



## STAFF REPORT

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**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.

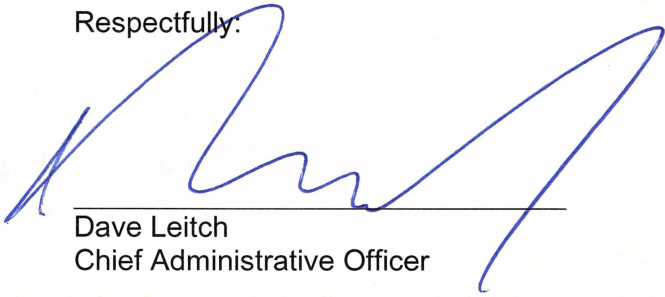
Option A – THAT the Regional District continue its evaluation of the feasibility of providing stormwater infrastructure that would serve those parts of Electoral Area D identified in the March 6, 2025 report from the Chief Administrative Officer.

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

# TECHNICAL MEMORANDUM

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**To**

Sheena Fisher, Engineering Services Coordinator  
Strathcona Regional District

**From**

Michael de Hart, P.Eng  
McElhanney, Campbell River Branch

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**Re**

Strathcona Regional District  
SRD Area D Drainage Study

**Date**

January 21, 2025

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## 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.



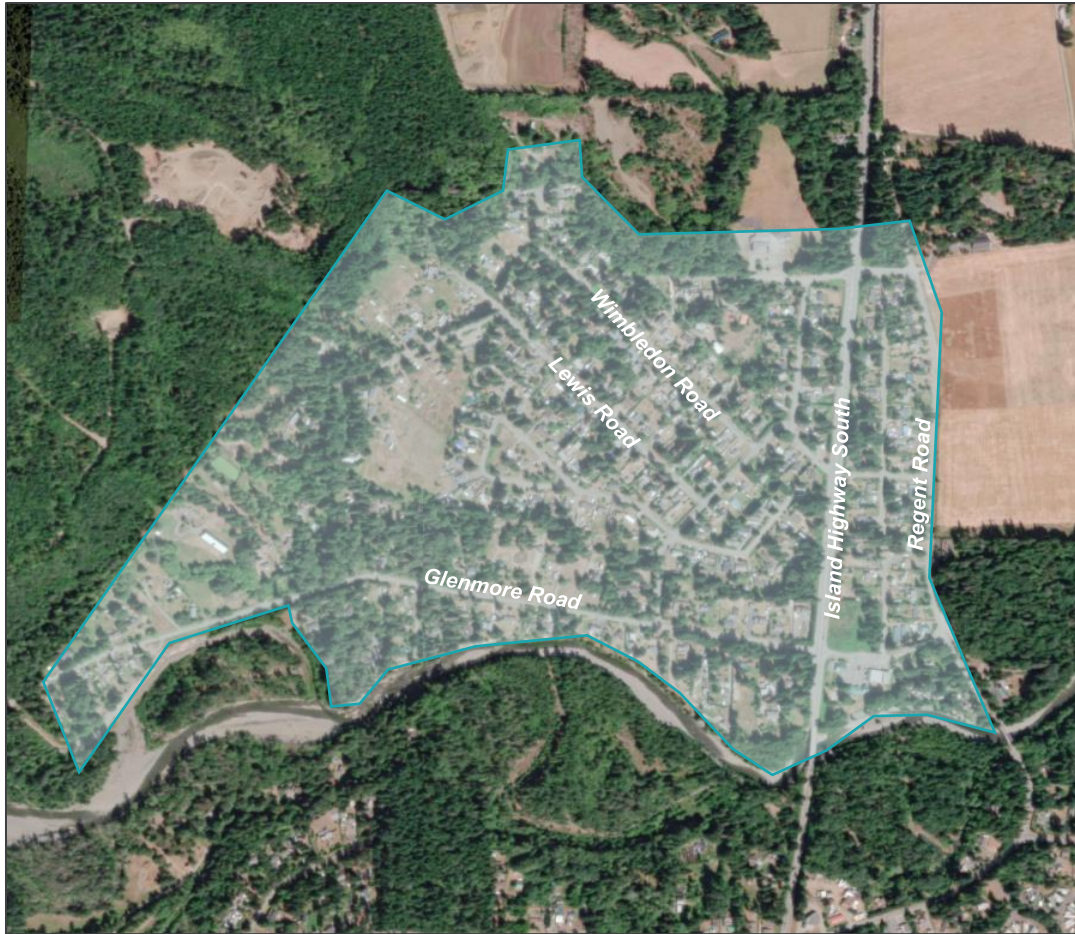


Figure 1: Oyster River Catchment Area



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.





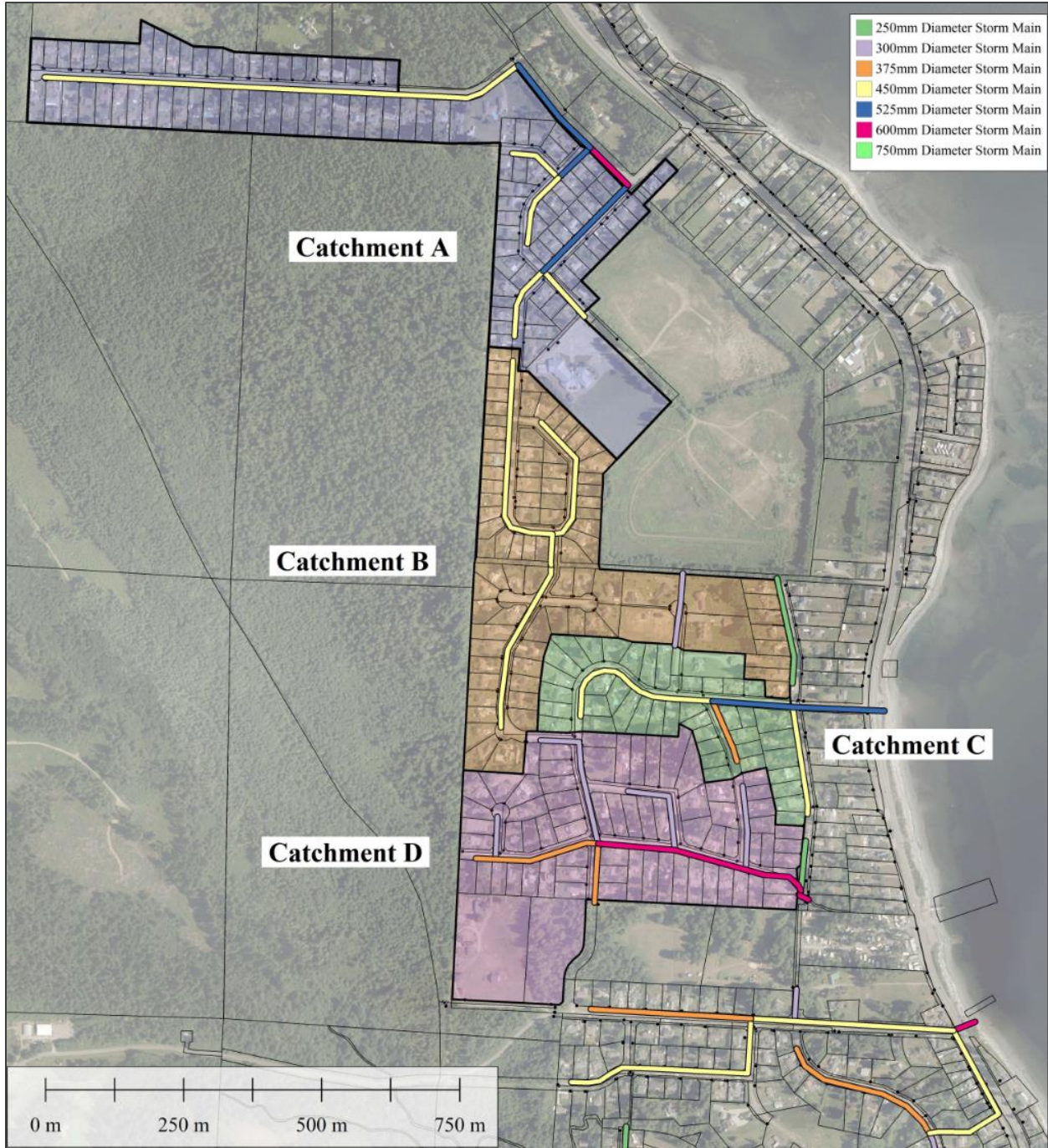


Figure 3: Ocean Grove/Shelter Point Sub Catchments



### 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 Crescent 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.



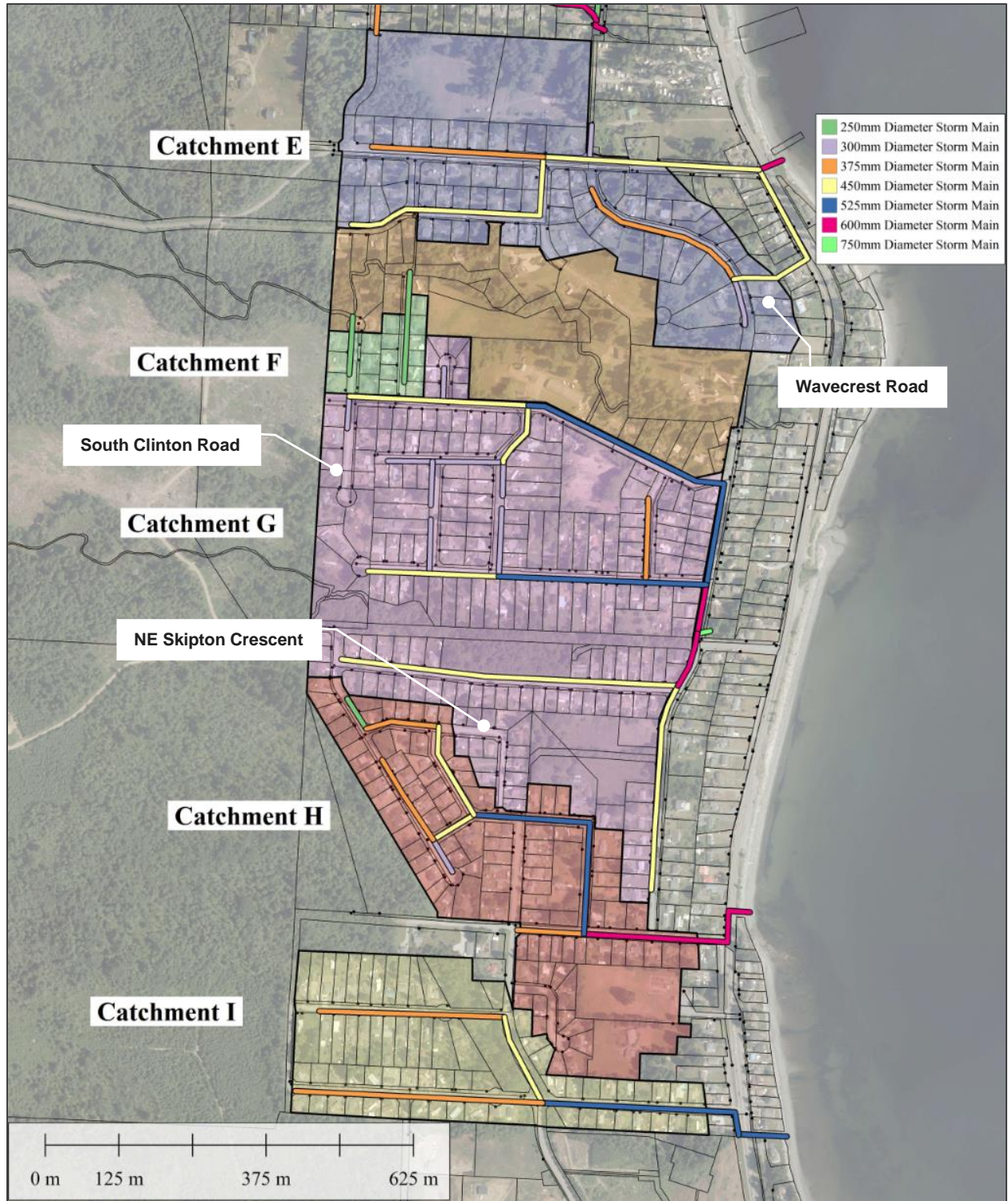


Figure 4: Stories Creek Sub Catchments



### 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.

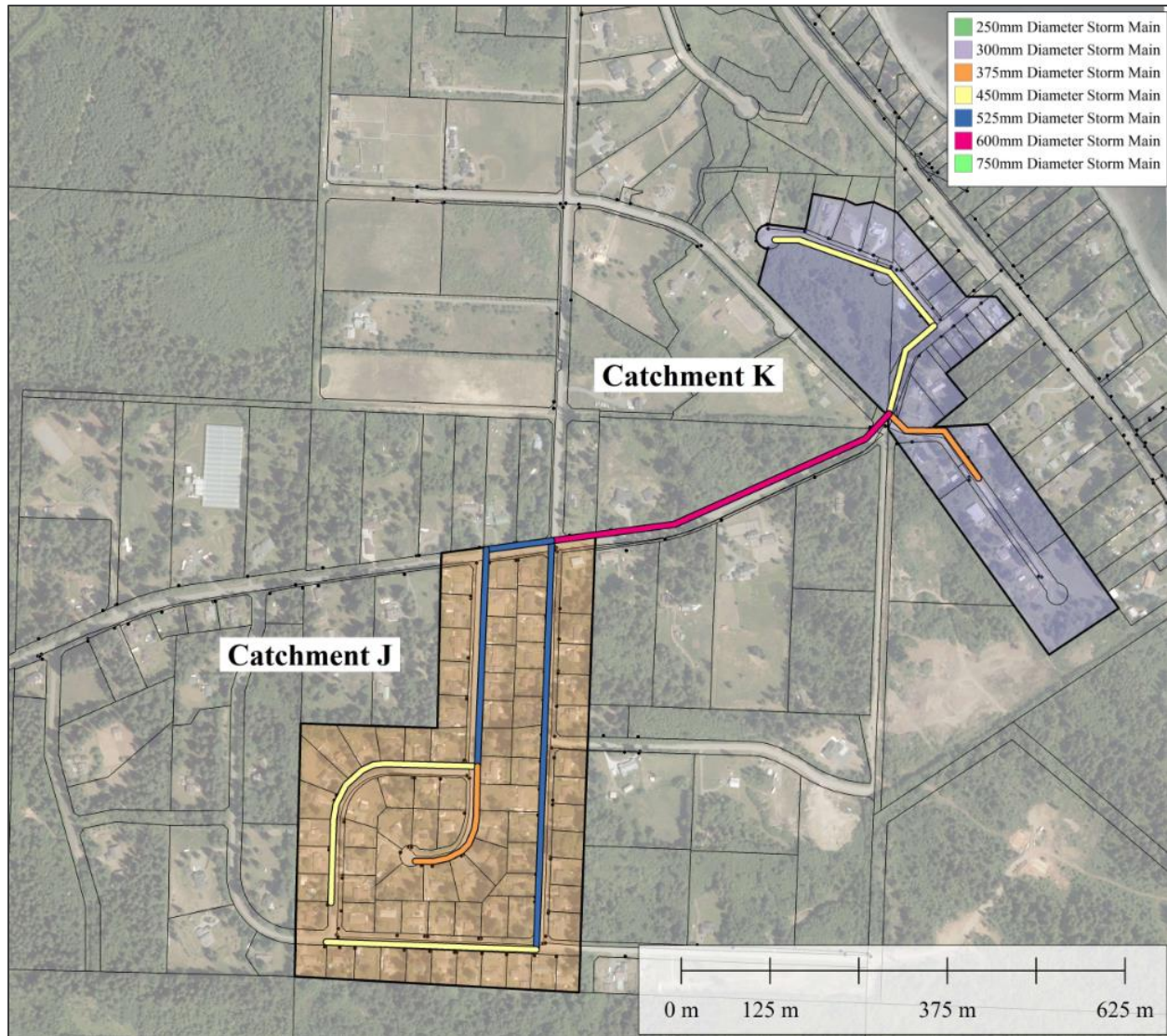


Figure 5: York Road Sub Catchments

### 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.

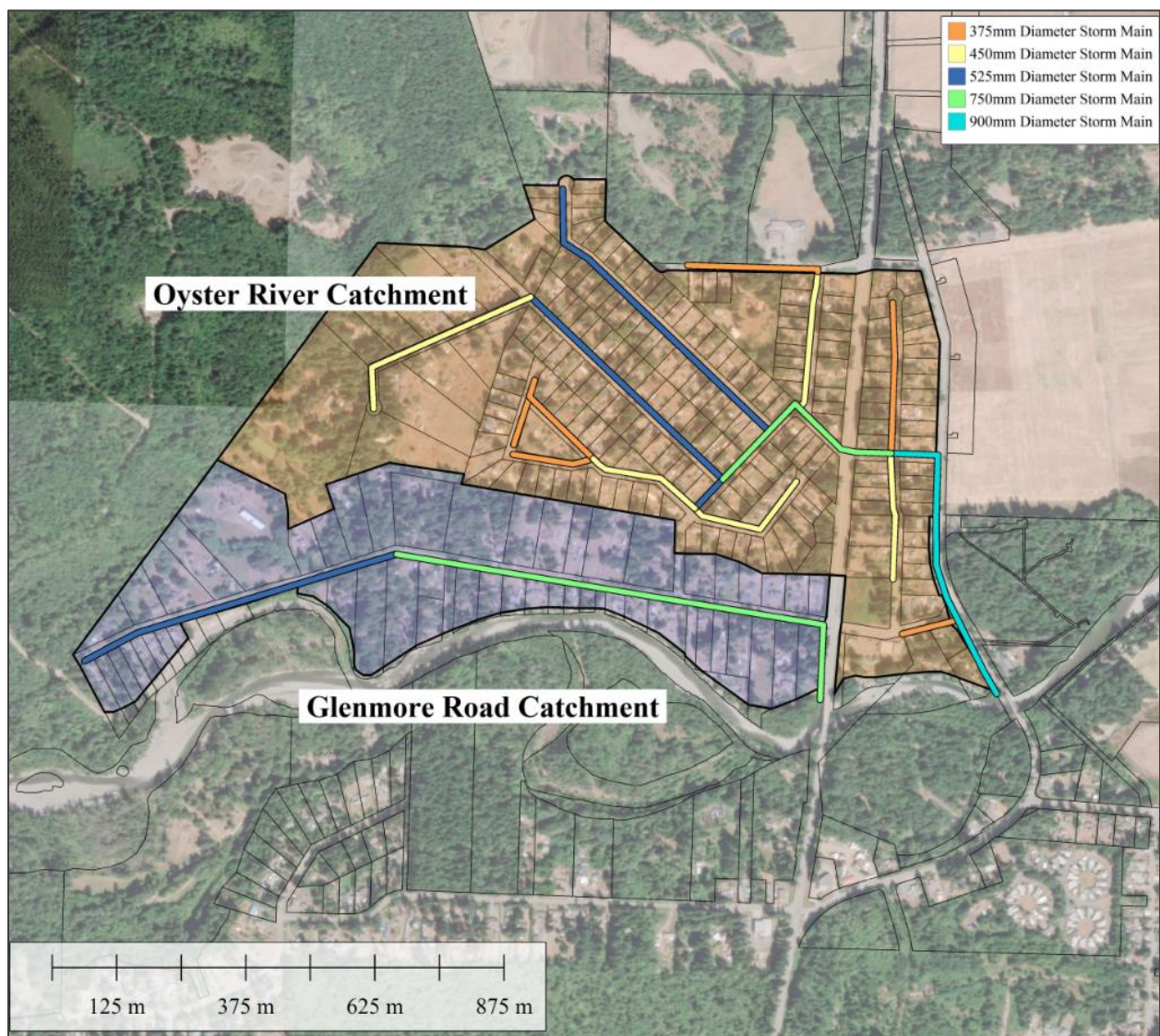


Figure 6: Oyster River Sub Catchments

## 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) <sup>1</sup>	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
<b>Sum:</b>	<b>23470</b>	<b>1121</b>	<b>226</b>

<sup>1</sup>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 <sup>1</sup>	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
<b>Average cost per serviceable parcel:</b>		<b>\$40,610</b>	<b>-</b>

<sup>1</sup>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

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# APPENDIX A – STATEMENT OF LIMITATIONS



## 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.



# APPENDIX B – CLASS D COST ESTIMATES



Project No: 2221-49698-00

**SRD Electoral Area D**
**Study Area**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 300,715	\$ 300,715
			Subtotal	\$ 300,715
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 601,430	\$ 601,430
			Subtotal	\$ 601,430
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 30,974,000</b>
			<b>Contingency (40%)</b>	12,390,000
			<b>Subtotal Site Servicing</b>	<b>\$ 43,364,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

Project No: 2221-49698-00

**SRD Electoral Area D**
**Catchment A**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 25,190	\$ 25,190
			Subtotal	\$ 25,190
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 50,380	\$ 50,380
			Subtotal	\$ 50,380
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 2,595,000</b>
			<b>Contingency (40%)</b>	1,038,000
			<b>Subtotal Site Servicing</b>	<b>\$ 3,633,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

Project No: 2221-49698-00

**SRD Electoral Area D**
**Catchment B**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 16,573	\$ 16,573
			Subtotal	\$ 16,573
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 33,145	\$ 33,145
			Subtotal	\$ 33,145
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 1,707,000</b>
			<b>Contingency (40%)</b>	<b>683,000</b>
			<b>Subtotal Site Servicing</b>	<b>\$ 2,390,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

Project No: 2221-49698-00

**SRD Electoral Area D**
**Catchment C**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 11,945	\$ 11,945
			Subtotal	\$ 11,945
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 23,890	\$ 23,890
			Subtotal	\$ 23,890
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 1,230,000</b>
			<b>Contingency (40%)</b>	<b>492,000</b>
			<b>Subtotal Site Servicing</b>	<b>\$ 1,722,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.



Project No: 2221-49698-00

**SRD Electoral Area D**
**Catchment D**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 18,215	\$ 18,215
			Subtotal	\$ 18,215
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 36,430	\$ 36,430
			Subtotal	\$ 36,430
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 1,876,000</b>
			<b>Contingency (40%)</b>	<b>750,000</b>
			<b>Subtotal Site Servicing</b>	<b>\$ 2,626,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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**SRD Electoral Area D**
**Catchment E**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 21,810	\$ 21,810
			Subtotal	\$ 21,810
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 43,620	\$ 43,620
			Subtotal	\$ 43,620
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 2,246,000</b>
			<b>Contingency (40%)</b>	<b>898,000</b>
			<b>Subtotal Site Servicing</b>	<b>\$ 3,144,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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**SRD Electoral Area D**
**Catchment F**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 3,075	\$ 3,075
			Subtotal	\$ 3,075
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 6,150	\$ 6,150
			Subtotal	\$ 6,150
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 317,000</b>
			<b>Contingency (40%)</b>	<b>127,000</b>
			<b>Subtotal Site Servicing</b>	<b>\$ 444,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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**SRD Electoral Area D**
**Catchment G**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 44,205	\$ 44,205
			Subtotal	\$ 44,205
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 88,410	\$ 88,410
			Subtotal	\$ 88,410
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 4,553,000</b>
			<b>Contingency (40%)</b>	1,821,000
			<b>Subtotal Site Servicing</b>	<b>\$ 6,374,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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**SRD Electoral Area D**
**Catchment H**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 20,260	\$ 20,260
			Subtotal	\$ 20,260
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 40,520	\$ 40,520
			Subtotal	\$ 40,520
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 2,087,000</b>
			<b>Contingency (40%)</b>	835,000
			<b>Subtotal Site Servicing</b>	<b>\$ 2,922,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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**SRD Electoral Area D**
**Catchment I**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 16,735	\$ 16,735
			Subtotal	\$ 16,735
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 33,470	\$ 33,470
			Subtotal	\$ 33,470
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 1,724,000</b>
			<b>Contingency (40%)</b>	690,000
			<b>Subtotal Site Servicing</b>	<b>\$ 2,414,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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**SRD Electoral Area D**
**Catchment J**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 29,870	\$ 29,870
			Subtotal	\$ 29,870
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 59,740	\$ 59,740
			Subtotal	\$ 59,740
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 3,077,000</b>
			<b>Contingency (40%)</b>	<b>1,231,000</b>
			<b>Subtotal Site Servicing</b>	<b>\$ 4,308,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

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**SRD Electoral Area D**
**Catchment K**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

	<b>BUDGET</b>			
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 6,760	\$ 6,760
			Subtotal	\$ 6,760
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 13,520	\$ 13,520
			Subtotal	\$ 13,520
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 696,000</b>
			<b>Contingency (40%)</b>	<b>278,000</b>
			<b>Subtotal Site Servicing</b>	<b>\$ 974,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.



Project No: 2221-49698-00

**SRD Electoral Area D**
**Glenmore Catchment**
**Preliminary Construction Cost Estimate  
Underground Stormwater Utilities**

<b>BUDGET</b>				
	<b>Estimated Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Estimated Cost</b>
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 22,885	\$ 22,885
			Subtotal	\$ 22,885
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 45,770	\$ 45,770
			Subtotal	\$ 45,770
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 2,357,000</b>
			<b>Contingency (40%)</b>	<b>943,000</b>
			<b>Subtotal Site Servicing</b>	<b>\$ 3,300,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.

Project No: 2221-49698-00

**SRD Electoral Area D**  
**Oyster River Catchment**

**Preliminary Construction Cost Estimate**  
**Underground Stormwater Utilities**

	<b>BUDGET</b>			
	Estimated Quantity	Unit	Unit Price	Estimated Cost
<b>Traffic Management Plan</b>				
TMP (Allowance - 1%)	1	LS	\$ 61,925	\$ 61,925
			Subtotal	\$ 61,925
<b>Erosion and Sediment Control</b>				
ESC (Allowance - 2%)	1	LS	\$ 123,850	\$ 123,850
			Subtotal	\$ 123,850
<b>Stormwater</b>				
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
<b>Road Works</b>				
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
			<b>Subtotal (rounded to nearest \$1000)</b>	<b>\$ 6,378,000</b>
			<b>Contingency (40%)</b>	<b>2,551,000</b>
			<b>Subtotal Site Servicing</b>	<b>\$ 8,929,000</b>

**Assumptions**

Road Works quantities assume a 2.5m wide asphalt cut along the entire length of the storm main works.