared for further consideration regarding the options for development cost charges in Electoral Area D.

EXECUTIVE SUMMARY

As part of the Stronger BC strategy, the Ministry of Housing released the Homes for People housing action plan in April 2023. This plan is intended to address the housing situation across BC and includes several pieces of new or revised legislation and programs with implications for local governments, including the Strathcona Regional District. One new piece of legislation is Bill 46, *Housing Statutes (Development Financing) Amendment Act, 2023*, which broadens the range of infrastructure Development Cost Charges (DCCs) that may be levied to fund infrastructure and introduces Amenity Cost Charges (ACCs) as a new tool to fund community amenities from new developments. The purpose of this regulation is to support local governments in meeting the expanded service and infrastructure needs that may accompany new development.

Prior to Bill 46, DCCs could only be collected to fund capital costs for infrastructure related to sewage, water, drainage, highway facilities, and the acquisition of parkland. Eligible infrastructure categories have now been expanded to include capital costs related to fire protection, police services, solid waste and recycling facilities. It should be made clear that these capital costs are limited to infrastructure or services that currently provide service to the area in which they are levied. Also, DCC charges would only apply to those developments that were proposing (or where permitted by bylaw) four or more units. Although the Regional District historically had the authority to charge DCCs for specific infrastructure, it does not currently levy DCCs for any of the current eligible infrastructure.

Currently it is clear that Electoral Area D could contemplate implementing DCCs related to infrastructure or services currently being provided to a particular area, such as water and

parkland. Further clarity is expected from the Province regarding other services that may be considered in the future.

Bill 46 also introduced the new ACC tool which now enables local governments to levy fees from new developments to fund amenities that provide social, cultural, heritage, recreational or environmental benefits to a community. This could provide capital costs for amenities such as community centres, libraries, and childcare facilities. As the Regional District did not previously have the authority to charge ACCs, implementing a levy has not been contemplated to date.

Both the improved DCC and new ACC tools come with limitations, exemptions, eligibility requirements and other legal parameters. Both ACC and DCC fees may only be administered through a bylaw, which must outline any DCC amounts and/or ACC amounts and amenities required following consideration of OCP policies and future land use patterns and development, among other considerations. The approval of an ACC bylaw would require public consultation and, in the case of a DCC bylaw, approval from the Inspector of Municipalities. It is important to understand that DCCs and ACCs can only be collected at the time of subdivision or building permit.

The Province has committed to providing additional guidance on the application of these new tools in the summer or fall of 2024 at which point more information may be available. Should the Committee wish to explore any of these DCC or ACC options that may be applicable to a particular area, it would be appropriate to recommend that a detailed staff report be brought forward once the Province issues additional guidance to local governments.

RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

David Leitch
Chief Administrative Officer

for

Prepared by: *A. Nelson, Senior Manager, Community Services and M. Starkey, Manager Planning and Parks*

Attachments: The Interim Guidance report from March 2024
Bill 46

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Interim Guidance

Development Finance Tools Update: Development Cost Charges/Levies and Amenity Cost Charges

Ministry of Housing
March 2024

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Contents of this document are not intended to be provided as legal advice and should not be relied upon as legal advice.

Introduction

Local governments have a range of development financing tools that can be used to help fund the costs of infrastructure and amenities that are needed to support new development, including Development Cost Charges (DCCs)/Development Cost Levies (DCLs), subdivision servicing bylaws, excess or extended services, latecomer agreements, development works agreements, and density bonusing.

In the fall of 2023 *Bill 46 – 2023: Housing Statues (Development Financing) Amendment Act* (Bill 46) made amendments to the *Local Government Act* (LGA) and the *Vancouver Charter* to provide local governments (municipalities and regional districts) with new and expanded development finance tools.[1]

These changes include:

- Updating the scope of infrastructure eligible to be funded through DCCs and DCLs to include new categories of infrastructure - fire protection, police, and solid waste and recycling facilities.
- Introducing Amenity Cost Charges (ACCs), a new development finance tool that allows local governments to collect funds for amenities, such as community centres, recreation centres, daycares, and libraries from new development that results in increased population.

In addition, Bill 46 made amendments to enable municipalities to collect and use DCCs/DCLs to finance their portion of highway facilities that are cost-shared between the province and the municipality, like interchanges and highway exits. Any questions on this topic should be directed to the Ministry of Municipal Affairs at LGIF@gov.bc.ca.

This interim guidance will help local governments update or adopt DCC/DCL bylaws to begin collecting for the new categories of eligible infrastructure and to implement an ACC bylaw, if they choose to use the new tools.

The Province will develop more comprehensive guidance in consultation with the Development Finance Review Committee (DFRC)[2], local governments, and the development industry, for release in the late summer/early fall 2024.

Background

The Province of BC passed legislation in the fall of 2023 to facilitate increased housing supply as part of the Province's *Homes for People Action Plan*. Through *Bill 44 – 2023: Housing Statues (Residential Development) Amendment Act* and *Bill 47 – Housing Statutes (Transit-Oriented Areas) Amendment Act* the Province made changes to the land use planning frameworks under the LGA and the *Vancouver Charter,* including:

[1] The amendments came into effect on November 30, 2023.

[2] The DFRC was formed as an advisory committee in 1995 to advise the Ministry of Municipal Affairs about the development of best practices, policy, and potential legislative changes in relation to development finance. The DFRC includes representation from the Union of BC Municipalities, Planning Institute of BC, local governments, and the development industry.

- Requiring local governments to update zoning bylaws to allow for small-scale, multi-unit housing (e.g., secondary suites/accessory dwelling units, triplexes, townhomes, and houseplexes) in land use zones that are otherwise restricted to single-family dwellings or duplexes.
- Requiring local governments to shift to a more pro-active, long-term approach to planning where they must identify their housing needs and then zone for what housing is needed.
- Removing public hearings on rezonings for housing projects that are consistent with a local government's official community plan (OCP).
- Requiring some municipalities to designate Transit-Oriented Development Areas (TOD Areas) near transit hubs. In TOD areas, municipalities may not use zoning powers to prohibit or restrict prescribed minimum levels of density, size, and may not impose off-street parking requirements other than for disabled persons, and must consider a provincial policy manual when planning or amending zoning bylaws.

As local governments shift to more upfront planning and zoning, through Bills 44 and 47, changes under Bill 46 provide local governments with new and improved development finance tools to help fund infrastructure and amenities to support increased housing supply and growth.

More information on local government housing initiatives is available on the Ministry of Housing website located at: https://www.gov.bc.ca/housingInitiatives

Legislation Overview

Development Cost Charges/Development Cost Levies[3]

Overview

Under section 559 of the LGA, municipalities and regional districts can choose to collect DCCs from new development to help pay for the capital costs of off-site infrastructure services that are needed to accommodate growth.

DCCs can be collected for defined categories of infrastructure as specified in legislation: sewage, water, drainage, highway facilities, and the acquisition and improvement of parkland.[4] Per amendments under Bill 46, local governments can collect DCCs for the following new categories: fire protection, police, and solid waste and recycling facilities.

The Development Cost Charges Best Practices Guide (Best Practices Guide) provides general DCC policy direction that also applies to the new DCC categories. For guidance on existing DCC policies when establishing or amending a DCC bylaw, please refer to the Best Practices Guide.

[3] DCCs are known as DCLs in the City of Vancouver, where they are authorized under the *Vancouver Charter*. For the purposes of this interim guidance, any reference to DCCs include DCLs. While there are differences between the DCC and DCL frameworks (e.g., the Inspector of Municipalities approves DCC bylaws but not DCL bylaws), the recent amendments to expand the scope of eligible infrastructure are the same under both frameworks. Thus, the information provided in this interim guidance can apply to both.

[4] Additionally, the City of Vancouver can collect DCLs for day care facilities and replacement housing.

Project Eligibility for New DCC Categories

Consistent with existing DCC categories, capital projects under the new DCC categories must directly or indirectly service new development (LGA section 559(2)). Provincial policy establishes that charges are only eligible for capital assets owned or controlled by the local government. Project cost estimates under the new DCC categories that are included in a new or amended DCC bylaw, must be consistent with the local government's OCP, financial plan, service plans, and long-term capital plans.

Under section 560 of the LGA the Inspector of Municipalities (Inspector) may refuse to grant approval of a DCC bylaw if the Inspector determines that the DCCs are not related to capital costs attributable to projects included in a local government's financial plan.

The definition of capital costs under section 558 of the LGA includes planning, engineering and legal costs directly related to the work for which a capital cost may be incurred. Costs that are not eligible under existing and new DCC categories include:

- Operating and staffing costs, personal equipment, and mobile equipment, including vehicles and other rolling stock such as fire and garbage trucks.
- Leased facilities, except for the costs of construction or leasing an asset that will be controlled by the local government under a capital lease.
- Projects related to maintenance or replacement of existing assets.

Fire Protection Facilities

A fire protection DCC program should be based on the long-term strategy and priorities provided in a fire protection/department master plan (or equivalent).

For DCC programs, infrastructure considered 'fire protection facilities' includes projects such as:

- firehalls;
- training facilities;
- staff quarters;
- apparatus bays;
- maintenance facilities
- dispatches; and,
- fire department administration buildings.

Fire service costs that are not considered "facilities" include:

- all vehicles related to the service
- any gear or equipment that is conveyed to the site of a fire or other service activity.

Police Facilities

A police facilities DCC program should support a municipality with a facility for a police force of sufficient size. For DCC calculations, a key consideration is ownership or control of the capital infrastructure located within a municipality. A single facility may accommodate multiple detachments that provide

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services to more than one jurisdiction. Only the portion of a facility that serves a municipality should be used in DCC calculations for that municipality.

For DCC programs, infrastructure considered 'police facilities' includes projects such as:

- detachment buildings;
- municipal jails, cells and holding facilities;
- training facilities;
- community policing centres;
- dispatches; and,
- police administration buildings.

Policing costs that are not considered "facilities" include:

- all vehicles related to the service
- any gear or equipment related to the service

Solid Waste and Recycling Facilities

A solid waste and recycling DCC program should be based on an approved solid waste management plan and align with the financial and long-term capital plan.

Solid waste and recycling facilities may be included in a municipal DCC program if they are not part of the separate service of a regional district. Where the authority for a solid waste service lies outside a municipality (e.g., within a regional district), a separate DCC can be imposed by that jurisdiction. In that case, the municipality will be governed by the regional DCC bylaw and the municipality will collect and remit solid waste and recycling DCCs to the regional district.

For DCC programs, infrastructure considered 'solid waste and recycling facilities' includes projects such as:

- solid waste master planning;
- landfills;
- transfer stations;
- recycling depots and processing facilities; and,
- compost facilities

Solid waste and recycling costs that are not considered "facilities" include:

- curbside collection costs including garbage trucks
- vehicles that are on-site at a landfill or other facility
- asset management; and,
- environmental monitoring;

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Bylaw Process for New Categories

During the development of a DCC bylaw, local governments must ensure that all bylaws and processes conform to all legal requirements. Local governments must properly consider whether the proposed DCCs will:

- be excessive in relation to the capital cost of prevailing standards of service;
- deter development; or,
- discourage the development of reasonably priced housing or reasonably priced serviced land.

When incorporating a new category into a DCC program, local governments are advised to follow the existing methodologies in the Best Practices Guide. Each new DCC category (fire protection facilities, police facilities, solid waste and recycling facilities) will need to be calculated individually and included as a separate charge in the bylaw. The addition of a new category in a DCC bylaw is considered a major update to the bylaw and will require a local government to conduct a full review of the DCC methodologies and underlying assumptions used.

Bylaws establishing or amending a DCC bylaw require approval by the Inspector of Municipalities before adoption. To assist in the approval review of a proposed DCC Bylaw, a copy of the Development Cost Charge Submission Summary Checklist (updated March 2024) should be completed by the local government and attached to the bylaw approval package being sent to the Inspector of Municipalities.

Please contact the Financial Analyst for your local government at the Ministry of Municipal Affairs to discuss or review the addition of new categories to a DCC program. This is particularly important if the local government intends to request the inclusion of interest in charges for the new categories. Discussing this well in advance may save a local government significant time. Staff contacts can be found on the Local Government Division Staff Finder.

Once levied and collected, the DCCs must be deposited into separate fire protection, police and solid waste and recycling DCC reserve funds, established by bylaw. One bylaw may be used to establish all the reserve funds. A reserve fund should be established by bylaw for each of the current DCC categories (water, sewer, etc.). These reserve funds may only be used for capital costs relating to the projects used in the calculations of an approved DCC bylaw. Any interest earned from investments in these reserve funds must be used for eligible DCC projects.

Allocating Benefits

Fairness and equitable distribution of capital costs among those parties receiving a benefit is a guiding principle of DCCs and suggests that certain DCC projects may benefit the existing population as well as new development. For example, existing users may receive some benefit from the construction of a new fire hall, if the facilities are upgraded in response to the need for replacement or pent-up demand, as well as new development. In turn, the allocation of capital costs that benefit existing users should be deducted from the difference between the total capital cost estimate and funds from other sources.

If a grant for a project in a DCC program has been received, that grant should be deducted from the capital cost of the project and the remainder allocated between the existing population and new

development. This approach enables both existing and new contributors to the capital cost to benefit from the grant.

Fire Protection and Police Facilities

Fire protection and policing services benefit the entire community, as emergency services are not fixed or limited to a specific geographic region. Because the services benefit the population at large, capital costs related to fire protection and police facilities should be apportioned to existing users as well as the new development. In addition, any aspect of a fire protection or police facilities DCC program that involves replacing existing facilities has a higher benefit to existing users and should be allocated accordingly. Only the portion of the project that services growth should be allocated to new development.

Solid Waste and Recycling Facilities

As part of a solid waste management plan, a local government should assess the current solid waste management system and determine any existing deficiencies and areas for improvement. Any projects that are required to address existing deficiencies or to improve solid waste processes should be assigned higher benefit to existing users.

Assigning Costs to Land Use Types

Each type of development creates different demands on off-site infrastructure services. The impact of each type, relative to that of others, needs to be considered when assigning the portion of total infrastructure costs attributable to growth. Local governments usually express relative impacts in terms of "equivalent units," which express the impact of each type of development on a service relative to that of a single-family house. The relative impacts of the different development types will vary by type of service.

Police facilities DCCs, for example, may be based on the premise that expansion and/or building police facilities are required due to population growth and can therefore be based on occupancy rates for residential land use and equivalent population density for non-residential land use. The calculation involved would be similar to the sanitary DCC method in the Best Practices Guide.

Local governments are encouraged to work with professional planners and engineers to determine appropriate equivalent units for the new categories so that the best possible method of assigning cost to types of development is used.

Considerations with Other Housing Legislation

In addition to establishing whether to collect DCCs to help pay capital costs of fire protection, police, or solid waste and recycling facilities, local governments will also need to determine how their DCC program is affected by other new housing legislation amendments, particularly small-scale multi-unit housing (SSMUH) requirements (as established in Bill 44).

For example, the LGA establishes that DCCs are not payable on building permits authorizing the construction, alteration or extension of fewer than four self-contained dwelling units unless the DCC

bylaw specifies that DCCs are payable. In light of amendments under Bill 44, which enables multiple dwelling units on a single-family lot, if a local government wishes to impose DCCs on fewer than four dwelling units and does not have this authority provided for within the current DCC bylaw, an amendment to the DCC bylaw would be required.

To provide an incentive for affordable housing, a local government may define affordable rental housing and then provide waivers and reductions of DCCs to developments that are eligible under these definitions. Local governments should consider waivers and exemptions for affordable rental housing so that there is an incentive for this much needed type of development.

Amendments to a DCC bylaw may also be required if assumptions used to calculate DCCs, such as the number of residential units, housing stock mix, or occupancy rates are affected by SSMUH requirements. Please refer to the SSMUH Provincial Policy Manual & Site Standards for more information.

Another consideration is regarding the timing of collecting DCCs. Typically, single family DCCs are charged at subdivision approval, but with the new legislation allowing additional dwelling units on one lot, a local government may want to provide that single family dwelling DCCs may, in the alternative, also be charged prior to issuing a building permit.

Amenity Cost Charge

Amenity Cost Charges (ACCs) are a new development finance tool that allow local governments to collect funds for amenities, such as community centres, libraries, daycares from new development that results in increased demand for services. These amenities support liveable and complete communities in areas of growth.

The new Division 19.1 of the LGA authorizes local governments to impose ACCs and outlines the legislated requirements. The equivalent authority is provided to the City of Vancouver through Part XXIV-B of the *Vancouver Charter*.

This interim guidance provides local governments with an introduction to ACCs and the legislative requirements and key considerations for developing an ACC program and bylaw.

While ACCs are a distinct tool, local governments are encouraged to borrow many of the principles and practices that apply to DCCs as outlined in the Development Cost Charges Best Practices Guide and use those practices when developing an ACC program. These well-established DCC practices will help stakeholders understand the rationale for ACCs and can help guide the process of developing an ACC program. The design approach to the ACC framework was also based on the foundational principles set out in the DCC Best Practices Guide.

Overview

Local governments can collect ACCs on subdivision approval or prior to the issuance of a building permit from any new development that results in an increase in the population of residents or workers (i.e., if a development adds new residential units or new workplaces to the community) in areas where a local government is planning for growth. Similar to DCCs, ACCs must be imposed by bylaw and in accordance

with the process and requirements set out in the legislation. Local governments can choose whether or not to use the new ACC tool and can adopt an ACC bylaw at any time. Unlike DCCs, ACC bylaws do not require approval from the Inspector of Municipalities.

Project Eligibility

Under section 570.1 of the LGA and section 523E of the *Vancouver Charter*, an "amenity" is broadly defined as a facility or feature that provides social, cultural, heritage, recreational or environmental benefits to a community. Amenities need to directly or indirectly benefit the new development itself and the increased population of residents or workers that result from the development.

While the legislation sets out a list of the types of amenities that a local government can fund with ACCs, the list is not exhaustive. Examples of amenities include (but are not limited to), a:

- community, youth, or seniors' centre;
- recreational or athletic facility;
- library; and,
- public square.

ACCs can only help fund the capital costs of amenities. ACCs can be used to fund the capital costs of constructing new amenities or to alter or expand existing amenities, such as creating a new day care space within an existing community centre or adding a new wing to a community centre. Under s. 570.2(3) of the LGA and s. 523G(3) of *the Vancouver Charter*, local governments can also use ACCs for amenities where a local government has a partnering agreement with a person (e.g. not-for-profit organization, corporation, etc.) or public authority (e.g., another local government).

Sections 570.4 of the LGA and 523I of the *Vancouver Charter* establish the following circumstances when development is exempt from ACCs:

- Developments where a building permit authorizes the construction, alteration, or extension of a building, or part of a building which is solely used for public worship, such as a church.
- Developments that do not result in an increase in population of residents or workers.
    - For example, an ACC cannot be imposed on a triplex if it replaces another triplex because no additional units were added to the community. If a triplex replaces a single-family home, then an ACC can be imposed on the two additional units.
- Developments that have already been charged for a particular amenity, unless further development results in an increase in population of residents or workers (i.e., adds additional units).
    - For example, if a development has already paid an ACC for amenities included in an ACC bylaw but then adds additional units through a renovation, an additional ACC can be imposed on that development to help pay for the amenities in the ACC bylaw.
- Developments that fall under a class of affordable housing prescribed by regulation.

The legislation includes rules to prevent "double-charging" for amenities. For example, there is a general rule that a charge for an amenity can only be recovered once (see s. 570.95 of the LGA and s. 523R of the *Vancouver Charter*). This clarifies the relationship between the ACC bylaw and other authorities that local governments can use to obtain amenities (e.g., through phased development agreements, density bonus), and ensures that a development will not be double charged for an amenity under an ACC bylaw through other authorities.

The legislation also clarifies the relationship between ACCs and other tools, specifically in relation to DCCs and density bonus authorities. For example:

- ***DCCs***: ACCs cannot be used to pay for the capital costs of infrastructure for which a DCC can be imposed. For example, ACCs cannot be used to fund sewer or water infrastructure (section 570.4(4) of the LGA and section 523I(2) of the *Vancouver Charter*).
- ***Density bonus authorities:*** Under density bonus provisions, local governments can establish different density rules for a zone – one that is generally applicable for the zone (i.e., a "base density"), and other(s) that will entitle a developer to higher density ("bonus density"), if certain conditions are met either in relation to the conservation or provision of amenities or the provision of affordable and special needs housing. Local governments can continue to use density bonus to collect for amenities and can apply both density bonus conditions and ACCs on the same development (or use the tools separately on different developments or in different areas). However, local governments cannot use density bonusing to collect for an amenity for which an ACC is being collected. For example, if an amenity project is included in the local government's ACC bylaw, the local government cannot use density bonusing to secure that amenity (section 482(2.1) of the LGA and section 565.1(2.1) of the *Vancouver Charter*).
    - By virtue of the requirements detailed below around how a local government determines the areas ACCs will be imposed, the amenities that will receive funding, and the charge amounts, it is intended that local governments take only the base density into consideration when developing their ACC program.

Developing an ACC Program and Bylaw

To impose ACCs, a local government must pass a bylaw that identifies the:

- area or areas in which the charge(s) apply;
- amenity projects for which a charge will be imposed; and,
- amount of the charges that will be imposed, which must be set as a flat rate per unit and/or per square metre of floorspace.

The ACC rates for the various areas are presented in a series of schedules that accompany the bylaw, which should summarize the charges for the applicable land uses, based on the representative unit of development.

Local governments may consider compiling supporting documents for the ACC bylaw, which include information that captures the data, assumptions, and rationale used to develop the bylaw, to help fulfill the requirements around developing an ACC program. These supporting documents may contribute to

overall transparency and allow for local governments to monitor the assumptions made in formulating the proposed ACCs over time. These may also make it easier to later update the ACC program. Information in these documents should include a summary of capital cost and revenue assumptions as well as an outline of the various methodologies used to derive the charges.

Under section 570.7(7) of the LGA and section 523K(7) of *the Vancouver Charter* local governments must make available to the public on request, the considerations, information, and calculations used to determine the ACCs. Information respecting the contemplated acquisition costs of specific properties is not required to be provided to the public.

Determine an Appropriate ACC Program Timeframe

The ACC legislation requires a close connection between projected population growth and the planning of amenities to support that new population. A defined time period for the ACC program is needed for estimating new development and the amenities required to support that new development.

Timeframes for an initial ACC program:

ACCs can be used to help fund amenities needed to support the growth that is anticipated to result from the small-scale multi-unit housing (SSMUH) and transit-oriented (TOA) requirements. Local governments must comply with new requirements under SSMUH and TOA legislation, if applicable, by June 30, 2024.

If local governments want to collect ACCs on SSMUH and TOA developments, then it is recommended they develop their initial ACC bylaw as soon as possible. This would likely entail developing a program with a shorter timeframe, largely based on information from a local governments' current planning documents, growth projections, and financial planning.

The provincial policy manuals for SSMUH and TOA provide additional considerations for the application of ACCs in these areas.

Timeframes for subsequent program updates:

Over the long-term, local governments could consider timing their ACC program updates with the newly required timeframes for updating Housing Needs Reports (HNR) and OCPs established in Bill 44 and in alignment with their DCC program updates, if applicable, to achieve greater efficiencies and alignment between land use planning and financial planning.

Determine Area(s) and Amenities

Under section 570.7(4) of the LGA, local governments are required to consider:

- the applicable OCP(s) and other relevant planning documents (e.g., HNRs, local area plans, public benefits strategies);
- expected increases in population growth of residents and workers; and,
- the financial plan

The ACC bylaw must identify each area where ACCs will be imposed on new development and the amenities in each area that will receive funding.

Under section 523K(4) of the *Vancouver Charter*, the City of Vancouver are required to consider:

- an applicable development plan as defined in section 559;
- an applicable official development plan as defined in section 559;
- other relevant planning documents;
- future land use patterns in the city;
- expected increases in the population of residents and workers; and,
- reports submitted by the Director of Finance.

Determine Charge Amounts

Overall considerations:

Under section 570.7(2) of the LGA and section 523K(2) of the *Vancouver Charter*, ACCs must be set as a flat rate per unit/lot or per square metre of floorspace in a development. As part of determining the charge amounts, local governments must consider the following (as per s.570.7(5) of the LGA and s.523K(5) of the *Vancouver Charter*):

- the capital costs of the amenities in each area;
- the phasing of amenity projects (e.g., the different stages/timelines of the construction of an amenity project)
- whether the charges are excessive in relation to existing standards of services; and,
- whether charges would deter development or discourage construction of reasonable priced housing.

These requirements necessitate that local governments undertake analyses to understand the impact of charges on development viability. Local governments are encouraged to use the same principles and best practices found in the DCC Best Practices Guide when undertaking an analysis on the impact of charges on development viability.

Deductions from the capital costs of amenities:

ACCs are meant to assist local governments with the capital costs of amenities required to support population growth. When determining the specific charge amounts, local governments must make the following deductions (as per section 570.7(6) of the LGA and section 523K(6) of the *Vancouver Charter*):

- Deduct from the total cost of the amenity any grants or other sources of funding (e.g., grants from the provincial or federal government) that are being used to finance an amenity.
- Allocate the costs between the future population (e.g., the portion of costs allocated to new population/to be paid by new development) and current population. This is determined through a benefit allocation exercise that determines how much the amenities would benefit the new population and how much they would benefit the existing population. As amenities often benefit the existing population, local governments will need to fairly distribute the costs of amenities between future population (i.e., the development) and existing population (i.e., the existing tax base).

- Deduct from the portion of costs attributed to new development an amount that will be funded by the local government—this is know as the "assist factor." Similar to DCCs, ACCs are intended to "assist" with paying the capital costs of amenities. Therefore, local governments are expected to provide some financial assistance to ensure that new development does not shoulder the entire costs of amenities.

Varying charges:

Local governments could also consider the varying impacts of different types of developments (e.g., residential vs. employment-related developments, such as commercial or industrial developments, or between different types of residential development) on demand for and use of amenities. To address any differences, under section 570.7(2) of the LGA and section 523K(2) of the *Vancouver Charter* local governments are enabled to vary charges for different zones, uses, and sizes or different numbers of lots or units in a development, with the requirement that charges must be similar for all developments that are expected to result in a similar increase in the population of residents or workers.

Charges can also vary by different geographic areas. As charges are set based on the cost of the amenities (minus the required deductions for external grants, benefit allocation, and the assist factor) needed in an area to support the anticipated growth within that area, charges will naturally vary between different areas because amenity and growth needs will vary.

Waivers or reductions:

Under section 570.6 (2) of the LGA and section 523J (2) of the *Vancouver Charter* local governments may waive or reduce charges for not-for-profit rental housing (LGA only) and for-profit affordable rental housing by bylaw. If a local government chooses to provide waivers or reductions, they should account for the potential loss of revenue for amenities and prepare for a source other than ACCs with which to make up the loss. Charges cannot be increased on other forms of development – instead, the local government must use their other revenue sources to make up for this loss.

Consultation During the Development of an ACC Bylaw

To ensure transparency, accountability, and accuracy in determining amenities and resulting charges imposed on new development, the ACC legislation requires a local government to consult with the public and with affected persons, public authorities, and organizations (e.g., the development community, neighbouring municipalities or regional districts, First Nations) during the development of an ACC bylaw. Consultation is required during the development of the bylaw to provide the public and affected parties with the opportunity to provide feedback and for local government staff to consider and incorporate any feedback before the bylaw is considered by a council or board.

These consultation requirements are similar to those required by the Inspector of Municipalities when considering a DCC bylaw for approval. The recommended best practices for public process in the Development Cost Charges Best Practice Guide can be used as guidance to provide a meaningful public process for developing an ACC bylaw.

Adopting the Bylaw

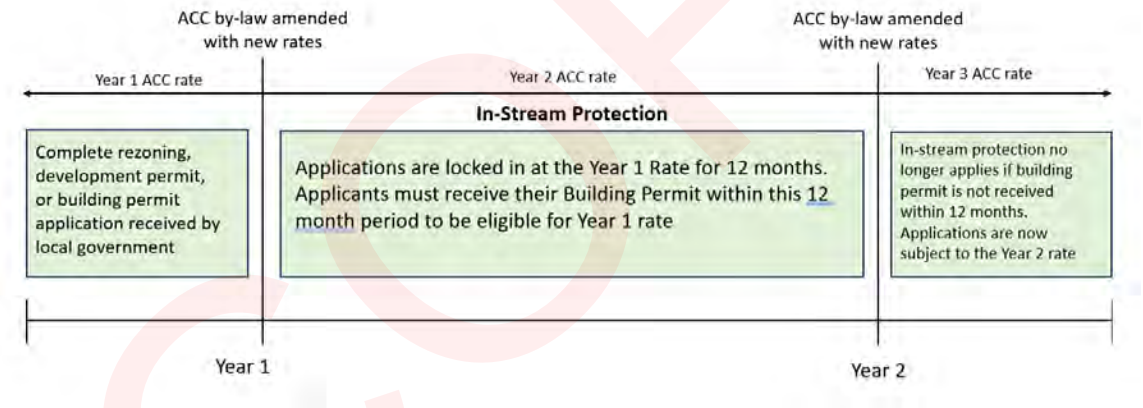
The ACC bylaw must be considered by a local government's council or board in an open meeting and the bylaw comes into effect once adopted.

Collecting and Reporting ACCs

Imposing and Collecting Charges

Once an ACC bylaw is in effect, all applicants for developments in areas where ACCs are imposed (except for developments upon which local governments cannot impose ACCs or has waived them) must pay the applicable ACC as set out in the ACC bylaw upon subdivision approval or issuance of the building permit. Similar to DCCs, the Minister has regulation-making authority to authorize the payment of ACCs in instalments beyond the building permit stage.

Section 570.91 of the LGA and section 523N of the *Vancouver Charter* include rules to protect development applications that are in progress (e.g, 'in-stream') from being subject to a new or updated charge. When a local government passes their first ACC bylaw, charges cannot apply to a development if the local government has received a complete application for a building permit, a development permit, or an amendment to a zoning bylaw before the date the ACC bylaw was adopted. When a local government amends their ACC bylaw and changes the charge amounts, applicants that have submitted complete building permit, development permit, or zoning bylaw amendment applications are given a 12-month exemption from a new ACC rate, as long as they receive their building permit within that time period.



To enhance transparency and accountability, under section 570.8 in the LGA and section 523L of the *Vancouver Charter*, local governments are required to deposit ACCs in reserve funds established by bylaw for each area in which ACCs are imposed. ACCs collected must be deposited in reserve funds established for each area in which an ACC is imposed. ACC reserve funds, together with interest, can only be used to pay:

- the capital costs of providing, constructing, altering, or expanding amenities as outlined in the ACC bylaw.
- principal and interest on a debt incurred as a result of an expenditure.
- a person subject to an ACC for some or all of the capital costs a person has incurred in completing a project if it was completed under a partnering agreement.

A council/board resolution must authorize the use of any funds in an ACC reserve.

In-kind Amenities

Under section 570.9 of the LGA and section 523M of the *Vancouver Charter*, the legislation also allows applicants to provide an amenity in-kind or land for an amenity in-lieu of paying the monetary ACC amount. In-kind contributions allow for situations where it may be more efficient, economical, and mutually beneficial to both a developer and a local government for an amenity to be provided as part of a particular development. For example, a developer and a local government may agree upon building a youth centre within the base of a new, large multi-residential development, rather than paying a monetary charge to be used by the local government at a later date to build a youth centre.

If an applicant is providing an amenity or land instead of paying a monetary ACC amount, a local government is required to enter into an agreement with the developer that outlines certain matters, including details about when the amenity will be provided, who will provide it, the value of the amenity, and any payment or credit to the developer if the value of amenity or land exceeds what the monetary charge would have been otherwise.

Reporting Requirements

Under section 570.92 of the LGA and section 523O of the *Vancouver Charter*, local governments are required to prepare and consider a report regarding the collection and use of ACC funds each year. The LGA further requires that these reports must be prepared and considered before June 30.

A report must include the following:

- the amount of ACCs received;
- expenditures from the ACC reserve fund(s), including any expenditures made to a person or public authority under a partnering agreement;
- the balance in the ACC reserve fund(s) at the start and at the end of the applicable year;
- any waivers or reductions made; and,
- any in-kind amenity contributions.

These reports must be made available to the public.

Monitoring and Updating an ACC Program

Local governments can update their ACC bylaw as needed. For greater efficiency and alignment with land use and financial planning cycles, local governments may consider reviewing and updating ACC bylaws in line with new and updated financial plans, OCPs, HNRs, and zoning bylaws.

Local governments may consider regularly monitoring land economic conditions within the community to ensure charges are not too onerous on development and make adjustments to charges accordingly. Along with regular monitoring and reviews of the ACC bylaw, local governments are recommended to regularly review charges and adjust them as needed to keep up with the changing costs of amenities, the introduction of new amenities or the removal of completed amenities when the predicted amount of charges for them has been collected. Regular reviews and updates can prevent against sudden, significant increases in charges, which can negatively affect development viability.

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Local governments will need to follow the same legislated process and considerations, including consultation requirements, for any amendment to the ACC bylaw.

Regulations

The legislation includes various regulation-making authorities for the Province to prescribe additional requirements or address any issues that may arise as local governments begin to impose ACCs. Regulation-making authorities include:

- defining what cannot be considered an 'amenity.'
- authorizing payment of ACCs in instalments.
- setting specific requirements for consultation on the ACC bylaw (e.g., notice and process requirements, who must be consulted, when consultation is not required).
- exempting classes of affordable housing from paying ACCs.
- establishing criteria for what constitutes an eligible development for a waiver or reduction of ACCs.
- prescribing other bases by which local governments can vary charges.
- prescribing additional information that local governments must consider when developing their amenity cost charge bylaws.
- adjusting or limiting charges and setting specific requirements for how local governments set their charges (e.g., establishing a methodology for how local governments allocate benefit of amenities to existing population, which they are required to deduct from charges; requiring that the methodology be applied by an individual with a specific professional designation; setting a minimum assist factor).
- prescribing that additional information is required to be included in agreements between developers and local governments when an in-kind amenity is provided in-lieu of a monetary charge.
- prescribing a period longer than 12 months for in-stream rate protection of precursor development applications (e.g., building permits, development permits, and zoning bylaw amendments).
- prescribing that additional information is required in the annual ACC report.

Key Differences between DCCs and ACCs

For reference, key differences between the DCC and ACC tools include:

Development Cost Charges (DCCs)	Amenity Cost Charges (ACCs)
Existing tool: Introduced in the 1970s	***New tool***: Introduced in 2023
What funds can be used for: Specified types of infrastructure that service a new development: sewer, water, drainage, roads, parkland and park improvements, fire protection facilities	***What funds can be used for***: Amenities that provide social, cultural, heritage, recreational, or environmental benefits to a community (e.g., community centre, library, daycare)

Development Cost Charges (DCCs)	Amenity Cost Charges (ACCs)
(new), police facilities (new), and solid waste and recycling facilities (new)	
Consultation: No legislated requirement to consult; expectations for consultation are set out by policy. The Inspector of Municipalities looks at evidence of consultation when considering approval of DCC bylaws.	***Consultation***: Legislation requires local governments to consult with the public and affected persons, public authorities, and organizations during the development of the bylaw
When charges cannot be imposed: • If a development does not pose capital costs burdens • If a DCC had been previously paid by a development unless there is further development • If a development contains fewer than 4 units (unless authorized by LG bylaw) • If a unit is smaller than 29 square metres • If a value of work is less than $50,000 (unless a greater amount is established by LG bylaw)	***When charges cannot be imposed:*** • If a development does not result in an increase in population of residents or workers • If an ACC had been previously paid by a development for a particular amenity unless there is further development • For costs that can be funded through DCCs • On types of affordable housing prescribed by regulation
Waivers or reductions: LG may waive or reduce a DCC for the following eligible development: • Not-for profit rental housing, including supportive living housing • For-profit affordable rental housing; • A submission of small lots that is designed to result in low greenhouse gas emissions; • A development that is designed to result in a low environmental impact	***Waivers or reductions:*** LG may waive or reduce an ACC for the following eligible development: • Not-for-profit rental housing, including supportive living housing; • For-profit affordable rental housing.
Bylaw content: Amount of charges must be specified in a schedule or schedules of DCCs	***Bylaw content:*** Area(s), amenities, and amount of charges set per lot/unit or per square metre of floor space in a development must be set out in bylaw
Consideration requirements: • Future land use patterns and development • Phasing of works and services • Provision of park land described in an OCP • How development designed to result in a low environmental impact may affect capital costs • Whether the charges are excessive in relation to the capital cost of prevailing standards of service in the municipality or regional district • Whether the charges will, in the municipality or regional district,	***Consideration requirements:*** • Applicable Official Community Plan(s) • Expected increases in population of residents and workers • Financial Plan • The capital costs of amenities, with deductions made for: o The portion of costs to be funded through grants o The portion of costs allocated to the existing population, and therefore funded by them (i.e., through property taxes)

Development Cost Charges (DCCs)	Amenity Cost Charges (ACCs)
o deter development, o discourage the construction of reasonably priced housing or the provision of reasonably priced serviced land, or o discourage development designed to result in a low environmental impact.	o The portion of costs to be funded by the local government as assistance (i.e., the assist factor)
Approval by Inspector of Municipalities: Required	***Approval by Inspector of Municipalities:*** Not required. In place of inspector approval, legislation includes other measures, including: • Consultation requirement • Regulation-making authorities that allow the Province to prescribe additional requirements and/or limitations on the use of ACCs (e.g., limit charges, require a minimum assist factor, exempt affordable housing from paying ACCs) • Inspector can request any information from local governments respecting their ACCs
In-stream protection: protection from new DCC charges if building permit is issued within 12 months of initial DCC bylaw or amending DCC bylaw subject to a precursor application being submitted	***In-stream protection:*** protection from new charges for building permits issued after initial adoption of an ACC bylaw and protection for 12 months after amending ACC bylaw subject to a precursor application being submitted
Rules against "double-charging": • Development cannot be charged a DCC if previously paid on same development unless there is further development	***Rules against "double-charging":*** • Development cannot be charged an ACC twice for a particular amenity unless it results in an increase in population of residents or workers. • ACCs cannot be used to help fund infrastructure for which DCCs can be used. • Capital costs of any amenity funded by an ACC must be recovered only once (i.e., local governments cannot use density bonusing to collect for an amenity for which an ACC is being collected).

Monitoring

The Province will monitor the adoption and use of the new development finance tools to ensure that the tools are being used as intended, to inform the need for and use of any regulation-making authority, and/or development of additional guidance or information materials.

More Information

Comprehensive guidance on the new development finance tools will be published in late summer/early fall 2024.

Please direct technical questions about Development Cost Charges (DCCs) or Amenity Cost Charges (ACCs) to:

> Ministry of Municipal Affairs, Local Government Infrastructure and Finance Branch
> Telephone: 250 387-4060
> Email: LGIF@gov.bc.ca

Questions about local government housing initiatives can be sent to:

> Ministry of Housing, Planning and Land Use Management Branch
> Telephone: 250-387-3394
> Email: PLUM@gov.bc.ca

Full text of Bill 46: https://www.bclaws.gov.bc.ca/civix/document/id/bills/billscurrent/4th42nd:gov46-1

More information about local government housing initiatives:
https://www2.gov.bc.ca/gov/content/housing-tenancy/local-governments-and-housing/housing-initiatives

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4th Session, 42nd Parliament (2023)
FIRST READING

The following electronic version is for informational purposes only.
The printed version remains the official version.

HONOURABLE RAVI KAHLON
MINISTER OF HOUSING

BILL 46 – 2023
HOUSING STATUTES (DEVELOPMENT FINANCING) AMENDMENT ACT, 2023

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows:

Local Government Act

Explanatory Note

1 Section 25 (1) of the Local Government Act, R.S.B.C. 2015, c. 1, is amended by adding the following paragraph:

(d.1) provide that Division 19.1 *[Amenity Costs Recovery]* of Part 14 applies to the municipality; ***.***

Explanatory Note

2 Section 482 is amended

(a) in subsection (2) (a) by adding "subject to subsection (2.1),***" before "***conditions relating to the conservation or provision of amenities***", and***

(b) by adding the following subsection:

(2.1) A zoning bylaw must not establish conditions relating to the conservation or provision of an amenity that is specified in an amenity cost charge bylaw under section 570.7 (1) (b) *[amenities receiving funding from amenity cost charge]*.

Explanatory Note

3 Section 559 is amended

(a) in subsection (2) (a) by striking out "sewage, water, drainage and highway facilities***" and substituting "***sewage, water, drainage, fire protection, police, highway and solid waste and recycling facilities***", and***

(b) by adding the following subsections:

(2.1) For the purposes of subsection (2) (a) and section 566 (2) (a), a reference to a highway facility includes highway facilities that serve provincial and municipal interests if

(a) the municipality and the province have entered into an arrangement to share the costs of the highway facilities,

(b) the highway facilities directly or indirectly enable the integrated functioning of the provincial and municipal highway systems, and

(c) the highway facilities, in whole or in part, directly or indirectly service the development.

(2.2) The amount of the development cost charges imposed for a purpose referred to in subsection (2) respecting highway facilities must not exceed the amount of the costs of the highway facilities to be paid by the municipality.

Explanatory Note

4 Section 560 (2) is amended by adding the following paragraph:

(a.1) in relation to a development cost charge imposed for a purpose referred to in section 559 (2) respecting highway facilities, the charge does not relate to highway facilities that meet the conditions in section 559 (2.1), ***.***

Explanatory Note

5 Section 566 (2) (a) is amended by striking out "sewage, water, drainage and highway facilities***" and substituting "***sewage, water, drainage, fire protection, police, highway and solid waste and recycling facilities***".***

Explanatory Note

6 Section 570 (1) is amended in paragraph (a) of the definition of* "works" *by striking out "sewage, water, drainage and highway facilities***" and substituting "***sewage, water, drainage, fire protection, police, highway and solid waste and recycling facilities***".***

Explanatory Note

7 The following Division is added to Part 14:

Division 19.1 – Amenity Costs Recovery

Definitions in relation to this Division

570.1 In this Division:

"amenity" means a facility or feature that provides social, cultural, heritage, recreational or environmental benefits to a community, including, without limitation,

(a) a community, youth or seniors' centre,

(b) a recreational or athletic facility,

(c) a library,

(d) a day care facility, and

(e) a public square,

but does not include a facility or feature within a class of facilities or features that are prescribed by regulation not to be amenities;

"amenity cost charge" means a charge imposed by an amenity cost charge bylaw;

"amenity cost charge bylaw" means a bylaw under section 570.2 (1);

"capital costs" includes

(a) planning, engineering and legal costs directly related to the work for which a capital cost may be incurred under this Division,

(b) interest costs directly related to the work referred to in paragraph (a), and

(c) expenditures made to a person or public authority under a partnering agreement in order to pay capital costs incurred by the person or public authority;

"development" means those items referred to in section 570.2 (1) (a) and (b) for which an amenity cost charge may be imposed.

Amenity cost charges: imposition and collection

570.2 (1) A local government may, by bylaw, for the purpose described in subsection (2), impose amenity cost charges on every person who obtains

(a) approval of a subdivision, or

(b) a building permit authorizing the construction, alteration or extension of a building or structure.

(2) Amenity cost charges may be imposed under subsection (1) for the purpose of providing funds to assist the local government to pay the capital costs of providing, constructing, altering or expanding amenities to benefit, directly or indirectly,

(a) the development, and

(b) the increased population of residents or workers that results from the development

for which the charge is being imposed.

(3) An amenity referred to in subsection (2) must

(a) be owned by a municipality or regional district, or

(b) be owned or operated by a person or public authority that has entered into a partnering agreement with a municipality or regional district in respect of the amenity.

(4) Subject to subsection (5), an amenity cost charge that is payable under a bylaw under this section must be paid at the time of the approval of the subdivision or the issue of the building permit.

(5) The minister may, by regulation in respect of all or different classes of developments, authorize the payment of amenity cost charges in instalments and prescribe conditions under which the instalments may be paid.

(6) If a board has the responsibility of providing a service that includes providing, constructing, altering or expanding one or more amenities referred to in subsection (2) in a participating municipality, the board may, by bylaw under subsection (1), impose an amenity cost charge that is applicable within that municipality.

(7) The municipality must collect and remit an amenity cost charge imposed under subsection (6) to the regional district in the manner provided for in the applicable amenity cost charge bylaw.

Consultation required for amenity cost charge bylaw

570.3 (1) During the development of a bylaw that imposes an amenity cost charge, or the development of an amendment to such a bylaw, the proposing local government must provide one or more opportunities it considers appropriate for consultation with

(a) the public, and

(b) persons, public authorities and organizations that the local government considers will be affected by the bylaw.

(2) No consultation is required to repeal a bylaw referred to in subsection (1).

(3) The Lieutenant Governor in Council may make regulations respecting consultation under subsection (1), including regulations as follows:

(a) establishing notice requirements and the process for consultation;

(b) prescribing persons, public authorities and organizations that must be consulted;

(c) prescribing circumstances in which no consultation is required.

Circumstances in which amenity cost charges are not payable

570.4 (1) An amenity cost charge is not payable in relation to a development authorized by a building permit that authorizes the construction, alteration or extension of a building or part of a building that is, or will be, after the construction, alteration or extension, exempt from taxation under either of the following provisions of the *Community Charter*:

(a) section 220 (1) (h) *[statutory exemption for places of public worship]*;

(b) section 224 (2) (f) *[permissive exemptions in relation to places of public worship]*.

(2) An amenity cost charge is not payable if no increase in the population of residents or workers is expected to result from the development.

(3) An amenity cost charge in respect of a particular amenity is not payable if an amenity cost charge in respect of that amenity has previously been paid for the same development, unless further development is expected to result in an increase in the population of residents or workers.

(4) An amenity cost charge is not payable in respect of a capital cost for which a development cost charge may be imposed.

(5) An amenity cost charge is not payable in relation to a development for any class of affordable housing prescribed by regulation.

General prohibition against waiving or reducing charges

570.5 (1) Except as authorized under section 570.6, a local government must not provide assistance by waiving or reducing an amenity cost charge.

(2) This section operates as a restriction on

(a) sections 263 (1) (c) *[regional district corporate powers – providing assistance]* and 274 *[assistance under partnering agreements]* of this Act, and

(b) sections 8 (1) *[natural person powers]* and 21 *[partnering agreements]* of the *Community Charter*.

Development for which charges may be waived or reduced

570.6 (1) In this section, **"eligible development"** means a development that is eligible in accordance with an applicable bylaw or regulation under this section as being for one or both of the following categories:

(a) not-for-profit rental housing, including supportive living housing;

(b) for-profit affordable rental housing.

(2) Subject to a bylaw under subsection (3) and an applicable regulation under subsection (6), a local government may waive or reduce an amenity cost charge for an eligible development.

(3) For the purposes of subsection (2), the local government, by bylaw,

(a) must establish what constitutes an eligible development or a class of eligible development for the purposes of one or more categories of eligible development described in subsection (1),

(b) must establish the amount or rates of reduction for an eligible development, which may be different for different categories of eligible

development described in subsection (1) or different classes of eligible development established in the bylaw, and

(c) may establish the requirements that must be met in order to obtain a waiver or reduction under subsection (2) and the conditions on which such a waiver or reduction may be granted.

(4) The authority under subsection (2) is an exception to

(a) section 273 *[prohibition against assistance to business]* of this Act, and

(b) section 25 (1) *[prohibition against assistance to business]* of the *Community Charter*.

(5) If a local government delegates the power under subsection (2), the person who is subject to the decision of the delegate is entitled to have the local government reconsider the matter.

(6) The minister may make regulations in relation to subsection (3)

(a) establishing,

(b) restricting, or

(c) establishing criteria for determining

what constitutes an eligible development or a class of eligible development for the purposes of one or more categories of eligible development described in subsection (1).

Amenity cost charge bylaw: specifying amenities and setting charges

570.7 (1) An amenity cost charge bylaw must specify the following:

(a) one or more areas in which development is subject to an amenity cost charge;

(b) for each area referred to in paragraph (a), the amenities that will receive funding from an amenity cost charge;

(c) the amount of the charge or charges imposed in a schedule or schedules of amenity cost charges.

(2) Amenity cost charges may vary as provided in subsection (3), but must

(a) be set as a charge

(i) per lot or per unit in a development, or

(ii) per square metre of floor space in a development, and

(b) be similar for all developments that are expected to result in a similar increase in the population of residents or workers.

(3) Amenity cost charges may vary with respect to one or more of the following:

(a) different areas specified under subsection (1) (a);

(b) different zones;

(c) different uses;

(d) different sizes or different numbers of lots or units in a development;

(e) any other basis for variation prescribed by regulation.

(4) In specifying, in the amenity cost charge bylaw, the areas in which development is subject to an amenity cost charge and the amenities in each of those areas that will receive funding from the charge, a local government must take the following into consideration:

(a) an applicable official community plan and other relevant planning documents;

(b) expected increases in the population of residents and workers;

(c) the local government's financial plan;

(d) any other information prescribed by regulation.

(5) In setting amenity cost charges, a local government must take the following into consideration:

(a) in each area in which development is subject to an amenity cost charge, the capital costs of amenities that will receive funding from the charge;

(b) the phasing of amenities;

(c) whether the charges are excessive in relation to the capital cost of prevailing standards of service in the municipality or regional district;

(d) whether the charges will, in the municipality or regional district,

(i) deter development, or

(ii) discourage the construction of reasonably priced housing or the provision of reasonably priced serviced land;

(e) any other information prescribed by regulation.

(6) In setting amenity cost charges, a local government must deduct the following from the estimated capital cost of each amenity in an area:

(a) the portion of the estimated capital cost to be funded by grants and other sources of funding that are external to the municipality or regional district;

(b) the portion of the estimated capital cost to be allocated to the existing population of the area and, as a result, funded by the local government;

(c) the portion of the estimated capital cost to be allocated to the development but funded by the local government.

(7) A local government must make available to the public, on request, the considerations, information and calculations used to determine the schedule or

schedules referred to in subsection (1), but any information respecting the contemplated acquisition costs of specific properties need not be provided.

(8) The Lieutenant Governor in Council may make regulations respecting the setting of amenity cost charges, including regulations as follows:

(a) adjusting or limiting amenity cost charges;

(b) prescribing economic and other analyses that local governments must undertake in setting amenity cost charges;

(c) establishing the method for making deductions under subsection (6) (b);

(d) requiring that the method for making deductions under subsection (6) (b) be applied by an individual with a professional designation specified in the regulation;

(e) specifying a minimum portion that must be deducted for the purposes of subsection (6) (c).

Use of amenity cost charges

570.8 (1) An amenity cost charge paid to a local government must be deposited by the local government in a separate special amenity cost charge reserve fund established for each area in which development is subject to an amenity cost charge.

(2) Money in amenity cost charge reserve funds, together with interest on it, may be used only for the following:

(a) to pay the capital costs of providing, constructing, altering or expanding amenities specified in the amenity cost charge bylaw under section 570.7 (1) (b);

(b) to pay principal and interest on a debt incurred by a local government as a result of an expenditure under paragraph (a);

(c) to pay a person subject to an amenity cost charge for some or all of the capital costs the person incurred in completing a project described in paragraph (a) if

(i) the project was completed under an agreement referred to in section 570.9 (1) between the person and the local government, and

(ii) the project is included in the calculations used to determine the amount of that amenity cost charge.

(3) Authority to make payments under subsection (2) must be authorized by bylaw.

(4) The inspector may require a municipality or regional district to provide the inspector with a report on the status of amenity cost charge collections, expenditures and proposed expenditures for a time period the inspector specifies.

(5) After reviewing a report under subsection (4), the inspector may order the transfer of funds from an amenity cost charge reserve fund under this section to a reserve fund established for a capital purpose.

Provision of amenity instead of all or part of charge

570.9 (1) Despite an amenity cost charge bylaw, a local government may, by bylaw and in accordance with this section, enter into an agreement with a person under which the person provides, constructs, alters or expands an amenity, or provides land for an amenity, instead of paying all or part of an amenity cost charge.

(2) An amenity referred to in subsection (1) must

(a) be an amenity that is specified in the amenity cost charge bylaw under section 570.7 (1) (b), and

(b) have a location acceptable to the local government.

(3) Without limiting the matters that may be dealt with in an agreement under subsection (1), the agreement must specify the following:

(a) the amenity to be provided, constructed, altered or expanded or the land to be provided for the amenity;

(b) the location of the amenity or land;

(c) who is to provide, construct, alter or expand the amenity or provide the land;

(d) when the amenity is to be provided, constructed, altered or expanded or when the land is to be provided;

(e) the value of the amenity or land and how the local government and the person determined that value;

(f) any remainder of the amenity cost charge to be paid under subsection (4);

(g) the payment or crediting to the person of the amount, if any, by which the value of the amenity or land exceeds the amount of the amenity cost charge;

(h) any other information prescribed by regulation.

(4) If partial payment of an amenity cost charge is made by providing, constructing, altering or expanding an amenity, or providing land for an amenity, the remainder must be paid in accordance with the amenity cost charge bylaw.

(5) If land for an amenity is to be provided under subsection (1), a registrable transfer of the land must be provided to the local government.

Effect of bylaws adopted after application for rezoning, development permit or building permit submitted

570.91 (1) In this section, **"in-stream"** and **"precursor application"** have the same meaning as in section 568 (1).

(2) An initial amenity cost charge bylaw that would otherwise be applicable to the construction, alteration or extension of a building or structure has no effect with respect to that construction, alteration or extension if a precursor application to the building permit authorizing that construction, alteration or extension is in-stream on the date the initial bylaw is adopted.

(3) Subject to subsection (4), an amended amenity cost charge bylaw that would otherwise be applicable to the construction, alteration or extension of a building or structure has no effect with respect to that construction, alteration or extension if

(a) the building permit authorizing that construction, alteration or extension is issued within 12 months, or any longer period prescribed by regulation, after the date the bylaw is amended, and

(b) a precursor application to that building permit is in-stream on the date the bylaw is amended.

(4) Subsection (3) does not apply if the applicant for that building permit agrees in writing that the amended amenity cost charge bylaw should have effect.

Annual amenity cost charges report

570.92 (1) Before June 30 in each year, a local government must prepare and consider a report in accordance with this section respecting the previous year.

(2) The report must include the following, reported for each area in which development is subject to an amenity cost charge in the applicable year:

(a) the amount of amenity cost charges received;

(b) the expenditures from the amenity cost charge reserve funds, including the expenditures made to a person or public authority under a partnering agreement;

(c) the balance in the amenity cost charge reserve funds at the start and at the end of the applicable year;

(d) any waivers and reductions under section 570.6 (2) *[development for which charges may be waived or reduced]*;

(e) any amenities provided, constructed, altered or expanded by a person under section 570.9 *[provision of amenity instead of all or part of charge]*;

(f) any other information prescribed by regulation.

(3) The local government must make the report available to the public from the time it considers the report until June 30 in the following year.

Information requested by inspector

570.93 As requested by the inspector, a local government must provide the inspector with any information respecting amenity cost charges, including information

respecting the following:

(a) the setting of amenity cost charges;

(b) the development of the amenity cost charge bylaw and of any amendments to it, including consultations undertaken in that development.

Regulations made for purposes of this Division

570.94 In making a regulation for the purposes of this Division, the Lieutenant Governor in Council

(a) must take into consideration any applicable information provided to the inspector under section 570.93, and

(b) may make provisions that the Lieutenant Governor in Council considers necessary or advisable for the purpose of preventing, minimizing or otherwise addressing any transitional difficulties encountered in relation to amenity cost charges.

Division does not restrict other powers

570.95 Nothing in this Division restricts or affects any other power of a local government under this or any other Act, subject to

(a) the exceptions provided in sections 570.5 (2) *[general prohibition against waiving or reducing charges]* and 570.6 (4) *[development for which charges may be waived or reduced]*, and

(b) the condition that the capital costs of any amenity funded by an amenity cost charge must be recovered only once.

Explanatory Note

8 Section 610 (2) (b) is amended by adding the following subparagraph:

(vi) a bylaw under Division 19.1 *[Amenity Costs Recovery]* of Part 14; ***.***

Explanatory Note

9 Section 617 (2) is amended by adding the following paragraph:

(f) a bylaw under Division 19.1 *[Amenity Costs Recovery]* of Part 14.

Vancouver Charter

Explanatory Note

10 Section 523D of the Vancouver Charter, S.B.C. 1953, c. 55, is amended

(a) in subsection (1) (a) by striking out "sewage, water, drainage and highway facilities***" and substituting "***sewage, water, drainage, fire protection, police, highway and solid waste and recycling facilities***", and***

(b) by adding the following subsections:

(1.1) For the purposes of subsection (1) (a), a reference to a highway facility includes highway facilities that serve provincial and city interests if

(a) the city and the province have entered into an arrangement to share the costs of the highway facilities,

(b) the highway facilities directly or indirectly enable the integrated functioning of the provincial and city street systems, and

(c) the highway facilities, in whole or in part, directly or indirectly service the development.

(1.2) The amount of the development cost levy imposed for a purpose referred to in subsection (1) respecting highway facilities must not exceed the amount of the costs of the highway facilities to be paid by the city.

Explanatory Note

11 The following Part is added:

Part XXIV-B – Amenity Cost Charges

Definitions

523E. In this Part:

"amenity" means a facility or feature that provides social, cultural, heritage, recreational or environmental benefits to a community, including, without limitation,

(a) a community, youth or seniors' centre,

(b) a recreational or athletic facility,

(c) a library, and

(d) a public square,

but does not include a facility or feature within a class of facilities or features that are prescribed by regulation not to be amenities;

"amenity cost charge" means a charge imposed by an amenity cost charge by-law;

"amenity cost charge by-law" means a by-law under section 523G (1);

"capital costs" includes

(a) planning, architectural, engineering and legal costs related to the work for which a capital cost may be incurred under this Part,

(b) the principal and interest related to the work referred to in paragraph (a), and

(c) expenditures that are made to a person or public authority pursuant to an agreement under which the person or public authority agrees to provide a service on behalf of the city and that are made to pay capital costs incurred by the person or public authority;

"development" means the construction, alteration or extension of all or part of a building or structure for which an amenity cost charge may be imposed;

"public authority" has the same meaning as in section 1 of the Schedule to the *Community Charter*.

Power to undertake projects

523F. The Council may undertake any projects to provide, construct, alter or expand amenities.

Imposition and collection of amenity cost charge

523G. (1) The Council may, by by-law, impose an amenity cost charge in accordance with this Part for the purpose of providing funds to assist the Council to pay the capital costs of providing, constructing, altering or expanding amenities to benefit, directly or indirectly,

(a) the development, and

(b) the increased population of residents or workers that results from the development

for which the charge is being imposed.

(2) Subject to section 523I *[circumstances in which amenity cost charges are not payable]*, the amenity cost charge must be imposed on every person entitled to the delivery of a building permit authorizing the construction, alteration or extension of all or part of a building or structure.

(3) An amenity referred to in subsection (1) must

(a) be owned by the city, or

(b) be owned or operated by a person or public authority that has entered into an agreement with the city in respect of the amenity and under which agreement the person or public authority agrees to provide a service on behalf of the city.

(4) An amenity cost charge is a condition of the issuance of a building permit and must be paid at the time or times a building permit or permits are issued for the development or redevelopment of property in an area to which an amenity cost charge by-law applies.

(5) For the purposes of subsection (4), the Council may define what constitutes development or redevelopment of property and may provide that, if a development takes place in stages, each stage is deemed to be part of the development.

(6) The Council may, in respect of all or different classes of developments, authorize the payment of amenity cost charges in instalments, prescribe conditions under which the instalments may be paid and provide that, if not paid, the instalment must be inserted in the real property tax roll as a charge imposed with respect to the parcel or parcels in relation to which the building permit was issued.

Consultation required for amenity cost charge by-law

523H. (1) During the development of a by-law that imposes an amenity cost charge, or the development of an amendment to such a by-law, the Council must provide one or more opportunities it considers appropriate for consultation with

(a) the public, and

(b) persons, public authorities and organizations that the Council considers will be affected by the by-law.

(2) No consultation is required to repeal a by-law referred to in subsection (1).

(3) The Lieutenant Governor in Council may make regulations respecting consultation under subsection (1), including regulations as follows:

(a) establishing notice requirements and the process for consultation;

(b) prescribing persons, public authorities and organizations that must be consulted;

(c) prescribing circumstances in which no consultation is required.

Circumstances in which amenity cost charges are not payable

523I. (1) An amenity cost charge is not payable if

(a) a parcel of land is, or will be after construction, alteration or extension, exempt from taxation under section 396 (1) (c) (iv) *[place of public worship]*, or

(b) a parcel of land, owned by the Federal or Provincial government, the City of Vancouver or a non-profit organization, is or will be, after construction, alteration or extension, used for social housing and, for the purposes of this paragraph, the Council may define what constitutes social housing.

(2) An amenity cost charge is not payable in respect of all or part of any capital project

(a) provided to the city pursuant to a by-law passed under section 292 *[subdivision control]*,

(b) in respect of which an assessment has been imposed under Part XXIV *[Local Improvements]*, or

(c) in respect of which a development cost levy may be imposed under Part XXIV-A *[Development Cost Levies]*.

(3) An amenity cost charge is not payable if no increase in the population of residents or workers is expected to result from the development.

(4) An amenity cost charge in respect of a particular amenity is not payable if an amenity cost charge in respect of that amenity has previously been paid for the same development, unless further development is expected to result in an increase in the population of residents or workers.

(5) An amenity cost charge is not payable in relation to a development for any class of affordable housing prescribed by regulation.

Development for which charges may be waived or reduced

523J. (1) In this section, **"eligible development"** means development that is eligible in accordance with an applicable by-law or regulation under this section as being for for-profit affordable rental housing.

(2) Subject to a by-law under subsection (3) and an applicable regulation under subsection (5), the Council may waive or reduce an amenity cost charge for an eligible development.

(3) For the purposes of subsection (2), the Council, by by-law,

(a) must establish what constitutes an eligible development or a class of eligible development,

(b) must establish the amount or rates of reduction for an eligible development, which may be different for different classes of eligible development established in the by-law, and

(c) may establish the terms and conditions that must be met in order to obtain a waiver or reduction under subsection (2).

(4) If the Council delegates the power under subsection (2), the person who is subject to the decision of the delegate is entitled to have the Council reconsider the matter.

(5) The minister may make regulations in relation to subsection (3)

(a) establishing,

(b) restricting, or

(c) establishing criteria for determining

what constitutes an eligible development or a class of eligible development.

Amenity cost charge by-law – specifying amenities and setting charges

523K. (1) An amenity cost charge by-law must specify the following:

(a) one or more areas in which development is subject to an amenity cost charge;

(b) for each area referred to in paragraph (a), the amenities that will receive funding from an amenity cost charge;

(c) the amount of the charge or charges imposed in a schedule or schedules of amenity cost charges.

(2) Amenity cost charges may vary as provided in subsection (3), but must

(a) be set as a charge

(i) per lot or per unit in a development, or

(ii) per square metre of floor space in a development, and

(b) be similar for all developments that are expected to result in a similar increase in the population of residents or workers.

(3) Amenity cost charges may vary with respect to one or more of the following:

(a) different areas specified under subsection (1) (a);

(b) different zones;

(c) different uses;

(d) different sizes or different numbers of lots or units in a development;

(e) any other basis for variation prescribed by regulation.

(4) In specifying, in the amenity cost charge by-law, the areas in which development is subject to an amenity cost charge and the amenities in each of those areas that will receive funding from the charge, the Council must take the following into consideration:

(a) an applicable development plan as defined in section 559;

(b) an applicable official development plan as defined in section 559;

(c) other relevant planning documents;

(d) future land use patterns in the city;

(e) expected increases in the population of residents and workers;

(f) reports submitted by the Director of Finance under section 219 *[report on revenue and expenditure]*;

(g) any other information prescribed by regulation.

(5) In setting amenity cost charges, the Council must take the following into consideration:

(a) in each area in which development is subject to an amenity cost charge, the capital costs of amenities that will receive funding from the charge;

(b) the phasing of amenities;

(c) whether the charges are excessive in relation to the capital cost of prevailing standards of service in the city;

(d) whether the charges will, in the city,

(i) deter development, or

(ii) discourage the construction of reasonably priced housing or the provision of reasonably priced serviced land;

(e) any other information prescribed by regulation.

(6) In setting amenity cost charges, the Council must deduct the following from the estimated capital cost of each amenity in an area:

(a) the portion of the estimated capital cost to be funded by grants and other sources of funding that are external to the city;

(b) the portion of the estimated capital cost to be allocated to the existing population of the area and, as a result, funded by the Council;

(c) the portion of the estimated capital cost to be allocated to the development but funded by the Council.

(7) The Council must make available to the public, on request, the considerations, information and calculations used to determine the schedule or schedules referred to in subsection (1), but any information respecting the contemplated acquisition costs of specific properties need not be provided.

(8) The Lieutenant Governor in Council may make regulations respecting the setting of amenity cost charges, including regulations as follows:

(a) adjusting or limiting amenity cost charges;

(b) prescribing economic and other analyses that the Council must undertake in setting amenity cost charges;

(c) establishing the method for making deductions under subsection (6) (b);

(d) requiring that the method for making deductions under subsection (6) (b) be applied by an individual with a professional designation specified in the regulation;

(e) specifying a minimum portion that must be deducted for the purposes of subsection (6) (c).

Use of amenity cost charges

523L. (1) An amenity cost charge must be deposited in a separate amenity cost charge reserve fund established for each area in which development is subject to an amenity cost charge.

(2) Money in amenity cost charge reserve funds, together with interest, may be used only

(a) to pay the capital costs of providing, constructing, altering or expanding amenities specified in the amenity cost charge by-law under section 523K (1) (b), or

(b) to pay a person subject to an amenity cost charge for some or all of the capital costs the person incurred in completing a project referred to in paragraph (a) if

(i) the project was completed under an agreement referred to in section 523M (1) between the person and the Council, and

(ii) the project is included in the calculations used to determine the amount of that amenity cost charge.

(3) Payments out of an amenity cost charge reserve fund must be authorized by a resolution of the Council, and one resolution may authorize a series of payments in respect of any amenity.

Provision of amenity instead of all or part of charge

523M. (1) Despite an amenity cost charge by-law, the Council may, by by-law and in accordance with this section, enter into an agreement with a person under which the person provides, constructs, alters or expands an amenity, or provides land for an amenity, instead of paying all or part of an amenity cost charge.

(2) An amenity referred to in subsection (1) must

(a) be an amenity that is specified in the amenity cost charge by-law under section 523K (1) (b), and

(b) have a location acceptable to the Council.

(3) Without limiting the matters that may be dealt with in an agreement under subsection (1), the agreement must specify the following:

(a) the amenity to be provided, constructed, altered or expanded or the land to be provided for the amenity;

(b) the location of the amenity or land;

(c) who is to provide, construct, alter or expand the amenity or provide the land;

(d) when the amenity is to be provided, constructed, altered or expanded or when the land is to be provided;

(e) the value of the amenity or land and how the Council and the person determined that value;

(f) any remainder of the amenity cost charge to be paid under subsection (4);

(g) the payment or crediting to the person of the amount, if any, by which the value of the amenity or land exceeds the amount of the amenity cost charge;

(h) any other information prescribed by regulation.

(4) If partial payment of an amenity cost charge is made by providing, constructing, altering or expanding an amenity, or providing land for an amenity, the remainder must be paid in accordance with the amenity cost charge by-law.

(5) If land for an amenity is to be provided under subsection (1), a registrable transfer of the land must be provided to the Council.

COPY

Effect of by-laws adopted or amended after application for rezoning, development permit or building permit submitted

523N. (1) In this section, **"in-stream"** and **"precursor application"** have the same meaning as in section 523D (8.3) *[development cost levies]*.

(2) An initial amenity cost charge by-law that would otherwise be applicable to the construction, alteration or extension of a building or structure, or part of a building or structure, has no effect with respect to that construction, alteration or extension if a precursor application to the building permit authorizing that construction, alteration or extension is in-stream on the date the initial by-law is adopted.

(3) An amended amenity cost charge by-law that would otherwise be applicable to the construction, alteration or extension of a building or structure, or part of a building or structure, has no effect with respect to that construction, alteration or extension if

(a) the building permit authorizing that construction, alteration or extension is issued within 12 months, or any longer period prescribed by regulation, after the date the by-law is amended, and

(b) a precursor application to the building permit is in-stream on the date the by-law is amended,

unless the applicant for that building permit agrees in writing that the amended by-law should have effect.

Annual report by Director of Finance

523O. In each year,

(a) the Director of Finance must prepare and submit to the Council a report for the previous year that includes the following, reported for each area in which development is subject to an amenity cost charge in the applicable year:

(i) the amount of amenity cost charges received;

(ii) the expenditures from the amenity cost charge reserve funds, including the expenditures made to a person or public authority pursuant to an agreement under which the person or public authority agrees to provide a service on behalf of the city;

(iii) the balance in the amenity cost charge reserve funds at the start and at the end of the applicable year;

(iv) any waivers and reductions under section 523J *[development for which charges may be waived or reduced]*;

(v) any amenities provided, constructed, altered or expanded by a person under section 523M *[provision of amenity instead of all or part of charge]*;

(vi) any other information prescribed by regulation, and

(b) as soon as practicable after receiving the report, the Council must consider the report and make it available to the public.

Information requested by minister

523P. As requested by the minister, the Council must provide the minister with any information respecting amenity cost charges, including information respecting the following:

(a) the setting of amenity cost charges;

(b) the development of the amenity cost charge by-law and of any amendments to it, including consultations undertaken in that development.

Regulations

523Q. (1) The Lieutenant Governor in Council may make regulations respecting any matter for which regulations are contemplated by this Part.

(2) In making a regulation for the purposes of this Part, the Lieutenant Governor in Council

(a) must take into consideration any applicable information provided to the minister under section 523P, and

(b) may make provisions that the Lieutenant Governor in Council considers necessary or advisable for the purpose of preventing, minimizing or otherwise addressing any transitional difficulties encountered in relation to amenity cost charges.

Part does not restrict other powers

523R. Nothing in this Part restricts or affects any other power contained in this Act, subject to the condition that the capital costs of any amenity funded by an amenity cost charge must be recovered only once.

Explanatory Note

12 Section 565.1 is amended

(a) in subsection (2) (a) by adding "subject to subsection (2.1),***" before "***conditions relating to the conservation or provision of amenities***", and***

(b) by adding the following subsection:

(2.1) A zoning by-law must not establish conditions relating to the conservation or provision of an amenity that is specified in an amenity cost charge by-law under section 523K (1) (b) *[amenities receiving funding from amenity cost charge]*.

Explanatory Note

13 Section 592 (2) (b) is amended by adding the following subparagraph:

(ii.1) a by-law under Part XXIV-B, **.**

Explanatory Note

14 Section 597 (2) is amended

(a) in paragraph (b) by striking out "bylaw***" and substituting "***by-law***", and***

(b) by adding the following paragraph:

(b.1) a by-law under Part XXIV-B, **.**

Consequential Amendments

Community Charter

Explanatory Note

15 Section 188 (2) of the Community Charter, S.B.C. 2003, c. 26, is amended by adding the following paragraph:

(a.1) money received from the imposition of an amenity cost charge, which must be placed to the credit of a reserve fund in accordance with section 570.8 *[use of amenity cost charges]* of the *Local Government Act*; **.**

Explanatory Note

16 Section 189 (5) is repealed and the following substituted:

(5) As a restriction on subsections (2) and (3), a council must not transfer amounts or use money from a fund required under any of the following provisions unless the bylaw is approved by the minister:

(a) section 188 (2) (a) *[development cost charge reserve fund]*;

(b) section 188 (2) (a.1) *[amenity cost charge reserve fund]*;

(c) section 188 (2) (b) *[park land acquisition reserve fund]*.

Islands Trust Act

Explanatory Note

17 Section 29 (1) (b) of the Islands Trust Act, R.S.B.C. 1996, c. 239, is amended by adding the following subparagraph:

(ii.1) Division 19.1 *[Amenity Costs Recovery]*; **.**

Commencement

18 This Act comes into force on the date of Royal Assent.

Explanatory Notes

CLAUSE 1: ***[Local Government Act, section 25]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 2: ***[Local Government Act, section 482]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 3: ***[Local Government Act, section 559]*** amends a section to

- add fire protection, police and solid waste and recycling facilities to the list of purposes for which local governments may impose development cost charges,
- add conditions for imposing development cost charges for highway facilities, and
- limit the amount of the development cost charge that may be imposed.

CLAUSE 4: ***[Local Government Act, section 560]*** amends a section to add another basis on which the inspector may refuse to approve a bylaw.

CLAUSE 5: ***[Local Government Act, section 566]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 6: ***[Local Government Act, section 570]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 7: ***[Local Government Act, Division 19.1 of Part 14]*** establishes a framework that authorizes local governments to impose amenity cost charges on developers.

CLAUSE 8: ***[Local Government Act, section 610]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 9: ***[Local Government Act, section 617]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 10: ***[Vancouver Charter, section 523D]*** amends a section to

- establishes a framework that authorizes the Council to impose amenity cost charges on developers.
- add conditions for imposing development cost levies for highway facilities, and
- limit the amount of development cost levy that may be imposed.

CLAUSE 11: ***[Vancouver Charter, Part XXIV-B]*** establishes a framework that authorizes the council to impose amenity cost charges on developers.

CLAUSE 12: ***[Vancouver Charter, section 565.1]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 13: ***[Vancouver Charter, section 592]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 14: ***[Vancouver Charter, section 597]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 15: ***[Community Charter, section 188]*** is consequential to amendments made by this Bill to the *Local Government Act*.

CLAUSE 16: ***[Community Charter, section 189]*** is consequential to amendments made by this Bill to the *Local Government Act*.

CLAUSE 17: ***[Islands Trust Act, section 29]*** is consequential to amendments made by this Bill to the *Local Government Act*.

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Deferred from November 6, 2024 EASC meeting

STAFF REPORT

DATE: November 6, 2024

FILE: 0550-04 EASC

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: David Leitch
Chief Administrative Officer

RE: **DEVELOPMENT COST CHARGES AND AMENITY COST CHARGES**

PURPOSE

To consider additional information on Development Cost Charges (DCCs) and Amenity Cost Charges (ACCs) for Electoral Areas B, C and D.

POLICY ANALYSIS

The attached report was considered at the July 24, 2024 Board meeting at which time the following resolution was passed:

> SRD 615/24
>
> THAT a report be prepared for further consideration that investigates development cost charges for Electoral Area D and an amenity contribution policy for Electoral Areas B and C.

The *Local Government Act (LGA)* has provisions for both DCCs (Division 19) and ACCs (Division 19.1) stating a local government may, by bylaw, impose development cost charges and amenity cost charges on every person who obtains approval of a subdivision or a building permit. Amenity cost charges imposed [n accordance with ss. 570.1 - 570.95 of the *LGA* are imposed by bylaw and not by policy. Official Community Plans (OCPs) include identified community amenities in policy that can be used to influence contributions at the time of development and further considered within ACC bylaws with charges collected for such amenities.

EXECUTIVE SUMMARY

Development Cost Charges (DCCs) can be collected to help pay for specific infrastructure needed to service new development, while Amenity Cost Charges (ACCs) are a tool to fund community amenities needed for growth. The purpose of these development finance tools is to support local governments in meeting the expanded service and infrastructure needs that may accompany new development. The new ACC tool enables local governments to levy fees for new development to fund the capital costs of amenities such as community centres, libraries, and childcare facilities, if identified in the electoral area OCP as amenities that are needed in the community. Interim guidance has been provided by the Province of BC to assist local government in implementing ACCs; however, an anticipated update to this guide has not been published at this time.

Although ACCs can be highlighted through policy within individual OCPs and used to encourage the provision of specific amenities by a developer at the time of development, the requirement to provide either a DCCs or ACCs can only be administered through a bylaw. Regardless of the electoral area, the process for imposing either DCCs or ACCs under separate bylaws must specifically outline any DCC and ACC amounts. ACCs are charged in relation to amenities that are required as outlined within an electoral area's Official Community Plan (OCP). Prior to creation of a new bylaw to impose DCCs, a service area must first exist. Financial and engineering review

of the electoral area demands and capital costs for a service are required to create a new DCC bylaw. The creation of a new DCC bylaw would require extensive research, cost estimating and approval from the Inspector of Municipalities, while an ACC bylaw would require research and alignment with the electoral area's OCPs as well as public consultation.

Both DCCs and ACCs must be set by bylaw and are imposed at the time of subdivision or building permit. Based on initial review of the number of subdivision and building permit applications in Electoral Area D, it may be beneficial to impose DCCs at building permit application for Area services. However, ACCs in Electoral Area B and C could only be charged at time of subdivision as a building service has not been established.

RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

David Leitch
Chief Administrative Officer

BACKGROUND

DCC bylaws only apply to projects owned or controlled by the local government. Establishing bylaws are required to provide services, and they must include the scope of the service, the method by which the service is to be funded, the way in which service-related decisions are to be made and by whom. Areas that do not have a service established may not impose a DCC. Each electoral area has a discrete revenue and cost specific to each service and fund. Some costs are clearly related to one specific service and others are not, such as general administration. Development finance tools, such as DCCs, are used in areas of high growth that demand new infrastructure. ACCs, a new development finance tool created in relation to Bill 46, enables local governments to levy fees from development to fund amenities identified in an OCP that provide social, cultural, heritage, recreational or environmental benefits to a community.

PLANNING ANALYSIS

The electoral areas differ in their choices of specific service provisions. Some services are mandated by legislation; general administration, planning, and solid waste management, and some are not; water and sewer utilities, recreation programs and facilities, community and regional parks, libraries, animal control and building inspection, E-911 and fire protection, economic development, regional growth strategies, and airports. Prior to Bill 46, DCCs could only be collected to fund capital costs for infrastructure related to sewage, water, drainage, highway facilities, and the acquisition of parkland. Eligible infrastructure categories have now been expanded to include capital costs related to fire protection, police services, solid waste and recycling facilities. Both DCCs and ACCs require continuous monitoring, financial administration and reserve fund allocation in addition to financial reporting.

Development Cost Charges

A DCC fee may only be administered through a bylaw, as approved by the Inspector of Municipalities and must outline amounts that apply to land use and development, among other considerations. DCC Best Practices Guide provides direction when establishing a DCC bylaw.

Local governments must also properly consider whether the proposed DCCs will:

1) be excessive in relation to the capital cost of prevailing standards of service;
2) deter development; or,
3) discourage the development of reasonably priced housing or reasonably priced serviced land.

Establishment of DCCs requires the following:

1. Projection of future growth
2. Identification of required works
3. Estimate of infrastructure costs (involves variety of separate costs)
4. Allocate costs to growth or existing users
5. Assign costs to land use types (residential, commercial, industrial)
6. Convert costs into dcc rates
7. Apply assist factor (existing population assist future growth – 1%)

As an example, in Electoral Area D specifically, services for which a DCC could possibly be charged, by bylaw, are:

1) Parks acquisition / development
2) Northern Area D Water
3) Street lighting

In Electoral Area D, a total of four subdivision applications were received by the MOTI in 2023, resulting in nine new lots in the SRD. In comparison, 17 building permits for Area D were received in 2023 that could potentially be subject to a DCC bylaw. The subdivision and building permit applications and services are detailed in Table 1 and 2 below.

Electoral Area D Subdivision Applications 2023. Table #1

Application No.	No. of new lots	Possible DCC Bylaw charges for Service Area	DCC Bylaw charges not applicable
00301 D 24 2338 Glenmore Rd	1	Parks	No Water Service – BC/OB No Street Lighting No Sewer CR Wasteshed MOTI Road
01285 D 24 3751 Shoreline	1	Area D Water (north) Parks	No Street lighting No Sewer CR Wasteshed MOTI Road
02688 D 24 3041 Vaughn Rd	3	Area D Water (north) Parks	No Street Lighting No Sewer BC/OB Fire CR Wasteshed MOTI Road
03498 D 24 2986 Paul Rd	4	Area D Water (north) Parks	No Street Lighting No Sewage BK OB Fire CR Wasteshed MOTI Road

Electoral Area D Building permit applications, 2023. Table #2

Building Use	No. of building Applications 2023	Potential Service Area	Notes
Commercial / Industrial	1	Water Parks	DCCs charged by building area
Institutional	1	TBD	Further research into service areas by building / planning required.
Residential	16	TBD	
Other	21	NA	Renovations, etc., DCCs don't apply

The noted properties in Table 2 are examples of the applications to which DCCs could have possibly been applied at building permit in 2023. If DCCs were collected at building permit there are potentially a total of 17 properties where DCCs (or partial DCCs) would be applicable. However, a bylaw must specify that residential buildings that contain fewer than four units will be subject to DCCs. Different areas in the electoral area could have varying and specific DCCs imposed and a DCC bylaw would outline the appropriate cost charged to development.

Amenity Cost Charges

ACCs are also administered through a bylaw. Additional information is expected from the Province this fall, however interim guidance states that the principles and practices that apply to DCCs should also be used when developing an ACC program. ACCs can be collected on subdivision approval or prior to the issuance of a building permit from any new development that results in an increase in the population of residents or workers in areas where a local government is planning for growth. Electoral Areas B and C do not have a Building Service, therefore ACCs could only be charged at subdivision, for which the approving authority is MOTI. For reference, there were a total of two subdivision applications in Area B and five in Area C in 2023 resulting in 4 and 24 lots respectively (MOTI confirmation of final approval has not been received on all applications at this time).

To impose ACCs a local government must pass a bylaw that identifies the:

1) Area or areas in which the charge(s) apply;
2) Amenity projects for which a charge will be imposed; and,
3) Amount of the charges that will be imposed, which must be set as a flat rate per unit and/or per square metre of floorspace.

To determine charge amounts a local government must consider:

1) the capital costs of the amenities in each area;
2) the phasing of amenity projects (e.g., the different stages/timelines of the construction of an amenity project)
3) whether the charges are excessive in relation to existing standards of services; and
4) whether the charges would deter development or discourage construction of reasonably priced housing;

To consider an ACC bylaw in an Electoral Area also necessitates analysis of the impact of charges on development viability. ACCs are meant to assist local governments with capital costs or amenities required to support population growth. Any current funding and grants, portion of costs allocated to the existing populations, and the 'assist factor' or what the SRD is expected to provide would be reviewed as part of creation of an ACC Bylaw.

STRATEGIC PLAN PRIORITIES AND AREAS OF FOCUS:

Good Governance.

Build sound and efficient systems to protect the region's assets and deliver services in a reliable, and fiscally responsible way.

Prioritize good governance that recognizes the diversity of our region and focuses on areas of common interests.

FINANCIAL IMPLICATIONS

The DCCs and ACCs bylaw creation would require project resources. The ACC bylaw would also require public consultation and advertising.

LEGAL IMPLICATIONS

A DCC bylaw must be approved by the Inspector of Municipalities in compliance with the *LGA*.

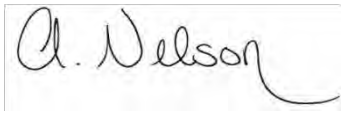
CITIZEN/PUBLIC RELATIONS IMPLICATIONS

Should direction to impose a DCC bylaw in any Electoral Area be given by the Board, notification in accordance with the *LGA* will be required. Should direction be given to proceed with a project to determine viability of an ACC bylaw in any Electoral Area, notification and public consultation would be required in accordance with the *LGA*.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS

Multiple departments, including Finance, Engineering, and Planning, would be responsible for all aspects of any bylaw process. Additionally, Corporate Services staff resources would be required during the adoption of the bylaw.

Submitted by:



Aniko Nelson
Senior Manager, Community Services

Prepared by: *Keltie Chamberlain, Development Planner II*

Strathcona REGIONAL DISTRICT

STAFF REPORT

DATE: July 12, 2024 **FILE:** 0550-04 Board

TO: Chair and Directors,
Regional Board

FROM: Dave Leitch
Chief Administrative Officer

RE: **AMENITY COST CHARGES & DEVELOPMENT COST CHARGES**

PURPOSE/PROBLEM

To consider a recommendation from the Electoral Areas Services Committee that the Regional District investigate amenity cost charges and development cost charges for some of its electoral areas.

EXECUTIVE SUMMARY

The attached report was considered at the July 10, 2024 meeting of the Electoral Areas Services Committee at which time the following recommendation was passed:

> Vonesch/Rice: EASC 235/24
>
> THAT a report be prepared on a bylaw addressing Amenity Cost Charges and Development Cost Charges for Electoral Area D; and
>
> THAT a report be prepared on a policy addressing Amenity Cost Charges for Electoral Areas B and C.

The actions outlined below are offered in support of the Committee's recommendation.

RECOMMENDATIONS

1. THAT the report from the Chief Administrative Officer be received.
2. THAT a report be prepared for further consideration that investigates development cost charges for Electoral Area D and amenity cost charges for Electoral Areas B, C and D.

Respectfully:

Dave Leitch
Chief Administrative Officer

Prepared by: *T. Yates, Corporate Services Manager*

Attachment: Copy of July 2, 2024 report to the EASC

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Strathcona
REGIONAL DISTRICT

STAFF REPORT

DATE: July 2, 2024

FILE: 0550-04

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: David Leitch
Chief Administrative Officer

RE: **BILL 46, HOUSING STATUTES (DEVELOPMENT FINANCING) AMENDMENT ACT, 2023**

PURPOSE

To provide an update and clarity on Bill 46, *Housing Statutes (Development Financing) Amendment Act, 2023,* which changes provincial legislation related to Development Cost Charges (DCCs) and Amenity Cost Charges (ACCs).

POLICY ANALYSIS

The Board passed the following motions at its February 28, 2024 meeting:

> SRD 94/24 THAT staff prepare a report for the Electoral Areas Services Committee providing information, background and options on amenity contribution policies for regional districts.
>
> SRD 96/24 THAT a report be prepared for further consideration regarding the options for development cost charges in Electoral Area D.

EXECUTIVE SUMMARY

As part of the Stronger BC strategy, the Ministry of Housing released the Homes for People housing action plan in April 2023. This plan is intended to address the housing situation across BC and includes several pieces of new or revised legislation and programs with implications for local governments, including the Strathcona Regional District. One new piece of legislation is Bill 46, *Housing Statutes (Development Financing) Amendment Act, 2023*, which broadens the range of infrastructure Development Cost Charges (DCCs) that may be levied to fund infrastructure and introduces Amenity Cost Charges (ACCs) as a new tool to fund community amenities from new developments. The purpose of this regulation is to support local governments in meeting the expanded service and infrastructure needs that may accompany new development.

Prior to Bill 46, DCCs could only be collected to fund capital costs for infrastructure related to sewage, water, drainage, highway facilities, and the acquisition of parkland. Eligible infrastructure categories have now been expanded to include capital costs related to fire protection, police services, solid waste and recycling facilities. It should be made clear that these capital costs are limited to infrastructure or services that currently provide service to the area in which they are levied. Also, DCC charges would only apply to those developments that were proposing (or where permitted by bylaw) four or more units. Although the Regional District historically had the authority to charge DCCs for specific infrastructure, it does not currently levy DCCs for any of the current eligible infrastructure.

Currently it is clear that Electoral Area D could contemplate implementing DCCs related to infrastructure or services currently being provided to a particular area, such as water and

parkland. Further clarity is expected from the Province regarding other services that may be considered in the future.

Bill 46 also introduced the new ACC tool which now enables local governments to levy fees from new developments to fund amenities that provide social, cultural, heritage, recreational or environmental benefits to a community. This could provide capital costs for amenities such as community centres, libraries, and childcare facilities. As the Regional District did not previously have the authority to charge ACCs, implementing a levy has not been contemplated to date.

Both the improved DCC and new ACC tools come with limitations, exemptions, eligibility requirements and other legal parameters. Both ACC and DCC fees may only be administered through a bylaw, which must outline any DCC amounts and/or ACC amounts and amenities required following consideration of OCP policies and future land use patterns and development, among other considerations. The approval of an ACC bylaw would require public consultation and, in the case of a DCC bylaw, approval from the Inspector of Municipalities. It is important to understand that DCCs and ACCs can only be collected at the time of subdivision or building permit.

The Province has committed to providing additional guidance on the application of these new tools in the summer or fall of 2024 at which point more information may be available. Should the Committee wish to explore any of these DCC or ACC options that may be applicable to a particular area, it would be appropriate to recommend that a detailed staff report be brought forward once the Province issues additional guidance to local governments.

RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

David Leitch
Chief Administrative Officer

for

Prepared by: *A. Nelson, Senior Manager, Community Services and M. Starkey, Manager Planning and Parks*

Attachments: The Interim Guidance report from March 2024
Bill 46

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Interim Guidance

Development Finance Tools Update: Development Cost Charges/Levies and Amenity Cost Charges

Ministry of Housing
March 2024

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Contents of this document are not intended to be provided as legal advice and should not be relied upon as legal advice.

Introduction

Local governments have a range of development financing tools that can be used to help fund the costs of infrastructure and amenities that are needed to support new development, including Development Cost Charges (DCCs)/Development Cost Levies (DCLs), subdivision servicing bylaws, excess or extended services, latecomer agreements, development works agreements, and density bonusing.

In the fall of 2023 *Bill 46 – 2023: Housing Statues (Development Financing) Amendment Act* (Bill 46) made amendments to the *Local Government Act* (LGA) and the *Vancouver Charter* to provide local governments (municipalities and regional districts) with new and expanded development finance tools.[1]

These changes include:

- Updating the scope of infrastructure eligible to be funded through DCCs and DCLs to include new categories of infrastructure - fire protection, police, and solid waste and recycling facilities.
- Introducing Amenity Cost Charges (ACCs), a new development finance tool that allows local governments to collect funds for amenities, such as community centres, recreation centres, daycares, and libraries from new development that results in increased population.

In addition, Bill 46 made amendments to enable municipalities to collect and use DCCs/DCLs to finance their portion of highway facilities that are cost-shared between the province and the municipality, like interchanges and highway exits. Any questions on this topic should be directed to the Ministry of Municipal Affairs at LGIF@gov.bc.ca.

This interim guidance will help local governments update or adopt DCC/DCL bylaws to begin collecting for the new categories of eligible infrastructure and to implement an ACC bylaw, if they choose to use the new tools.

The Province will develop more comprehensive guidance in consultation with the Development Finance Review Committee (DFRC)[2], local governments, and the development industry, for release in the late summer/early fall 2024.

Background

The Province of BC passed legislation in the fall of 2023 to facilitate increased housing supply as part of the Province's *Homes for People Action Plan*. Through *Bill 44 – 2023: Housing Statues (Residential Development) Amendment Act* and *Bill 47 – Housing Statutes (Transit-Oriented Areas) Amendment Act* the Province made changes to the land use planning frameworks under the LGA and the *Vancouver Charter,* including:

[1] The amendments came into effect on November 30, 2023.

[2] The DFRC was formed as an advisory committee in 1995 to advise the Ministry of Municipal Affairs about the development of best practices, policy, and potential legislative changes in relation to development finance. The DFRC includes representation from the Union of BC Municipalities, Planning Institute of BC, local governments, and the development industry.

- Requiring local governments to update zoning bylaws to allow for small-scale, multi-unit housing (e.g., secondary suites/accessory dwelling units, triplexes, townhomes, and houseplexes) in land use zones that are otherwise restricted to single-family dwellings or duplexes.
- Requiring local governments to shift to a more pro-active, long-term approach to planning where they must identify their housing needs and then zone for what housing is needed.
- Removing public hearings on rezonings for housing projects that are consistent with a local government's official community plan (OCP).
- Requiring some municipalities to designate Transit-Oriented Development Areas (TOD Areas) near transit hubs. In TOD areas, municipalities may not use zoning powers to prohibit or restrict prescribed minimum levels of density, size, and may not impose off-street parking requirements other than for disabled persons, and must consider a provincial policy manual when planning or amending zoning bylaws.

As local governments shift to more upfront planning and zoning, through Bills 44 and 47, changes under Bill 46 provide local governments with new and improved development finance tools to help fund infrastructure and amenities to support increased housing supply and growth.

More information on local government housing initiatives is available on the Ministry of Housing website located at: https://www.gov.bc.ca/housingInitiatives

Legislation Overview

Development Cost Charges/Development Cost Levies[3]

Overview

Under section 559 of the LGA, municipalities and regional districts can choose to collect DCCs from new development to help pay for the capital costs of off-site infrastructure services that are needed to accommodate growth.

DCCs can be collected for defined categories of infrastructure as specified in legislation: sewage, water, drainage, highway facilities, and the acquisition and improvement of parkland.[4] Per amendments under Bill 46, local governments can collect DCCs for the following new categories: fire protection, police, and solid waste and recycling facilities.

The Development Cost Charges Best Practices Guide (Best Practices Guide) provides general DCC policy direction that also applies to the new DCC categories. For guidance on existing DCC policies when establishing or amending a DCC bylaw, please refer to the Best Practices Guide.

[3] DCCs are known as DCLs in the City of Vancouver, where they are authorized under the *Vancouver Charter*. For the purposes of this interim guidance, any reference to DCCs include DCLs. While there are differences between the DCC and DCL frameworks (e.g., the Inspector of Municipalities approves DCC bylaws but not DCL bylaws), the recent amendments to expand the scope of eligible infrastructure are the same under both frameworks. Thus, the information provided in this interim guidance can apply to both.

[4] Additionally, the City of Vancouver can collect DCLs for day care facilities and replacement housing.

Project Eligibility for New DCC Categories

Consistent with existing DCC categories, capital projects under the new DCC categories must directly or indirectly service new development (LGA section 559(2)). Provincial policy establishes that charges are only eligible for capital assets owned or controlled by the local government. Project cost estimates under the new DCC categories that are included in a new or amended DCC bylaw, must be consistent with the local government's OCP, financial plan, service plans, and long-term capital plans.

Under section 560 of the LGA the Inspector of Municipalities (Inspector) may refuse to grant approval of a DCC bylaw if the Inspector determines that the DCCs are not related to capital costs attributable to projects included in a local government's financial plan.

The definition of capital costs under section 558 of the LGA includes planning, engineering and legal costs directly related to the work for which a capital cost may be incurred. Costs that are not eligible under existing and new DCC categories include:

- Operating and staffing costs, personal equipment, and mobile equipment, including vehicles and other rolling stock such as fire and garbage trucks.
- Leased facilities, except for the costs of construction or leasing an asset that will be controlled by the local government under a capital lease.
- Projects related to maintenance or replacement of existing assets.

Fire Protection Facilities

A fire protection DCC program should be based on the long-term strategy and priorities provided in a fire protection/department master plan (or equivalent).

For DCC programs, infrastructure considered 'fire protection facilities' includes projects such as:

- firehalls;
- training facilities;
- staff quarters;
- apparatus bays;
- maintenance facilities
- dispatches; and,
- fire department administration buildings.

Fire service costs that are not considered "facilities" include:

- all vehicles related to the service
- any gear or equipment that is conveyed to the site of a fire or other service activity.

Police Facilities

A police facilities DCC program should support a municipality with a facility for a police force of sufficient size. For DCC calculations, a key consideration is ownership or control of the capital infrastructure located within a municipality. A single facility may accommodate multiple detachments that provide

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services to more than one jurisdiction. Only the portion of a facility that serves a municipality should be used in DCC calculations for that municipality.

For DCC programs, infrastructure considered 'police facilities' includes projects such as:

- detachment buildings;
- municipal jails, cells and holding facilities;
- training facilities;
- community policing centres;
- dispatches; and,
- police administration buildings.

Policing costs that are not considered "facilities" include:

- all vehicles related to the service
- any gear or equipment related to the service

Solid Waste and Recycling Facilities

A solid waste and recycling DCC program should be based on an approved solid waste management plan and align with the financial and long-term capital plan.

Solid waste and recycling facilities may be included in a municipal DCC program if they are not part of the separate service of a regional district. Where the authority for a solid waste service lies outside a municipality (e.g., within a regional district), a separate DCC can be imposed by that jurisdiction. In that case, the municipality will be governed by the regional DCC bylaw and the municipality will collect and remit solid waste and recycling DCCs to the regional district.

For DCC programs, infrastructure considered 'solid waste and recycling facilities' includes projects such as:

- solid waste master planning;
- landfills;
- transfer stations;
- recycling depots and processing facilities; and,
- compost facilities

Solid waste and recycling costs that are not considered "facilities" include:

- curbside collection costs including garbage trucks
- vehicles that are on-site at a landfill or other facility
- asset management; and,
- environmental monitoring;

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Bylaw Process for New Categories

During the development of a DCC bylaw, local governments must ensure that all bylaws and processes conform to all legal requirements. Local governments must properly consider whether the proposed DCCs will:

- be excessive in relation to the capital cost of prevailing standards of service;
- deter development; or,
- discourage the development of reasonably priced housing or reasonably priced serviced land.

When incorporating a new category into a DCC program, local governments are advised to follow the existing methodologies in the Best Practices Guide. Each new DCC category (fire protection facilities, police facilities, solid waste and recycling facilities) will need to be calculated individually and included as a separate charge in the bylaw. The addition of a new category in a DCC bylaw is considered a major update to the bylaw and will require a local government to conduct a full review of the DCC methodologies and underlying assumptions used.

Bylaws establishing or amending a DCC bylaw require approval by the Inspector of Municipalities before adoption. To assist in the approval review of a proposed DCC Bylaw, a copy of the Development Cost Charge Submission Summary Checklist (updated March 2024) should be completed by the local government and attached to the bylaw approval package being sent to the Inspector of Municipalities.

Please contact the Financial Analyst for your local government at the Ministry of Municipal Affairs to discuss or review the addition of new categories to a DCC program. This is particularly important if the local government intends to request the inclusion of interest in charges for the new categories. Discussing this well in advance may save a local government significant time. Staff contacts can be found on the Local Government Division Staff Finder.

Once levied and collected, the DCCs must be deposited into separate fire protection, police and solid waste and recycling DCC reserve funds, established by bylaw. One bylaw may be used to establish all the reserve funds. A reserve fund should be established by bylaw for each of the current DCC categories (water, sewer, etc.). These reserve funds may only be used for capital costs relating to the projects used in the calculations of an approved DCC bylaw. Any interest earned from investments in these reserve funds must be used for eligible DCC projects.

Allocating Benefits

Fairness and equitable distribution of capital costs among those parties receiving a benefit is a guiding principle of DCCs and suggests that certain DCC projects may benefit the existing population as well as new development. For example, existing users may receive some benefit from the construction of a new fire hall, if the facilities are upgraded in response to the need for replacement or pent-up demand, as well as new development. In turn, the allocation of capital costs that benefit existing users should be deducted from the difference between the total capital cost estimate and funds from other sources.

If a grant for a project in a DCC program has been received, that grant should be deducted from the capital cost of the project and the remainder allocated between the existing population and new

development. This approach enables both existing and new contributors to the capital cost to benefit from the grant.

Fire Protection and Police Facilities

Fire protection and policing services benefit the entire community, as emergency services are not fixed or limited to a specific geographic region. Because the services benefit the population at large, capital costs related to fire protection and police facilities should be apportioned to existing users as well as the new development. In addition, any aspect of a fire protection or police facilities DCC program that involves replacing existing facilities has a higher benefit to existing users and should be allocated accordingly. Only the portion of the project that services growth should be allocated to new development.

Solid Waste and Recycling Facilities

As part of a solid waste management plan, a local government should assess the current solid waste management system and determine any existing deficiencies and areas for improvement. Any projects that are required to address existing deficiencies or to improve solid waste processes should be assigned higher benefit to existing users.

Assigning Costs to Land Use Types

Each type of development creates different demands on off-site infrastructure services. The impact of each type, relative to that of others, needs to be considered when assigning the portion of total infrastructure costs attributable to growth. Local governments usually express relative impacts in terms of "equivalent units," which express the impact of each type of development on a service relative to that of a single-family house. The relative impacts of the different development types will vary by type of service.

Police facilities DCCs, for example, may be based on the premise that expansion and/or building police facilities are required due to population growth and can therefore be based on occupancy rates for residential land use and equivalent population density for non-residential land use. The calculation involved would be similar to the sanitary DCC method in the Best Practices Guide.

Local governments are encouraged to work with professional planners and engineers to determine appropriate equivalent units for the new categories so that the best possible method of assigning cost to types of development is used.

Considerations with Other Housing Legislation

In addition to establishing whether to collect DCCs to help pay capital costs of fire protection, police, or solid waste and recycling facilities, local governments will also need to determine how their DCC program is affected by other new housing legislation amendments, particularly small-scale multi-unit housing (SSMUH) requirements (as established in Bill 44).

For example, the LGA establishes that DCCs are not payable on building permits authorizing the construction, alteration or extension of fewer than four self-contained dwelling units unless the DCC

bylaw specifies that DCCs are payable. In light of amendments under Bill 44, which enables multiple dwelling units on a single-family lot, if a local government wishes to impose DCCs on fewer than four dwelling units and does not have this authority provided for within the current DCC bylaw, an amendment to the DCC bylaw would be required.

To provide an incentive for affordable housing, a local government may define affordable rental housing and then provide waivers and reductions of DCCs to developments that are eligible under these definitions. Local governments should consider waivers and exemptions for affordable rental housing so that there is an incentive for this much needed type of development.

Amendments to a DCC bylaw may also be required if assumptions used to calculate DCCs, such as the number of residential units, housing stock mix, or occupancy rates are affected by SSMUH requirements. Please refer to the SSMUH Provincial Policy Manual & Site Standards for more information.

Another consideration is regarding the timing of collecting DCCs. Typically, single family DCCs are charged at subdivision approval, but with the new legislation allowing additional dwelling units on one lot, a local government may want to provide that single family dwelling DCCs may, in the alternative, also be charged prior to issuing a building permit.

Amenity Cost Charge

Amenity Cost Charges (ACCs) are a new development finance tool that allow local governments to collect funds for amenities, such as community centres, libraries, daycares from new development that results in increased demand for services. These amenities support liveable and complete communities in areas of growth.

The new Division 19.1 of the LGA authorizes local governments to impose ACCs and outlines the legislated requirements. The equivalent authority is provided to the City of Vancouver through Part XXIV-B of the *Vancouver Charter*.

This interim guidance provides local governments with an introduction to ACCs and the legislative requirements and key considerations for developing an ACC program and bylaw.

While ACCs are a distinct tool, local governments are encouraged to borrow many of the principles and practices that apply to DCCs as outlined in the Development Cost Charges Best Practices Guide and use those practices when developing an ACC program. These well-established DCC practices will help stakeholders understand the rationale for ACCs and can help guide the process of developing an ACC program. The design approach to the ACC framework was also based on the foundational principles set out in the DCC Best Practices Guide.

Overview

Local governments can collect ACCs on subdivision approval or prior to the issuance of a building permit from any new development that results in an increase in the population of residents or workers (i.e., if a development adds new residential units or new workplaces to the community) in areas where a local government is planning for growth. Similar to DCCs, ACCs must be imposed by bylaw and in accordance

with the process and requirements set out in the legislation. Local governments can choose whether or not to use the new ACC tool and can adopt an ACC bylaw at any time. Unlike DCCs, ACC bylaws do not require approval from the Inspector of Municipalities.

Project Eligibility

Under section 570.1 of the LGA and section 523E of the *Vancouver Charter*, an "amenity" is broadly defined as a facility or feature that provides social, cultural, heritage, recreational or environmental benefits to a community. Amenities need to directly or indirectly benefit the new development itself and the increased population of residents or workers that result from the development.

While the legislation sets out a list of the types of amenities that a local government can fund with ACCs, the list is not exhaustive. Examples of amenities include (but are not limited to), a:

- community, youth, or seniors' centre;
- recreational or athletic facility;
- library; and,
- public square.

ACCs can only help fund the capital costs of amenities. ACCs can be used to fund the capital costs of constructing new amenities or to alter or expand existing amenities, such as creating a new day care space within an existing community centre or adding a new wing to a community centre. Under s. 570.2(3) of the LGA and s. 523G(3) of *the Vancouver Charter*, local governments can also use ACCs for amenities where a local government has a partnering agreement with a person (e.g. not-for-profit organization, corporation, etc.) or public authority (e.g., another local government).

Sections 570.4 of the LGA and 523I of the *Vancouver Charter* establish the following circumstances when development is exempt from ACCs:

- Developments where a building permit authorizes the construction, alteration, or extension of a building, or part of a building which is solely used for public worship, such as a church.
- Developments that do not result in an increase in population of residents or workers.
    - For example, an ACC cannot be imposed on a triplex if it replaces another triplex because no additional units were added to the community. If a triplex replaces a single-family home, then an ACC can be imposed on the two additional units.
- Developments that have already been charged for a particular amenity, unless further development results in an increase in population of residents or workers (i.e., adds additional units).
    - For example, if a development has already paid an ACC for amenities included in an ACC bylaw but then adds additional units through a renovation, an additional ACC can be imposed on that development to help pay for the amenities in the ACC bylaw.
- Developments that fall under a class of affordable housing prescribed by regulation.

The legislation includes rules to prevent "double-charging" for amenities. For example, there is a general rule that a charge for an amenity can only be recovered once (see s. 570.95 of the LGA and s. 523R of the *Vancouver Charter*). This clarifies the relationship between the ACC bylaw and other authorities that local governments can use to obtain amenities (e.g., through phased development agreements, density bonus), and ensures that a development will not be double charged for an amenity under an ACC bylaw through other authorities.

The legislation also clarifies the relationship between ACCs and other tools, specifically in relation to DCCs and density bonus authorities. For example:

- ***DCCs***: ACCs cannot be used to pay for the capital costs of infrastructure for which a DCC can be imposed. For example, ACCs cannot be used to fund sewer or water infrastructure (section 570.4(4) of the LGA and section 523I(2) of the *Vancouver Charter*).
- ***Density bonus authorities:*** Under density bonus provisions, local governments can establish different density rules for a zone – one that is generally applicable for the zone (i.e., a "base density"), and other(s) that will entitle a developer to higher density ("bonus density"), if certain conditions are met either in relation to the conservation or provision of amenities or the provision of affordable and special needs housing. Local governments can continue to use density bonus to collect for amenities and can apply both density bonus conditions and ACCs on the same development (or use the tools separately on different developments or in different areas). However, local governments cannot use density bonusing to collect for an amenity for which an ACC is being collected. For example, if an amenity project is included in the local government's ACC bylaw, the local government cannot use density bonusing to secure that amenity (section 482(2.1) of the LGA and section 565.1(2.1) of the *Vancouver Charter*).
    - By virtue of the requirements detailed below around how a local government determines the areas ACCs will be imposed, the amenities that will receive funding, and the charge amounts, it is intended that local governments take only the base density into consideration when developing their ACC program.

Developing an ACC Program and Bylaw

To impose ACCs, a local government must pass a bylaw that identifies the:

- area or areas in which the charge(s) apply;
- amenity projects for which a charge will be imposed; and,
- amount of the charges that will be imposed, which must be set as a flat rate per unit and/or per square metre of floorspace.

The ACC rates for the various areas are presented in a series of schedules that accompany the bylaw, which should summarize the charges for the applicable land uses, based on the representative unit of development.

Local governments may consider compiling supporting documents for the ACC bylaw, which include information that captures the data, assumptions, and rationale used to develop the bylaw, to help fulfill the requirements around developing an ACC program. These supporting documents may contribute to

overall transparency and allow for local governments to monitor the assumptions made in formulating the proposed ACCs over time. These may also make it easier to later update the ACC program. Information in these documents should include a summary of capital cost and revenue assumptions as well as an outline of the various methodologies used to derive the charges.

Under section 570.7(7) of the LGA and section 523K(7) of *the Vancouver Charter* local governments must make available to the public on request, the considerations, information, and calculations used to determine the ACCs. Information respecting the contemplated acquisition costs of specific properties is not required to be provided to the public.

Determine an Appropriate ACC Program Timeframe

The ACC legislation requires a close connection between projected population growth and the planning of amenities to support that new population. A defined time period for the ACC program is needed for estimating new development and the amenities required to support that new development.

Timeframes for an initial ACC program:

ACCs can be used to help fund amenities needed to support the growth that is anticipated to result from the small-scale multi-unit housing (SSMUH) and transit-oriented (TOA) requirements. Local governments must comply with new requirements under SSMUH and TOA legislation, if applicable, by June 30, 2024.

If local governments want to collect ACCs on SSMUH and TOA developments, then it is recommended they develop their initial ACC bylaw as soon as possible. This would likely entail developing a program with a shorter timeframe, largely based on information from a local governments' current planning documents, growth projections, and financial planning.

The provincial policy manuals for SSMUH and TOA provide additional considerations for the application of ACCs in these areas.

Timeframes for subsequent program updates:

Over the long-term, local governments could consider timing their ACC program updates with the newly required timeframes for updating Housing Needs Reports (HNR) and OCPs established in Bill 44 and in alignment with their DCC program updates, if applicable, to achieve greater efficiencies and alignment between land use planning and financial planning.

Determine Area(s) and Amenities

Under section 570.7(4) of the LGA, local governments are required to consider:

- the applicable OCP(s) and other relevant planning documents (e.g., HNRs, local area plans, public benefits strategies);
- expected increases in population growth of residents and workers; and,
- the financial plan

The ACC bylaw must identify each area where ACCs will be imposed on new development and the amenities in each area that will receive funding.

Under section 523K(4) of the *Vancouver Charter*, the City of Vancouver are required to consider:

- an applicable development plan as defined in section 559;
- an applicable official development plan as defined in section 559;
- other relevant planning documents;
- future land use patterns in the city;
- expected increases in the population of residents and workers; and,
- reports submitted by the Director of Finance.

Determine Charge Amounts

Overall considerations:

Under section 570.7(2) of the LGA and section 523K(2) of the *Vancouver Charter*, ACCs must be set as a flat rate per unit/lot or per square metre of floorspace in a development. As part of determining the charge amounts, local governments must consider the following (as per s.570.7(5) of the LGA and s.523K(5) of the *Vancouver Charter*):

- the capital costs of the amenities in each area;
- the phasing of amenity projects (e.g., the different stages/timelines of the construction of an amenity project)
- whether the charges are excessive in relation to existing standards of services; and,
- whether charges would deter development or discourage construction of reasonable priced housing.

These requirements necessitate that local governments undertake analyses to understand the impact of charges on development viability. Local governments are encouraged to use the same principles and best practices found in the DCC Best Practices Guide when undertaking an analysis on the impact of charges on development viability.

Deductions from the capital costs of amenities:

ACCs are meant to assist local governments with the capital costs of amenities required to support population growth. When determining the specific charge amounts, local governments must make the following deductions (as per section 570.7(6) of the LGA and section 523K(6) of the *Vancouver Charter*):

- Deduct from the total cost of the amenity any grants or other sources of funding (e.g., grants from the provincial or federal government) that are being used to finance an amenity.
- Allocate the costs between the future population (e.g., the portion of costs allocated to new population/to be paid by new development) and current population. This is determined through a benefit allocation exercise that determines how much the amenities would benefit the new population and how much they would benefit the existing population. As amenities often benefit the existing population, local governments will need to fairly distribute the costs of amenities between future population (i.e., the development) and existing population (i.e., the existing tax base).

- Deduct from the portion of costs attributed to new development an amount that will be funded by the local government—this is know as the "assist factor." Similar to DCCs, ACCs are intended to "assist" with paying the capital costs of amenities. Therefore, local governments are expected to provide some financial assistance to ensure that new development does not shoulder the entire costs of amenities.

Varying charges:

Local governments could also consider the varying impacts of different types of developments (e.g., residential vs. employment-related developments, such as commercial or industrial developments, or between different types of residential development) on demand for and use of amenities. To address any differences, under section 570.7(2) of the LGA and section 523K(2) of the *Vancouver Charter* local governments are enabled to vary charges for different zones, uses, and sizes or different numbers of lots or units in a development, with the requirement that charges must be similar for all developments that are expected to result in a similar increase in the population of residents or workers.

Charges can also vary by different geographic areas. As charges are set based on the cost of the amenities (minus the required deductions for external grants, benefit allocation, and the assist factor) needed in an area to support the anticipated growth within that area, charges will naturally vary between different areas because amenity and growth needs will vary.

Waivers or reductions:

Under section 570.6 (2) of the LGA and section 523J (2) of the *Vancouver Charter* local governments may waive or reduce charges for not-for-profit rental housing (LGA only) and for-profit affordable rental housing by bylaw. If a local government chooses to provide waivers or reductions, they should account for the potential loss of revenue for amenities and prepare for a source other than ACCs with which to make up the loss. Charges cannot be increased on other forms of development – instead, the local government must use their other revenue sources to make up for this loss.

Consultation During the Development of an ACC Bylaw

To ensure transparency, accountability, and accuracy in determining amenities and resulting charges imposed on new development, the ACC legislation requires a local government to consult with the public and with affected persons, public authorities, and organizations (e.g., the development community, neighbouring municipalities or regional districts, First Nations) during the development of an ACC bylaw. Consultation is required during the development of the bylaw to provide the public and affected parties with the opportunity to provide feedback and for local government staff to consider and incorporate any feedback before the bylaw is considered by a council or board.

These consultation requirements are similar to those required by the Inspector of Municipalities when considering a DCC bylaw for approval. The recommended best practices for public process in the Development Cost Charges Best Practice Guide can be used as guidance to provide a meaningful public process for developing an ACC bylaw.

Adopting the Bylaw

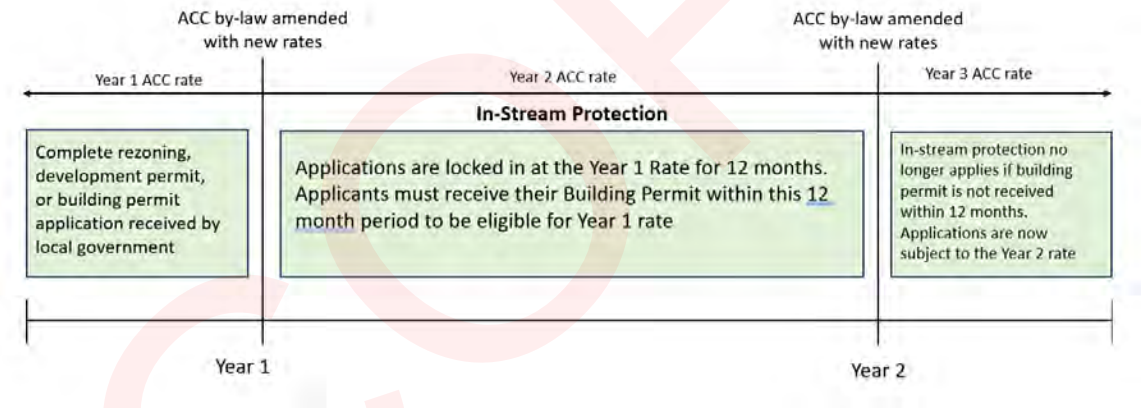
The ACC bylaw must be considered by a local government's council or board in an open meeting and the bylaw comes into effect once adopted.

Collecting and Reporting ACCs

Imposing and Collecting Charges

Once an ACC bylaw is in effect, all applicants for developments in areas where ACCs are imposed (except for developments upon which local governments cannot impose ACCs or has waived them) must pay the applicable ACC as set out in the ACC bylaw upon subdivision approval or issuance of the building permit. Similar to DCCs, the Minister has regulation-making authority to authorize the payment of ACCs in instalments beyond the building permit stage.

Section 570.91 of the LGA and section 523N of the *Vancouver Charter* include rules to protect development applications that are in progress (e.g, 'in-stream') from being subject to a new or updated charge. When a local government passes their first ACC bylaw, charges cannot apply to a development if the local government has received a complete application for a building permit, a development permit, or an amendment to a zoning bylaw before the date the ACC bylaw was adopted. When a local government amends their ACC bylaw and changes the charge amounts, applicants that have submitted complete building permit, development permit, or zoning bylaw amendment applications are given a 12-month exemption from a new ACC rate, as long as they receive their building permit within that time period.



To enhance transparency and accountability, under section 570.8 in the LGA and section 523L of the *Vancouver Charter*, local governments are required to deposit ACCs in reserve funds established by bylaw for each area in which ACCs are imposed. ACCs collected must be deposited in reserve funds established for each area in which an ACC is imposed. ACC reserve funds, together with interest, can only be used to pay:

- the capital costs of providing, constructing, altering, or expanding amenities as outlined in the ACC bylaw.
- principal and interest on a debt incurred as a result of an expenditure.
- a person subject to an ACC for some or all of the capital costs a person has incurred in completing a project if it was completed under a partnering agreement.

A council/board resolution must authorize the use of any funds in an ACC reserve.

In-kind Amenities

Under section 570.9 of the LGA and section 523M of the *Vancouver Charter*, the legislation also allows applicants to provide an amenity in-kind or land for an amenity in-lieu of paying the monetary ACC amount. In-kind contributions allow for situations where it may be more efficient, economical, and mutually beneficial to both a developer and a local government for an amenity to be provided as part of a particular development. For example, a developer and a local government may agree upon building a youth centre within the base of a new, large multi-residential development, rather than paying a monetary charge to be used by the local government at a later date to build a youth centre.

If an applicant is providing an amenity or land instead of paying a monetary ACC amount, a local government is required to enter into an agreement with the developer that outlines certain matters, including details about when the amenity will be provided, who will provide it, the value of the amenity, and any payment or credit to the developer if the value of amenity or land exceeds what the monetary charge would have been otherwise.

Reporting Requirements

Under section 570.92 of the LGA and section 523O of the *Vancouver Charter*, local governments are required to prepare and consider a report regarding the collection and use of ACC funds each year. The LGA further requires that these reports must be prepared and considered before June 30.

A report must include the following:

- the amount of ACCs received;
- expenditures from the ACC reserve fund(s), including any expenditures made to a person or public authority under a partnering agreement;
- the balance in the ACC reserve fund(s) at the start and at the end of the applicable year;
- any waivers or reductions made; and,
- any in-kind amenity contributions.

These reports must be made available to the public.

Monitoring and Updating an ACC Program

Local governments can update their ACC bylaw as needed. For greater efficiency and alignment with land use and financial planning cycles, local governments may consider reviewing and updating ACC bylaws in line with new and updated financial plans, OCPs, HNRs, and zoning bylaws.

Local governments may consider regularly monitoring land economic conditions within the community to ensure charges are not too onerous on development and make adjustments to charges accordingly. Along with regular monitoring and reviews of the ACC bylaw, local governments are recommended to regularly review charges and adjust them as needed to keep up with the changing costs of amenities, the introduction of new amenities or the removal of completed amenities when the predicted amount of charges for them has been collected. Regular reviews and updates can prevent against sudden, significant increases in charges, which can negatively affect development viability.

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Local governments will need to follow the same legislated process and considerations, including consultation requirements, for any amendment to the ACC bylaw.

Regulations

The legislation includes various regulation-making authorities for the Province to prescribe additional requirements or address any issues that may arise as local governments begin to impose ACCs. Regulation-making authorities include:

- defining what cannot be considered an 'amenity.'
- authorizing payment of ACCs in instalments.
- setting specific requirements for consultation on the ACC bylaw (e.g., notice and process requirements, who must be consulted, when consultation is not required).
- exempting classes of affordable housing from paying ACCs.
- establishing criteria for what constitutes an eligible development for a waiver or reduction of ACCs.
- prescribing other bases by which local governments can vary charges.
- prescribing additional information that local governments must consider when developing their amenity cost charge bylaws.
- adjusting or limiting charges and setting specific requirements for how local governments set their charges (e.g., establishing a methodology for how local governments allocate benefit of amenities to existing population, which they are required to deduct from charges; requiring that the methodology be applied by an individual with a specific professional designation; setting a minimum assist factor).
- prescribing that additional information is required to be included in agreements between developers and local governments when an in-kind amenity is provided in-lieu of a monetary charge.
- prescribing a period longer than 12 months for in-stream rate protection of precursor development applications (e.g., building permits, development permits, and zoning bylaw amendments).
- prescribing that additional information is required in the annual ACC report.

Key Differences between DCCs and ACCs

For reference, key differences between the DCC and ACC tools include:

Development Cost Charges (DCCs)	Amenity Cost Charges (ACCs)
Existing tool: Introduced in the 1970s	***New tool***: Introduced in 2023
What funds can be used for: Specified types of infrastructure that service a new development: sewer, water, drainage, roads, parkland and park improvements, fire protection facilities	***What funds can be used for***: Amenities that provide social, cultural, heritage, recreational, or environmental benefits to a community (e.g., community centre, library, daycare)

Development Cost Charges (DCCs)	Amenity Cost Charges (ACCs)
(new), police facilities (new), and solid waste and recycling facilities (new)	
Consultation: No legislated requirement to consult; expectations for consultation are set out by policy. The Inspector of Municipalities looks at evidence of consultation when considering approval of DCC bylaws.	***Consultation***: Legislation requires local governments to consult with the public and affected persons, public authorities, and organizations during the development of the bylaw
When charges cannot be imposed: • If a development does not pose capital costs burdens • If a DCC had been previously paid by a development unless there is further development • If a development contains fewer than 4 units (unless authorized by LG bylaw) • If a unit is smaller than 29 square metres • If a value of work is less than $50,000 (unless a greater amount is established by LG bylaw)	***When charges cannot be imposed:*** • If a development does not result in an increase in population of residents or workers • If an ACC had been previously paid by a development for a particular amenity unless there is further development • For costs that can be funded through DCCs • On types of affordable housing prescribed by regulation
Waivers or reductions: LG may waive or reduce a DCC for the following eligible development: • Not-for profit rental housing, including supportive living housing • For-profit affordable rental housing; • A submission of small lots that is designed to result in low greenhouse gas emissions; • A development that is designed to result in a low environmental impact	***Waivers or reductions:*** LG may waive or reduce an ACC for the following eligible development: • Not-for-profit rental housing, including supportive living housing; • For-profit affordable rental housing.
Bylaw content: Amount of charges must be specified in a schedule or schedules of DCCs	***Bylaw content:*** Area(s), amenities, and amount of charges set per lot/unit or per square metre of floor space in a development must be set out in bylaw
Consideration requirements: • Future land use patterns and development • Phasing of works and services • Provision of park land described in an OCP • How development designed to result in a low environmental impact may affect capital costs • Whether the charges are excessive in relation to the capital cost of prevailing standards of service in the municipality or regional district • Whether the charges will, in the municipality or regional district,	***Consideration requirements:*** • Applicable Official Community Plan(s) • Expected increases in population of residents and workers • Financial Plan • The capital costs of amenities, with deductions made for: o The portion of costs to be funded through grants o The portion of costs allocated to the existing population, and therefore funded by them (i.e., through property taxes)

Development Cost Charges (DCCs)	Amenity Cost Charges (ACCs)
o deter development, o discourage the construction of reasonably priced housing or the provision of reasonably priced serviced land, or o discourage development designed to result in a low environmental impact.	o The portion of costs to be funded by the local government as assistance (i.e., the assist factor)
Approval by Inspector of Municipalities: Required	***Approval by Inspector of Municipalities:*** Not required. In place of inspector approval, legislation includes other measures, including: • Consultation requirement • Regulation-making authorities that allow the Province to prescribe additional requirements and/or limitations on the use of ACCs (e.g., limit charges, require a minimum assist factor, exempt affordable housing from paying ACCs) • Inspector can request any information from local governments respecting their ACCs
In-stream protection: protection from new DCC charges if building permit is issued within 12 months of initial DCC bylaw or amending DCC bylaw subject to a precursor application being submitted	***In-stream protection:*** protection from new charges for building permits issued after initial adoption of an ACC bylaw and protection for 12 months after amending ACC bylaw subject to a precursor application being submitted
Rules against "double-charging": • Development cannot be charged a DCC if previously paid on same development unless there is further development	***Rules against "double-charging":*** • Development cannot be charged an ACC twice for a particular amenity unless it results in an increase in population of residents or workers. • ACCs cannot be used to help fund infrastructure for which DCCs can be used. • Capital costs of any amenity funded by an ACC must be recovered only once (i.e., local governments cannot use density bonusing to collect for an amenity for which an ACC is being collected).

Monitoring

The Province will monitor the adoption and use of the new development finance tools to ensure that the tools are being used as intended, to inform the need for and use of any regulation-making authority, and/or development of additional guidance or information materials.

More Information

Comprehensive guidance on the new development finance tools will be published in late summer/early fall 2024.

Please direct technical questions about Development Cost Charges (DCCs) or Amenity Cost Charges (ACCs) to:

> Ministry of Municipal Affairs, Local Government Infrastructure and Finance Branch
> Telephone: 250 387-4060
> Email: LGIF@gov.bc.ca

Questions about local government housing initiatives can be sent to:

> Ministry of Housing, Planning and Land Use Management Branch
> Telephone: 250-387-3394
> Email: PLUM@gov.bc.ca

Full text of Bill 46: https://www.bclaws.gov.bc.ca/civix/document/id/bills/billscurrent/4th42nd:gov46-1

More information about local government housing initiatives:
https://www2.gov.bc.ca/gov/content/housing-tenancy/local-governments-and-housing/housing-initiatives

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4th Session, 42nd Parliament (2023)
FIRST READING

The following electronic version is for informational purposes only.
The printed version remains the official version.

HONOURABLE RAVI KAHLON
MINISTER OF HOUSING

BILL 46 – 2023
HOUSING STATUTES (DEVELOPMENT FINANCING) AMENDMENT ACT, 2023

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows:

Local Government Act

Explanatory Note

1 Section 25 (1) of the Local Government Act, R.S.B.C. 2015, c. 1, is amended by adding the following paragraph:

(d.1) provide that Division 19.1 *[Amenity Costs Recovery]* of Part 14 applies to the municipality; ***.***

Explanatory Note

2 Section 482 is amended

(a) in subsection (2) (a) by adding "subject to subsection (2.1),***" before "***conditions relating to the conservation or provision of amenities***", and***

(b) by adding the following subsection:

(2.1) A zoning bylaw must not establish conditions relating to the conservation or provision of an amenity that is specified in an amenity cost charge bylaw under section 570.7 (1) (b) *[amenities receiving funding from amenity cost charge]*.

Explanatory Note

3 Section 559 is amended

(a) in subsection (2) (a) by striking out "sewage, water, drainage and highway facilities***" and substituting "***sewage, water, drainage, fire protection, police, highway and solid waste and recycling facilities***", and***

(b) by adding the following subsections:

(2.1) For the purposes of subsection (2) (a) and section 566 (2) (a), a reference to a highway facility includes highway facilities that serve provincial and municipal interests if

(a) the municipality and the province have entered into an arrangement to share the costs of the highway facilities,

(b) the highway facilities directly or indirectly enable the integrated functioning of the provincial and municipal highway systems, and

(c) the highway facilities, in whole or in part, directly or indirectly service the development.

(2.2) The amount of the development cost charges imposed for a purpose referred to in subsection (2) respecting highway facilities must not exceed the amount of the costs of the highway facilities to be paid by the municipality.

Explanatory Note

4 Section 560 (2) is amended by adding the following paragraph:

(a.1) in relation to a development cost charge imposed for a purpose referred to in section 559 (2) respecting highway facilities, the charge does not relate to highway facilities that meet the conditions in section 559 (2.1), ***.***

Explanatory Note

5 Section 566 (2) (a) is amended by striking out "sewage, water, drainage and highway facilities***" and substituting "***sewage, water, drainage, fire protection, police, highway and solid waste and recycling facilities***".***

Explanatory Note

6 Section 570 (1) is amended in paragraph (a) of the definition of* "works" *by striking out "sewage, water, drainage and highway facilities***" and substituting "***sewage, water, drainage, fire protection, police, highway and solid waste and recycling facilities***".***

Explanatory Note

7 The following Division is added to Part 14:

Division 19.1 – Amenity Costs Recovery

Definitions in relation to this Division

570.1 In this Division:

"amenity" means a facility or feature that provides social, cultural, heritage, recreational or environmental benefits to a community, including, without limitation,

(a) a community, youth or seniors' centre,

(b) a recreational or athletic facility,

(c) a library,

(d) a day care facility, and

(e) a public square,

but does not include a facility or feature within a class of facilities or features that are prescribed by regulation not to be amenities;

"amenity cost charge" means a charge imposed by an amenity cost charge bylaw;

"amenity cost charge bylaw" means a bylaw under section 570.2 (1);

"capital costs" includes

(a) planning, engineering and legal costs directly related to the work for which a capital cost may be incurred under this Division,

(b) interest costs directly related to the work referred to in paragraph (a), and

(c) expenditures made to a person or public authority under a partnering agreement in order to pay capital costs incurred by the person or public authority;

"development" means those items referred to in section 570.2 (1) (a) and (b) for which an amenity cost charge may be imposed.

Amenity cost charges: imposition and collection

570.2 (1) A local government may, by bylaw, for the purpose described in subsection (2), impose amenity cost charges on every person who obtains

(a) approval of a subdivision, or

(b) a building permit authorizing the construction, alteration or extension of a building or structure.

(2) Amenity cost charges may be imposed under subsection (1) for the purpose of providing funds to assist the local government to pay the capital costs of providing, constructing, altering or expanding amenities to benefit, directly or indirectly,

(a) the development, and

(b) the increased population of residents or workers that results from the development

for which the charge is being imposed.

(3) An amenity referred to in subsection (2) must

(a) be owned by a municipality or regional district, or

(b) be owned or operated by a person or public authority that has entered into a partnering agreement with a municipality or regional district in respect of the amenity.

(4) Subject to subsection (5), an amenity cost charge that is payable under a bylaw under this section must be paid at the time of the approval of the subdivision or the issue of the building permit.

(5) The minister may, by regulation in respect of all or different classes of developments, authorize the payment of amenity cost charges in instalments and prescribe conditions under which the instalments may be paid.

(6) If a board has the responsibility of providing a service that includes providing, constructing, altering or expanding one or more amenities referred to in subsection (2) in a participating municipality, the board may, by bylaw under subsection (1), impose an amenity cost charge that is applicable within that municipality.

(7) The municipality must collect and remit an amenity cost charge imposed under subsection (6) to the regional district in the manner provided for in the applicable amenity cost charge bylaw.

Consultation required for amenity cost charge bylaw

570.3 (1) During the development of a bylaw that imposes an amenity cost charge, or the development of an amendment to such a bylaw, the proposing local government must provide one or more opportunities it considers appropriate for consultation with

(a) the public, and

(b) persons, public authorities and organizations that the local government considers will be affected by the bylaw.

(2) No consultation is required to repeal a bylaw referred to in subsection (1).

(3) The Lieutenant Governor in Council may make regulations respecting consultation under subsection (1), including regulations as follows:

(a) establishing notice requirements and the process for consultation;

(b) prescribing persons, public authorities and organizations that must be consulted;

(c) prescribing circumstances in which no consultation is required.

Circumstances in which amenity cost charges are not payable

570.4 (1) An amenity cost charge is not payable in relation to a development authorized by a building permit that authorizes the construction, alteration or extension of a building or part of a building that is, or will be, after the construction, alteration or extension, exempt from taxation under either of the following provisions of the *Community Charter*:

(a) section 220 (1) (h) *[statutory exemption for places of public worship]*;

(b) section 224 (2) (f) *[permissive exemptions in relation to places of public worship]*.

(2) An amenity cost charge is not payable if no increase in the population of residents or workers is expected to result from the development.

(3) An amenity cost charge in respect of a particular amenity is not payable if an amenity cost charge in respect of that amenity has previously been paid for the same development, unless further development is expected to result in an increase in the population of residents or workers.

(4) An amenity cost charge is not payable in respect of a capital cost for which a development cost charge may be imposed.

(5) An amenity cost charge is not payable in relation to a development for any class of affordable housing prescribed by regulation.

General prohibition against waiving or reducing charges

570.5 (1) Except as authorized under section 570.6, a local government must not provide assistance by waiving or reducing an amenity cost charge.

(2) This section operates as a restriction on

(a) sections 263 (1) (c) *[regional district corporate powers – providing assistance]* and 274 *[assistance under partnering agreements]* of this Act, and

(b) sections 8 (1) *[natural person powers]* and 21 *[partnering agreements]* of the *Community Charter*.

Development for which charges may be waived or reduced

570.6 (1) In this section, **"eligible development"** means a development that is eligible in accordance with an applicable bylaw or regulation under this section as being for one or both of the following categories:

(a) not-for-profit rental housing, including supportive living housing;

(b) for-profit affordable rental housing.

(2) Subject to a bylaw under subsection (3) and an applicable regulation under subsection (6), a local government may waive or reduce an amenity cost charge for an eligible development.

(3) For the purposes of subsection (2), the local government, by bylaw,

(a) must establish what constitutes an eligible development or a class of eligible development for the purposes of one or more categories of eligible development described in subsection (1),

(b) must establish the amount or rates of reduction for an eligible development, which may be different for different categories of eligible

development described in subsection (1) or different classes of eligible development established in the bylaw, and

(c) may establish the requirements that must be met in order to obtain a waiver or reduction under subsection (2) and the conditions on which such a waiver or reduction may be granted.

(4) The authority under subsection (2) is an exception to

(a) section 273 *[prohibition against assistance to business]* of this Act, and

(b) section 25 (1) *[prohibition against assistance to business]* of the *Community Charter*.

(5) If a local government delegates the power under subsection (2), the person who is subject to the decision of the delegate is entitled to have the local government reconsider the matter.

(6) The minister may make regulations in relation to subsection (3)

(a) establishing,

(b) restricting, or

(c) establishing criteria for determining

what constitutes an eligible development or a class of eligible development for the purposes of one or more categories of eligible development described in subsection (1).

Amenity cost charge bylaw: specifying amenities and setting charges

570.7 (1) An amenity cost charge bylaw must specify the following:

(a) one or more areas in which development is subject to an amenity cost charge;

(b) for each area referred to in paragraph (a), the amenities that will receive funding from an amenity cost charge;

(c) the amount of the charge or charges imposed in a schedule or schedules of amenity cost charges.

(2) Amenity cost charges may vary as provided in subsection (3), but must

(a) be set as a charge

(i) per lot or per unit in a development, or

(ii) per square metre of floor space in a development, and

(b) be similar for all developments that are expected to result in a similar increase in the population of residents or workers.

(3) Amenity cost charges may vary with respect to one or more of the following:

(a) different areas specified under subsection (1) (a);

(b) different zones;

(c) different uses;

(d) different sizes or different numbers of lots or units in a development;

(e) any other basis for variation prescribed by regulation.

(4) In specifying, in the amenity cost charge bylaw, the areas in which development is subject to an amenity cost charge and the amenities in each of those areas that will receive funding from the charge, a local government must take the following into consideration:

(a) an applicable official community plan and other relevant planning documents;

(b) expected increases in the population of residents and workers;

(c) the local government's financial plan;

(d) any other information prescribed by regulation.

(5) In setting amenity cost charges, a local government must take the following into consideration:

(a) in each area in which development is subject to an amenity cost charge, the capital costs of amenities that will receive funding from the charge;

(b) the phasing of amenities;

(c) whether the charges are excessive in relation to the capital cost of prevailing standards of service in the municipality or regional district;

(d) whether the charges will, in the municipality or regional district,

(i) deter development, or

(ii) discourage the construction of reasonably priced housing or the provision of reasonably priced serviced land;

(e) any other information prescribed by regulation.

(6) In setting amenity cost charges, a local government must deduct the following from the estimated capital cost of each amenity in an area:

(a) the portion of the estimated capital cost to be funded by grants and other sources of funding that are external to the municipality or regional district;

(b) the portion of the estimated capital cost to be allocated to the existing population of the area and, as a result, funded by the local government;

(c) the portion of the estimated capital cost to be allocated to the development but funded by the local government.

(7) A local government must make available to the public, on request, the considerations, information and calculations used to determine the schedule or

schedules referred to in subsection (1), but any information respecting the contemplated acquisition costs of specific properties need not be provided.

(8) The Lieutenant Governor in Council may make regulations respecting the setting of amenity cost charges, including regulations as follows:

(a) adjusting or limiting amenity cost charges;

(b) prescribing economic and other analyses that local governments must undertake in setting amenity cost charges;

(c) establishing the method for making deductions under subsection (6) (b);

(d) requiring that the method for making deductions under subsection (6) (b) be applied by an individual with a professional designation specified in the regulation;

(e) specifying a minimum portion that must be deducted for the purposes of subsection (6) (c).

Use of amenity cost charges

570.8 (1) An amenity cost charge paid to a local government must be deposited by the local government in a separate special amenity cost charge reserve fund established for each area in which development is subject to an amenity cost charge.

(2) Money in amenity cost charge reserve funds, together with interest on it, may be used only for the following:

(a) to pay the capital costs of providing, constructing, altering or expanding amenities specified in the amenity cost charge bylaw under section 570.7 (1) (b);

(b) to pay principal and interest on a debt incurred by a local government as a result of an expenditure under paragraph (a);

(c) to pay a person subject to an amenity cost charge for some or all of the capital costs the person incurred in completing a project described in paragraph (a) if

(i) the project was completed under an agreement referred to in section 570.9 (1) between the person and the local government, and

(ii) the project is included in the calculations used to determine the amount of that amenity cost charge.

(3) Authority to make payments under subsection (2) must be authorized by bylaw.

(4) The inspector may require a municipality or regional district to provide the inspector with a report on the status of amenity cost charge collections, expenditures and proposed expenditures for a time period the inspector specifies.

(5) After reviewing a report under subsection (4), the inspector may order the transfer of funds from an amenity cost charge reserve fund under this section to a reserve fund established for a capital purpose.

Provision of amenity instead of all or part of charge

570.9 (1) Despite an amenity cost charge bylaw, a local government may, by bylaw and in accordance with this section, enter into an agreement with a person under which the person provides, constructs, alters or expands an amenity, or provides land for an amenity, instead of paying all or part of an amenity cost charge.

(2) An amenity referred to in subsection (1) must

(a) be an amenity that is specified in the amenity cost charge bylaw under section 570.7 (1) (b), and

(b) have a location acceptable to the local government.

(3) Without limiting the matters that may be dealt with in an agreement under subsection (1), the agreement must specify the following:

(a) the amenity to be provided, constructed, altered or expanded or the land to be provided for the amenity;

(b) the location of the amenity or land;

(c) who is to provide, construct, alter or expand the amenity or provide the land;

(d) when the amenity is to be provided, constructed, altered or expanded or when the land is to be provided;

(e) the value of the amenity or land and how the local government and the person determined that value;

(f) any remainder of the amenity cost charge to be paid under subsection (4);

(g) the payment or crediting to the person of the amount, if any, by which the value of the amenity or land exceeds the amount of the amenity cost charge;

(h) any other information prescribed by regulation.

(4) If partial payment of an amenity cost charge is made by providing, constructing, altering or expanding an amenity, or providing land for an amenity, the remainder must be paid in accordance with the amenity cost charge bylaw.

(5) If land for an amenity is to be provided under subsection (1), a registrable transfer of the land must be provided to the local government.

Effect of bylaws adopted after application for rezoning, development permit or building permit submitted

570.91 (1) In this section, **"in-stream"** and **"precursor application"** have the same meaning as in section 568 (1).

(2) An initial amenity cost charge bylaw that would otherwise be applicable to the construction, alteration or extension of a building or structure has no effect with respect to that construction, alteration or extension if a precursor application to the building permit authorizing that construction, alteration or extension is in-stream on the date the initial bylaw is adopted.

(3) Subject to subsection (4), an amended amenity cost charge bylaw that would otherwise be applicable to the construction, alteration or extension of a building or structure has no effect with respect to that construction, alteration or extension if

(a) the building permit authorizing that construction, alteration or extension is issued within 12 months, or any longer period prescribed by regulation, after the date the bylaw is amended, and

(b) a precursor application to that building permit is in-stream on the date the bylaw is amended.

(4) Subsection (3) does not apply if the applicant for that building permit agrees in writing that the amended amenity cost charge bylaw should have effect.

Annual amenity cost charges report

570.92 (1) Before June 30 in each year, a local government must prepare and consider a report in accordance with this section respecting the previous year.

(2) The report must include the following, reported for each area in which development is subject to an amenity cost charge in the applicable year:

(a) the amount of amenity cost charges received;

(b) the expenditures from the amenity cost charge reserve funds, including the expenditures made to a person or public authority under a partnering agreement;

(c) the balance in the amenity cost charge reserve funds at the start and at the end of the applicable year;

(d) any waivers and reductions under section 570.6 (2) *[development for which charges may be waived or reduced]*;

(e) any amenities provided, constructed, altered or expanded by a person under section 570.9 *[provision of amenity instead of all or part of charge]*;

(f) any other information prescribed by regulation.

(3) The local government must make the report available to the public from the time it considers the report until June 30 in the following year.

Information requested by inspector

570.93 As requested by the inspector, a local government must provide the inspector with any information respecting amenity cost charges, including information

respecting the following:

(a) the setting of amenity cost charges;

(b) the development of the amenity cost charge bylaw and of any amendments to it, including consultations undertaken in that development.

Regulations made for purposes of this Division

570.94 In making a regulation for the purposes of this Division, the Lieutenant Governor in Council

(a) must take into consideration any applicable information provided to the inspector under section 570.93, and

(b) may make provisions that the Lieutenant Governor in Council considers necessary or advisable for the purpose of preventing, minimizing or otherwise addressing any transitional difficulties encountered in relation to amenity cost charges.

Division does not restrict other powers

570.95 Nothing in this Division restricts or affects any other power of a local government under this or any other Act, subject to

(a) the exceptions provided in sections 570.5 (2) *[general prohibition against waiving or reducing charges]* and 570.6 (4) *[development for which charges may be waived or reduced]*, and

(b) the condition that the capital costs of any amenity funded by an amenity cost charge must be recovered only once.

Explanatory Note

8 Section 610 (2) (b) is amended by adding the following subparagraph:

(vi) a bylaw under Division 19.1 *[Amenity Costs Recovery]* of Part 14; ***.***

Explanatory Note

9 Section 617 (2) is amended by adding the following paragraph:

(f) a bylaw under Division 19.1 *[Amenity Costs Recovery]* of Part 14.

Vancouver Charter

Explanatory Note

10 Section 523D of the Vancouver Charter, S.B.C. 1953, c. 55, is amended

(a) in subsection (1) (a) by striking out "sewage, water, drainage and highway facilities***" and substituting "***sewage, water, drainage, fire protection, police, highway and solid waste and recycling facilities***", and***

(b) by adding the following subsections:

(1.1) For the purposes of subsection (1) (a), a reference to a highway facility includes highway facilities that serve provincial and city interests if

(a) the city and the province have entered into an arrangement to share the costs of the highway facilities,

(b) the highway facilities directly or indirectly enable the integrated functioning of the provincial and city street systems, and

(c) the highway facilities, in whole or in part, directly or indirectly service the development.

(1.2) The amount of the development cost levy imposed for a purpose referred to in subsection (1) respecting highway facilities must not exceed the amount of the costs of the highway facilities to be paid by the city.

Explanatory Note

11 The following Part is added:

Part XXIV-B – Amenity Cost Charges

Definitions

523E. In this Part:

"amenity" means a facility or feature that provides social, cultural, heritage, recreational or environmental benefits to a community, including, without limitation,

(a) a community, youth or seniors' centre,

(b) a recreational or athletic facility,

(c) a library, and

(d) a public square,

but does not include a facility or feature within a class of facilities or features that are prescribed by regulation not to be amenities;

"amenity cost charge" means a charge imposed by an amenity cost charge by-law;

"amenity cost charge by-law" means a by-law under section 523G (1);

"capital costs" includes

(a) planning, architectural, engineering and legal costs related to the work for which a capital cost may be incurred under this Part,

(b) the principal and interest related to the work referred to in paragraph (a), and

(c) expenditures that are made to a person or public authority pursuant to an agreement under which the person or public authority agrees to provide a service on behalf of the city and that are made to pay capital costs incurred by the person or public authority;

"development" means the construction, alteration or extension of all or part of a building or structure for which an amenity cost charge may be imposed;

"public authority" has the same meaning as in section 1 of the Schedule to the *Community Charter*.

Power to undertake projects

523F. The Council may undertake any projects to provide, construct, alter or expand amenities.

Imposition and collection of amenity cost charge

523G. (1) The Council may, by by-law, impose an amenity cost charge in accordance with this Part for the purpose of providing funds to assist the Council to pay the capital costs of providing, constructing, altering or expanding amenities to benefit, directly or indirectly,

(a) the development, and

(b) the increased population of residents or workers that results from the development

for which the charge is being imposed.

(2) Subject to section 523I *[circumstances in which amenity cost charges are not payable]*, the amenity cost charge must be imposed on every person entitled to the delivery of a building permit authorizing the construction, alteration or extension of all or part of a building or structure.

(3) An amenity referred to in subsection (1) must

(a) be owned by the city, or

(b) be owned or operated by a person or public authority that has entered into an agreement with the city in respect of the amenity and under which agreement the person or public authority agrees to provide a service on behalf of the city.

(4) An amenity cost charge is a condition of the issuance of a building permit and must be paid at the time or times a building permit or permits are issued for the development or redevelopment of property in an area to which an amenity cost charge by-law applies.

(5) For the purposes of subsection (4), the Council may define what constitutes development or redevelopment of property and may provide that, if a development takes place in stages, each stage is deemed to be part of the development.

(6) The Council may, in respect of all or different classes of developments, authorize the payment of amenity cost charges in instalments, prescribe conditions under which the instalments may be paid and provide that, if not paid, the instalment must be inserted in the real property tax roll as a charge imposed with respect to the parcel or parcels in relation to which the building permit was issued.

Consultation required for amenity cost charge by-law

523H. (1) During the development of a by-law that imposes an amenity cost charge, or the development of an amendment to such a by-law, the Council must provide one or more opportunities it considers appropriate for consultation with

(a) the public, and

(b) persons, public authorities and organizations that the Council considers will be affected by the by-law.

(2) No consultation is required to repeal a by-law referred to in subsection (1).

(3) The Lieutenant Governor in Council may make regulations respecting consultation under subsection (1), including regulations as follows:

(a) establishing notice requirements and the process for consultation;

(b) prescribing persons, public authorities and organizations that must be consulted;

(c) prescribing circumstances in which no consultation is required.

Circumstances in which amenity cost charges are not payable

523I. (1) An amenity cost charge is not payable if

(a) a parcel of land is, or will be after construction, alteration or extension, exempt from taxation under section 396 (1) (c) (iv) *[place of public worship]*, or

(b) a parcel of land, owned by the Federal or Provincial government, the City of Vancouver or a non-profit organization, is or will be, after construction, alteration or extension, used for social housing and, for the purposes of this paragraph, the Council may define what constitutes social housing.

(2) An amenity cost charge is not payable in respect of all or part of any capital project

(a) provided to the city pursuant to a by-law passed under section 292 *[subdivision control]*,

(b) in respect of which an assessment has been imposed under Part XXIV *[Local Improvements]*, or

(c) in respect of which a development cost levy may be imposed under Part XXIV-A *[Development Cost Levies]*.

(3) An amenity cost charge is not payable if no increase in the population of residents or workers is expected to result from the development.

(4) An amenity cost charge in respect of a particular amenity is not payable if an amenity cost charge in respect of that amenity has previously been paid for the same development, unless further development is expected to result in an increase in the population of residents or workers.

(5) An amenity cost charge is not payable in relation to a development for any class of affordable housing prescribed by regulation.

Development for which charges may be waived or reduced

523J. (1) In this section, **"eligible development"** means development that is eligible in accordance with an applicable by-law or regulation under this section as being for for-profit affordable rental housing.

(2) Subject to a by-law under subsection (3) and an applicable regulation under subsection (5), the Council may waive or reduce an amenity cost charge for an eligible development.

(3) For the purposes of subsection (2), the Council, by by-law,

(a) must establish what constitutes an eligible development or a class of eligible development,

(b) must establish the amount or rates of reduction for an eligible development, which may be different for different classes of eligible development established in the by-law, and

(c) may establish the terms and conditions that must be met in order to obtain a waiver or reduction under subsection (2).

(4) If the Council delegates the power under subsection (2), the person who is subject to the decision of the delegate is entitled to have the Council reconsider the matter.

(5) The minister may make regulations in relation to subsection (3)

(a) establishing,

(b) restricting, or

(c) establishing criteria for determining

what constitutes an eligible development or a class of eligible development.

Amenity cost charge by-law – specifying amenities and setting charges

523K. (1) An amenity cost charge by-law must specify the following:

(a) one or more areas in which development is subject to an amenity cost charge;

(b) for each area referred to in paragraph (a), the amenities that will receive funding from an amenity cost charge;

(c) the amount of the charge or charges imposed in a schedule or schedules of amenity cost charges.

(2) Amenity cost charges may vary as provided in subsection (3), but must

(a) be set as a charge

(i) per lot or per unit in a development, or

(ii) per square metre of floor space in a development, and

(b) be similar for all developments that are expected to result in a similar increase in the population of residents or workers.

(3) Amenity cost charges may vary with respect to one or more of the following:

(a) different areas specified under subsection (1) (a);

(b) different zones;

(c) different uses;

(d) different sizes or different numbers of lots or units in a development;

(e) any other basis for variation prescribed by regulation.

(4) In specifying, in the amenity cost charge by-law, the areas in which development is subject to an amenity cost charge and the amenities in each of those areas that will receive funding from the charge, the Council must take the following into consideration:

(a) an applicable development plan as defined in section 559;

(b) an applicable official development plan as defined in section 559;

(c) other relevant planning documents;

(d) future land use patterns in the city;

(e) expected increases in the population of residents and workers;

(f) reports submitted by the Director of Finance under section 219 *[report on revenue and expenditure]*;

(g) any other information prescribed by regulation.

(5) In setting amenity cost charges, the Council must take the following into consideration:

(a) in each area in which development is subject to an amenity cost charge, the capital costs of amenities that will receive funding from the charge;

(b) the phasing of amenities;

(c) whether the charges are excessive in relation to the capital cost of prevailing standards of service in the city;

(d) whether the charges will, in the city,

(i) deter development, or

(ii) discourage the construction of reasonably priced housing or the provision of reasonably priced serviced land;

(e) any other information prescribed by regulation.

(6) In setting amenity cost charges, the Council must deduct the following from the estimated capital cost of each amenity in an area:

(a) the portion of the estimated capital cost to be funded by grants and other sources of funding that are external to the city;

(b) the portion of the estimated capital cost to be allocated to the existing population of the area and, as a result, funded by the Council;

(c) the portion of the estimated capital cost to be allocated to the development but funded by the Council.

(7) The Council must make available to the public, on request, the considerations, information and calculations used to determine the schedule or schedules referred to in subsection (1), but any information respecting the contemplated acquisition costs of specific properties need not be provided.

(8) The Lieutenant Governor in Council may make regulations respecting the setting of amenity cost charges, including regulations as follows:

(a) adjusting or limiting amenity cost charges;

(b) prescribing economic and other analyses that the Council must undertake in setting amenity cost charges;

(c) establishing the method for making deductions under subsection (6) (b);

(d) requiring that the method for making deductions under subsection (6) (b) be applied by an individual with a professional designation specified in the regulation;

(e) specifying a minimum portion that must be deducted for the purposes of subsection (6) (c).

Use of amenity cost charges

523L. (1) An amenity cost charge must be deposited in a separate amenity cost charge reserve fund established for each area in which development is subject to an amenity cost charge.

(2) Money in amenity cost charge reserve funds, together with interest, may be used only

(a) to pay the capital costs of providing, constructing, altering or expanding amenities specified in the amenity cost charge by-law under section 523K (1) (b), or

(b) to pay a person subject to an amenity cost charge for some or all of the capital costs the person incurred in completing a project referred to in paragraph (a) if

(i) the project was completed under an agreement referred to in section 523M (1) between the person and the Council, and

(ii) the project is included in the calculations used to determine the amount of that amenity cost charge.

(3) Payments out of an amenity cost charge reserve fund must be authorized by a resolution of the Council, and one resolution may authorize a series of payments in respect of any amenity.

Provision of amenity instead of all or part of charge

523M. (1) Despite an amenity cost charge by-law, the Council may, by by-law and in accordance with this section, enter into an agreement with a person under which the person provides, constructs, alters or expands an amenity, or provides land for an amenity, instead of paying all or part of an amenity cost charge.

(2) An amenity referred to in subsection (1) must

(a) be an amenity that is specified in the amenity cost charge by-law under section 523K (1) (b), and

(b) have a location acceptable to the Council.

(3) Without limiting the matters that may be dealt with in an agreement under subsection (1), the agreement must specify the following:

(a) the amenity to be provided, constructed, altered or expanded or the land to be provided for the amenity;

(b) the location of the amenity or land;

(c) who is to provide, construct, alter or expand the amenity or provide the land;

(d) when the amenity is to be provided, constructed, altered or expanded or when the land is to be provided;

(e) the value of the amenity or land and how the Council and the person determined that value;

(f) any remainder of the amenity cost charge to be paid under subsection (4);

(g) the payment or crediting to the person of the amount, if any, by which the value of the amenity or land exceeds the amount of the amenity cost charge;

(h) any other information prescribed by regulation.

(4) If partial payment of an amenity cost charge is made by providing, constructing, altering or expanding an amenity, or providing land for an amenity, the remainder must be paid in accordance with the amenity cost charge by-law.

(5) If land for an amenity is to be provided under subsection (1), a registrable transfer of the land must be provided to the Council.

COPY

Effect of by-laws adopted or amended after application for rezoning, development permit or building permit submitted

523N. (1) In this section, **"in-stream"** and **"precursor application"** have the same meaning as in section 523D (8.3) *[development cost levies]*.

(2) An initial amenity cost charge by-law that would otherwise be applicable to the construction, alteration or extension of a building or structure, or part of a building or structure, has no effect with respect to that construction, alteration or extension if a precursor application to the building permit authorizing that construction, alteration or extension is in-stream on the date the initial by-law is adopted.

(3) An amended amenity cost charge by-law that would otherwise be applicable to the construction, alteration or extension of a building or structure, or part of a building or structure, has no effect with respect to that construction, alteration or extension if

(a) the building permit authorizing that construction, alteration or extension is issued within 12 months, or any longer period prescribed by regulation, after the date the by-law is amended, and

(b) a precursor application to the building permit is in-stream on the date the by-law is amended,

unless the applicant for that building permit agrees in writing that the amended by-law should have effect.

Annual report by Director of Finance

523O. In each year,

(a) the Director of Finance must prepare and submit to the Council a report for the previous year that includes the following, reported for each area in which development is subject to an amenity cost charge in the applicable year:

(i) the amount of amenity cost charges received;

(ii) the expenditures from the amenity cost charge reserve funds, including the expenditures made to a person or public authority pursuant to an agreement under which the person or public authority agrees to provide a service on behalf of the city;

(iii) the balance in the amenity cost charge reserve funds at the start and at the end of the applicable year;

(iv) any waivers and reductions under section 523J *[development for which charges may be waived or reduced]*;

(v) any amenities provided, constructed, altered or expanded by a person under section 523M *[provision of amenity instead of all or part of charge]*;

(vi) any other information prescribed by regulation, and

(b) as soon as practicable after receiving the report, the Council must consider the report and make it available to the public.

Information requested by minister

523P. As requested by the minister, the Council must provide the minister with any information respecting amenity cost charges, including information respecting the following:

(a) the setting of amenity cost charges;

(b) the development of the amenity cost charge by-law and of any amendments to it, including consultations undertaken in that development.

Regulations

523Q. (1) The Lieutenant Governor in Council may make regulations respecting any matter for which regulations are contemplated by this Part.

(2) In making a regulation for the purposes of this Part, the Lieutenant Governor in Council

(a) must take into consideration any applicable information provided to the minister under section 523P, and

(b) may make provisions that the Lieutenant Governor in Council considers necessary or advisable for the purpose of preventing, minimizing or otherwise addressing any transitional difficulties encountered in relation to amenity cost charges.

Part does not restrict other powers

523R. Nothing in this Part restricts or affects any other power contained in this Act, subject to the condition that the capital costs of any amenity funded by an amenity cost charge must be recovered only once.

Explanatory Note

12 Section 565.1 is amended

(a) in subsection (2) (a) by adding "subject to subsection (2.1),***" before "***conditions relating to the conservation or provision of amenities***", and***

(b) by adding the following subsection:

(2.1) A zoning by-law must not establish conditions relating to the conservation or provision of an amenity that is specified in an amenity cost charge by-law under section 523K (1) (b) *[amenities receiving funding from amenity cost charge]*.

Explanatory Note

13 Section 592 (2) (b) is amended by adding the following subparagraph:

(ii.1) a by-law under Part XXIV-B, **.**

Explanatory Note

14 Section 597 (2) is amended

(a) in paragraph (b) by striking out "bylaw***" and substituting "***by-law***", and***

(b) by adding the following paragraph:

(b.1) a by-law under Part XXIV-B, **.**

Consequential Amendments

Community Charter

Explanatory Note

15 Section 188 (2) of the Community Charter, S.B.C. 2003, c. 26, is amended by adding the following paragraph:

(a.1) money received from the imposition of an amenity cost charge, which must be placed to the credit of a reserve fund in accordance with section 570.8 *[use of amenity cost charges]* of the *Local Government Act*; **.**

Explanatory Note

16 Section 189 (5) is repealed and the following substituted:

(5) As a restriction on subsections (2) and (3), a council must not transfer amounts or use money from a fund required under any of the following provisions unless the bylaw is approved by the minister:

(a) section 188 (2) (a) *[development cost charge reserve fund]*;

(b) section 188 (2) (a.1) *[amenity cost charge reserve fund]*;

(c) section 188 (2) (b) *[park land acquisition reserve fund]*.

Islands Trust Act

Explanatory Note

17 Section 29 (1) (b) of the Islands Trust Act, R.S.B.C. 1996, c. 239, is amended by adding the following subparagraph:

(ii.1) Division 19.1 *[Amenity Costs Recovery]*; **.**

Commencement

18 This Act comes into force on the date of Royal Assent.

Explanatory Notes

CLAUSE 1: ***[Local Government Act, section 25]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 2: ***[Local Government Act, section 482]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 3: ***[Local Government Act, section 559]*** amends a section to

- add fire protection, police and solid waste and recycling facilities to the list of purposes for which local governments may impose development cost charges,
- add conditions for imposing development cost charges for highway facilities, and
- limit the amount of the development cost charge that may be imposed.

CLAUSE 4: ***[Local Government Act, section 560]*** amends a section to add another basis on which the inspector may refuse to approve a bylaw.

CLAUSE 5: ***[Local Government Act, section 566]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 6: ***[Local Government Act, section 570]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 7: ***[Local Government Act, Division 19.1 of Part 14]*** establishes a framework that authorizes local governments to impose amenity cost charges on developers.

CLAUSE 8: ***[Local Government Act, section 610]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 9: ***[Local Government Act, section 617]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 10: ***[Vancouver Charter, section 523D]*** amends a section to

- establishes a framework that authorizes the Council to impose amenity cost charges on developers.
- add conditions for imposing development cost levies for highway facilities, and
- limit the amount of development cost levy that may be imposed.

CLAUSE 11: ***[Vancouver Charter, Part XXIV-B]*** establishes a framework that authorizes the council to impose amenity cost charges on developers.

CLAUSE 12: ***[Vancouver Charter, section 565.1]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 13: ***[Vancouver Charter, section 592]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 14: ***[Vancouver Charter, section 597]*** is consequential to amendments made by this Bill to the Act.

CLAUSE 15: ***[Community Charter, section 188]*** is consequential to amendments made by this Bill to the *Local Government Act*.

CLAUSE 16: ***[Community Charter, section 189]*** is consequential to amendments made by this Bill to the *Local Government Act*.

CLAUSE 17: ***[Islands Trust Act, section 29]*** is consequential to amendments made by this Bill to the *Local Government Act*.

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Strathcona
REGIONAL DISTRICT

STAFF REPORT

DATE: October 29, 2025 **FILE:** 0550-04 EASC

TO: Chair and Directors,
Regional Board

FROM: Dave Leitch
Chief Administrative Officer

RE: ELECTORAL AREA D TRANSIT SHELTERS UPDATE

PURPOSE/PROBLEM

To provide an update on the Highway 19A transit shelter project and seek direction on next steps regarding project funding and implementation.

EXECUTIVE SUMMARY

The Regional District (SRD), in collaboration with the City of Campbell River and BC Transit, applied under the 2025/26 Transit Minor Betterments (TMB) program to construct two new bus shelters and associated pullouts along Highway 19A in Electoral Area D. The project would improve passenger safety and comfort at two rural stops—Shelter Bay Resort (southbound) and Engles Road (northbound)—serving the Campbell River public transit system.

The project experienced significant delays due to extended discussions with the Ministry of Transportation and Transit (MoTT) over long-term maintenance responsibilities for the new bus pullouts—a required condition of grant approval. While MoTT ultimately confirmed that the infrastructure owner (the SRD) must assume maintenance responsibilities, the timing of this clarification prevented the grant from advancing before the 2025/26 funding window closed.

The Ministry has since confirmed that the 2025/26 TMB intake is at capacity, and the SRD's application has been placed on a waitlist for potential consideration should funds become available. If unsuccessful for the 2025/26 intake, the SRD may reapply under the 2026/27 intake.

Two options are presented for consideration:

- **Option A**: THAT the Committee recommend that the SRD wait for 2025/26 funding availability or reapply to the 2026/27 TMB intake (opening April 2026); or

- **Option B**: THAT the Committee recommend that the SRD proceed with construction in 2026 using available SRD Transit Service funds.

If the SRD proceeds using its own funding, staff could still pursue future TMB funding for additional shelters in subsequent years.

RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

Dave Leitch
Chief Administrative Officer

BACKGROUND/HISTORY

The Transit Minor Betterments (TMB) program provides up to $100,000 in provincial funding per project for small-scale, transit-supportive infrastructure such as shelters, pullouts, and accessibility improvements. In April 2025, the SRD and City of Campbell River jointly submitted an application to construct two rural bus shelters on Highway 19A in Electoral Area D—one northbound near Engles Road and one southbound near Shelter Bay Resort. The total project value was estimated at approximately $94,000 (based on quotations from Stubbs Consulting Ltd. and Monarch Structures) and included new pullouts, concrete pads, shelters, and vehicle barriers. The project was endorsed by BC Transit as part of the Campbell River transit system's rural improvement strategy.

Progress was delayed while the SRD and City sought clarity from MoTT regarding responsibility for ongoing maintenance of the new pullouts. Although the City initially requested that MoTT assume this responsibility, the Ministry advised that maintenance must be borne by the infrastructure owner —in this case, the SRD. This created uncertainty around long-term obligations and delayed the grant's processing until after the fiscal window had closed.

With the 2025/26 intake now fully subscribed, the application has been placed on a waitlist for possible funding if capacity becomes available. If not, the SRD may reapply under the 2026/27 intake, opening April 2026.

The SRD Transit Service has approximately $150,000 available ($30,000 allocated from gas tax funding and $120,000 from the Growing Communities fund), providing flexibility to advance construction independently. Should the SRD proceed with the two shelters using this budget, staff could still pursue additional TMB funding next year for further installations elsewhere in the service area.

FINANCIAL IMPLICATIONS

The Transit Minor Betterments (TMB) program provides up to $100,000 in provincial funding per project for transit-supportive infrastructure such as shelters, pullouts, accessibility upgrades, and signage.

In collaboration with the City of Campbell River and BC Transit, the SRD submitted an application under the 2025/26 TMB intake to construct two new transit shelters and bus pullouts along Highway 19A in Electoral Area D. While these stops serve the Campbell River transit system, they are located outside City limits, making the SRD solely responsible for both capital funding and ongoing maintenance.

Although the April 2025 cost estimates have expired, the total project value was approximately $94,000, which included construction of two new pullouts, bus pads, vehicle barriers, and installation of two shelters. While staff had sought to fully fund the project through the TMB grant, there remains $154,000 available within the Transit Service budget that could be used to support construction of the shelters or other related improvements if required.

Should the construction of the shelters at Shelter Bay Resort (southbound) and Engles Road @ Highway 19A (northbound) proceed using the available budget, staff could still pursue additional

funding through the 2026/27 TMB intake to support future shelter installations elsewhere in the transit service area.

LEGAL IMPLICATIONS
Construction of the new shelters will require right-of-way agreements and Highway Use Permits issued by the Ministry of Transportation and Transit (MoTT). MoTT has already indicated support for granting the necessary rights-of-way to facilitate the installation of transit infrastructure within the Highway 19A corridor.

INTERGOVERNMENTAL/REGIONAL IMPLICATIONS
The development of new transit shelters and pullouts along Highway 19A in Electoral Area D has required close coordination between the SRD, City of Campbell River, BC Transit, and MoTT.

The shelters were endorsed by BC Transit as part of the Campbell River transit system and align with BC Transit's goal of improving accessibility, safety, and passenger comfort in rural service areas. While BC Transit provides system coordination and technical guidance, it does not fund infrastructure located on provincial highways. As such, project delivery and long-term maintenance responsibilities rest with local partners.

The central issue among agencies has been maintenance responsibility—particularly snow removal at the new pullouts. Both the SRD and City have strongly advocated that MoTT should assume snow-clearing responsibilities, given that the shelters are situated entirely within the provincial highway right-of-way and MoTT already manages plowing, sanding, and general maintenance along Highway 19A.

This position reflects a shared concern that MoTT's plowing operations will inevitably create snow berms at the shelter locations, potentially limiting pedestrian access. Without timely removal during routine highway clearing, these berms could make it difficult for some passengers—particularly seniors or those with mobility challenges—to access the stops safely and comfortably.

For the SRD, which does not maintain highway infrastructure, this presents both logistical and financial challenges. The City has indicated it could provide snow-clearing and maintenance services to the rural shelters; however, this would occur at an additional cost to the SRD, and the priority of shelter snow clearing may conflict with other key infrastructure within City limits. This arrangement would also add further complexity to the existing transit agreement and funding share between the two governments.

MoTT has maintained that maintenance obligations rest with the infrastructure owner, meaning the SRD would be responsible for ongoing maintenance once the shelters are constructed. While this position delayed progress on the 2025/26 TMB application, the SRD and City have agreed to continue advocating for MoTT to assume snow-clearing responsibilities in future discussions—particularly where pullouts are located directly adjacent to provincially maintained roadways.

The SRD remains committed to working collaboratively with BC Transit, the City, and MoTT to ensure consistent, accessible, and safe transit facilities for rural residents while pursuing sustainable approaches to long-term maintenance.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS
Users of the Campbell River transit system will likely benefit from the addition of new shelters along Highway 19A. The improvements will enhance comfort, safety, and accessibility—particularly for riders waiting during inclement weather—and support continued ridership growth within the rural portion of the service area.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS
None at this time

Prepared by: *S. Fisher, Manager, Engineering Services*

Strathcona
REGIONAL DISTRICT

STAFF REPORT

DATE: October 31, 2025 **FILE**:0550-04 EASC

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: Dave Leitch
Chief Administrative Officer

RE: **AREA D STORMWATER COLLECTION SYSTEM DESIGN – CONTRACT AWARD**

PURPOSE/PROBLEM

To consider recommending the award of a contract for the Electoral Area D Stormwater Collection System Design – Catchment C and Oyster River Rest Area.

EXECUTIVE SUMMARY

At its June 25, 2025 meeting the Board considered the attached report and passed the following resolution:

> Rice/Whalley: SRD 502/25
>
> THAT a Request for Proposals (RFP) process for detailed design services in connection with Electoral Area D stormwater management be initiated in Catchment Areas C and the Oyster Bay rest area utilizing the $150,000 available from the 2025 Feasibility Study budget with the balance to be funded from unallocated Electoral Area D gas tax funds.

A Request for Proposals (RFP) was issued on September 5, 2025 and closed on October 10, 2025 with 8 proposals being received. Based on the evaluation criteria outlined in the RFP, ISL Engineering and Land Services Ltd. achieved the highest overall score and it is anticipated that the contract, if awarded, can be completed within the budget approved for this project.

The proposed work will deliver a 75% design, including the geotechnical investigation, with a targeted completion in Q3 2026. It is anticipated that sufficient funds will remain within the allocated budget to advance the design to the 95% stage if there is strong confidence that construction may proceed within a two-year timeframe.

Given evolving design standards, potential changes in property ownership, and updates to permitting requirements from various regulatory authorities, it is not recommended to progress to a 95% design until there is a high degree of certainty regarding construction timing. Should that confidence be established following completion of the 75% milestone, there will be an opportunity to reintroduce Option Scope 2 (95% Design) under a contract amendment.

It is therefore recommended that the contract for the Electoral Area D Stormwater System Design be awarded to ISL Engineering and Land Services Ltd.

RECOMMENDATIONS

1. THAT the report from the Chief Administrative Officer be received.

2. THAT the Committee recommend that the contract for the Electoral Area D Stormwater System Design Catchment C and Oyster River Rest Area be awarded to ISL Engineering and Land Services Ltd. in the amount of $136,674 (excluding GST) for the core project and Option Scope 1.

Respectfully:

Dave Leitch
Chief Administrative Officer

BACKGROUND

Based on the 2025 funding availability within the Are D feasibility study budget and on areas with the highest need, Catchment C and the Oyster River Rest Area were selected by the Board to proceed into detailed design.

The RFP outlined the project scope and evaluation criteria which focused on technical approach, relevant experience, local context understanding, and best value to the Regional District. Proposals were evaluated by a staff panel using a 100-point matrix. ISL Engineering and Land Services Ltd. ranked highest with a score of 83 points, excelling in the following areas

- Methodology and Approach (20/20): A clear, logical work plan with defined milestones and risk-mitigation strategies.
- Identification of Challenges and Mitigation (10/10): Recognized site-specific risks and offered practical solutions based on previous experience.
- Local Experience (5/5): Strong understanding of Area D's coastal conditions and regulatory context.
- Team and Expertise (18/20): An experienced project manager and support team with relevant stormwater design projects across coastal BC.

Although not the lowest cost submission, ISL offered the best overall value to the SRD based on its technical approach, depth of experience and capacity to complete the work within budgetary and scheduling constraints.

Given evolving design standards, potential property ownership changes, and permitting requirements from multiple regulatory authorities, staff do not recommend advancing beyond 75% design until there is a high degree of certainty regarding construction timing. Once that confidence is established, Option Scope 2 – 95% Design may be added under contract amendment.

FINANCIAL IMPLICATIONS

This project is funded through the $150,000 allocation from the 2025 Electoral Area D Feasibility Study budget, as authorized under Resolution SRD 502/25. No additional funding is required at this time. Should the design advance to 95%, a future contract amendment may be brought forward, funded through unallocated Area D Gas Tax reserves.

The recommended award of $136,674 (excl. GST) to ISL Engineering covers the 75% design and geotechnical scope, leaving a modest contingency within the existing budget for SRD oversight and minor disbursements.

LEGAL IMPLICATIONS

Implementation of the proposed stormwater system will require:

- Statutory rights-of-way (SRWs) or easements over private property to secure access to drainage infrastructure and outfalls.
- Highway Use Permits from MoTT for works located within road corridors.
- Crown tenures for marine outfalls and any infrastructure extending below the high-water mark.
- Environmental approvals through Ministry of Water, Land and Resource Stewardship (WLRS) and the Department of Fisheries and Oceans (DFO), including review under the Water Sustainability Act and Fisheries Act, where applicable.

This design phase will confirm the extent of required easements, tenures, and permits, and provide a clear roadmap and supporting documentation to facilitate applications if the project advances to construction

INTERGOVERNMENTAL/REGIONAL IMPLICATIONS

Coordination will be required with the Ministry of Transportation and Transit (MoTT), as the proposed stormwater system will be largely located within the provincial road rights of way. Early engagement will ensure the design aligns with MoTT drainage standards, maintenance practices, and access requirements.

Additional permitting and inter-agency coordination will be necessary with the Ministry of Water, Land and Resource Stewardship (WLRS) and the Department of Fisheries and Oceans (DFO) due to potential impacts on fish-bearing watercourses and ocean discharge locations. Crown land tenures will be required for the ocean outfalls, and supporting documentation for these tenure applications will be developed through this design phase.

This phase of work will also define the regulatory path for construction, identify all required environmental and tenure authorizations, and prepare preliminary submissions and mapping to streamline future permit applications.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS

Residents within the Catchment C and Oyster River areas will benefit from reduced surface flooding and improved drainage management once construction is implemented. The design phase itself will include early notification to affected landowners if any access or right-of-way discussions are required.

INTERDEPARTMENTAL IMPLICATIONS

None at this time

Prepared by: *S. Fisher, Manager, Engineering Services*

Attachments: RFP-10-25 Area D Stormwater Collection System Design- Catchment C and Oyster River Rest Area
ISL Engineering and Land Services Ltd. Proposal
20250606-Area-D-Stormwater Report

RFP-10-25
REQUEST FOR PROPOSALS

AREA D STORMWATER COLLECTION SYSTEM DESIGN – CATCHMENT C & OYSTER RIVER REST AREA

ISSUE DATE
SEPTEMBER 5, 2025

CLOSING DATE AND TIME
12:00 NOON OCTOBER 10, 2025

CLOSING LOCATION
Strathcona Regional District
990 Cedar Street
Campbell River, BC V9W 7Z8

CONTACT PERSON
Sheena Fisher, Manager, Engineering Services
Tel: (250) 830-6700
Fax: (250) 830-6710
Email: Procurement@srd.ca

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A. PROJECT SUMMARY

1. Introduction

The Strathcona Regional District (SRD) is seeking proposals from qualified engineering and planning consultants to advance the planning and design of stormwater utility systems within two identified priority catchments in Electoral Area D. This work builds on the findings of the 2025 SRD Area D Drainage Study (McElhanney Ltd., March 26, 2025), which assessed the feasibility of implementing a formal stormwater utility across 14 sub-catchments in the region.

2. Background

Electoral Area D currently lacks a formal stormwater management system. Drainage is informally managed through roadside ditches and culverts under the jurisdiction of the Ministry of Transportation and Transit (MoTT). However, private properties are not permitted to directly connect to MoTT infrastructure, leaving property owners with few legal or effective options to manage runoff.

As a result, localized flooding, surface ponding, and runoff-related disputes are common. These issues have also placed a significant burden on SRD staff. The 2025 Drainage Study identified potential long-term solutions through a conceptual piped stormwater network using MoTT rights-of-way and discharging to existing natural features or the foreshore.

Two high-priority catchments have been selected for further advancement based on feasibility, density of serviceable properties, and the potential to alleviate chronic drainage issues:

- Catchment C (Engles Road corridor), and
- Oyster River Rest Area (Highway 19A frontage).

Their locations are shown in **Figure 4** and **Figure 8** on the following pages. A summary of characteristics of the catchments is presented below in Table 1.

Table 1 – Catchment C and Oyster River Rest Area Characteristics

Description	Catchment C	Oyster River Rest Area
Catchment Area	± 9 ha	± 10 ha
No of Properties to be Serviced	42 lots	20 lots
Preliminary Estimated Pipe Length & Dia.		
• 375 mm dia.	120 m	-
• 450 mm dia.	510 m	705 m
• 525 mm dia.	310 m	35 m
Combined Total:	940 m	740 m
Point of Discharge	Foreshore	Foreshore

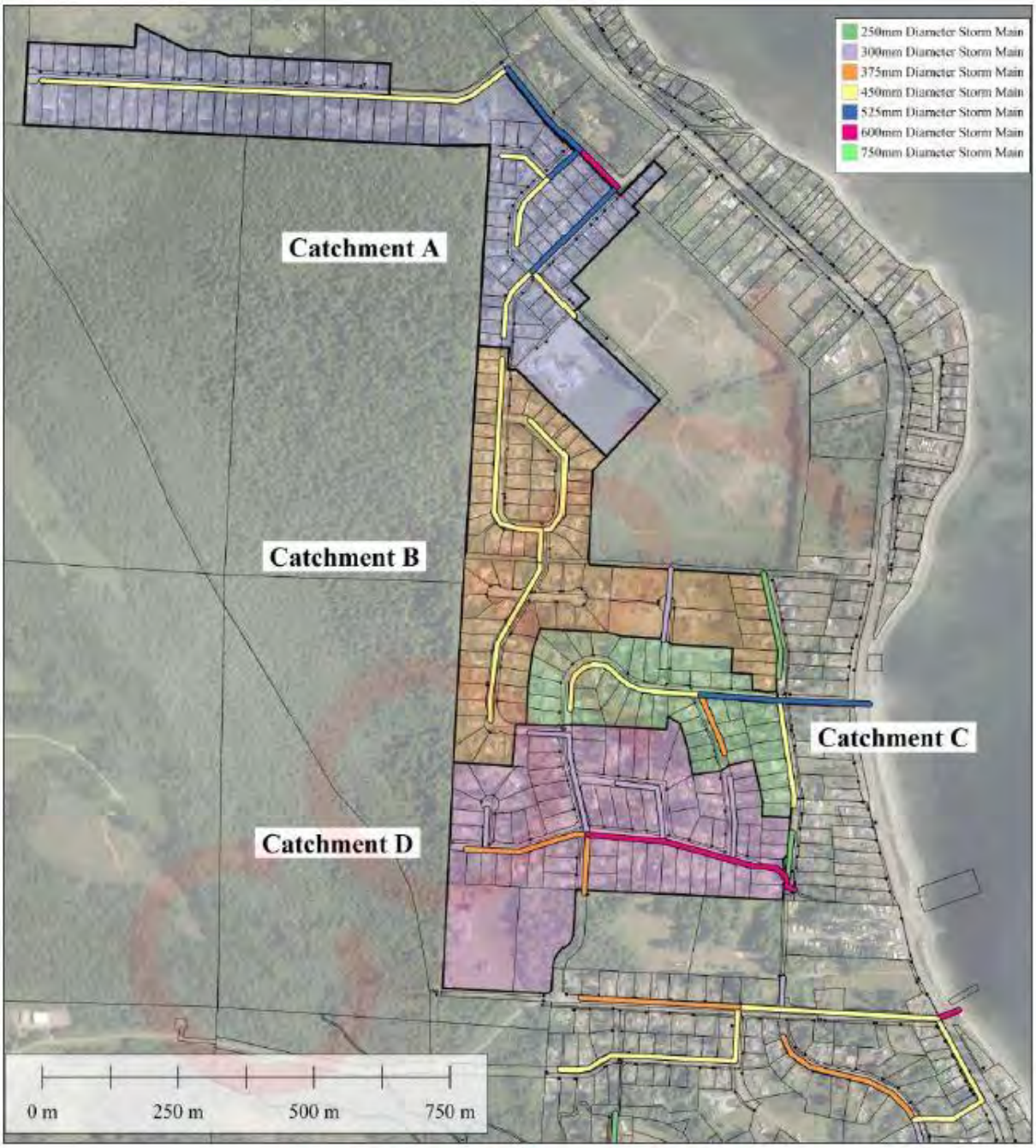


Figure 4: Ocean Grove/Shelter Point Sub Catchments

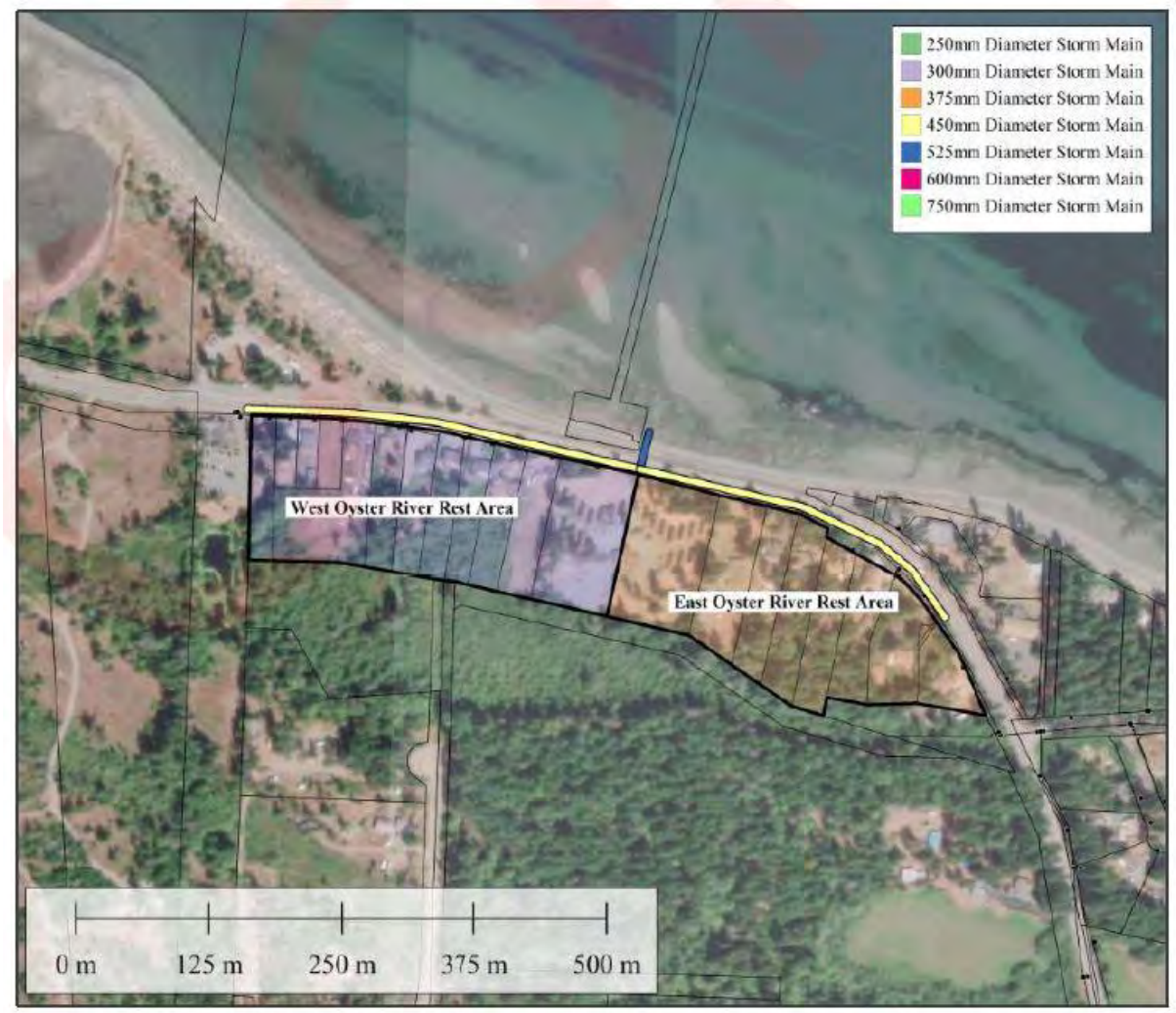


Figure 8: Oyster River Rest Area Sub Catchment

The SRD is seeking to advance the Area D storm drainage system project by retaining a qualified consulting engineering company to:

Confirm Concept Feasibility

- Validate catchment boundaries, system alignments, and design assumptions from the 2025 drainage study
- Confirm feasibility of proposed gravity-flow piped systems within existing public corridors or flag where easements or design alternatives are required

Develop Detailed Design Drawings & Cost Estimate

- Advance detailed design, including alignment drawings, profiles, specifications, and construction sequencing where appropriate
- Develop a Class B cost estimate

Support Coordination with Permitting Authorities and Landowners

- Coordinate with the Ministry of Transportation and Transit (MoTT) and other relevant regulators to support future permitting and construction approvals

- Undertake environmental review of proposed outfall areas and receiving environments to:
    - assess outfall suitability and resilience;
    - identify permitting requirements
    - evaluate potential physical, ecological, or regulatory barriers to construction or discharge
- Support early engagement with landowners where statutory rights-of-way (SRWs) or access agreements may be required

B. ADMINISTRATIVE REQUIREMENTS

1.0 DEFINITIONS

Throughout this Request for Proposals (RFP), the following definitions apply:

"Closing" means the closing date and time specified on the first page of this Request for Proposals.

"Contract" means the written agreement resulting from this Request for Proposals executed by the Strathcona Regional District and the contractor.

"Contractor" means the successful proponent to this Request for Proposals who enters into a written contract with the Regional District.

"Must", "shall" or "mandatory" means a requirement that must be met in order for the proposal to receive consideration.

"Project" means that work to be completed in accordance with this Request for Proposals.

"Proponent" means an individual, company or partnership that submits, or intends to submit, a proposal in response to this Request for Proposals.

"Proposal" means a submission in response to this Request for Proposals.

"RFP" means this Request for Proposals.

"Should" or "desirable" means a requirement having a significant degree of importance to the objective of the Request for Proposals.

2.0 TERMS AND CONDITIONS

The terms and conditions applicable to this RFP are contained within this document. Submission of a proposal in response to this RFP indicates acceptance of all terms and conditions contained herein or in any addenda issued by the Regional District.

3.0 EVALUATION

Proposals will be evaluated by the Regional District based on the criteria identified herein. The intent of the Regional District is to enter into a contract with the proponent whose proposal represents the best value to the Regional District based on the Regional District's evaluation of the proposals received.

4.0 ALTERNATIVE SOLUTIONS

If alternative solutions are offered, the information should be submitted in the same format as a standard proposed response but must be clearly marked as an "Alternative Proposal". If a proponent submits more than one proposal each must be separately and uniquely identified.

5.0 CHANGES TO PROPOSALS

By written notice a proponent may, prior to closing, amend or withdraw its proposal. Upon closing all proposals become irrevocable and may not be amended or withdrawn prior to the deadline for acceptance except where the proponent and the Regional District have mutually agreed to a change for the purpose of entering into a contract.

6.0 PROPONENT EXPENSES

Proponents are solely responsible for their own expenses in preparing and submitting their proposals. The Regional District will not be liable for any claims for costs or damages incurred by a proponent in preparing a proposal, loss of anticipated profit in connection with a final contract or any other matter whatsoever.

7.0 SUBCONTRACTORS AND PARTNERSHIPS

If subcontractors are to be used they must be clearly identified in the proposal. Joint submissions in the form of a partnership or consortium are acceptable including a joint submission by proponents having no formal corporate links. However, each proposal must identify the legal entity which is to be responsible for the overall performance of the work which constitutes the project.

8.0 CONFLICT OF INTEREST

Contracting or subcontracting with any firm or individual whose corporate or other interests could, in the Regional District's opinion, give rise to a conflict of interest in connection with the services will not be permitted. This includes, but is not limited to, any firm or individual involved in the preparation of this RFP.

9.0 CURRENCY AND TAXES

Prices must be quoted in Canadian dollars and exclusive of taxes which shall be shown separately on the Proposal Form. No adjustment of fees or pricing will be made due to international currency fluctuations and/or any import duties and any additional taxes as a result of the contractor sourcing any materials, components and/or labour from international sources.

10.0 ACCEPTANCE OF PROPOSALS

This RFP must not be construed as an agreement to purchase goods or services nor as an invitation to perform any service for the Regional District, except as specifically outlined herein. Proposals shall remain open for acceptance by the Regional District for at least 30 days after the RFP closing date. Proposals must state the latest date for acceptance at the time of submission.

The Regional District is not bound to accept the lowest priced proposal or any proposal. Proposals will be evaluated on the basis of stated criteria and the Regional District is under no obligation to request clarification or further information, whether written or oral, from any proponent prior to completion of the evaluation process.

The Regional District reserves the right to reject any and all proposals for any reason or to accept any proposal in whole or in part which the Regional District, in its sole unrestricted discretion, deems to represent the best value for the Regional District. Proponents acknowledge the Regional District's rights under this clause and absolutely waive any right of action against the Regional District for failure to accept their proposals whether such right of action arises as a result of negligence, bad faith or for any other reason.

The Regional District reserves the right to enter into negotiations with one or more proponents with respect to the services to be provided, and expressly reserves the right through such negotiations to request changes, alterations, additions or deletions from the terms of any proposals received.

Formal acceptance of any proposal and the subsequent confirmation of project award must not be construed as authority for the proponent to proceed with the project as this will be dependent on the execution of a contract and the fulfillment of any condition's precedent imposed by any authority having jurisdiction over the work or service to be performed.

11.0 CANCELLATION OR DELAY OF RFP

The Regional District reserves the right to delay and/or cancel this RFP at any time and for any reason and will not be held responsible for any direct or indirect loss, damage, cost or expense incurred or suffered by any proponent as a result of such cancellation.

The acceptance of any Proposal and the subsequent execution of a contract may be subject to funding and approval by the Board of Directors of the Strathcona Regional District or any of its delegated authorities.

12.0 EXECUTION OF CONTRACT

After acceptance by the Regional District, the successful Proponent will be provided with written confirmation. A contract will be executed when all preconditions have been met. No proponent will acquire any legal or equitable rights or privileges with respect to this project until a contract has been entered into with the Regional District.

13.0 LIABILITY FOR ERRORS

The information contained within this RFP is not guaranteed or warranted to be accurate by the Regional District, nor is it necessarily comprehensive or exhaustive. Nothing in this RFP is intended to relieve proponents from conducting their own research and forming their own opinions and conclusions with respect to the matters addressed in this RFP.

14.0 MODIFICATION OF TERMS

The Regional District reserves the right, at its sole discretion, to modify the terms of this RFP at any time prior to the closing time. Such modifications will be communicated to all proponents through a formal addenda process.

15.0 FREEDOM OF INFORMATION

Proposals are subject to the provisions of the *Freedom of Information and Protection of Privacy Act* which provides that all information contained therein, with some exceptions, is subject to access by the public. Information that is considered to be confidential or proprietary in nature should be clearly noted as such by the proponent. The Regional District cannot guarantee that any information contained within a proposal will remain confidential if a request for access is made.

16.0 USE OF DOCUMENT

This document, nor any portion thereof, may not be used for any purpose other than the submission of proposals.

17.0 CONFIDENTIALITY OF INFORMATION

Information pertaining to the Regional District obtained by the Proponent as a result of participation in this RFP process, other than information that is generally available as part of the public record, is to be treated as confidential and must not be disclosed without prior written authorization from the Regional District.

C. SUBMISSION REQUIREMENTS

18.0 PROPOSAL SUBMISSION

Proposals shall be submitted in one of the following formats:

Electronically in PDF format, along with the signed and dated Proposal Form provided herein, to the secure RFP submission portal on the SRD's website. The deadline for receipt of proposals is 12:00 noon Pacific time on October 10, 2025 at the following address:

https://srd.ca/uploadsubmissions/

Once submitted, proposals may not be viewed or changed. To make a correction, a clearly labelled corrected version shall be submitted to the portal and an email sent to procurement@srd.ca indicating which version is intended for consideration.

In person delivery or by mail/courier in duplicate complete with one digital copy in portable document format (.pdf file) on a USB device along with the signed and dated Proposal Form provided. The deadline for receipt of proposals is 12:00 noon Pacific Time on October 10, 2025 at the following location:

Strathcona Regional District
990 Cedar Street
Campbell River, BC V9W 7Z8

Proposals must be submitted in a sealed package with the name and address of the proponent and the RFP title clearly marked on the outside.

SAMPLE LABEL

Name of Proponent
Address of Proponent

CONFIDENTIAL – DO NOT OPEN
RFP-10-25

STRATHCONA REGIONAL DISTRICT
990 Cedar Street
Campbell River, BC V9W 7Z8

Late proposals will be disqualified.

Proposals that are conditional, illegible, obscure, contain arithmetical errors, erasures, alterations or irregularities of any kind may, at the discretion of the Regional District, be disqualified.

The person(s) authorized to sign on behalf of the proponent and to bind the proponent to statements made in response to this RFP **must execute** the Proposal Form. Unsigned proposals will be disqualified.

Proponents shall be solely responsible for the delivery of their proposals in the manner and time prescribed. All submissions must be delivered according to the instructions provided herein and the Regional District will accept no responsibility for documents delivered to any other location.

Proposals for the optional, additional scope of work shall be submitted as an appendix to a primary proposal, delivered to the SRD in accordance with the specifications noted above.

19.0 PROJECT MANAGER

Proponents are required to designate an individual who shall be the Designated Project Manager ("Project Manager") for the project. The Project Manager shall be the contractor's project/construction manager responsible for the delivery of all contracted services to the Regional District. The Project Manager, and not subordinate staff, shall at all times be directly responsible for the management of the project. The Project Manager shall attend all meetings of the project team during the term of the project. The Project Manager shall not be replaced without the prior written consent of the Regional District.

20.0 ENQUIRIES

All enquiries related to this RFP are to be directed, in writing or by email, to:

Strathcona Regional District
990 Cedar Street, Campbell River, BC V9W 7Z8
Phone: 250-830-6700
Fax: 250-830-6710
Email: procurement@srd.ca

Information obtained from any other source is not official and should not be relied upon.

21.0 RFP ADDENDA

Addenda to this RFP may be issued prior to closing in response to queries received or at the initiative of the Regional District. Such addenda will be in written form and will be made available on the BC Bid (http://www.bcbid.gov.bc.ca) and Strathcona Regional District (www.srd.ca) websites. Information contained within RFP addenda is considered an integral part of the RFP and should be considered by proponents when responding to this RFP.

Verbal communications will not be binding unless confirmed by written addenda.

The final day to submit inquiries is October 3, 2025.

22.0 DISCLAIMER

Each proponent is responsible for reviewing and understand the terms and conditions of this RFP and the scope of the work described. The Regional District makes no representation or warranty as to the accuracy or completeness of the information contained in this RFP and proponents are solely responsible to ensure that they have obtained and considered all information necessary to understand the requirements of the RFP and to prepare and submit their proposals. The Regional District will not be held responsible for any loss, damage or expense incurred by a proponent as a result of any inaccuracy or lack of completeness associated with this RFP, or as a result of any misunderstanding or misinterpretation of the requirements of this RFP on the part of any proponent.

23.0 EVALUATION CRITERIA

The SRD will evaluate proposals based upon, but not limited to, the following criteria:

Criteria	Points
Best value to the Regional District	30
Methodology and approach	20
Project team and relevant expertise	20
Local specific experience	5
Identify challenges, constraints and obstacles in the project and advise strategy to minimize	10
Reference samples and reference checks from similar projects	10

Proposal clarity and layout	5

If required, a short list of proponents may be established to be contacted by the Regional District. The purpose for contacting a proponent at this stage would be to gain a greater understanding of the proponent's proposal as submitted. Depending on the nature of the questions to be answered an interview may also be arranged to facilitate a more in-depth understanding of the proposal.

D. SPECIFICATIONS AND SCOPE OF WORK

The scope includes, but is not limited to, the following tasks:

Review and Validation

- Review the March 2025 drainage study, available lidar data, and high-level cost estimates.
- Validate design assumptions, alignment feasibility, and serviceable parcel estimates.
- Identify constraints associated with topography, MoTT RoWs, easements, or existing infrastructure (above and below ground).

Environmental Review and Outfall Assessment

- Undertake an environmental review of proposed outfall areas to assess:
  - suitability and functionality of discharge points (e.g., ocean, creek, or wetland environments);
  - potential ecological impacts;
  - long-term resilience under projected sea-level rise and high flow conditions;
- Identify permitting requirements
- Evaluate physical, regulatory, or environmental barriers that may influence outfall placement, constructability, or long-term maintenance;
- Recommend mitigation measures or alternative approaches if outfall sites are deemed unsuitable.

Topographic Survey

- Carry out a topographic survey of the full width of the road allowance.
- Survey pick-up to include, but not limited to: edge of asphalt, edge of gavel top and bottom of ditch, culverts, utility poles, street/stop signs, pavement markings, watermain valves, hydrants, water meter boxes, landscaped areas, driveways, fences, trees, existing storm drain discharge pipe/swale from each lot, where visible/noticeable.

Base Plan

- Compile legal plan and prepare base plan drawing from the topographic survey.
- Plan to include legal plans, street address, and approximate location of house to be serviced for each property

Detailed Design

- Advance the underground piped storm system design from high-level concepts to detailed design for each catchment.
- Prepare plan/profile drawings, typical cross-sections, and service connection detail.
- Plan drawing to be prepared showing major system flow paths.
- Coordinate with environmental consultants to evaluate and confirm discharge locations, and any regulatory requirements.

Permitting & SRW/Easement Identification

- Identify anticipated permitting requirements (e.g., Highway Use Permits, watercourse approvals, land access).
- Clearly flag any anticipated Statutory Rights-of-Way (SRWs) or easements required through private lands or government-owned parcels.

Class B Cost Estimate

- Update and refine cost estimates for each system to Class B level, identifying key cost drivers, assumptions.

Stakeholder Coordination

- Engage with SRD Engineering staff and other relevant agencies (e.g., MoTT, DFO, provincial ministries) to confirm assumptions and incorporate requirements.
- Identify any foreseeable private or public impacts and propose a basic engagement approach where warranted.

Design Criteria

The SRD does not maintain its own engineering design standards.

The Consultant shall apply the City of Campbell River Engineering Design Standards (2022), which supplement the MMCD Design Guidelines. A copy of the City's standards is provided as an attachment to this RFP.

Unless otherwise directed, the following design parameters are to be used:

- Minor system (storm mains) shall be designed for a 1:5-year return period storm.
- Major system surface flow paths must be identified and demonstrated to safely convey the 1:100-year return period storm.
    - Where surface flow cannot be safely conveyed within the road right-of-way and is expected to enter private property, the piped storm system shall be designed to accommodate the 100-year event.
- The Rational Method is to be used to calculate design flows.
- Campbell River IDF curves (see Figure 4.4 of the City's Engineering Design Standards) to be used for rainfall intensity.
- Allowance for the potential impact of climate change to be accounted for by an increase in the peak design flow.

Project Deliverables

Deliverables shall be submitted at key milestones and must include, at a minimum:

Design Technical Memo

- Summary of hydrologic and hydraulic model review and updates, including input data, assumptions, and verification methods.
- System capacity evaluation based on the existing and proposed level of service.
- Identification and analysis of any critical drainage constraints or outfall-specific considerations.
- Copy of the Environmental Review and Outfall Assessment report.
- Class D cost estimate.

50% Detailed Design Submission

- Cover page with location plan, legend, list of drawings, and location of each drawing sheet
- Preliminary design drawings showing:
    - Plan/Profile drawings with lot service connections shown.

  - Proposed main diameter and slopes.
  - Manholes and outfall.
  - Third-party conflicts or off-site connection requirements.
- Storm drains to be at a sufficient depth to provide gravity service to the existing house and the lowest point on the property.
- Design flow calculation spreadsheet.
- Identification of proposed SRWs and/or easements.

75% Detailed Design Submission

- Updated design drawings including plan drawing showing proposed SRWs and/or easements.
- Typical cross sections and details.
- Updated plan drawing identifying proposed SRWs and/or easements.
- Updated (Class B) cost estimate.

Optional Deliverables

1 Geotechnical Investigation

The geotechnical investigation would ideally be carried out and the findings incorporated into the 50% design drawing stage.

- Drilling of boreholes at ±100 m spacing along the proposed storm main routes
- Summary letter report, complete with:
  - Plan drawing showing borehole locations
  - Drill log for each borehole
  - Assessment of impact of groundwater levels on construction
  - Reuse of soil for trench backfill
  - Trench backfill material recommendations in vehicle traffic and non-traffic areas
  - Road prism structural design recommendations (subbase, base and asphalt thicknesses, compaction)

2 95% Detailed Design Submission

- Updated design drawings complete with general and project specific notes.
- Covering letter identifying:
  - Outstanding items, issues, permits, construction approvals.
  - Properties requiring SRWs and/or easements.
- Draft supplement construction specifications.

Resources:

- March 26 2025 McElhanney Technical Memo - SRD Area D Drainage Study – Revision 1
- June 6 2025 – Report to the Board of Directors

24.0 PERMITS AND CERTIFICATES

If necessary, the successful proponent will obtain, at its own cost, all necessary permits to carry out the work of this project. The contractor will be required to provide certificates of conformity with any requirements of authorities having jurisdiction.

25.0 PROJECT SCHEDULE

The following schedule is provided as a guideline:

Description	Deliverable Date
RFP released	September 5, 2025
Deadline for receiving proposals	October 10, 2025
Awarding of contract	October 24. 2025
Project start date	November 3, 2025
Design Technical Memo	TBD by Consultants
50% Detail Design Submission	TBD by Consultants
75% Detail Design Submission	TBD by Consultants
Final reporting documents submitted to SRD	July 2026

Proponents should include in their responses whether they can comply with this timeline. In accordance with the evaluation criteria set out in this document, preference may be given to proponents that can complete the work of the contract within the schedule outlined herein. Proponents are also required to provide a Gantt Chart showing their project schedule for each task and key milestone/submission date. The schedule must allow for a minimum two-week SRD review period for each submission.

Proponents submitting a proposal that includes the Optional Scope of work should provide a separate project schedule that incorporates the additional timelines if the optional work is included in the final contract.

26.0 CHANGE IN SCOPE

The Regional District reserves the right to amend the scope of work during the term of the proposed contract. In such cases, the Regional District would request a quotation from the contractor for the change in scope.

E. CONTRACT CONDITIONS

By submission of a proposal, the Proponent agrees that should its proposal be successful, the Proponent will enter into a contract with the Regional District that subject to negotiation, may include the following contract clauses:

27.0 COMPLIANCE WITH LAWS

The contractor will give all notices and provide all permits, licenses and other approvals required to perform the work. The contractor will comply with all laws applicable to the work or performance of the contract.

28.0 LAWS OF BRITISH COLUMBIA

Any contract resulting from this RFP will be governed by and will be construed and interpreted in accordance with all laws in affect in the province of British Columbia.

29.0 INDEMNITY

Notwithstanding the provision of insurance coverage by the contractor, the contractor hereby agrees to indemnify and save harmless the Regional District, its officers, agents and employees from and against all claims, demands, losses, costs, damages, actions, suits or proceedings by whomever made, brought or prosecuted and in any manner based upon, arising out, related to, occasioned by or attributable to the activities of the contractor, its servants, agents, subcontractors and sub-operators, in providing the services and performing

the work of the contract, excepting always liability arising solely out of the negligent act or omission of the Regional District.

30.0 INSURANCE

Any contract resulting from this RFP will require that the contractor, without limiting its obligations or liabilities and at its own expense, provide and maintain throughout the contract term:

a. Comprehensive commercial general liability insurance in an amount not less than $2,000,000 inclusive per occurrence, insuring against bodily injury and property damage and including liability assumed under the contract;

b. Automobile liability on all vehicles owned, operated or licensed in the name of the contractor in an amount not less than $5,000,000.

The Regional District is to be added as an additional insured and the policy shall contain a cross-liability clause. All required insurance will be endorsed to provide the Regional District with 30 days' advance written notice of cancellation or material change.

The contractor will provide the Regional District with evidence of the required insurance in the form of a certificate(s) of insurance, immediately upon execution and delivery of the contract.

31.0 REGISTRATION WITH WORKSAFE BC

The contractor and any approved subcontractors must be registered with WorkSafe BC and WCB coverage must be maintained for the duration of the contract. Prior to receiving any payment, the contractor may be required to submit a WCB Clearance Letter confirming all assessments have been paid and the contractor is in good standing. The contractor and any approved subcontractors shall abide by all provisions of the Workers Compensation Act of British Columbia.

F. PROPOSAL FORM

RFP-10-25

CLOSING DATE AND TIME
12:00 NOON PACIFIC TIME OCTOBER 10, 2025

This form must be completed, signed and included with the submission.

The undersigned confirms that its submission is in response to the above noted RFP.

The proponent acknowledges receipt of Addenda # _____ through Addenda #_____.

Proponent: _____

Address: _____

Contact Name: _____

Phone: _____ **Fax:** _____

Email: _____

Completed Price for Primary Scope	**$**
Taxes	**$**
Total Completed Price for Primary Scope	**$**

Completed Price for Optional Scope 1	**$**
Taxes	**$**
Total Completed Price for Optional Scope 1	**$**

Completed Price for Optional Scope 2	**$**
Taxes	**$**
Total Completed Price for Optional Scope 2	**$**

Proponents should ensure that all requirements of the RFP are dealt with in their proposal submission and that all materials and products proposed comply with the specifications therein.

_____

Authorized Signature

Name and Title

Date

Strathcona Regional District

Area D Stormwater Collection System Design Catchment C & Oyster River Rest Area

RFP-10-25

CONFIDENTIAL

October 2025

RFP-10-25
Strathcona Regional District
Area D Stormwater Collection System
Catchment C & Oyster River Rest Area

For additional information regarding this proposal please contact:

Mike Elliott, AScT, MMCD CCA, CPWI 3
Mid-Island Lead

ISL Engineering and Land Services Ltd.
495 Dunsmuir Street
Nanaimo BC V9R 6B9
T: 250.361.3230
melliott@islengineering.com

This proposal may contain trade secrets, commercial and financial information. Such proprietary information is provided in the strictest confidence and may be reviewed for the sole purpose for which the information has been provided. Reasonable steps to safe keep the information are required, and information shall not be released to any third party without prior written authorization. Disclosure of such information to any third party is deemed to constitute significant harm to ISL Engineering and Land Services Ltd.

ISL Engineering and Land Services Ltd. is an award-winning full-service consulting firm dedicated to working with all levels of government and the private sector to deliver planning and design solutions for transportation, water, and land projects.

At ISL, your identity is part of our identity. Diversity, Equity, and Inclusion (DEI) speaks to our core values and provides space for our teams to bring their authentic selves to work. ISL believes DEI creates the best outcomes for our clients while sustaining a happy and thriving work environment that allows for career development opportunities for all staff. ISL is committed to a focused effort on continuous improvement and development of a respectful and safe workplace.

1051 Vancouver Street, Victoria BC V8V 3K3, T: 250.361.3230

CONFIDENTIAL

October 10, 2025
ISL Reference: 53498

Strathcona Regional District
990 Cedar Street
Campbell River, BC V9W 7Z8
Submitted via Client Submission Portal: https://srd.ca/uploadsubmissions/

Attention: Sheena Fisher, PMP Engineering Services

Dear Sheena:

Reference: RFP-10-25 and Addenda - Area D Stormwater Collection System Design – Catchment C & Oyster River Rest Area

---

In reference to the Request for Proposals (RFP) and subsequent addenda regarding Area D Stormwater Collection System Design – Catchment C & Oyster River Rest Area, issued by Strathcona Regional District (SRD), ISL Engineering and Land Services Ltd. (ISL) is pleased to submit the enclosed proposal and contribute our expertise to SRD.

We are an award-winning, industry-leading 100 per cent Canadian consulting firm with over 600 staff and 15 offices across Western Canada, known for delivering innovative and resilient infrastructure solutions. Below are some of the many reasons that make us ideally suited to deliver this project, upon award:

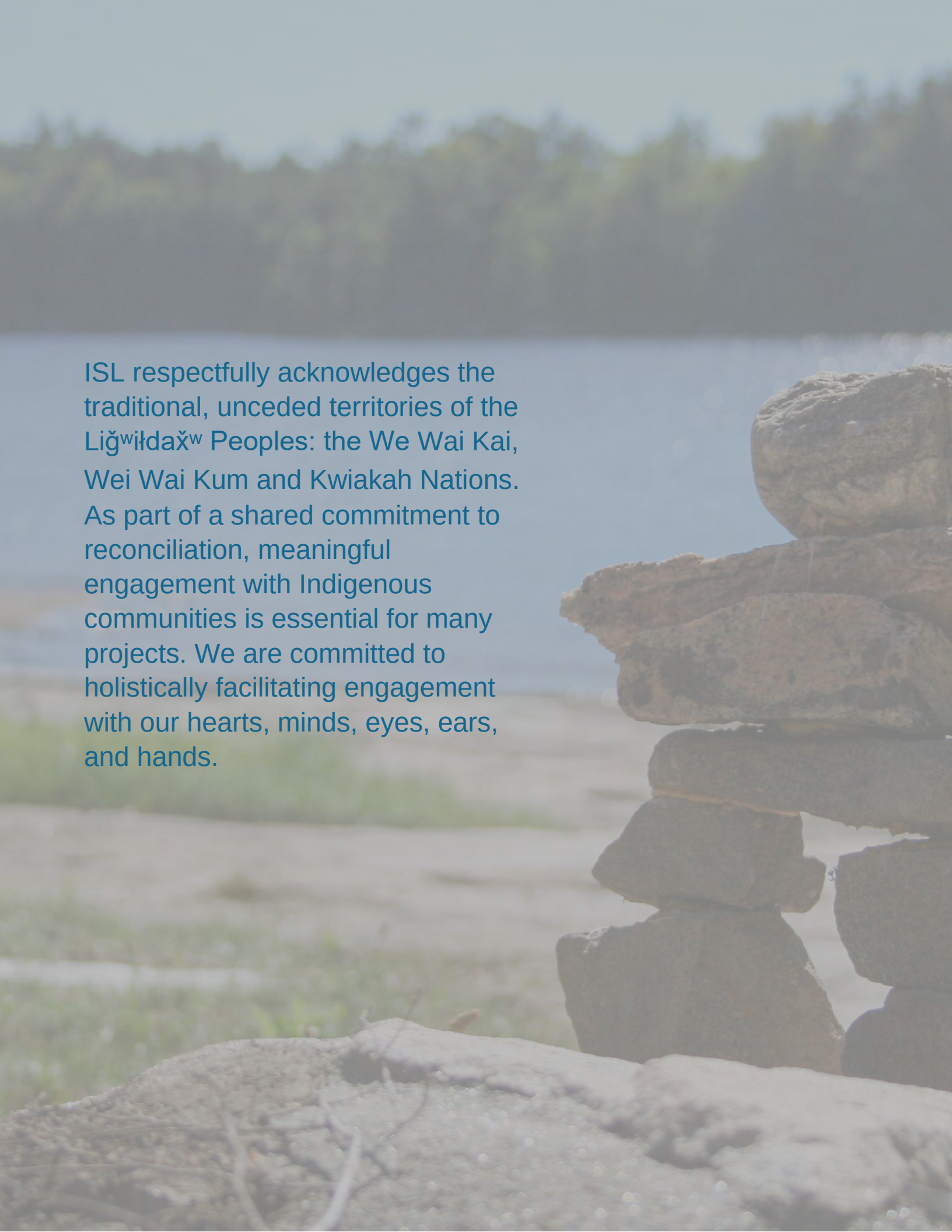
- Proven experience delivering **full lifecycle stormwater infrastructure projects**, from feasibility and concept through detailed design, permitting, and construction support.
- Strong **local knowledge and regional experience** in BC, including recent work in Campbell River and Cumberland, with familiarity in SRD's permitting and design context.
- A multidisciplinary team with **direct experience in rural drainage systems**, piped stormwater design, outfall assessments, and phased implementation strategies.
- Recognized for **industry-leading and award-winning capabilities**, with a reputation for innovative, resilient, and community-focused infrastructure solutions.
- Demonstrated ability to **engage effectively with local governments, Indigenous communities, and residents**, enabling designs to reflect interested parties' priorities and long-term value.

With a strong presence and a history of successful collaboration with municipalities across BC, we look forward to supporting SRD in delivering a resilient, community-focused stormwater system.

Should you require any clarification regarding our submission, please feel free to contact me at 250.361.3230 or MElliott@islengineering.com at your convenience.

Sincerely,
ISL Engineering and Land Services Ltd.

Mike Elliott, AScT
Mid-Island Lead



ISL respectfully acknowledges the traditional, unceded territories of the Liǧʷiłdaxʷ Peoples: the We Wai Kai, Wei Wai Kum and Kwiakah Nations. As part of a shared commitment to reconciliation, meaningful engagement with Indigenous communities is essential for many projects. We are committed to holistically facilitating engagement with our hearts, minds, eyes, ears, and hands.

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1.0 EXECUTIVE SUMMARY

ISL Engineering and Land Services Ltd. is pleased to submit our proposal for the Strathcona Regional District's (SRD) Request for Proposal for the **Area D Stormwater Collection System Design – Catchment C & Oyster River Rest Area.**

With over 38 years of experience and a track record of delivering over 25,000 transportation and municipal engineering projects across Western Canada, ISL has established itself as a trusted partner for complex civil engineering projects. In British Columbia alone, we have completed over 2,800 projects, demonstrating our in-depth understanding of the region's distinct infrastructure requirements. ISL's expertise, paired with our commitment to innovation and client-focused delivery, positions us as an ideal partner to support SRD in achieving your goals. We bring not only technical excellence but also a collaborative approach, so that every project aligns with our client's broader vision and objectives.

WHY ISL?

Our strength lies in our integrated approach, which combines civil engineering, urban design, and engagement with interested parties to deliver projects that are both technically sound and contextually sensitive. With deep roots in British Columbia and a strong understanding of municipal infrastructure challenges, ISL will bring the following success factors to deliver a successful design of the Area D Stormwater Collection System.

- **We Deeply Understand SRD's Goals and How They Align With This Project:** ISL understands that the Stormwater Collection system design is more than an upgrade project; it's a strategic investment in the SRD's long-term vision for protecting environmental systems, supporting sustainable rural development, and enhancing community resilience through infrastructure that aligns with local values, ecosystem preservation, and responsible land use planning. Our team is committed to delivering a design that not only meets technical requirements but also supports the SRD's broader objectives for liveability, sustainability, and community well-being.
- **We Bring Extensive Experience in Delivering Similar Municipal Infrastructure Projects:** ISL has a long-standing history of successfully delivering similar municipal infrastructure projects across Western Canada, including road reconstruction, utility upgrades, and stormwater modelling exercises. Our team is well-versed in the complexities of designing a stormwater system, particularly those that require environmental reviews and inter-agency collaboration. Our experience enables us to anticipate challenges, streamline approvals, and deliver a functional and effective design to the SRD.
- **We Have Proven Methodology:** ISL's methodology is built on a structured, collaborative, and data-driven approach, aligning with the SRD's expectations. Through close collaboration, we enable continuous feedback and refinements at each design milestone. Our team integrates survey data, utility coordination, and environmental considerations to enable a comprehensive and constructible design.
- **We have Established a Track Record in the Area:** ISL has proudly partnered with the City of Campbell River and the Comox Valley Regional District on a number of multidisciplinary infrastructure projects, consistently delivering high-quality outcomes tailored to local needs. Our familiarity with the area's standards, processes, and community expectations allows us to navigate project requirements efficiently and collaboratively. This depth of experience enables our team to bring not only technical expertise but also a nuanced understanding of the local context, which is an essential advantage for the successful delivery of the Area D Stormwater Collection System Design.
- **We are Committed to Quality and Collaboration:** ISL is committed to delivering a tender-ready design package on schedule and in full alignment with the SRD's project milestones. Our team prioritizes responsiveness and transparency so that the SRD's staff are engaged throughout all phases. We understand the importance of clear communication, timely reviews, and collaborative decision-making, and we will facilitate all required meetings and workshops to support this. ISL is also prepared to expand our scope to include contract administration and construction inspection services. This flexibility, paired with our structured quality assurance process, will result in SRD receiving a reliable, high-performing design solution.

1.1 Company Profile

ISL Engineering and Land Services (ISL) is a professional engineering consulting firm dedicated to delivering innovative, cost-effective and sustainable planning and design solutions. Our collaborative partnerships with all levels of government and the private sector have resulted in our ability to deliver our clients a strong foundation of project success and making us an award-winning organization.

ISL was incorporated in 1987. Since then, we have grown from small beginnings with 31 staff and 3 offices offering just the transportation and municipal engineering to become an industry leader providing multi-disciplinary services across the realm of civil engineering with 15 offices in Western Canada (Calgary, Canmore, Edmonton, Grande Prairie, Lethbridge, Burnaby, East Kootenay, Kamloops, Langley, Nanaimo, Squamish, Vancouver Island, West Kootenay, Whitehorse and Saskatoon).

With a total staff of over 600, ISL is large enough to offer a wide range of services and deliver on complex projects while being small enough to maintain strong, cohesive project teams and personal client attention and service. We consider our clients part of our project teams and believe we can work together to produce successful results and lasting relationships.

ISL's future direction is summed up in our tagline, "Integrated Expertise. Locally Delivered." What makes ISL truly unique is our strong local presence, which combines in-depth knowledge of the communities we serve with a broad range of expertise and years of experience. This blend enables us to effectively meet the distinct challenges of each project while understanding and integrating sustainable solutions throughout every phase of the project life cycle. By leveraging both our local insight and technical proficiency, we create solutions that are not only effective but also considerate of long-term environmental and community impacts.

1.2 Team Integration and Expertise

ISL has assembled a cohesive, experienced, and qualified team for this roster. ISL selected team members with relevant experience and proven capabilities to meet the SRD's project requirements. Our proposed team has a proven track record of working together on a variety of successful projects. This established working relationship fosters strong communication and streamlined project execution to have efficient and cohesive project delivery from design to construction. In the following pages, summaries of qualifications and relevant projects of our key team members have been provided.

The personnel chosen for this proposal have the qualifications and capacity to take on consulting services for the Area D Stormwater Collection System Design. They are supported by a large team of internal resources that regularly deliver multiple projects to clients simultaneously.

ISL's proposed team is backed by a broad and agile internal resource pool of over 600 professionals across British Columbia and Alberta, so that SRD has access to the right expertise at every stage of the project. This depth allows ISL to respond quickly to evolving needs, maintain project momentum, and uphold quality standards without compromise. Our integrated service model enables the additional technical, environmental, or permitting support to be seamlessly deployed as needed, with the SRD's priorities in mind, always. This approach reflects ISL's commitment to being a responsive, transparent, and trusted partner, focused on delivering a stormwater solution that aligns with the District's goals and community expectations.

1.3 Multidisciplinary Expertise from Concept to Completion

At ISL, we bring together a full spectrum of services under one roof to support your project from concept to completion. Our civil engineering expertise spans transportation, municipal infrastructure, community development, bridges, buildings, and construction services. Complementing this, we offer landscape architecture and urban design, environmental management, GIS and mapping, community engagement and communications, as well as cutting-edge 3D visualization. ISL offers integrated, innovative, and collaborative solutions to support projects from planning and design through to construction.

Transportation	Water	Community	Structures	Environment
Transportation Planning Active Transportation Traffic Operations Urban Transportation Rural Transportation Traffic Engineering Rail Transportation Structures	Municipal Infrastructure Water Resources Wastewater Stormwater Municipal Water	Landscape Architecture and Urban Design Community Development Community Planning Community Engagement Heritage Services	Retaining Structures Buildings Bridges	Land Management Biophysical and Environmental Assessments Fish and Fish Habitat Regulatory Approvals and Notifications Hydrogeology Hydrotechnical

Our Construction Administration and 3D Visualization services support all sectors.

1.4 Primary Contact

The primary contact (Project Manager) for ISL's team is **Mike Elliott**, Mid-Island Lead based out of the Nanaimo office, and he will lead coordination with SRD throughout the assignment. Mike has over 19 years of experience delivering infrastructure projects across the south coast of British Columbia, including work in communities adjacent to the SRD, including Campbell River and Oyster River. Over his career, he has worked on over 300 projects in both utility and transportation disciplines across the province. Mike will serve as the main point of contact throughout the project, bringing his regional insight and technical leadership to provide seamless project execution.

Mike's contact information is as follows:

Mike Elliott, AScT, MMCD CCA, CWPI 3
Mid-Island Lead
T: 250.361.3230
E: melliott@islengeering.com

ISL's Nanaimo Office
401-495 Dunsmuir Street
Nanaimo, BC V9R 6B9

2.0 PROJECT UNDERSTANDING

ISL understands that the Strathcona Regional District (SRD) is requesting proposals from qualified engineering and planning consultants to advance the design of stormwater utility systems in Catchment C and the Oyster River Rest Area within Electoral Area D. Currently, Electoral Area D lacks a formal drainage system, resulting in localized flooding, property access challenges, and ongoing operational difficulties for SRD staff. While the Ministry of Transportation and Infrastructure (MoTT) maintains a network of open ditches and culverts in the area, private connections to this system are not permitted. The Area D Drainage Study (2025), completed by McElhanney, outlines a high-level conceptual solution to these challenges, which involves a piped stormwater network with service connections for homeowners that maintains roadside ditch and drainage structures managed by MoTT. The Area D Drainage Study provides recommendations for high to medium-density urban areas within Area D, but the SRD has chosen to proceed with the detailed design of only two catchments. This approach will provide the SRD with insight and positioning for informed decision-making regarding the required technical process, community engagement needs, and inter-agency coordination while balancing financial risk. This project aims to validate the concept provided in the Area D Drainage Study for catchments C and Oyster River Rest Area and move it forward into detailed design.

Catchment C has an area of approximately 9 hectares and would service 42 residential lots. The proposed total length of the stormwater system in this catchment is 940m and would consist of 375mm, 450mm, and 525mm diameter pipes. The system would be installed on Engles Road with branches on Sutil Road and Mitlenach Drive, cross Highway 19A, then discharge to the foreshore.

Oyster River Rest Area has an area of approximately 10 hectares and would service 20 lots consisting of both commercial and country residential. This catchment can be further divided into sub-catchments, East and West. The proposed total length of the stormwater system in this catchment is 740m, consisting of 450mm and 525mm diameter pipes. The system would be installed in the road right-of-way of Highway 19A, converging to a point between the East and West catchments, then would cross Highway 19A and discharge to the foreshore. There is currently no MOTT ditch on the south side of Highway 19A along the frontage of this catchment; however, the proposed storm alignment is within the asphalt surface to avoid conflicts with other utilities (watermain and overhead hydro). An existing low spot/wetland is located at the rear (south) side of the serviceable lots. While the proposed system will help address drainage concerns near the existing structures, it is not expected to significantly impact ponding or high-water conditions in rear yards.

Both conceptual designs require validation of design assumptions, alignment feasibility, and serviceable parcel estimates. Additionally, as both catchments discharge to the foreshore, an environmental review will be required to assess discharge point suitability with respect to the federal Fisheries Act, provincial foreshore and submerged crown land issues, ecological impacts, and resilience under projected sea-level rise and peak flow events.

Challenges and Mitigation Strategies

In preparation for our proposal, ISL completed a site visit and reviewed the 2025 SRD Area D Drainage Study, The Area 'D' Stormwater Management Plan (2015), and Bylaw No. 276 Oyster Bay – Buttle Lake Official Community Plan Bylaw, 2023. During this process, our team identified key challenges and corresponding mitigation strategies relevant to this project, as illustrated in the accompanying maps and discussed in the sections below.

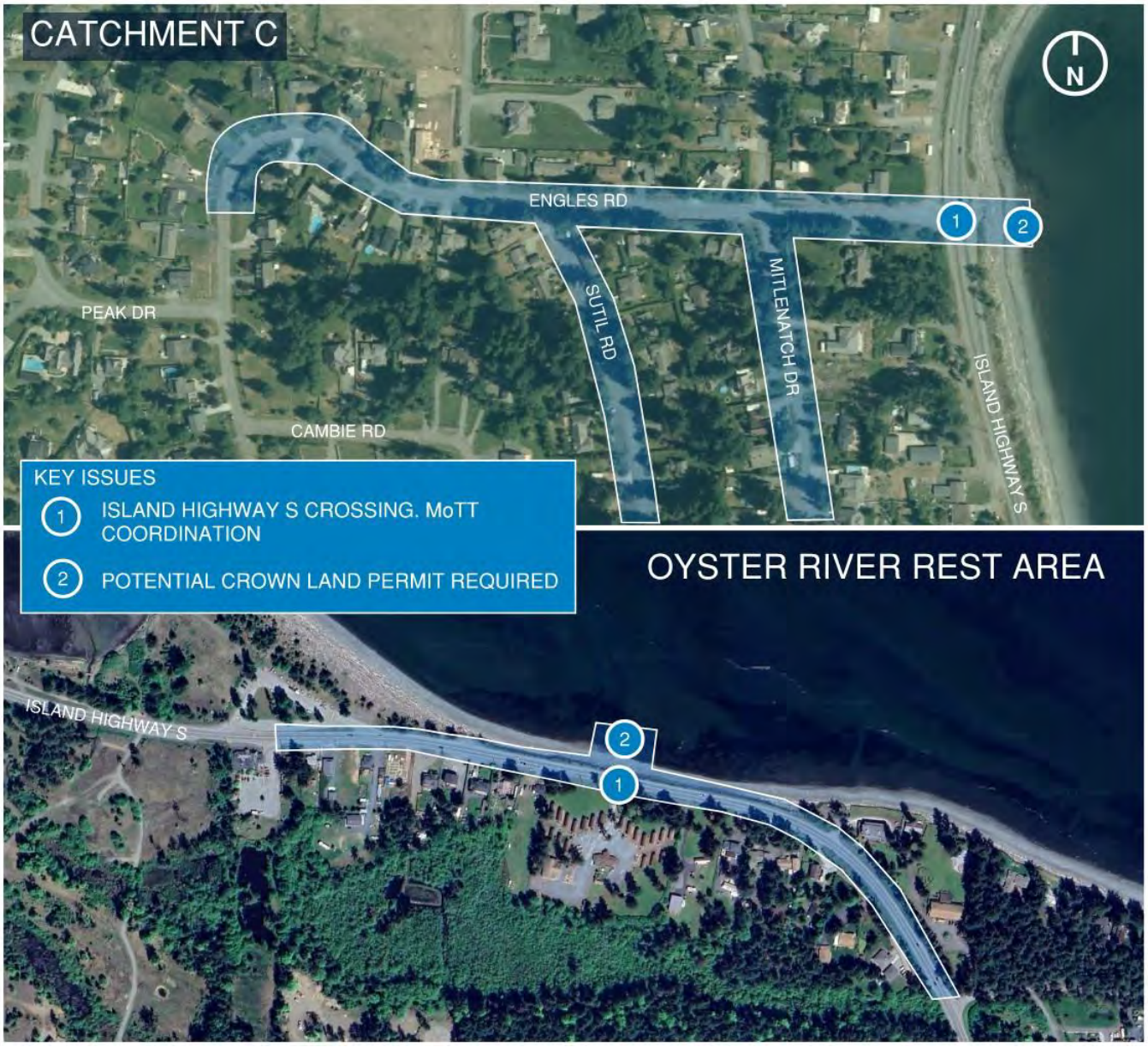


Figure 2.1: Key Issues Map

MINISTRY OF TRANSPORTATION AND TRANSIT (MOTT) COORDINATION	
Challenge	Both locations have alignments that require permits from the Ministry of Transportation and Transit (MoTT). While the permits for Engles Road and the parallel portion at the Oyster River Rest Stop should be straightforward, each crossing of the Island Highway S will be of special interest to MoTT. The expected standard for highway crossings is to drill/auger a casing and then pull the conveyance piping through. This methodology, while important for areas where traffic cannot be easily diverted, is quite costly at an estimated $5-7k per/m.
Proposed Mitigation	Coordination with MoTT will be done proactively, such that they understand the project goals and requirements in the early stages of design. By establishing lines of communication early in the process, the project team will endeavor to have the trenchless methodology waived and install the piping using open cut methodology. Showing MoTT that this can be done by using appropriate traffic control regimes, night work if necessary and solid asphalt restoration methods are typically enough to get this methodology approved.
Constraints	Island Highway South is the only route in and out for some properties in the area and emergency routing will need to be considered.
Previously implemented	ISL has a productive relationship with MOTT and has been in coordination with them for the following projects: 1. Veterans Memorial Parkway and Goldstream Intersection Improvements (Hwy 14, 2025) – ISL worked with the Ministry to get a “preliminary approval” to complete works prior to the July paving program. ISL also provided specific traffic management plans which allowed the contractor to work during the day. 2. Terminal Avenue Upgrades (Hwy 1, 2024) – MoTT agreed to day work over night work to reduce the expected construction period from 16 months to 12 months. ISL worked with the Ministry to have a permanent traffic control regime where lanes were closed for extended periods and only opened for long weekends. All utilities were installed with open cut methodology.

ASPHALT RESTORATION	
Challenge	Asphalt restoration can be a major and unexpected cost on utility projects. While the preference will be to utilize trench patches, the asphalt in some locations is old and nearing the end of its useful life and may need to be completely replaced.
Proposed Mitigation	The alignment selection will be critical to minimize the number and frequency of crossings. The expected alignment will be in an unpaved area but the side with the most services should be prioritized. Wherever possible, services should be combined into a common trench. During site visits, ISL will identify areas of asphalt in poor condition which should be avoided.
Constraints	Some asphalt in the area is in very poor condition.
Previously implemented	Mike Elliott has previously led pavement rehabilitation programs in Surrey (2015-2018) and Nanaimo (2018-2023) and can provide cost-effective solutions to pavement replacement.

CROWN LAND PERMITTING	
Challenge	The proposed work will require coordination with Fisheries and Oceans Canada (DFO) and potentially the Ministry of Water, Land Resource Stewardship (provincial crown land tenures), and landowners, where statutory rights-of-way or access agreements may be required. DFO has jurisdiction over fish habitat and that habitat includes marine foreshore. The province has jurisdiction over the submerged lands and foreshore from a land tenure perspective.
Proposed Mitigation	ISL will engage DFO and MWLRS in the early stages of the project so that all permitting requirements are well understood. Requirements from the permitting agencies will be implemented at the early stages of design to enable compliance. ISL will promote designs that stay within the Ministry Right-Of-Way to avoid provincial Crown Land Permitting if possible. ISL developed comprehensive mitigation design (restoration planting, and habitat complexing to mitigate and offset project related impacts). We have also developed comprehensive construction environmental plans which outline requisite environmental standards that construction contractors would need to implement at construction to reduce environmental effect.
Constraints	Timeline for Access over Crown land permits or designing a system that avoids tenure related issues.
Previously implemented	ISL's environmental management team has completed many dozens of assessments to support Request for Review and Request for Authorizations, to DFO including: • Coglan Creek Bridge Repair (2025) • Still Creek Channel Vegetation Maintenance Program (2025) • Little River Multi-Use Trail and Bridge, District of Sooke (2024) • Cedar Drive Upgrades City of Coquitlam (2022-2025) Our experience with stormwater outfalls to both marine and freshwater is that the footprint impacts are generally low and can be readily mitigated such that DFO would not be required to issue an Authorization for the project, and instead the project will be able to proceed under a non-statutory Letter of Advice/Proceed with Mitigation. In addition, ISL has been retained by DFO for engineering and environmental services for works around fish habitat including: • Tahltan Lake Dam Assessment and Construction (2023-2025) • Cheslatta Hatchery Hydrogeological Assessment (2021-2022) • Cultus Lake Sanitary System (2021) • Cultus Lake Intakes Design and Construction (2015-2016)

Little River Multi-Use Trail and Bridge, District of Sooke

3.0 APPROACH AND METHODOLOGY

ISL proposes to take a collaborative approach to the Area D Stormwater Collection System Design for Catchment C and Oyster River Rest Area. We will listen to the SRD's experiences to gain a full understanding of the SRD's in-house expertise and lessons learned from previous projects and coordination with internal and external shareholders. Our team will bring outside expertise and a new perspective to validating, designing, and implementing each phase of the project. The SRD's input will be incorporated at each step of the technical design and in the implementation.

Through collaboration and efficient communication with SRD staff, subconsultants, and relevant third parties, ISL will enable project progress to continue at a good rate with minimal delays. Should delays arise, the team will work quickly to understand the situation, notify all appropriate parties, and work with the SRD to propose and implement a solution.

3.1 ISL's Philosophy and Approach

Key activities that will further strengthen the project and make it successful include Project Management and Quality Control, and Integration (Quality Assurance).

3.1.1 Project Management Philosophy

Mike Elliott has been proposed as the project manager for this project. Mike will be the prime point of contact for the project and will be entirely responsible for project deliverables. Strong project management is critical so that a project's scope, budget, and schedule objectives are met. Success in this project will require open and frequent communication between the design leads and SRD. We are committed to meeting this project's objectives both on schedule and within budget, and to working with the SRD during the project to adjust course, as necessary, to respond to input and changes that may arise. As prime consultant for the project team, ISL will manage the project, from the award of consultant services to contract close-out. Project management activities will include:

- Assurance of team integration and quality of deliverables.
- Regular communication with the SRD to provide interim updates (as established during the project startup meeting).
- Tracking of decisions.
- Scheduling, coordination, chairing, and recording of meetings and workshops.
- Management of resources, budget, and schedule
- Coordination with interested parties of the project and third-party utility companies.
- Monthly progress reports to supplement invoicing.

Cost Control Procedures

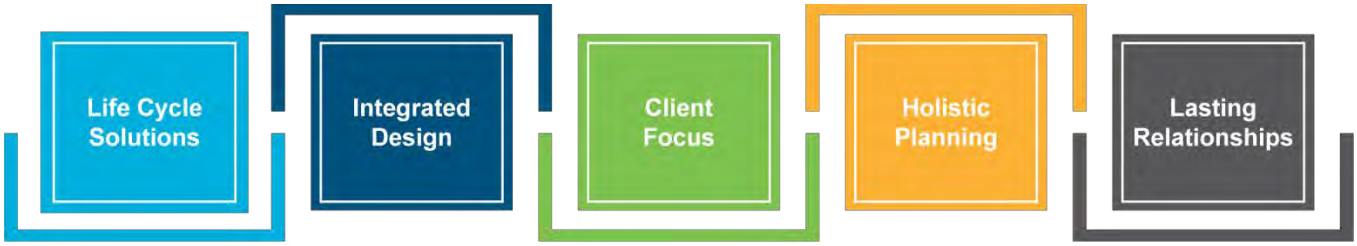
We believe that delivering the Area D Stormwater Collection System Design on schedule and on budget will be a key component to enabling success on this project and on future SRD projects. Cost and schedule updates will form part of our formal quality control and integration meetings held between the leadership team and design leads prior to submissions.

Mike Elliott, as Project Manager, will further monitor expenditure of hours and labour costs, disbursements, subconsultant budgets and fees expended to date on an ongoing basis and to mitigate risks of cost overruns. ISL maintains a web-based, central cost tracking and accounting system (BST v8.8), which provides the project manager with up-to-date expenditures of hours, disbursements and overall project costs on a weekly basis.

The project manager then uses this updated information as a comparison against the planned budget and our estimated percentage complete on the project. With this information, the project manager can determine:

- The percent complete relative to the project schedule.
- The relationship between spent value and the percent complete (earned value).
- The requirements to meet the budget and schedule.

We recognize that changes can occur on projects of this size and complexity. The project manager will first acknowledge the changes when they happen. He will then flag these changes to the team so that they can discuss the next steps – continue as planned or review the schedule and effort implications. The team will monitor the scope, and Mike will communicate and obtain the SRD's approval for changes in scope that will affect the fees or the project schedule.



3.1.2 Quality Management

ISL is committed to delivering high-quality, professional engineering services through a robust and adaptive Quality Management Program (QMP). For this project, we will develop a project-specific QMP that aligns with the SRD's expectations for accuracy, accountability, and transparency throughout all phases of design and delivery. Our in-house quality control and assurance procedures are built on best practices from the International Organization for Standards (ISO), Project Management Institute (PMI), and Project Services Management Journal (PSMJ), as well as our extensive experience delivering transportation projects. These practices are continuously refined through ongoing staff training and internal reviews.

At ISL, quality is not a final checklist; it is embedded throughout the project lifecycle. Each discipline team is responsible for producing high-quality designs and deliverables as the project progresses. Our QMP outlines:

- Which documents are subject to formal Quality Control (QC) review?
- Who is responsible for conducting and documenting those reviews?
- How are QC outcomes tracked and acknowledged?

This process is applied at key milestones, particularly for professionally authenticated documents. Each major delivery is accompanied by a quality management acknowledgement form signed by the author, reviewer, and responsible team member. This enables all final products to meet the standards expected by the SRD.

We welcome the opportunity to share a sample QMP upon request and are committed to continuous improvement throughout the project.

Quality Assurance

Quality assurance for the Area D Stormwater Collection System Design project will be led by Ian McKinnon, who will oversee all engineering design so that it meets the SRD's requirements, professional standards, and applicable design guidelines. ISL's commitment to quality is reflected in our consistent use of proven processes and independent review protocols, enabling reliable deliverables for the SRD.

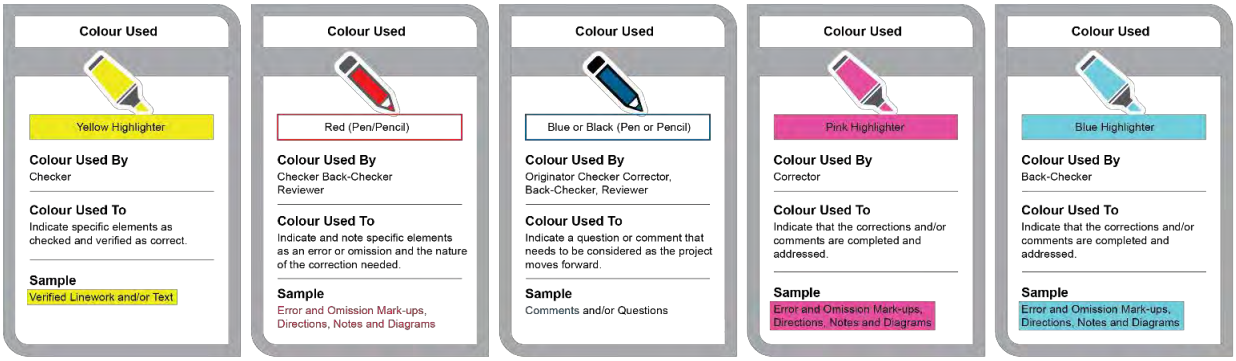
ISL has developed a comprehensive in-house Quality Management Plan, applied across all projects, that includes standardized contract administration procedures, manuals, and proprietary inspection tools. These systems guide engineering and inspection personnel to consistently deliver high-quality outcomes. In addition, our Professional Practice Management Plan (PPMP) outlines quality control and assurance procedures specific to engineering design, aligned with industry standards and the City of Campbell River's Engineering Design Standards (2022).

To further strengthen this approach, ISL maintains a robust program of ongoing staff training across engineering disciplines and has implemented a Continuous Quality Improvement (CQI) program. This initiative, led by a dedicated quality manager, applies ISO 9001 principles such as document control, design change protocols, and defined responsibilities so that our services evolve with industry best practices and continue to meet the SRD's expectations.

Quality Control

Quality controls are the processes that examine the actual deliverables produced on the project with the goal of producing correct deliverables that meet the project requirements. Our quality management process includes:

- **Informal Quality Control:** This is the process that each of us applies to everything we do on a daily basis in an effort to deliver work that is accurate and complete. The informal QC process is the backbone of timely project delivery and is not formally documented. It is the expectation that quality documents/deliverables will be produced via informal QC prior to the need for formal QC processes to be completed.
- **Formal Quality Control:** The formal process is typically applied to professional documents at major project delivery milestones. The formal process can take many forms depending on the size of the project, the type and complexity of the deliverable, and the risk involved. Our formal QC process outlines the roles and responsibilities of all reviewers, from technical drafting staff to design professionals to senior peer reviewers, and the review documentation tracking process.
- **Comments Log:** ISL will create a comments log that compiles the SRD's comments from each design submission and how each comment was rectified. This enables every comment and concern to be addressed appropriately and outlines any actions that were taken in response to streamline the revision process.



Example Quality Management Review Process (Design)

3.2 Project Work Plan

3.2.1 Phase 1 – Validation and Data Collection

Kick-Off Meeting and Site Review

ISL will meet with the SRD for a project kickoff meeting (ISL will coordinate, chair, and minute the meeting). Following the in-office meeting, we recommend that key staff visit the site so that we are aligned on the project risks, opportunities, and objectives. The project initiation meeting will be the first formal opportunity to:

- Confirmation of scope, roles, responsibilities, deliverables and timelines.
- Identification of internal/external interested party involvement (SRD Contacts, MoTT, Third Party Utilities, etc.)
- Formalize lines of communication between interested parties
- Present project challenges, constraints, opportunities, information gaps, project risks, mitigation strategies, design considerations, and uncertainties.
- Identification of opportunities for coordination with other projects if available.
- Review and request copies of relevant data and background reports
- Establish the SRD's deliverables and reporting requirements

Following the meeting, the project team will walk the sites to understand constraints from residents and other user perspectives. The purpose of the walk-through will be to further identify opportunities and challenges.

Outcomes & Deliverables:

- Meeting minutes
- Identification of opportunities and constraints
- Confirmation of scope of work

Baseline Data Collection / Survey and Assembly

5 Days prior to the field crew scheduled to be onsite, ISL will deliver notification to all properties with a narrative on the work and contact information if residents have any concerns. This will allow the survey crew to access yards and obtain slab elevations where possible.

Available background reports, record drawings, and digital base plan drawings will be obtained to allow for an overall appraisal of the project. Our survey team will set up a base plan / cadastral using Land Title Office Plans.

The topographic survey will tie the cadastral using located pins/ control monuments and will be completed to Geodetic elevations. The survey will collect:

- Pavement details including edge of pavement, paint lines, traffic islands, surface visible utilities, curb/gutter and letdowns.
- Utility poles, lamp standards, traffic signals, sidewalks, bus stops, driveways, culverts, ditches, signs, bollards, other relevant features.

The survey data will be used to create a base plan for the site in accordance with the City of Campbell River Engineering Design Standards. Although subject to refinement, the initial base plan preparation will involve presentation of the following components:

- Available record municipal utility information (provided by the SRD).
- Topographic survey information of the project location and the surrounding area.
- Relevant onsite and adjacent property features that could be affected during the design and construction works.

Additional information provided by third parties as discovered through the BC One Call process and the SRD's GIS database, inclusive of service plate drawings.

Outcomes & Deliverables:

- Compilation of existing data and identification of data gaps
- Topographical survey and base plan of existing conditions

Review and Validation

Following the Kick-Off Meeting, ISL's modelling team will begin their review of the stormwater requirements. ISL's modelling team will validate the 2025 Drainage Study using updated LiDAR, field survey inputs, and Campbell River/MMCD design standards to confirm catchment boundaries, alignments, and servicing assumptions.

Design flows will be established with the Rational Method, as required by local standards, while acknowledging MMCD guidance that it is best suited for drainage areas under 10 ha. Given that the study catchments (±9–10 ha) are at this threshold and that the Rational method tends to overestimate design flows, we will supplement Rational calculations with the hydrograph method so that results are robust and defensible. Hydraulic validation will confirm system performance under 1:5-year and 1:100-year storm events, assess overland flow paths and outfall capacity, and incorporate allowances for climate change. The proposed software for this application is PCSWMM. This model will aid the team in providing efficient and cost-effective design for the proposed drainage solutions.

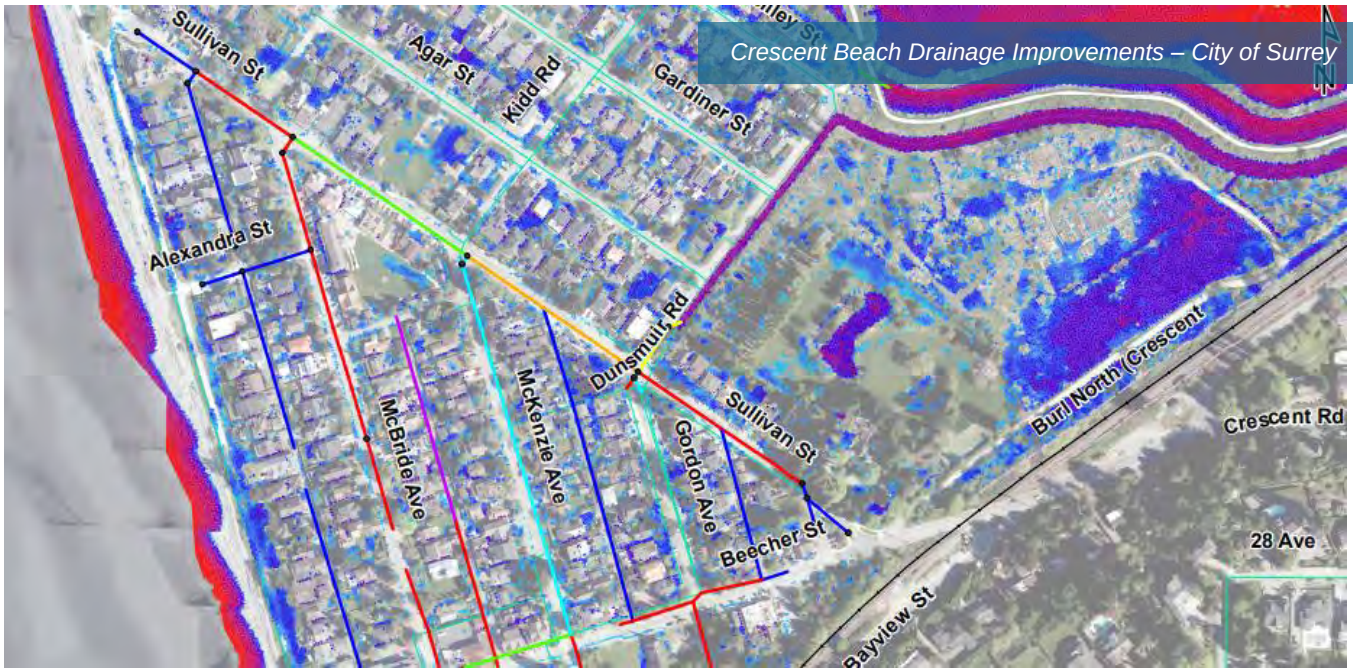
Broadly depicted, ISL's approach to this task includes:

- Delineating drainage catchments
- Defining catchment parameters based on land use
- Reviewing existing design drawings and/or reports where applicable
- Assessing existing/proposed lot grades and overland flow routes
- Developing conceptual drainage solutions and high-level cost comparisons
- Refining chosen drainage solutions based on received feedback

The outcome will be a clear hydrologic and hydraulic foundation that directly supports system sizing, stormwater management requirements, and cost estimating.

Outcomes & Deliverables:

- Flow confirmations for input into the design memorandum



Crescent Beach Drainage Improvements – City of Surrey

Environmental Impact Assessment Review and Outfall Assessment

ISL will undertake a reconnaissance level Environmental Impact Assessment (EIA) comprised of desktop and ground assessment of the proposed site. We would also review concept drainage solutions to consider project footprint impacts and likely ecological effect. We would liaise with our designers to consider outfall location alternatives to potentially avoid Crown Land permit applications, and to identify opportunities where pre-discharge treatment options might be implemented to mitigate water quality related issues associated with storm run-off from roads. Where design affected riparian or marine foreshore areas we would consider restoration plans to mitigate effects to those ecosystems. ISL's environmental engagement would be iterative and entail review of concept, preliminary and detailed designs as they are developed.

ISL would then prepare a Supplemental Information Report which will be attached to the DFO Request for Review form. This submission will include the following subsections:

- Justification for Project
- Description of Project Activities and Components
- Description of Equipment and Materials
- Environmental Assessment • Environmental Impact Assessment
- Footprint analysis • Effects Assessment
- Mitigation Measures and Monitoring Requirements

We anticipate that DFO would review the RFR and determine that the project would not result in harmful alteration disruption or destruction (HADD), and DFO would then provide their review comments in the form of a Letter of Advice within approximately 60 - 75 days.

ISL would support Crown Land applications, as required. The information within the DFO RFR is anticipated to satisfy provincial concerns related to the environment and any Crown Land tenure application.

A project's environmental mitigation measures are only as good as the Contractor who is awarded the contract to construct the storm sewer improvements. To assist in informing prospective contractors on project environmental requirements, ISL will prepare an Environmental Management Plan (EMP) which will comprise the environmental specifications to accompany the contract documents. The EMP provisions are critical to successful project completion and represent the 'hand-off' of environmental responsibility to the contractor by the District and the design team, particularly in the instance where the contractor would be responsible for retaining their own field environmental monitoring team.

Outcomes & Deliverables:

- Environmental Impact Assessment
- DFO Request for Review and response from DFO
- Crown land tenure application (where required)
- Environmental Management Plan

Still Creek Vegetation Maintenance, Metro Vancouver

Third Party Coordination + Conflicts Assessment

A BC One Call will be completed by ISL for this assignment for the design locations and the team will identify potential underground (and overhead) conflicts associated with the future construction activities with a strong focus on new signal works, storm drainage and landscaping. We will coordinate with all third-party service providers (e.g., TELUS, BC Hydro, Fortis Gas) to confirm proposed works, project timelines and expectations where underground activities are anticipated.

Outcomes + Deliverables

- BC One calls for third-party utilities
- Identification of potential conflicts and remedy options

Geotechnical Assessment (OPTIONAL)

ISL will partner with Lewkowich Engineering to conduct a geotechnical assessment of the proposed storm main alignment, should the SRD decide to proceed with the assessment. This will include 20 evenly spaced boreholes along the proposed pipe alignments in both Catchment C and the Oyster River Rest Area with approximately 50% of the boreholes completed as groundwater monitoring wells. LEA's proposal is found in **Appendix C**

Outcomes + Deliverables

- Geotechnical Report

Greenwood Trunk Sanitary Sewer – Comox Valley Regional District

Design Technical Memo

Upon completion of the data collection and validation phase, ISL will prepare a design technical memo for submission to the SRD that will include the following, as required:

- Stormwater modelling information, including results from the hydrologic and hydraulic model review and assumptions/input data used for verification
- Design flows, pipe sizing and capacity, materials, and HGLs from above
- Environmental review and outfall assessment report
- Permitting requirements.
- Plan view drawings with commentary on constraints
- Geotechnical conditions (optional).
- Class D cost estimate

Outcomes + Deliverables

- Memorandum summarizing review findings detailing the design approach, site considerations and recommendations.
- Class D Cost Estimate

3.2.2 Phase 2 – Detailed Design

50% Detailed Design

The 50% detailed design package will be prepared for the entire scope of work. The submission will include design drawings showing proposed horizontal and vertical alignments of all drainage works, including all proposed pipe sizes and materials, and all necessary appurtenances and service connections. The service connections will be designed such that they are at sufficient depth to serve the existing house and the lowest point on the property.

It is understood that the objectives of the preliminary drawing set will be to confirm project scope, design dimensions and constraints, provide supplementary specifications, and confirm the drawing set layout with District staff to inform the 75% Drawing Set. This would also be the opportunity to discuss the District preferred tendering format (MMCD, RFP, CCDC etc.) such that future submissions can be aligned. The package will be reviewed and go through ISL quality management program prior to submission.

At this stage, we would recommend making an application to construct works (H0020) to the Ministry of Transportation and Transit (MoTT). This will formally start the conversation and allow the project team to acquire feedback from the ministry with the goal of obtaining a ministry project number and eventual permit to construct.

Outcomes + Deliverables

- Class C Cost Estimate
- 50% Drawing Package
- H0020 Application to Construct

50% Detailed Design Review Workshop

ISL will schedule a design workshop and review meeting for two weeks following the 50% design package submission. If we feel that it may prove valuable, the team may suggest a site meeting during the review to further validate the design work to date. We will complete an interactive design review with the SRD to collect live feedback and reconcile comments that will be incorporated in the 75% drawing submission.

Outcomes + Deliverables

- Workshop and meeting minutes
- Comment form/tracking sheet update

75% Detailed Design

The detailed design submission will be developed to include the comments from the 50% design submission and show all proposed works in final locations complete with notes and details to communicate a full understanding of the design. The 75% design submission will include the following as a minimum:

- The detailed engineering designs updated with all District's comments from previous submission and new solutions as required. Only minor adjustments and revisions shall be necessary to bring the drawings to 95% design stage.
- Surface Restoration Plans.
- Identify the future horizontal alignments for storm sewer infrastructure mains not subject to replacement at this time (based on conceptual design).
- Correspond with any additional government agencies or authorities required to complete the design stage of the project and permit construction to proceed on schedule.

Prior to submission, the package will be reviewed by the quality control and integration team so that the design goals and desired outcomes are achieved.

Outcomes + Deliverables

- Class B Cost Estimate
- 75% Drawing Package

75% Detailed Design Review Workshop

ISL will schedule a design workshop and review meeting for two weeks following the 75% design package submission. We will complete an interactive design review with the SRD to collect live feedback and reconcile comments.

Outcomes + Deliverables

- Workshop and meeting minutes
- Reconciled comments on the comment form/tracking sheet update

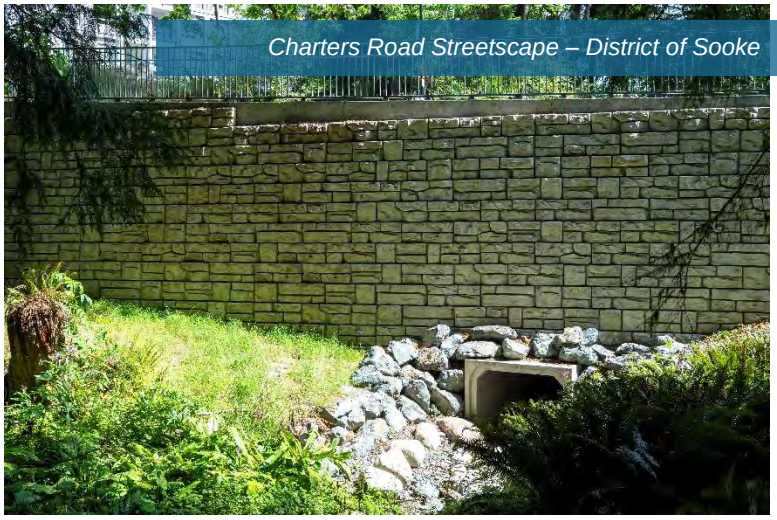
95% Detailed Design – OPTIONAL

If the SRD chooses, a 95% detailed design submission will be prepared following comments received from the 75% design review workshop. ISL will provide the District with PDF and full sized 95% - near IFC drawing that will include the comments from the 90% design submission and the following at a minimum:

- 95% drawings. The drawings shall be to a level such that the project would be almost ready to construct. Only minor adjustments and revisions shall be necessary to bring the drawings to IFC design stage.
- A Class 'A' cost estimate for each project location with a 15% contingency for budgeting purposes.
- Where applicable, an environmental protection plan and recommendations that should be adhered to during construction.

Outcomes + Deliverables

- 95% Drawings
- Class A cost estimate



Charters Road Streetscape – District of Sooke

4.0 PROJECT TEAM

At ISL, we believe that diversity in experience and perspective is key to delivering exceptional infrastructure solutions. This belief guides our approach to assembling project teams for our clients' initiatives. For this proposal, we have carefully selected a team that blends the proven expertise of seasoned professionals with the fresh insights of emerging engineers and technologists, a combination that fosters innovation, agility, and continuous improvement.

We understand that clear communication and sound decision-making are essential to successful project management. Our team is committed to applying established best practices while remaining open to creative, context-sensitive solutions, which is especially important for a project like the Area D Stormwater Collection System Design, that demands both technical precision and community-focused design.

With this in mind, we propose key staff positions that reflect a balanced mix of experience and energy, enabling the delivery of high-quality services that meet and exceed the expectations of SRD. Each team member brings unique strengths to the table, contributing to a collaborative environment that encourages innovation and accountability. Our team organization structure is shown in **Figure 4.1**.

ISL has a strong track record of delivering successful projects across Western Canada, and we are proud to bring that experience to this initiative. The proposed team offers a depth of knowledge in multi-modal transportation design, value engineering, and corridor planning, all of which are critical to the success of this intersection upgrade.

We understand that SRD requires approval for any changes or substitutions to key personnel, and we fully support this expectation. Our proposed team is not only available and committed to the duration of the project but also backed by internal succession planning to provide seamless delivery should unforeseen circumstances arise. This approach reflects our dedication to transparency, accountability, and long-term partnership with SRD.

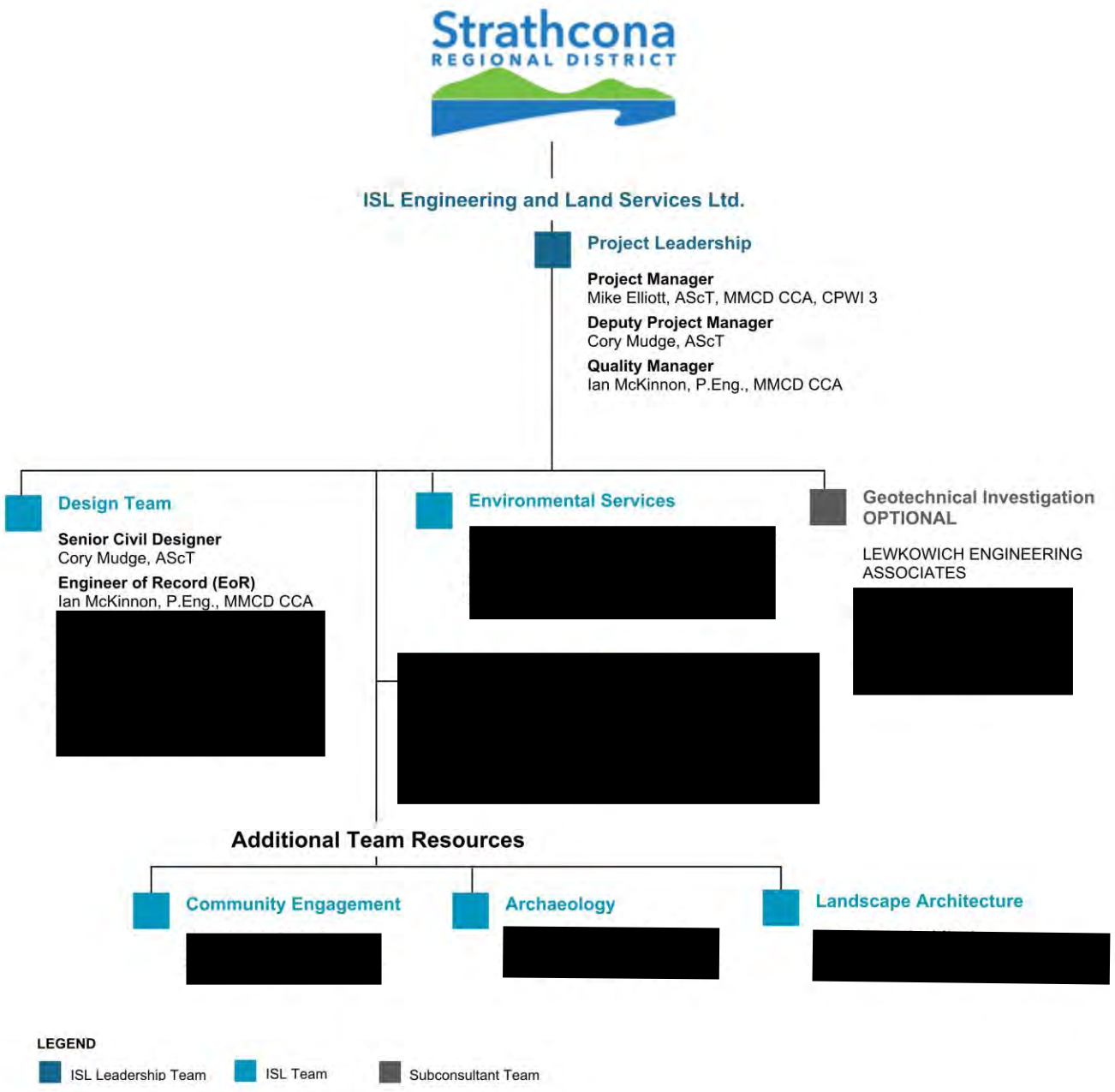


Figure 4.1: Project Team Organization

4.1 Key Team

MIKE ELLIOTT, ASCT, MMCD CCA, CPWI 3

PROJECT MANAGER — NANAIMO, BC

Mike Elliott is the Mid-Island Lead at ISL Engineering and Land Services, where he brings a wealth of technical expertise and leadership to infrastructure projects across Vancouver Island. Based in ISL's Nanaimo office, Mike plays a key role in managing multidisciplinary teams and delivering innovative, community-focused engineering solutions. His credentials include Applied Science Technologist (AScT) designation, as well as certifications in the Master Municipal Construction Documents (MMCD) and Public Works Inspection (CPWI 3), reflecting his commitment to industry standards and quality assurance.

Prior to joining ISL, Mike built a strong foundation in civil engineering and municipal infrastructure through years of hands-on experience in both the public and private sectors. His background includes extensive work in construction inspection, project management, and municipal servicing design, where he developed a reputation for practical problem-solving and collaborative project delivery. Mike's career is marked by a dedication to sustainable development and community engagement, values that align closely with ISL's mission to build vibrant, resilient communities across Western Canada.

Why Mike? Mike has been selected as Project Manager for the Area D Stormwater Collection Design based on his nearly two decades of experience delivering transportation and municipal infrastructure projects across British Columbia. With over 19 years of work on the south coast and a portfolio of nearly 300 completed transportation and utility projects, Mike brings a deep understanding of how to deliver cost-effective solutions while minimizing traffic disruptions and construction impacts.

Mike's strength lies in his ability to coordinate effectively with municipalities and the Ministry of Transportation and Infrastructure (MoTT). His recent work as Design Manager for the City of Nanaimo and City of Langford – on projects such as the **Veterans Memorial Parkway and Goldstream Intersection Improvements** (Hwy 14, 2025), **Terminal Avenue Upgrades** (Hwy 1, 2024), **Island Highway South Watermain** (Hwy 1, 2020), and the **Stewart Avenue Sanitary Sewer Upgrade** (2021) – demonstrates his capacity to navigate complex regulatory environments and deliver resilient infrastructure within MoTT jurisdiction.
He is also currently working on the following files with MoTT involvement:

- **Sunrise Drive and Highway 19A Intersection Improvements** (Ministry of Transportation and Transit), 2025-Ongoing. **Role:** Design Manager **Status:** Construction start October 2025
- **Downtown Nanaimo Transit Exchange** (BC Transit) 2021-Ongoing **Role:** Consultant Team Project Manager **Status:** Early works package expected early 2026
- **Highway 14 and Delem Drive Intersection** (City of Langford) **Role:** Project Manager **Status:** Detailed design commencing October 2025

To assist the reviewers in evaluating his candidacy, we have provided the following references in regard to his Ministry experience.

City of Langford
Katelyn Balzer, P.Eng.
Director of Engineering and Public Works
T: 250-391-3442 | **E:** kbalzer@langford.ca
Project: VMP and Goldstream Intersection Upgrades, Highway 14 and Delem Drive Intersection

City of Nanaimo
Phil Stewart, P.Eng., Manager, Engineering Projects
T: 250-755-4442 | **E:** phil.stewart@nanaimo.ca
Project: Terminal Avenue Upgrades Phase 1, Downtown Nanaimo Transit Exchange

Project Roles and Duties: Mike will be the primary liaison with SRD's Contract Manager and will be directly responsible for planning, coordinating, and delivering all services. He is fully available and committed to completing this project within the proposed schedule, enabling the high-quality deliverables as follows:

- **Regular Meetings:** Mike and the team will meet regularly with SRD to review design progress, get timely input on solutions to constraints and stay apprised of scope and schedule.
- **Resource Allocation:** Regular check-ins with the team, combined with adherence to the schedule, allow the addition of resources if required for specific deliverables. ISL has experienced resources who have all worked together previously to deliver similar assignments.
- **Risk Identification:** While not a large project in the scope, unidentified risks have a much bigger impact on cost and delivery for smaller projects. Leaning on the experience of the team assigned allows risks to be identified early in the process and mitigations/contingencies to be well developed in advance.
- **Quality Management:** Mike will work closely with **Ian McKinnon,** who will serve as the Quality Manager (QM), so that quality management systems are in place, enable adherence to SRD deliverables and format, and review all deliverables prior to submission to SRD

CORY MUDGE, ASCT

DEPUTY PROJECT MANAGER | SENIOR CIVIL DESIGNER — VICTORIA, BC

Cory is a Civil Engineering Technologist for ISL's Vancouver Island Office and has 15 years of design and construction experience with ISL. Cory has extensive experience in utility and roadworks projects, including multi-modal urban road design and major roadworks rehabilitation projects. His utility experience includes sewer separation, sanitary and storm sewer, sanitary force main, and watermain design and construction. Cory has provided full-time inspections on urban roadways, road rehabilitation, and underground utility projects and understands the importance of quality and comprehensive design solutions that allow for competitive bidding and constructible projects.

Project Roles and Duties: As Deputy Project Manager and Senior Civil Designer, Cory will support overall project coordination and serve as a secondary point of contact for SRD. He will lead technical design tasks for roadway and utility components, prepare and review plans, drawings, and cost estimates, and coordinate inputs from survey, geotechnical, and environmental specialists. Cory will also assist with scheduling, budgeting, and resource management, and provide construction-phase support so that design intent is delivered in the field.

IAN MCKINNON, P.ENG., MMCD CCA

QUALITY MANAGER | ENGINEER OF RECORD (EOR) — VICTORIA, BC

Ian is the Manager of ISL's Vancouver Island operations, overseeing teams across Nanaimo and Victoria offices. He is a senior project engineer with over 15 years of experience delivering municipal infrastructure projects. He leads integrated teams of engineers, planners, and specialists on projects involving roadworks, multi-modal transportation, water and wastewater systems, and active transportation. Ian's expertise spans feasibility studies, planning, detailed design, and construction, including road rehabilitation, linear underground utilities, pump and lift stations, and pressure-reducing valve stations. An MMCD Certified Contract Administrator, he is highly experienced in administering construction projects for municipalities and regional governments. As the Engineer of Record, Ian has successfully delivered more than 130 multidisciplinary projects, providing strong leadership, quality control, and client-focused solutions.

Project Roles and Duties: Ian will provide senior oversight of the technical design components, overseeing the roadway and utility design components, enabling technical accuracy, constructability, and integration with survey, geotechnical, and environmental inputs; review design deliverables for accuracy and constructability and offer strategic recommendations to address site-specific constraints. Ian will also support internal coordination and review processes to maintain consistency and quality across all phases of design.

4.2 Subconsultants

We also have strong relationships with a variety of subconsultants, including geotechnical subconsultants. For this opportunity, we are partnering with Lewkowich Engineering Associates (LEA) for Geotechnical Support, who is one of our trusted partners with a proven track record of high-quality deliverables.

If ISL is awarded this contract, ISL will be identified as the prime consultant with SRD and a standard ISL corporate “Subconsultant Agreement” will be administered between ISL and LEA.

GEOTECHNICAL INVESTIGATION (OPTIONAL)

LEA is a full-service geotechnical engineering firm founded in 1994 on Central Vancouver Island. Originally established as Lewkowich Geotechnical Engineering Ltd., the company expanded its scope and rebranded in 2008 following the acquisition of Johnston Gray Environmental. With permanent offices in Nanaimo and Courtenay, LEA has grown into a multidisciplinary team of engineers, geoscientists, environmental scientists, industrial hygienists, and technical staff. Their mission is to deliver practical, cost-effective solutions that support safe and sustainable development across Vancouver Island, the Gulf Islands, and the Sunshine Coast. LEA offers a comprehensive suite of services, including geotechnical engineering, materials testing, hazardous materials (hazmat) assessments, environmental consulting, and occupational health and safety services. Their team is known for being approachable, collaborative, and responsive, values that guide their client relationships and project delivery. With over three decades of experience, LEA continues to provide reliable expertise for residential, commercial, and industrial projects, helping clients build with confidence.

Responsibilities: LEA would provide geotechnical investigation services for this project. They specialize in subsurface investigation, foundation design, and geotechnical analysis. Their work will inform the structural and design aspects of the project by assessing soil conditions and providing recommendations for site development.

ISL has worked with LEA on previous projects, including multiple projects in Parksville, which have established a working relationship between the two firms. This familiarity with each other's processes and communication styles will support efficient coordination and collaboration on this project.

Bellamy Road Multi-Use Pathway – City of Langford

5.1 ISL Experience

Great projects are built on expertise, trust and innovation. ISL is proud to be part of many such initiatives that have helped shape communities across BC and Western Canada. Our experience spans the full lifecycle of infrastructure projects, from early feasibility and concept development through detailed design, permitting and construction administration. We bring a deep understanding of stormwater systems, rural drainage challenges and phased implementation strategies that align with SRD's priorities.

ISL brings meaningful regional experience to this assignment, with recent work completed for the Comox Valley Regional District and the City of Campbell River. Our team maintains established relationships with several staff members and is familiar with the local context and expectations. Our past projects in Campbell River reflect our understanding of municipal infrastructure priorities in the region. These connections and experiences position us to engage effectively with SRD interested parties and contribute insightfully to the Area D stormwater initiative.

Table 5.1 provides a brief summary of ISL's past experience providing similar services as per the RFP, with five projects (highlighted in bold in the tables below) provided in more detail in the following pages.

Table 5.1: ISL Past Experience

Project	Utilities	Road and Sidewalks	Topographic Survey	Detailed Design	Cost Estimation	Tendering Admin and Support	Contract Administration / Inspection	MoTT Permitting
6th Avenue and Thulin Street Renewal (City of Campbell River)	✓	✓	✓	✓	✓	✓	✓	✓
2023 Roads and Utilities Package (Village of Cumberland) 2023 - 3024	✓	✓	✓	✓	✓	✓	✓	
Lazo Greenway Multi-Use Trail (Town of Comox) 2024 - 2025		✓	✓	✓	✓	✓	✓	✓
Bagshaw Street Utility and Roadworks (City of Parksville) 2020-2022	✓	✓	✓	✓	✓	✓	✓	
Charters Road Streetscape (District of Sooke), 2021-2024	✓	✓	✓	✓	✓	✓	✓	
Crescent Beach Utility Upgrades (City of Surrey), 2021-2023	✓	✓	✓	✓	✓	✓	✓	
Metral Drive Complete Street and Utility Project (City of Nanaimo) 2020-2023	✓	✓	✓	✓	✓	✓	✓	
19 Wing Comox Roads & Utilities Recapitalization (Defense Construction Canada) 2019-2022	✓	✓	✓	✓	✓	✓	✓	
Greenwood Trunk Sanitary Sewer (Comox Valley Regional District) 2019-2021	✓		✓	✓	✓	✓	✓	
Underground Utility Replacement Program (District of Saanich) 2021-2022	✓	✓	✓	✓	✓		✓	
Oliver Street Watermain Replacement (District of Oak Bay) 2022-2023	✓		✓	✓	✓	✓	✓	
Terminal Avenue Improvements / Downtown Transit Exchange (City of Nanaimo), 2020 - 2024	✓	✓	✓	✓	✓	✓	✓	✓
Uptown Mobility Hub (Ministry of Transportation and Transit – South Island)		✓	✓	✓	✓	✓	✓	✓

6TH AVENUE AND THULIN STREET UTILITY RENEWAL

CITY OF CAMPBELL RIVER | 2021-2023

As part of the City of Campbell River's pre-qualified consultant roster from RFQ21-07, ISL was retained to provide assessment, design, archaeological, tendering, and construction services for the 6th Avenue and Thulin Street Utility Renewal project.

ISL was initially engaged to provide rehabilitation or replacement options for an existing 600 mm diameter concrete storm sewer on 6th Avenue between Thulin Street and Island Highway that was previously found to be in poor condition. Following ISL's review of CCTV and capacity analysis for the existing storm, replacement of the existing storm sewer with a larger 750 mm diameter storm sewer was established to be the preferred option. During design of the storm sewer replacement, the City expanded the scope of the project to include: 170m of sanitary sewer replacement (6th Avenue from Thulin Street to Island Highway) and 640m of watermain replacement (6th Avenue from Alder Street to Island Highway and Thulin Street from 6th Avenue to 5th Avenue).

The City also requested that ISL provide archaeological services for the underground works. Following ISL's review of archaeological work previously completed near the project location and outline of potential heritage concerns, it was determined that the project would proceed with an application for a Section 12.2 Heritage Conservation Act (HCA).

The 6th Avenue project was tendered in January 2023 and was completed in September 2023.

2023-2025 ROADS AND UTILITIES PACKAGE

VILLAGE OF CUMBERLAND | 2023-DATE

Since 2022, ISL has been supporting the Village with a range of infrastructure-related assignments as part of its ongoing capital program. These efforts have focused on renewing aging assets and enhancing community resilience through strategic planning and engineering services. This is an ongoing multi-year project that demonstrates ISL's commitment to improving infrastructure in the Village of Cumberland.

Initial projects under this contract included the full road reconstruction of First Street between Dunsmuir and Penrith. Additionally, both Maryport Avenue and Ambleside Avenue received full road reconstruction, complete with watermain, sanitary, and storm replacement, and a watermain was installed on Union Avenue.

Future work includes full road reconstruction of First Avenue between Ambleside and Penrith, sanitary and storm upgrades in the lanes between Penrith and Maryport and Maryport and Windermere.

LAZO GREENWAY MULTI-USE PATHWAY

COMOX VALLEY REGIONAL DISTRICT/TOWN OF COMOX | 2022-2025

The Lazo Greenway is a 2.6km AAA multi-use facility within a rural area of the Comox Valley connecting existing bike facilities. The corridor is surrounded predominantly by single-family detached homes in a rural/suburban setting, separated by a sensitive wetland conservation area. There are residential cross streets, including Forester Avenue, Barber Avenue, Beckton Drive, with a significant crossing at Guthrie Road, and a rural crossing at Brent Road. Sand Pines Drive is the eastern limits of the project, terminating with a pedestrian crossing south on Lazo Road connecting to an existing shoreline pathway along Point Holmes

The project was a joint project between the Comox Valley Regional District (CVRD), and the Town of Comox. This project also included coordination and approvals by the Ministry of Transportation and Transit, as well as construction coordination with the CVRD Sanitary Conveyance project. Design constraints included limited available road right-of-way, mature trees, and multiple conflicting driveways and nearby properties. This assignment involved route option analysis, project planning, consultation, cost estimating and detailed design services. Construction of the greenway was completed in the summer of 2025.

BAGSHAW STREET STREETSCAPE AND UTILITY ROADWORKS | CITY OF PARKSVILLE | 2020

Bagshaw Street was upgraded to accommodate its dual designation: single-unit residential south of Jensen Avenue and downtown core north of Jensen Avenue. The roadway design transitions from the City's downtown standard to the urban local roadway standard near Jensen Avenue, integrating the Jensen Avenue Greenway—a key multi-use active transportation corridor connecting to transit routes on Corfield Street, McVickers Street, Stanford Avenue, and Island Highway. The upgrades incorporated active transportation tie-ins, lighting, and drainage from the greenway.

Utility improvements included CCTV inspection and assessment of existing sanitary sewers, replacement of the AC watermain with 370 m of 150–200 mm PVC, installation of a new 20 m – 200 mm sanitary service, and conversion of roadside ditches to 350 m of 300–600 mm PVC storm sewer. Following ISL's review, the sanitary sewers were deemed suitable for CIPP relining, completed under a separate construction contract in 2022. Public engagement was conducted in three phases: project introduction, concept option feedback, and presentation of the recommended concept.

CHARTERS ROAD STREETSCAPE

SOOKE, BC | 2022 TO 2024

The project involved the conceptual design, detailed design, and construction of Charters Road (between Throup Road and Golledge Avenue) to upgrade it to an urban cross-section. As outlined in the Transportation Master Plan, the new road design includes two vehicle travel lanes, buffered on-road bike lanes, curbs and gutters, boulevards, and sidewalks.

This upgrade enhances active transportation by improving connections to key community destinations, including École Poirier Elementary, Journey Middle School, the Art Morris and Sooke bike parks, and the SEAPARC Leisure Complex. It also improves neighbourhood access to public transit.

Previously, Charters Road between Throup Road and Sooke Road featured a rural cross-section with two lanes and roadside drainage ditches. Approximately 200 meters south of Throup Road, the road crosses Throup Stream. South of the stream, the area is primarily low- to medium-density residential, with most homes accessed from Charters Road. North of the stream, Art Morris Park lies to the west, while a large agricultural property is on the east.

Challenges and Innovations:

- **Throup Stream.** The roadway previously featured a significant sag curve at the Throup Stream crossing. The design lengthened the vertical curve while balancing budget constraints and minimizing environmental impacts.
- **Environment.** The ecological value of Throup Stream was assessed to evaluate the roadway's impact at the crossing. An environmental assessment was conducted, followed by the environmental management plan that was in place for the duration of construction.
- **Utilities.** The open ditches and culverts were replaced with catch basins and storm sewers. Utility pole relocations were minimized, and the watermain was replaced as part of the project.
- **Driveway Tie-Ins.** The new Charters Road cross-section is significantly wider than the existing rural design. With a narrow right-of-way (18–19.5 meters), integrating driveways at varying elevations presented challenges. The design executed smooth driveway transitions while minimizing property impacts.

CRESCENT BEACH UTILITY IMPROVEMENTS

CITY OF SURREY | 2021 TO DATE

ISL was retained by the City of Surrey to provide comprehensive engineering design, environmental management, archaeological, and construction services for the Crescent Beach Utility Improvements project. The project focuses on improving drainage infrastructure in the Crescent Beach area, which frequently experiences local flooding due to the lack of a formal drainage system and high groundwater levels. This project is part of the City's Disaster Mitigation and Adaptation Fund (DMAF) initiative, taking into account the City's recent climate change adaptation and detailed drainage studies for the area.

The scope includes installation of approximately 5,200 meters of solid-wall and perforated drainage pipes within the Crecent Beach area. Additionally, the project involves replacing approximately 550 meters of water main, 170 meters of sanitary sewer infrastructure, and 4,800 meters of local, collector and laneway road improvements. Construction of the proposed works has been implemented in three phases over the past six (6) years with multiple future phases of work remaining.

The Crescent Beach community is located within the Boundary Bay floodplain, with elevations ranging from 0.00 to 3.00 meters. It is protected by upgraded dikes from high tides and storm surges, but the community routinely experiences flooding due to back-flooding from high groundwater levels, particularly during winter. ISL's engineering team designed a stormwater drainage system that uses closed-wall pipes to prevent saltwater intrusion in coastal areas and perforated pipes inland to lower the groundwater table and designed road improvements with consideration of raising the elevation of existing roads where possible to combat rising sea levels. In support of the drainage design works, a 1D-2D hydraulic model was developed in InfoWorks ICM to simulate stormwater runoff, infiltration, and groundwater dynamics. The model accounted for the area's flat terrain, tidal influences, and high groundwater levels, providing recommendations for optimal stormwater infrastructure sizing and configuration. The resulting design ensures the system can accommodate current and future development, significantly reducing the risk of flooding.

6.0 PROJECT SCHEDULE

ISL's proposed schedule provides a clear breakdown of project phases and deliverables, including site assessments, preliminary and detailed design submissions at 50% and 75%. The timeline aligns with the SRD's intent to proceed with construction in early July 2026. All design submissions will be coordinated with SRD staff, and the schedule will be adaptable through mutual agreement with the SRD to meet project milestones, which we have allocated to the following dates:

Table 6.1: Project Milestones

Task	Dates
Project Award (assumed)	October 24th, 2025
PHASE 1	
Kick Off Meeting	Week of November 10, 2025
Review and Validation	Week of December 8, 2025
Environmental Review and Assessment (should be completed after conceptual alignments)	Week of January 19, 2026
Design Technical Memo	Week of February 2, 2026
PHASE 2	
50% Detailed Design Submission	Week of March 30, 2026
50% Detailed Design Review Workshop	Week of April 20, 2026
75% Detailed Design Submission	Week of May 18, 2026
75% Detailed Design Review Workshop	Week of June 8, 2026

This schedule is intended to provide a realistic timeline based on the project team's understanding of the scope and deliverables desired by SRD; however, as a team, we are flexible and can assign more resources to specific deliverables if so desired by the SRD.

Assumptions:

- Submissions to include a two-week review period.
- The geotechnical assessment, if desired by the client, will be approved before mid-November such that it can be implemented in the schedule with minimal impacts
- If the assumed award date or any of the review periods go longer than expected, the schedule will be moved forward in the same increments as shown on the detailed work schedule

Terminal Avenue / Trans Canada Hwy – May 2021

Terminal Avenue / Trans Canada Hwy – August 2025

Figure 6.1: Project Work Schedule
Area D Stormwater Collection System Design, Area C & Oyster River Rest Area
Strathcona Regional District - RFP-10-25

TASK MEETING M MILESTONE X REPORT R

		2025 October				November					December					2026 January				February				March					April				May				June					July			
	Week Starting	6	13	20	27	3	10	17	24	31	1	8	15	22	29	5	12	19	26	2	9	16	23	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27
Phase 1 - Validation and Data Collection																																													
1.1	Kick off Meeting						M																																						
1.2	Topographic Survey																																												
1.3	Base Plan Preparation																																												
1.4	Review and Validation										X																																		
1.5	Environmental Review and Outfall Assessment																	X																											
1.7	Design Technical Memo																			R																									
	District Review Period																																												
Phase 2 - Detailed Design																																													
2.1	50% Detailed Design																											X																	
	District Review Period																																												
2.2	50% Detailed Design Review Workshop																														M														
2.3	75% Detailed Design																																		X										
	District Review Period																																												
2.4	75% Detailed Design Review Workshop																																					M								

7.2 Other Business Considerations

ISL acknowledges the insurance and WorkSafe BC coverage requirements, and upon award, we will promptly provide confirmation of our Comprehensive Commercial General Liability Insurance and Automobile Liability Insurance on the vehicles used in connection with the project. Our insurance will include cross-liability, waiver of subrogation, and the naming of the Strathcona Regional District (SRD) as Additional Insured. All certificates will be completed and signed by our insurance broker and submitted immediately upon contract execution.

Additionally, ISL and all approved subcontractors are registered with WorkSafe BC, and coverage will be maintained throughout the contract term. We will provide a WCB Clearance Letter confirming good standing and payment of all assessments prior to receiving any payment, in accordance with the Workers' Compensation Act of British Columbia.

Veterans Memorial Parkway (Highway 14) and Goldstream Avenue – City of Langford

APPENDIX A

Proposal Form and Addenda Acknowledgements

F. PROPOSAL FORM

RFP-10-25

CLOSING DATE AND TIME
12:00 NOON PACIFIC TIME OCTOBER 10, 2025

This form must be completed, signed and included with the submission.

The undersigned confirms that its submission is in response to the above noted RFP.

The proponent acknowledges receipt of Addenda # 1 through Addenda # 5.

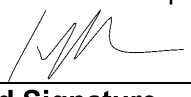
Proponent:	ISL Engineering and Land Services Ltd.
Address:	1051 Vancouver Street, Victoria BC V8V 3K3
Contact Name:	Mike Elliott, AScT, MMCD CCA, CPWI 3 - Mid-Island Lead
Phone:	250.361.3230 **Fax:**
Email:	melliott@islengineering.com

Completed Price for Primary Scope	$ 88,460
Taxes	$ 4.423
Total Completed Price for Primary Scope	$ 92,883

Completed Price for Optional Scope 1	$ 48,214
Taxes	$ 2,411
Total Completed Price for Optional Scope 1	$ 50,625

Completed Price for Optional Scope 2	$ 10,702
Taxes	$ 535
Total Completed Price for Optional Scope 2	$ 11,237

Proponents should ensure that all requirements of the RFP are dealt with in their proposal submission and that all materials and products proposed comply with the specifications therein.



Authorized Signature

Ian McKinnon, P.Eng. | Manager, Vancouver Island
Name and Title

October 10, 2025
Date

ADDENDUM #1

REQUEST FOR PROPOSALS

RFP-10-25 AREA D STORMWATER COLLECTION SYSTEM DESIGN

CATCHMENT C & OYSTER RIVER REST AREA

Addendum Issued September 8, 2025

The Strathcona Regional District (SRD) wishes to issue the following addendum to RFP-10-25 Area D Stormwater Collection System Design – Catchment C & Oyster River Rest Area, which closes on Friday, October 10, 2025. Please sign below, acknowledging receipt of this Addendum and return this document with your submission to the RFP.

Question 1:

Is this RFP following the Canadian Free Trade Agreement and/or New West Partnership Trade Agreement?

Response 1:

All purchasing conducted by the SRD follows the guidance of the Canadian Free Trade Agreement and/or New West Partnership Trade Agreement.

Question 2:

In the evaluation criteria it states that there are 5 points awarded to Local Specific Experience. Is this because SRD believes the threshold amount to be below $75,000?

Response 2:

No. The allocation of points for local experience reflects the correlation between a respondent's familiarity with the local area and certain project efficiencies. This includes potential knowledge of and relationships with local vendors, contractors, and suppliers, as well as geographic familiarity.

Question 3:

Why not direct award to McElhanney when the CAO and Senior Manager have the option to do this if the threshold amount is below $75,000?

Response 3:

The estimated project value is not assumed to be below $75,000. Regardless of the amount, the SRD frequently seeks competitive bids for projects under the thresholds set out in the agreements mentioned above.

Please sign below, acknowledging receipt of this Addendum and return this document with your submission to the RFP.

Signature	Name of Firm
Mike Elliott, AScT, MMCD CA, CPWI 3	October 10, 2025
Name and Title (Print)	Date

ADDENDUM #2

REQUEST FOR PROPOSALS

RFP-10-25 AREA D STORMWATER COLLECTION SYSTEM DESIGN

CATCHMENT C & OYSTER RIVER REST AREA

Addendum Issued September 11, 2025

The Strathcona Regional District (SRD) wishes to issue the following addendum to RFP-10-25 Area D Stormwater Collection System Design – Catchment C & Oyster River Rest Area, which closes on Friday, October 10, 2025. Please sign below, acknowledging receipt of this Addendum and return this document with your submission to the RFP.

Clarification to RFP:
The final date to submit questions is September 30th, 2025 at 2:00pm.

Question 1:
If the estimated project value is above the NWPTA threshold of $75,000, why is it being used only as “guidance”?

Response 1:
The $75,000 NWPTA threshold indicates when open procurement is generally required, but exceptions—such as sole-sourcing for unique suppliers, urgent needs, or proprietary products—are allowed. We follow the agreements fully, using the threshold as a guide rather than an absolute limitation.

Question 2:
If I were to meet with local vendors, contractors, and suppliers and provided evidence of this I would be entitled to the full 5 points?

Response 2:
Scoring will be based on the proposal’s overall demonstration of understanding of local conditions.

Question 3:
Would you consider a 1-month extension to allow this to happen, so it’s a fair bidding process?

Response 3:
No

Question 4:
What is the bounds of the geographical area? The catchment areas McElhanney has reported on? SRD? North Island? Vancouver Island?

Response 4:
The geographical area is as defined in the RFP. i.e., the area for which proposals are being sought.

Question 5:
If there is potential information that one bidder may have that SRD is aware of, should this not be made public for others to benefit from? IE. Some potential knowledge of the geographical area stated in answer 2 or something that pertains to project efficiency in the geographical area.

Response 5:
The SRD has released the same information to all proponents. Any additional familiarity a bidder may bring reflects their own experience.

Question 6:
Are local vendors, suppliers, contractors evaluated based on the engineering consultants they know? For local area knowledge and project efficiency.

Response 6:
Proponents are evaluated on their perceived ability to deliver the project efficiently and effectively.

Please sign below, acknowledging receipt of this Addendum and return this document with your submission to the RFP.

Signature

ISL Engineering and Land Services Ltd.

Name of Firm

Mike Elliott, AScT, MMCD CA, CPWI 3

Name and Title (Print)

October 10, 2025

Date

ADDENDUM #3

REQUEST FOR PROPOSALS

RFP-10-25 AREA D STORMWATER COLLECTION SYSTEM DESIGN

CATCHMENT C & OYSTER RIVER REST AREA

Addendum Issued September 24, 2025

The Strathcona Regional District (SRD) wishes to issue the following addendum to RFP-10-25 Area D Stormwater Collection System Design – Catchment C & Oyster River Rest Area, which closes on Friday, October 10, 2025. Please sign below, acknowledging receipt of this Addendum and return this document with your submission to the RFP.

Question 1:
I am reaching out to kindly request if the District could provide a sample consultant agreement?

Response1:
See attached sample agreement

Question 2:
Does the District require the Proponent to only identify permitting requirements or to both identify and apply for those permits?

Response 2:
Identify the permitting requirements only.

Signature	ISL Engineering and Land Services Ltd.
	Name of Firm
Mike Elliott, AScT, MMCD CA, CPWI 3	October 10, 2025
Name and Title (Print)	Date

(Name of Project)
SRD Agreement # SRD-XX-XXX

This Agreement dated for reference the XX day of XXX 2025.

Between:

STRATHCONA REGIONAL DISTRICT
301- 990 CEDAR STREET
CAMPBELL RIVER, BC V9W 7Z8

(hereinafter called the Regional District)

And:

(hereinafter called the 'Contractor')

WHEREAS:

A. The Regional District has issued a Request for Proposals (RFP) to (**name of project**) ("the work") attached hereto as Appendix "A".

B. The Contractor has submitted a proposal in response to the Regional District's request, attached hereto as Appendix "B".

C. The Regional District and the Contractor wish to enter into an agreement to provide the services outlined herein.

NOW THEREFORE in consideration of the covenants and agreements herein contained and other good and valuable consideration, the Regional District and the Contractor covenant and agree as follows:

PROVISION OF SERVICES AND TERM

1. The Contractor agrees to provide services in accordance with the provisions of this agreement, including Appendix "A" and "B" to complete the works at the work site.

2. The Contractor agrees to provide the services commencing on the date of execution of this Agreement and ending no later than (**insert date**) (the "Term").

SAMPLE

3. The Regional District shall review the Services. Satisfactory completion of the Services shall be at the sole determination of the Regional District.

PAYMENT

4. The Regional District shall provide payment to the Contractor, upon receiving invoices, for the Services in an amount not to exceed the sum of $XXX exclusive of GST over the term of the Agreement.

5. Invoices may be submitted as work is completed, or upon project completion. Invoices must show the contract number, itemized detail and applicable taxes. Claims for expense disbursements will be accompanied by original receipts. Invoices are due and payable within thirty (30) days after receipt by the Regional District.

6. The Regional District may withhold the payments contemplated in section 5 above until the Contractor has provided the Regional District with all documentation required under this agreement and/or until the Contractor has completed the Services being the subject of the payments to the complete satisfaction of the Regional District.

7. Unless otherwise specified, the Contractor shall be responsible for the provision of all labour, equipment, materials and payment of all expenses associated with the Services.

8. In the event the Contractor fails to pay for any expenses associated with the Services, the Regional District, may at its sole option, deduct the corresponding amounts from any payment amount invoiced by the Contractor and pay such expenses directly.

9. The Regional District will not be obliged to provide payment to the Contractor for the purchase of any supplies, materials, labour or services that are outside the scope of activities listed in Appendix “A” or “B” for which prior written approval from the Regional District has not been granted.

10. Prior to sub-contracting any obligation or service under this agreement, the Contractor will obtain written consent from the Regional District.

INSURANCE

11. The Contractor shall:
    a) At its expense and throughout the term of the agreement, maintain and pay for a comprehensive general liability insurance policy or policies with a limit of not less than $2,000,000 inclusive per occurrence for bodily injury and property damage reflecting the Regional District as an additional insured.
    b) Furnish the Regional District with a certificate or certificates of insurance as evidence that such insurance is in force including evidence of any insurance renewal of policy or policies.
12. Maintenance of such insurance and the performance by the Contractor of its obligation under this clause shall not relieve the Contractor of liability under the indemnity provisions here and above set forth.

SAMPLE

OCCUPATIONAL HEALTH & SAFETY

13. The Contractor hereby covenants and agrees to comply with all requirements of the *Worker's Compensation Act* and its regulations (the "Act"),

14. The Contractor will provide a current clearance certificate from Worksafe BC confirming that it is in compliance with all requirements of the Act, regulations and payment of premiums. The Contractor's Workers' Compensation Board registration number is **(insert number)**.

15. The Contractor hereby covenants and agrees that when there are two or more employers present on the work site (including at least one of the Contractor and a subcontractor) creating a "multi-employer" worksite as defined by the Act and its regulations, the Contractor shall:
    a) be the "prime contractor" for the "work site" as defined by the Act and its regulations; and
    b) do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with the Act and its regulations, as required to ensure the health and safety of all persons at the "work site".

16. Such responsibility as "prime contractor" will be strictly limited to times when the Contractor and a subcontractor is physically present on the work site.

17. The Contractor shall direct all sub-contractors, other contractors, employers, workers, volunteers and any other persons at the "work site" on safety related matters to the extent required to fulfill its "prime contractor" responsibilities pursuant to the Act, regardless of:
    a) whether or not any contractual relationship exists between the Contractor and any of these entities, and
    b) whether or not such entities have been specifically identified in this agreement.

TERMINATION

18. If the Contractor fails to comply with or is in breach of any of the terms and conditions of this agreement or fails to provide the Services to the complete satisfaction of the Regional District, the Regional District may, at its sole option, terminate the agreement without notice.

19. At any time during the Term, either party may terminate this agreement on sixty (60) days written notice to the other party and upon the expiration of the sixtieth (60) day from the date of receipt of such notice, this agreement shall be immediately terminated.

INDEMNITY

20. The Contractor hereby indemnifies, saves harmless, releases and forever discharges the Regional District, its elected and appointed officers, employees or agents from and against any and all claims and demands, losses, costs, damages, actions, suits, fees or other proceedings by whomsoever made, brought or prosecuted, to the extent attributable to the errors, omissions or negligent acts of the Contractor in performing the Services under this Agreement, except claims for damage resulting from the negligence of any officer, servant or agent of the Regional District while acting within the scope of their duties of employment.

SAMPLE

21. Neither party shall be responsible to the other for indirect, consequential or punitive damages arising from the Services performed under this Agreement.

EMPLOYMENT RELATIONSHIP

22. It is understood that this agreement is strictly between the Regional District and the Contractor and in no way shall be interpreted as an employment relationship between the Regional District and the Contractor, its employees, servants, volunteers, agents, contractors or subcontractors. Should any issues arise between the Contractor and any of its employees, servants, volunteers, agents, contractors or subcontractors, such issues will be resolved directly between them and the Contractor in this connection.

GENERAL

23. This agreement, and any rights or obligations hereunder, shall not be transferred or assigned by the Contractor without the prior written consent of the Regional District, and any attempt to do so without such consent will be of no force and effect.
24. This agreement may not be modified or amended except by an instrument in writing signed by the parties hereto or by their successors or assigns.
25. The provisions herein contained constitute the entire agreement between the parties and supersede all previous communications, representations and agreements, whether verbal or written, between the parties with respect to the subject matter hereof.
26. Wherever the singular or masculine are used, the same shall be deemed to include the plural or the feminine or the body politic or corporate where the context or the parties so requires.
27. The headings to the sections of this agreement are inserted for convenience only and shall not affect the construction or interpretation hereof.
28. Time is expressly declared and stipulated to be of the essence of this agreement in respect of all payments to be made hereunder and all covenants and agreements to be performed and fulfilled.

NOTICE

29. All notices, requests, and demands required or permitted to be given hereunder shall be in writing and may be delivered personally by hand, by commercial courier or mail, or sent by facsimile transmission or e-mail to the parties at the addresses, facsimile numbers, or e-mail addresses set out below. All such notices, requests, and demands shall be deemed to have been received: if sent by facsimile, upon transmission; if sent by e-mail, upon confirmation of transmission without error; if mailed, on the seventh (7th) calendar day after mailing; and if delivered by hand or courier, upon actual receipt.:

To the Regional District:

STRATHCONA REGIONAL DISTRICT
301-990 CEDAR STREET
CAMPBELL RIVER, BC, V9W 7Z8
Facsimile: (250) 830-6710
e-mail: corporate@srd.ca

To the Contractor:

SAMPLE

In witness whereof the parties hereto have set their hands on the dates set out below.

STRATHCONA REGIONAL DISTRICT
by its authorized signatories:

_____
Name

Corporate Officer

_____
Name

(Contractor)
By its authorized signatory:

_____ _____
Authorized Signature Dated

_____
Name

SAMPLE

ADDENDUM #4

REQUEST FOR PROPOSALS

RFP-10-25 AREA D STORMWATER COLLECTION SYSTEM DESIGN

CATCHMENT C & OYSTER RIVER REST AREA

Addendum Issued October 3, 2025

The Strathcona Regional District (SRD) wishes to issue the following addendum to RFP-10-25 Area D Stormwater Collection System Design – Catchment C & Oyster River Rest Area, which closes on Friday, October 10, 2025. Please sign below, acknowledging receipt of this Addendum and return this document with your submission to the RFP.

Question 1:
No format, proposed sections, limits on information or details of information required for the proposal is provided in the RFP – can some direction be provided?

Response1:
To assist the SRD in evaluating submissions, the proposal can be structured using the heading in 23.0 Evaluation Criteria:

- Methodology & Approach
- Project Team & Relevant Expertise
- Local Specific Experience
- Identifying Challenges, Constraints and Obstacles in the project and advise strategy to minimize (Project Understanding)
- References samples and reference for similar projects (References)

For Methodology & Approach, the use of the headings in D Specifications and Scope of Work would be helpful.

Question 2:
Are any meetings required / requested by the SRD – i.e. at completion of the various design stages?

Response 2:
Yes, as a minimum, either a virtual or in-person meeting with the Project Team (at least the Manager and Design Engineer) are required to review the following submissions:

- Design Tech Memo
- 50% Design
- 75% Detailed Design
- 95% Detailed Design

If the consultant wishes to propose additional meetings, they should be shown as Optional Work and include the cost for each meeting.

Question 3:
Will existing models of the stormwater system be provided to the successful proponent?

Response 3:
The SRD does not have a model of the stormwater system.

Question 4:
I am writing to inquire whether our surveying company is able to submit a quote for the topographic survey portion of this project independently, or if it is required to be submitted as part of a package.

Response 4:
Proposals limited to individual scope components (e.g., topographic survey only) will be deemed non-compliant and will not be considered. All submissions must address the complete scope of work specified in the RFP, either by a single proponent or through a coordinated team submission.

Signature	ISL Engineering and Land Services Ltd. Name of Firm
Mike Elliott, AScT, MMCD CCA, CPWI 3 Name and Title (Print)	October 10, 2025 Date

ADDENDUM #5

REQUEST FOR PROPOSALS

RFP-10-25 AREA D STORMWATER COLLECTION SYSTEM DESIGN

CATCHMENT C & OYSTER RIVER REST AREA

Addendum Issued October 3, 2025

The Strathcona Regional District (SRD) wishes to issue the following addendum to RFP-10-25 Area D Stormwater Collection System Design – Catchment C & Oyster River Rest Area, which closes on Friday, October 10, 2025. Please sign below, acknowledging receipt of this Addendum and return this document with your submission to the RFP.

Question 1:
Please can the SRD confirm what is required for the 'legal plan' as part of the Base Plan task. Does this require legal evidence of each property within the project extents?

Response1:
The "legal plan" refers to a base drawing showing property boundaries, rights-of-way, and easements within the project extents. It does not require legal evidence or survey confirmation for each property. A current cadastral fabric from BC Land Title and Survey, or equivalent, is sufficient for the purposes of this assignment.

	ISL Engineering and Land Services Ltd.
Signature	Name of Firm
Mike Elliott, AScT, MMCD CCA, CPWI 3	October 10, 2025
Name and Title (Print)	Date

APPENDIX B

Team Resumes

APPENDIX C

Subconsultant Proposal

Strathcona
REGIONAL DISTRICT

STAFF REPORT

DATE: June 6, 2025 **FILE**: 0550-04 Board

TO: Chair and Directors
Regional Board

FROM: David Leitch
Chief Administrative Officer

RE: ELECTORAL AREA D STORMWATER MANAGEMENT

PURPOSE/PROBLEM

To consider a recommendation from the Electoral Areas Services Committee that the Regional District request proposals for the design of a stormwater management system to serve part of Electoral Area D.

EXECUTIVE SUMMARY

At its June 4, 2025 regular meeting the Electoral Areas Services Committee considered the attached report and passed the following resolution:

> Rice/Vonesch: EASC 153/25
>
> THAT the Committee recommend that a Request for Proposals (RFP) process be initiated for detailed design services in Catchment Areas C and Oyster Bay rest area, utilizing the $150,000 available from the 2025 Feasibility Study budget, with the balance to be funded from unallocated Electoral Area D gas tax funds.

The following actions are offered in support of the Committee's recommendations.

RECOMMENDATIONS

1. THAT the report from the Chief Administrative Officer be received.
2. THAT a Request for Proposals (RFP) process for detailed design services in connection with Electoral Area D stormwater management be initiated in Catchment Areas C and the Oyster Bay rest area utilizing the $150,000 available from the 2025 Feasibility Study budget with the balance to be funded from unallocated Electoral Area D gas tax funds.

Respectfully:

David Leitch
Chief Administrative Officer

Prepared by: *T. Yates, Corporate Services Manager*

Attachments: Copy of May 27, 2025 report to the Electoral Areas Services Committee

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STAFF REPORT

DATE: May 27, 2025 **FILE**:0550-04 EASC

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: Dave Leitch
Chief Administrative Officer

RE: ELECTORAL AREA D STORMWATER MANAGEMENT – PHASE 2 OPTIONS

PURPOSE/PROBLEM

To consider the options for developing a detailed design for a stormwater management service in Electoral Area D.

EXECUTIVE SUMMARY

At its April 9, 2025 meeting, the Committee considered the attached report and passed the following resolution:

> Rice/Mawhinney: EASC 69/25
>
> THAT the Regional District continue its evaluation of the feasibility of providing stormwater infrastructure that would serve those parts of Electoral Area D identified in the April 2, 2025 report from the Chief Administrative Officer, but excluding Catchment A, Oyster River Catchment, and Glenmore Road Catchment areas.

The Class D cost estimate for constructing drainage infrastructure across the entire study area is approximately $44.7 million. To exclude the Oyster River, Glenmore Road, and Catchment A areas, the estimated construction cost would be reduced to $28.9 million.

To advance the project through the design phase, McElhanney advises that engineering design fees typically range from 5% to 10% of construction value, which aligns with professional guidelines set by the Association of Consulting Engineering Companies British Columbia (ACEC-BC) and Engineers and Geoscientists British Columbia (EGBC). Applying these standards, a project of this scale would require a design-phase budget of approximately $2.3 million, inclusive of supporting studies, project management, and consultation.

Given that only $150,000 in funding has been allocated—$100,000 from the 2025 Feasibility Study budget and $50,000 from the Growing Communities Fund—design work could focus on smaller-scale catchments with construction values up to approximately $1.875 million. Four catchment areas fall within this threshold: Catchment C, Catchment F, Catchment K, and the Oyster River Rest Area. While a small catchment may present challenges related to service establishment and potential homeowner costs, it will improve cost certainty and inform future capital planning.

Sufficient funds exist within Electoral Area D's unallocated gas tax reserve to support design development for all of the identified catchments, if desired.

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Confirming the project scope and funding availability is necessary to advance to the next stage. To support this, staff have developed several options for the Committee's consideration. Direction is needed on which catchments to include in the next phase of design, as well as the funding source(s) that should be used to support this work.

ALTERNATIVES

To assist with defining the terms of reference for a detailed design scope, further direction is needed regarding the preferred funding sources and the extent of the design area.

Option A – THAT the Committee recommend that a Request for Proposals (RFP) process be initiated for detailed design services in Catchment Areas _____, utilizing the $150,000 available from the 2025 Feasibility Study budget.

Option B – THAT the Committee recommend that a Request for Proposals (RFP) process be initiated for detailed design services across the entire study area, using up to $2.5 million from unallocated Electoral Area D gas tax funds.

Option C – THAT the Committee recommend that a Request for Proposals (RFP) process be initiated for detailed design services in Catchment Areas _____, utilizing the $150,000 available from the 2025 Feasibility Study budget, with the balance to be funded from unallocated Electoral Area D gas tax funds.

RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

Dave Leitch
Chief Administrative Officer

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BACKGROUND

As the proposed drainage infrastructure in each catchment would discharge into adjacent watercourses and is generally located within the Ministry of Transportation and Transit (MOTT) road allowance, detailed design work will require both an environmental assessment by a qualified professional and early engagement with MOTT. This is necessary to ensure the final design complies with environmental regulations and MOTT design standards.

In addition, any required rights-of-way (ROWs) for stormwater conveyance—particularly for gravity-fed systems—must be identified early in the process. Preliminary discussions with private landowners or other affected parties will also need to be included within the design scope to avoid future delays or obstacles.

Proceeding in a piecemeal fashion—especially if the likelihood of creating a service area and securing construction funding remains uncertain—may lead to significant rework in the future. This risk is heightened if design standards, regulatory requirements, or property ownership conditions change over time. Given the high capital cost of stormwater infrastructure and the broader service delivery challenges in the area, the long-term vision for drainage management

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should be carefully considered before committing significant funding to a partial or full design at this stage.

While advancing detailed design for a smaller catchment area still carries some of these risks, the lower capital investment reduces the impact if the final design later becomes unviable due to changing conditions. It also offers an opportunity to better understand the technical process, engagement needs, and inter-agency coordination that would be required if the service area is expanded in the future.

For that reason, there is a strong argument in favour of proceeding with a single small catchment, using a modest portion of the Area D budget. This approach balances financial risk while still generating valuable insight and positioning the SRD for more informed decision-making.

However, if there is strong interest in establishing a comprehensive service area covering all or most of the identified catchments, advancing the full design scope at this time would likely result in a lower overall capital expenditure compared to a lengthy piecemeal approach, particularly in light of rising construction and service delivery costs.

FINANCIAL IMPLICATIONS

The technical memo prepared by McElhanney and Associates estimates the cost to construct the system throughout the entire study area at approximately $44,736,000. If the Oyster River ($8.9 million), Glenmore Road ($3.3 million), and Catchment A ($3.6 million) areas are removed from the scope, the Class D construction estimate would be reduced to $28,874,000.

McElhanney Engineering has indicated that the cost to design a project of this nature typically ranges from 5% to 10% of the construction budget, depending on project complexity. This aligns with the Budget Guidelines for Engineering Services for Infrastructure and Transportation, which are endorsed by the Association of Consulting Engineering Companies British Columbia (ACEC-BC) and Engineers and Geoscientists British Columbia (EGBC). For projects over $20 million, the guidelines recommend a base fee of $1,086,288 for the first $20 million, plus 5.2% on the balance. Based on this formula, a $28.9 million project would have an estimated engineering design fee of $1,547,736.

Additional costs beyond engineering design are necessary to advance a project through the detailed design stage. These may include environmental studies, geotechnical investigations, surveying, legal services, project management and public consultation. A design budget equal to 8% of the construction cost is recommended to ensure adequate resources are in place for a comprehensive design. This would add $762,184, bringing the total recommended design-phase budget to $2,309,920.

Procurement requirements for a project of this value necessitate a public process to retain a qualified design team. Because developing proposals for complex projects involves a significant investment by proponents, it is considered poor practice to solicit submissions if it is known that sufficient project funding has not been secured. Therefore, confirming funding availability is the logical next step before issuing a Request for Proposals (RFP).

The Electoral Area D Feasibility Study budget for 2025 includes approximately $100,000 in available funding, and an additional $50,000 has been allocated from the Growing Communities Fund to support drainage improvements in Electoral Area D. With a combined budget of $150,000 it is recommended that design work focus on construction projects with a value of up to approximately $1,875,000.

Based on the Class D estimates, the following four catchment areas fall within this construction value threshold:

- Catchment C – $1,722,000
  (Northern sections of Engles Road, Sutil Road, and Mitlenatch Drive)
- Catchment F – $444,000
  (Searidge Road and the northern section of Clinton Road)
- Catchment K – $974,000
  (Severn Road, Baxandall Drive, and the eastern portion of York Road)
- Oyster River Rest Area – $1,340,000

Electoral Area D's gas tax allocation currently includes approximately $3.2 million in unallocated funds, which would be sufficient to cover the full design costs for any one of these catchments or a combination thereof, depending on priorities and phasing.

While obtaining detailed designs for individual catchment areas presents challenges related to service establishment and potential costs to individual homeowners, it will provide greater clarity on actual design costs and support more accurate future budgeting.

LEGAL IMPLICATIONS
None at this time

INTERGOVERNMENTAL/REGIONAL IMPLICATIONS
None at this time

CITIZEN/PUBLIC RELATIONS IMPLICATIONS
None at this time

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS
None at this time

Prepared by: *Sheena Fisher, Engineering Services Manager*

Attachment: 20250402-Area-D-Stormwater-Management--COMBINED.pdf

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Strathcona
REGIONAL DISTRICT

STAFF REPORT

DATE: April 2, 2025 **FILE**:0550-04 EASC

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: Dave Leitch
Chief Administrative Officer

RE: **AREA D STORMWATER MANAGEMENT – UPDATED STUDY RESULTS**

PURPOSE/PROBLEM

To consider the updated results of the high-level cost study for establishing a stormwater utility system for part of Electoral Area D.

EXECUTIVE SUMMARY

The attached report was presented to the Electoral Area Services Committee at its meeting on March 11, 2025, at which time an additional catchment area was requested for inclusion into the study. McElhanney Engineering was subsequently asked to review and incorporate a small catchment area titled Oyster River Rest Stop Catchment Area which was divided into two sub-catchments, titled East and West, respectively.

A desktop study using BC Lidar data identified a low spot/wetland area at the rear of serviceable properties, with difficult-to-confirm drainage paths consisting of culverts, ditches, and ponds. Although an underground system along the properties' frontage may help manage stormwater around existing structures, it will likely have a limited impact on ponding or high-water issues in rear yards. Potential mitigation efforts include flood construction levels, sump pumps, and upgrading MOTT drainage infrastructure.

This catchment area increased the linear meters of pipe by 740m, requiring 7 manholes to service 20 parcels, at a cost of $1,340,000, or an average of $67K per parcel. The combined class D cost estimate for construction, including the catchment area noted above, is $44,736,000.

Adding the Oyster River catchment area to the study increased the cost by $2,798, bringing the total cost of the updated study report to $17,400.82. The Regional District was successful in securing a 2024 Infrastructure Planning Grant, which will contribute $10,000 toward the project.

ALTERNATIVES

To ensure a fiscally responsible approach, direction is needed on whether to continue allocating resources to this initiative and, if so, whether to apply them across the entire study area, limit efforts to specific catchments, or explore other relevant questions.

Option A – THAT the Regional District continue its evaluation of the feasibility of providing stormwater infrastructure that would serve those parts of Electoral Area D identified in the April 2, 2025 report from the Chief Administrative Officer.

Option B – THAT the Committee recommend that further evaluation of the benefits and cost for stormwater management system to serve Electoral Area D not be pursued further at this time.

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RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

Dave Leitch
Chief Administrative Officer

Prepared by: *Sheena Fisher, Engineering Services Coordinator*

Attachment: SRD Area D Updated Drainage Study – Technical Memo – March 26, 2025
IPGP Conditional Approval letter
20250306-Area-D-Stormwater-Mgmt-Report

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BRITISH
COLUMBIA

March 31, 2025 Reference: 72644

His Worship Mark Baker
Strathcona Regional District
301 – 990 Cedar St
Campbell River, BC V9W 7Z8

Dear Mayor Baker and Members of the Board:

On behalf of the Province of British Columbia (province), I am pleased to advise you that your application under the *Local Government Grants Act* for an infrastructure planning grant has been conditionally approved for the following project:

Grant Description	**Amount**
Area D Feasibility Study for Stormwater Utility	$10,000

Details of the terms and conditions attached to this grant will be dealt with in an agreement that will be forwarded to you by Ministry of Housing and Municipal Affairs' staff. This agreement must be signed and returned to the Ministry, indicating your acceptance of the terms and conditions. For questions related to this funding, please contact infra@gov.bc.ca.

The province welcomes the opportunity to support planning in the Strathcona Regional District. We believe that early and ongoing planning is the best way to ensure that the environmental, social, and economic needs of your community will continue to be met in the years ahead.

Through your planning efforts, the province encourages you to find ways to use new technology to promote environmental excellence and sustainable service delivery.

Congratulations on your successful application and my best wishes with your infrastructure study.

Sincerely,

Ravi Kahlon
Minister of Housing and Municipal Affairs

Office of the Minister of Housing and Municipal Affairs

Website:
www.gov.bc.ca/housing

Mailing Address:
PO Box 9074 Stn Prov Govt
Victoria BC V8W 9E9
Phone: 236 478-3970

Location:
Parliament Buildings
Victoria BC V8V 1X4
Email: HMA.Minister@gov.bc.ca

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Our File: 2221-49698-00

TECHNICAL MEMO

To	From
Sheena Fisher, Engineering Services Coordinator Strathcona Regional District	Michael de Hart, P.Eng McElhanney, Campbell River Branch
Re	**Date**
Strathcona Region District SRD Area D Drainage Study – Revision 1	March 26, 2025

1. Introduction

As requested by the Strathcona Regional District (SRD), McElhanney has completed a High-Level Drainage Study for a potential stormwater utility system to service SRD's Electoral Area D (Area D). The stormwater system is intended to consist of underground piped stormwater network within MOTT ROWs, with multiple outfalls to the existing drainage features or the foreshore. The stormwater system is designed to service individual private parcels, while maintaining MOTT roadside ditches and drainage structures for roadway and outside catchment drainages.

The study area consists of high to medium density urban areas within Area D, as those areas would be best serviced by this potential utility. Rural areas and coastal parcels were not included as a part of this study as it is assumed that these areas would not require a storm service by the district.

1.1. BACKGROUND

Area D currently has no formal stormwater management systems. Drainage throughout the region is the responsibility of the Ministry of Transportation and Transit (MOTT) and generally consists of a system of open ditches and culverts. MOTT does not allow formal connections to their drainage systems from private properties as they do not accept additional drainages over their own ROWs.

Without a formal stormwater utility in place from the SRD or MOTT, individual private parcels have limited stormwater options to deal with their onsite issues. This can lead to neighbor conflicts based on drainage issues and nuisance issues for SRD staff. Therefore, the SRD commissioned this drainage study to explore the feasibility to construct a stormwater utility within Area D.

As a part of this drainage study, a review of the Regional District's 2015 Area D Stormwater Management Plan (also authored by McElhanney) was completed. The 2015 SWMP included a desktop review of

existing characteristic information with respect to the individual watersheds in the study area, including: drainage characteristics and patterns with a database of known complaint locations; a review of environmentally sensitive areas; and a review of the surficial geology to determine the infiltration potential of the native soils. Based on this review, several key locations for drainage improvements were recommended. These locations were all related to MOTT owned infrastructure.

2. Drainage Study

To define the size and extents of the proposed utility, this study incorporated the delineation of catchment areas (and sub catchments within them), with runoff calculations (rational method) and the calculations for pipe sizing (Mannings). This methodology behind this review is described in the follow sections.

2.1. CATCHMENT AREAS

The catchment areas were determined by accessing land use through available satellite imagery and were delineated based on overall housing density. The catchment areas do not account for any upstream runoff outside of developed areas and it is assumed that upstream runoff will continue to use existing flow paths through creeks and MOTT ditches and culverts. An outline of the catchment areas can be found in **Figures 1-3**.

A hydraulic assessment of Area D was completed via a rational calculation method. The rational method calculation allows for the conservative sizing of the potential utility and each sub catchment listed in **Figures 1-3**, were broken down to appropriately sized sub catchments to develop the design flow rates for this assessment. The catchment areas consist of high to medium density single family properties. Coastal areas and areas that are more rural in nature are assumed to not require a storm service from the SRD. The catchment areas consist of Shelter Point, Stories Beach, York Road, and Oyster River. These areas were broken into sub catchments and received a high-level layout of an underground piped storm system, using the BC Lidar to ensure alignments of the linear infrastructure would be able to maintain gravity flow.

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Figure 1: Oyster River Catchment A

Figure 2: Shelter Point, Stories Beach & York Road Catchment Areas

Figure 3: Oyster River Rest Stop Catchment Area

2.2. SUBCATCHMENT AREAS

The Catchment Areas of Ocean Grove/Shelter Point, Stories Beach, York Road and Oyster River were broken down into 14 sub catchments, as is shown in **Figures 4-8**. In addition to the high-level utility mapping, each sub catchment received 'nodes' which further breaks up the sub catchment areas for the purpose of pipe sizing via rational method calculations. These 'nodes' can be seen in Figures 3-6 as circular red labels.

2.2.1. Ocen Grove/Shelter Point Area (Sub Catchments A-D)

- **Sub Catchment A** outfalls at the Crawford and Bier Road intersection. The outfall will discharge into the existing ditch/creek which runs south along the east side of the 19.6 ha vacant lot.
- **Sub Catchment B** outfalls in 4 places along the existing ditch/creek to Veden Road (unconstructed). The ditch flows east along Veden Road until in cross the South Island Highway and discharges to the ocean.
- **Sub Catchment C** outfalls directly to the ocean. The underground storm system would flow down Engles Road, cross the South Island Highway, and discharge to the ocean.
- **Sub Catchment D** outfalls into a creek located within an SRD Regional Park at Mitlenatch – Lot 7.

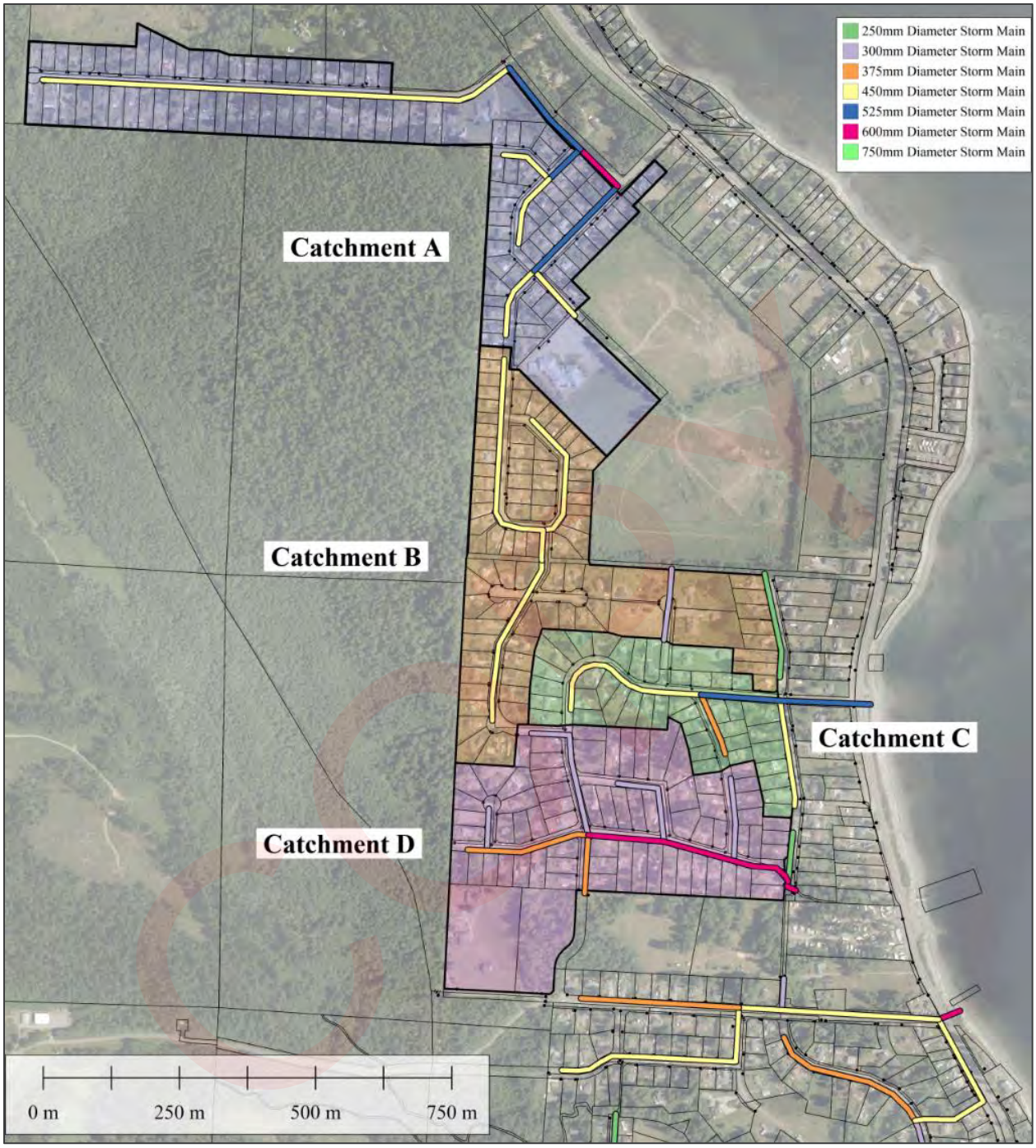

Figure 4: Ocean Grove/Shelter Point Sub Catchments

2.2.2. Shelter Point/Stories Beach Area (Sub Catchments E-I & Woods Creek Catchment)

- **Sub Catchment E** outfalls directly to the ocean. The underground storm system would flow down McGimpsey Road, cross the South Island Highway, and discharge to the ocean. Due to existing topography, it is not feasible to discharge Wavecrest road via gravity flow to McGimpsey Road. Therefore, Wavecrest road will require an additional solution to manage stormwater. For the purpose of maintaining a gravity system and the attached cost estimate, it has been shown to run through private property and then along the South Island Highway where it connects to the McGimpsey Road main.
- **Sub Catchment F** outfalls in 2 places along Woods Creek. Due to existing topography, Searidge Place and North Clinton Road are not feasible to gravity discharge to Sub Catchment G and can simply discharge to Woods Creek.
- **Sub Catchment G** outfalls to Storie Creek at the intersection of Wavecrest, Dillman and Seawave Road.
    - The NE corner of Skipton Cresent is not feasible to discharge via gravity flow to Sub Catchment H within MOTT ROWs. Utilization of the existing drainage easements in the area would be required to drain to Dillman Road.
    - The South end of Clinton Road also cannot be feasibly serviced by a gravity storm main within the MOTT ROW. A new drainage easement would be required to drain South Clinton Road to either Neptune Road or Surfside Drive.
- **Sub Catchment H** outfalls directly to the ocean. The underground storm system would flow down Lynwood Road, cross the South Island Highway, and discharge to the ocean.
    - Maple Park Circle cannot be feasibility serviced by a gravity storm main within the MOTT ROW. New SRWs/Easements would be required through private parcels at Maple Park to drain Maple Park Circle.
- **Sub Catchment I** outfalls directly to the ocean. The underground storm system would flow down Henry Road, cross the South Island Highway, and discharge to the ocean south of 4015 South Island Highway. It is noted that there is a new sanitary main running along Henry road from the new Tlowitsis Nation subdivision development, which discharges treated sanitary flow via the treatment plant. Working around this sanitary main is crucial for installing a new storm main along Henry Road.
- **Woods Creek Catchment** contains properties that border Woods Creek and it is assumed that these parcels can be serviced directly to the Creek and do not require a storm service from the SRD.

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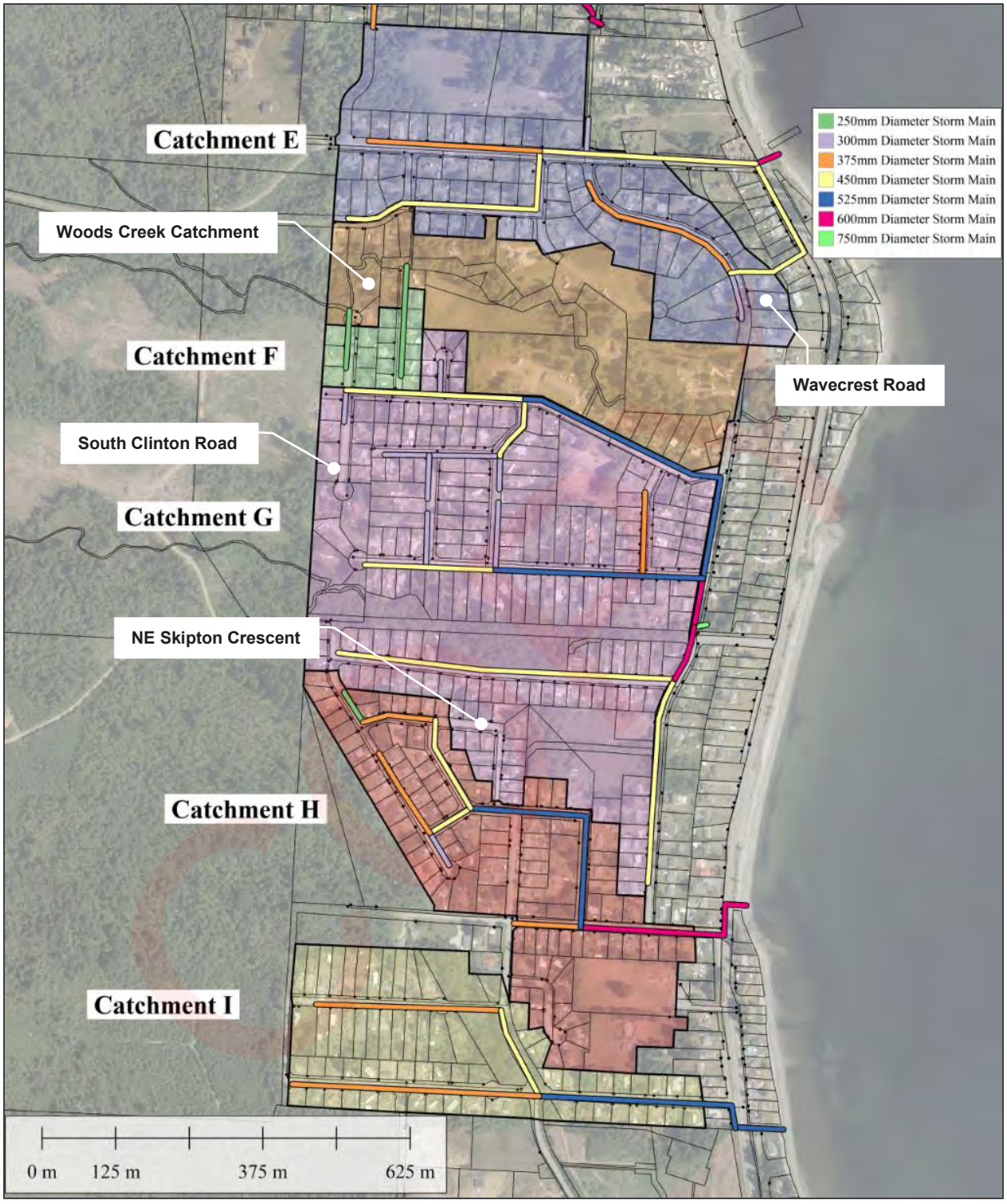

Figure 5: Stories Creek Sub Catchments

2.2.3. York Road (Sub Catchments J & K)

- **Sub Catchment J** outfalls at Hagel Park, where stormwater currently flows through an existing ditch along Jody Lynne Way, and flows through Hagel Creek. The underground storm system would flow down York Road, from Enquist Road.
- **Sub Catchment K** will utilize the same outfall as sub catchment J. The underground storm system catches Severn Road and Baxandall Drive.

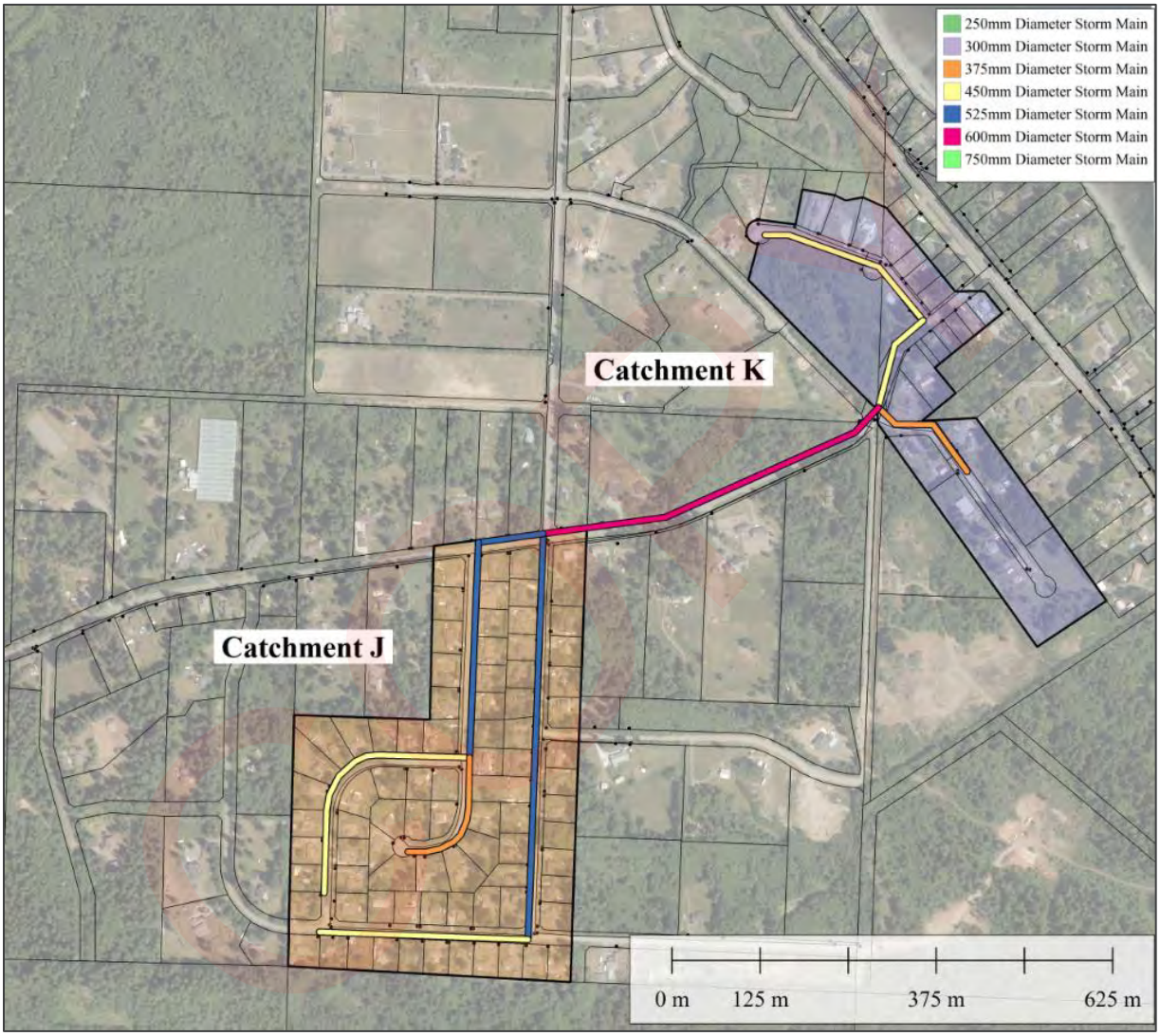

Figure 6: York Road Sub Catchments

2.2.4. Oyster River (Glenmore Road and Oyster River Sub Catchments)

- **Glenmore Sub Catchment** will outfall directly to Oyster River, adjacent to the South Island Highway. The underground storm system would flow down Glenmore Road. Glenmore Road is adjacent to the Oyster River, and there is potential for more frequent outfalls. However, for the purpose of this report and attached cost estimate, a storm main along the entire road is assumed.
- **Oyster River Sub Catchment** will outfall directly to the Oyster River at the Regent Road Bridge. The main flow path will run down Upland Road, crossing the South Island Highway via Croydon Road, and down Regent Road to the outfall at the Oyster River Regent Road Bridge.

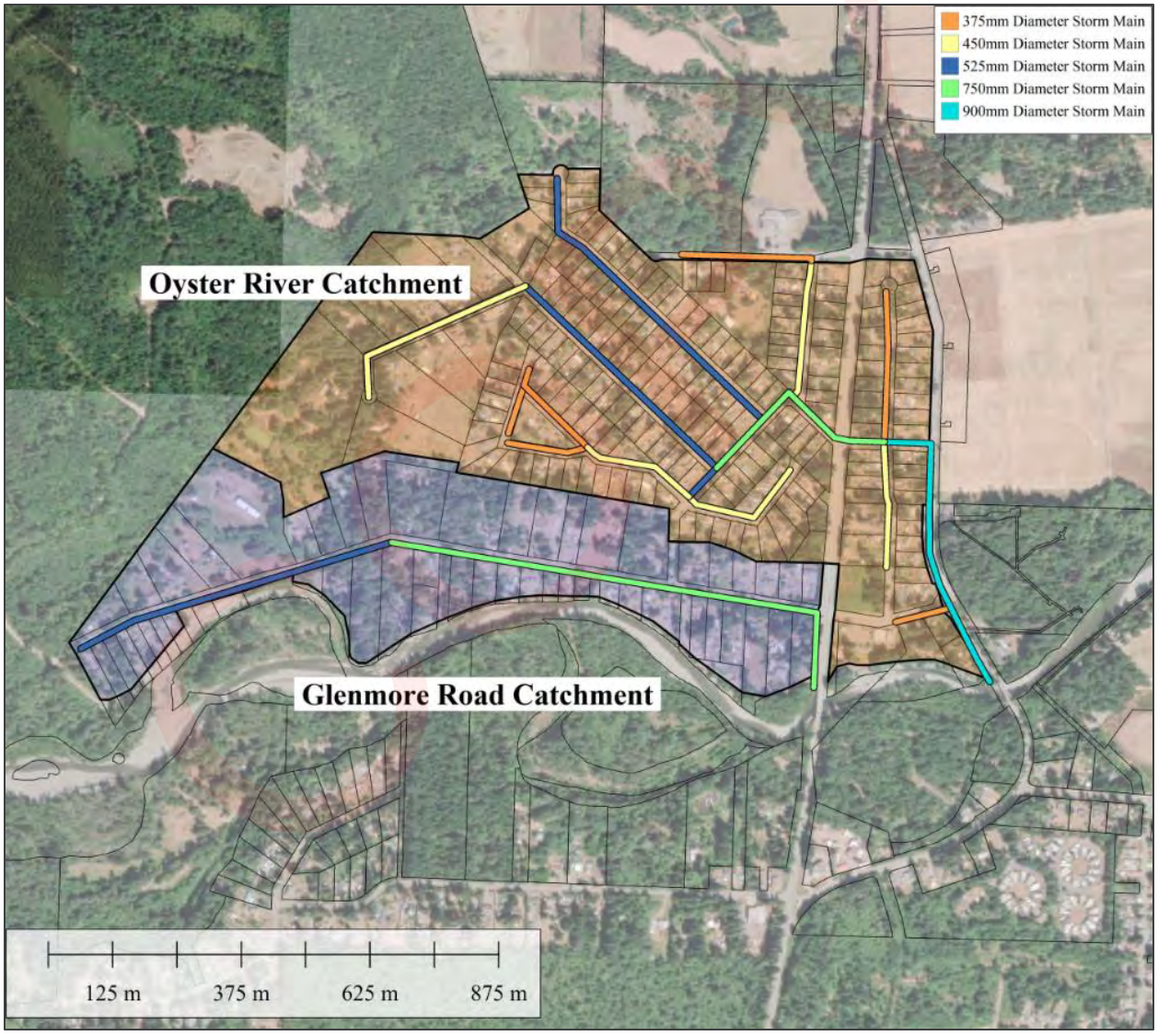

Figure 7: Oyster River Sub Catchments

2.2.5. Oyster River Rest Area Catchment

Oyster River Rest Area Catchment would consist of a storm main along the Island Highway with a single crossing across the Island Highway to outlet to the ocean. There is currently no ditch along the south side of the Island Highway in this area, which could lead to potentially installing a proposed storm main offset from the Island Highway. However, for the purpose of the attached cost estimate, it is assumed that construction of the underground piped system within the asphalt surface would be required to avoid potential conflicts with other utilities. See **Figure 8** for the catchment and underground storm main alignment.

Upon review of available BC Lidar data, it is noted that there is a low spot/wetland area in the rear (south) side of the serviceable properties within the catchment area. There are existing drainages off this low spot/wetland area to the west and the east of the serviceable properties in this catchment area. The existing drainage paths are difficult to confirm via a desktop study, and appear to consist of series of culverts, ditches, and ponds. Additionally, the upstream contributing area is difficult to access as the lidar does not show a defined flow path. **Figure 9** shows the BC Lidar surface and the assumed flow paths and infrastructure of the lower/wetland areas behind the properties in this catchment.

Based on the above, an underground piped system along the frontage of the serviceable properties may reduce onsite stormwater issues around the existing structures, however, it is unlikely to significantly alter any ponding or high-water issues in the rear yard areas of those properties. Possible mitigation efforts for high water levels in the rear of the serviceable properties are, but not limited to, recommending flood construction levels for structures, basement sump pumps (where applicable) to manage groundwater intrusion around structures, and/or the formalization or upgrading of MOTT drainage infrastructure crossing Highway 19A.

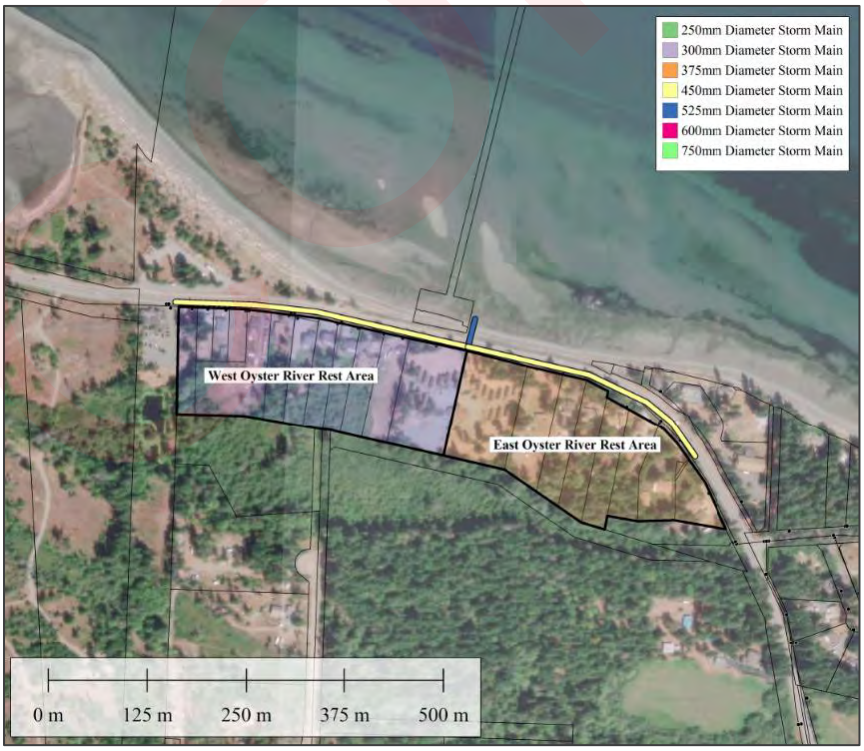

Figure 8: Oyster River Rest Area Sub Catchment

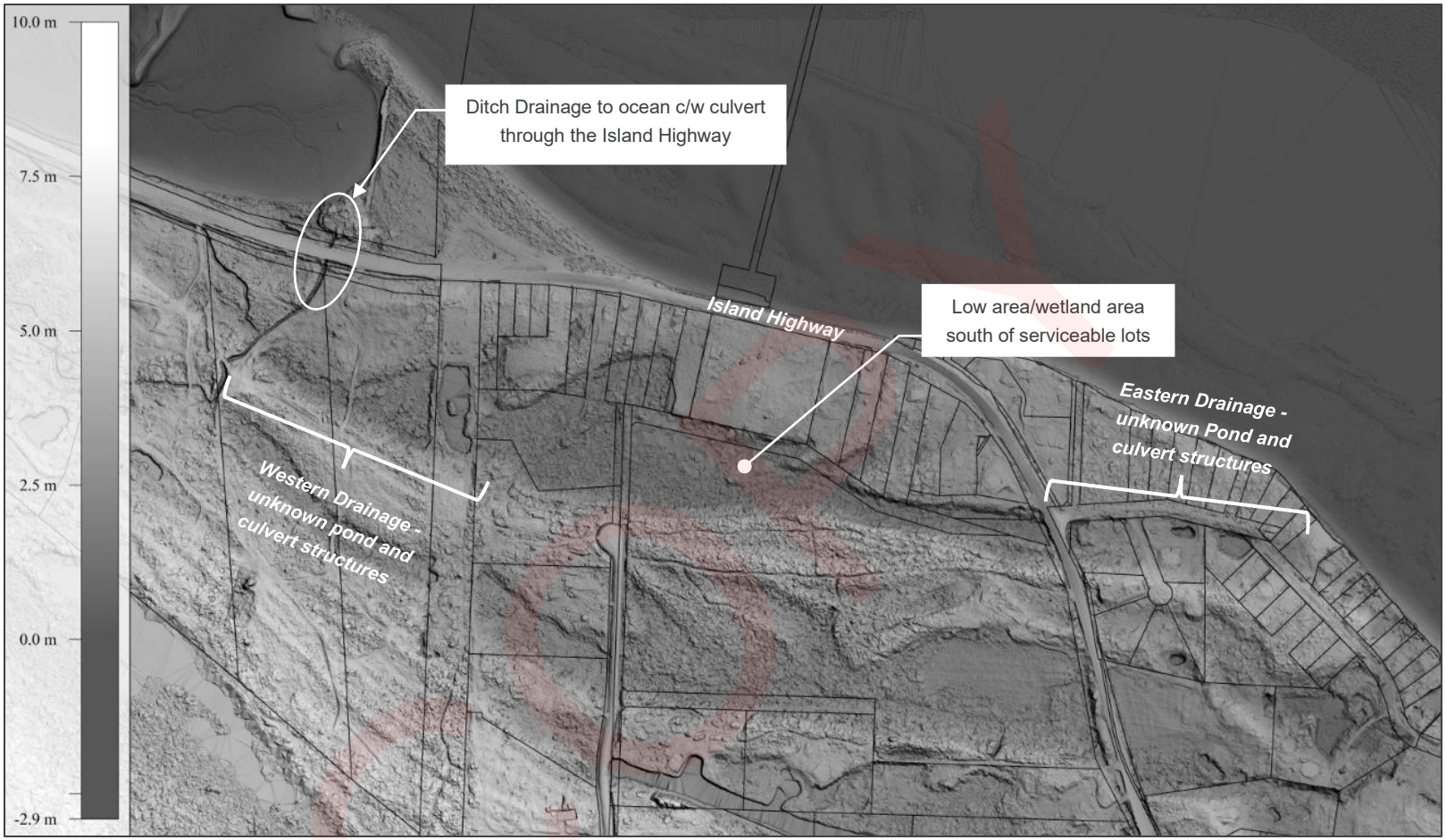

Figure 9: Oyster River Rest Area - BC Lidar Surface

2.3. RUNOFF AND PIPE SIZING CALCULATIONS

The underground piped storm system was sized using the rational calculation method as outlined in the MMCD 2022 Design Standards. The calculations used a 5-year design storm event with an added 15% to account for climate change. The 15% climate change addition is derived from the City of Campbell River Works and Services bylaw, which governs design parameters for the nearby City stormwater utility. Rainfall data is also derived from the City's Works and Services Bylaw, which references the Intensity-Duration-Frequency Curve derived from the Campbell River Airport (gauge ID 1021261). The catchment runoff coefficients ranged from 0.2 – 0.4 for rural areas to single family lots, respectively. The storm mains were assumed to be at a 1.0% slope throughout the entire system and a Mannings value of 0.013 was assumed.

2.4. RESULTS

The cumulative length of mapped storm main as a result of this assessment is 24,210 meters. See below the breakdown of each pipe size per catchment in **Table 1**.

Table 1: Total estimated work and materials

Sub Catchment	Cumulative Length of Pipe (m)[1]	Number of Serviceable Parcels	Number of Manholes
A	1960	101	22
B	1330	85	13
C	940	42	11
D	1500	69	17
E	1880	67	20
F	280	17	3
G	3440	194	35
H	1500	96	16
I	1340	69	11
J	2340	82	21
K	580	18	8
Woods Creek	-	23	-
Oyster River	4760	206	39
Glenmore	1620	52	12
Oyster River Rest Area	740	20	7
Sum:	**24210**	**1141**	**233**

[1]*Cumulative pipe lengths are rounded to the nearest 10 linear meters.*

3. Cost Estimate

The provided Class D cost estimates are related to the required works and services to meet the MOTT design standards. Cost estimates have been provided for the total combined mapped work and for each sub catchment. The cost estimate considers only construction costs and does not include any allowances for additional consulting, permitting or legal fees that may be associated with the work.

Pavement and road restoration is assumed to be two laned, paved with open shoulder (Supplement to TAC Figure 1520.E). Due to the level of detail of this assessment, a 40% contingency has been included with the provided cost estimate. The calculated cost estimates, as defined by the assumptions herein, can be found in **Table 2**. The detailed cost estimates can be found in **Appendix B**.

Table 2: Cost Estimate Summary

Sub Catchment	Estimated Number of Serviceable Parcels	Cost per Serviceable Parcel[1]	Cost per Sub Catchment
A	101	$35,970	$3,633,000
B	85	$28,120	$2,390,000
C	42	$41,000	$1,722,000
D	69	$38,060	$2,626,000
E	67	$46,930	$3,144,000
F	17	$26,120	$444,000
G	194	$32,860	$6,374,000
H	96	$30,440	$2,922,000
I	69	$34,990	$2,414,000
J	82	$52,540	$4,308,000
K	18	$54,110	$974,000
Woods Creek	23	-	-
Oyster River	206	$43,340	$8,929,000
Glenmore	52	$63,460	$3,300,000
Oyster River Rest Area	20	$67,000	$1,340,000
Average cost per serviceable parcel:		**$42,500**	**-**

[1]*Rounded to the nearest $10.*

4. Conclusion

Based on the above stated in this technical memorandum and the assumptions made, the conclusions are as follows:

- The total length of storm main works for the Shelter point, Stories Beach, York Road, and Oyster River areas is 24.2 km.
- The combined class D cost estimate is $44,736,000 for the construction works.
- Multiple areas will require utilization of existing easements, creation of new easements, or another solution to achieve gravity flow. Further analysis of these areas is outside of the scope of this report.
- As this study is limited to the review of the development of a public stormwater utility and no changes to the existing MOTT drainage infrastructure, it is uncertain whether the stormwater utility discussed throughout this report would have any significant impact on the known complaint areas discussed in the 2015 SWMP. The utility would, however, provide private owners with a formal stormwater option for an onsite drainage issues.

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Sincerely,
McElhanney Ltd.

Prepared by:

Dylan Modesto

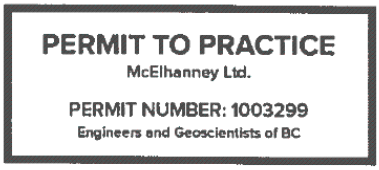
Dylan Modesto, EIT
dmodesto@mcelhanney.com
250-287-7799

Reviewed by:

M de Hart

Michael de Hart, P. Eng
mdehart@mcelhanney.com
250-287-7799

2025-03-26



APPENDIX A

Statement of Limitations

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Statement of Limitations

Use of this Report. This report was prepared by McElhanney Ltd. ("McElhanney") for the particular site, design objective, development and purpose (the “Project”) described in this report and for the exclusive use of the client identified in this report (the “Client”). The data, interpretations and recommendations pertain to the Project and are not applicable to any other project or site location and this report may not be reproduced, used or relied upon, in whole or in part, by a party other than the Client, without the prior written consent of McElhanney. The Client may provide copies of this report to its affiliates, contractors, subcontractors and regulatory authorities for use in relation to and in connection with the Project provided that any reliance, unauthorized use, and/or decisions made based on the information contained within this report are at the sole risk of such parties. McElhanney will not be responsible for the use of this report on projects other than the Project, where this report or the contents hereof have been modified without McElhanney’s consent, to the extent that the content is in the nature of an opinion, and if the report is preliminary or draft. This is a technical report and is not a legal representation or interpretation of laws, rules, regulations, or policies of governmental agencies.

Standard of Care and Disclaimer of Warranties. This report was prepared with the degree of care, skill, and diligence as would reasonably be expected from a qualified member of the same profession, providing a similar report for similar projects, and under similar circumstances, and in accordance with generally accepted engineering and scientific judgments, principles and practices. McElhanney expressly disclaims any and all warranties in connection with this report.

Information from Client and Third Parties. McElhanney has relied in good faith on information provided by the Client and third parties noted in this report and has assumed such information to be accurate, complete, reliable, non-fringing, and fit for the intended purpose without independent verification. McElhanney accepts no responsibility for any deficiency, misstatements or inaccuracy contained in this report as a result of omissions or errors in information provided by third parties or for omissions, misstatements or fraudulent acts of persons interviewed.

Effect of Changes. All evaluations and conclusions stated in this report are based on facts, observations, site-specific details, legislation and regulations as they existed at the time of the report preparation. Some conditions are subject to change over time and the Client recognizes that the passage of time, natural occurrences, and direct or indirect human intervention at or near the site may substantially alter such evaluations and conclusions. Construction activities can significantly alter soil, rock and other geologic conditions on the site. McElhanney should be requested to re-evaluate the conclusions of this report and to provide amendments as required prior to any reliance upon the information presented herein upon any of the following events: a) any changes (or possible changes) as to the site, purpose, or development plans upon which this report was based, b) any changes to applicable laws subsequent to the issuance of the report, c) new information is discovered in the future during site excavations, construction, building demolition or other activities, or d) additional subsurface assessments or testing conducted by others.

Independent Judgments. McElhanney will not be responsible for the independent conclusions, interpretations, interpolations and/or decisions of the Client, or others, who may come into possession of this report, or any part thereof. This restriction of liability includes decisions made to purchase, finance or sell land or with respect to public offerings for the sale of securities.

Construction Cost Estimates. This construction cost estimate has been prepared using the design and technical information currently available, and without the benefit of Survey, Geotechnical, Environmental, or other information. Furthermore, McElhanney cannot predict the competitive environment, weather or other unforeseen conditions that will prevail at the time that contractors will prepare their bids. The cost estimate is therefore subject to factors over which McElhanney has no control, and McElhanney does not guarantee or warranty the accuracy of such estimate.

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APPENDIX B

Class D Cost Estimates

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Study Area

Preliminary Construction Cost Estimate - Revision 1
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 310,233	$ 310,233
			Subtotal	$ 310,233
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 620,465	$ 620,465
			Subtotal	$ 620,465
Stormwater				
250mm PVC Storm Main	630	LM	$ 400	$ 252,000
300mm PVC Storm Main	1640	LM	$ 500	$ 820,000
375mm PVC Storm Main	3800	LM	$ 550	$ 2,090,000
450mm PVC Storm Main	9135	LM	$ 600	$ 5,481,000
525mm PVC Storm Main	5415	LM	$ 750	$ 4,061,250
600mm PVC Storm Main	1580	LM	$ 800	$ 1,264,000
750mm PVC Storm Main	1430	LM	$ 900	$ 1,287,000
900mm PVC Storm Main	580	LM	$ 1,000	$ 580,000
150mm dia PVC Storm Services c/w IC	1141	EA	$ 3,500	$ 3,993,500
1050mm Manhole	152	EA	$ 7,000	$ 1,064,000
1200mm Manhole	65	EA	$ 9,000	$ 585,000
1350mm Manhole	11	EA	$ 11,000	$ 121,000
1500mm Manhole	5	EA	$ 13,000	$ 65,000
250mm Headwall	3	EA	$ 5,000	$ 15,000
300mm Headwall	1	EA	$ 5,000	$ 5,000
450mm Headwall	1	EA	$ 7,500	$ 7,500
525mm Headwall	4	EA	$ 7,500	$ 30,000
600mm Headwall	4	EA	$ 7,500	$ 30,000
750mm Headwall	2	EA	$ 15,000	$ 30,000
900mm Headwall	1	EA	$ 15,000	$ 15,000
			Subtotal	$ 21,799,251
Road Works				
Granular Base (225mm)	61000	SM	$ 40	$ 2,440,000
Granular Subbase (300mm)	61000	SM	$ 50	$ 3,050,000
Asphalt (50mm)	59150	SM	$ 60	$ 3,549,000
Asphalt (100mm)	1850	SM	$ 100	$ 185,000
			Subtotal	$ 9,224,000
	Subtotal (rounded to nearest $1000)			**$ 31,954,000**
			Contingency (40%)	12,782,000
			Subtotal Site Servicing	**$ 44,736,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment A

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 25,190	$ 25,190
			Subtotal	$ 25,190
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 50,380	$ 50,380
			Subtotal	$ 50,380
Stormwater				
450mm PVC Storm Main	1360	LM	$ 600.00	$ 816,000
525mm PVC Storm Main	500	LM	$ 750.00	$ 375,000
600mm PVC Storm Main	100	LM	$ 800.00	$ 80,000
150mm dia PVC Storm Services c/w IC	101	EA	$ 3,500.00	$ 353,500
1050mm Manhole	14	EA	$ 7,000.00	$ 98,000
1200mm Manhole	6	EA	$ 9,000.00	$ 54,000
600mm Headwall	1	EA	$ 7,500.00	$ 7,500
			Subtotal	$ 1,784,000
Road Works				
Granular Base (225mm)	4900	SM	$ 40	$ 196,000
Granular Subbase (300mm)	4900	SM	$ 50	$ 245,000
Asphalt (50mm)	4900	SM	$ 60	$ 294,000
			Subtotal	$ 735,000
	Subtotal (rounded to nearest $1000)			**$ 2,595,000**
			Contingency (40%)	1,038,000
			Subtotal Site Servicing	**$ 3,633,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment B

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 16,573	$ 16,573
			Subtotal	$ 16,573
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 33,145	$ 33,145
			Subtotal	$ 33,145
Stormwater				
250mm PVC Storm Main	200	LM	$ 400	$ 80,000
300mm PVC Storm Main	130	LM	$ 500	$ 65,000
450mm PVC Storm Main	1000	LM	$ 600	$ 600,000
150mm dia PVC Storm Services c/w IC	85	EA	$ 3,500	$ 297,500
1050mm Manhole	13	EA	$ 7,000	$ 91,000
250mm Headwall	1	EA	$ 5,000	$ 5,000
300mm Headwall	1	EA	$ 5,000	$ 5,000
450mm Headwall	2	EA	$ 7,500	$ 15,000
			Subtotal	$ 1,158,500
Road Works				
Granular Base (225mm)	3325	SM	$ 40	$ 133,000
Granular Subbase (300mm)	3325	SM	$ 50	$ 166,250
Asphalt (50mm)	3325	SM	$ 60	$ 199,500
			Subtotal	$ 498,750
	Subtotal (rounded to nearest $1000)			**$ 1,707,000**
			Contingency (40%)	683,000
			Subtotal Site Servicing	**$ 2,390,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment C

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 11,945	$ 11,945
			Subtotal	$ 11,945
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 23,890	$ 23,890
			Subtotal	$ 23,890
Stormwater				
375mm PVC Storm Main	120	LM	$ 550	$ 66,000
450mm PVC Storm Main	510	LM	$ 600	$ 306,000
525mm PVC Storm Main	310	LM	$ 750	$ 232,500
150mm dia PVC Storm Services c/w IC	42	EA	$ 3,500	$ 147,000
1050mm Manhole	8	EA	$ 7,000	$ 56,000
1200mm Manhole	3	EA	$ 9,000	$ 27,000
525mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 842,000
Road Works				
Granular Base (225mm)	2350	SM	$ 40	$ 94,000
Granular Subbase (300mm)	2350	SM	$ 50	$ 117,500
Asphalt (50mm)	2350	SM	$ 60	$ 141,000
			Subtotal	$ 352,500
	Subtotal (rounded to nearest $1000)			**$ 1,230,000**
			Contingency (40%)	492,000
			Subtotal Site Servicing	**$ 1,722,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment D

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 18,215	$ 18,215
			Subtotal	$ 18,215
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 36,430	$ 36,430
			Subtotal	$ 36,430
Stormwater				
250mm PVC Storm Main	90	LM	$ 400	$ 36,000
300mm PVC Storm Main	660	LM	$ 500	$ 330,000
375mm PVC Storm Main	340	LM	$ 550	$ 187,000
600mm PVC Storm Main	410	LM	$ 800	$ 328,000
150mm dia PVC Storm Services c/w IC	69	EA	$ 3,500	$ 241,500
1050mm Manhole	12	EA	$ 7,000	$ 84,000
1200mm Manhole	5	EA	$ 9,000	$ 45,000
600mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 1,259,000
Road Works				
Granular Base (225mm)	3750	SM	$ 40	$ 150,000
Granular Subbase (300mm)	3750	SM	$ 50	$ 187,500
Asphalt (50mm)	3750	SM	$ 60	$ 225,000
			Subtotal	$ 562,500
	Subtotal (rounded to nearest $1000)			**$ 1,876,000**
			Contingency (40%)	750,000
			Subtotal Site Servicing	**$ 2,626,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment E

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 21,810	$ 21,810
			Subtotal	$ 21,810
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 43,620	$ 43,620
			Subtotal	$ 43,620
Stormwater				
300mm PVC Storm Main	140	LM	$ 500	$ 70,000
375mm PVC Storm Main	600	LM	$ 550	$ 330,000
450mm PVC Storm Main	1100	LM	$ 600	$ 660,000
600mm PVC Storm Main	40	LM	$ 800	$ 32,000
150mm dia PVC Storm Services c/w IC	67	EA	$ 3,500	$ 234,500
1050mm Manhole	19	EA	$ 7,000	$ 133,000
1200mm Manhole	1	EA	$ 9,000	$ 9,000
600mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 1,476,000
Road Works				
Granular Base (225mm)	4700	SM	$ 40	$ 188,000
Granular Subbase (300mm)	4700	SM	$ 50	$ 235,000
Asphalt (50mm)	4700	SM	$ 60	$ 282,000
			Subtotal	$ 705,000
	Subtotal (rounded to nearest $1000)			**$ 2,246,000**
			Contingency (40%)	898,000
			Subtotal Site Servicing	**$ 3,144,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment F

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 3,075	$ 3,075
			Subtotal	$ 3,075
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 6,150	$ 6,150
			Subtotal	$ 6,150
Stormwater				
250mm PVC Storm Main	280	LM	$ 400	$ 112,000
150mm dia PVC Storm Services c/w IC	17	EA	$ 3,500	$ 59,500
1050mm Manhole	3	EA	$ 7,000	$ 21,000
250mm Headwall	2	EA	$ 5,000	$ 10,000
			Subtotal	$ 202,500
Road Works				
Granular Base (225mm)	700	SM	$ 40	$ 28,000
Granular Subbase (300mm)	700	SM	$ 50	$ 35,000
Asphalt (50mm)	700	SM	$ 60	$ 42,000
			Subtotal	$ 105,000
	Subtotal (rounded to nearest $1000)			**$ 317,000**
			Contingency (40%)	127,000
			Subtotal Site Servicing	**$ 444,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment G

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 44,205	$ 44,205
			Subtotal	$ 44,205
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 88,410	$ 88,410
			Subtotal	$ 88,410
Stormwater				
300mm PVC Storm Main	650	LM	$ 500	$ 325,000
375mm PVC Storm Main	140	LM	$ 550	$ 77,000
450mm PVC Storm Main	1560	LM	$ 600	$ 936,000
525mm PVC Storm Main	890	LM	$ 750	$ 667,500
600mm PVC Storm Main	180	LM	$ 800	$ 144,000
750mm PVC Storm Main	20	LM	$ 900	$ 18,000
150mm dia PVC Storm Services c/w IC	194	EA	$ 3,500	$ 679,000
1050mm Manhole	23	EA	$ 7,000	$ 161,000
1200mm Manhole	12	EA	$ 9,000	$ 108,000
750mm Headwall	1	EA	$ 15,000	$ 15,000
			Subtotal	$ 3,130,500
Road Works				
Granular Base (225mm)	8600	SM	$ 40	$ 344,000
Granular Subbase (300mm)	8600	SM	$ 50	$ 430,000
Asphalt (50mm)	8600	SM	$ 60	$ 516,000
			Subtotal	$ 1,290,000
	Subtotal (rounded to nearest $1000)			**$ 4,553,000**
			Contingency (40%)	1,821,000
			Subtotal Site Servicing	**$ 6,374,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment H

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 20,260	$ 20,260
			Subtotal	$ 20,260
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 40,520	$ 40,520
			Subtotal	$ 40,520
Stormwater				
250mm PVC Storm Main	60	LM	$ 400	$ 24,000
300mm PVC Storm Main	60	LM	$ 500	$ 30,000
375mm PVC Storm Main	400	LM	$ 550	$ 220,000
450mm PVC Storm Main	250	LM	$ 600	$ 150,000
525mm PVC Storm Main	400	LM	$ 750	$ 300,000
600mm PVC Storm Main	330	LM	$ 800	$ 264,000
150mm dia PVC Storm Services c/w IC	96	EA	$ 3,500	$ 336,000
1050mm Manhole	6	EA	$ 7,000	$ 42,000
1200mm Manhole	10	EA	$ 9,000	$ 90,000
600mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 1,463,500
Road Works				
Granular Base (225mm)	3750	SM	$ 40	$ 150,000
Granular Subbase (300mm)	3750	SM	$ 50	$ 187,500
Asphalt (50mm)	3750	SM	$ 60	$ 225,000
			Subtotal	$ 562,500
	Subtotal (rounded to nearest $1000)			**$ 2,087,000**
			Contingency (40%)	835,000
			Subtotal Site Servicing	**$ 2,922,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment I

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 16,735	$ 16,735
			Subtotal	$ 16,735
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 33,470	$ 33,470
			Subtotal	$ 33,470
Stormwater				
375mm PVC Storm Main	730	LM	$ 550	$ 401,500
450mm PVC Storm Main	160	LM	$ 600	$ 96,000
525mm PVC Storm Main	450	LM	$ 750	$ 337,500
150mm dia PVC Storm Services c/w IC	69	EA	$ 3,500	$ 241,500
1050mm Manhole	6	EA	$ 7,000	$ 42,000
1200mm Manhole	5	EA	$ 9,000	$ 45,000
525mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 1,171,000
Road Works				
Granular Base (225mm)	3350	SM	$ 40	$ 134,000
Granular Subbase (300mm)	3350	SM	$ 50	$ 167,500
Asphalt (50mm)	3350	SM	$ 60	$ 201,000
			Subtotal	$ 502,500
	Subtotal (rounded to nearest $1000)			**$ 1,724,000**
			Contingency (40%)	690,000
			Subtotal Site Servicing	**$ 2,414,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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McElhanney

March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment J

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 29,870	$ 29,870
			Subtotal	$ 29,870
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 59,740	$ 59,740
			Subtotal	$ 59,740
Stormwater				
375mm PVC Storm Main	190	LM	$ 550	$ 104,500
450mm PVC Storm Main	660	LM	$ 600	$ 396,000
525mm PVC Storm Main	970	LM	$ 750	$ 727,500
600mm PVC Storm Main	520	LM	$ 800	$ 416,000
150mm dia PVC Storm Services c/w IC	82	EA	$ 3,500	$ 287,000
1050mm Manhole	9	EA	$ 7,000	$ 63,000
1200mm Manhole	12	EA	$ 9,000	$ 108,000
525mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 2,109,500
Road Works				
Granular Base (225mm)	5850	SM	$ 40	$ 234,000
Granular Subbase (300mm)	5850	SM	$ 50	$ 292,500
Asphalt (50mm)	5850	SM	$ 60	$ 351,000
			Subtotal	$ 877,500
	Subtotal (rounded to nearest $1000)			**$ 3,077,000**
			Contingency (40%)	1,231,000
			Subtotal Site Servicing	**$ 4,308,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment K

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 6,760	$ 6,760
			Subtotal	$ 6,760
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 13,520	$ 13,520
			Subtotal	$ 13,520
Stormwater				
375mm PVC Storm Main	170	LM	$ 550	$ 93,500
450mm PVC Storm Main	410	LM	$ 600	$ 246,000
150mm dia PVC Storm Services c/w IC	18	EA	$ 3,500	$ 63,000
1050mm Manhole	8	EA	$ 7,000	$ 56,000
			Subtotal	$ 458,500
Road Works				
Granular Base (225mm)	1450	SM	$ 40	$ 58,000
Granular Subbase (300mm)	1450	SM	$ 50	$ 72,500
Asphalt (50mm)	1450	SM	$ 60	$ 87,000
			Subtotal	$ 217,500
	Subtotal (rounded to nearest $1000)			**$ 696,000**
			Contingency (40%)	278,000
			Subtotal Site Servicing	**$ 974,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Glenmore Catchment

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 22,885	$ 22,885
			Subtotal	$ 22,885
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 45,770	$ 45,770
			Subtotal	$ 45,770
Stormwater				
525mm PVC Storm Main	640	LM	$ 750	$ 480,000
750mm PVC Storm Main	980	LM	$ 900	$ 882,000
150mm dia PVC Storm Services c/w IC	52	EA	$ 3,500	$ 182,000
1200mm Manhole	5	EA	$ 9,000	$ 45,000
1350mm Manhole	7	EA	$ 11,000	$ 77,000
750mm Headwall	1	LM	$ 15,000	$ 15,000
			Subtotal	$ 1,681,000
Road Works				
Granular Base (225mm)	4050	SM	$ 40	$ 162,000
Granular Subbase (300mm)	4050	SM	$ 50	$ 202,500
Asphalt (50mm)	4050	SM	$ 60	$ 243,000
			Subtotal	$ 607,500
	Subtotal (rounded to nearest $1000)			**$ 2,357,000**
			Contingency (40%)	943,000
			Subtotal Site Servicing	**$ 3,300,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Oyster River Catchment

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 61,925	$ 61,925
			Subtotal	$ 61,925
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 123,850	$ 123,850
			Subtotal	$ 123,850
Stormwater				
375mm PVC Storm Main	1120	LM	$ 550	$ 616,000
450mm PVC Storm Main	1410	LM	$ 600	$ 846,000
525mm PVC Storm Main	1230	LM	$ 750	$ 922,500
750mm PVC Storm Main	420	LM	$ 900	$ 378,000
900mm PVC Storm Main	580	LM	$ 1,000	$ 580,000
150mm dia PVC Storm Services c/w IC	206	EA	$ 3,500	$ 721,000
1050mm Manhole	25	EA	$ 7,000	$ 175,000
1200mm Manhole	5	EA	$ 9,000	$ 45,000
1350mm Manhole	4	EA	$ 11,000	$ 44,000
1500mm Manhole	5	EA	$ 13,000	$ 65,000
900mm Headwall	1	EA	$ 15,000	$ 15,000
			Subtotal	$ 4,407,500
Road Works				
Granular Base (225mm)	11900	SM	$ 40	$ 476,000
Granular Subbase (300mm)	11900	SM	$ 50	$ 595,000
Asphalt (50mm)	11900	SM	$ 60	$ 714,000
			Subtotal	$ 1,785,000
	Subtotal (rounded to nearest $1000)			**$ 6,378,000**
			Contingency (40%)	2,551,000
			Subtotal Site Servicing	**$ 8,929,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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McElhanney

March 25, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Oyster River Rest Area Catchment

Preliminary Construciton Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 9,293	$ 9,293
			Subtotal	$ 9,293
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 18,585	$ 18,585
			Subtotal	$ 18,585
Stormwater				
450mm PVC Storm Main	705	LM	$ 600	$ 423,000
525mm PVC Storm Main	35	LM	$ 750	$ 26,250
150mm dia PVC Storm Services c/w IC	20	EA	$ 3,500	$ 70,000
1050mm Manhole	6	EA	$ 7,000	$ 42,000
1200mm Manhole	1	EA	$ 9,000	$ 9,000
525mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 577,750
Road Works				
Granular Base (225mm)	1850	SM	$ 40	$ 74,000
Granular Subbase (300mm)	1850	SM	$ 50	$ 92,500
Asphalt (100mm)	1850	SM	$ 100	$ 185,000
			Subtotal	$ 351,500
	Subtotal (rounded to nearest $1000)			**$ 957,000**
			Contingency (40%)	383,000
			Subtotal Site Servicing	**$ 1,340,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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STAFF REPORT

DATE: March 6, 2025 **FILE**:0550-04 EASC

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: Dave Leitch
Chief Administrative Officer

RE: AREA D STORMWATER MANAGEMENT – STUDY RESULTS

PURPOSE/PROBLEM

To consider the results of the high-level cost study of establishing a stormwater utility system for part of Electoral Area D.

EXECUTIVE SUMMARY

At its meeting on September 25, 2024 the Board considered the attached report and passed the following resolution:

> Rice/Lott: SRD 760/24
>
> THAT the feasibility study to investigate the potential of establishing a stormwater management service for Electoral Area D be awarded to McElhanney Engineering and that it be funded through the Electoral Area D Feasibility Study budget.

Electoral Area D currently lacks a formal stormwater management system, leading to localized flooding, drainage conflicts between private property owners, and challenges for SRD staff. The Strathcona Regional District (SRD) commissioned a high-level drainage study to assess the feasibility of a stormwater utility system for Electoral Area D from a cost perspective. The study examined areas that would benefit from an underground piped stormwater network while maintaining the existing Ministry of Transportation and Transit (MOTT) drainage infrastructure. A new stormwater utility would provide a structured approach to managing runoff while offering property owners a reliable drainage solution.

The study estimates that implementing the system across four primary catchment areas—Shelter Point, Stories Beach, York Road, and Oyster River—would require approximately 23.5 km of underground storm mains and 226 manholes to service 1,121 parcels. The Class D cost estimate for construction is $43.36 million, which includes a 40% contingency. This estimate does not include additional costs related to permitting, consulting, or legal fees. The study also identified areas requiring additional easements or alternative solutions to maintain gravity flow. While the proposed utility would not modify existing MOTT infrastructure, it would provide property owners with a formalized drainage option, potentially reducing drainage-related disputes.

ALTERNATIVES

To ensure a fiscally responsible approach, direction is needed on whether to continue allocating resources to this initiative, and if so, whether to apply them across the entire study area, limit efforts to specific catchments, or explore other relevant questions.

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Option A – THAT the Regional District continue its evaluation of the feasibility of providing stormwater infrastructure that would serve those parts of Electoral Area D identified in the March 6, 2025 report from the Chief Administrative Officer.
Option B – THAT the Committee recommend that further evaluation of the benefits and cost for stormwater management system to serve Electoral Area D not be pursued further at this time.

RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

Dave Leitch
Chief Administrative Officer

BACKGROUND/HISTORY

Electoral Area D currently lacks a formal stormwater management system. Drainage in the area is handled informally through roadside ditches and culverts managed by the Ministry of Transportation and Transit (MOTT). However, MOTT does not permit direct private property connections to its infrastructure, leaving property owners with limited drainage solutions. Without a designated stormwater utility, many properties experience localized flooding, ponding, and runoff issues, which can lead to conflicts between neighbors when drainage solutions impact adjacent properties. The absence of a regulated system also places a burden on SRD staff, as complaints related to water pooling, flooding, and improper drainage frequently arise.

To address these challenges, the SRD commissioned a high-level drainage study to determine the feasibility of implementing a stormwater utility that would provide a structured and sustainable solution for stormwater management. The study focused on high- and medium-density residential areas within Electoral Area D, where a stormwater utility would provide the most benefit. Rural and coastal areas were excluded, as they are assumed to have sufficient natural drainage. The study examined four key drainage areas known as Shelter Point, Stories Beach, York Road and Oyster River.

Within these areas, 13 sub-catchments were identified based on topography, housing density, and existing drainage patterns. The system design incorporated rational method calculations to estimate stormwater flow and ensure proper gravity-based drainage throughout the network. The proposed stormwater utility would include:

- 23,470 meters of underground storm mains
- 1,121 serviceable parcels
- 226 manholes
- multiple outfalls discharging to creeks or the foreshore

The system is intended to integrate with existing MOTT infrastructure while preventing additional runoff from burdening the ministry's drainage network. Additionally, the study identified areas where easements or alternative drainage solutions would be required to maintain gravity flow.

The implementation of a formal stormwater utility would provide property owners with a reliable, regulated drainage solution, reduce disputes over stormwater runoff, and improve long-term stormwater management for Electoral Area D.

FINANCIAL IMPLICATIONS

The Class D cost estimate for the proposed stormwater system is $43.36 million, which includes $30.97 million in direct construction costs and a $12.39 million (40%) contingency. This estimate does not include additional costs for:

- engineering, legal and consulting fees
- environmental and regulatory permitting
- land acquisition for required easements
- long-term operation and maintenance

Potential funding sources may include provincial and federal infrastructure grants, local service area taxation, and development cost charges. Further financial modeling will be required to assess affordability and funding options before advancing the project.

The cost of this study was $14,602.82, which has been funded through the Area D Feasibility Service. No announcement has yet been made regarding the $10,000 Infrastructure Planning Grant which was submitted in September 2024 to assist with the cost of this study.

LEGAL IMPLICATIONS

If the Regional District decides to move forward with development of stormwater management infrastructure it will first need to adopt a bylaw to establish the service and to authorize recovery of costs for providing the service.

INTERGOVERNMENTAL/REGIONAL IMPLICATIONS

The Ministry of Transportation and Transit (MOTT) currently holds jurisdiction over drainage infrastructure for public roads within Electoral Area D. Under current MOTT regulations, private property owners cannot directly connect to ministry-managed ditches and culverts.

For the stormwater utility to be implemented, coordination with MOTT will be essential to:

- obtain necessary approvals for installing stormwater mains within road rights-of-way.
- ensure MOTT drainage structures are not adversely impacted by the new system.
- determine long-term operational responsibilities between MOTT and SRD, particularly regarding maintenance and overflow management.

MOTT's approval process and regulatory requirements will play a critical role in determining the feasibility and timeline for implementing a stormwater management system.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS

While SRD staff receive a low volume of complaints, it is known that some property owners experience ongoing drainage problems. A formal utility may provide relief, but it is important to note that any onsite costs to collect and convey stormwater from private property to the new system would be the responsibility of the property owner. This is over and above the capital cost for construction. Additionally, property owners within the service area would be subject to ongoing operational and maintenance costs, including contributions to a capital reserve for long-term system sustainability.

Prepared by: *Sheena Fisher, Engineering Services Coordinator*

Attachment: SRD Area D Drainage Study – January 21, 2025
20240917-Area-D-Stormwater-FS – Staff Report

COPY

Our File: 2221-49698-00

TECHNICAL MEMORANDUM

To	From
Sheena Fisher, Engineering Services Coordinator Strathcona Regional District	Michael de Hart, P.Eng McElhanney, Campbell River Branch
Re	**Date**
Strathcona Regional District SRD Area D Drainage Study	January 21, 2025

1. Introduction

As requested by the Strathcona Regional District (SRD), McElhanney has completed a High-Level Drainage Study for a potential stormwater utility system to service SRD's Electoral Area D (Area D). The stormwater system is intended to consist of underground piped stormwater network within MOTI ROWs, with multiple outfalls to the existing drainage features or the foreshore. The stormwater system is designed to service individual private parcels, while maintaining MOTI roadside ditches and drainage structures for roadway and outside catchment drainages.

The study area consists of high to medium density urban areas within Area D, as those areas would be best serviced by this potential utility. Rural areas and coastal parcels were not included as a part of this study as it is assumed that these areas would not require a storm service by the district.

1.1. BACKGROUND

Area D currently has no formal stormwater management systems. Drainage throughout the region is the responsibility of the Ministry of Transportation and Infrastructure (MOTI) and generally consists of a system of open ditches and culverts. MOTI does not allow formal connections to their drainage systems from private properties as they do not accept additional drainages over their own ROWs.

Without a formal stormwater utility in place from the SRD or MOTI, individual private parcels have limited stormwater options to deal with their onsite issues. This can lead to neighbor conflicts based on drainage issues and nuisance issues for SRD staff. Therefore, the SRD commissioned this drainage study to explore the feasibility to construct a stormwater utility within Area D.

As a part of this drainage study, a review of the Regional District's 2015 Area D Stormwater Management Plan (also authored by McElhanney) was completed. The 2015 SWMP included a desktop review of existing characteristic information with respect to the individual watersheds in the study area, including: drainage characteristics and patterns with a database of known complaint locations; a review of environmentally sensitive areas; and a review of the surficial geology to determine the infiltration potential of the native soils. Based on this review, several key locations for drainage improvements were recommended. These locations were all related to MOTI owned infrastructure.

2. Drainage Study

To define the size and extents of the proposed utility, this study incorporated the delineation of catchment areas (and sub catchments within them), with runoff calculations (rational method) and the calculations for pipe sizing (Mannings). This methodology behind this review is described in the follow sections.

2.1. CATCHMENT AREAS

The catchment areas were determined by accessing land use through available satellite imagery and were delineated based on overall housing density. The catchment areas do not account for any upstream runoff outside of developed areas and it is assumed that upstream runoff will continue to use existing flow paths through creeks and MOTI ditches and culverts. An outline of the catchment areas can be found in **Figure 1 and 2**.

A hydraulic assessment of Area D was completed via a rational calculation method. The rational method calculation allows for the conservative sizing of the potential utility and each sub catchment listed in Figures 1 and 2, were broken down to appropriately sized sub catchments to develop the design flow rates for this assessment. The catchment areas consist of high to medium density single family properties. Coastal areas and areas that are more rural in nature are assumed to not require a storm service from the SRD.

The catchment areas consist of Shelter Point, Stories Beach, York Road, and Oyster River. These areas were broken into sub catchments and received a high-level layout of an underground piped storm system, using the BC Lidar to ensure alignments of the linear infrastructure would be able to maintain gravity flow.

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Figure 1: Oyster River Catchment Area

Figure 2: Shelter Point, Stories Beach & York Road Catchment Areas

2.2. SUBCATCHMENT AREAS

The Catchment Areas of Ocean Grove/Shelter Point, Stories Beach, York Road and Oyster River were broken down into 13 sub catchments, as is shown in **Figures 3-6**. In addition to the high-level utility mapping, each sub catchment received 'nodes' which further breaks up the sub catchment areas for the purpose of pipe sizing via rational method calculations. These 'nodes' can be seen in Figures 3-6 as circular red labels.

2.2.1. Ocean Grove/Shelter Pont Area (Sub Catchments A-D)

- **Sub Catchment A** outfalls at the Crawford and Bier Road intersection. The outfall will discharge into the existing ditch/creek which runs south along the east side of the 19.6 ha vacant lot.

- **Sub Catchment B** outfalls in 4 places along the existing ditch/creek to Veden Road (unconstructed). The ditch flows east along Veden Road until in cross the South Island Highway and discharges to the ocean.

- **Sub Catchment C** outfalls directly to the ocean. The underground storm system would flow down Engles Road, cross the South Island Highway, and discharge to the ocean.

- **Sub Catchment D** outfalls into a creek located within an SRD Regional Park at Mitlenatch – Lot 7.

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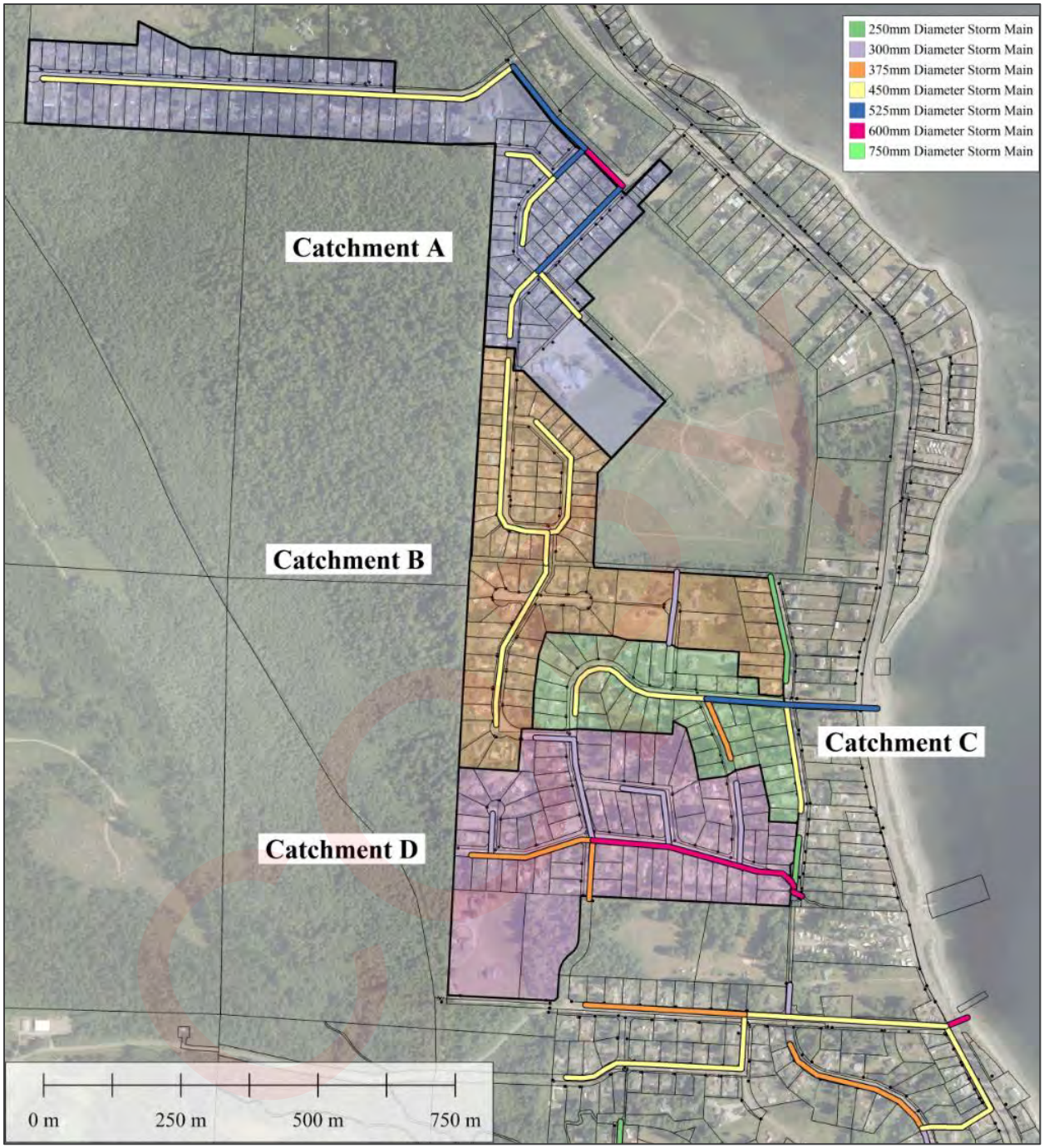

Figure 3: Ocean Grove/Shelter Point Sub Catchments

2.2.2. Shelter Point/Stories Beach Area (Sub Catchments E-I & Woods Creek Catchment)

- **Sub Catchment E** outfalls directly to the ocean. The underground storm system would flow down McGimpsey Road, cross the South Island Highway, and discharge to the ocean. Due to existing topography, it is not feasible to discharge Wavecrest road via gravity flow to McGimpsey Road. Therefore, Wavecrest road will require an additional solution to manage stormwater. For the purpose of maintaining a gravity system and the attached cost estimate, it has been shown to run through private property and then along the South Island Highway where it connects to the McGimpsey Road main.

- **Sub Catchment F** outfalls in 2 places along Woods Creek. Due to existing topography, Searidge Place and North Clinton Road are not feasible to gravity discharge to Sub Catchment G and can simply discharge to Woods Creek.

- **Sub Catchment G** outfalls to Storie Creek at the intersection of Wavecrest, Dillman and Seawave Road.

    - The NE corner of Skipton Cresent is not feasible to discharge via gravity flow to Sub Catchment H within MOTI ROWs. Utilization of the existing drainage easements in the area would be required to drain to Dillman Road.

    - The South end of Clinton Road also cannot be feasibly serviced by a gravity storm main within the MOTI ROW. A new drainage easement would be required to drain South Clinton Road to either Neptune Road or Surfside Drive.

- **Sub Catchment H** outfalls directly to the ocean. The underground storm system would flow down Lynwood Road, cross the South Island Highway, and discharge to the ocean.

    - Maple Park Circle cannot be feasibility serviced by a gravity storm main within the MOTI ROW. New SRWs/Easements would be required through private parcels at Maple Park to drain Maple Park Circle.

- **Sub Catchment I** outfalls directly to the ocean. The underground storm system would flow down Henry Road, cross the South Island Highway, and discharge to the ocean south of 4015 South Island Highway. It is noted that there is a new sanitary main running along Henry road from the new Tlowitsis Nation subdivision development, which discharges treated sanitary flow via the treatment plant. Working around this sanitary main is crucial for installing a new storm main along Henry Road.

- **Woods Creek Catchment** contains properties that border Woods Creek and it is assumed that these parcels can be serviced directly to the Creek and do not require a storm service from the SRD.

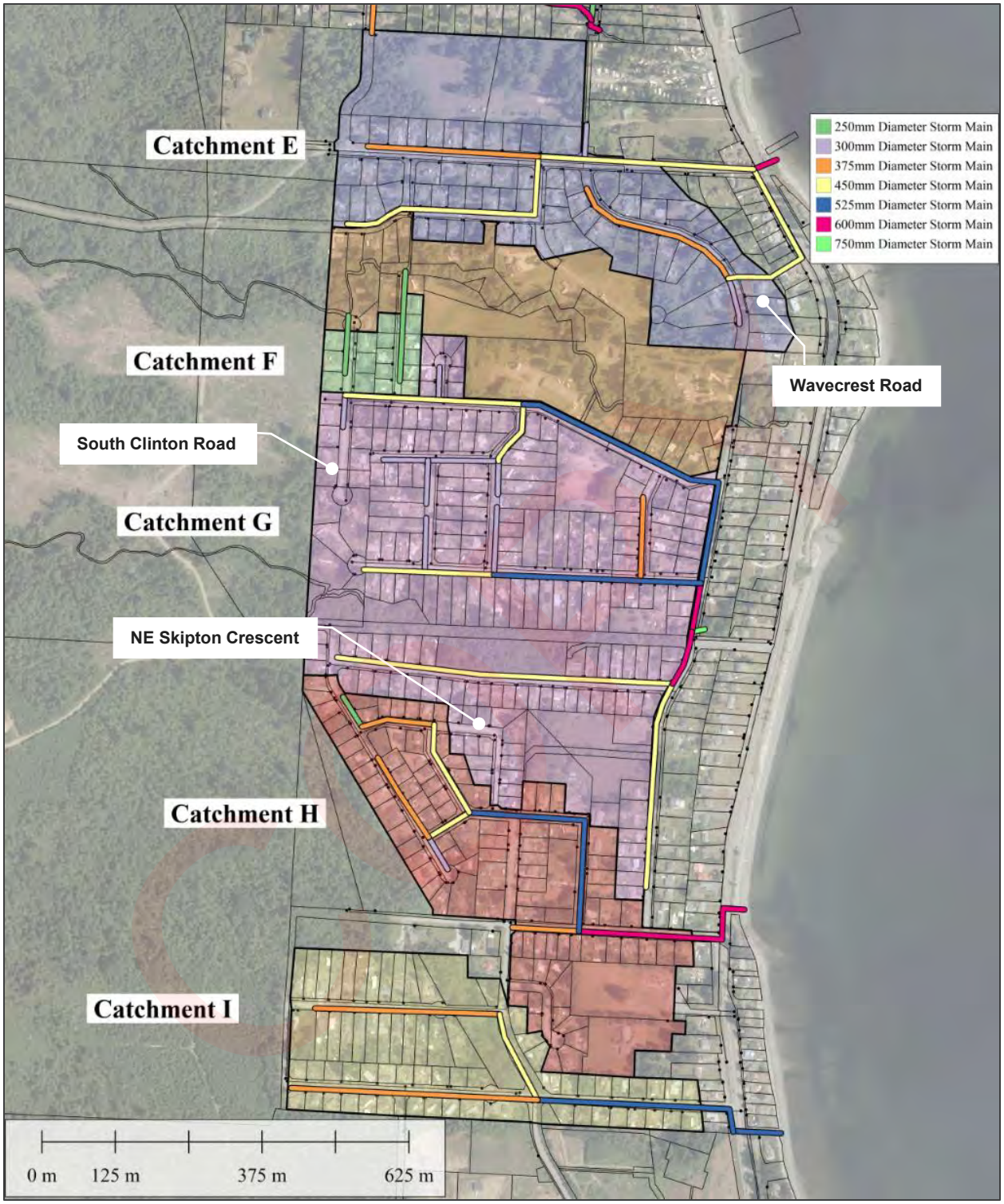

Figure 4: Stories Creek Sub Catchments

2.2.3. York Road (Sub Catchments J & K)

- **Sub Catchment J** outfalls at Hagel Park, where stormwater currently flows through an existing ditch along Jody Lynne Way, and flows through Hagel Creek. The underground storm system would flow down York Road, from Enquist Road.

- **Sub Catchment K** will utilize the same outfall as sub catchment J. The underground storm system catches Severn Road and Baxandall Drive.

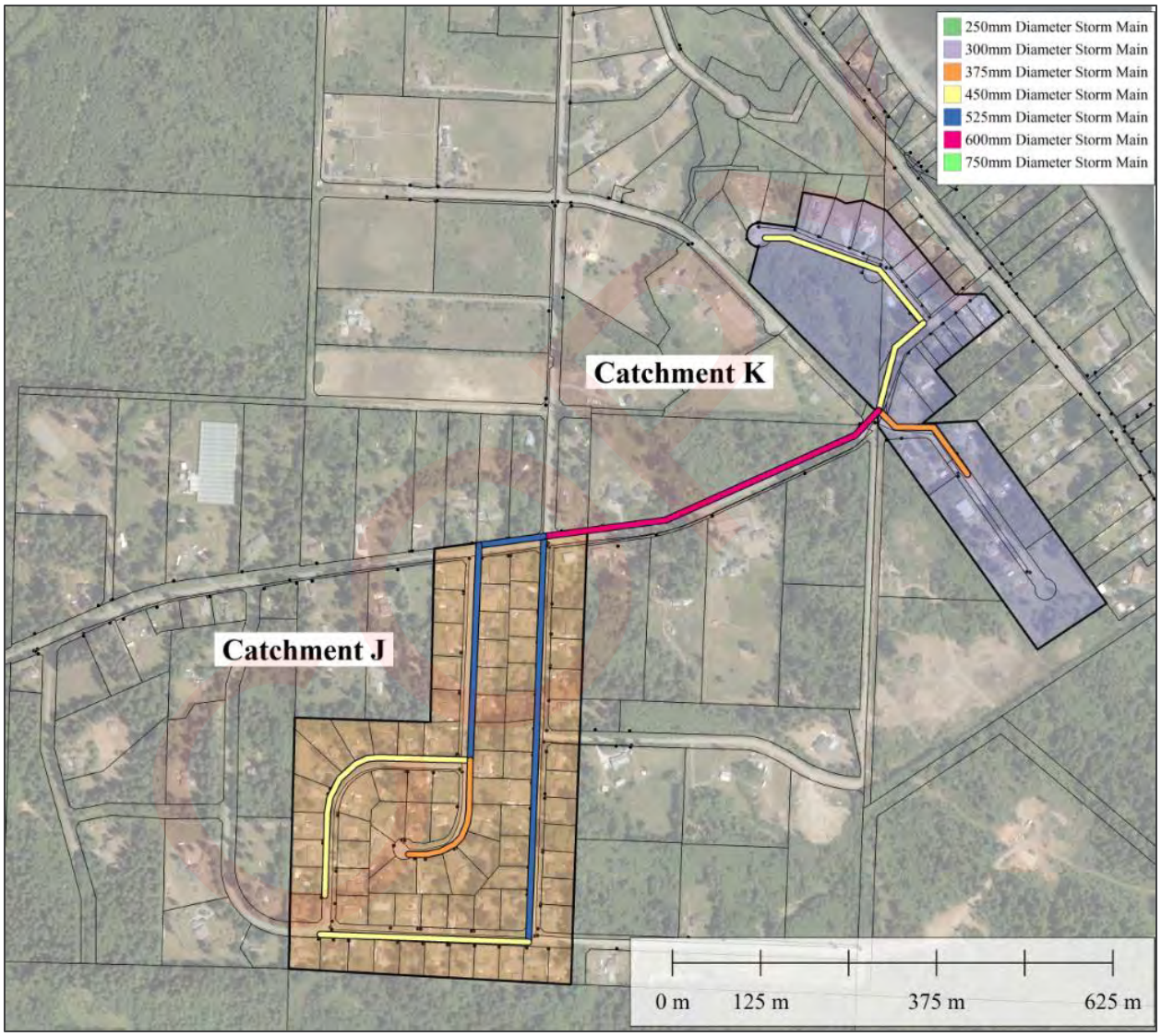

Figure 5: York Road Sub Catchments

2.2.4. Oyster River Area (Glenmore Road and Oyster River Sub Catchments)

- **Glenmore Sub Catchment** will outfall directly to Oyster River, adjacent to the South Island Highway. The underground storm system would flow down Glenmore Road. Glenmore Road is adjacent to the Oyster River, and there is potential for more frequent outfalls. However, for the purpose of this report and attached cost estimate, a storm main along the entire road is assumed.

- **Oyster River Sub Catchment** will outfall directly to the Oyster River at the Regent Road Bridge. The main flow path will run down Upland Road, crossing the South Island Highway via Croydon Road, and down Regent Road to the outfall at the Oyster River Regent Road Bridge.

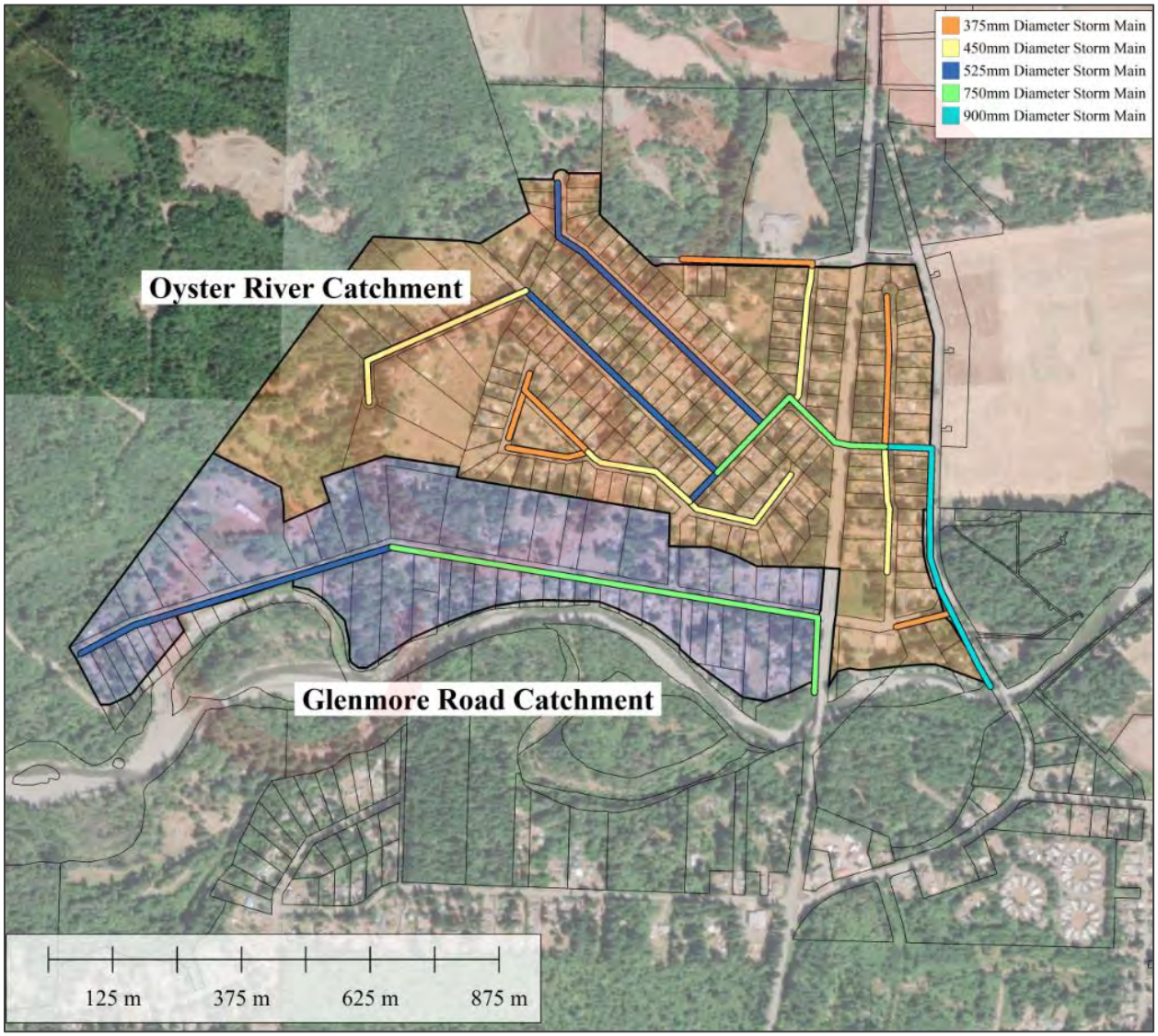

Figure 6: Oyster River Sub Catchments

2.3. RUNOFF AND PIPE SIZING CALCULATIONS

The underground piped storm system was sized using the rational calculation method as outlined in the MMCD 2022 Design Standards. The calculations used a 5-year design storm event with an added 15% to account for climate change. The 15% climate change addition is derived from the City of Campbell River Works and Services bylaw, which governs design parameters for the nearby City stormwater utility. Rainfall data is also derived from the City's Works and Services Bylaw, which references the Intensity-Duration-Frequency Curve derived from the Campbell River Airport (gauge ID 1021261). The catchment runoff coefficients ranged from 0.2 – 0.4 for rural areas to single family lots, respectively. The storm mains were assumed to be at a 1.0% slope throughout the entire system and a Mannings value of 0.013 was assumed.

2.4. RESULTS

The cumulative length of mapped storm main as a result of this assessment is 23,470 meters. See below the breakdown of each pipe size per catchment in **Table 1**.

Table 1: Total estimated work and materials

Sub Catchment	Cumulative Length of Pipe (m)[1]	Number of Serviceable Parcels	Number of Manholes
A	1960	101	22
B	1330	85	13
C	940	42	11
D	1500	69	17
E	1880	67	20
F	280	17	3
G	3440	194	35
H	1500	96	16
I	1340	69	11
J	2340	82	21
K	580	18	8
Woods Creek	-	23	-
Oyster River	4760	206	39
Glenmore	1620	52	12
Sum:	23470	1121	226

[1]*Cumulative pipe lengths are rounded to the nearest 10 linear meters.*

3. Cost Estimate

The provided Class D cost estimates are related to the required works and services to meet the MOTI design standards. Cost estimates have been provided for the total combined mapped work and for each sub catchment. The cost estimate considers only construction costs and does not include any allowances for additional consulting, permitting or legal fees that may be associated with the work.

Pavement and road restoration is assumed to be two laned, paved with open shoulder (Supplement to TAC Figure 1520.E). Due to the level of detail of this assessment, a 40% contingency has been included with the provided cost estimate. The calculated cost estimates, as defined by the assumptions herein, can be found in **Table 2**. The detailed cost estimates can be found in **Appendix B**.

Table 2: Cost Estimate Summary

Sub Catchment	Estimated Number of Serviceable Parcels	Cost per Serviceable Parcel[1]	Cost per Sub Catchment
A	101	$35,970	$3,633,000
B	85	$28,120	$2,390,000
C	42	$41,000	$1,722,000
D	69	$38,060	$2,626,000
E	67	$46,930	$3,144,000
F	17	$26,120	$444,000
G	194	$32,860	$6,374,000
H	96	$30,440	$2,922,000
I	69	$34,990	$2,414,000
J	82	$52,540	$4,308,000
K	18	$54,110	$974,000
Woods Creek	23		-
Oyster River	206	$43,340	$8,929,000
Glenmore	52	$63,460	$3,300,000
Average cost per serviceable parcel:		**$40,610**	-

[1]*Rounded to the nearest 10 Dollars.*

4. Conclusion

Based on the above stated in this technical memorandum and the assumptions made, the conclusions are as follows:

- The total length of storm main works for the Shelter point, Stories Beach, York road, and Oyster River areas is 23.5 km.
- The combined class D cost estimate is $43,364,000 for the construction works.
- Multiple areas will require utilization of existing easements, creation of new easements, or another solution to achieve gravity flow. Further analysis of these areas is outside of the scope of this report.
- As this study is limited to the review of the development of a public stormwater utility and no changes to the existing MOTI drainage infrastructure, it is uncertain whether the stormwater utility discussed throughout this report would have any significant impact on the known complaint areas discussed in the 2015 SWMP. The utility would, however, provide private owners with a formal stormwater option for an onsite drainage issues.

Sincerely,
McElhanney Ltd

Prepared by:

Dylan Modesto, EIT.
dmodesto@mcelhanney.com

Reviewed by:

Michael de Hart, P. Eng.
mdehart@mcelhanney.com

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APPENDIX A – STATEMENT OF LIMITATIONS

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Statement of Limitations

Use of this Report. This report was prepared by McElhanney Ltd. ("**McElhanney**") for the particular site, design objective, development and purpose (the "**Project**") described in this report and for the exclusive use of the client identified in this report (the "**Client**"). The data, interpretations and recommendations pertain to the Project and are not applicable to any other project or site location and this report may not be reproduced, used or relied upon, in whole or in part, by a party other than the Client, without the prior written consent of McElhanney. The Client may provide copies of this report to its affiliates, contractors, subcontractors and regulatory authorities for use in relation to and in connection with the Project provided that any reliance, unauthorized use, and/or decisions made based on the information contained within this report are at the sole risk of such parties. McElhanney will not be responsible for the use of this report on projects other than the Project, where this report or the contents hereof have been modified without McElhanney's consent, to the extent that the content is in the nature of an opinion, and if the report is preliminary or draft. This is a technical report and is not a legal representation or interpretation of laws, rules, regulations, or policies of governmental agencies.

Standard of Care and Disclaimer of Warranties. This report was prepared with the degree of care, skill, and diligence as would reasonably be expected from a qualified member of the same profession, providing a similar report for similar projects, and under similar circumstances, and in accordance with generally accepted engineering and scientific judgments, principles and practices. McElhanney expressly disclaims any and all warranties in connection with this report.

Information from Client and Third Parties. McElhanney has relied in good faith on information provided by the Client and third parties noted in this report and has assumed such information to be accurate, complete, reliable, non-fringing, and fit for the intended purpose without independent verification. McElhanney accepts no responsibility for any deficiency, misstatements or inaccuracy contained in this report as a result of omissions or errors in information provided by third parties or for omissions, misstatements or fraudulent acts of persons interviewed.

Effect of Changes. All evaluations and conclusions stated in this report are based on facts, observations, site-specific details, legislation and regulations as they existed at the time of the report preparation. Some conditions are subject to change over time and the Client recognizes that the passage of time, natural occurrences, and direct or indirect human intervention at or near the site may substantially alter such evaluations and conclusions. Construction activities can significantly alter soil, rock and other geologic conditions on the site. McElhanney should be requested to re-evaluate the conclusions of this report and to provide amendments as required prior to any reliance upon the information presented herein upon any of the following events: a) any changes (or possible changes) as to the site, purpose, or development plans upon which this report was based, b) any changes to applicable laws subsequent to the issuance of the report, c) new information is discovered in the future during site excavations, construction, building demolition or other activities, or d) additional subsurface assessments or testing conducted by others.

Independent Judgments. McElhanney will not be responsible for the independent conclusions, interpretations, interpolations and/or decisions of the Client, or others, who may come into possession of

this report, or any part thereof. This restriction of liability includes decisions made to purchase, finance or sell land or with respect to public offerings for the sale of securities.

Construction Cost Estimates. This construction cost estimate has been prepared using the design and technical information currently available, and without the benefit of Survey, Geotechnical, Environmental, or other information. Furthermore, McElhanney cannot predict the competitive environment, weather or other unforeseen conditions that will prevail at the time that contractors will prepare their bids. The cost estimate is therefore subject to factors over which McElhanney has no control, and McElhanney does not guarantee or warranty the accuracy of such estimate.

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APPENDIX B – CLASS D COST ESTIMATES

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Study Area

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 300,715	$ 300,715
			Subtotal	$ 300,715
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 601,430	$ 601,430
			Subtotal	$ 601,430
Stormwater				
250mm PVC Storm Main	630	LM	$ 400	$ 252,000
300mm PVC Storm Main	1640	LM	$ 500	$ 820,000
375mm PVC Storm Main	3800	LM	$ 550	$ 2,090,000
450mm PVC Storm Main	8430	LM	$ 600	$ 5,058,000
525mm PVC Storm Main	5380	LM	$ 750	$ 4,035,000
600mm PVC Storm Main	1580	LM	$ 800	$ 1,264,000
750mm PVC Storm Main	1430	LM	$ 900	$ 1,287,000
900mm PVC Storm Main	580	LM	$ 1,000	$ 580,000
150mm dia PVC Storm Services c/w IC	1121	EA	$ 3,500	$ 3,923,500
1050mm Manhole	146	EA	$ 7,000	$ 1,022,000
1200mm Manhole	64	EA	$ 9,000	$ 576,000
1350mm Manhole	11	EA	$ 11,000	$ 121,000
1500mm Manhole	5	EA	$ 13,000	$ 65,000
250mm Headwall	3	EA	$ 5,000	$ 15,000
300mm Headwall	1	EA	$ 5,000	$ 5,000
450mm Headwall	1	EA	$ 7,500	$ 7,500
525mm Headwall	3	EA	$ 7,500	$ 22,500
600mm Headwall	4	EA	$ 7,500	$ 30,000
750mm Headwall	2	EA	$ 15,000	$ 30,000
900mm Headwall	1	EA	$ 15,000	$ 15,000
			Subtotal	$ 21,221,501
Road Works				
Granular Base (225mm)	59000	SM	$ 40	$ 2,360,000
Granular Subbase (300mm)	59000	SM	$ 50	$ 2,950,000
Asphalt (50mm)	59000	SM	$ 60	$ 3,540,000
			Subtotal	$ 8,850,000
	Subtotal (rounded to nearest $1000)			**$ 30,974,000**
			Contingency (40%)	12,390,000
			Subtotal Site Servicing	**$ 43,364,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment A

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 25,190	$ 25,190
			Subtotal	$ 25,190
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 50,380	$ 50,380
			Subtotal	$ 50,380
Stormwater				
450mm PVC Storm Main	1360	LM	$ 600.00	$ 816,000
525mm PVC Storm Main	500	LM	$ 750.00	$ 375,000
600mm PVC Storm Main	100	LM	$ 800.00	$ 80,000
150mm dia PVC Storm Services c/w IC	101	EA	$ 3,500.00	$ 353,500
1050mm Manhole	14	EA	$ 7,000.00	$ 98,000
1200mm Manhole	6	EA	$ 9,000.00	$ 54,000
600mm Headwall	1	EA	$ 7,500.00	$ 7,500
			Subtotal	$ 1,784,000
Road Works				
Granular Base (225mm)	4900	SM	$ 40	$ 196,000
Granular Subbase (300mm)	4900	SM	$ 50	$ 245,000
Asphalt (50mm)	4900	SM	$ 60	$ 294,000
			Subtotal	$ 735,000
	Subtotal (rounded to nearest $1000)			**$ 2,595,000**
			Contingency (40%)	1,038,000
			Subtotal Site Servicing	**$ 3,633,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment B

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 16,573	$ 16,573
			Subtotal	$ 16,573
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 33,145	$ 33,145
			Subtotal	$ 33,145
Stormwater				
250mm PVC Storm Main	200	LM	$ 400	$ 80,000
300mm PVC Storm Main	130	LM	$ 500	$ 65,000
450mm PVC Storm Main	1000	LM	$ 600	$ 600,000
150mm dia PVC Storm Services c/w IC	85	EA	$ 3,500	$ 297,500
1050mm Manhole	13	EA	$ 7,000	$ 91,000
250mm Headwall	1	EA	$ 5,000	$ 5,000
300mm Headwall	1	EA	$ 5,000	$ 5,000
450mm Headwall	2	EA	$ 7,500	$ 15,000
			Subtotal	$ 1,158,500
Road Works				
Granular Base (225mm)	3325	SM	$ 40	$ 133,000
Granular Subbase (300mm)	3325	SM	$ 50	$ 166,250
Asphalt (50mm)	3325	SM	$ 60	$ 199,500
			Subtotal	$ 498,750
	Subtotal (rounded to nearest $1000)			**$ 1,707,000**
			Contingency (40%)	683,000
			Subtotal Site Servicing	**$ 2,390,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment C

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 11,945	$ 11,945
			Subtotal	$ 11,945
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 23,890	$ 23,890
			Subtotal	$ 23,890
Stormwater				
375mm PVC Storm Main	120	LM	$ 550	$ 66,000
450mm PVC Storm Main	510	LM	$ 600	$ 306,000
525mm PVC Storm Main	310	LM	$ 750	$ 232,500
150mm dia PVC Storm Services c/w IC	42	EA	$ 3,500	$ 147,000
1050mm Manhole	8	EA	$ 7,000	$ 56,000
1200mm Manhole	3	EA	$ 9,000	$ 27,000
525mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 842,000
Road Works				
Granular Base (225mm)	2350	SM	$ 40	$ 94,000
Granular Subbase (300mm)	2350	SM	$ 50	$ 117,500
Asphalt (50mm)	2350	SM	$ 60	$ 141,000
			Subtotal	$ 352,500
	Subtotal (rounded to nearest $1000)			**$ 1,230,000**
			Contingency (40%)	492,000
			Subtotal Site Servicing	**$ 1,722,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment D

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 18,215	$ 18,215
			Subtotal	$ 18,215
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 36,430	$ 36,430
			Subtotal	$ 36,430
Stormwater				
250mm PVC Storm Main	90	LM	$ 400	$ 36,000
300mm PVC Storm Main	660	LM	$ 500	$ 330,000
375mm PVC Storm Main	340	LM	$ 550	$ 187,000
600mm PVC Storm Main	410	LM	$ 800	$ 328,000
150mm dia PVC Storm Services c/w IC	69	EA	$ 3,500	$ 241,500
1050mm Manhole	12	EA	$ 7,000	$ 84,000
1200mm Manhole	5	EA	$ 9,000	$ 45,000
600mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 1,259,000
Road Works				
Granular Base (225mm)	3750	SM	$ 40	$ 150,000
Granular Subbase (300mm)	3750	SM	$ 50	$ 187,500
Asphalt (50mm)	3750	SM	$ 60	$ 225,000
			Subtotal	$ 562,500
	Subtotal (rounded to nearest $1000)			**$ 1,876,000**
			Contingency (40%)	750,000
			Subtotal Site Servicing	**$ 2,626,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment E

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 21,810	$ 21,810
			Subtotal	$ 21,810
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 43,620	$ 43,620
			Subtotal	$ 43,620
Stormwater				
300mm PVC Storm Main	140	LM	$ 500	$ 70,000
375mm PVC Storm Main	600	LM	$ 550	$ 330,000
450mm PVC Storm Main	1100	LM	$ 600	$ 660,000
600mm PVC Storm Main	40	LM	$ 800	$ 32,000
150mm dia PVC Storm Services c/w IC	67	EA	$ 3,500	$ 234,500
1050mm Manhole	19	EA	$ 7,000	$ 133,000
1200mm Manhole	1	EA	$ 9,000	$ 9,000
600mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 1,476,000
Road Works				
Granular Base (225mm)	4700	SM	$ 40	$ 188,000
Granular Subbase (300mm)	4700	SM	$ 50	$ 235,000
Asphalt (50mm)	4700	SM	$ 60	$ 282,000
			Subtotal	$ 705,000
	Subtotal (rounded to nearest $1000)			**$ 2,246,000**
			Contingency (40%)	898,000
			Subtotal Site Servicing	**$ 3,144,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment F

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 3,075	$ 3,075
			Subtotal	$ 3,075
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 6,150	$ 6,150
			Subtotal	$ 6,150
Stormwater				
250mm PVC Storm Main	280	LM	$ 400	$ 112,000
150mm dia PVC Storm Services c/w IC	17	EA	$ 3,500	$ 59,500
1050mm Manhole	3	EA	$ 7,000	$ 21,000
250mm Headwall	2	EA	$ 5,000	$ 10,000
			Subtotal	$ 202,500
Road Works				
Granular Base (225mm)	700	SM	$ 40	$ 28,000
Granular Subbase (300mm)	700	SM	$ 50	$ 35,000
Asphalt (50mm)	700	SM	$ 60	$ 42,000
			Subtotal	$ 105,000
	Subtotal (rounded to nearest $1000)			**$ 317,000**
			Contingency (40%)	127,000
			Subtotal Site Servicing	**$ 444,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment G

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 44,205	$ 44,205
			Subtotal	$ 44,205
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 88,410	$ 88,410
			Subtotal	$ 88,410
Stormwater				
300mm PVC Storm Main	650	LM	$ 500	$ 325,000
375mm PVC Storm Main	140	LM	$ 550	$ 77,000
450mm PVC Storm Main	1560	LM	$ 600	$ 936,000
525mm PVC Storm Main	890	LM	$ 750	$ 667,500
600mm PVC Storm Main	180	LM	$ 800	$ 144,000
750mm PVC Storm Main	20	LM	$ 900	$ 18,000
150mm dia PVC Storm Services c/w IC	194	EA	$ 3,500	$ 679,000
1050mm Manhole	23	EA	$ 7,000	$ 161,000
1200mm Manhole	12	EA	$ 9,000	$ 108,000
750mm Headwall	1	EA	$ 15,000	$ 15,000
			Subtotal	$ 3,130,500
Road Works				
Granular Base (225mm)	8600	SM	$ 40	$ 344,000
Granular Subbase (300mm)	8600	SM	$ 50	$ 430,000
Asphalt (50mm)	8600	SM	$ 60	$ 516,000
			Subtotal	$ 1,290,000
	Subtotal (rounded to nearest $1000)			**$ 4,553,000**
			Contingency (40%)	1,821,000
			Subtotal Site Servicing	**$ 6,374,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment H

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 20,260	$ 20,260
			Subtotal	$ 20,260
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 40,520	$ 40,520
			Subtotal	$ 40,520
Stormwater				
250mm PVC Storm Main	60	LM	$ 400	$ 24,000
300mm PVC Storm Main	60	LM	$ 500	$ 30,000
375mm PVC Storm Main	400	LM	$ 550	$ 220,000
450mm PVC Storm Main	250	LM	$ 600	$ 150,000
525mm PVC Storm Main	400	LM	$ 750	$ 300,000
600mm PVC Storm Main	330	LM	$ 800	$ 264,000
150mm dia PVC Storm Services c/w IC	96	EA	$ 3,500	$ 336,000
1050mm Manhole	6	EA	$ 7,000	$ 42,000
1200mm Manhole	10	EA	$ 9,000	$ 90,000
600mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 1,463,500
Road Works				
Granular Base (225mm)	3750	SM	$ 40	$ 150,000
Granular Subbase (300mm)	3750	SM	$ 50	$ 187,500
Asphalt (50mm)	3750	SM	$ 60	$ 225,000
			Subtotal	$ 562,500
	Subtotal (rounded to nearest $1000)			**$ 2,087,000**
			Contingency (40%)	835,000
			Subtotal Site Servicing	**$ 2,922,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment I

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 16,735	$ 16,735
			Subtotal	$ 16,735
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 33,470	$ 33,470
			Subtotal	$ 33,470
Stormwater				
375mm PVC Storm Main	730	LM	$ 550	$ 401,500
450mm PVC Storm Main	160	LM	$ 600	$ 96,000
525mm PVC Storm Main	450	LM	$ 750	$ 337,500
150mm dia PVC Storm Services c/w IC	69	EA	$ 3,500	$ 241,500
1050mm Manhole	6	EA	$ 7,000	$ 42,000
1200mm Manhole	5	EA	$ 9,000	$ 45,000
525mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 1,171,000
Road Works				
Granular Base (225mm)	3350	SM	$ 40	$ 134,000
Granular Subbase (300mm)	3350	SM	$ 50	$ 167,500
Asphalt (50mm)	3350	SM	$ 60	$ 201,000
			Subtotal	$ 502,500
	Subtotal (rounded to nearest $1000)			**$ 1,724,000**
			Contingency (40%)	690,000
			Subtotal Site Servicing	**$ 2,414,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment J

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 29,870	$ 29,870
			Subtotal	$ 29,870
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 59,740	$ 59,740
			Subtotal	$ 59,740
Stormwater				
375mm PVC Storm Main	190	LM	$ 550	$ 104,500
450mm PVC Storm Main	660	LM	$ 600	$ 396,000
525mm PVC Storm Main	970	LM	$ 750	$ 727,500
600mm PVC Storm Main	520	LM	$ 800	$ 416,000
150mm dia PVC Storm Services c/w IC	82	EA	$ 3,500	$ 287,000
1050mm Manhole	9	EA	$ 7,000	$ 63,000
1200mm Manhole	12	EA	$ 9,000	$ 108,000
525mm Headwall	1	EA	$ 7,500	$ 7,500
			Subtotal	$ 2,109,500
Road Works				
Granular Base (225mm)	5850	SM	$ 40	$ 234,000
Granular Subbase (300mm)	5850	SM	$ 50	$ 292,500
Asphalt (50mm)	5850	SM	$ 60	$ 351,000
			Subtotal	$ 877,500
	Subtotal (rounded to nearest $1000)			**$ 3,077,000**
			Contingency (40%)	1,231,000
			Subtotal Site Servicing	**$ 4,308,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Catchment K

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 6,760	$ 6,760
			Subtotal	$ 6,760
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 13,520	$ 13,520
			Subtotal	$ 13,520
Stormwater				
375mm PVC Storm Main	170	LM	$ 550	$ 93,500
450mm PVC Storm Main	410	LM	$ 600	$ 246,000
150mm dia PVC Storm Services c/w IC	18	EA	$ 3,500	$ 63,000
1050mm Manhole	8	EA	$ 7,000	$ 56,000
			Subtotal	$ 458,500
Road Works				
Granular Base (225mm)	1450	SM	$ 40	$ 58,000
Granular Subbase (300mm)	1450	SM	$ 50	$ 72,500
Asphalt (50mm)	1450	SM	$ 60	$ 87,000
			Subtotal	$ 217,500
	Subtotal (rounded to nearest $1000)			**$ 696,000**
			Contingency (40%)	278,000
			Subtotal Site Servicing	**$ 974,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Glenmore Catchment

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	**Unit**	**Unit Price**	**Estimated Cost**
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 22,885	$ 22,885
			Subtotal	$ 22,885
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 45,770	$ 45,770
			Subtotal	$ 45,770
Stormwater				
525mm PVC Storm Main	640	LM	$ 750	$ 480,000
750mm PVC Storm Main	980	LM	$ 900	$ 882,000
150mm dia PVC Storm Services c/w IC	52	EA	$ 3,500	$ 182,000
1200mm Manhole	5	EA	$ 9,000	$ 45,000
1350mm Manhole	7	EA	$ 11,000	$ 77,000
750mm Headwall	1	LM	$ 15,000	$ 15,000
			Subtotal	$ 1,681,000
Road Works				
Granular Base (225mm)	4050	SM	$ 40	$ 162,000
Granular Subbase (300mm)	4050	SM	$ 50	$ 202,500
Asphalt (50mm)	4050	SM	$ 60	$ 243,000
			Subtotal	$ 607,500
	Subtotal (rounded to nearest $1000)			**$ 2,357,000**
			Contingency (40%)	943,000
			Subtotal Site Servicing	**$ 3,300,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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McElhanney

January 10, 2025

Project No: 2221-49698-00

SRD Electoral Area D

Oyster River Catchment

Preliminary Construction Cost Estimate
Underground Stormwater Utilities

	BUDGET			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
Traffic Management Plan				
TMP (Allowance - 1%)	1	LS	$ 61,925	$ 61,925
			Subtotal	$ 61,925
Erosion and Sediment Control				
ESC (Allowance - 2%)	1	LS	$ 123,850	$ 123,850
			Subtotal	$ 123,850
Stormwater				
375mm PVC Storm Main	1120	LM	$ 550	$ 616,000
450mm PVC Storm Main	1410	LM	$ 600	$ 846,000
525mm PVC Storm Main	1230	LM	$ 750	$ 922,500
750mm PVC Storm Main	420	LM	$ 900	$ 378,000
900mm PVC Storm Main	580	LM	$ 1,000	$ 580,000
150mm dia PVC Storm Services c/w IC	206	EA	$ 3,500	$ 721,000
1050mm Manhole	25	EA	$ 7,000	$ 175,000
1200mm Manhole	5	EA	$ 9,000	$ 45,000
1350mm Manhole	4	EA	$ 11,000	$ 44,000
1500mm Manhole	5	EA	$ 13,000	$ 65,000
900mm Headwall	1	EA	$ 15,000	$ 15,000
			Subtotal	$ 4,407,500
Road Works				
Granular Base (225mm)	11900	SM	$ 40	$ 476,000
Granular Subbase (300mm)	11900	SM	$ 50	$ 595,000
Asphalt (50mm)	11900	SM	$ 60	$ 714,000
			Subtotal	$ 1,785,000
	Subtotal (rounded to nearest $1000)			**$ 6,378,000**
			Contingency (40%)	2,551,000
			Subtotal Site Servicing	**$ 8,929,000**

Assumptions

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

COPY

REGIONAL DISTRICT

STAFF REPORT

DATE: September 17, 2024 **FILE:** 0550-04 Board

TO: Chair and Directors,
Regional Board

FROM: Dave Leitch
Chief Administrative Officer

RE: **ELECTORAL AREA D STORMWATER MANAGEMENT FEASIBILITY STUDY**

PURPOSE/PROBLEM

To consider a recommendation from the Electoral Areas Services Committee to award a contract for the feasibility study to investigate the establishment of a stormwater management service for Electoral Area D.

EXECUTIVE SUMMARY

The attached report was considered at the September 4, 2024 meeting of the Electoral Areas Services Committee at which time the following resolution was passed:

> Rice/Mawhinney: EASC 290/24
>
> THAT the Committee recommend that the feasibility study to investigate the potential of establishing a stormwater management service for Electoral Area D be awarded to McElhanney Engineering and that it be funded through the Electoral Area D Feasibility Study budget.

If the Committee's recommendation is supported, the Board may also wish to consider submitting an application for an Infrastructure Planning Grant to help fund the study.

The following actions are offered in support of the Committee's recommendation.

RECOMMENDATIONS

1. THAT the report from the Chief Administrative Officer be received.
2. THAT the feasibility study to investigate the potential of establishing a stormwater management service for Electoral Area D be awarded to McElhanney Engineering and that it be funded through the Electoral Area D Feasibility Study budget.
3. THAT an application to the Infrastructure Planning Grant Program for $10,000 be submitted to assist with funding the Electoral Area D Stormwater Management Feasibility Study.

Respectfully:

for Dave Leitch
Chief Administrative Officer

COPY

Prepared by: *E. Watson, Manager, Corporate Operations*

Attachment: Copy of August 29, 2024 report to the Electoral Areas Services Committee

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Strathcona REGIONAL DISTRICT

STAFF REPORT

DATE: August 29, 2024 **FILE**: 0540-04 EASC

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: David Leitch
Chief Administrative Officer

RE: **ELECTORAL AREA D STORMWATER FEASIBILITY STUDY**

PURPOSE/PROBLEM

To consider the proposal from McElhanney Engineering for a high-level feasibility study for potential Stormwater Utility in Electoral Area D

EXECUTIVE SUMMARY

At its March 27, 2024 meeting, the Regional Board considered the attached report and passed the following resolution:

> Rice/Mawhinney: SRD 219/24
>
> THAT the Regional District undertake a feasibility study to investigate the potential of establishing a stormwater management service for Electoral Area D.

McElhanney Engineering developed the 2015 Stormwater Management Plan for Electoral Area D and is well-positioned to conduct a feasibility study for a potential stormwater utility. The proposed utility would consist of an underground piped network within Ministry of Transportation and Infrastructure (MOTI) highway rights of way, discharging into nearby watercourses. The service area would be designed to provide individual homeowners with stormwater connections while maintaining roadside ditches and drainage structures managed by MOTI.

The study will focus on denser residential areas like Storey Creek, York Road, and regions north of the Oyster River. Catchment areas will be identified using lidar data, and flow routes will be designed based on existing terrain. The study will include rational method calculations for preliminary pipe sizes, climate change allowances, high-level figures, and Class D cost estimates.

This study would be designed as a preliminary assessment to give elected officials a clearer understanding of the likely costs of building a stormwater management system. Given that this type of infrastructure can be expensive, the study will help determine whether it's worth pursuing further. It is noted that this would be an initial overview, and much more detailed work will be needed if there is interest in moving forward. Specifically, this assessment will not address potential conflicts with potable water systems, regulatory coordination, or evaluations of existing infrastructure, which would require additional analysis.

The final deliverable will be a technical memorandum, including cost estimates and stormwater infrastructure maps. The proposed study, estimated at $14,925, could be funded through the Electoral Area D Feasibility Study service, which has an unallocated budget of $100,000.

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RECOMMENDATION

1. THAT the report from the Chief Administrative Officer be received.

2. THAT the Committee recommend that the feasibility study to investigate the potential of establishing a stormwater management service for Electoral Area D be awarded to MacElhanney Engineering and that it be funded through the Electoral Area D Feasibility Study budget

Respectfully:

David Leitch
Chief Administrative Officer

Prepared by: *S. Fisher, Engineering Services Coordinator*

Attachments: August 16, 2024, McElhanney Proposal for Area D High Level Feasibility Study for Potential Stormwater Utility
20240315-Electoral-Area-D-Stormwater-Management

COPY

Our File: 2221-91907-00

August 16, 2024

Strathcona Regional District
990 Cedar Street
Campbell River, BC, V9W 7Z8

Attention: Sheena Fisher, PMP

Re: Area D High Level Feasibility Study for Potential Stormwater Utility – Proposal

As requested, McElhanney is please to submit our proposal for the High-Level Feasibility Assessment for a potential stormwater utility system in the Strathcona Regional District's Electoral Area D. It is understood that the intent of this project is to review the feasibility of developing of a stormwater management service area within Area D as per the direction of the Electoral Areas Services Committee (staff report dated March 15, 2024).

McElhanney, having provided the Regional District with an overall Stormwater Management Plan for Area D in 2015, is well positioned to build upon this assessment and provide the requested feasibility study for a potential stormwater utility. For this assessment, it is understood that the potential stormwater utility would consist of an underground piped stormwater network in MOTI ROWs, with various outfalls to the existing drainage system. It would be the intent of the stormwater management service area to provide individual homeowners a stormwater service connection, while maintaining roadside ditch and drainage structures, which are currently the responsibility of MOTI. The following sections highlight the proposed scope of work and budget to complete this feasibility study.

SCOPE

For this initial stage of the Area D storm service feasibility assessment, it is proposed to focus efforts on the denser housing areas, such as Storey Creek, York Road and north of the Oyster River. Coastal areas and areas that are more rural in nature will be assumed to not require a storm service from the district. Catchment areas will be identified using available open source lidar data and flow routes will be selected to follow the existing terrain surface. Discharges to watercourses will be required to maintain the existing overall flow regimes in the area. Preliminary pipe sizes will be determined via rational method calculations and allowances for climate change will be provided. High level figures of these catchment areas will be provided within the technical memorandum.

It is proposed to provide Class D cost estimates to support the potential stormwater infrastructure works. It is known that most areas within Area D are also serviced with potable water and this assessment does not include any detailed reviews for potential conflicts with those systems. Our scope of work also assumes that coordination efforts with other regulatory bodies (such as MOTI, MOE, DFO, City of Campbell River) will not be required. Further assumptions are provided in the attached budget. It also assumes that the evaluation of detention systems or condition assessments of existing infrastructure will not be required.

Deliverable for this effort will be in the form of a technical memorandum with cost estimate and high-level stormwater infrastructure maps as appendices.

Fee Estimate

McElhanney

Strathcona Regional District - Area D Drainage Study – High Level Feasibility – Initial Stage

		Project Manager	Design Team		Other		Totals
	Role	PM/EOR	QC	EIT	Admin	Disb.	
	Name	M de Hart	N Bruce	J Braun	C Hartt	6%	
Task Description	Hourly Rate	$185	$185	$155	$100		
Engineering Design Services							
1	Initial Review / Project Kickoff	2			2	$34	$604
2	Review of 2015 Studies and Area D Drainage Areas	3		4		$71	$1,246
3	Development of Sub-Service Areas within Area D (Catchments within the Proposed Service Area)	2	2	28		$305	$5,385
4	Class D Cost Estimate for Potential Stormwater Utility Installations	2	1	10		$126	$2,231
5	Technical Memorandum - Draft	4	1	14		$186	$3,281
6	Review Meeting with SRD Staff	2		2		$41	$721
7	Technical Memorandum - Final	2	1	4	2	$83	$1,458
	Total Hours	17	5	62	4		
	Total	$3,145	$925	$9,610	$400	$845	**$14,925**

Assumptions:
No allowance for Survey has been provided
No allowance for any hydraulic modelling has been provided
No field review allowances have been provided
It is assumed that 1 virtual or in person meeting with SRD staff will be sufficient to generate the final technical memorandum
The SRD will be able to provide GIS data for legal cadastral, existing watercourses and watermains if available

SCHEDULE

Initial Review / Project Kickoff	August 2024
Review of 2015 Studies and Area D Drainage Areas	August 2024
Development of Sub-Service Areas within Area D (Catchments within the Proposed Service Area)	September 2024
Class D Cost Estimate for Potential Stormwater Utility Installations	September 2024
Technical Memorandum - Draft	End of September 2024
Review Meeting with SRD Staff	Start of October 2024
Technical Memorandum - Final	End of October 2024

IN CLOSING

Thank you for the opportunity to provide this proposal in support of the Regional District's effort to assess the feasibility of a stormwater utility in Area D. Please contact the undersigned if there are any questions with this proposal.

Sincerely,
McElhanney Ltd.

Prepared by:

Michael de Hart, P.Eng, CPESC, Project Manager
mdehart@mcelhanney.com
250-287-7799

Reviewed by:

Nick Bruce, P.Eng, Municipal Division Manager
nbruce@mcelhanney.com
250-287-7799

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Legal Disclaimer

Notwithstanding any statement in this Proposal, or any other statement, verbal or in writing in any form, made before a contract is entered, McElhanney will perform services as proposed with substantially the same degree of care, skill, and diligence as would reasonably be expected from a qualified member of the land surveying, engineering, and science professions, as the case may be, providing substantially the same services for similar projects, and under substantially the same circumstances, to those contemplated by this Proposal at the time such services are performed. No other representation, warranty, condition, or guarantee, expressed, implied or statutory, is made or intended by this Proposal and McElhanney excludes and disclaims any other warranty, representation, condition or guarantee not expressly set out in a contract for the Services entered into between McElhanney and the Client.

Strathcona
REGIONAL DISTRICT

STAFF REPORT

DATE: March 15, 2024 **FILE:** 0550-04 Board

TO: Chair and Directors,
Regional Board

FROM: Dave Leitch
Chief Administrative Officer

RE: **ELECTORAL AREA D STORMWATER MANAGEMENT**

PURPOSE/PROBLEM

To consider a recommendation from the Electoral Areas Services Committee that the Regional District investigate the feasibility of a stormwater management service for Electoral Area D.

EXECUTIVE SUMMARY

The attached report was considered at the Martch 13, 2024 meeting of the Electoral Areas Services Committee at which time the following resolution was passed:

> Rice/Mawhinney: EASC 94/24
>
> THAT the Committee recommend that the Regional District undertake a feasibility study to investigate the potential of establishing a stormwater management service for Electoral Area D.

The following actions are offered in support of the Committee's recommendation.

RECOMMENDATIONS

1. THAT the report from the Chief Administrative Officer be received.
2. THAT the Regional District undertake a feasibility study to investigate the potential of establishing a stormwater management service for Electoral Area D.

Respectfully:

Dave Leitch
Chief Administrative Officer

for

Prepared by: *T. Yates, Corporate Services Manager*

Attachment: Copy of March 8, 2024 report to First Nations Relations Committee

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Strathcona REGIONAL DISTRICT

STAFF REPORT

DATE: March 8, 2024 **FILE**: 0540-04 EASC

TO: Chair and Directors,
Electoral Areas Services Committee

FROM: David Leitch
Chief Administrative Officer

RE: ELECTORAL AREA D STORMWATER MANAGEMENT OPTIONS

PURPOSE/PROBLEM

To provide options for addressing drainage concerns in Electoral Area D.

EXECUTIVE SUMMARY

At its February 28, 2024 meeting the Regional Board considered the attached report and passed the following resolution:

> Rice/Mawhinney: SRD 180/24
>
> THAT staff to prepare a report for discussion at EASC on how to best tackle Storm Water Management.

Stormwater management presents a multifaceted challenge in the Regional District (SRD). Notably, the SRD does not have a drainage and/or a storm water management service to address drainage issues of any kind in the four SRD electoral areas. The Ministry of Transportation and Infrastructure (MoTI) manages all drainage within the highways and road rights of way, however this does not include the conveyance of drainage from private properties into a ditch, drainage network, storm water detention pond, etc.

The MoTI holds jurisdiction over subdivision approval and establishing drainage requirements for new developments. Despite the availability of building inspection services in Electoral Area D, the BC Building Code only governs stormwater management related to building construction, not overall property drainage or comprehensive stormwater management authority.

Considering these challenges, the Regional District has only two practical options for assisting with storm water management and collection in Electoral Area D.

ALTERNATIVES

Option A – THAT the Committee recommend that the Regional District continue its advocacy for drainage and stormwater management-related improvements with the Ministry of Transportation and Infrastructure and other levels of government.

Option B – THAT the Committee recommend that the Regional District undertake a feasibility study to investigate the potential of establishing a stormwater management service for Electoral Area D.

Option C – THAT the Committee recommend that no further action be taken at this time regarding Electoral Area D stormwater management.

RECOMMENDATION

THAT the report from the Chief Administrative Officer be received.

Respectfully:

David Leitch
Chief Administrative Officer

BACKGROUND/HISTORY

In 2015, the Regional District successfully concluded the Area 'D' Stormwater Management Plan, authored by McElhanney. This comprehensive plan provided recommendations for employing Low-Impact Development (LID) techniques and lot-level control options that homeowners could adopt. Among the suggested lot-level controls are permeable paving, rainwater cisterns, green roofs, and rain gardens, among others.

While the study's analytics and data would require updating, they serve as the foundational groundwork for advancing a feasibility study. A study could include an estimate of the capital and operating costs required to construct and maintain a stormwater management system by the Regional District.

FINANCIAL IMPLICATIONS

After engaging in high-level discussions with a local engineering consultant firm, it has been indicated that the cost of conducting a feasibility study is contingent upon the Terms of Reference set for the project. Preliminarily, the estimated cost would be approximately $100,000 depending on the scope of the study.

The Electoral Area D Feasibility budget in the approved 2024-2027 Financial Plan has $100,300 allocated.

Function 340 – Liquid Waste, a shared Function between Electoral Areas B and D, has $26,000 available. However, next steps for the Cortes Septage Management Study have yet to be determined.

LEGAL IMPLICATIONS

Conducting a feasibility study itself does not carry legal implications. Legal considerations may come into play during subsequent efforts related to service establishment, construction, and operations. The specifics of these requirements will become clearer upon the completion of a feasibility study, providing a foundation for informed decision-making and compliance with relevant regulations.

INTERGOVERNMENTAL/REGIONAL IMPLICATIONS

The Ministry of Transportation will play a pivotal role in the implementation of any option moving forward.

CITIZEN/PUBLIC RELATIONS IMPLICATIONS

None at this time.

INTERDEPARTMENTAL INVOLVEMENT/IMPLICATIONS

Community Services is recognized as an invested party in this initiative. The development potential outlined in the Official Community Plan for Electoral Area D serves as crucial background documentation essential for crafting a comprehensive feasibility study. If the decision is made to proceed with a study, and the Terms of Reference involve additional analysis or considerations related to development, Community Services will be engaged in defining those terms and reviewing any pertinent findings. This collaborative involvement ensures a holistic and well-informed approach to the feasibility study.

Prepared by: *S. Fisher, Engineering Services Coordinator*

Attachments: 2015 Area D Stormwater Management Plan
Copy of February 13, 2024 Director Report

COPY

AREA 'D' STORMWATER MANAGEMENT PLAN

FINAL REPORT

COPY

1307 Shoppers Row
Campbell River, BC V9W 2C9
Tel. 250.287.7799 Fax. 250.287.7662
www.mcelhanney.com
Contact: Mark DeGagné, P.Eng.
Our File: 2221-48856-0

January 2015

EXECUTIVE SUMMARY

Storm water management has evolved over the last several decades, moving away from pipe and convey systems to managing “storm” water that tends to cause flooding nuisances and/or property damage, to viewing the management of “rain” water from all aspects of the hydrologic cycle. The Strathcona Regional District (SRD) and the Ministry of Transportation and Infrastructure (MoTI) have partnered to commission a study of the storm water systems issues and challenges in Area ‘D’, with the goal of obtaining a document that can provide them with a storm water management planning tool, which would include the identification of areas that are unfavourable or favourable for future development.

The study included a desk top review of existing characteristic information with respect to the individual watersheds in the study area, including: drainage characteristics and patterns with a database of known complaint locations; a review of environmentally sensitive areas; and a review of the surficial geology to determine the infiltration potential of the native soils. All three of these aspects were based on available information from the SRDs geographic information system (GIS), with supplemental information programmed by McElhanney from other sources.

During field verification visits to problem sites, it became evident that hydraulic assessments of conveyance capacity could not be provided, as there is insufficient record information to base any assessments on. However, several locations were identified as key culvert locations where drainage issues persist, and more detailed field survey; hydraulic assessments and design should be completed, namely:

FL-7 – Wimbledon Road at Terrain
FL-8, FL-9 and FL-10 – Craig Road
FL-13, FL-14 and FL-15 – Wimbledon Road
FL-16 – Mayfly Creek at the Highway
FL-23 – 4585 Highway 19A
FL-24 – Oyster Garden Road and Brian Road Area

A review of historic aerial photographs confirmed that the mapped Environmentally Sensitive Areas are consistent with the GIS database, which included attribute data such as whether or not the presence of fish populations was confirmed or unconfirmed. This information was used as a basis for scoring the requirements for review under the Riparian Area Regulation (RAR) and was mapped to include a standard 30m buffer consistent with the RAR’s simplified methods of assessment. In general, the number and complexity of wetland ESAs increases in the southern half of the Study Area where the land is flatter and the storm water infrastructure is not as developed.

Infiltration potential of native soils in Area ‘D’ were also reviewed in the context of the existing surficial geological mapping. The three distinct geological units found in the area were assessed as being capable of moderate to high infiltration rates. However, two of the units are known to be shallow granular materials overlying dense silt/clay tills which are rather impermeable, causing seasonal high water tables throughout the study area, and presenting additional challenges for selection of storm water management infrastructure.

The mapped Watersheds (**Map 2.1**) with known storm water infrastructure issues; the mapped Environmentally Sensitive Areas (**Map 2.2**) and Soil Infiltration Potential (**Map 2.3**) were used to develop a Stormwater Management Classification by Favourability Map (**Map 2.4**), which classifies all areas as either Favourable, Less Favourable or Not Favourable. Generally, the southern half of the study area is deemed not favourable for development due to the significance of wetlands and the under developed drainage system with a number of known flooding issues, including some areas within the Oyster River Floodplain. The northern half of the study area is either favourable or less favourable for development, excepting those areas of known environmental sensitivity.

While the classification of area by favourability is essential to completing the planning study, the classification is only one part of ensuring sound development practices occur in Area 'D'. On this basis the hydrology of the area was also reviewed to quantify the amount of rainfall and its characteristic runoff from the land. From an assessment of rainfall at the Comox Airport and local stream measurement gauges, it has been shown that approximately 70% of all rainfall reaches the local stream network either as direct runoff or via the shallow groundwater system known as interflow. The Water Balance Model approach was used to calculate post-development target runoff discharges that should be used throughout the study area in conjunction with the corresponding unit area flow-duration relationship. The following targets should be used to ensure that runoff from post-development land uses remain consistent with the pre-development regime.

16.1 l/s/ha for the 1 in 100 year event
13.3 l/s/ha for the 1 in 10 year event
12.0 l/s/ha for the 1 in 5 year event
9.8 l/s/ha for the 1 in 2 year event

Post-development storm water management targets for water quality should strive for 80% removal of total suspended solids (TSS) and grease and oil, especially from large commercial developments with significant areas of impervious surfaces, such as asphalt parking lots.

Proposed developments should make use of an appropriate suite of Low Impact Development (LID) techniques to reduce the impact of development on the natural storm water regime. The best management practices (BMPs) provided herewith can be established at the lot level, street level or even the neighbourhood level depending on the requirements of the development and the existing state of the watershed, with preference being given to those BMPs at the lot level first. Regulatory instruments are available to ensure conformance of the proposed systems (BMPs) to meet the recommended water quantity and quality targets for Area 'D'. **Table 5.1** links the various low impact development BMP techniques with the applicable issues and challenges, as well as the BMP Selection Criteria.

Given the number of existing flood issues and the complexity of the natural environment, especially in the southern half of electoral Area 'D', the Strathcona Regional District should draft and approve a bylaw to make Area 'D' a designated Development Permit Area (DPA) to ensure flooding issues are properly considered and designed for during the development process.

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APPENDICES

Appendix A – SRD Database of Drainage Issues

Appendix B – Surficial Geology Oyster River, Geological Survey of Canada, 1959

MAPS

Map 1.1: Study Area

Map 2.1: Watersheds

Map 2.2: Environmentally Sensitive Areas

Map 2.3: Infiltration Potential

Map 2.4: Stormwater Management Index

PHOTO LOG

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1.0 INTRODUCTION

Storm water management has evolved over the last several decades, moving away from pipe and convey systems to managing "storm" water that tends to cause flooding nuisances and/or property damage, to viewing the management of "rain" water from all aspects of the hydrologic cycle. This evolution is depicted in Figure 1.1 below, and the objectives of mitigating property damage alone are now considered and "integrated" with other objectives such as maintenance of environmentally sensitive areas, stream health (which relates to healthy aquatic ecosystems), and even considerations for replenishing and maintaining important groundwater systems – both shallow and deep groundwater aquifers. It is this integrated management approach that can allow developing communities to grow responsibly, while respecting the natural environment and its need to flourish in conjunction with human activities.

Figure 1.1: Evolution of Integrated Rainwater Management Planning

The Strathcona Regional District (SRD) has commissioned this study to provide a planning level integrated stormwater management plan for the portion of Area 'D' north of the Oyster River. The study's purpose is to assist the SRD with the development planning function for the area, serving to guide future decisions respecting land use planning and development, within the study area, especially as they relate to the management of storm water and existing infrastructure in the area. The following vision statement encapsulates the intent of the study:

> *The SRD requires a document that can provide them with a planning tool as related to storm water issues in the **RURAL** Area 'D', which would include the identification of areas that are unfavourable or favourable for development.*

Area 'D' has been slowly developing over the last half century, and is generally a rural community in terms of housing density, land use and municipal infrastructure. Pressures for more development warrant gaining an understanding of the needs to properly manage stormwater in this neighbourhood, where past practices have led to areas of concern with the existing drainage infrastructure.

Partnered with the SRD in the approval for development and the maintenance of stormwater infrastructure is the BC Ministry of Transportation and Infrastructure (MoTI). MoTI's vested interest in approving and maintaining the stormwater conveyance infrastructure (the ditches, culverts and pipes) in the public right-of-way also warrants a greater need for understanding the complexity of managing rain water over the entire spectrum of the hydrologic cycle, and they are also interested in gaining knowledge as to where the areas of concern are and potential means for remedy.

On this basis, this report provides a high level assessment of existing conditions, while providing guidance for potential future developments in Area 'D' of the Strathcona Regional District. The emphasis of the report is on providing a perspective for the management of rain water, and not on dictating what level of development the lands could realize. The overall goal is establishing

the requirements for stormwater management within a neighbourhood that is likely to become a special Development Permit Area (DPA) within the district.

1.1 The Study Area and Geographic Setting

Area 'D' lies south of Campbell River (South of Jubilee Parkway) to the Oyster River. It is characterized as a rural neighbourhood. Its residence typically enjoying larger parcels of land in close proximity to the communities of Campbell River and the Comox Valley, which are the primary employment and shopping destinations.

The study area comprises the portion of Area 'D' (Oyster River) shown on the attached **Study Area Map** (Map 1.1). The topography in the study area consists of relatively flat to rolling terrain sloping gently toward the ocean. Highway 19A transects Area 'D' running close to the Ocean along the entire length of Area 'D'. All major streams and ditches cross this major thoroughfare, and these crossings are important controls for the management of stormwater. In fact, the stormwater infrastructure is primarily an open ditch culvert system and this infrastructure controls the conveyance of water off the land, and/or is, in some cases, responsible for the development of the low lying "marsh" areas that have developed or expanded in many areas over the years.

Land use includes a mix of rural residential development, agriculture, some small-scale commercial development, and undeveloped forested private land. Development has been more intensive on the north and south portions of the area. The north part being closer to Campbell River where most SRD residents work, and the south portion is adjacent to the Oyster River where a fairly intensive development has grown over the years, including a commercial area between Hwy 19A and the ocean.

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2.0 THE WATERSHED

2.1 Available Information on the Watershed

A number of references were received from the SRD in support of this project. They include the following:

- Water/Flooding Issues Tracking Database
  - Storm Flood Water Management spreadsheet
  - Flood Issues Sites shape files
  - Photos of select flood issues sites
- Environmentally Sensitive Areas shape files
- Provincial Floodplain Mapping for the Oyster River
- Air-photos of the study area from 1999, 2002, 2005, and 2007
- GIS shape files for:
  - Aquifer
  - Cadastre
  - Coastline
  - Contours (20k and 5k)
  - Ditches
  - Streams
  - Trim Water Bodies
  - Geology[1]
  - SRD Official Community Plan
  - Environmentally Sensitive Areas
  - Watersheds
  - Zoning

[1] These were found to be mostly outside of the study area and/or to have insufficient detail. Other surficial geology data was sourced as described later in the report.

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- Regional District of Comox-Strathcona Aquifer Classification Project Report – G. Humphrey, August 2000
- A Preliminary Survey of Three Wetlands and the Coastal Strip MacMillan-Bloedel Property, Oyster Bay, Vancouver Island – Betty Brooks MSc., September 15, 1999

In addition to the above, the following was obtained from other sources:

- Surficial Geology Oyster River – Geological Survey of Canada, 1959 (**Appendix B**)

2.2 Streams and Watershed Characteristics

Individual watersheds throughout the study area were assessed using a comparison of the topographic contours, and the individual stream reaches. The assessed catchments are presented in **Map 2.1: Watersheds.** The map shows the interpreted watershed boundaries for Area 'D', which are approximate only, as they are based on the limited information provided for this study and are not verified by a detailed topographic analysis. Each watershed has been assigned a name for identification purposes for this study. Names are generally associated with the main stream draining the land, or a locational address for smaller watershed where no main stream exists.

The topography in the area generally slopes gently from west to east toward the Strait of Georgia. The grades are relatively flat throughout, at less than 5%, with the exception of the area specifically around York Rd, where an elevated bench exists in closer proximity to the ocean.

The watersheds show an increase in the number and size of the identified wetlands moving from the northern study area limit toward the south. This is a result of flatter terrain in the south half of the study area that also features an existing ditching system that is typically overgrown and under maintained. These flat grades have promoted the development of a dispersed stream network, intercepted by ponded wetlands with, in some cases, multiple outlets. Conveyance

through these convoluted systems is slow, and winter wet weather conditions are characterized by high groundwater tables.

The MoTI Hwy 19A runs along the coast parallel to the shoreline. As the study area slopes toward the ocean, virtually all drainage courses must cross the highway at some point. Stormwater conveyance infrastructure has been developed to collect the upstream dispersed drainage system to converge at a discrete number of crossings at the highway. These crossings are one of the key elements to providing a suitably functional stormwater conveyance system for the area. Some of the crossings are known to be in need of replacement and/or reconfiguration.

2.3 Environmentally Sensitive Areas

The SRD's GIS records include a number of mapped environmentally sensitive areas (ESA) in the study area, as shown on the attached **Map 2.2: Environmentally Sensitive Areas.** These ESAs are typically wetland areas and are present throughout the study area, although they are more prevalent in the flatter southern portion. Many of them receive inflow from multiple tributary streams, as well as have multiple outlets. The SRDs GIS records indicate confirmed or unconfirmed fish presence for each ESA polygon.

The SRD also had on file several historic air photos of the study area from the years 1999, 2002, 2005, 2007, and 2012. These air photos were compared to assess whether or not the wetland areas are changing over time, or if the drainage system has been harmfully altered by development. In general, there is negligible evidence of wetland growth or other significant changes to the drainage system exhibited in the air photos. On this basis, the air photos confirm existing wetland boundaries throughout the Study Area, and these wetlands will need to be subject to Riparian Area Regulation (RAR) assessments as part of the development application process.

The map also shows a 30m buffer area around each identified ESA, which is the default 30m Streamside Protection and Enhancement Area (SPEA) used by the simple assessment

methods in the Riparian Areas Regulation. Proposed development within these areas will be subject to the RAR assessment process to ensure that any proposed reduction in SPEA setbacks are consistent with the regulation as approved by the Ministry of the Environment.

2.4 Surface Geology

Geological mapping was sourced directly from the Geological Survey of Canada mapping records (**Appendix B**). According to this Surficial Geology Mapping, most of the area is described by the following geological units:

- 5d/3: Varied stony gravelly, and sandy marine-veneer deposits over ground moraine deposits (high infiltration potential)
- 5b: Sand, pebbly sand; generally underlain by clay (moderate infiltration potential)
- 6a: Deltaic deposits: gravel and sand commonly underlain by silt and clay (high infiltration potential)

Excepting for the 5d/3 geological units noted above, the surficial soil stratigraphy is common to the region as a whole. Note units 5b and 6a state underlain or commonly underlain by silt and clay, usually in the form of compacted glacial till material, which is highly impermeable and has a very slow rate of infiltration (typical less than 2mm per hour). The result of this stratigraphy is a very shallow vadose zone, where the saturated "interflow" layer is as close to the surface as 0.5 metres.

2.5 Groundwater Conditions

The geological units noted above were transcribed to a GIS layer, and the respective surficial soils were ranked according to their potential for groundwater infiltration as shown on **Map 2.3: Infiltration Potential**. The map shows that much of the study area has a moderate to high estimated infiltration potential in the surficial layer. However, many of the areas are underlain by a layer of less permeable clay or glacial till which will limit the potential for infiltration to the deeper groundwater aquifer. Combined with the relatively flat grades, these conditions promote

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a seasonally high ground water table throughout much of the study area. Coupling this phenomenon with poorly maintained drainage infrastructure has likely exacerbated the development of wetland areas.

2.6 Historical Stormwater Issues

The MoTI and SRD are ultimately jointly responsible for drainage infrastructure in the area, with separate and defined roles. The MoTI is responsible for maintenance of the drainage infrastructure within the rights-of-way insofar as necessary to provide road drainage and crossings to maintain land access. The SRD, on the other hand, is responsible for land use planning and can therefore provide planning level guidance for management of runoff from proposed development lands. These two functions are inextricably linked as private land owners have historically created onsite drainage connections from private property to the MoTI's road-side ditch and culvert systems.

The area is subject to typical issues within organized districts with an aging infrastructure. Ditches, culverts and pipes once appropriately sized for required design conditions tend toward reduced conveyance capacity as vegetation and sediments build up within the system. Coupling this with a general lack of maintenance and heavy rainfall leads to more persistent conditions of localized flooding and complaints by local residences.

The SRD has compiled a database of known drainage issues based on public complaints and operational observations. The database includes a map of "flood related issues" sites, and a cross-referenced table with descriptions and photos. The database information is attached as **Appendix A**, and all flagged incidents are shown on the aforementioned Watersheds Map **(Map 2.1)**. In addition, the SRDs flood issues data-base (**Appendix A**) includes numerous reports of high ground water. Improvement of the area's conveyance systems, including roadside ditches and adequately sized culvert crossings, could help lower the ground water table and improve the potential for subsurface storage in adjacent lands.

Further to these known drainage issues, McElhanney Consulting Services Ltd (MCSL) met with SRD staff and the Area Director to gain operation knowledge of the issues, and conducted

additional field verification of these areas to assess the likely causes and potential remedies. The field verification is described in the following section.

2.7 Field Verification

MCSL has conducted field reviews of the SRD's Field Issues sites identified in **Appendix A**. Key sites were visited based on their relative importance to the overall drainage system in the study area, with particular priority given to highway crossings. The following is a summary of the observations made and a photo log, presented in numerical order according to the identifiers assigned in the SRD's records.

Hydraulic assessments of conveyance capacity could not be provided at this time as there is insufficient record information to base an assessment on. Recommendations contained herein are provided at key culvert locations where drainage issues persist. These locations will require a more detailed field survey to allow for the hydraulic assessments and design of upgrades.

Terrain Road at Highway 19A:

SRD Reference Locations: FL-3, FL-4, FL-5, FL-6

Location: CSP Culverts and Ditches crossing Upland Rd, Terrain Rd, and Highway 19A.

Observations: The existing CSP culvert crossing Hwy 19A (**Photos 3a-b**) appears to be in serviceable condition, although some corrosion is evident up to spring line. This will eventually rust through, at which time replacement and or lining will be required. The vegetation in the upstream ditch on both Hwy 19A (**Photo 3c**) and Terrain Rd (**Photo 3d**) is very dense, and needs to be cut back. This vegetation is likely significantly reducing the flow capacity of the ditch.

Recent observations of this area during the storms of early December 2014 have shown that these culverts have adequate capacity at the Highway and through the downstream reach into

the Shelter Point Distillery lands, but there appears to be a general lack of capacity upstream, especially through properties along Wimbledon Road.

Recommendations: Perform maintenance on the ditch vegetation upstream of the culvert on both the west side of Hwy 19A and the south side of Terrain Rd.

Maple Park Circle:

SRD Reference Locations: FL-12

Location: Maple Park Circle walkway access.

Description: There is a small wooden walkway bridge (**Photo 12a**) from Maple Park Circle that leads to a walkway to the old Maple Elementary School field. Underneath this bridge is a CSP culvert that flows west-to-east toward the field to a manhole (**Photo 12b**). According to the SRD records, this manhole is now being maintained on an annual basis by the SRD Parks Maintenance staff. The ditches upstream of the walkway culvert are relatively flat and becoming overgrown with vegetation, restricting conveyance.

Recommendations: Perform maintenance on the ditch vegetation upstream of the Maple Park walkway.

Mayfly Creek:

SRD Reference Locations: FL-16

Location: Mayfly Creek crossing at Hwy 19A

Description: There are twin 900mm dia. CSP culverts (**Photo 16a**) at the Mayfly Creek crossing of Hwy 19A, with the southerly of the two culverts being abandoned (**Photo 16b**). The active culvert is in relatively poor condition, with the culvert exhibiting extensive corrosion below the

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spring line (**Photo 16c**). This culvert is lacking some of the features that promote fish passage, such as an embedded culvert bottom, in-culvert river rock, and minimum flow depth during dry weather conditions as evidenced by the photos.
Upstream of the culvert, the channel is natural and relatively clear of in-stream vegetation (**Photo 16d**). If the culvert is exhibiting surcharging, as indicated by the SRD's records, then it is likely that the culvert diameter is undersized.

Recommendations: This culvert should be assessed in further detail, with consideration for constructing a replacement culvert with a higher capacity and suitable fish passage provisions.

Regent Road:

SRD Reference Locations: FL-19

Location: Regent Rd south of Terrain Rd.

Description: Road runoff and front yard drainage from Regent Rd is collected in a series of roadside ditches and culverts on the west side of Regent Rd, and conveyed to the north across Terrain Rd via a 450mm CSP culvert (**Photo 19a**). The 450mm CSP culvert crossing Terrain Rd is in poor condition, with evidence of corrosion, crushed ends, and densely vegetated inlet and outlet areas (**Photo 19b**).

Recommendation: According to the SRD's records, the MoTI has been assigned responsibility to address the issues in this area. As a minimum, the ditch vegetation should be removed both upstream and downstream of the 450mm CSP culvert crossing Terrain Rd.

Forfar Rd:

SRD Reference Locations: FL-21

Location: 4172 Forfar Rd

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Description: Drainage from the west, north and south on Forfar Rd enters a ditch between lots 4172 and 4176 Forfar Rd (**Photo 21a**) and flows east toward Enquist Rd. This ditch and the roadside ditches on the east side of Forfar Rd are all relatively flat and severely overgrown with vegetation (**Photo 21b**).

Recommendation: According to the SRD's records, the MoTI has been assigned responsibility to address the issues in this area. As a minimum, the vegetation should be removed in the ditch between 4172 and 4176 Forfar Rd, and in the roadside ditches on the east side of Forfar Rd.

Salmon Point Road:

SRD Reference Locations: FL-22

Location: 2199 Salmon Point Rd

Description: There are a series of 600mm CSP culverts on the north side of Salmon Point Rd leading to a 700mm CSP culvert crossing Salmon Point Rd. These culverts work together to convey a well-defined drainage course from north to south across Salmon Point Rd at this location (**Photo 22a**). This area is very flat and close to the ocean, and SRD records indicate that combined rainfall and high tide events have resulted in some groundwater back up, which will be monitored during future severe rainfall events. Our site investigations revealed some physical deficiencies including reverse ditch grading upstream of the 700mm CSP culvert, culvert corrosion (**Photo 22b**), as well as dense vegetation at the outlet end of the 700mm CSP (**Photo 22c**).

Recommendation: Perform maintenance on the ditch vegetation downstream of the 700mm CSP culvert crossing Salmon Point Rd. Monitor future severe rainfall events to observe potential flooding due to elevated groundwater and poor conveyance due to flat topography. It may be necessary to re-grade the ditch upstream of the 700mm CSP culvert, and remove and replace the culvert to establish positive grade throughout the local conveyance system.

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4585 Highway 19A:

SRD Reference Locations: FL-23

Location: 4585 Highway 19A – Emerald Acres Farm

Description: There is a 1,200mm CSP culvert crossing the farm's main driveway entrance (**Photo 23a**). According to SRD records and the land owner, the creek has overflowed several times over the last few years. The creek channel is significantly wider than the culvert in this area (**Photo 23b**), so the culvert is likely undersized.

Recommendation: Assess this culvert in detail with consideration for replacing it with a larger culvert.

Brian Rd:

SRD Reference Locations: FL-24

Location: 4410 Brian Rd (Oyster Garden Road Area)

Description: Drainage from the catchment discharges into the front yard of 4410 Brian Rd. The front yard is fully depressed (**Photo 24a**), presumably to provide storage for stormwater (**Photo 24b**). This is a poorly configured stormwater conveyance system, with upstream discharges from a fairly significant catchment on the west side of the Hwy routed across the Hwy, along the south side of Oyster Garden Rd, and into private property at 4410 Brian Rd. Moreover, no outfall from the front yard storage basin was identified during the site reconnaissance, nor is one indicated in any available drainage mapping. SRD records indicate that the owner's home has flooded badly in the past.

Recommendation: Major reworking is required here, including collection of all upstream stormwater and road runoff into roadside ditches on Brian Rd and Oyster Garden Rd, and the

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construction of a proper outfall to the Strait of Georgia. One possible outfall location is via Seabell Rd, directly to the west.

Lambeth Road:

SRD Reference Locations: FL-26

Location: Lambeth Rd, north of Croydon Rd

Description: The Lambeth Rd corridor lacks consistent roadside ditches (**Photo 26a**), and subsequently much of the road drainage is routed across private property toward Regent Rd to the east.

Recommendation: According to the SRD's records, the MoTI has been assigned responsibility to address the issues in this area. A long term solution would be to construct roadside ditching along both sides of Lambeth Rd, tying into the Terrain Rd ditch system to the north via the narrow right away at the north end of Lambeth Rd. The feasibility of this solution would need to be assessed further to confirm that proper grading is achievable.

In summary, there is a common theme among the flooding issues within Area 'D', and these issues are common to most municipalities where the neighbourhoods are established and have not been maintained to a reasonable standard to ensure proper conveyance of rainfall runoff. The majority of flooding issues relate to heavy vegetation in the ditches or failing culvert structures. The only real exception to this is the Oyster Garden Road and Brian Road area, where there is no clear path for rainfall runoff to be conveyed to the ocean. It would almost seem that the water was meant to cross the highway to the northwest and flow in behind the existing businesses and residences fronting the highway through the wetland area and eventually be discharged to the ocean through a culvert below the highway just south of the Rest Area. **Table 2.1** below lists those areas flagged by the SRD and investigated by MCSL,

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with associated comments and recommendations. The flagged areas are also identified by location and to which subcatchment or watershed they belong to.

Table 2.1: Summary of Reported Flooding Concerns in Area 'D'

Location	Watershed	ID	Comments / Recommendations
Terrain Road at Highway 19A	Terrain Road	FL-3	Heavy vegetation, culverts in fair condition. Ditch maintenance required to remove vegetation
Terrain Road at Highway 19A	Terrain Road	FL-4	Heavy vegetation, culverts in fair condition. Ditch maintenance required to remove vegetation
Terrain Road at Upland Road	Terrain Road	FL-5	Heavy vegetation, culverts in fair condition. Ditch maintenance required to remove vegetation
Terrain Road at Upland Road	Terrain Road	FL-6	Heavy vegetation, culverts in fair condition. Ditch maintenance required to remove vegetation
Wimbledon Road	Terrain Road	FL-7	Private Culvert Installation in failed condition. Replace culvert.
Linnea Place at Craig Road	Lynwood Road	FL-8	Ditching requires maintenance. Consider improvements to culverts
Craig Road	Lynwood Road	FL-9	Ditching requires maintenance. Consider improvements to culverts
Craig Road	Lynwood Road	FL-10	Ditching requires maintenance. Consider improvements to culverts
Glenmore Road Near Lorna Lane	Oyster River Mouth	FL-11	Local flooding during heavy rains. Consider ditch and culvert maintenance/upgrades
Maple Park Circle	Lynwood Road	FL-12	Local flooding during heavy rains. Consider ditch and culvert maintenance/upgrades
Wimbledon Road	Terrain Road	FL-13	Local flooding during heavy rains. Consider ditch and culvert maintenance/upgrades
Wimbledon Road	Terrain Road	FL-14	Local flooding during heavy rains. Consider ditch and culvert maintenance/upgrades
Wimbledon Road	Terrain Road	FL-15	Local flooding during heavy rains. Consider ditch and culvert maintenance/upgrades
Mayfly Creek crossing Highway 19A	Mayfly Creek	FL-16	Consider upgrades to Road Crossing Culvert
Regent Road at Terrain Road	Terrain Road	FL-19	Heavy vegetation, culverts in fair condition. Ditch maintenance required to remove vegetation
For Far Road at Brent Road	York Road South	FL-21	Heavy vegetation, culverts in fair condition. Ditch maintenance required to remove vegetation
2199 Salmon Point Road	Salmon Point	FL-22	Heavy vegetation, culverts in fair condition. Ditch maintenance required to remove vegetation
4585 Highway 19A	Salmon Point	FL-23	Consider upgrades to Road Crossing Culvert
Brian Road	4351 South Island Highway	FL-24	No storm outlet to Ocean. Storm System Requires Study and Upgrades
Highway 19A near Fosgate Road	Salmon Point	FL-25	Local flooding during heavy rains. Consider ditch and culvert maintenance/upgrades
Lambeth Road at Terrain Road	Terrain Road	FL-26	Local flooding during heavy rains. Consider ditch and culvert maintenance/upgrades
Wimbledon Road	Terrain Road	FL-27	Local flooding during heavy rains. Consider ditch and culvert maintenance/upgrades

2.8 Classification of Stormwater Management Areas

The stated vision for the study intends to provide the SRD with a planning tool as related to storm water issues in the rural Area 'D', which would include the identification of areas that are unfavourable or favourable for development. To accomplish this goal, several sources of information were incorporated to classify the various stormwater management areas within the study boundary. The intent of the stormwater management area classification is to assist SRD staff in identifying which lands warrant more detailed consideration for stormwater management at the time of proposed development.

From the data collected and reviewed related to the stormwater infrastructure, the environmentally sensitive areas and the surficial Geology, a classification methodology was devised. First, the watershed was looked at as a whole, and in the context of its existing storm water infrastructure, as well as, its proximity to the Oyster River Floodplain (see **Map 2.1**). The watersheds were scored according to a four point system as defined below.

- Watershed Infrastructure / Floodplain Score:
    - Watersheds with downstream infrastructure issues of known significance or are within the Oyster River Floodplain score 1 point to indicate that these areas require thorough study of the development within the watershed area as a whole, as part of the development permit process.
    - Watersheds with downstream infrastructure of known moderate issues score 2 points to indicate that these areas require consideration of the development within the watershed area as a whole, as part of the development permit process.
    - Watersheds with downstream infrastructure of known minor issues score 3 points to indicate that these areas may need to consider minor upgrades to downstream infrastructure as may be appropriate.
    - Watersheds with no known downstream infrastructure issues score 4 points to indicate that these areas currently have no known infrastructure issues associated with the development area.

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To summarize the ranking for each watershed refer to **Table 2.2** below, which lists the watershed name, its score and associated comments to justify the scoring.

Table 2.2: Watershed Infrastructure / Floodplain Score

ID	Watershed Name	Comments	Score
1	Woods Creek	Highway culvert repeatedly floods	1
2	Storrie Creek		4
3	Lynwood Road	Minor Local Flooding - Maintenance Issue	3
4	Neigal Crescent		4
5	York Road North		4
6	York Road South	Minor Local Flooding - Maintenance Issues	3
7	Mayfly Creek	Flooding during severe rainfall. Highway culvert known to flood	2
8	4351 South Island Highway	Flat terrain. Known downstream flooding issues	1
9	4200 South Island Highway		4
10	Oyster Garden Road South		4
11	Salmon Point	Flat terrain. Known downstream flooding issues	1
12	Terrain Road	Flat terrain. Known downstream flooding issues	1
13	Salmon Point Resort		4
14	Oyster Garden Road Beach		4
15	Oyster Bay South		4
16	Oyster Bay North		4
17	York Road Beach		4
18	Appian Way		4
19	Storrie Beach		4
20	Oyster River Mouth	Oyster River Floodplain Area. Flat terrain	1

As the management of storm water has direct effect on environmentally sensitive areas, the second criterion used to develop the classification was to create a 30m buffer around all identified ESA areas, according to the default 30m Streamside Protection and Enhancement Area (SPEA, see **Map 2.2**) used by the simple assessment methods in the Riparian Areas Regulation. Land within these areas was given a lower stormwater management score since they will need to undergo RAR assessments to determine the permissibility of development.

Confirmed fish presence within the ESAs or streams also factored in the scoring system as follows:

- ESAs:
    - Lands not in an ESA or stream setback = 3
    - Lands in an ESA or stream setback, unconfirmed fish presence = 2
    - Lands in an ESA or stream setback with confirmed fish presence = 1

The other factor considered in the generation of the storm water index was the surficial soils and their potential for infiltration as shown on **Map 2.3.**

- Infiltration Potential:
    - High infiltration potential = 3
    - Medium infiltration potential = 2
    - Low infiltration potential = 1

The product of the Watershed Infrastructure / Floodplain score; the ESA score and the Infiltration Potential score was calculated to develop a classification of Stormwater Management by Favourability as shown on the enclosed **Map 2.4**. The favourability classification defines those areas that are **Favourable, Less Favourable or Not Favourable** according to the following classes of the overall score:

1. Not Favourable areas for development from a stormwater management perspective had an overall score between **0 and 16.**
2. Less Favourable areas had an overall score of **17 to 24.**
3. Favourable areas had an overall score of **25 to 36.**

For example, an area that is in a watershed with a score of 1 because it is in a watershed that has significant downstream issues related to the existing stormwater infrastructure; and is also in a wetland with confirmed fish presence (ESA score 1); and is in a surficial geological zone

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with an infiltration rating of 2 is assigned an "Overall Classification Score" of 2, and is an obvious area of concern as it relates to developing into residential or commercial land uses.

An area with a high classification score indicates areas where ESA concerns are a minimum and infiltration potential is the highest, and indicates that the management of stormwater for proposed development is likely achievable to a set standard. It does not provide any other indication toward the suitability of the land for development. Since the favourability classifications are based on generalized criteria for the management of stormwater including the permeability of soils, location of flood plain areas and known stormwater infrastructure conveyance capacity issues within the development area, the classification map is to be used only as a guide, indicating lands where stormwater issues may be present or are known. Individual developments must complete a comprehensive stormwater management plan as part of the Development Permit Application process, which includes a site assessment and an assessment of downstream infrastructure capacity.

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3.0 HYDROLOGY

After looking at the characteristics of the watersheds within Area 'D', and establishing those areas, which are considered more favourable for development (from a storm water management perspective) than others, it is prudent to develop standards for ensuring development meets suitable goals with respect to stormwater management. On this basis, the hydrology of the watershed must first be determined to define the amounts and distribution of rainfall over the watershed, so that proper targets for managing the rainfall can be formulated.

The hydrology of a watershed is described by the water balance model (or hydrologic cycle). The principle of the water balance model is that each drop of precipitation interacts with the earth's surface through the following:

- Evaporation
- Transpiration
- Infiltration
    - Interflow
    - Groundwater recharge
- Runoff

Eventually, each drop of precipitation is returned to the atmosphere and the process repeats itself.

In a natural condition, the watershed exhibits an appropriately balanced and sustainable rainfall response. This ultimately results in healthy and sustainable stream hydrology, water quality and riparian and stream environments. However, as urbanization occurs and imperviousness of the watershed increases, the hydrology of the watershed changes resulting in a reduction in transpiration and infiltration, and an increase in surface runoff.

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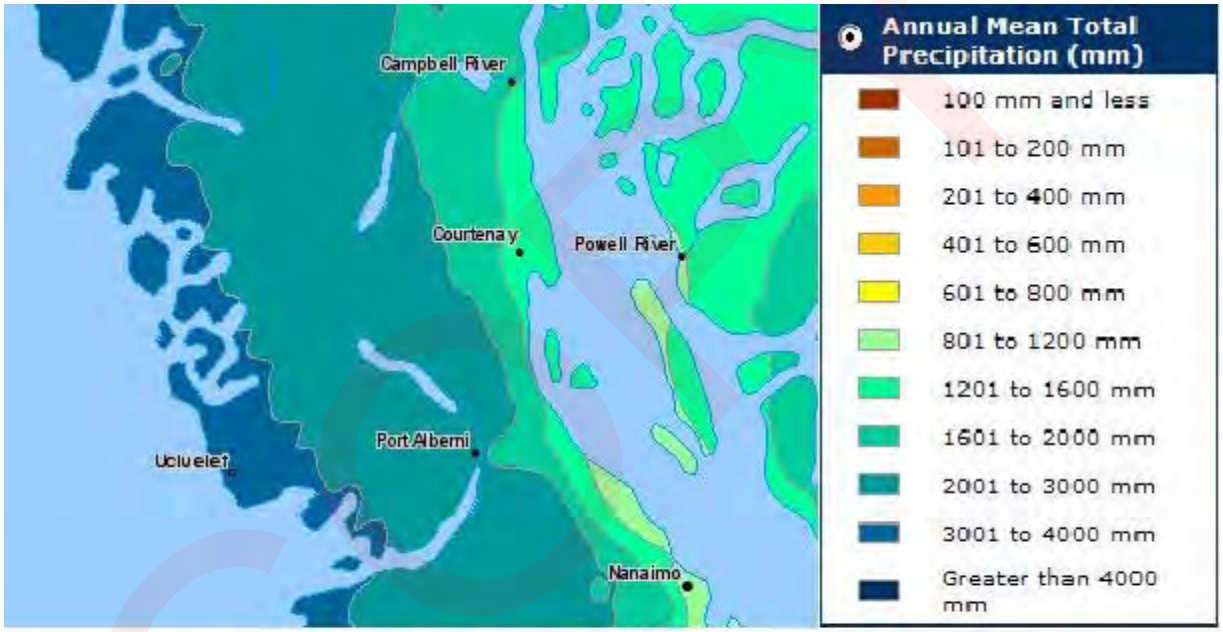
3.1 Rainfall Characteristics of Area D

Figure 3.1 indicates the regional Annual Mean Total Precipitation for the mid-Vancouver Island and Discovery Islands region.

Figure 3.1: Regional Mean Annual Precipitation Atlas



Source: Annual Mean Total Precipitation (Atlas of Canada)

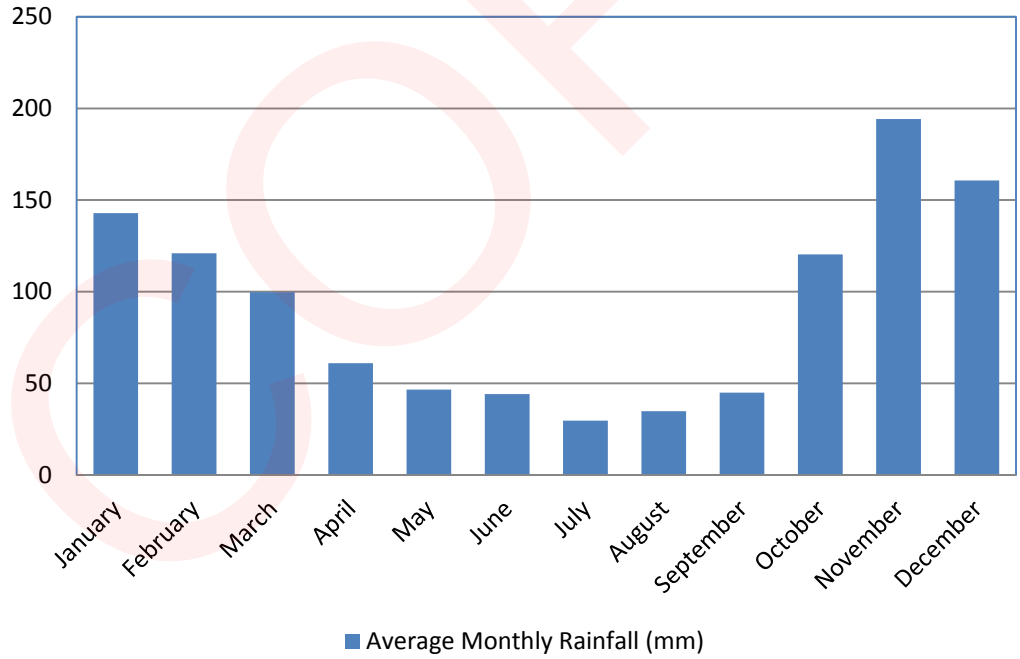
http://atlas.nrcan.gc.ca/site/english/maps/environment/climate/precipitation/precip?layers=pcp_annual&scale=42051275.911682&mapxy=-1694825.2083336664%201868243.25&mapsize=1150%201350&urlappend=

The map suggests the Oyster River study area receives an average annual rainfall consistent with the region around Courtenay/Comox, at 801 to 1200mm of precipitation (Comox Airport weather station reports a mean annual precipitation value of 1179 mm (1971-2000)). Areas banding Courtenay/Comox, including Campbell River, are in the 1201 to 1600mm average annual precipitation zone (Campbell River airport weather station reports 1451 mm of total

annual precipitation on average). Seasonal variations at available Island weather stations were compared and found to be consistent with **Figure 3.1** throughout the region.

For the purposes of assessing the hydrology for the study area, the Environment Canada rain gauge at the Comox Airport has been used. The Environment Canada website displays "Canadian Climate Normals or Averages" for all its stations. **Figure 3.2** shows the long-term average monthly rainfall at the Comox Airport. The graph provides a key observation of the seasonal distribution of rainfall: The summers are relatively dry, and most of the rainfall occurs between October and March each year.

Figure 3.2: Monthly Average Rainfall* (1971-2000)



* Obtained from Environment Canada – Canadian Climate Normals

Rainfall statistics for the study area are as follows:

- 40% of all days have some amount of rainfall falling primarily in November, December and January as shown on **Figure 3.2**.
- The Mean Annual Rainfall (MAR) based on daily amounts of rainfall is calculated to be 44 mm/day, with only 0.8% of rainfall days exceeding this amount.
- The largest single day of rainfall measured to-date is 113mm, which occurred on December 22, 1957.
- The longest single-event storm for the period of record is 36 hours with a total accumulation of rainfall of 119.6mm (12/20/1986 to 12/21/1986).

3.2 Runoff Characteristics of Area D

Rainfall runoff is directly correlated to the amount of rainfall experienced in an area, but it is also a function of topography, soil characteristics and vegetated cover. Typically though, runoff on the east coast of mid-Vancouver Island follows the same pattern as rainfall with most areas displaying a rather homogeneous response to rainfall. That is, there is usually a direct correlation to the amount of runoff to rainfall, and more importantly the amount of runoff tends to be fairly uniform on a unit area basis. Put another way, drainage areas that have similar development characteristics tend to produce the same amount of runoff on a per hectare basis regardless of their size.

To illustrate the runoff characteristics in Area D the daily flow record for the Little Oyster River at York Road (Water Survey of Canada Gauge 08HD023) for 2011 is shown on **Figure 3.3**. The figure shows a typical year of flow with most runoff occurring from November through to the end of March. It can also be shown that for this 38 square kilometer drainage basin, on average, the volume of runoff is about 70% of the total volume of rainfall.

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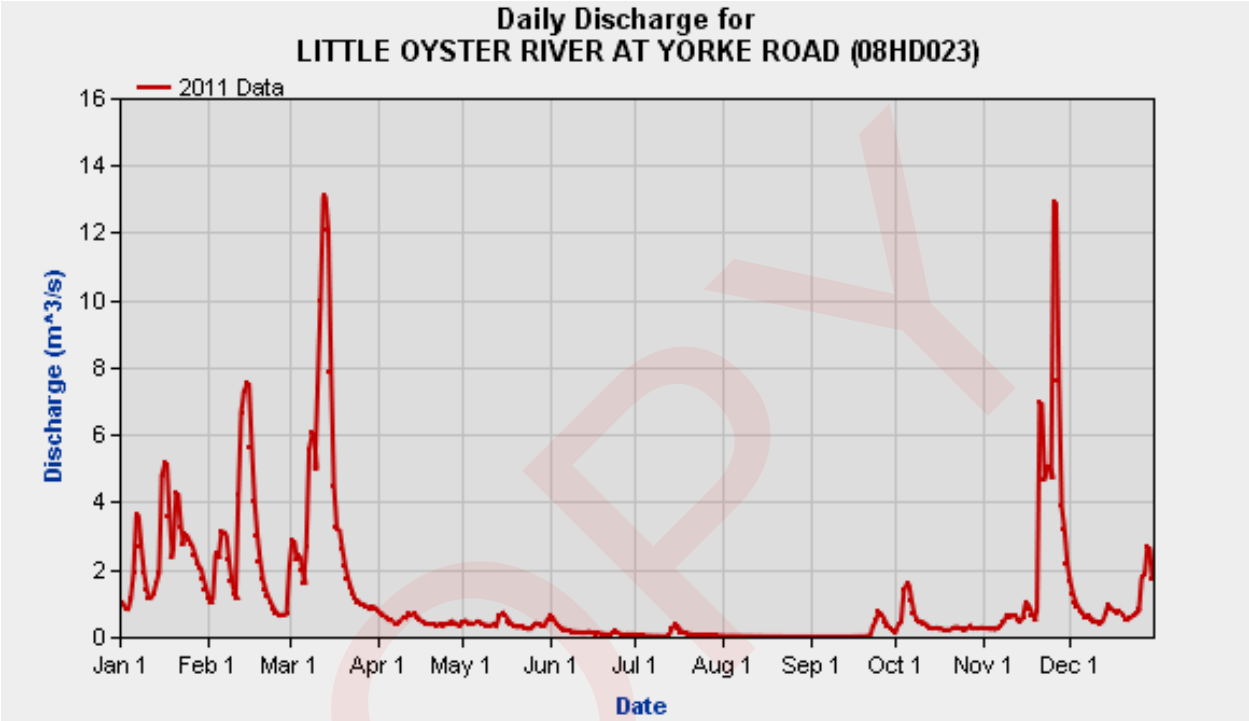
Figure 3.3: Daily Discharges for Little Oyster River at York Road.



3.3 *Impacts of Development*

Urbanization of a watershed can significantly alter the natural characteristics of the watershed, including changes to the watershed's natural response to rainfall, runoff water quality, and the natural habitat supporting riparian and aquatic life. Many of these changes are directly or indirectly attributable to an increase in imperviousness of the watershed. As a watershed undergoes development, typically the proportion of impervious surfaces within the watershed increases, due to the construction of new roadway surfaces, driveways and roof-tops. The amount of imperviousness within a watershed is typically represented as a percentage of the total watershed area, expressed as % impervious.

In general, there are four main categories that describe the impact that development can have on a watershed, as follows:

1. Changes in hydrology
2. Impact to riparian habitat
3. Increase in pollutants
4. Changes in stream habitat

Each of the above is described in greater detail in the following sub-sections.

3.3.1 Changes in Hydrology

Urban stormwater infrastructure has historically treated rainfall as a nuisance, with the primary goal being the protection of infrastructure assets from flooding, placing an emphasis on collection and conveyance. This results in more direct and efficient connections from the land surface to the receiving natural watercourses. More direct connections create a reduction in the time it takes for runoff to arrive at the receiving watercourse. Since runoff from the watershed tends to arrive at the watercourse more simultaneously, the result is an increase in the peak flow that is discharged to the receiving watercourse. An increase in the occurrence and rate of high flow events can put significant strain on stormwater conveyance infrastructure, as well as cause damage to the receiving watercourse channel.

Conversely, the same quick response to runoff that causes high peak flows during wet weather can also lead to a reduction in dry weather base flows. Precipitation that is infiltrated into the ground and transported via interflow to the receiving watercourse travels relatively slowly, resulting in a slow release after the end of a rainfall event and throughout an ensuing dry weather period. Since this type of infiltration can be reduced as the watershed is developed, the result is a reduction in dry weather base flows in the watercourse. Base flows are vital to supporting aquatic life in the stream environment during dry weather conditions.

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3.3.2 Riparian Habitat

The riparian habitat is the environment adjacent to a watercourse which supports aquatic life by performing many important functions, including the provision of shade, stream bank stabilization, food, and shelter for fish. Degradation of the riparian area can therefore reduce the quality of the stream habitat. Riparian areas are protected from development by Provincial legislation, known as the Riparian Areas Regulation via the Fish Protection Act.

Potential development impacts on riparian areas, if left unchecked, include a reduction in the size and character of the riparian area, introduction of invasive plant species, and loss of riparian vegetation. Hydrologic impacts on the riparian area include an increase in the occurrence of bank-full events, which are runoff events that fill the normal channel bottom to the top of its banks. Bank-full events can be damaging to the stream channel, as they result in erosion, channel widening, de-stabilization of the stream substrate, and siltation in flatter reaches of the watercourse.

3.3.3 Pollutants

Urban land uses introduce a number of different contaminants. Many potential contaminants are related to vehicle traffic on paved roads, including hydrocarbons and heavy metals. Fecal coliforms can be introduced through agricultural land uses, domestic pets, and septic cross-connections and leaks. The increased incidence of peak flow events also generates higher flow velocities, causing erosion and resulting in greater concentrations of Total Suspended Solids (TSS). Urban watersheds also typically exhibit greater runoff temperatures.

Not only do urban watersheds generate more pollutants, they also tend to flush them out in higher concentrations. The flashy nature of developed watersheds' rainfall-runoff response introduces large pollutant loadings following the first large rainfall event following a dry weather period. This is known as a "first-flush" event.

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3.3.4 Stream Habitat

Natural watercourses serve as essential habitat for aquatic life and other wildlife. Changing hydrologic conditions caused by development can result in an increase in occurrence of bank-full events, which can significantly alter a watercourse's morphology and therefore the quality of the stream habitat. Bank-full events can cause more stream erosion in high-velocity reaches, and sedimentation in low-velocity reaches. Although this is a natural process, the natural rate of occurrence of these defining events can become unsustainable if the rate of incidence increases significantly. Other potential harmful impacts of development include a reduction in base flows, and the construction of physical barriers such as poorly designed or maintained culvert crossings which can become a barrier to fish passage.

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4.0 Water Quantity and Quality Targets for Area 'D'

4.1 The Water Balance Approach

As indicated in the previous sections the management of storm water has moved away from the discrete analysis of rainfall runoff toward a more holistic approach that considers the overall water balance within the hydrologic cycle of a watershed. The water balance approach considers the mass balance evapotranspiration; infiltration; interflow; deep groundwater recharge and the surface runoff over the history of the watershed as a means of forecasting the requirements for future development.

To properly plan at the watershed level, the Water Balance Model planning tool (powered by QualHYMO) was introduced by the Partnership for Water Sustainability in British Columbia. This tool integrates the Water Balance Model and QualHYMO to provide engineers and planners with a run-off based approach for source control evaluation and stream health assessment. This approach was piloted by the City of Surrey, Fergus Creek Integrated Stormwater Management Plan, where the run-off based approach was simulated using QualHYMO, illustrating four scenarios for the Watershed, namely:

1. Pre-Development Case: representing the watershed in accordance with the Design Criteria Manual of the City of Surrey. This watershed is essentially in its current state with a mixture of urban and rural development. This watershed condition provides the baseline upon which all other scenarios can be compared.
2. Post-Development condition without mitigation: provides a view of the potential impacts due to development, if mitigation were not included in future planning and development. This case represents the extreme, to provide a comparison for both the pre-development condition and the mitigated development condition of the watershed.

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3. The "Guidebook[2]" scenario: represents a developed watershed where one half of the mean annual storm must be retained on site. For storms that exceed this volume, the discharges are detained in a series of ponds to prevent increases in downstream flooding. (One unintended consequence to implementing the full Guidebook requirement was to significantly reduce the baseflows in the stream.)
4. An alternative mitigation case has been developed to eliminate the unintended reduction in base flows and to provide a more balanced approach.

The results of the above cases are presented below in **Figure 4.1**, which indicates the statistical exceedance of all rainfall events in relation to stream discharge. By balancing the pre and post-development exceedance curves with appropriate stormwater controls throughout the watershed, the overall stream health of Fergus Creek was predicted not only to be maintained, but potentially enhanced. It is this methodology that has now been widely accepted in BC, and is proposed for the SRD Area 'D' Stormwater Management Plan.

Utilizing an appropriate suite of "Low Impact Design" (LID) techniques, post-development hydrology will approximate the existing (pre-development) stormwater flow-duration relationship over the spectrum of historic data. Extreme run-off/flood events will be mitigated/managed through the use of appropriately designed stormwater detention and retention facilities.

Soils within the study area have a finite capacity to capture and infiltrate run-off, without impacting existing hydrogeological regimes, or breaking out down slope in a manner inconsistent with pre-development conditions. The site specific locations and magnitude of groundwater recharge at each proposed location will need to be modeled and documented by the proponent of each development, for the purposes of informing detailed design.

[2] The Stormwater Planning Guidebook (2002) was developed as a precursor to the new Water Balance Approach, and formalized the objectives and guiding principles for an "Integrated Stormwater Management Plan (SWMP)"

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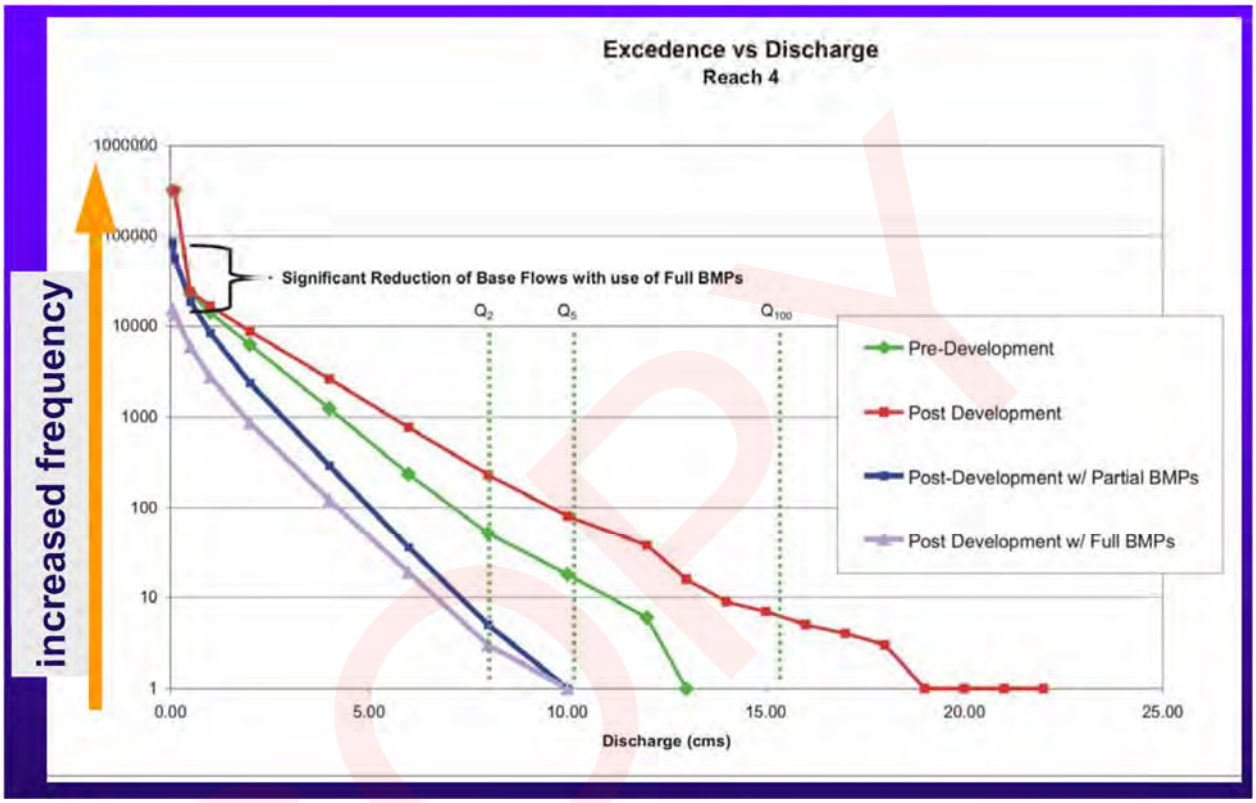
Figure 4.1: Exceedence vs. Stream Discharge – Fergus Creek Pilot Project



It is proposed to utilize the performance criteria founded on the 2007 "Beyond the Guidebook" document. On this basis, the following criteria are proposed:

- A focus on flow duration, i.e., provide an analysis of the discharge rates that could adversely affect downstream properties, if flow durations were increased. The opportunity may exist to extend the flow duration of smaller events, thus providing a net environmental benefit, whilst decreasing flood potential.
- Large, infrequent events (eg: 25, 50 and 100 year run-off events), are to have peak run-off rates attenuated [not to exceed pre-development peak], through the use of ground recharge, community based detention and other BMPs.

- Flood routing is to be estimated, up to and including the Q_{100} event, using statistical methods.
- Changes in expected flow-duration and overall drainage basin average annual volume will not cause erosive forces in excess of pre-development conditions, nor result in downstream aquatic habitat degradation. This will be inferred based on the sub watershed analysis.

4.2 Establishing Water Quantity Targets for Area 'D'

The background information provided above sets the stage for assessing appropriate management targets for Area D. As it is stated that the post-development hydrologic conditions should statistically mimic pre-development conditions, the establishment of Pre-Development runoff targets provide the basis for future designs.

As the study area is relatively small, it is assumed that the hydrologic response is fairly uniform over the entire catchment. That is, the same pre-development targets are to be used for further analysis, regardless of subcatchment size. Hydraulic modelling has been completed using the QualHymo software to assess pre-development rain water management targets for future development.

In order to ascertain the accuracy of a hydraulic model, verification is ideally required against known rainfall and run-off values within the study area. Where such data is not available, comparison in the form of a regional analysis can serve as a suitable alternative. In the present context, the latter option is required to verify the available stream flow data within the watershed.

The intent of the regional analysis is to compare model results with similar watersheds within the same geographic area. Peak discharge rates and run-off volumes are typically used. The regional analysis method is most accurate when utilizing long term flow measurements. Thus, proxy streams selected for comparative analysis were selected, in part, based on the duration of reliable flow data available.

To select an appropriate proxy stream, the nearby gauge needs to be within a region of similar climate and geography, including land use and soil characteristics. Based on regional mean annual precipitation, streams initially considered for use in a regional analysis are shown on **Figure 4.2**, and listed within **Table 4.1**. Streams with catchments of up to 250 square kilometres were selected. Continuous gauges were favoured over seasonal or intermittent. Of the seven streams listed in **Table 4.1**, six were deemed suitable for use in the verification process. The Little Oyster River was excluded from this analysis, largely because it is a seasonal gauge only monitoring flows between the months of June and October.

Figure 4.2: Hydrometric Station Locations

All other stations were deemed suitable based on their geographic characteristics, as well as their relative state of catchment development and similar soil characteristics. Notably: Hyacinthe Creek and the Browns River were found suitable based on their relatively undeveloped catchments. Dove Creek and the Tsolum River were deemed suitable based on their lack of development. These watersheds were also favourable based on their long record of flow data and similar geographic and soil characteristics.

Table 4.1: Regional Stream Characteristics

ID	Name	Area (km2)	Years of Record	Continuous
08HD016	Hyacinthe Creek on Quadra Island	7.68	1990-1999	Yes
O8HB011	Tsolum River near Courtenay	251	1964-2010	Yes
08HD023	Little Oyster River at Yorke Rd	38	1994-2008	Seasonal
08HB089	Tsolum River below Murex Creek	86.7	1997-2008	Yes
08HB075	Dove Creek Near the Mouth	41.1	1985-2008	Yes
08HBB11*	Little River at Wilkinson Rd	19.3	1987-92	Intermittent
08HB025	Browns River near Courtenay	86	1960-2008	Yes

* Provincial Station – Only Monthly Average Flow Data available from Comox/Black Creek Water Allocation Plan (MC MoE, 1997)

Given the limited data available for the area, the above stations were all utilized for the calibration of run-off volumes and peak flows.

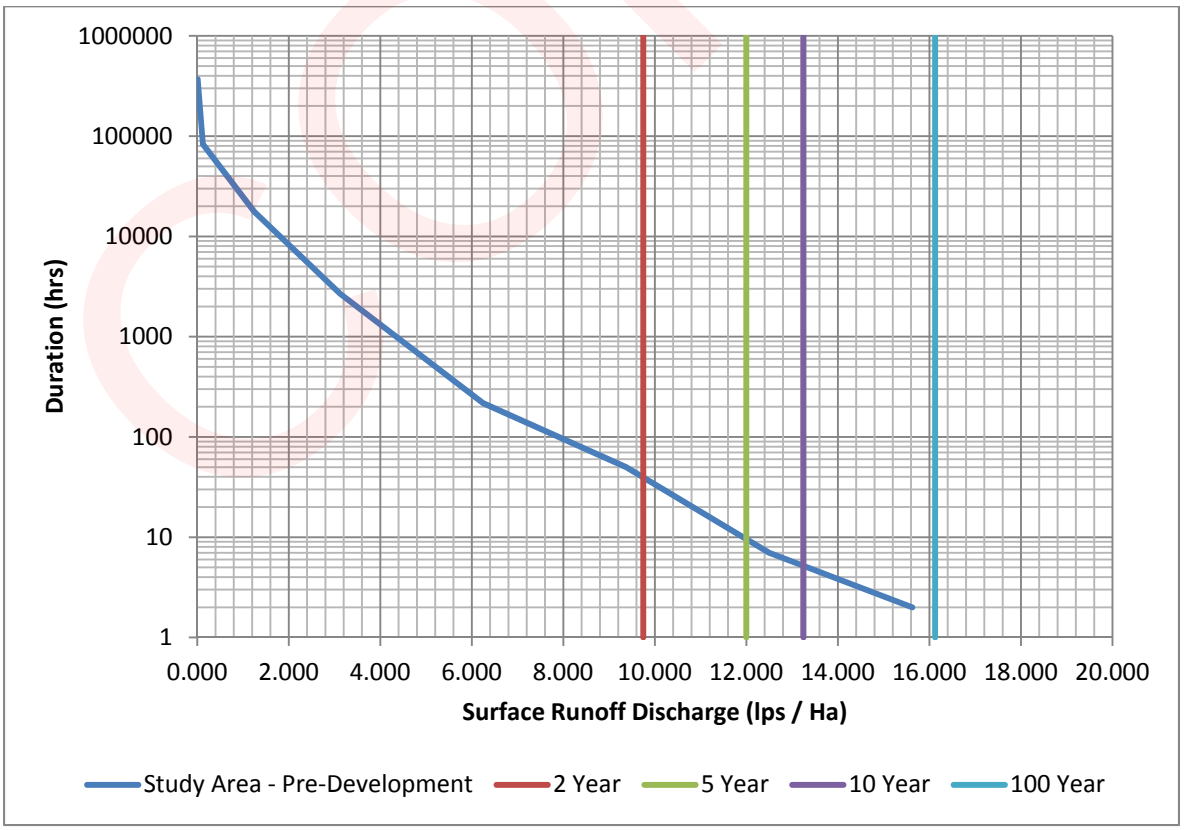
Throughout the course of our previous work in the region, we have developed an assessment of pre-development runoff rates using a flood frequency analysis. The verified flow-duration relationship for the study area is shown on **Figure 4.3**. This figure includes the calculated 2, 5, 10 and 100 year return period discharges. This relationship will form the basis of the targets for pre-development flows in the Study Area, and the metric against which post-development modelling should be compared to, up to the 1:100 year return periods.

The following list summarizes the key volumetric targets on a per unit area basis, allowing each subcatchment to achieve a normalized target as a product of its total area.

- The following rates form the discharge targets for the study area:
  - 16.1 l/s/ha for the 1 in 100 year event
  - 13.3 l/s/ha for the 1 in 10 year event
  - 12.0 l/s/ha for the 1 in 5 year event
  - 9.8 l/s/ha for the 1 in 2 year event

In general, development at the "lot level" should match the normalized discharge-duration results of **Figure 4.3**.

Figure 4.3: Flow-Duration Target Relationship for the Study Area



4.3 The Possible Effects of Climate Change

The Terms of Reference require that consideration be given to the effect of Climate Change on stormwater management in Area 'D'. The Pacific Climate Impacts Consortium (PCIC) at the University of Victoria has reviewed and assembled 15 different climate change models. The science of climate change is not complete; long term monitoring of evolving weather patterns required to verify model accuracy is limited. The 15 accepted climate change models used by PCIC provide very different predictions, thus, the approach used here utilizes the Median Climate Change model, out to year 2050. At this level of study this methodology is considered a reasonable indication of the possible effects of climate change on the storm water management systems in Area 'D'.

The following information from the PCIC was input into QualHYMO:

- Emission Scenario A1B was selected as it represents an average climate scenario for average future emission values.
- Climate Model 15GCM (it also provides an average prediction).
- The MEDIAN percentile was used, and:
- A MEDIUM term is considered to be 2050.

Factors derived from the above scenario are used to translate hourly values on a monthly basis. That is, the same adjustment factor was used for each value within a given month. Example, all hourly rainfall values are to be increased by 6% for the month of January.

Temperature adjustments are based on predicted temperature increases; also on a monthly basis. Using the above criteria, the adjustment factors used for Area 'D' are listed on **Table 4.2** below.

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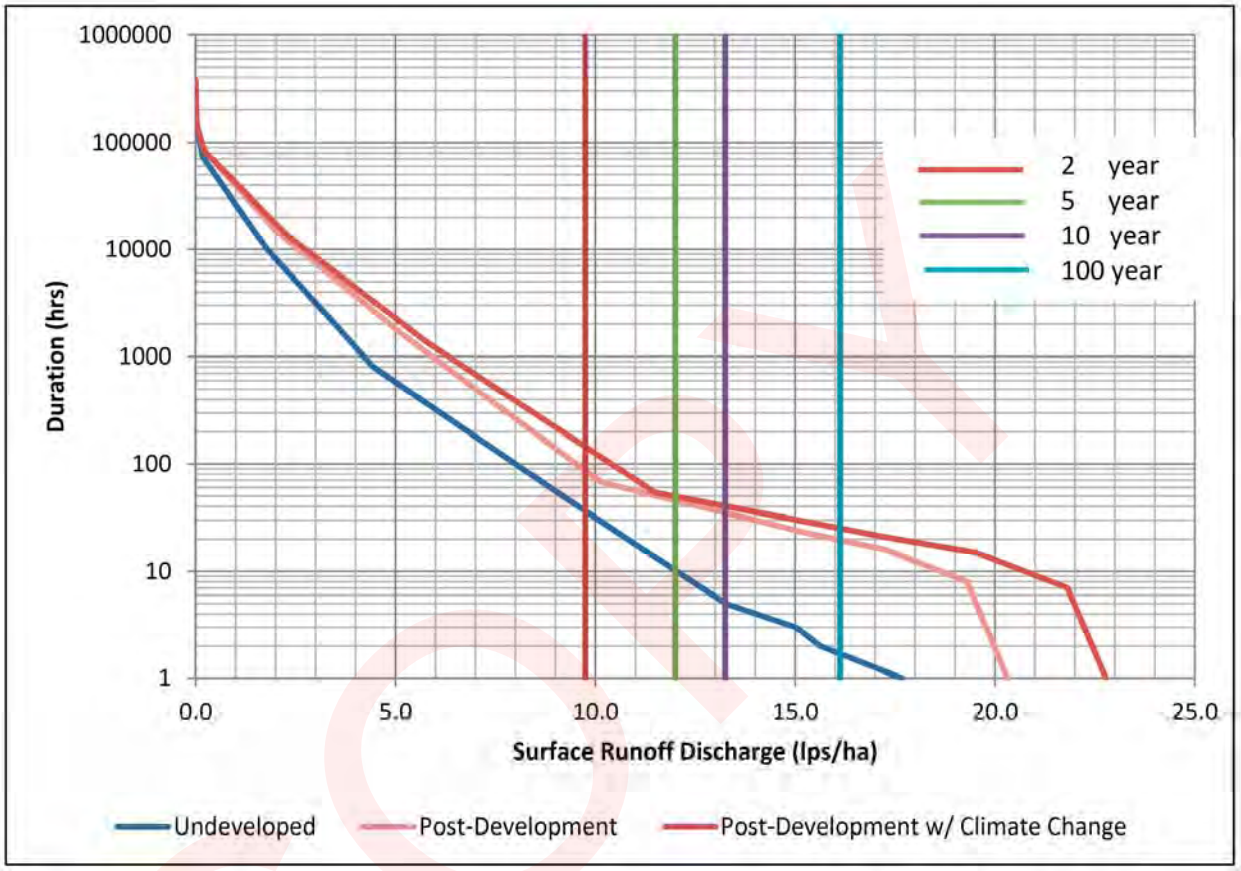
Table 4.2: Monthly Climate Change Factors

Month	% Change from 2014	
	Precipitation	Temperature
January	6	1.5
February	5	1.7
March	8	1.4
April	3	1.4
May	8	1.3
June	-9	1.7
July	-22	2.1
August	-21	2.1
September	-7	1.9
October	9	1.7
November	10	1.5
December	12	2

The above factors were applied to historic hourly rainfall and temperature records, and simulated in the QualHYMO software to predict the potential effect of Climate Change. The resultant changes to the target Flow-Duration Relationship due to predicted variation in weather in 2050 are shown graphically on **Figure 4.4**, which compares the calculated exceedence of discharges from a typical post-development model assuming historic rainfall and temperatures, as well as those calculated for the Climate Change scenario of 2050.

Modeling indicates an increase of about 12% more runoff, when expressed as both peak and duration. Within the post-development model scenario, all parameters were left unchanged from the undeveloped scenario, with the exception of percent impervious and climate change related variation in rainfall and temperature. A weighted average of 71% impervious was used for the post-development model based on 55% and 90% impervious for Residential and Commercial zoning respectively.

Figure 4.4: Flow-Duration Comparison including Climate Change



Since the science of Climate Change is still in development and the Provincial Government has not enacted legislation or provided guidance with respect to planning for climate change as it relates to storm water management, it is recommended to implement only those targets which have been defined in Section 4.2. The above assessment provides a sensitivity of possible effects on the requirements for storm water management, which shows approximately a 12% increase over a 35 year planning horizon. The Strathcona Regional District should continue to monitor the climate change modelling, and any direction received from senior levels of government should be acted upon once provided.

4.4 Water Quality Targets for Area 'D'

Water quality targets should meet the minimum requirements of the Provincial guidelines and which are now generally implemented in many BC municipalities, including Campbell River. Requirements for storm water quality of runoff from new developments should provide treatment of runoff from new impervious areas for all storm events less than the Mean Annual Rainfall (MAR) of 44 mm in 24 hours, with specific targets as follows:

- Total Suspended Solids – Remove 80% of the annual average load
- Oil & Grease – Remove a minimum of 80% of concentrations from runoff from commercial and industrial areas

The above targets provide a reasonable approach to the management of storm water quality, especially as it relates to discrete sites with significant portions of impervious surfaces, which are more common to commercial, industrial and/or institutional developments. Notwithstanding, the same targets should be considered for smaller, more comprehensive residential developments, where neighbourhoods are being considered.

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5.0 A PLANNING STRATEGY FOR AREA 'D'

The previous sections have set the stage for the final section, which deals with finding applicable tools to deal with the storm water issues and challenges in Area 'D', including the areas of identified concern with respect to further development in the Area. In the following sections, the identified issues and challenges will be presented along with a number of strategies for ensuring that targets can be achieved through sound engineering design and effective planning tools for stormwater management.

5.1 Issues and Challenges

Arising from the assessment of the physical characteristics of the watershed, as well as the hydrologic responses and other factors such as environmentally sensitive areas, the following issues and challenges associated with storm water management in Area D are provided below:

a) Maintenance/protection of ESAs
b) Undefined drainage courses and identified flood plains, resulting in flooding
c) Regular maintenance of ditch vegetation
d) Construction/reconstruction of roadside ditches to mitigate road runoff from entering private property
e) Establishment of barrier free fish passage (particularly at highway culvert crossings)
f) Identification of a stormwater management classification for all land areas within the study area as they relate to development potential
g) Water quantity and quality targets for development
h) Identification of potential stormwater management techniques to mitigate land development impacts

Of the items listed above, only the identification of potential stormwater management techniques remains to be discussed. The following section provides a discussion of several techniques that

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are commonly implemented as part of a "low Impact development" (LID) strategy that respects the water balance approach to the management of rain water.

Other issues related to storm water management, but considered outside the scope of this study include:

a) Erosion and sediment control on construction sites
b) Presence of native wildlife and plant species
c) Mitigation of invasive plant species
d) Vegetation retention during development

5.1.1 BMP Selection Criteria

In order to establish a new vision for development in the study area, one that includes LID best management practices, the chosen practices have to be agreeable to all stakeholders and achieve the desired long-term effect for maintaining the pre-development stormwater targets. The following sections discuss potential Best Management Practices (BMPs). The discussion includes a list of pros and cons associated with each technique, and maintenance strategies. The menu of BMPs is not specific to any one area of the study area, and specific preference of the developer's for implementation will need to be pre-screened with the SRD in order to gain approval.

In order to mitigate the effects of development and mimic predevelopment hydrological conditions, an appropriate compliment of Best Management Practices (BMPs) must be implemented. The efficacy of the specific strategies, or BMPs employed largely depends on in-situ soil conditions. That is, the ability of the existing soils to infiltrate, and convey rainwater to the interflow or deep groundwater layers.

A number of criteria have been identified for use in evaluating/assessing the desirability of specific BMPs. These criteria are discussed in detail below.

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1. **Function and Site Suitability:** Of the criteria listed within this section, function and/or site suitability are the only requirements that are not subjective. That is to say, the BMPs that are identified for use must perform the hydrological function required, i.e., infiltration, storage/detention, etc., and be suitable based on the in-situ conditions of the particular site.

2. **Location and Access**: All BMPs must be located such that ongoing (public) operation, maintenance, and (potential) eventual replacement is possible. Generally, the placement of BMPs should:

    a. Be within municipal rights of way, park areas, or other public spaces.
    b. Should not conflict with other utilities. That is, BMPs should ideally be located outside of other utility corridors, and/or above other utilities so they can be accessed with minimal disruption to other municipal or third party utilities.
    c. Where possible, should be located in such a manner as to provide visual indication of lack of performance. A possible example could be installing overflows from exfiltration galleries that spill to the public right-of-way, where problems would be visible during routine inspections.

3. **Ownership**: The issue of ownership, and therefore the ongoing obligation to operate and maintain stormwater management features in perpetuity must be carefully considered. There is concern that privately owned infrastructure may not been maintained to the same standard as the SRD would maintain their infrastructure. This is not an unreasonable assumption, given the propensity of some home owners to "fix when broken", rather than perform regular maintenance. An example of poorly maintained privately owned infrastructure is onsite septic disposal systems. The management of privately owned infrastructure should ideally not be dictated by covenants, but rather should be self-regulating: i.e.,

    a. On site, or privately owned infrastructure, must be designed in a manner that precludes these systems from negatively impacting community owned

infrastructure, in the event of a failure. Such a failure could be caused by misuse, lack of maintenance, or the expiration of service life.

b. Community based systems are to be designed to account for reasonably foreseeable failure of privately owned systems (due to lack of maintenance etc.) without decreasing the function or capacity of the community system.

4. **Initial Construction Cost:** The costs of constructing stormwater management features must not be prohibitive. Notwithstanding, where a number of stormwater management options exist (which perform the same hydraulic function), preference should be given to the option with the lowest life cycle cost.

5. **Ongoing Operation and Maintenance Costs**: Low impact storm water management systems typically carry higher operation and maintenance costs than traditional (hard piped) storm drainage systems. These increased costs are unavoidable with the shift to low impact development. Notwithstanding this, every effort should be taken to mitigate the long term liabilities of LID features.

6. **Replacement Costs**: Some LID features have service lives shorter than that of the development they are designed to mitigate. In general, preference should be given to LID features with the greatest longevity, provided they present the least life cycle costs. Further, BMPs should be designed not as standalone infrastructure elements, but rather as an integral part of the lands servicing systems. For example, an exfiltration gallery with an expected service life of 10 years should ideally not be located under a road structure with a service life of 40 years. A more suitable location could be a grassed boulevard, above service connections to private properties.

7. **Legislative Management Tools**: The mitigating BMPS selected for ICI vs. single family residential areas may be different, based on the ability of the SRD to enforce construction and maintenance of private onsite infrastructure. For instance, the SRD may decide it preferable to transfer the long term liability of maintenance of stormwater management infrastructure to owners of ICI properties, in the same way as many municipalities require documentation of maintenance to oil/water separators or

landscaping. The Development Permitting process should provide a mechanism for the SRD to ensure conformance with this document. Section 219 covenants could be used to enforce ongoing maintenance, as this encumbrance travels with the land in perpetuity.

A select listing of legislative management tools includes:

Section 907 of the Local Government Act allows municipalities to limit the maximum impervious area within a given zone.

Runoff control requirement:
907
(1) A local government may, by bylaw, require that an owner of land who carries out construction of a paved area or roof area, manage and provide for the ongoing disposal of surface runoff and storm water in accordance with the requirements of the bylaw.
(2) A local government may, by bylaw, establish the maximum percentage of the area of land that can be covered by impermeable material.
(3) A bylaw under subsection (1) or (2) may be different for
(a) different zones,
(b) different uses in zones,
(c) different areas in zones,
(d) different sizes of paved or roof areas, and
(e) different terrain and surface water or groundwater conditions

Rent charges – Annual fees levied to ensure specific maintenance activities are performed by a land owner.

Section 219 Covenants – legal instruments, registered on title that run with the land, utilized to impose specific duties or requirements.

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Section 919.1 (1) (b) protection of development from hazardous conditions. In the context of this study, the SRD can use this section to establish a Development Permit Area (DPA) to protect from the hazardous condition of flooding.

5.1.2 General - Lot Level BMPs

The term "Lot level" stormwater management refers to mitigating measures taken at the individual home, or "Lot" level. Such facilities play a vital role in the overall stormwater management process, by retaining rainwater at the source, therefore decentralizing the management of rainwater within a given area.

Unlike conveyance infrastructure and end-of-pipe controls that are typically owned and operated (maintained) by the municipality, operation and maintenance of lot level controls on private property is the responsibility of the individual property owners. To ensure storm water management features are maintained over the lifespan of the infrastructure, consideration must be given to the constraints imposed by wide spread private ownership of infrastructure that benefits the municipality as a whole.
Examples of potential issues to be mitigated in this regard include:

- Lack of maintenance by home owners, because of nuisance of financial costs.
- Inadequate maintenance due to lack of information regarding the need for, and benefit of private storm water management systems.
- Misuse of stormwater management systems because of lack of information
- Conflict between neighboring properties resulting from lack of maintenance (example – nuisance flooding).
- Lack of access for public works staff to inspect or repair/maintain infrastructure.

In order to successfully implement lot level controls, residents and land owners must be regularly reminded of the importance of those rainwater systems they are required to maintain,

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and provided with the information needed to operate and maintain these systems. Potential strategies to achieve this include:

- Requiring easements or rights-of way over the infrastructure (in favour of the municipality), to allow for periodic inspection and/or maintenance of the facility (depending on the specific ownership/maintenance agreement).
- Locating outlet control structures (e.g., an orifice control on a bioretention system outlet) on municipal property to allow for inspection, operation and maintenance by municipal personnel.
- Requiring the submission of performance monitoring reports for review by the municipality, similar to proof of oil/water separator maintenance, as is required in many municipalities. Such reporting could be potentially be encouraged through the use of Rent Charges.
- Requiring a legal agreement (covenant or similar), to ensure the system remains fully operational and is properly maintained;
- Establishing a sinking fund, to which all property owners contribute, for the eventual replacement of storm water management components, at the end of their expected service life.
- An incentive program, perhaps a storm sewer user fee based on the area of impervious cover on a property that is directly connected to a storm sewer (i.e., does not first drain to a pervious area or LID practice) could be used to encourage property owners or managers to minimise impervious areas.
- Levying annual user fees for maintenance by a third party, possibly through the creation of a local service area.
- Implementing an ongoing property owner/resident education program to ensure that the benefits of maintaining lot level controls (to the owner and community) are understood, and the repercussions of not maintaining are clear. Examples could include:
    - **Pre-Sales Information Package:** This information package should be provided to prospective buyers and made available as a display in the sales office. The package should describe the lot level control to be implemented, its operation

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and the basic maintenance requirements. It is important that this information package also stipulate clearly that the lot level control is not to be altered.

- **Purchase Agreement Package:** This information package should form part of the agreement to purchase the property and should describe the system and any maintenance requirements as well, to encourage homeowners to maintain the installation. It is important that this document be focused on encouraging regular maintenance. This information could be registered on title in the form of a Section 219 covenant, to ensure subsequent property owners are aware of their obligations.
- **Property Owner's Guide:** A user-friendly property owner's guide should be distributed to residents upon possession of their new homes. The guide should be simple and informative and should provide a basic description of the lot level control, its function and any maintenance requirements.
- **Newsletter:** In some communities, periodic newsletters are circulated informing homeowners of the activities which are occurring in their community. Information regarding the function of lot level controls should be included in the newsletter on a periodic basis. This approach serves to remind homeowners about the need to ensure that the function of the installation should be maintained.

5.1.3 Lot Level Controls – Options

Rain Water Harvesting (Cisterns)

Rain water harvesting refers to the process of capturing rain water from impervious areas, and conveying to a storage vessel, where it is released slowly over a protracted period of time. Storage tanks range in size from rain barrels for residential land uses (typically 190 to 400 litres in size), to large cisterns for industrial or commercial land uses (**Figure 4.2**). Typical pre-fabricated cisterns can range from 750 to 40,000 litres in size.

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Figure 4.2: Stormwater Management Cistern

With minimal pre-treatment (e.g., gravity filtration or first-flush diversion), captured rainwater can be used for outdoor (non-potable) uses, including irrigation, pressure washing, etc. Some jurisdictions are moving towards the use of captured runoff to flush toilets or urinals, though not locally to our knowledge.

Implementation/Construction Timing: Should be undertaken at the time of building construction.

Function: Retention and detention of rainwater on site. Retained water can be re-used for irrigation or other non-potable uses, reducing the volume of rainwater discharged off-lot into the storm system, and reducing potable water demands. Detention uses the cistern storage to attenuate peak discharges from the site usually through a control orifice.

Design Criteria/Requirements: Design of cisterns should consider the rate of runoff to be attenuated, as well as the rate and duration of release to ensure that storage volume is available during protracted periods of wet weather. If seasonal reuse is expected, the outlet control for the cistern should be designed to restrict outflow during dry weather, and controlled outflow during wet weather.

Pre-treatment (screening/filtering of rainfall should be considered to minimize maintenance requirements, and prevent plugging.

Maintenance Requirements: Maintenance should include semi-annual inspections, and cleaning of the tanks, control orifices and filters as required.

Pros/Cons: Rainwater harvesting can assist in the water balance for the development by retaining water at the lot level, potentially for re-use during dryer periods, reducing the quantity of potable water needed for irrigation. Studies have shown that up to 40% of domestic water usage during dry periods is for irrigation; rainwater harvesting can greatly reduce this burden on the public water utility.
Other operational considerations include:

- Winter Operation: Rainwater harvesting systems can be used throughout the year, but may be subject to freezing and icing problems. On Vancouver Island winter typically brings heavy rains, which produce more runoff than could be practically used on site, especially if the cisterns service a single family dwelling. This then limits the cistern to a stormwater detention facility for peak rate control only.

- Plumbing Codes: provincial and local plumbing codes may restrict the use of harvested rain water to irrigation.

- Standing Water and Mosquitoes: Rainwater harvesting systems, if improperly managed, can create habitat suitable for mosquito breeding and reproduction. Designers should provide screens on inlets and overflow outlets to prevent mosquitoes and other insects from entering the system. If screening is not sufficient to deter mosquitoes, dunks containing larvicide can be added to storage tanks when harvested water is intended for irrigation only.

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- Child Safety: Above grade home cisterns with openings large enough for children to enter the tank must have lockable covers. For underground cisterns, manholes should be secured to prevent unwanted access.

- On Private Property: If a rainwater harvesting system is installed on private lots, property owners or managers will need to be educated on their routine operation and maintenance needs, understand the long-term maintenance plan, and may be subject to a legally binding maintenance agreement. An incentive program such as a storm sewer user fee based on the area of impervious cover on a property that is directly connected to a storm sewer (i.e., does not first drain to a pervious area or LID practice) could be used to encourage property owners or managers to maintain existing practices.

5.1.4 Amended Topsoils

The placement of amended soils within pervious areas of a development adds surface storage capacity and promotes interflow and infiltration. Amended soils typically have an average porosity of 20%, and containing 8-10% organics to promote growth. The thickness of soils applied can be modified as required to offset changes in impervious surface areas - amended soils can be modelled as up to 20-30mm of initial abstraction per 150mm of applied material over pervious surfaces.

Implementation/Construction Timing:
Amended soils should be placed following completion of all home building activities, to minimise compaction and contamination.

Function: Amended soils can be used to enhance or restore initial abstraction losses that tend to be reduced during development, promote infiltration to shallow interflow layers, and provide a growing medium for restorative plantings.

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Design Criteria/Requirements: Amended soils should be designed to accept that volume of rainwater which can be safely returned to deeper ground water systems (deep aquifers), or conveyed via interflow. For typical specifications see the attached Technical Primer prepared by the Green Infrastructure Partnership.

Maintenance Requirements: The function of amended topsoil overtime is greatly affected by the maintenance and usage habits of landowners. Compaction of soils resulting from vehicular traffic, pedestrian traffic, and natural consolidation can all result in a significant decrease in the porosity of soils. The accumulation of organics (lawn clippings, etc.) on the surface of amended soils can decrease the rate of absorption if allowed to go unchecked. Selecting an appropriate soil blend, with sufficient granular constituents to maintain porosity over time is key. Similarly, reducing vehicle traffic on amended soils, and regular removal of accumulated organics and/or mechanical aeration is required.

Pros/Cons:

- Simple, low cost to construct if done at the time of building construction.
- Highly effective in restoring initial abstraction volumes lost to impervious areas.
- Works well in conjunction with other lot level BMPs
- Maintenance requirements are not onerous, and are considered to be within the normal course of home ownership.
- Ensuring the correct blend of soil is placed requires municipality/developer involvement beyond registration of the subdivision. Certification of placement should be a condition of building occupancy.
- Less effective on steep sloping sites (>40%)

5.1.5 Disconnected Roof Leaders/Splash Pads

Disconnected roof leaders function by diverting rainwater that falls on impervious roof areas away from the piped storm drainage system, to soak away pits, rock pits, rain barrels etc. The use of disconnected roof leaders requires forethought with respect to lot grading, and house design.

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Implementation/Construction Timing: Should be undertaken at the time of building construction.

Function: Interception of rainwater landing on impervious roof areas, to divert away from traditional hard pipe systems for re-absorption into soils, evapotranspiration, or re-use.

Design Criteria/Requirements: Roof leader disconnections should be designed to allow property owners to immediately observe overflows from exfiltration galleries, rock pits, etc.

Maintenance Requirements: Maintenance requirements for disconnected roof leaders are expected to be minimal. However, consideration should be given to initiating periodic inspections to ensure downspouts are not re-connected over time.

Pros/Cons:

- Simple, low cost to construct and maintain.
- Allows for easy re-use of clean roof water.
- Can significantly reduce the peak runoff rates from developed areas.
- Requires the use of additional BMPs to maximise efficacy (amended topsoil, rock pits, etc.).
- Can lead to nuisance flooding of residences, adjacent properties, if not properly designed.
- Requires forethought at the house design stage to ensure downspout locations are suitable.

5.1.6 Soak Away Pits

Soak away pits provide a mechanism for infiltration of rainwater from rooftop areas, as well as detention. These relatively simple systems have been used with success for many years, and are well understood by local developers and builders. Soak away, or rock pits, can be designed in a variety of configurations to accommodate site and/or regulatory requirements.

Implementation/Construction Timing: Should be undertaken at the time of building construction, or protected from heavy traffic if installed by the developer at the time of subdivision servicing.

Function: Interception of rainwater landing on impervious roof areas, to divert away from traditional hard pipe systems for re-absorption into soils. Also provides attenuation of peak flows by providing on site storage of rainwater.

Design Criteria/Requirements: Soak Away Pits should be set back two [2] to four [4] metres from building foundations. Overflow pipes should discharge to pervious areas that are located at least 2 metres from building foundations and slope away from the building. The bottom of the facility should be vertically separated by one [1] metre from the seasonally high water table or top of bedrock elevation. Drain rock used should be clean and of uniform size to achieve a 40% porosity ratio within the soak away pit, and should be separated from the surrounding soils by a non-woven geotextile material. Keep soak away pits away from high traffic areas, which can contribute significant pollutant loads

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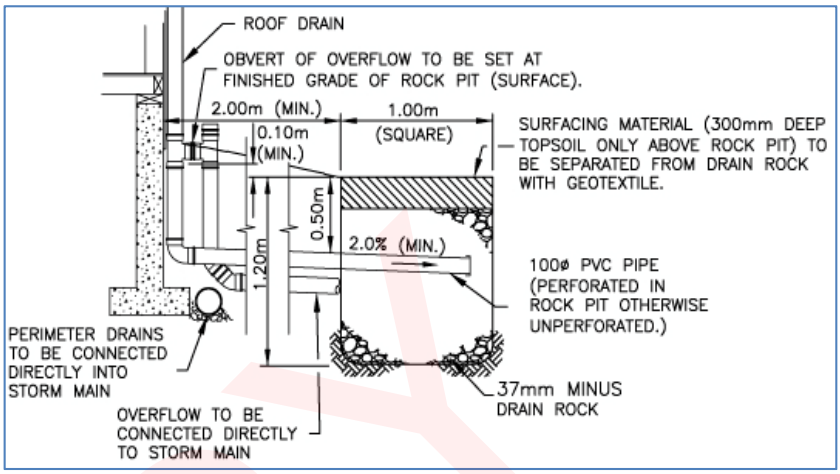
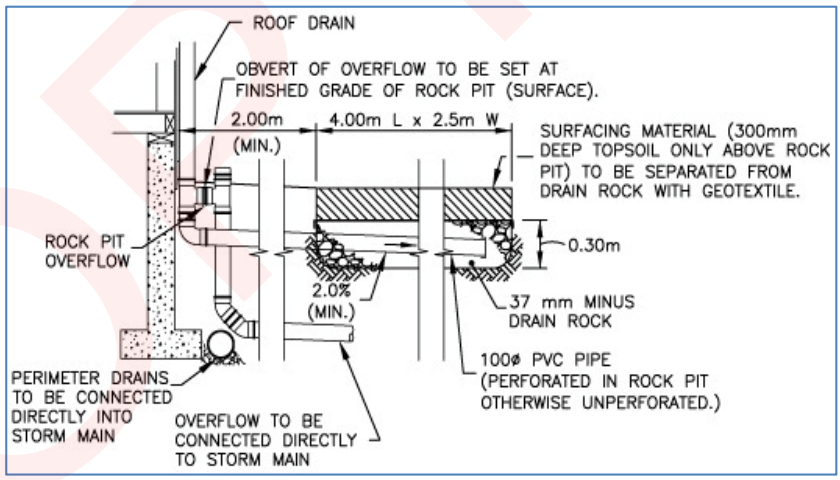
Maintenance Requirements:





As with all infiltration practices, these facilities require regular inspection to ensure they continue to function. Maintenance typically consists of cleaning out leaves, debris and accumulated sediment caught in pre-treatment devices, inlets and outlets annually or as needed. Inspection via an inspection/cleanout chamber should be performed to ensure the facility drains within the maximum acceptable length of time (typically 72 hours) at least annually and following every major storm event (>25 mm). If the time required to fully drain exceeds 72 hours, drain via pumping and clean out the perforated pipe underdrain, if present. If slow drainage persists, the system may need removal and replacement of granular material and/or geotextile fabric. The expected lifespan of infiltration practices is not well understood, however, it can be expected that it will vary depending on pre-treatment practice maintenance frequency, and the sediment texture and load coming from the catchment. Soak away pits have been observed to continue to function well after more than 30 years of operation3.

[3] Excerpt from the Low Impact Development Stormwater Management Planning and Design Guide, 2010, Toronto and Region Conservation Authority and the Credit Valley Conservation Authority

Pros/Cons:

- Simple, low cost to construct and maintain.
- Can lead to nuisance flooding of residences, adjacent properties, if not properly designed.
- Requires forethought at the subdivision servicing stage to ensure locations are suitable for future house designs and connection.
- In situ soils must be sufficiently permeable to allow for exfiltration of rainwater from soak away pits.
- Routine maintenance and inspections are required to ensure proper function over time.
- Renewal likely required over the lifespan of the home.

5.1.7 Green Roofs

Green roofs, also known as "living roofs" or "rooftop gardens", consist of a thin layer of vegetation and growing medium installed on top of a conventional flat or sloped roof. Green roofs are touted for their benefits to cities, as they improve energy efficiency, reduce urban heat island effects, and create greenspace for passive recreation or aesthetic enjoyment. To a water resources manager, they are attractive for their water quality, water balance, and peak flow control benefits. From a hydrologic perspective, the green roof acts like a lawn or meadow by storing rainwater in the growing medium and ponding areas. Excess rainfall enters underdrains and overflow points and is conveyed in the building drainage system. After the storm, a large portion of the stored water is evapotranspired by the plants, evaporates or slowly drains away.

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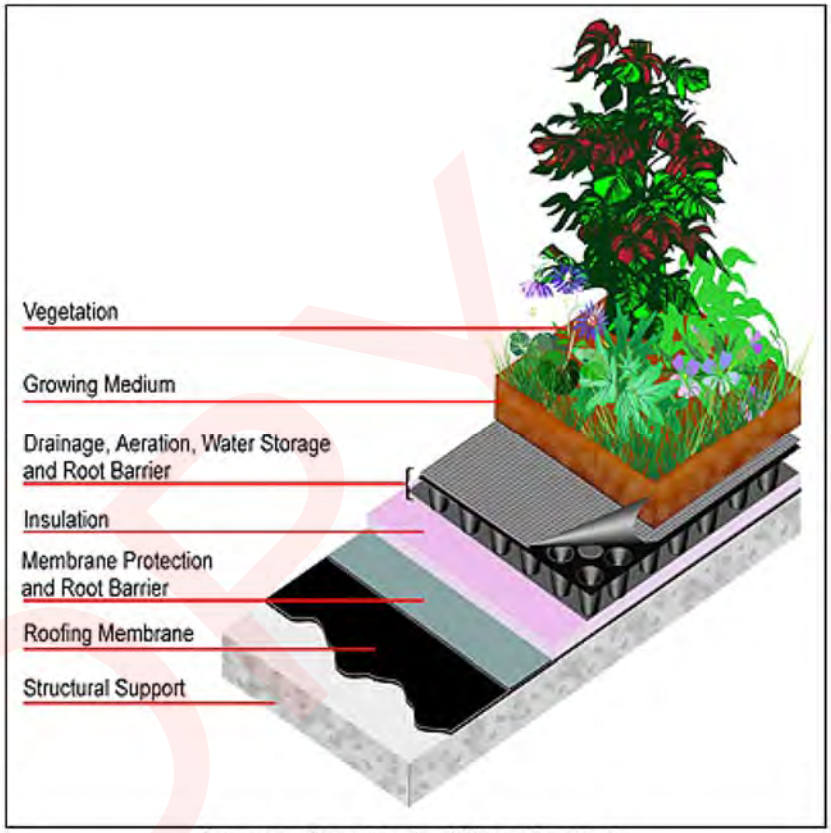
There are two types of green roofs: intensive and extensive. Intensive green roofs contain greater than 15 centimetres depth of growing medium, can be planted with deeply rooted plants and are designed to handle pedestrian traffic. Roof structures supporting intensive green roofs require significantly greater load bearing capacity, thereby increasing their overall cost and complexity of design. Extensive green roofs consist of a thin layer of growing medium (15 centimetre depth or less) with an herbaceous vegetative cover.



Source: Great Lake Water Institute

Implementation/Construction Timing: Should be undertaken at the time of building construction.

Function: Interception of rainwater landing on otherwise impervious roof areas. Properly designed green roofs provide interception and storage of rainwater contributing as well as providing saturated surface area for evapotranspiration.

Design Criteria/Requirements: A properly designed and constructed green roof must include a drainage layer, growing medium and a vegetation layer. Plantings used in a green roof system must be carefully selected based on local climate conditions and the constraints

imposed by a relatively shallow layer of growing medium. Targets for rainwater management can typically range from 20-50% of volume and peak reduction in comparison to conventional roofing systems.

Maintenance Requirements: Green roof maintenance is typically greatest in the first two years while plantings are established. Vegetation should be monitored to ensure growth, density and coverage are as required. Watering during summer months may be required during the establishment period, based on location, species, etc.

Regular operation of a green roof includes:

- Irrigation: Watering should be based on actual soil moisture conditions as plants are designed to be drought tolerant. High soil moisture from unnecessary watering will reduce the runoff reduction benefits of the green roof.
- Leak Detection: Electronic leak detection is recommended. This system, also used with traditional roofs, must be installed prior to the green roof. Particular attention to leak detection should be paid in the first few months following installation.

Ongoing maintenance should occur at least twice per year and should include:

- Weeding: Remove volunteer seedlings of trees and shrubs. Extensive green roofs are not designed for the weight of these plants, and the woody roots can damage the waterproofing.
- Debris and Dead Vegetation Removal: Debris and bird feces should be removed periodically. In particular, the overflow conveyance system should be kept clear.

Pros/Cons:

- Can be a highly effective means for maintaining water balance with proper design, especially on large commercial sites where ground space is a premium.
- Increased initial capital construction costs for structural components, required to support the heavier roof loads. An analysis to determine cost effectiveness for a given site should include the roofing lifespan, energy savings, stormwater management requirements, aesthetics, market value, tax and other municipal incentives. It is

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estimated that green roofs can extend the life of a roof by as long as 20 years by reducing exposure of the roofing materials to sun and precipitation. They can also reduce energy demand by as much as 75%.

- Waterproofing and roof membrane maintenance become more difficult with the vegetative cover.
- The volume of runoff detained in a green roof may not be sufficient to mitigate all rainfall events, particularly during periods of extended wet weather.
- Property owners or managers will need to be educated on the operational and maintenance requirements of these systems.

5.1.8 Permeable Pavement

Porous pavement and paver stones provide a permeable hard surface, in areas that have traditionally been paved with non-porous asphalt or concrete. Typically, porous pavement structures include a permeable surface treatment (asphalt, pavers or other), and a base substrate with a high void ratio (usually sand or clean washed stone). With proper construction and maintenance, porous pavement structures can reintroduce significant initial abstraction volumes to developed areas.

A number of porous paving methods have been utilized locally, ranging from porous asphalt, which to the lay person is essentially indistinguishable from traditional asphalt, to a vast array of paver stone designs, to "Grasscrete" and other more natural treatments.

Implementation/Construction Timing:

Pervious pavements should be placed following completion of all home building activities, to minimise sediment deposition in the porous matrix, and prevent "clogging". For this reason they are more suited as a lot level BMP, or restricted to low traffic areas, such as boulevards and/or parking areas

Function: Pervious pavement structures capture rainwater at the source, and can be used to enhance or restore initial abstraction in areas that must be hard surfaced to facilitate vehicular or pedestrian traffic.

Design Criteria/Requirements: When selecting a pervious pavement structure, consideration should be given to the intended loading/usage, maintenance/upkeep requirements, and specific site conditions (in situ soils, site gradient, potential for nuisance break out at roadway, etc.). The effects of improper or inadequate maintenance should be accounted for in design calculations.

Maintenance Requirements: Pervious pavement function and longevity are greatly influenced by the accumulation of fine particulates/sediment. Deposition of these materials can effectively seal pervious surfaces, reducing initial abstraction rates to (near) pervious states. As a general rule of thumb, the more structurally robust the pavement material, the more onerous the maintenance requirements tend to be. For example, porous asphalt utilized in public roadways, depending on location, traffic volumes, frequency of sand application during periods of cold weather, and a variety of other factors, could require pressure washing several times per year. Alternatively, Grasscrete materials used in low traffic areas could function for many years with essentially no maintenance required.

In order to ensure the perpetual function of porous pavement materials, it is imperative that maintenance and monitoring regimens be established and observed.

Pros/Cons:

- Aesthetically attractive.
- Effective in restoring initial abstraction volumes lost to impervious areas.

- Removes some automobile related pollutants (hydrocarbons) through traditional piped drainage systems that eventually discharge into aquatic environments.
- Maintenance requirements can be onerous.
- Initial construction costs are higher than traditional asphalt and concrete pavements.
- Efficacy can decrease over time if not property maintained.

5.1.9 Bio Retention (Rain Gardens and Rock Gardens)

As a stormwater management tool, bioretention temporarily stores, treats and infiltrates runoff. The most important component within a bioretention system is the filter bed, a mixture of sands/granular materials and organic growing medium. Other important elements of the bioretention system include a mulch ground cover and plantings suited to the micro climate and soil conditions created by the regular introduction of stormwater. Pre-treatment, such as a settling forebay, vegetated filter strip, or stone diaphragms, are typically employed upstream of the rain garden to remove suspended solids that would otherwise clog the filter bed. Bioretention is most useful in the capture of small storm events and the management of water quality. An overflow or bypass is necessary to ensure nuisance flooding does not result during rainfall events in excess of those the facility was designed to accommodate.

Bioretention can be adapted to fit into many different development contexts and provides a convenient area for treatment.

Implementation/Construction Timing: When used as a lot level control, construction should be undertaken following completion of building, to minimise contamination and over compaction of soils. Similar precautions are required if used as a street level BMP.

Function: Bioretention is suited to meet both water quality and water balance objectives. It may also be used in a treatment train with traditional detention practices that meet the regional event peak discharge requirements. Bioretention has been shown to reduce runoff volume through evapotranspiration and infiltration of runoff. The research can be classified into bioretention applications that include underdrains and those that do not (and therefore rely on full infiltration into underlying soils). Bioretention provides effective removal for many pollutants as a result of sedimentation, filtering, soil adsorption, microbial processes and plant uptake. It is also important to note that there is a relationship between the water balance and water quality functions.

Design Criteria/Requirements: Bioretention can be used wherever water can be conveyed to a landscaped area. Facilities have been installed at commercial, institutional, and residential sites in spaces that are traditionally pervious and landscaped. Bioretention facilities are installed close to the impervious area that generates the runoff. Typical locations are in and around parking lots, in traffic islands and near building roof leaders. Bioretention planters, extended tree pits, and curb extension are able to fit into ultra-urban development contexts.

Maintenance Requirements: Bioretention requires routine inspection and maintenance of the landscaping as well as periodic inspection for less frequent maintenance needs or remedial maintenance. Generally, routine maintenance will be the same as for any other landscaped area, weeding, pruning, and litter removal. Routine operation and maintenance tasks are key to public acceptance of highly visible bioretention units.

Periodic inspections after major storm events will determine whether corrective action is necessary to address gradual deterioration or abnormal conditions. For the first two years

following construction the facility should be inspected at least quarterly and after every major storm event (> 25 mm). Subsequently, inspections should be conducted in the spring and fall of each year and after major storm events.

Pros/Cons:

- Aesthetically attractive, enhancing the neighboured look and feel.
- Effective in restoring initial abstraction and infiltration volumes lost to impervious areas, maintaining the water balance, and improving storm water quality.
- In areas where high contaminants are present, groundwater contamination could be a concern, thus strategic placement of the bioretenion BMPs is required.
- Maintenance requirements can be onerous for public works crews with limited resources, but this can be counteracted with contract services in special tax areas.
- Initial construction costs are higher than boulevard and basic landscaped (grassed) areas.
- Efficacy can decrease over time if not property maintained.

5.1.10 Exfiltration Galleries

On sites suited to subsurface stormwater infiltration, exfiltration trenches and galleries can be highly effective stormwater management tools.

Galleries are rectangular or circular excavations lined with geotextile fabric and filled with clean granular stone or other void forming material. Runoff is routed into the gallery and discharged, typically via from a perforated pipe, and allowed to infiltrate into the native soil. Galleries can be designed to service areas as small as a single family lot, or

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potentially as large as entire streetscape, based on in situ soil conditions.
Infiltration trenches are linear galleries, suited to sites where space is limited, or exfiltration must be decentralized.

Implementation/Construction Timing: As a lot level control, exfiltration galleries should be installed at the time of building construction. When utilized as a street level control, construction during subdivision servicing is required. Care should be taken to minimise the amount of sediment introduced into exfiltration galleries until the subdivision is at "build-out" or relatively stabilized.

Function: Infiltration galleries are highly effective tools for storing runoff, infiltrating into vadose and deep ground water strata, and removing pollutants from surface water.

Design Criteria/Requirements: Infiltration galleries can be designed in a variety of configurations/arrangements, while infiltration trenches are typically rectangular excavations with a bottom width generally between 600 and 2400 mm. All facilities should have level or nearly level bed bottoms, and should be separated from the seasonal high water table by about 1m, if possible.

It is important that sediment and debris be prevented from entering infiltration facilities. Introduction of deleterious materials into exfiltration features will lead to clogging and premature failure of the system. Examples of pre-treatment for these types of systems include:

- Leaf Screens: Leaf screens are mesh screens installed on building eaves troughs or roof downspouts and are used to remove leaves and other large debris from roof runoff. Leaf screens must be regularly cleaned to be effective; if not maintained, they can become clogged and prevent rainwater from flowing into the facility.

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- In-ground filters: Filters placed between a conveyance pipe and the facility (e.g., oil and grit separators, sedimentation chamber or sump), that can be designed to remove both large and fine particulate from runoff. A number of proprietary stormwater filter designs are available. Like leaf screens, they require regular cleaning to ensure they do not become clogged.
- Vegetated filter strips or grass swales: Road and parking lot runoff can be pretreated with vegetated filter strips or grass swales prior to entering the infiltration trench.

Inlet and overflow outlet piping within an exfiltration gallery should be installed below the maximum frost penetration depth to prevent freezing. Galleries are often designed with a common inlet/outlet pipe that regulates the flow of water into the storage void. When the hydraulic grade within the gallery reaches a design maximum, water is shunted to an overflow (surface discharge, or conveyed to "end of pipe" attenuating facilities.

Capped vertical non-perforated pipes connected to the inlet and outlet pipes are recommended

to provide a means of inspecting and flushing them out as part of routine maintenance. Manholes and inspection ports should be installed in infiltration chambers to provide access for monitoring and maintenance activities.

Filter Media should consist of a stone reservoir with uniformly-graded, washed stone that provides 30 to 40% void space. Granular material should be 50 mm clear stone.

A non-woven needle punched, or woven monofilament geotextile fabric should be installed around the stone reservoir of infiltration galleries/trenches with a minimum overlap at the top of 300 mm.

Maintenance Requirements: Typical maintenance of exfiltration galleries includes cleaning out leaves, debris and accumulated sediment caught in pre-treatment devices, inlets and outlets (annually or as required). Periodic internal inspection (via cleanout chamber) should be performed to ensure the facility drains within the maximum acceptable length of time (typically 72 hours) at least annually and following every major storm event (>25 mm). If the time required to fully drain exceeds 72 hours, drain via pumping and clean out the perforated pipe underdrain, if present. If slow drainage persists, the system may need removal and replacement of granular material and/or geotextile fabric. The expected lifespan of infiltration practices is not well understood, however, it can be expected that it will vary depending on pre-treatment practice maintenance frequency, and the sediment texture and load coming from the catchment. Soak away pits have been observed to continue to function well after more than 30 years of operation.

Pros/Cons:

- Simple, low cost to construct and maintain.
- Can lead to nuisance flooding if not properly designed.
- Can lead to soil or groundwater contamination if not properly pre-treated or in areas of excessive pollutant loading.
- Requires forethought at the subdivision servicing stage to ensure locations are suitable for future house designs and connection.
- In situ soils must be sufficiently permeable to allow for exfiltration of rainwater from galleries/trenches.
- Routine maintenance and inspections are required to ensure proper function over time.
- Renewal likely required over the lifespan of the subdivision/development.

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5.1.11 Street Level BMPs

Modified (Narrowed) Public Road Cross Sections

Implementation/Construction Timing: The modified road cross-section needs to be built at the time of subdivision servicing.

Seattle's SEA Street project (top of photo) uses numerous LID practices including rain gardens, vegetated swales and a narrow, winding street. A typical Seattle street (bottom of photo), by comparison, has a broad, wide street and flat yards with few natural depressions to capture and store stormwater runoff.

Function: The modified road cross-section serves as a method to limit the total impervious surfaces in the neighbourhood. A reduction of roadway width from the traditional 9 metres to 6 or 7 metres will result in a total impervious road reduction of 22%. The addition of strategically placed parking within the road areas will diminish the effective reduction of impervious roadways to 15 – 20%. The implementation of narrower roadways also has the added benefit of wider and safer boulevards, as well as, generally slowing down traffic.

Design Criteria/Requirements: Design of narrower roadways follows traditional engineering practice for safe roadways, and must allow for adequate emergency vehicle access, as well as the potential for transit services as may be required, but is not usually the case. The recommended roadway width is 7 metres to allow for adequate maneuvering of emergency vehicles. Parking may be allowed on one side of the road. Narrower streets should be used only on local roads, collectors and arterials should maintain standard widths and parking allowances, as well as, allowances for other modes of traffic, such as bicycles. The photo/figure (left) illustrates the difference between

a narrow street, and a typical street development of a 9m wide roadway with parking allowed on both sides.

A "walkable" and properly planned neighbourhood should include sufficient design consideration for sidewalks. To achieve a higher level of pervious surfaces (i.e., reduction of impervious surfaces), the design should maximize sidewalks on one side of the street as much as possible, similar to what is shown in the figure above. Many jurisdictions rely on the Master Municipal Construction Documents (MMCD) Design Guideline Manual, which suggests that for Urban Single-Family Residential streets the sidewalk requirement is one side.

Maintenance Requirements: There are no special requirements for maintenance of narrower roads.

Pros/Cons: A fundamental aspect of smart growth development is the design of the street network. To make roads safe and inviting for pedestrians, cyclists, and other users, smart growth street design uses narrower widths, tighter turning radii, better connections between streets, and street trees, sidewalks, and on-street parking. Narrower streets can also help communities protect water quality by reducing stormwater runoff.

However, in many communities, as developers and city officials try to design these types of street systems, they are finding that local fire and emergency response officials may not approve them because of minimum street clearance requirements in their local or provincial codes. In many communities, minimum clearance requirements have been developed and adopted to ensure unobstructed access and easy maneuverability for emergency response vehicles. In some instances, communities have been unable to move forward with smart growth plans because of these codes and the concerns of emergency responders who believe that narrower streets undermine their ability to ensure timely and responsive service.

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5.1.12 Neighborhood Level BMPs

Detention Ponds

Implementation/Construction Timing: Should be undertaken at the time of subdivision servicing.

Function: Peak rate control of rainwater discharges for safe conveyance of more severe, all-be-it infrequent events. Some infiltration capacity may be possible, and some water quality benefits may be achieved.

Design Criteria/Requirements: Ponds should be sized for the major storm event to limit peak flows with pre-development targets. Ponds can be either wet ponds with some lower limit for dead storage, or dry ponds that typically drain between successive storms.

Outlet controls are typically orifices, with major overflows control via a weir. Side slopes are dependent on site and geotechnical conditions, but typical standard maximum slopes are 3 or 4H:1V. Vegetation plantings can enhance the aesthetic as well as the overall water quality output of the pond.

A forebay settling area should be designed to allow for periodic cleaning of the pond. This area should have relatively easy machine access.

Maintenance Requirements: Properly constructed ponds are relatively low in maintenance. Annual inspections should be conducted to ensure that sediment build up is not excessive. Dredging may be required depending on sediment loading, but is not likely to occur annually.

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Pros/Cons:

- Ponds are viewed as a last resort for BMP, and should be used only for volume rate control for major events and flood control.
- They can take up valuable real estate, but are relatively inexpensive to construct.
- Properly designed they can have suitable water quality benefits for total suspended solids (TSS) and other common pollutants held in suspension in flowing storm water.

5.2 LID Recommendations for the Study Area

Industrial-Commercial-Institutional (ICI) Development

The figure to the right shows an intensely developed hospital site in Thunder Bay, Ontario where a suite of BMPs have been incorporated into the overall development to maintain the hydrologic balance and ensure a high standard of stormwater quality leaving the site. While parking areas are still extensive the green spaces buffer the stormwater runoff and strategically placed infiltration and storage BMPS ensure the water balance.

Source: Thunder Bay Regional Health Centre Model Study

It is this type of development that will be most desirable for the study area, where the chosen BMPS compliment the landscaping of the lot, and work with the subsurface soils to promote infiltration. The only additional consideration for the study area would be the implementation of a green roof system to further reduce the impervious surfaces where practical.

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Residential Development

In general, it is believed that the best approach both from a developer and municipal perspective is to maximize the stormwater infrastructure on Public lands in a distributed fashion keeping the rainwater management facilities as close to the source as possible. The intent of the specific lot developments would follow the general guideline below:

- Minimize the total percent impervious where possible by using narrow roads and streetscapes;
- Amended soils on the public right-of-way are viewed favourably. Private amended soils are less likely to be effective, as they cannot be properly enforced or monitored
- Infiltration galleries; rain gardens or rock gardens distributed throughput the street network will ensure a more even distribution of BMPs, and maximize the soil infiltration capacity
- Supplementary storage at a neighbourhood level is likely necessary, and will aim to control peak runoff of infrequent events as required.

Table 5.1 (overleaf) summarizes the above discussion by linking the various low impact development BMP techniques with the applicable issues and challenges, as well as the BMP Selection Criteria. It lists the responsibilities of developers, owners, the SRD/MoTI, and potential legislative mechanisms that can be used to enforce the proper implementation and maintenance of the proposed system. Each of the BMPs listed should be looked at as part of the overall development, especially of the proposals for new neighbourhoods or larger commercial developments that may have a broader land use impact. All developments should require a formal stormwater management plan that considers the property in question in relation to the potential cumulative effects on the neighbourhood and watershed(s) that it lies within.

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Table 5.1: Summary of BMPs Selection

BMP Description	Time of Construction or Implementation	Key Implementation Issues/Challenges	Implementation Responsibilities	Key Selection Criteria	Applicable Legislation or Management/ Enforcement Tool
Amended Topsoil	Following building (home) construction	Water Quantity and Quality Control Protection of ESAs Erosion and Sediment Control Mitigation of invasive species Promotion of native species	**Designed and Certified by:** Design Engineer **Implemented/ Constructed by:** Home Builder	Overall inexpensive cost to construct and maintain Site Suitability and Access Concern with Long Term Maintenance and Ownership	Section 219 Covenant Subdivision/bonding Section 907 bylaw Section 919 DPA
Roof Leader Disconnections	At the time of building or home construction	Water Quantity and Quality Control Protection of ESAs	**Designed and Certified by:** Design Engineer **Implemented/ Constructed by:** Home Builder	Overall inexpensive cost to construct and maintain Site Suitability, especially as it relates to site drainage and connection to off site system Concern with Long Term Maintenance and Ownership	Section 219 Covenant Subdivision /bonding Section 907 bylaw Nuisance flooding/drainage easements may require Section 919 DPA
Rock Pits or Cisterns	At the time of subdivision servicing	Water Quantity and Quality Control Protection of ESAs Protection of existing off site infrastructure	**Designed and Certified by:** Design Engineer **Implemented/ Constructed by:** Civil Contractor	Site suitability is key, especially in areas were the seasonal high water table is shallow. SRW may be required for access and maintenance by operations staff Maintenance and replacement costs need to be considered	Section 219 Covenant Subdivision /bonding Section 907 bylaw Nuisance flooding/drainage easements may require Section 919 DPA
Green Roofs	At the time of building or home construction	Water Quantity and Quality Control Protection of ESAs Protection of existing off site infrastructure	**Designed and Certified by:** Design Engineer **Implemented/ Constructed by:** Home Builder	Initial Cost is considerably higher. Long-term maintenance of vegetation is required and difficult to enforce Replacement Costs are also to be considered. Likely best for larger buildings in commercial/industrial/institutional zones	Subdivision/bonding Section 907 bylaw Section 919 DPA
Permeable Pavement	Following building (home) construction, or at subdivision servicing of within R.O.W.	Water Quantity and Quality Control Protection of ESAs Part of the municipal drainage system, and requires proper street drainage system (pipes, ditches, culverts, etc.)	**Designed and Certified by:** Design Engineer **Implemented/ Constructed by:** Civil Contractor	Site Suitability. Potential Issues with Ownership and Long-term Maintenance when on private property Higher cost to implement and maintain	Section 219 Covenant for private property Requirement of PLA/subdivision.
Bio Retention	Subdivision servicing	Water Quantity and Quality Control Protection of ESAs Erosion and Sediment Control Mitigation of invasive species Promotion of native species	**Designed and Certified by:** Design Engineer **Implemented/ Constructed by:** Civil Contractor	Site requires high infiltration capacity with ground water table below 1.2m Comprehensive construction and post construction phase sediment and erosion control plans must be developed at the detailed design phase, based on the specific constraints of each site. Minimize the use of these features in areas where frequent road sanding is required. Initial cost is higher, but long-term maintenance can be efficient	Requirement of Subdivision Section 919 Flood Hazard DP
Exfiltration Galleries	Subdivision servicing	Water Quantity and Quality Control Protection of ESAs Erosion and Sediment Control Mitigates Road Runoff from entering private property. Formalizes the storm sewer infrastructure	**Designed and Certified by:** Design Engineer **Implemented/ Constructed by:** Civil Contractor	Site requires high infiltration capacity with ground water table below 1.2m Comprehensive construction and post construction phase sediment and erosion control plans must be developed at the detailed design phase, based on the specific constraints of each site. Minimize the use of these features in areas where frequent road sanding is required. Initial cost is higher, but long-term maintenance can be efficient	Requirement of Subdivision Section 919 Flood Hazard DP
Narrow Roads (expanded green space)	Subdivision servicing	Water Quantity and Quality Control Protection of ESAs Erosion and Sediment Control Mitigates Road Runoff from entering private property. Requires formalization of the storm sewer infrastructure Mitigation of invasive species Promotion of native species	**Designed and Certified by:** Design Engineer **Implemented/ Constructed by:** Civil Contractor	Saves cost of Asphalt and minimizes the overall percent impervious surfaces. Easy to maintain, but road function needs to be considered especially for emergency access. Ownership lies with MoTI	Requirement of Subdivision
Detention Ponds	Subdivision servicing	Water Quantity and Quality Control Protection of ESAs Erosion and Sediment Control Flood reduction	**Designed and Certified by:** Design Engineer **Implemented/ Constructed by:** Civil Contractor	Suitable land should be acquired at the neighborhood planning stage. A cost recovery mechanism should be implemented at the neighborhood planning stage as part of the DPA.	Requirement of Subdivision Section 919 Flood Hazard DP

6.0 CONCLUSIONS AND RECOMMENDATIONS

The Strathcona Regional District (SRD) and the Ministry of Transportation and Infrastructure (MoTI) have partnered to commission a study of the storm water systems issues and challenges in Area 'D', with the goal of obtaining a document that can provide them with a storm water management planning tool, which would include the identification of areas that are unfavourable or favourable for future development. From the information gathered, analysed and confirmed through field verification, the following summary conclusions and recommendations are made.

1. The SRD's database of flood issues sites was used to identify problem locations in the study area, a selection of which was reviewed in the field to develop recommendations with respect to management and/or system improvements. Typically the recommendations include improvements to the conveyance system, with many areas needing better connectivity, vegetation maintenance, and/or culvert replacement, as summarized on **Table 2.1**, and shown on **Map 2.1**.

2. Hydraulic assessments of conveyance capacity could not be provided at this time as there is insufficient record information to base an assessment on. However, several locations were identified as key culvert locations where drainage issues persist, and more detailed field survey; hydraulic assessments and design should be completed, namely:

   FL-7 – Wimbledon Road at Terrain
   FL-8, FL-9 and FL-10 – Craig Road
   FL-13, FL-14 and FL-15 – Wimbledon Road
   FL-16 – Mayfly Creek at the Highway
   FL-23 – 4585 Highway 19A
   FL-24 – Oyster Garden Road and Brian Road Area

COPY

3. The Environmentally Sensitive Areas within Area 'D' were reviewed in the context of historic aerial photos, and were shown to be consistent in area as shown on **Map 2.2**. The confirmed areas were also shown with a standard 30m buffer consistent with the simplified methods of the Riparian Area Regulation. It is noted that the size, number and complexity of wetland ESAs increases in the southern half of the Study Area where the land is flatter and the storm water infrastructure is not as developed.

4. Infiltration potential of native soils in Area 'D' were also reviewed in the context of the existing surficial geological mapping. The three distinct geological units found in the area were assessed as being capable of moderate to high infiltration rates. However, two of the units are known to be shallow granular materials overlying dense silt/clay tills which are rather impermeable, causing seasonal high water tables throughout the study area, and presenting additional challenges for selection of storm water management infrastructure.

5. The mapped Watersheds (**Map 2.1**) with known storm water infrastructure issues; the mapped Environmentally Sensitive Areas (**Map 2.2**) and Soil Infiltration Potential (**Map 2.3**) were used to develop a Stormwater Management Classification by Favourability Map (**Map 2.4**), which classifies all areas as either Favourable, Less Favourable or Not Favourable. Generally, the southern half of the study area is deemed not favourable for development due to the significance of wetlands and the under developed drainage system with a number of known flooding issues. The northern half of the study area is either favourable or less favourable for development, excepting those areas of known environmental sensitivity.

6. The hydrology of the study area was based on the rainfall statistics from Environment Canada's Comox Airport rain gauge. Some notable rainfall statistics for the area include:
    - The ½ Mean Annual Rainfall (MAR) is calculated to be 22mm in 24 hours.
    - The MAR is calculated to be 44mm in 24 hours.
    - Largest single day of rainfall was 113mm, which occurred on December 22, 1957

7. From an assessment of local stream measurement gauges, it has been shown that approximately 70% of all rainfall reaches the local stream network either as direct runoff or via the shallow groundwater system known as interflow.

8. The management of stormwater from a quantity perspective should be based on the Water Balance Model approach. From an assessment of the regional hydrology, the following post-development target flows should be used throughout the study area in conjunction with **Figure 4.3**, which define the corresponding unit area flow-duration relationship.

    16.1 l/s/ha for the 1 in 100 year event
    13.3 l/s/ha for the 1 in 10 year event
    12.0 l/s/ha for the 1 in 5 year event
    9.8 l/s/ha for the 1 in 2 year event

9. Post-development storm water management targets for water quality should strive for 80% removal of total suspended solids (TSS) and grease and oil, especially from large commercial developments with significant areas of impervious surfaces, such as asphalt parking lots.

10. Proposed developments should make use of an appropriate suite of Low Impact Development (LID) techniques to reduce the impact of development on the natural storm water regime. The best management practices (BMPs) provided herewith can be established at the lot level, street level or even the neighbourhood level depending on the requirements of the development and the existing state of the watershed, with preference being given to those BMPs at the lot level first.

11. Regulatory instruments are available to ensure conformance of the proposed systems (BMPs) to meet the recommended water quantity and quality targets for Area 'D'. **Table 5.1** links the various low impact development BMP techniques with the applicable issues and challenges, as well as the BMP Selection Criteria.

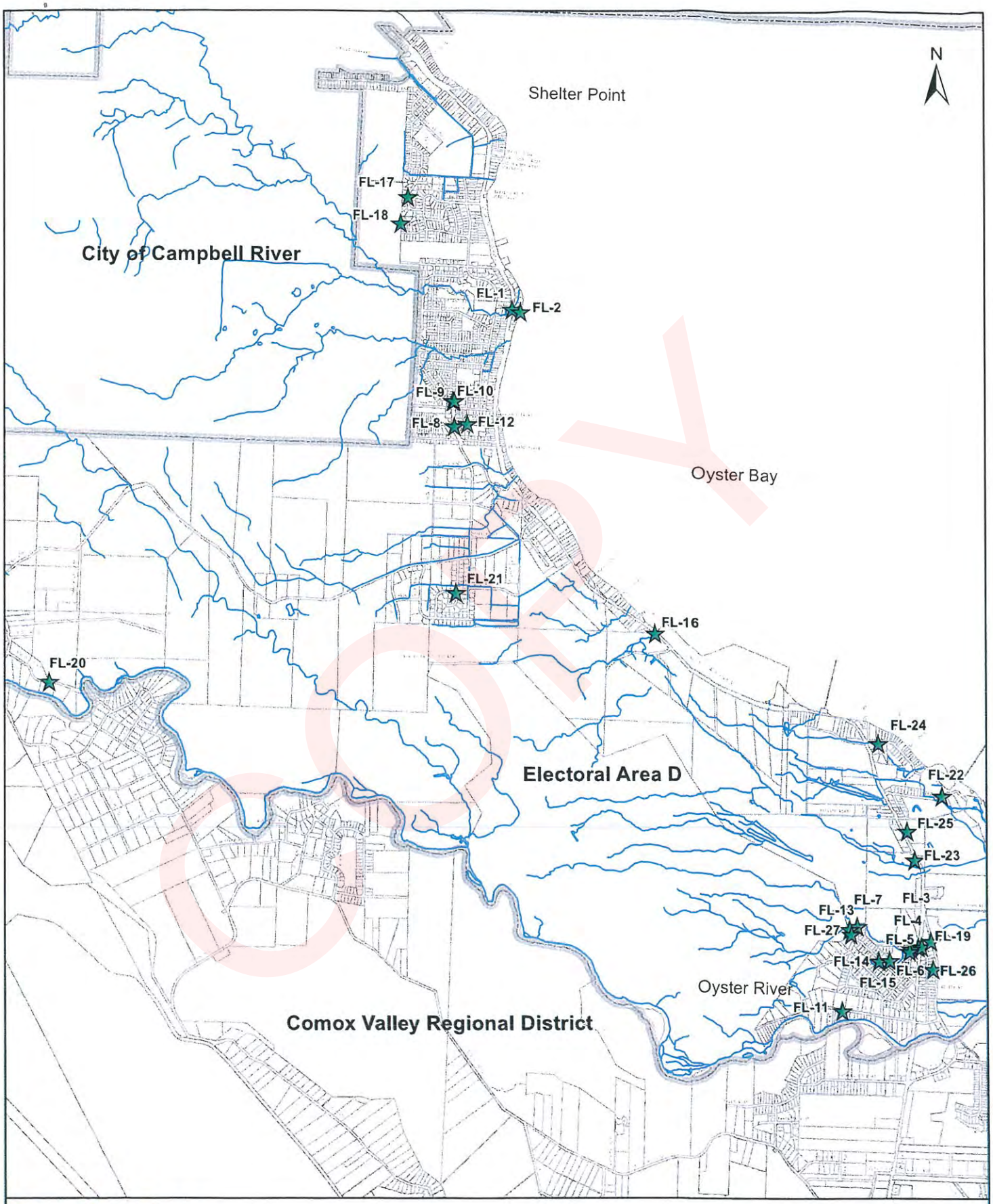
COPY

12. Given the number of existing flood issues and the complexity of the natural environment, especially in the southern half of electoral Area 'D', the Strathcona Regional District should draft and approve a bylaw to make Area 'D' a designated Development Permit Area (DPA) to ensure flooding issues are properly considered and designed for during the development process.

COPY

APPENDIX A:
SRD DATABASE OF DRAINAGE ISSUES

COPY

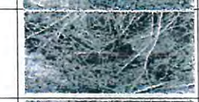


Strathcona REGIONAL DISTRICT

Storm Water / Flood Related Issues
Eastern Portion Electoral Area D

This map was prepared by the SRD for planning purposes only, and is not a legal document. This map is a composite of different data sets that were developed from different methods and dates. This map should be used with caution. The SRD is not responsible for any damages resulting from any omissions, deletions or errors.

Date map plotted: August 20, 2012

Unique Il	Types	Area of Concern	Picture	GenLocation	Location Description	Problem Concern	Occurance	Comment	Action Required	Status	Rating	Link
FL-1	**Flooding**	Woods Creek		Woods Creek - 3900 Block of Hwy 19A	**3900 Block of Hwy 19A**	**2010, 2011, 2012 high flows caused creek to breach its banks on the eastern side flooding Jamie Woods property.**	2010		Deflection plate added in attempt to flush out main box culvert **Still a concern- monitoring**	**Continue to Monitor - MOTI Responsible**	1	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-1
FL-1	**King Tides /Severe Rain**	Woods Creek			East side of Hwy culvert outflow			Large deposit of sediment within north concrete culvert which has restricted and diverted main flow channel	Removal of sediment blockage within north box culvert. Upstream of culvert restricted 50% and downstream restricted by 30%. Wing wall may be required at upstream to prevent further erosion of river bank which is contributing to the sediment deposit.	Culverts cleaned of sediment by Emcon 2011 **Continue to Monitor**		\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-1
FL-1		Woods Creek		Woods Creek	Upstream of Woods Creek Culvert. Culvert divided into two concrete box culverts and CSP overflow.	2010, 2011, 2012 Inflow high due to restriction of sediment deposits within north culvert and stream. Capacity of culverts decresed.			Removal of sediment blockage within north box culvert. Review of original design. Perhaps the rock overflow wall could be lowered to decrease surcharging of box culverts during storm events.			\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-1
FL-1		Woods Creek		Woods Creek	Upstream of Woods Creek Culvert			Sediment deposits within creek	Restoration of creek channel	MOTI Responsible		\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-1
FL-1		Woods Creek		Woods Creek	North east Hwy ditch upstream of Woods Creek	2011, Appears storm water is ponding within ditch which has contributed to dense vegetation.		Appears storm water is ponding within ditch which has contributed to dense vegetation. We were unable to locate driveway culvert.	Clearing of vegetation in ditch and culvert (or install one) to allow storm water to drain into Woods Creek			\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-1
FL-2	**King Tides /Severe Rain**	Woods Creek		Woods Creek - 3900 Block of Hwy 19A	Foreshores	2011 Debris deposited along CSP culvert release to ocean culvert		(Woods Creek is divert here through overflow diversion culvert on east side of hwy)	Removal of wood and tractor tire.			\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-2.jpg
FL-3		Terrain Rd		Hwy 19A and Terrain Rd and Upland Rd - Oyster River community Area 'D'	Inlet of CSP culvert crossing Hwy and receiving flow from Terrain Rd. south ditch (behind 4748 Upland Rd)	2012 Culvert approx 20% full downstream from Terrain & Upland culvert		*Information only*:			2	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-3.jpg
FL-4	**Severe Rain**	Terrain Rd		Hwy 19A and Terrain Rd and Upland Rd - Oyster River community Area 'D'	Outlet of CSP culvert crossing Upland Rd fronting #4748 Upland Rd near Terrain Rd			Outlet covered in dense vegetation (blackberry bushes) unable to see ditch bottom	Require removal of dense vegetation			\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-4.jpg
FL-5	**Severe Rain**	Terrain Rd		Hwy 19A and Terrain Rd and Upland Rd - Oyster River community Area 'D'	Pic.1: Inlet of CSP crossing Upland Road adjacent to #4752 Upland Road near Terrain Road	2011,2012 Water backing up in ditching, almost cresting		CSP culvert approx. comes with an inlet grate is approx. 90% full and restricted. Downstream culvert (at Hwy) only 20% full	Remove dense vegetation up and down stream of culvert to determine cause and clear blockage.	Outlet side of culver on east side of Hwy 19 A cleared and rock lined **continue to monitor - MOTI Responsible**		\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-5.jpg
FL-6	**Severe Rain**			Hwy 19A and Terrain Rd and Upland Rd - Oyster River community Area 'D'	Pic 2: Inlet grate on CSP crossing Upland Road adjacent to #4753 Upland Road near Terrain Road			Approx. 90% full and restricted. This culvert required debris removal during the Dec 24 2011 storm event. Local reesidents had to do it themselves.	Flag for routine inspection during heavy rain events			\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-6.jpg
FL-7	**Severe Rain**	Wimbledon Rd		Wimbledon Road far north end. 4710 Wimbledon, Oyster River	Pic.1: Inlet of #4710 Wimbledon Rd. driveway CSP culvert and small wood plan culvert overflow (both installed approx. 15 year ago by owner)			Wood culvert has collapsed and CSP culvert is oval shape with bottom of pipe corroding away. Invert of pipe low and approx. 60% full. Current situation is restricting flow during storm events and causing overflow.	Removal and replacement of culvert with a suitable sized culvert to handle flows.		3	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-7
FL-7		Wimbledon Rd		Wimbledon Road far north end. 4710 Wimbledon, Oyster River	Pic. 2: Inlet of driveway culverts at #4710 Wimpledon Rd.	2012 Culvert blockage		Surrounding area shows signs of debris deposted from ditch overflowing	Remove & Replace culvert			\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-7
FL-7		Wimbledon Rd		Wimbledon Road far north end. 4710 Wimbledon, Oyster River	Pic. 3: Inlet of wood culvert.			Collapsed and constructed of unsecured wood boards	Remove			\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-7
FL-8		Craig Rd		Craig Rd, Lennee Pl to Henry. #3996 Craig Rd. to Henry Rd.	Pic. 1: Ditch looking south to Henry Rd infront of #3996 Craig Rd driveway	2010, 2011 Ground water off road has no path to road side drainage system		Ground saturated with ponding surface water. During storm events ponding water increases and drains into properties behind the resident. - Driveway at high point of road and does not have a culvert. Ditch grade is flat which contributes to the surface water ponding. - Ground water table in this area has been reported to be high.	Reditch north and south of driveway to create a positive grade and to alleviate the ponding of water	December 2011 DITCHING HAS OCCURRED FROM #3996 DRIVEWAY TO HENRY ROAD.	5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-8
FL-8	**Severe Rain**	Craig Rd		Craig Rd, Lennee Pl to Henry. #3996 Craig Rd. to Henry Rd.	Pic. 2: Ditch further south towards Henry Rd.			Ground saturated with ponding surface water. During storm events ponding water increases and drains into properties behind the resident. - Driveway at high point of road and does not have a culvert. Ditch grade is flat which contributes to the surface water ponding. - Ground water table in this area has been reported to be high.	Reditch north and south of driveway to create a positive grade and to alleviate the ponding of water	December 2011 DITCHING HAS OCCURRED FROM #3996 DRIVEWAY TO HENRY ROAD.		\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-8

FL-8		Craig Rd		Craig Rd, Lennee Pl to Henry Rd	Pic. 3. Ditch further south towards Henry Rd.			Ditch flattens out . - Water drains toward properties and ponds	Reditching to create flow path toward Henry Rd.			\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-8
FL-8		Craig Rd		Craig Rd, Lennee Pl to Henry Rd	Pic. 4: Ditch further south towards Henry Rd.			Shallow ditch filled with dense vegetation which shall restrict surface water draining towards Henry Rd.	Reditch and remove vegetation with ditch to allow drainage from #3996 Craig Rd.	December 2011 DITCHING HAS OCCURRED FROM #3996 DRIVEWAY TO HENRY ROAD.		\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-8
FL-9	**Flooding**	Craig Rd		Craig Rd	3977 Craig Rd	2009, 2010, 2012 History of Crawl space flooding		Resident feels it may be due to lack of ditch maintenance and cleanning	Notfied MOTI			
FL-10	**Flooding**	Craig Rd		Craig Rd	3878 Craig Rd	2010 ditch flow backing back into yard threatening home.		Never has happened before				
FL-11	**Flooding**	Glenmore Rd		Glenmore	2351 Glenmore	2009, 2010, 2011 Resident indicates flows higher than seen before. Culvert on his propert cannot handle amount and back up water on to his property						
FL-12	**Flooding**	Maple Park Circle		Maple Park Circle	Locate at bend of road adjacent Maple Park pathway entrance in west side ditching	2011 slow moving ground water flows back up going into culvert and resultin flooding across low traffic road		Vegetation risks culvert flow. Resident have tried to clear on their own by hand. Ditching needs cleaning as well	Cleaning of ditching and removal of vegetation build up around culvert		5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-12
FL-12	**Severe Rain**	Maple Park Circle		Maple Park Circle	No address indicated on GIS mapping. Lot located backs properties 3996 & 3994 Craig Rd.	2011 Ground water floods and flows back yard and flos down driveway as shown in picture					5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-12
FL-12		Maple Park Circle		Maple Park Circle	Culvert running under Maple Park walkway access.	2011 No problem just part of inspection tour		No Issues			5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-12
FL-12		Maple Park Circle		Maple Park Circle	Culvert CLEAN OUT location southend of Maple Park walkway	Part of 2011 area tour		Was covered by debris, may require inspection. SRD has right of way to access cover based on old School District easement	**SRD Parks** - Peter Woods setup annual maintenance of drain manhole and ditching	**SRD Parks Maintenance**	5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-12
FL-13	**Flooding**	Wimbledon Rd.		4177 Wimbledon Road	South side back of property Shot 1	**2011** Stream back flows down into low lands			Land owner will be required to look into further		5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-13
FL-13	**Severe Rain**	Wimbledon Rd.		4177 Wimbledon Road	Shot 2:						5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-13
FL-13		Wimbledon Rd.		4177 Wimbledon Road	Shot 3:						5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-13
FL-13		Wimbledon Rd.		4177 Wimbledon Road	Shot 4:			Sediment deposit from stream restrict downstream flows and creates water to back flow off stream onto back portions of Raven lands and residential properties. Fish bearing stream on residential property	Cleaning of sediment from stream channel. Resident will need to approach DFO/MOE as stream has been deemed fish bearing		5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-13
FL-13		Wimbledon Rd.		4177 Wimbledon Road	Shot 5:						5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-13
FL-14	**Flooding**	Wimbledon Rd.	NO Pictures available	Wimbledon Road	**4773 Wimbledon Road Oyster River**	**2011 collasped culvert 50% flow only**		Collapsed pitted and corroded culvert 50% flow only			5	
FL-15	**Flooding**			Wimbledon Rd	4776 Wimbledon- Basha Scott	long history of flooding of back yard and basement of home when medium to large rain events occur		Several site visits during events have occured and several potential issues out of emergency programs may ability to address. Issues found: Landscape drain design, culvert ditching appears to end at eastern neighbour's property line, water channel in back yards shows a fish bearing,	Provided home owner with emergency response information		5	
FL-16	**Severe Rain**	Mayfly Creek		Mayfly Creek	Hwy 19A south of Stories beach	**2012** High flow seems to create surging.		Culvert appears not to be able to handle the volume of water.			5	

FL-16		Mayfly Creek		Mayfly Creek							5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-16
FL-16	**Flooding**	Mayfly Creek		Mayfly Creek	Shot 1	DISCOVERY: On private development upstream of Mayfly culvert - Large volume of ground water flow (unrestricted not controlled)			Has property owner been informed of extensive ground water flows?		5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-16
FL-16		Mayfly Creek		Mayfly Creek	Shot 2						5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-16
FL-16		Mayfly Creek		Mayfly Creek	Shot 3						5	\\CVRDSDE\GIS_Muni\SRD\Projects\Regional\EmergencyPrograms\DisasterMngmnt\Table\AreaD_StormFloodPics\FL-16
FL-17	**Flooding**	Peak Dr		Peak Drive	3821 & 3823 Peak	2010 , 2011 catch basin overflowing due to what is thought to be from extreme large amount of ground water flow coming of Private forest company lands behind homes.		MOTI indciated there seems to be a 12" pipe (undersized for the purpose it has been install for) that they have no records of having installed nor a right a way for access. Further north up the road near Victory Turn a new home seems to block the rear ditch or abrubtly ends it so flows do not reach the stream. MOTI is unsure if owner has filled in or if the ditch ever continue all the way through	Left with MOTI and Home owner	MOTI Responsible	5	
FL-18	**Flooding**	Asman Turn		Asman Turn	3847 Asman Turn	2010 , 2011 catch basin overflowing due to what is thought to be from extreme large amount of ground water flow coming of Private forest company lands behind homes.		MOTI indciated there seems to be a 12" pipe (undersized for the purpose it has been install for) that they have no records of having installed nor a right a way for access. Further north up the road near Victory Turn a new home seems to block the rear ditch or abrubtly ends it so flows do not reach the stream. MOTI is unsure if owner has filled in or if the ditch ever continue all the way through	Left with MOTI and Home owner		5	
FL-19	**King Tides /Severe Rain**	Regent Rd		Regent Rd south of Terrain Rd		2010 Large culvert 50% blocked and flows backing up		MOTI could not find outflow portion of culvert and will have contractor do a more thorough secondary site check shortly	Left with MOTI	MOTI Responsible	5	
FL-20	**Severe Rain**	Woodhus Rd		Woodhus RD	Terri Poitier (home owner) House # ???	2010 Creek flows surpassed bankful and flows threaten home owners home		At the time Emergency Coordinator could only provide sand & bags if resident wanted			5	
FL-21	**Flooding**	York Rd		York Rd subdivisions	Enquist/Forfar/Brent Rds	2009, 2010, 2011 drainage system does not seem to handle severe rain events as well as it use too.		Local residents have been working with Electoral Director and MOTI to clean our correct drainage system	Left with MOTI	MOTI Responsible	5	
FL-22	**King Tides /Severe Rain**	Oyster River		Oyster River flood plain	Oyster Gardens, Salmon Point, Wimbleton and Fosgate Rd	2009,2010, 2011 Severe rain and king tide events have occured that may be resulting in ground water back up			Note with Emergency Program and will monitor during severe rain/storm even. Have informed residents of available emergency service		5	
FL-23	**King Tides /Severe Rain**	Emerald Farms		4500 block S. Island Hwy	**Emerald Farms 4585 S. Island Hwy**	2009, 2010, 2011, 2012 Creek has overflowed several times and threatens their home			Note with Emergency Program and will monitor during severe rain/storm event. Have informed residents of available emergency service	Monitoring	5	
FL-24	**Flooding**	Brian Rd		Brian Rd		After event report by Electoral Area Director - Taylor's home flooded badly					5	
FL-25	**King Tides /Severe Rain**	Lorne Groner Prope		Lorne Groner property HWY 19 south of Salmon Point		2009,2010, 2011, 2012 Pasture always floods in large rain events,		2010 and 2012 the water levels threatened reaching their back steps	Note with Emergency Program and will monitor during severe rain/storm event. Have informed residents of available emergency service	Monitoring	5	
FL-26	**Flooding**	Lambeth Rd		Lambeth Rd	4780 Lambeth Rd	2010 Ditch overflowing flooding crawlspace			Actioned to MOTI	MOTI Responsible	5	

APPENDIX B:
SURFICIAL GEOLOGY OYSTER RIVER, GEOLOGICAL SURVEY OF CANADA, 1959

COPY

GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

PRELIMINARY SERIES

SHEET 92 F/14

LEGEND

CENOZOIC

PLEISTOCENE AND RECENT

SALISH SEDIMENTS (8)

8 — SHORE, DELTAIC, AND FLUVIAL DEPOSITS: gravel, sand, silt, clay, peat; 8a, alluvial-fan deposits

CAPILANO SEDIMENTS (5,6)

6 — TERRACED FLUVIAL DEPOSITS: 6a, Deltaic deposits: gravel and sand commonly underlain by silt and clay; 6b, Floodplain and channel deposits: gravel, sand, minor silt (shown only where averaging 5 feet or more in thickness; thinner deposits included in unit 7)

5 — MARINE DEPOSITS (INCLUDING GLACIO-MARINE):
5a, silt, clay, stony clay; 5b, sand, pebbly sand; generally underlain by clay — thickness few inches to 30 feet
5c, gravel, sandy gravel; in spits, bars, etc.
5d, varied stony, gravelly, and sandy marine-veneer deposits; 5e, varied stony, loamy, and clayey marine-veneer deposits — thickness generally less than 5 feet

VASHON DRIFT (3,4)

4 (Recessional) — GLACIO-FLUVIAL DEPOSITS: gravel, sand; lenses of till; 4a, hummocky, knob-and-kettle, and ridged deposits (eskers shown by symbol); 4b, terrace and pitted terrace deposits

3 — GROUND MORAINE DEPOSITS: till; lenses of gravel, sand, and silt

QUADRA SEDIMENTS (2)

1 — Sand; minor gravel, silt, peat, peaty soil, driftwood

2 — Gravel, sand, silt, clay, peat, driftwood, till; beneath Vashon ground moraine, relation to Quadra not known

7 — VALLEY ALLUVIAN AND COLLUVIUM: boulders, gravel, stony loam, sand, silt, clay (thickness generally less than 5 feet)

Areas of bedrock outcrop and of outcrop interspersed with patches of thin overburden . . . R
Bedrock outcrop in area of overburden . . . x
Geological boundary (approximate)
Limit of geological mapping
Glacial striae (S), grooves (G), stoss-and-lee surfaces (SL), miniature crag-and-tail forms (CT) (direction of ice movement indicated, not indicated)
Drumlinoid ridges, crag-and-tail hills (direction of ice movement indicated, not indicated)
Landslide scar
Scarp between deltas or river terraces
Abandoned channel
Limit of marine overlap (not shown on deltas) . . . • • • • •
Gravel pit

Note: Fractional units (e.g. 5e/3, 7/2 etc.) are used where the surface map unit averages less than 5 feet in thickness. The upper number applies to the surface unit and the lower number to the principal underlying unit. Thus, 5e/3 means that stony, gravelly marine veneer (unit 5d) extends a few feet below the surface and rests upon ground moraine (unit 3).

Geology by J.G. Fyles, 1956-1957

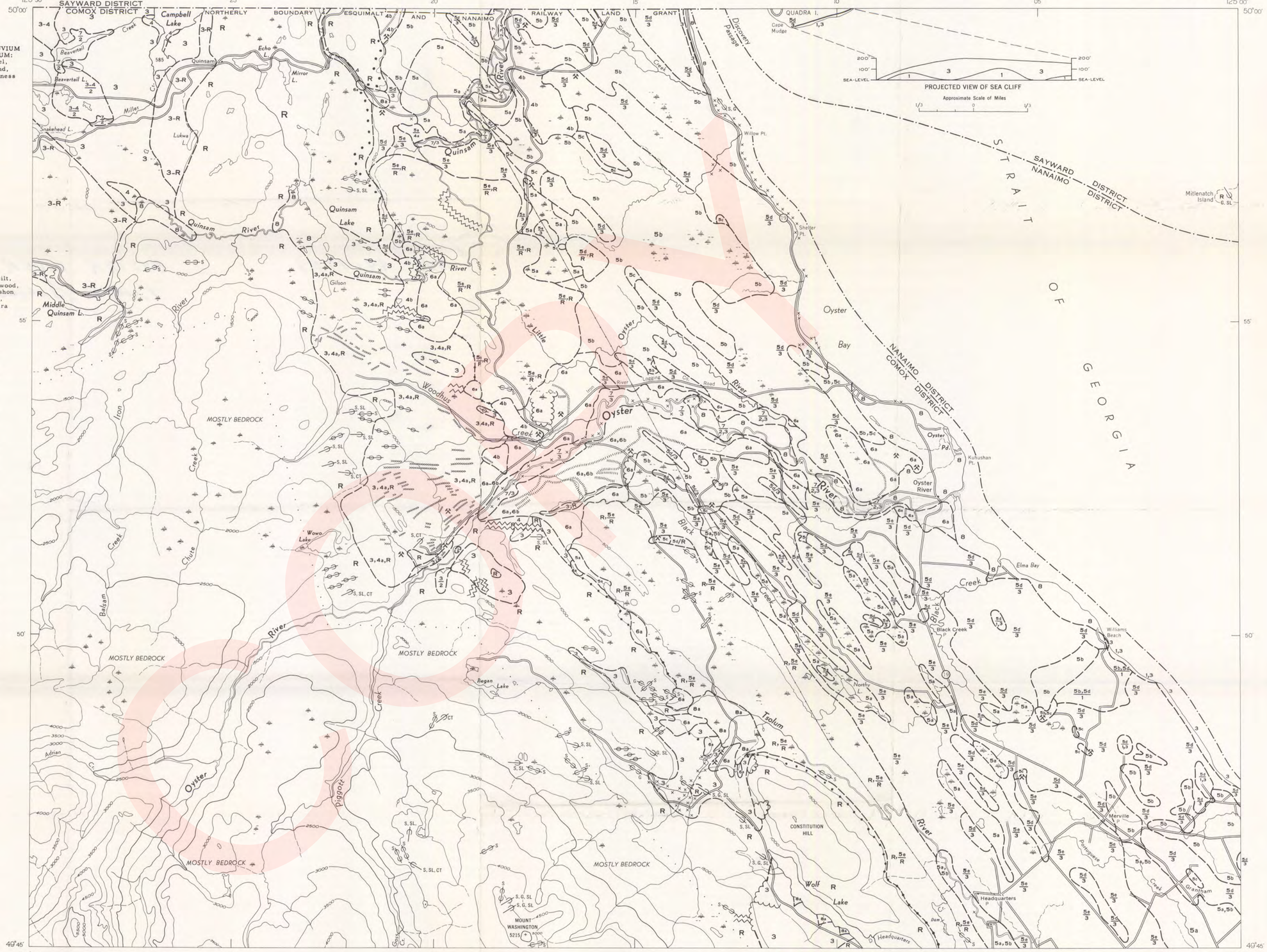
Main highway
Other roads
Power transmission line
Post Office . . . P
District boundary
Intermittent stream
Marsh
Sand
Contours (interval 500') . . . 500
Height in feet above mean sea-level . . . 5700

Cartography by the Geological Survey of Canada, 1959

Approximate magnetic declination, 24° 00' East

In response to public demand for earlier publication, Preliminary Series maps are now being issued in this simplified form, thereby effecting a substantial saving in time. There is no loss of information, but the maps will be clearer to read if all or some of the map-units are hand-coloured.

Air photographs covering this area may be obtained through the National Air Photographic Library, Topographical Survey, Ottawa, Ontario



PUBLISHED, 1960
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49-1959

MAP 49-1959
SURFICIAL GEOLOGY
OYSTER RIVER
COMOX, NANAIMO and SAYWARD DISTRICTS
BRITISH COLUMBIA

Scale: One Inch to One Mile = 1/63,360
Miles

MAP 49-1959
OYSTER RIVER
BRITISH COLUMBIA
SHEET 92 F/14

This map has been produced from a scanned version of the original map
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MAPS

COPY

Strathcona REGIONAL DISTRICT

AREA 'D' STORMWATER MANAGEMENT PLAN

MAP 1.1: STUDY AREA

LEGEND:

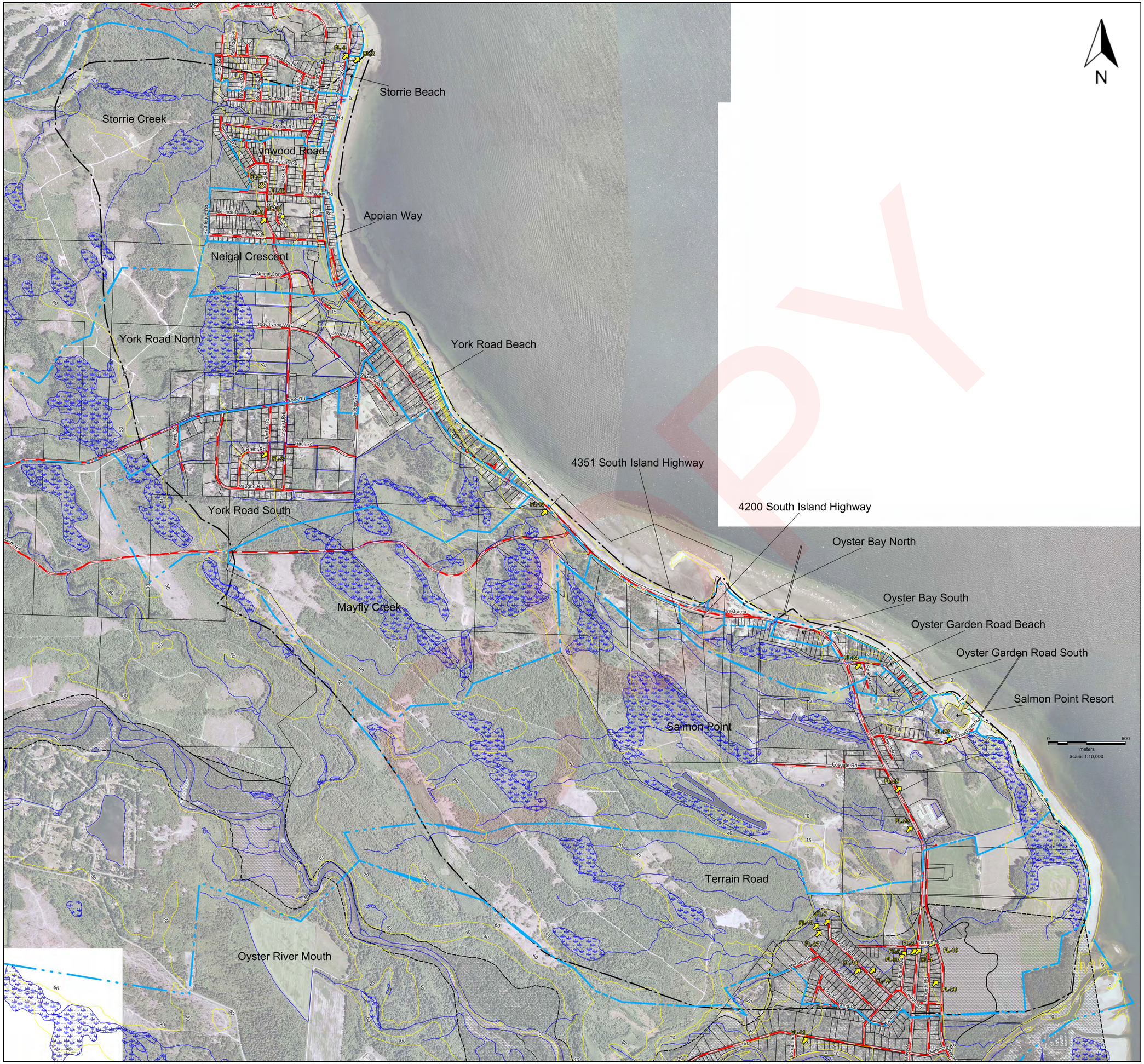
- Study Boundary
- Roads
- Contours
- Cadastre
- Wetlands
- Streams

This map was prepared for the purposes of this planning study and is provided for general reference only.

Site specific information must be obtained and provided to the SRD to confirm the actual conditions at any location.

McElhanney

File: 48856/Map 1.1.pdf, 2014-12-23



Strathcona Regional District

AREA 'D' STORMWATER MANAGEMENT PLAN

MAP 2.1: WATERSHEDS

LEGEND:

- Study Boundary
- Roads
- Contours
- Cadastre
- Wetlands
- Streams
- Watersheds
- Oyster River Floodplain

This map was prepared for the purposes of this planning study and is provided for general reference only.

Site specific information must be obtained and provided to the SRD to confirm the actual conditions at any location.

McElhanney

Strathcona REGIONAL DISTRICT

AREA 'D' STORMWATER MANAGEMENT PLAN

MAP 2.2: ENVIRONMENTALLY SENSITIVE AREAS

LEGEND:

Study Boundary

Roads

Contours

Cadastre

Wetlands

Streams

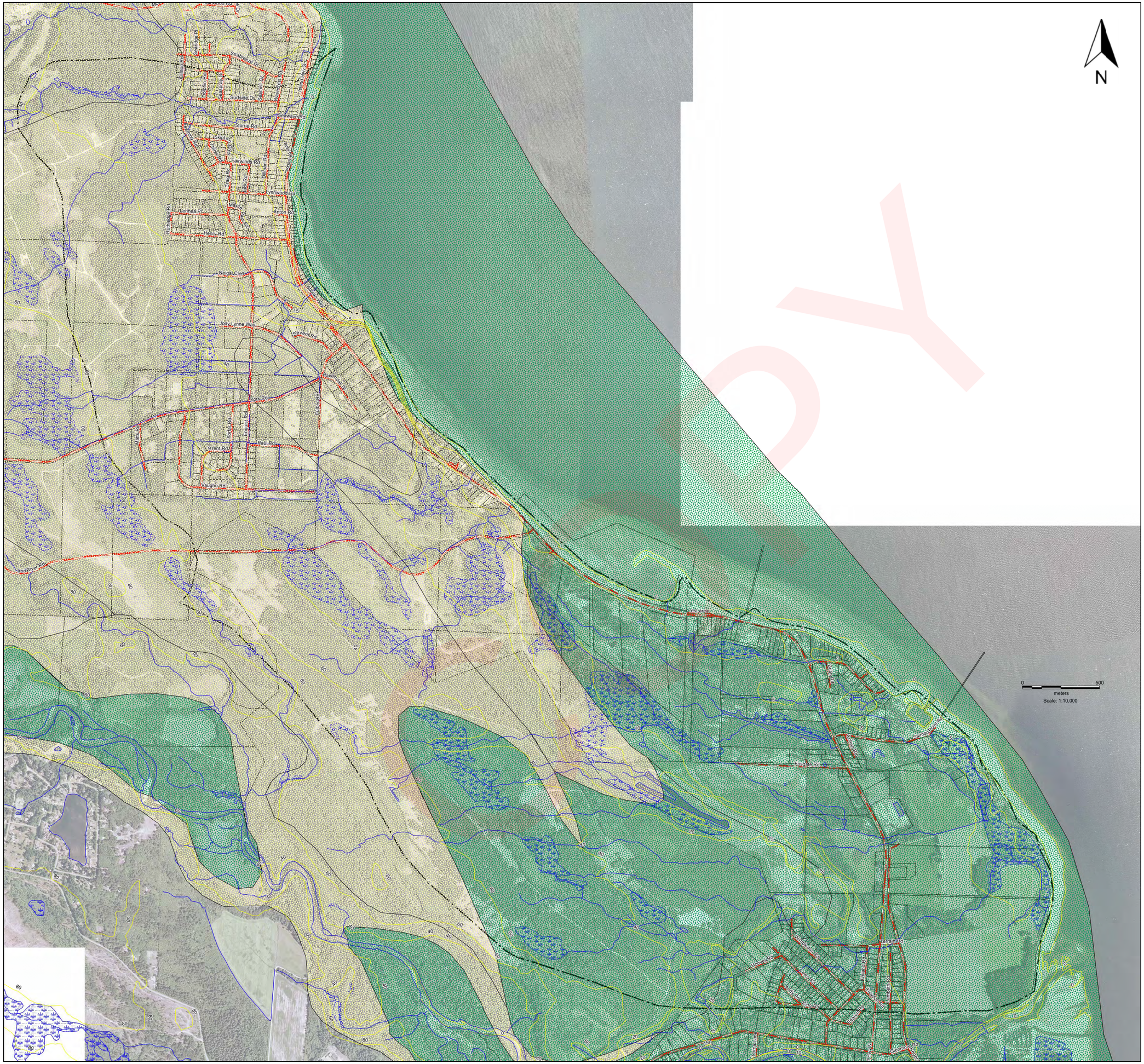
30m Environmentally Sensitive Area Buffer

This map was prepared for the purposes of this planning study and is provided for general reference only.

Site specific information must be obtained and provided to the SRD to confirm the actual conditions at any location.

Development within 30m Environmentally Sensitive Areas Buffer Zones is subject to the requirements of the Riparian Area Regulation and Approval by the SRD.

McElhanney



Strathcona REGIONAL DISTRICT

AREA 'D' STORMWATER MANAGEMENT PLAN

MAP 2.3: INFILTRATION POTENTIAL

LEGEND:

Study Boundary

Roads

Contours

Cadastre

Wetlands

Streams

Infiltration Potential

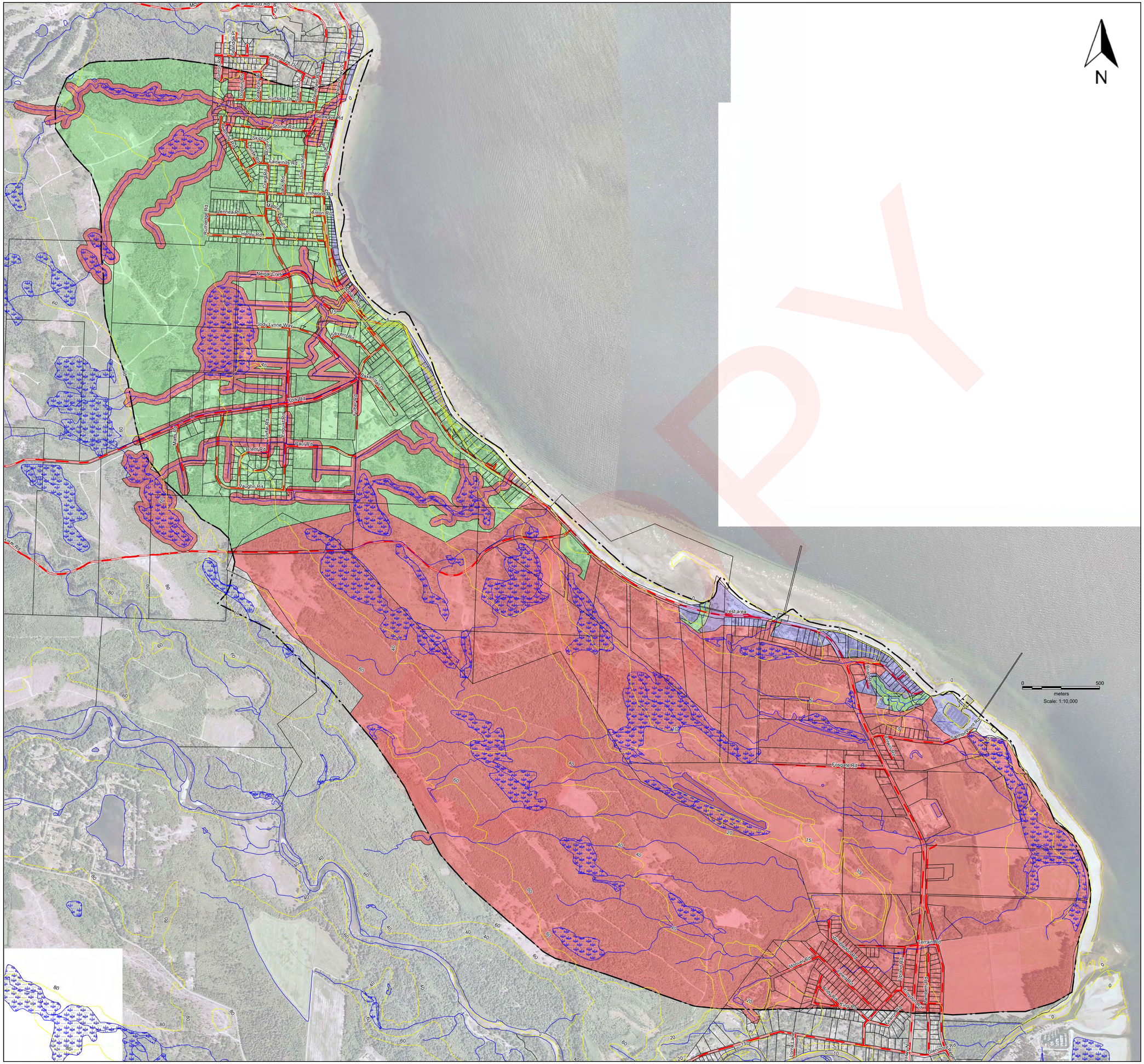
- High
- Medium
- Low

This map was prepared for the purposes of this planning study and is provided for general reference only.

Site specific information must be obtained and provided to the SRD to confirm the actual conditions at any location.

McElhanney

File: 48856/Map 2.3.pdf, 2014-12-23



Strathcona REGIONAL DISTRICT

AREA 'D' STORMWATER MANAGEMENT PLAN

MAP 2.4: Development Permit Areas: Stormwater Management Classification

LEGEND:

Study Boundary

Roads

Contours

Cadastre

Wetlands

Streams

Stormwater Managent Areas by Favourability

- Favourable
- Less Favourable
- Not Favourable

This map was prepared for the purposes of this planning study and is provided for general reference only.

Site specific information must be obtained and provided to the SRD to confirm the actual conditions at any location.

The favourability classifications are based on generalized criteria for the management of stormwater including the permeability of soils, location of flood plain areas and known stormwater infrastructure conveyance capacity issues within the development area. The map is to be used only as a guide, indicating lands where stormwater issues may be present or are known. Individual developments must complete a comprehensive stormwater management plan as part of the Development Permit Application process, which includes a site assessment and an assessment of downstream infrastructure capacity.

McElhanney

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PHOTO LOG

COPY

Site #3: Terrain Road at Hwy 19A

SRD Reference: FL-3, FL-4, FL-5 and FL-6

Photo 3a: Existing CSP culvert crossing Hwy 19A at Terrain Rd, outlet end.

Photo 3c: Ditch vegetation on west side of Hwy 19A, upstream of culvert crossing Hwy 19A at Terrain Rd.

Photo 3b: Existing CSP culvert crossing Hwy 19A at Terrain Rd.

Photo 3d: Ditch vegetation on south side of Terrain Rd, upstream of culvert crossing Hwy 19A at Terrain Rd.

Site #12: Maple Park Circle

SRD Reference: FL-12

Photo 12a: Walkway bridge on Maple Park Circle

Photo 12c: Ditch vegetation upstream of Maple Park walkway

Photo 12b: Drainage Manhole at east end of Maple Park walkway

Site #16: Mayfly Creek

SRD Reference: FL-16

Photo 16a: Mayfly Creek crossing of Hwy 19A, outlet end

Photo 16c: Active Mayfly Creek culvert, upstream end. Corrosion evident.

Photo 16b: Abandoned Mayfly Creek culvert

Photo 16d: Mayfly Creek channel looking upstream from culvert

Site #19: Regent Road

SRD Reference: FL-19

Photo 19a: 450mm CSP on Regent Rd crossing Terrain Rd, downstream end

Photo 19b: 450mm CSP on Regent Rd crossing Terrain Rd, upstream end showing dense vegetation

Site #21: Forfar Road

SRD Reference: FL-21

Photo 21a: Ditch between 4172 and 4176 Forfar Rd, looking downstream toward the east

Photo 21b: Roadside ditches on east side of Forfar Rd, showing dense vegetation growth

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Site #22: Salmon Point Road

SRD Reference: FL-22

Photo 22a: North side of Salmon Point Rd looking east, showing general site layout

Photo 22c: Downstream end of 700mm CSP culvert showing dense vegetation growth

Photo 22b: Upstream end of 700mm CSP culvert crossing Salmon Point Rd

Site #23: 4585 Highway 19A

SRD Reference: FL-23

Photo 23a: 1,200mm CSP culvert at 4585 Hwy 19A driveway, upstream end

Photo 23c: Note the white stake in the bottom left hand corner of the photo. The land owner claims this was the high water mark on December 24, 2010.

Photo 23b: Creek channel downstream of culvert

Site #24: 4410 Brian Rd:

SRD Reference: FL-24

Photo 24a: Front yard of 4410 Brian Rd, acting as a storage basin for upstream tributary stormwater

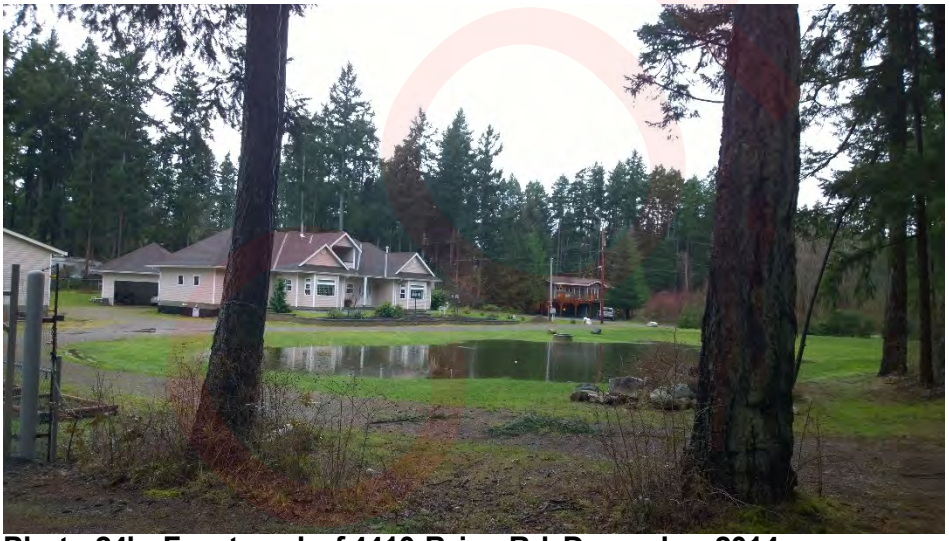

Photo 24b: Front yard of 4410 Brian Rd, December 2014

Site #26: Lambeth Road

SRD Reference: FL-26

Photo 26a: Lambeth Rd looking north, exhibiting a lack of consistent roadside ditching

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Strathcona REGIONAL DISTRICT

DIRECTOR REPORT

To: Name

From: Name

Date: Feb 13th 202[illegible]

Subject: Storm Water Management

Background:

As weather patterns are changing and we are now seeing more and more atmospheric rivers there is a growing number of residents being impacted by flood conditions on their properties.

Over the past year I have been asking about Storm Water Management but that seems to be where the conversation stops.

COPY

Proposed motion:

Staff to prepare a report for discussion at EASC on how to best to tackle Storm Water Management. The report should include how best to include other stakeholders such as the Ministry of Transportation and Infrastructure. Most important to the discussion is what options are available for property owners and how they can protect their properties from this growing problem.

Sincerely,

John Rice

Director

990 Cedar Street, Campbell River BC V9W 7Z8
Tel: 250-830-6700 Fax: 250-830-6710
Toll free: 1-877-830-2990 www.srd.ca