



DISTRICT OF CLEARWATER

BYLAW NO. 127, 2014

A bylaw to impose Development Cost Charges

WHEREAS pursuant to the Local Government Act, RSBC 1996, Chapter 323, as amended, Council may, by bylaw, impose development cost charges;

AND WHEREAS in the consideration of Council, development cost charges shall be imposed for the purpose of providing funds to assist the District in paying the capital cost of providing, constructing, altering or expanding sewage, water, and highway facilities, and improving parkland, to service, directly or indirectly, the development for which the charges are imposed;

AND WHEREAS no development cost charges shall be required to be paid:

- a) If a capital expenditure charge has previously been paid for the same development, unless, as a result of further or different development, new capital cost burdens will be imposed on the District; or
- b) Where the development does not impose new capital cost burdens on the District.

AND WHEREAS in the consideration of Council, the charges imposed under this bylaw reflect:

- a) Future land use patterns and development;
- b) The phasing of works and services consistent with the Official Community Plan, and projects included in the Five-year Financial Plan and the Infrastructure Master Plan.

AND WHEREAS in the consideration of Council, the charges imposed under this bylaw:

- a) Are not excessive in relation to the capital cost of prevailing standards of service;
- b) Will not deter development;
- c) Will not discourage the construction of reasonably priced housing or the provision of reasonably priced serviced land; and
- d) Will not discourage development designed to result in a low environmental impact.

NOW THEREFORE the Municipal Council of the District of Clearwater, in open meeting assembled, hereby enacts as follows:

1. TITLE

- 1.1. This bylaw may be cited for all purposes as "Development Cost Charges Bylaw No. 127, 2014".

2. INTERPRETATION

- 2.1. In this bylaw;

"Building" means a structure having a roof supported by columns and/or walls.

"Carriage Suite" means a self-contained, two-storey dwelling unit that is separate, subordinate in size, and accessory to the principal dwelling. A carriage suite shall have footprint no greater than 80 m² and shall not have more than 95 m² of residential living space.

"Commercial" means any commercial use as permitted under the District's Zoning Bylaw.

"District" means the District of Clearwater or the geographic area within the boundaries of the District of Clearwater, as the context requires.

"Dwelling Units" means one or more rooms with self-contained cooking, eating, living, sleeping and sanitary facilities used or intended to be used as a residence for one or more persons.

"Garden Suite" means a self-contained, one-storey dwelling unit that is separate, subordinate in size, and accessory to the principal dwelling. A garden suite shall have a total floor area of not more than 80 m².

"Gross Floor Area" means the combined area of all floors within a building, measured from the exterior surface of the exterior walls of the building, but excluding areas used only for vehicle parking, elevator shafts, stairwells and heating and ventilating fixtures, and crawl spaces.

"High Density Residential" means a land use containing three or more dwelling units having a density greater than forty (40) dwelling units per hectare of lot area.

"Industrial" means a use of land or building in an industrial zone as permitted by the District's Zoning Bylaw.

"Institutional" means a building or structure used or intended to be used only on a non-profit basis for cultural, recreational, social, religious, governmental, public hospital or educational purposes as permitted by the District's Zoning Bylaw.

"Lot" means a parcel of land legally described and registered on the records of the Land Title Office and includes Land Act Surveys as registered crown land.

“Low Density Residential” means a subdivision under the *Land Titles Act* or the *Strata Property Act* or a mobile home park for the purpose of creating parcels or spaces that may be used for residential occupancy and has an overall density up to but not greater than fifteen (15) units per hectare.

“Medium Density Residential” means a use including mobile home parks and multifamily dwellings as permitted under the District’s Zoning Bylaw having a density greater than fifteen (15) units per hectare and not exceeding forty (40) units per hectare.

“Not for Profit Rental Housing” means rental housing subsidized by the Province of British Columbia or by a non-profit agency which enables rents to be provided at below-market rates on a percentage of income basis and is owned and operated by either a public or a non-profit agency.

“Secondary Suite” means a second dwelling unit having a total floor area of not more than 90 m² in area and having a floor space less than 40% of the habitable floor space of the principal building. It must be located within the principal building of residential occupancy containing only one other dwelling unit, or in and part of a building which is a single real estate entity.

“Single-family Residential” means a detached building used for residential purposes by one family and consisting of one dwelling unit, regardless of the zone within which the use is located.

“Zone” means a zone as established by the District of Clearwater Zoning Bylaw No. 0940, 2011 as amended from time to time.

“Zoning Bylaw” means the District of Clearwater Zoning Bylaw No. 0940, 2011 as amended from time to time.

3. CHARGES

- 3.1. Development cost charges are hereby imposed on every person who obtains a building permit authorizing the construction, alteration, or extension of a building or structure who shall pay to the District the development cost charge in the amount set out in the Schedules which are attached to and form part of this bylaw as:
- a) Schedule A – Development Cost Charge for Water Supply
 - b) Schedule B – Development Cost Charge for Sanitary Sewer
 - c) Schedule C – Development Cost Charge for Municipal Roads
 - d) Schedule D – Development Cost Charge for Parkland Improvement
 - e) Schedule E – Map Delineating Area Subject to Water Supply Development Cost Charges

f) Schedule F – Map Delineating Area Subject to Sanitary Sewer
Development Cost Charges

The development cost charge shall be paid in full prior to issuance of a Building Permit.

- 3.2. All charges imposed by this bylaw may be paid by instalments in accordance with BC Reg. 166/84 to the Local Government Act, being the Development Cost Charges (Instalments) regulation.
- 3.3. Charges collected under this bylaw may be refunded only under the following circumstances:
 - a) The fee is incorrectly assessed or calculated;
 - b) Construction authorized under a Building Permit is not commenced within six (6) months of the issuance of a permit and the original Building Permit is returned to the District.
- 3.4. Charges will be collected at building permit for residential developments of less than four (4) dwelling units under section 933(4)(b) of the Local Government Act.

4. **EXEMPTIONS**

No charge is payable under Section 3 of this bylaw where:

- 4.1. The Building Permit 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 Section 220(1)(h) and 224(2)(f) of the Community Charter;
- 4.2. The value of the work authorized by the permit does not exceed \$50,000 or any other amount prescribed by regulation under the Local Government Act;
- 4.3. The Building Permit authorizes the construction of non-profit rental housing;
- 4.4. Buildings which are constructed for the purpose of storing goods or materials which were previously stored on the land out-of-doors and where the building will be used for no other purpose than such storage. The latter condition shall require a Section 219 covenant to be registered against the title of the land, in priority, for the purpose of enforcing such restriction;
- 4.5. A building is destroyed by fire or demolished for the purpose of redevelopment and the land, in which case development cost charges will only be payable for that portion of the building which exceeds the Gross Floor Area of the original building provided that a Building Permit is issued within two (2) years of demolition or destruction of the original building; and

- 4.6. Any building or structure which is designed only for agricultural use and is on a lot which is zoned for agricultural use under the District's Zoning Bylaw at the date of submission of a building permit application.

5. MULTIPLE USES

- 5.1. When a building or structure is used or intended to be used for more than one class of development, charges under this bylaw shall be calculated separately for the areas used for each class as though the area was a separate building, and the amount payable shall be the combined total for all classes.

6. SEVERABILITY

- 6.1. Each portion or section of this Bylaw is intended to be independent to the extent that a decision of a court of competent jurisdiction that a portion or section of is invalid does not affect the validity of any other portion or section, and the invalid portion shall be severed.

7. REPEAL

- 7.1. On the effective date, Clearwater Improvement District Capital Expenditures Bylaw No. 194, 1994, Clearwater Improvement District Capital Expenditures Bylaw No. 195, 1994, District of Clearwater Comprehensive Capital Expenditure Charge (Sanitary Sewer) Amending Bylaw No. 281 (2007), and Comprehensive Capital Expenditure Charge (Water) Amending Bylaw No. 282 (2007) are hereby repealed with respect to building permit applications received after the effective date of this bylaw.

8. EFFECTIVE DATE

- 8.1. THAT this Bylaw shall take effect upon the date of its final adoption by Council.

PASSED FIRST READING this 7th day of October, 2014

PASSED SECOND READING this 7th day of October, 2014

THIRD READING this 3rd day of March, 2015

THIRD READING, as amended, this 7th day of April, 2015

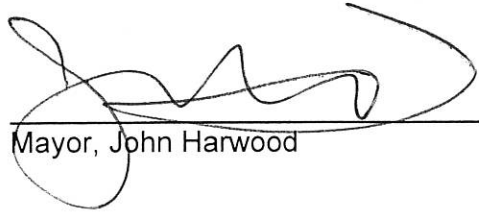
Certified a true and correct copy of the
District of Clearwater Development Cost Charge Bylaw No. 127, 2014
as at third reading.

Mayor, John Harwood

Leslie Groulx, Corporate Officer

APPROVED by the Inspector of Municipalities this 13th, day of May, 2015.

AND FINALLY ADOPTED this 19th day of May, 2015.



Mayor, John Harwood



Leslie Groulx, Corporate Officer

Certified to be a true and correct copy
cited as "The District of Clearwater
Development Cost Charge Bylaw No.
127, 2014" as adopted by the Council
of the District of Clearwater this
day of July 9th, 2015.



Leslie Groulx, Corporate Officer

SCHEDULE A
DEVELOPMENT COST CHARGES FOR WATER SUPPLY

1. Development Cost Charges are payable for Water Supply as follows:

	<u>Class of Development</u>		<u>Development Cost Charge</u>
a)	Low Density Residential	\$2904	per dwelling unit
b)	Medium Density Residential	\$2130	per dwelling unit
c)	High Density Residential, Garden Suite, Carriage House, Secondary Suite	\$1646	per dwelling unit
d)	Commercial	\$8.71	per square meter of gross floor area
e)	Industrial	\$8.71	per square meter of gross floor area
f)	Institutional	\$10.65	per square meter of gross floor area

2. Development cost charges for water supply is payable under this schedule for development within the designated area as illustrated in Schedule E.
3. The assist factor for water supply is 1%.

SCHEDULE B
DEVELOPMENT COST CHARGES FOR SANITARY SEWER

1. Development Cost Charges are payable for Sanitary Sewer as follows:

	<u>Class of Development</u>		<u>Development Cost Charge</u>
a)	Low Density Residential	\$1555	per dwelling unit
b)	Medium Density Residential	\$1140	per dwelling unit
c)	High Density Residential, Garden Suite, Carriage House, Secondary Suite	\$881	per dwelling unit
d)	Commercial	\$6.74	per square meter of gross floor area
e)	Industrial	\$6.74	per square meter of gross floor area
f)	Institutional	\$5.70	per square meter of gross floor area

2. Development cost charges for sanitary sewer is payable under this schedule for development within the designated area as illustrated in Schedule F.
3. The assist factor for sanitary sewer is 1%.

SCHEDULE C
DEVELOPMENT COST CHARGES FOR ROADS

1. Development Cost Charges are payable for Roads as follows:

	<u>Class of Development</u>		<u>Development Cost Charge</u>
a)	Low Density Residential	\$2004	per dwelling unit
b)	Medium Density Residential	\$1297	per dwelling unit
c)	High Density Residential, Garden Suite, Carriage House, Secondary Suite	\$1218	per dwelling unit
d)	Commercial	\$13.76	per square meter of gross floor area
e)	Industrial	\$5.40	per square meter of gross floor area
f)	Institutional	\$17.69	per square meter of gross floor area

2. Development cost charges for roads is payable on a District-wide basis.
3. The assist factor for roads is 1%.

SCHEDULE D
DEVELOPMENT COST CHARGES FOR PARKLAND

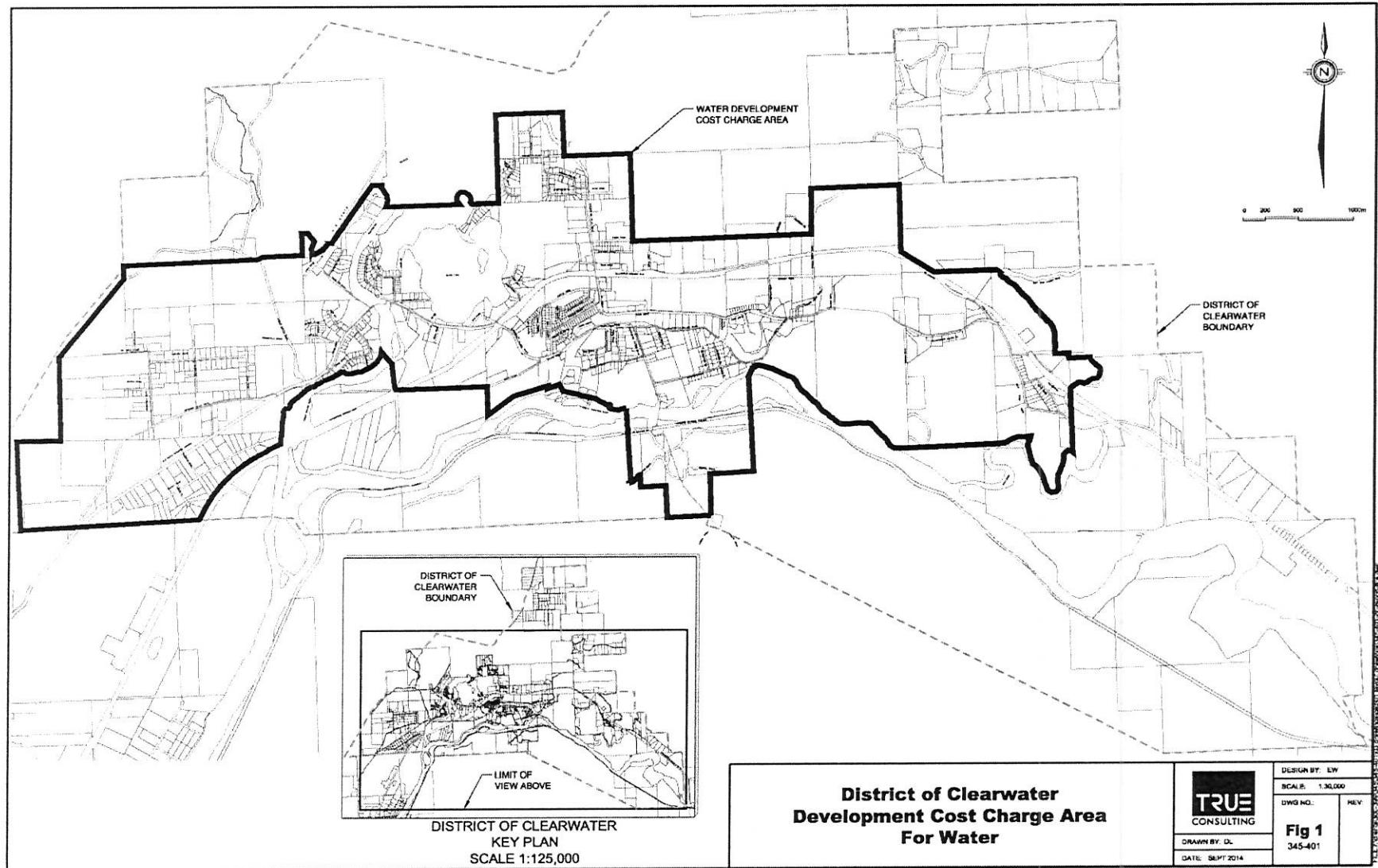
1. Development Cost Charges are payable for Parkland as follows:

	<u>Class of Development</u>		<u>Development Cost Charge</u>
a)	Low Density Residential	\$747	per dwelling unit
b)	Medium Density Residential	\$548	per dwelling unit
c)	High Density Residential, Garden Suite, Carriage House, Secondary Suite	\$423	per dwelling unit
d)	Commercial	\$0.00	per square meter of gross floor area
e)	Industrial	\$0.00	per square meter of gross floor area
f)	Institutional	\$0.00	per square meter of gross floor area

2. Development cost charges for parkland is payable on a District-wide basis.
3. The assist factor for parkland is 1%.

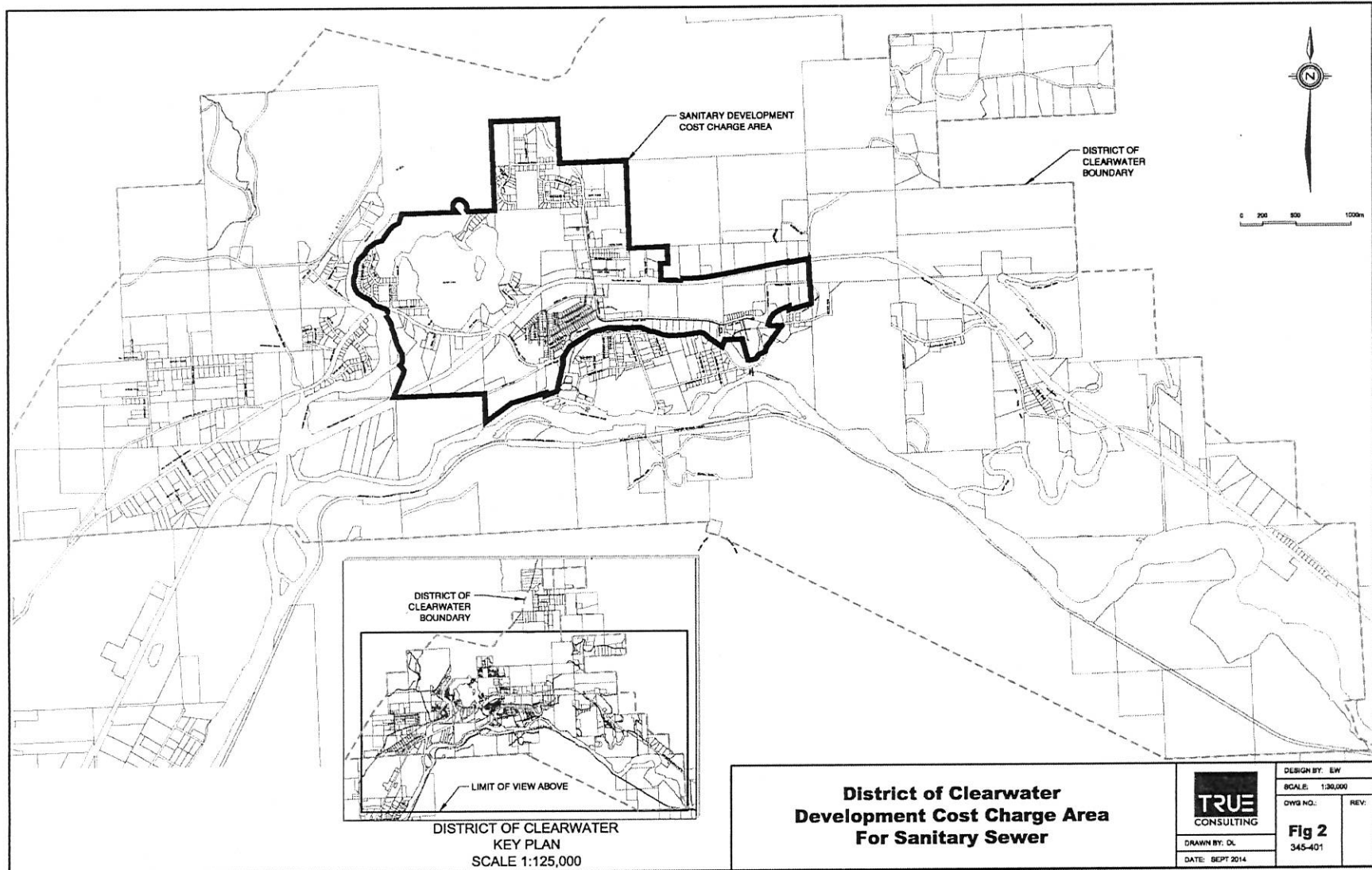
SCHEDULE E to Bylaw No. 127, 2014

Map delineating area subject to Water Supply Development Cost Charge



SCHEDULE F to Bylaw No. 127, 2014

Map delineating area subject to Sanitary Sewer Development Cost Charges



Development Cost Charge Bylaw No. 127, 2014

District of Clearwater

March 2015

Project No. 345-401



ENGINEERING ■ PLANNING ■ URBAN DESIGN

201-2079 Falcon Rd | Kamloops BC | V2C 4J2 | www.true.bc.ca | tel 250.828.0881 | fax 250.828.0717

Distribution List

# of Hard Copies	PDF Required	Association / Company Name
1	1	TRUE Consulting
	1	District of Clearwater

Revision Log

Revision #	Revised by	Date	Issue / Revision Description
R0	TRU	Sept. 15, 2014	Issued for Client Review - DRAFT
R1	TRU	Sept. 29, 2014	Issued for Open House - DRAFT
R2	EMW	Oct. 8, 2014	Final
R3	EMB	Feb. 3, 2015	Revised to add CECs
R4	EMB	Mar. 27, 2015	Revised to add assist factor before CECs

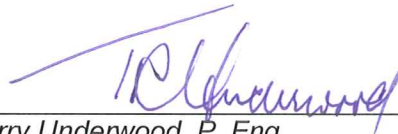
Report Submission

Report Prepared By:



Elisa Becker, P. Eng.
Project Engineer

Report Reviewed By:



Terry Underwood, P. Eng.
Project Engineer

R:\Clients\300-399\345\345-401\05 Reports\DCC Report\345-401-DCC-Technical Appendix-Mar 2015.docx

Table of Contents

1.0	Introduction and Objectives	1
2.0	Development Cost Charge Bylaw Format.....	2
2.1	Time Frame	2
2.2	DCC Levy Format	3
2.3	Assist Factors	3
3.0	Development Projections.....	4
4.0	Water Supply	6
5.0	Sanitary Sewer.....	9
6.0	Municipal Roads.....	13
7.0	Parkland Acquisition and Improvement Projects.....	18
8.0	Summary.....	21
	Appendix A.....	A1
	Appendix B.....	B1

List of Tables

Table 4-1 – Water Supply Projects.....	7
Table 4-2 – Water DCC Calculations	8
Table 5-1 – Sanitary Sewer Projects	10
Table 5-2 – Sanitary Sewer DCC Calculations	12
Table 6-1 - Municipal Road Projects	15
Table 6-2 - Road DCC Calculations	17
Table 7-1 - Parkland Projects.....	19
Table 7-2 - Parkland DCC Calculations.....	20
Table 8-1 - Summary of DCCs	21

List of Figures

Figure 1 - Development Cost Charge Area for Water	Appendix A
Figure 2 - Development Cost Charge Area for Sanitary Sewer	Appendix A
Figure 3 - Development Cost Charge Projects for Water.....	Appendix A
Figure 4 - Development Cost Charge Projects for Sanitary Sewer	Appendix A
Figure 5 - Development Cost Charge Projects for Roads.....	Appendix A
Figure 6 - Development Cost Charge Projects for Parklands	Appendix A

List of Acronyms

ADD	Average Day Demand
BPG	Best Practices Guide
CEC	Capital Expenditure Charges
DCC	Development Cost Charge
MDD	Maximum Day Demand
OCP	Official Community Plan
TRUE	TRUE Consulting
UV	Ultraviolet

Units of Measure

km	kilometre
m ³ /d	cubic metres per day
L/s	Litres per second
lpcd	Litres per capita per day
m	metre
mg/L	milligrams per Litre
mm	millimetre
m ²	square metre

1.0 Introduction and Objectives

Development cost charges (DCCs) are not currently levied by the District of Clearwater (the District). However, the District currently levies capital expenditure charges (CECs) according to the Comprehensive Capital Expenditure Charge (Sanitary Sewer) Amending Bylaw No. 281 and Comprehensive Capital Expenditure Charge (Water) Amending Bylaw No. 282, both of which were adopted by the Clearwater Improvement District. The District's Master Infrastructure Plan, completed in March 2013, recommended creating a DCC bylaw as part of the District's financial plan. Accordingly, the District is proceeding with creating a DCC bylaw.

The District of Clearwater finalized its Official Community Plan (OCP) in 2012 and the OCP was formally adopted by District Council by Bylaw No. 93, 2012 on February 2012.

Information from the District's OCP and Infrastructure Master Plan utilized to prepare this technical appendix to DCC Bylaw No. 127 includes:

- population and development projections
- residential land use (density) projections
- development areas
- infrastructure requirements

The Province of British Columbia has prepared a "Development Cost Charge Best Practices Guide" (3rd edition dated 2005) to assist local governments in the preparation of DCC bylaws. The Best Practices Guide (BPG) states that local governments who choose to follow the recommended best practices can expect an expedited process for provincial approval of their DCC bylaws. This Technical Appendix follows the recommendations of the BPG as closely as possible but retains elements which reflect development types unique to the District.

2.0 Development Cost Charge Bylaw Format

2.1 Time Frame

The BPG describes two options for program time frame that may be used as the basis for determining capital project requirements which then leads to the derivation of DCCs. One option is described as a build out approach where a capital plan is used to define all necessary projects to service development anticipated to occur to the full extent and level defined by the OCP and Infrastructure Master Plan.

For the District of Clearwater, the build out approach to the derivation of DCCs represents the following difficulties and complications:

- uncertainty of assistance programs from senior levels of government for road, water supply and sanitary sewer capital projects.
- changes by senior government to the regulatory standards for water supply, wastewater treatment and disposal, etc.
- preparation of capital cost estimates for projects that may be constructed 15 to 25 years in the future is, at the best of times, extremely difficult.

The second time frame option described as being acceptable in the BPG is the revolving program approach. The revolving program is consistent with the OCP and Infrastructure Master Plan, but consists of only those capital projects which are necessary to service development that is expected to occur in a defined or specified time frame, i.e. a 5 or 10 year period. As compared to the build out approach, it is significantly more straightforward with the revolving program to derive a realistic design population for the DCC calculations. It is also more straightforward to accurately describe capital works requirements and cost estimates for a 5 to 10 year design population than a 25 year or longer time horizon. Uncertainty factors related to technology, and senior government policies and standards, become less of a concern with the shorter time horizon.

In consultation with the District, the revolving program approach is the preferred option for the derivation of DCCs. A 10 year projection time frame has been utilized for the revolving program approach with population and development projections derived from the OCP.

2.2 DCC Levy Format

Development cost charges may be levied by a municipality on a municipal-wide basis or on an area specific (sector) basis.

The BPG recommends that DCCs should be established on a municipal-wide basis unless there is a significant disparity between those who pay and the benefiting users. For the District of Clearwater, levying DCCs on a municipal-wide basis for roads and parks is applied, as all users benefit from parks and roads. For water and sanitary sewer, however, there are areas not serviced by sanitary sewer and water systems, and there is no plan to extend service to these areas within the 10-year horizon of this DCC. For this reason, water and sanitary sewer DCCs are applied on a specific sector basis. Figure 1 presents the water sector and Figure 2 presents the sanitary sewer sector. The District is not proposing to levy a DCC for storm drainage works, therefore no discussion of a benefitting area is warranted.

2.3 Assist Factors

Section 933(2) of the Local Governance Act states that the purpose of DCCs is to provide funds to 'assist' local government to provide and improve parks and construct infrastructure. Accordingly, there is a requirement for municipalities to provide an assist factor in the derivation of DCCs. The assist factor:

- may be set as low as 1%.
- generally reflects Council's desire to encourage development and is therefore largely a political decision.
- may be varied from time-to-time by Bylaw amendment to ensure that DCCs do not deter development.
- may vary by components, for example 5% for sewers, 10% for roads, 25% for parks, etc.

The Council of the District of Clearwater has reviewed the gross DCCs (before assist factor) as derived in the following Sections 4.0 to 7.0 and set assist factors for each DCC category as follows:

▪ Water Supply	-	1%
▪ Sanitary Sewer	-	1%
▪ Roads	-	1%
▪ Parkland	-	1%

3.0 Development Projections

Consistent with the revolving program approach described in Section 2, the DCC calculations are derived on the basis of a 10-year population projection. The population projection is based on the housing demand as presented in the OCP summarized as follows:

Housing Type	%	# Units	Person/unit	Total Persons
Detached/duplex	74	96	3	288
Multi-family units	6	8	2.2	18
Pre-manufactured homes	20	26	2.2	57
Total				363

The OCP describes an average of 2.3 persons per dwelling unit, but for the purposes of estimating the projected population, persons per dwelling unit were assumed to be 3 for detached/duplex and 2.2 for multi-family units and pre-manufactured homes. These rates are consistent with a population increase consisting primarily of families. Using the 10-year housing demand population (363 persons every 10 years), the following is the projected population for the DCC horizon:

Year	Growth	Population
2011 Base	- -	2331
2014	36.3 persons/yr	2440
2023	36.3 persons/yr	2803

The District's OCP estimates that new residential development will comprise the following on a density basis:

- Low Density (detached/duplex) 74%
- Medium Density (multi-family units and pre-manufactured homes) 26%

The OCP doesn't anticipate high density new residential development in the DCC timeframe, so it isn't included in the population projection calculations, but DCCs have been calculated for high density development.

The following table presents the percentage of new development population compared to the existing population as of 2014. This is used to apportion DCC recoverable project costs, i.e. 13% of the projected population in 2023 is estimated to be new development population. The population breakdown for the DCC horizon is as follows:

Year	Total Population	Existing Population	New Development Population	Existing Population %	New Development Population %
2014 Base	2440	2440	0	100%	0%
2023	2803	2440	363	87%	13%

For non-residential development projections, i.e. commercial, industrial and institutional land uses, building permits from 2009 to 2014 were reviewed. During that 5 year period, there was approximately 2,500m² total of new commercial development and approximately 1,500m² total of new industrial development. There wasn't any new institutional development in this period, but a value of 1,000m² is assumed for future development projections based on other DCC bylaws in the southern interior of British Columbia. From this data, non-residential development by land use for the 10-year DCC horizon is anticipated to comprise:

Commercial	5,000	m ² floor area
Industrial	3,000	m ² floor area
Institutional	1,000	m ² floor area

4.0 Water Supply

The Master Infrastructure Plan completed in 2013 for the District of Clearwater includes water supply projects planned for a 25-year period. The design population from the Master Infrastructure Plan is 3665. This information is used to estimate DCCs for the 10-year projected population.

The Master Infrastructure Plan states the maximum day demand (MDD) in 2013 was 6,000 m³/d and is expected to increase to 8,000 m³/d by 2037, with a moderate conservation strategy. To accommodate the increase in MDD, as well as maintain the existing water infrastructure, the following water supply projects are planned to be constructed by 2037 according to the Master Infrastructure Plan:

- Water Supply Well 1 UV and Chlorination System (\$2,863,000)

The District currently has three water sources, Russell Creek water system, Well #1, and Well #2. To both maintain existing capacity and increase capacity, the Master Infrastructure Plan recommends replacing Well #1 and adding UV and chlorination; and keeping Russell Creek and Well #2 as backup sources. The estimated cost referenced in the Master Infrastructure Plan is \$2,833,000. This project may be funded partially by grants in the future, but the BPG recommends not including grants until they are approved, so the estimated cost to the District has not been adjusted. The DCC bylaw can be amended if grant funding is approved.

- Water Supply Main Upgrading (\$1,940,000)

The District's Master Infrastructure Plan includes a series of water supply main upgrading projects which have the objective of improving the hydraulic efficiency of the District's water distribution system and thereby increasing the capacity available from the District's existing water supply sources. The project will also significantly increase available fire flow throughout the central and western service sectors of the water system. The capital cost estimates for the three water supply main upgrading projects from the Infrastructure Master Plan are:

- 300mm from Well #1 to Hwy 5 (\$900,000)
- 300mm from Hwy 5 to Eden Rd. connection (\$460,000)
- 300mm from Eden Rd. to Archibald Rd. (\$580,000)

The net DCC recoverable amount for the water supply projects to benefit the DCC horizon population of 363 are summarized in the following table and illustrated in Figure 3.

TABLE 4-1 – WATER SUPPLY PROJECTS

Project	Total Estimated Cost	Total Design Population	Cost per Capita	DCC Horizon Population Increase	Benefit to New Development
Water supply well #1 replacement w/ UV and chlorination	\$2,863,000	3665	\$781	363	\$283,566
300mm from Well #1 to Hwy 5	\$900,000	3665	\$246	363	\$89,141
300mm from Hwy 5 to Eden Rd. connection	\$460,000	3665	\$126	363	\$45,561
300mm from Eden Rd. to Archibald Rd.	\$580,000	3665	\$158	363	\$57,446
Total					\$475,713
Municipal Assist Factor (1%)					\$4,757
DCC Recoverable					\$470,956
(minus) CEC Reserves					\$39,222
Net DCC Recoverable					\$431,734

The BPG describes a water DCC calculation methodology based on equivalent population. The design basis for required water supply projects is maximum day demand therefore the equivalent population method considers the maximum day water demand of each land use category. Equivalent population criteria used for each land use category are summarized as follows:

- for low and medium density residential, the population per unit as presented in Section 3.0 (i.e. low at 3.0 persons per unit and medium density at 2.2 persons per unit) are used as the equivalent population.
- for high density residential, the population per unit is derived from the BPG as 1.7 persons per unit.
- for commercial and institutional land use, equivalent populations as presented in the BPG (i.e. commercial at 0.009/m² and institutional at 0.011/ m²) are utilized.
- for industrial population equivalents, the BPG suggests a value of 45 people per hectare of industrial development area, which is 0.0045 persons per square metre of site. Assuming a 50% development density gives 0.009 persons per square metre of floor area used on the DCC calculations, or the same as commercial.

The water DCC calculations utilizing the population equivalent method and the preceding per unit population equivalents are presented in the following table.

TABLE 4-2 – WATER DCC CALCULATIONS

Part A - Equivalent population calculation

Land Use	Est. New Development	Units	Equivalent Population	Total Equivalent Population
Low Density Residential	96	dwelling	3.0	288
Medium Density Residential	34	dwelling	2.2	75
High Density Residential	0	dwelling	1.7	0
Commercial	5,000	m ² floor area	0.009	45
Industrial	3,000	m ² floor area	0.009	27
Institutional	1,000	m ² floor area	0.011	11
Total				446

Part B - Unit DCC calculation

Net DCC recoverable from Table 4.1	\$431,734
(divided by) total equivalent population = DCC per capita	\$968.01

Part C - Resulting DCCs

Low Density Residential	\$2,904	per dwelling unit
Medium Density Residential	\$2,130	per dwelling unit
High Density Residential	\$1,646	per dwelling unit
Commercial	\$8.71	per m ² gross floor area
Industrial	\$8.71	per m ² gross floor area
Institutional	\$10.65	per m ² gross floor area

5.0 Sanitary Sewer

The Master Infrastructure Plan (Urban Systems Ltd. 2013) presents a phased expansion plan for the District's wastewater treatment infrastructure covering a 25 year projection period. Within the timeframe of this DCC Bylaw, anticipated system upgrading that will be constructed consistent with the Master Infrastructure Plan comprises:

- Headworks comprising screen and washer compactor and enclosure building;
- Upgrading of Cell No. 1 to an aerated lagoon and construction of additional rapid infiltration basins.

The Master Infrastructure Plan states the average sanitary sewage flow per capita is $0.373 \text{ m}^3/\text{capita}/\text{day}$. For the DCC horizon population of 363 people, 90% are assumed to be within the sanitary sewer benefitting area. The increase in utilized sanitary sewer capacity is therefore $90\% \times 363 \times 0.373 \text{ m}^3/\text{capita}/\text{day}$, which is $122 \text{ m}^3/\text{day}$. Sanitary sewer projects included in the DCC program are described in more detail in sections following. Projects involving upgrading of the wastewater treatment system are derived from the Master Infrastructure Plan and the Lift Station Standby Power projects from District staff input and comment.

- Wastewater Treatment Plant Headworks (\$483,000)

Consistent with the Infrastructure Master Plan, the headworks facility would comprise a screen, washer compactor for screened solids and appurtenances. The facility will remove inorganic solids which would otherwise settle out in the treatment cell consuming treatment capacity. Screening will enhance the reuse options for sludge that will have to be removed from the treatment cells on a periodic basis.

As shown in Figure 4, the proposed headworks facility is located at the northwest corner of Cell No. 1 and would accept flow from the current sewered area via the existing 150mm inverted siphon and by gravity from a future trunk sewer servicing extension areas to the west including the Dutch Lake area. The project also includes a gravity sewer from the screening facility to the existing inlet to existing aerated lagoon Cell No. 2.

As presented in the Infrastructure Master Plan, the design capacity of the system is $1300 \text{ m}^3/\text{day}$. For the DCC horizon, new development would utilize $122 \text{ m}^3/\text{day}$ or 9.4% of the design capacity. A capital cost estimate for the facility totaling \$483,000 is contained in Appendix B. The amount apportioned to new development to the DCC population horizon is \$45,400.

- Lift Station Standby Power (\$105,000)

Standby power at the District's existing sewage lift stations; Eden Road, Hospital and Egram Homes; has been identified as a deficiency associated with expanding service to new development. Standby power in the form of diesel or propane fuelled generators is proposed to be provided at all three lift stations. The estimated capital cost is \$35,000 per site for a total project cost of \$105,000. The lift station standby power project will benefit the current sewer service area (existing maximum month sewage flow of 260m³/day from the Infrastructure Master Plan) and new development anticipated in the DCC horizon (estimated sewage flow of 122m³/day). The apportionment to new development based on flow is 31.9% or \$33,500.

- Convert Cell No. 1 to an Aerated Treatment Lagoon and add Rapid Infiltration (RI) Capacity (\$1,015,000)

From the Infrastructure Master Plan, increased treatment and disposal system capacity is recommended to be provided by converting existing lagoon Cell No. 1 to an aerated cell and constructing additional rapid infiltration cells including a dosing lift station. The conversion of existing Cell No. 1 to an aerated cell would first require removal of accumulated sludge. The cell would be lined and equipped with an aeration system supplied from the existing blower building. From the Infrastructure Master Plan, the project cost estimate totaling \$1,015,000 is presented in Appendix B. The system capacity to be provided is 600m³/day of which the 122m³/day of flow attributed to the DCC horizon population is 20.3%. The capital cost apportioned to new development is therefore \$206,000.

The net DCC recoverable amount for the sanitary sewer supply projects to benefit the DCC horizon population of 363 are summarized in the following table and illustrated in Figure 4.

TABLE 5-1 – SANITARY SEWER PROJECTS

Project	Total Estimated Cost	Total Capacity (m ³ /day)	New Development Capacity Required	Percent Apportioned to New Development	Benefit to New Development
New headworks/screening facility	\$483,000	1,300	122	9.4%	\$45,400
Standby power	\$105,000	382	122	31.9%	\$33,500
Convert Cell 1 and add RI capacity	\$1,015,000	600	122	20.3%	\$206,000
Total					\$284,900
Municipal Assist Factor (1%)					\$2,849
DCC Recoverable					\$282,051
(minus) CEC Reserves					\$34,308
Net DCC Recoverable					\$247,743

The BPG for DCCs describes a sanitary sewer equivalent population method. Equivalent population criteria used for each land use category are summarized as follows:

- for low and medium density residential, the population per unit as presented in Section 3.0 (i.e. low density at 3.0 persons per unit and medium density at 2.2 persons per unit) are used as the equivalent population.
- for high density residential, the population per unit follows the BPG as 1.7 persons per unit.
- for commercial and institutional land use, equivalent populations as presented in the BPG (i.e. commercial at 0.013/m² and institutional at 0.011/m²) are utilized.
- for industrial population equivalents, the BPG suggests a value of 64.3 people per hectare of industrial development area, which is 0.00643 persons per square metre of site. Assuming 50% site coverage by buildings gives 0.013 persons per square metre of floor area which is used for the DCC calculations.

The sanitary sewer DCC calculations utilizing the population equivalent method and the preceding per unit population equivalents are presented in the following table.

TABLE 5-2 – SANITARY SEWER DCC CALCULATIONS

Part A - Equivalent population calculation

Land Use	Est. New Development	Units	Equivalent Population	Total Equivalent Population
Low Density Residential	96	dwelling	3.0	288
Medium Density Residential	34	dwelling	2.2	75
High Density Residential	0	dwelling	1.7	0
Commercial	5,000	m ² floor area	0.013	65
Industrial	3,000	m ² floor area	0.013	39
Institutional	1,000	m ² floor area	0.011	11
Total				478

Part B - Unit DCC calculation

Net DCC recoverable from Table 5.1	\$247,743
(divided by) total equivalent population = DCC per capita	\$518.29

Part C - Resulting DCCs

Low Density Residential	\$1,555	per dwelling unit
Medium Density Residential	\$1,140	per dwelling unit
High Density Residential	\$881	per dwelling unit
Commercial	\$6.74	per m ² gross floor area
Industrial	\$6.74	per m ² gross floor area
Institutional	\$5.70	per m ² gross floor area

6.0 Municipal Roads

Municipal road projects which are planned to be constructed during the DCC horizon have been identified on the basis of the District's OCP Bylaw #111, and consultation with District staff. Following the municipal road projects are briefly described:

- Project #1: Construct south half of Murtle Crescent (east of Murtle Road) to an Urban Standard (\$195,000)

In 2014, a commercial development was constructed fronting on Murtle Crescent west of Helmcken Road. The developer was responsible for constructing the north half of Murtle Crescent and the District, the south half. The scope of the District's south half comprised:

- half of the 10.3m wide pavement surface
- standard curb and gutter
- storm drainage system for south half calculated as 50% of storm drainage system cost
- street lighting for south half calculated as 50% of street lighting cost
- 3.0m asphalt multipath

As commercial development fronting on Murtle Crescent expands west, it is anticipated that the District will be responsible for the costs of the south half of the street. It is assumed that the scope will be the same as described above for the 2014 phase. The segment of Murtle Crescent is illustrated in Figure 5 and has an estimated cost of \$195,000 as presented in Appendix B.

- Project #2: Construct south half of Murtle Crescent between Helmcken and Park Drive to Urban Standards (\$95,000)

The project is similar to Project No. 1 in that it is assumed that new development would be responsible for construction of the north half of Murtle Crescent and the District responsible for the south half. The scope of work on the south half would be as described for the Project No. 1 segment.

- Project #3: Reconstruction of Murtle Crescent east of Park Drive to an Urban Collector Standard (\$210,000)

This segment of Murtle Crescent provides access to the secondary school, Rotary Park and the Sportsplex. Accordingly this segment of Murtle Crescent has been identified as a high priority for reconstruction to provide a 10.3m pavement surface and facilities for pedestrians and bicycles. The roadway standard would be a continuation of the standard for Murtle Crescent west of Park Drive, i.e.:

- 1.5m concrete sidewalk on north side
- 10.3m pavement surface with standard curb and gutter on south side
- 3m wide asphalt multipath

- street lighting and storm drainage

On the school property, there is a turnaround loop for traffic on Murtle Crescent. The proposed reconstruction of Murtle Crescent would tie into this existing turnaround loop.

- Projects #4, 5, and 6: Upgrade Park Drive (\$715,000)

Within the horizon population of this DCC bylaw, properties on the north side of Park Drive are anticipated to be developed for residential land uses. As shown on Figure 5, Park Drive has been divided into 3 segments (Projects 4, 5, and 6) with each being the frontage of land parcels anticipated to be developed. The pavement surface of Park Drive east of Robson to Evergreen Place is in good condition averaging 8.5m in width. As development proceeds it is therefore assumed that new development would be responsible for the north half of the road upgrading to urban standards and the District, the south half comprising:

- standard curb and gutter
- 3m wide asphalt surface multipath
- storm drainage
- asphalt infill to existing edge of pavement (assume 1m wide)

Capital cost estimates are contained in Appendix B for each segment of Park Drive illustrated in Figure 5. The capital cost estimates are summarized as follows.

Project 4 – Segment Fronting DL 3852	\$250,000
Project 5 – Segment Fronting Lot A Plan 24061	\$175,000
Project 6 – Segment East of Robson	\$290,000

- Project #7: Reconstruct Robson Street (\$925,000)

To the DCC horizon, it is anticipated that Robson Street connecting Murtle Road to Park Drive will be reconstructed to an urban standard. Presently, the road is in poor condition, with aging infrastructure. There are no sidewalks, drainage facilities, nor street lighting. The District has identified this road as a major community access route, consistent with Bylaw 111 and the OCP. The reconstructed road represents a total of 470m of new road construction. For cost estimation purposes, it is assumed the District would construct an urban residential road standard comprising 10m of pavement surface, curb and gutter, and sidewalk. On this basis the estimated project cost is \$925,000 as presented in Appendix B.

- Project #8: Reconstruct Murtle Road - Robson to Village Road (\$495,000)

A short to mid-term objective is the provision of an upgraded collector road link between Highway 5 and Clearwater Village Road. With upgrading of Park Drive in 2013 concurrent with the H5 roundabout construction and planned reconstruction of Robson Street (Project #7), the remaining segment is Murtle Road as illustrated in Figure 5.

As with Robson Street, Murtle Road is in poor condition. There are no sidewalks, curb and gutter or street lighting on Murtle Road. For cost estimation purposes, it is assumed the District would construct an urban residential road standard comprising 10m of pavement surface, curb and gutter, sidewalk and street lighting. On this basis, the estimated project cost is \$495,000 as presented in Appendix B.

For purposes of DCC allocations, the municipal road projects are considered to be of general benefit. The allocation of benefit to new development is therefore calculated on a population ratio basis according to Section 3.0. The following Table 6-1 and Figure 5 summarize road projects and calculate the DCC recoverable cost.

TABLE 6-1 - MUNICIPAL ROAD PROJECTS

Project	Total Estimated Cost	District Share	Percent Apportioned to New Development	Benefit to New Development
Project #1 Murtle Crescent	\$195,000	\$169,650	13%	\$25,350
Project #2 Murtle Crescent	\$95,000	\$82,650	13%	\$12,350
Project #3 Murtle Crescent	\$210,000	\$182,700	13%	\$27,300
Project #4 Park Drive	\$250,000	\$217,500	13%	\$32,500
Project #5 Park Drive	\$175,000	\$152,250	13%	\$22,750
Project #6 Park Drive	\$290,000	\$252,300	13%	\$37,700
Project #7 Robson Street	\$925,000	\$804,750	13%	\$120,250
Project #8 Murtle Road	\$495,000	\$430,650	13%	\$64,350
Total				\$342,550
Municipal Assist Factor (1%)				\$3,426
DCC Recoverable				\$339,124
(minus) CEC Reserves				\$0
Net DCC Recoverable				\$339,124

The Development Cost Charge Best Practices guide suggests calculation of DCCs on the basis of afternoon (PM) peak hour trip generation for each land use as contained in the Institute of Transportation Engineers (ITE) manual titled "Trip Generation". Utilizing this approach, the Best Practices Guide provides the following peak afternoon trip generation criteria for DCC apportionment by land use:

- low density residential 1.02/unit
- medium density residential 0.66/unit

- high density residential 0.62/unit
- commercial 0.014/m² of gross floor area
- industrial 0.0055/m² of gross floor area
- institutional 0.018/m² of gross floor area

Applying these trip generation criteria to estimated new development as presented in Section 3.0 results trip end totals by land use category presented in Table 6.2.

The BPG trip generation criteria would as shown in the above table result in 46% of DCC recoverable costs being apportioned to non-residential land uses. This apportionment is inconsistent with the road program recognizing that the majority of proposed road projects are intended to provide upgraded service to primarily residential development areas.

On the basis of the preceding, non-residential Road DCCs have been calculated on the basis of trip generation criteria at 50% of the values presented in the Best Practices Guide. This approach is considered to more accurately reflect the road benefit of new non-residential development. Road DCC calculations are presented in the following table.

TABLE 6-2 - ROAD DCC CALCULATIONS

Trip End Totals as per BPG

Land Use	Est. New Development	Units	Trip Generation	Total Trip Ends
Low Density Residential	96	dwelling	1.02	98
Medium Density Residential	34	dwelling	0.66	22
High Density Residential	0	dwelling	0.62	0
Commercial	5,000	m ² floor area	0.014	70
Industrial	3,000	m ² floor area	0.0055	17
Institutional	1,000	m ² floor area	0.018	18
Total				224.9

Part A - Traffic generation calculation using non-residential rates at 50% of BPG

Land Use	Est. New Development	Units	Trip Generation	Total Trip Ends
Low Density Residential	96	dwelling	1.02	98
Medium Density Residential	34	dwelling	0.66	22
High Density Residential	0	dwelling	0.62	0
Commercial	5,000	m ² floor area	0.007	35
Industrial	3,000	m ² floor area	0.0028	8
Institutional	1,000	m ² floor area	0.009	9
Total				172.6

Part B - Unit DCC calculation

Net DCC recoverable from Table 6.1	\$339,124
(divided by) total trip ends = DCC per trip end	\$1,965

Part C - Resulting DCCs

Low Density Residential	\$2,004	per dwelling unit
Medium Density Residential	\$1,297	per dwelling unit
High Density Residential	\$1,218	per dwelling unit
Commercial	\$13.76	per m ² gross floor area
Industrial	\$5.40	per m ² gross floor area
Institutional	\$17.69	per m ² gross floor area

7.0 Parkland Acquisition and Improvement Projects

From discussions with District staff, the consensus of opinion is that the District has adequate parkland to accommodate the DCC horizon population. Accordingly, parks related DCCs do not include any provisions for land acquisition but instead focus on improvement projects.

The BPG provides guidelines as to park improvements that are eligible for DCCs and presents some examples of non-eligible projects. Projects that are DCC eligible include fencing, landscaping, drainage and irrigation, trails, restrooms, changing rooms, and playground equipment. Examples of non-eligible projects referenced in the guide include access roads, parking lots, basketball and tennis courts, ball diamonds, and lighting systems.

Recognizing eligible projects as presented in the BPG, park improvement projects to be included in the DCC program were identified in consultation with District staff. The projects are briefly described following and are illustrated in Figure 6. Capital cost estimates for all of the projects are contained in Appendix B.

- Project #1 – Natural Multi-Path; Dr. Helmcken Hospital (\$113,000)

The proposed natural path (crush gravel finished surface 3m in width) is located around the perimeter of the hospital site as shown in Figure 6. The pathway would be for the most part located at the top of the slope thereby providing views of the “Flats” and the North Thompson River. A chain link fence, to be located on the slope side of the path for safety, is provided for in the capital cost estimate. The location of the Dr. Helmcken Hospital Site Path is conceptual and would be finalized in the course of the project design, as illustrated in Figure 6.

- Project #2 – Washroom Facilities; Weyerhaeuser Pioneer Park (\$89,000)

The proposed washroom building would measure 2.4m by 6.0m and contain male and female washrooms and an internal utility room. The project cost of \$89,000 includes provisions for water, sanitary sewer and electrical services.

- Project #3 – Park Building/Pavilion at Dutch Lake Park (\$500,000)

The proposed park building at Dutch Lake Park is consistent with the conceptual plan for the park as prepared by Stantec in 2008. As per the Stantec plan, the proposed Park Building/Pavilion would contain washrooms, change rooms, and a multipurpose space. Construction of the Park Building at Dutch Lake would have to follow the extension of the District sanitary sewer systems into the Dutch Lake area.

For purposes of DCC allocations, the parkland projects are considered to be of general benefit. The allocation of benefit to new development is therefore calculated on a population ratio basis according to Section 3.0. The following table and Figure 6 summarize parkland projects and calculate the DCC recoverable cost.

TABLE 7-1 - PARKLAND PROJECTS

Project	Total Estimated Cost	District Share	Percent Apportioned to New Development	Benefit to New Development
Natural path at Dr. Helmcken Memorial Hospital	\$113,000	\$98,310	13%	\$14,690
Washroom facilities at Weyerhaeuser Pioneer Park	\$89,000	\$77,430	13%	\$11,570
Park building/pavilion at Dutch Lake Park	\$500,000	\$435,000	13%	\$65,000
Total				\$91,260
Municipal Assist Factor (1%)				\$913
DCC Recoverable				\$90,347
(minus) CEC Reserves				\$0
Net DCC Recoverable				\$90,347

Consistent with the Best Practices Guide, calculation of parks DCCs is done on an equivalent population method based on persons per unit for various residential land uses as presented in Section 3.0.

Parkland DCCs are calculated in the following table utilizing the equivalent population method. Consistent with the BPG, parkland DCCs are not applicable to Commercial, Industrial, and Institutional land uses.

TABLE 7-2 - PARKLAND DCC CALCULATIONS

Part A - Equivalent population calculation

Land Use	Est. New Development	Units	Equivalent Population	Total Equivalent Population
Low Density Residential	96	dwelling	3.0	288
Medium Density Residential	34	dwelling	2.2	75
High Density Residential	0	dwelling	1.7	0
Total				363

Part B - Unit DCC calculation

Net DCC recoverable from Table 7.1	\$90,347
(divided by) total equivalent population = DCC per capita	\$248.89

Part C - Resulting DCCs

Low Density Residential	\$747	per dwelling unit
Medium Density Residential	\$548	per dwelling unit
High Density Residential	\$423	per dwelling unit

8.0 Summary

As described in Section 2.0, this technical support document for the District of Clearwater Development Cost Charge Bylaw No. 127 has been prepared on the basis of a revolving program approach with the time frame established as 10 years (to year 2023). Consistent with the OCP (Bylaw No. 93, 2012) the District of Clearwater population is projected to increase by 363 people by year 2023. New development is anticipated to comprise:

Housing Type	%	# Units	Person/unit	Total Persons
Detached/duplex	74	96	3	288
Multi-family units	6	8	2.2	18
Pre-manufactured homes	20	26	2.2	57
Total				363

Development Cost Charges are derived herein for:

- Section 4.0 - Water Supply
- Section 5.0 - Sanitary Sewers
- Section 6.0 - Roads
- Section 7.0 - Parkland

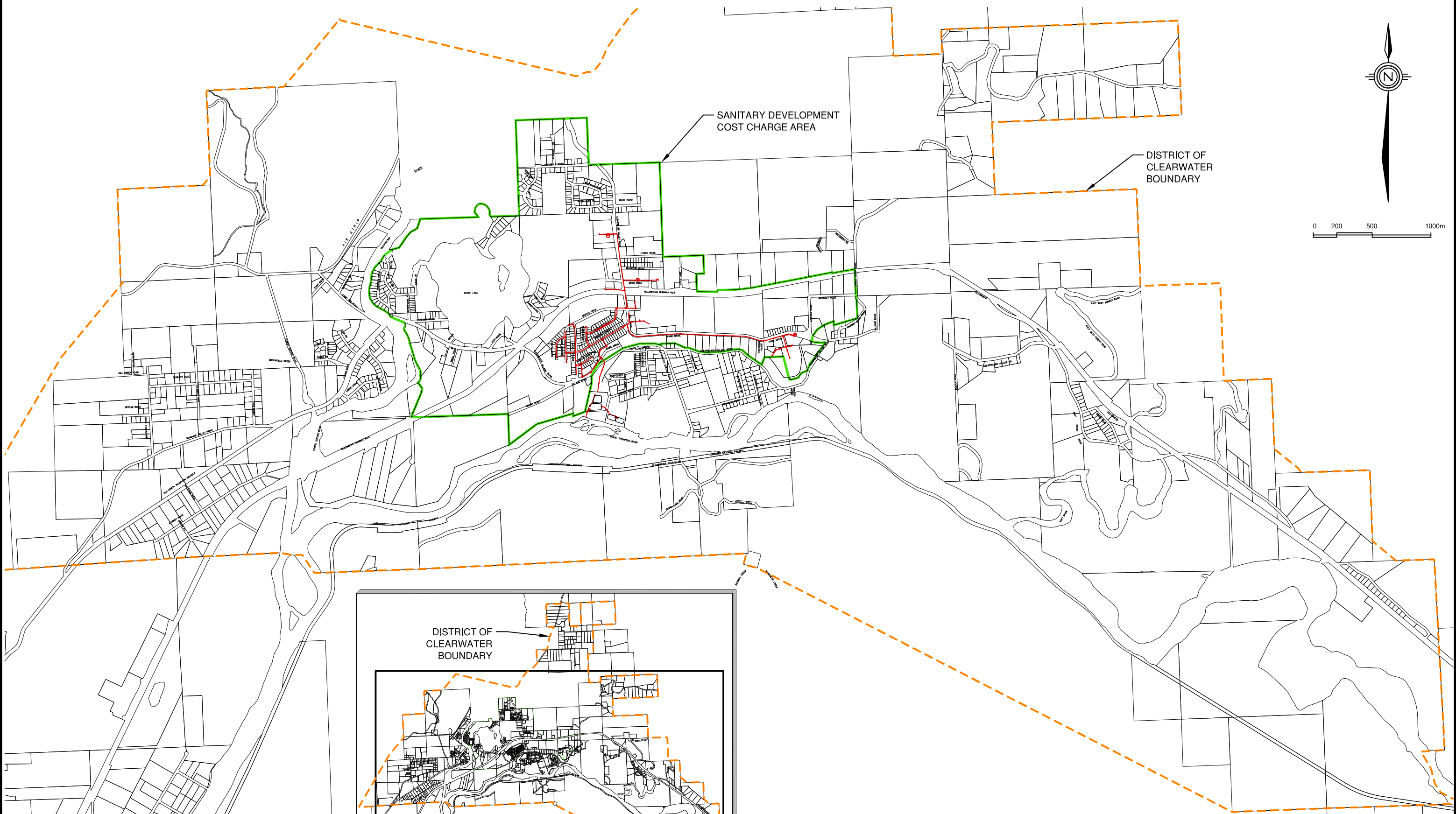
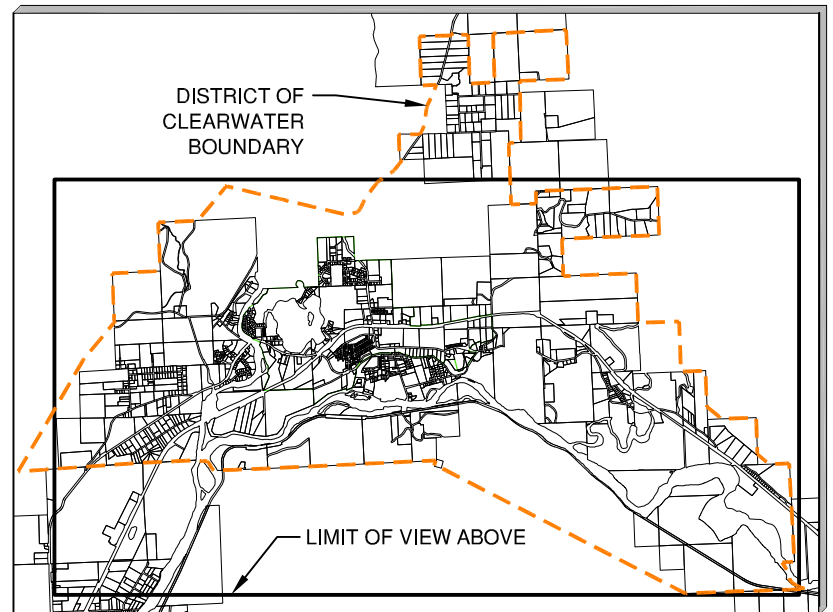
The following table summarizes DCCs with the assist factors included as presented in Section 2.3 of 1% for all infrastructure categories.

TABLE 8-1 - SUMMARY OF DCCs

Land Use	Units	Water	Sewer	Roads	Parkland	Total
Low Density Residential	dwelling unit	\$2,904	\$1,555	\$2,004	\$747	\$7,210
Medium Density Residential	dwelling unit	\$2,130	\$1,140	\$1,297	\$548	\$5,115
High Density Residential	dwelling unit	\$1,646	\$881	\$1,218	\$423	\$4,168
Commercial	m ² floor area	\$8.71	\$6.74	\$13.76	n/a	\$29.21
Industrial	m ² floor area	\$8.71	\$6.74	\$5.40	n/a	\$20.85
Institutional	m ² floor area	\$10.65	\$5.70	\$17.69	n/a	\$34.04

APPENDIX A

Figures



DISTRICT OF CLEARWATER
KEY PLAN
SCALE 1:125,000

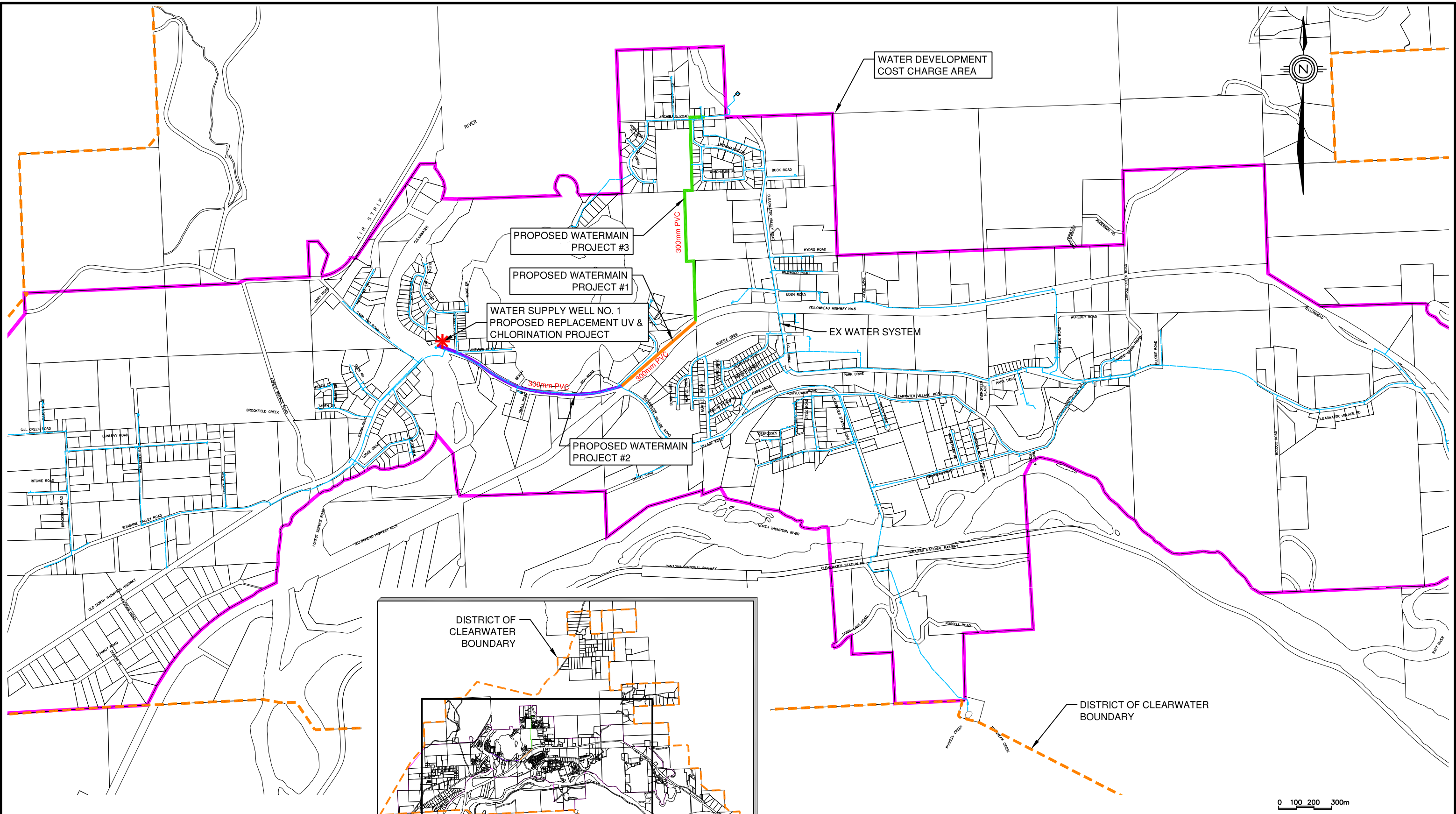
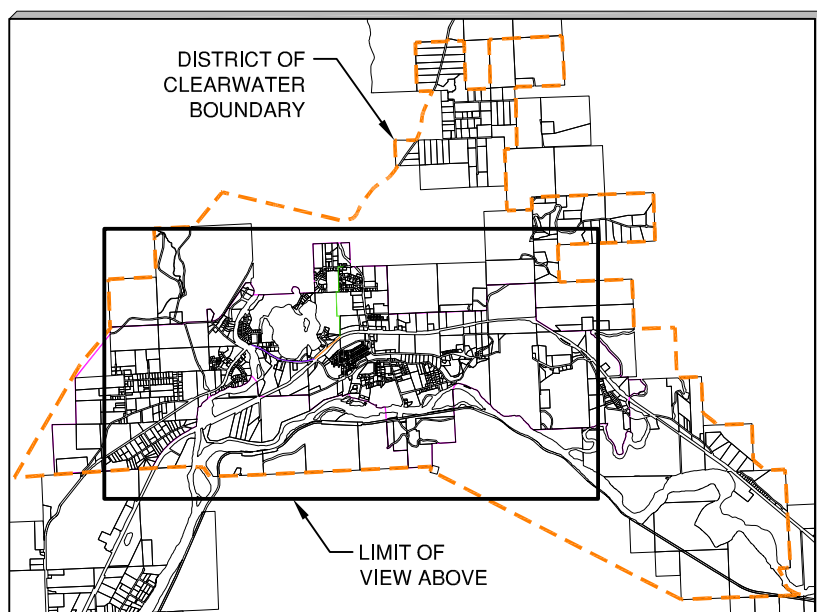
District of Clearwater Development Cost Charge Area For Sanitary Sewer



DRAWN BY: DL
DATE: SEPT 2014

DESIGN BY: EW	
SCALE: 1:30,000	
DWG NO.:	REV:
Fig 2 345-401	

I:\clients\345-399\345-401\Drawings\345-401-dp-report\figs.dwg

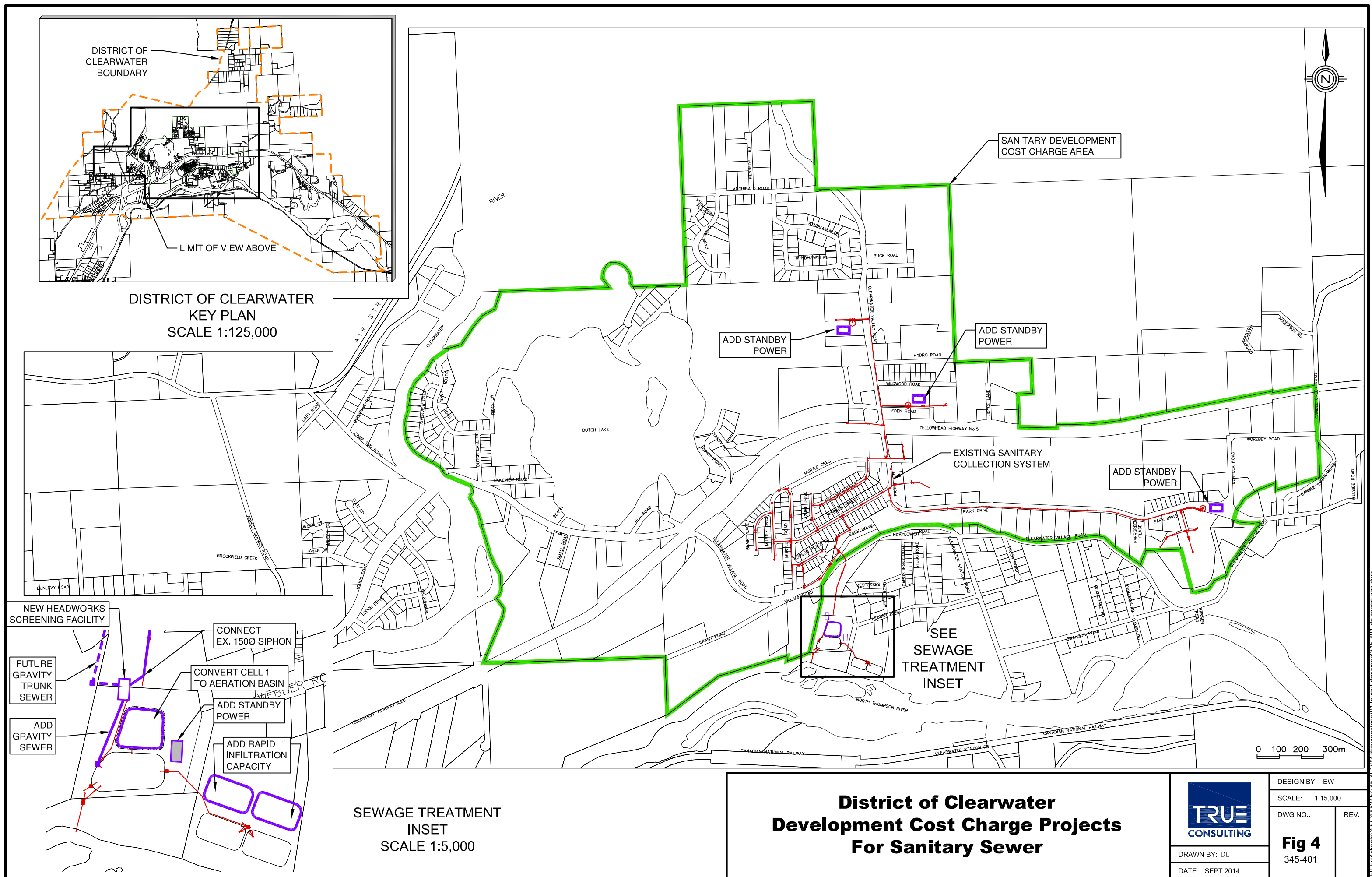


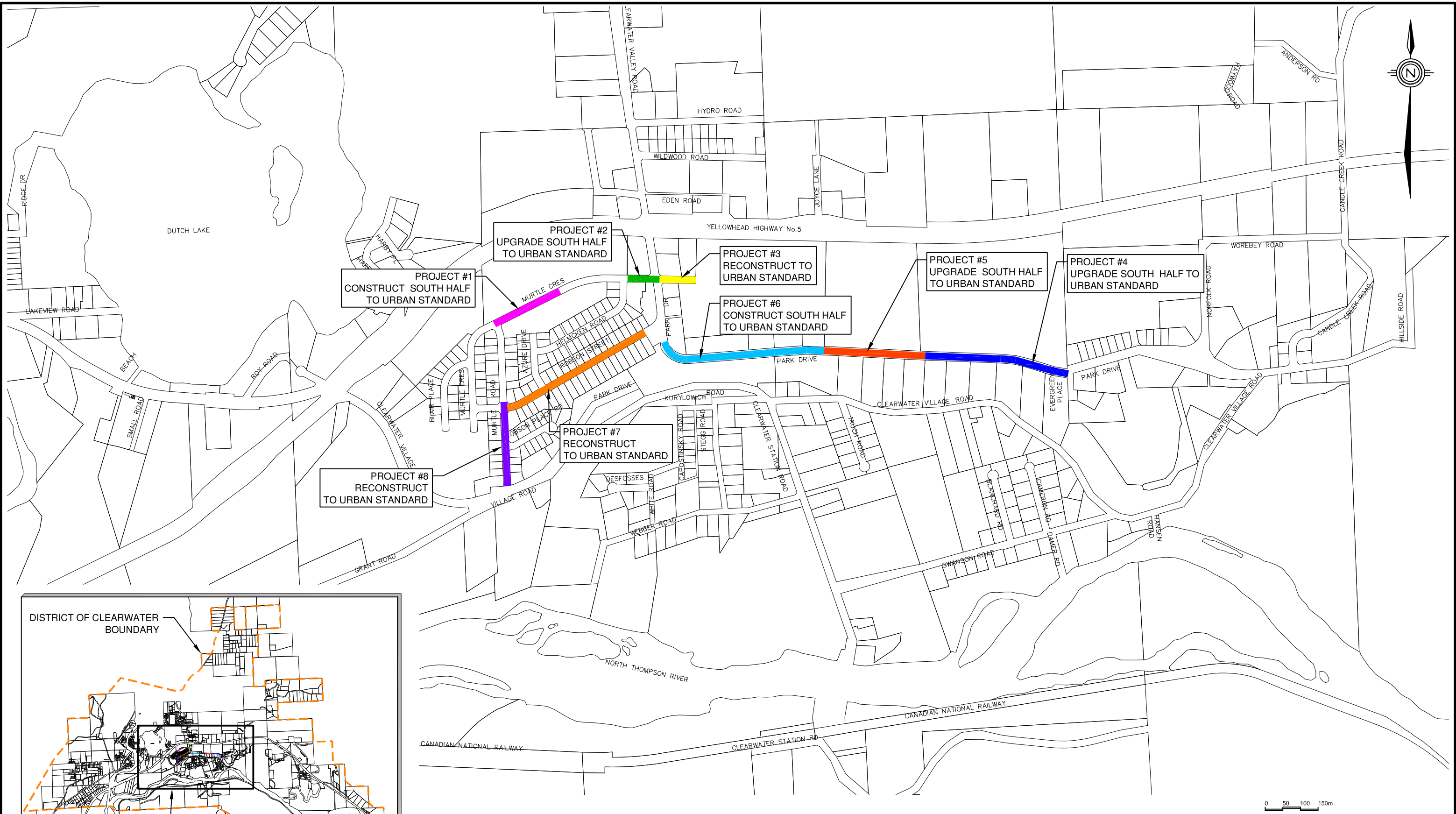
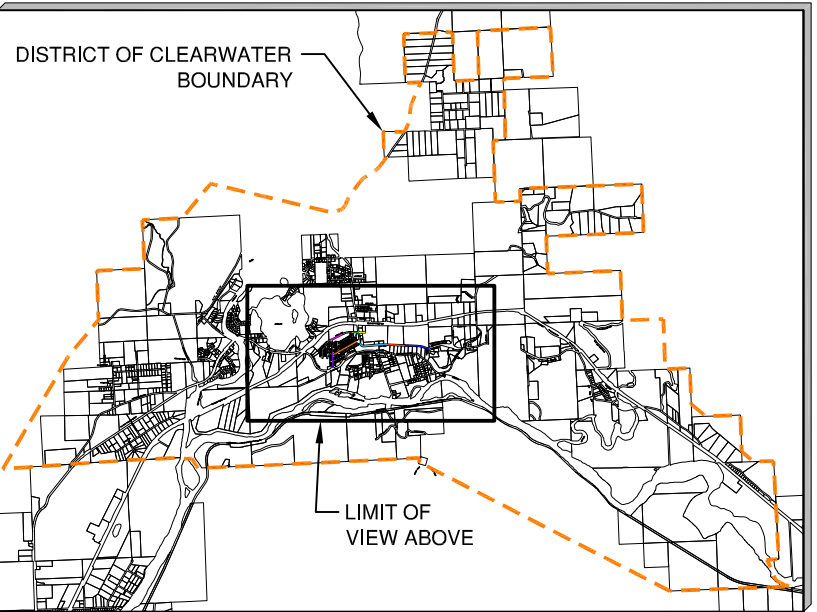
DISTRICT OF CLEARWATER
KEY PLAN
SCALE 1:125,000

District of Clearwater Development Cost Charge Projects For Water

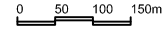
		DESIGN BY: EW	
		SCALE: 1:20,000	
DRAWN BY: DL		DWG NO.:	REV:
DATE: SEPT 2014		Fig 3 345-401	

I:\clients\345-399\345-401\03 drawings\345-401-dp-report-figs.dwg





DISTRICT OF CLEARWATER
KEY PLAN
SCALE 1:125,000



District of Clearwater Development Cost Charge Projects For Roads

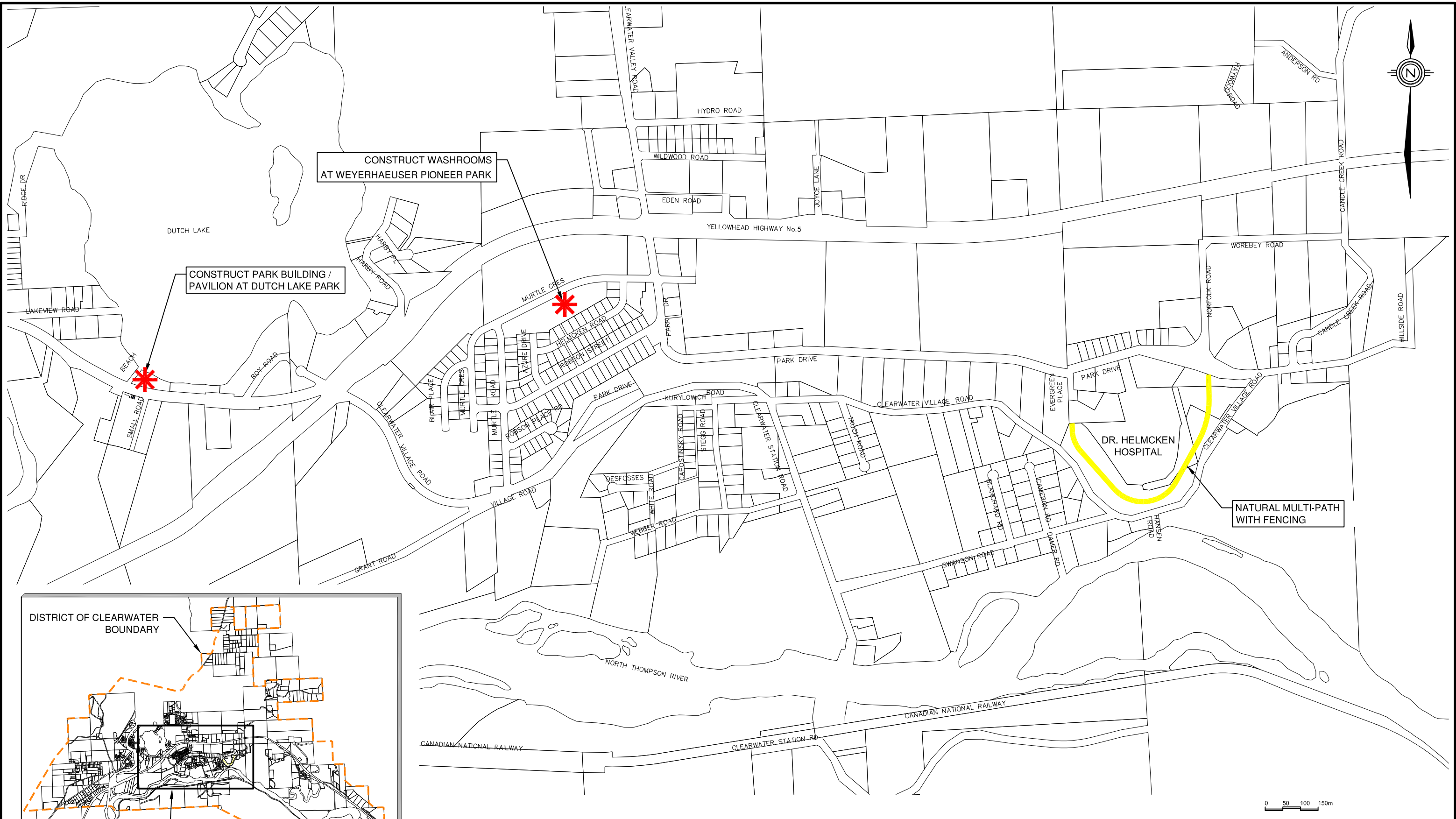
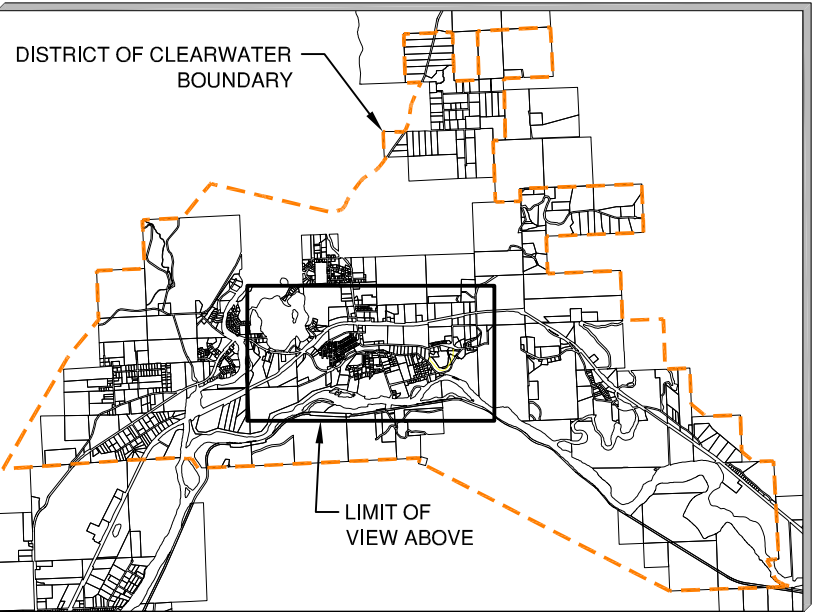
DESIGN BY: EW	
SCALE: 1:10,000	
DWG NO.:	REV:
DATE: SEPT 2014	



DESIGN BY: EW	
SCALE: 1:10,000	
DWG NO.:	REV:
DATE: SEPT 2014	

Fig 5
345-401

\\clearwater\clients\345-399\345-401\03 drawings\cad\01 layout drawings\345-401-dp-report-figs.dwg



DISTRICT OF CLEARWATER
KEY PLAN
SCALE 1:125,000

District of Clearwater Development Cost Charge Projects For Parklands

	DESIGN BY: EW	
	SCALE: 1:10,000	
DRAWN BY: DL	DWG NO.:	REV:
DATE: SEPT 2014	Fig 6 345-401	

F:\E:\clients\345-399\345-401\03 drawings\cad\01 layout drawings\345-401-dp-report.tggs.dwg

APPENDIX B

Cost Estimates

TABLE OF CONTENTS

CAPITAL COST ESTIMATE

Development Cost Charge Projects

District of Clearwater

<u>Project Name</u>	<u>Page</u>
Water	
Project #1: Water Supply Well #1 Replacement with UV and Chlorination.....	2
Project #2: 300mm from Well #1 to Hwy 5.....	4
Project #2: 300mm from Hwy 5 to Eden Rd. Connection.....	6
Project #4: 300mm from Eden Rd. to Archibald Rd.....	8
Sanitary Sewer	
Project #1: New Headworks/Screening Facility.....	10
Project #2: Standby Power.....	12
Project #3: Convert Cell 1 and Add RI capacity.....	13
Municipal Roads	
Project #1: Murtle Crescent.....	14
Project #2: Murtle Crescent.....	16
Project #3: Murtle Crescent.....	18
Project #4: Park Drive.....	20
Project #5: Park Drive.....	22
Project #6: Park Drive.....	24
Project #7: Robson Street.....	26
Project #8: Murtle Road.....	28
Parks	
Project #1: Natural Path at Dr. Helmcken Memorial Hospital.....	30
Project #2: Washroom Facilities at Weyerhaeuser Pioneer Park.....	31
Project #3: Park Building/Pavilion at Dutch Lake Park.....	32

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Prepared for: District of Clearwater

Last Updated: March 2013

Water Project #1: Water Supply Well #1 Replacement with UV and Chlorination

Prepared By: Urban Systems, Kamloops, B.C.

District of Clearwater: Infrastructure Master Plan

Reference Number: 2863.0006.02

Description:

- Replacement of Well #1 to increase the system capacity
- Addition of UV and chlorination for treatment

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>A - Water Source</u>					
A1	Water source				
1.1	Sitework & fencing				\$20,000
1.2	New well (including exploratory borehole)				\$440,000
1.3	Decomission well #1				\$10,000
1.4	Power supply				-
1.5	Piping - intake building to WTP	100	m	\$300	\$30,000
1.6	Standby power				\$100,000
<i>Sub-total</i>					\$600,000
<u>B - Treatment and Disinfection</u>					
B1	Treatment and disinfection				
1.1	Building	100	m ²	\$3,000	\$300,000
1.2	Demolition - existing building				\$25,000
1.3	Process piping				\$200,000
1.4	Valves & fittings				\$100,000
1.5	UV disinfection (sized for 115 L/s)				\$200,000
1.6	Sodium hypochlorite system				\$75,000
1.7	Electrical/controls				\$250,000
1.8	Flowmeter & instrumentation				\$30,000
1.9	Eyewash/shower				\$10,000
1.10	CT chamber (4-log) & wet well	35	m ³	\$2,000	\$70,000
1.11	Pumping				\$75,000
1.12	Process residual disposal				\$10,000
<i>Sub-total</i>					\$1,345,000

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Water Project #1: Water Supply Well #1 Replacement with UV and Chlorination

Prepared for: District of Clearwater

Last Updated: March 2013

Prepared By: Urban Systems, Kamloops, B.C.

District of Clearwater: Infrastructure Master Plan

Reference Number: 2863.0006.02

Description:

- Replacement of Well #1 to increase the system capacity
- Addition of UV and chlorination for treatment

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>C - General</u>					
C1	Mobilization/demobilization				\$15,000
C2	Insurance & bonding				\$50,000
<i>Sub-total</i>					\$65,000
<i>Sub-total (Parts A to C)</i>					\$2,010,000
<u>D - Contingencies & Engineering</u>					
D1	Environmental assessment				\$250,000
D2	Contingencies & Engineering @ 30%				\$603,000
<i>Sub-total (Part D)</i>					\$853,000
TOTAL (c/w rounding)					\$2,863,000

Cost Estimate Notes

- This cost estimate is from the District of Clearwater: Infrastructure Master Plan, prepared by Urban Systems Ltd. in March 2013
- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Prepared for: District of Clearwater

Last Updated: March 2013

Prepared By: Urban Systems, Kamloops, B.C.

District of Clearwater: Infrastructure Master Plan

Reference Number: 2863.0006.02

Water Project #2: 300mm from Well #1 to Hwy 5

Description:

- Water supply main upgrading from Well #1 to Highway 5 to increase capacity available from the District's existing water supply

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>A - General</u>					
A1	Mobilization/insurance				\$26,000
				<i>Sub-total</i>	\$26,000
<u>B - Removals</u>					
B1	Asphalt removal	3,090	m ²	\$6	\$18,540
				<i>Sub-total</i>	\$18,540
<u>C - Water Infrastructure</u>					
C1	Water pipe				
1.1	300 PVC pipe	1,110	m	\$200	\$222,000
C2	Allowance for fittings and valves	1,110	m	\$30	\$33,300
C3	Cleanout and blowoff	1	ea.	\$6,000	\$6,000
C4	Connection to existing water mains	3	ea.	\$5,000	\$15,000
C5	Flushing, disinfection and pressure testing		LS		\$5,000
C6	Augered crossing of Highway 5 c/w casing pipe				\$75,000
				<i>Sub-total</i>	\$356,300
<u>D - Road Restoration</u>					
D1	Base and gravel preparation				
1.1	Subgrade preparation	5,250	m ²	\$2	\$10,500
1.2	Sub-base gravel (450mm)	4,200	m ²	\$10	\$42,000
1.3	Base gravel (150mm)	5,250	m ²	\$9	\$47,250
D2	Asphalt pavement (100mm) c/w prime coat	3,150	m ²	\$50	\$157,500
D3	Ditching, topsoil and seeding (3m one side)	1,050	m	\$20	\$21,000
				<i>Sub-total</i>	\$278,250
				<i>Sub-total (Parts A to D)</i>	\$679,090

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Prepared for: District of Clearwater

Last Updated: March 2013

Prepared By: Urban Systems, Kamloops, B.C.

District of Clearwater: Infrastructure Master Plan

Reference Number: 2863.0006.02

Description:

- Water supply main upgrading from Well #1 to Highway 5 to increase capacity available from the District's existing water supply

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>E - Contingencies & Engineering</u>					
E1	Contingencies @ 20%				\$136,000
				<i>Sub-total</i>	\$815,090
E2	Engineering @ 10%				\$81,500
				<i>Sub-total</i>	\$896,590
				TOTAL (c/w rounding)	\$900,000

Cost Estimate Notes

- This cost estimate is from the District of Clearwater: Infrastructure Master Plan, prepared by Urban Systems Ltd. in March 2013
- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Prepared for: District of Clearwater

Last Updated: March 2013

Prepared By: Urban Systems, Kamloops, B.C.

District of Clearwater: Infrastructure Master Plan

Reference Number: 2863.0006.02

Description:

- Water supply main upgrading from Highway 5 to Eden Road to increase capacity available from the District's existing water supply

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>A - General</u>					
A1	Mobilization/insurance				\$13,000
				<i>Sub-total</i>	\$13,000
<u>B - Removals</u>					
B1	Asphalt removal	450	m ²	\$6	\$2,700
				<i>Sub-total</i>	\$2,700
<u>C - Water Infrastructure</u>					
C1	Water pipe				
1.1	300 PVC pipe	800	m	\$200	\$160,000
C2	Allowance for fittings and valves	800	m	\$30	\$24,000
C3	Hydrants	3	ea.	\$4,000	\$12,000
C4	Cleanout and blowoff	1	ea.	\$6,000	\$6,000
C5	Connection to existing water mains	2	ea.	\$5,000	\$10,000
C6	Flushing, disinfection and pressure testing		LS		\$5,000
C7	Augered crossing of Highway 5 c/w casing pipe				\$75,000
				<i>Sub-total</i>	\$292,000
<u>D - Road Restoration</u>					
D1	Base and gravel preparation				
1.1	Subgrade preparation	450	m ²	\$2	\$900
1.2	Sub-base gravel (450mm)	450	m ²	\$10	\$4,500
1.3	Base gravel (150mm)	450	m ²	\$9	\$4,050
D2	Asphalt pavement (75mm) c/w prime coat	450	m ²	\$35	\$15,750
D3	Ditching, topsoil and seeding (3m one side)	800	m	\$20	\$16,000
				<i>Sub-total</i>	\$41,200
				<i>Sub-total (Parts A to D)</i>	\$348,900

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Prepared for: District of Clearwater

Last Updated: March 2013

Prepared By: Urban Systems, Kamloops, B.C.

District of Clearwater: Infrastructure Master Plan

Reference Number: 2863.0006.02

Description:

- Water supply main upgrading from Highway 5 to Eden Road to increase capacity available from the District's existing water supply

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
-------------	--------------------	--------------------------	-------------	-------------------	-------------

E - Contingencies & Engineering

E1	Contingencies @ 20%				\$70,000
				<i>Sub-total</i>	\$418,900
E2	Engineering @ 10%				\$42,000
				<i>Sub-total</i>	\$460,900
				TOTAL (c/w rounding)	\$460,000

Cost Estimate Notes

- This cost estimate is from the District of Clearwater: Infrastructure Master Plan, prepared by Urban Systems Ltd. in March 2013
- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Prepared for: District of Clearwater

Last Updated: March 2013

Prepared By: Urban Systems, Kamloops, B.C.

District of Clearwater: Infrastructure Master Plan

Reference Number: 2863.0006.02

Description:

- Water supply main upgrading from Eden Road to Archibald Road to increase capacity available from the District's existing water supply

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>A - General</u>					
A1	Mobilization/insurance				\$17,000
				<i>Sub-total</i>	\$17,000
<u>B - Removals</u>					
B1	Asphalt removal	4,200	m ²	\$6	\$25,200
				<i>Sub-total</i>	\$25,200
<u>C - Water Infrastructure</u>					
C1	Water pipe				
1.1	300 PVC pipe	1,400	m	\$200	\$280,000
C2	Allowance for fittings and valves	1,400	m	\$30	\$42,000
C3	Hydrants	3	ea.	\$4,000	\$12,000
C4	Cleanout and blowoff	1	ea.	\$6,000	\$6,000
C5	Connection to existing water mains	3	ea.	\$5,000	\$15,000
C6	Flushing, disinfection and pressure testing		LS		\$5,000
				<i>Sub-total</i>	\$360,000
<u>D - Road Restoration</u>					
D1	Base and gravel preparation				
1.1	Subgrade preparation	600	m ²	\$2	\$1,200
1.2	Sub-base gravel (450mm)	600	m ²	\$10	\$6,000
1.3	Base gravel (150mm)	600	m ²	\$9	\$5,400
D2	Asphalt pavement (75mm) c/w prime coat	600	m ²	\$35	\$21,000
D3	Ditching, topsoil and seeding (3m one side)	200	m	\$20	\$4,000
				<i>Sub-total</i>	\$37,600
				<i>Sub-total (Parts A to D)</i>	\$439,800

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Prepared for: District of Clearwater

Last Updated: March 2013

Prepared By: Urban Systems, Kamloops, B.C.

District of Clearwater: Infrastructure Master Plan

Reference Number: 2863.0006.02

Water Project #4: 300mm from Eden Rd. to Archibald Rd.

Description:

- Water supply main upgrading from Eden Road to Archibald Road to increase capacity available from the District's existing water supply

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>E - Contingencies & Engineering</u>					
E1	Contingencies @ 20%				\$88,000
				<i>Sub-total</i>	\$527,800
E2	Engineering @ 10%				\$53,000
				<i>Sub-total</i>	\$580,800
				TOTAL (c/w rounding)	\$580,000

Cost Estimate Notes

- This cost estimate is from the District of Clearwater: Infrastructure Master Plan, prepared by Urban Systems Ltd. in March 2013
- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE**Development Cost Charge Project****District of Clearwater****Sanitary Sewer Project #1: New Headworks/Screening Facility**

Prepared for: District of Clearwater

Last Updated: August 27, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

*Description:**- Construction of a new headworks facility with screening and washer compactor*

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>A - Earthworks</u>					
A1	Construct/fill site to subgrade	600	m ³	\$20	\$12,000
<i>Sub-total</i>					<i>\$12,000</i>
<u>B - Gravity Sewer</u>					
B1	Manholes	3	ea.	\$5,000	\$15,000
B2	300mm sanitary	110	m	\$150	\$16,500
B3	Connections to existing				\$3,500
B4	Flow meter relocation				\$2,000
<i>Sub-total</i>					<i>\$37,000</i>
<u>C - Screening and Enclosure Building</u>					
C1	Cast in place concrete	40	m ³	\$1,500	\$60,000
C2	Enclosure building	65	m ²	\$1,000	\$65,000
C3	Screen c/w washer compactor				\$70,000
C4	Manual bypass screens and gates				\$5,000
C5	Internal electrical				\$40,000
C6	Odor control system				\$15,000
C7	Water service and hot water system				\$5,000
C8	Gas sensors and control panel				\$15,000
C9	Miscellaneous fans, floor drains, etc.				\$15,000
<i>Sub-total</i>					<i>\$290,000</i>
<u>D - Site Works</u>					
D1	Fence relocation	110	m	\$50	\$5,500
D2	Building enclosure fencing	50	m	\$100	\$5,000
D3	Access gate				\$2,000
D4	Access road			Allow	\$10,000
D5	Electrical service			Allow	\$10,000
<i>Sub-total</i>					<i>\$32,500</i>
<i>Sub-total (Parts A to D)</i>					<i>\$371,500</i>

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Sanitary Sewer Project #1: New Headworks/Screening Facility

Prepared for: District of Clearwater

Last Updated: August 27, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Construction of a new headworks facility with screening and washer compactor

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
-------------	--------------------	--------------------------	-------------	-------------------	-------------

E - Contingencies & Engineering

E1 Contingencies & Engineering @ 30%

\$111,500

Sub-total (Part E) ***\$111,500***

TOTAL (c/w rounding) ***\$483,000***

Cost Estimate Notes

- This estimate represents a Class 'C' estimate



CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Sanitary Sewer Project #2: Standby Power

Prepared for: District of Clearwater

Last Updated: August 27, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Provision of standby power for Eden Road, Egram Homes, and hospital lift stations

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>A - General</u>					
A1	Generator for standby power	3	ea.	\$35,000	\$105,000
<i>Sub-total (Part A)</i>					<i>\$105,000</i>
<i>TOTAL (c/w rounding)</i>					<i>\$105,000</i>

Cost Estimate Notes

- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Prepared for: District of Clearwater

Last Updated: March 2013

Prepared By: Urban Systems, Kamloops, B.C.

District of Clearwater: Infrastructure Master Plan

Reference Number: 2863.0006.02

Description:

- Conversion of Cell 1 to an aerated lagoon
- Increasing rapid infiltration basin capacity to 600m³/d

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>A - Cell No. 1 Conversion</u>					
A1	Desludge existing lagoon	2,500	m ³	\$20	\$50,000
A2	Site piping			Allow	\$30,000
A3	New blower, air header	2	ea.	\$12,500	\$25,000
A4	Aeration diffusers		LS		\$35,000
A5	Synthetic liner	4,000	m ²	\$15	\$60,000
<i>Sub-total</i>					<i>\$200,000</i>
<u>B - Construction</u>					
B1	Hydrogeotechnical study			Allow	\$50,000
B2	Site piping			Allow	\$60,000
B3	Clearing and grubbing	21,000	m ²	\$2	\$42,000
B4	Berm construction	10,000	m ³	\$20	\$200,000
B5	Lift station for dosing c/w standby power				\$150,000
<i>Sub-total</i>					<i>\$502,000</i>
<i>Sub-total (Parts A to B)</i>					<i>\$702,000</i>
<u>C - Contingencies & Engineering</u>					
C1	Contingencies & Engineering @ 45%				\$313,000
<i>Sub-total (Part C)</i>					<i>\$313,000</i>
TOTAL (c/w rounding)					\$1,015,000

Cost Estimate Notes

- This cost estimate is from the District of Clearwater: Infrastructure Master Plan, prepared by Urban Systems Ltd. in March 2013
- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE**Development Cost Charge Project****District of Clearwater****Road Project #1: Murtle Crescent**

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (220m) from 345-401-Fig 5
- Murtle Crescent is developed as a Collector Road (10.3m width, with a 3.0m pathway)
- Developer will construct road to centreline (50% of 10.3m width), District will continue road from centreline, including pathway
- District and Developer will share costs for stormwater and lighting (50% each)
- Total provided at the bottom of the cost estimate is for District portion only

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>A - Roadworks</u>					
A1	Earthworks				
1.1	Strip and clear to centreline	1,800	m ²	\$2	\$3,600
A2	Roads				
2.1	Barrier curb and gutter c/w crushed gravel base	220	m	\$130	\$28,600
2.2	Asphalt - 65mm in roadway (half road width: 5.15m)	1,130	m ²	\$40	\$45,200
A3	Sidewalk				
3.1	Asphalt pathway (3m width) c/w crush gravel base	660	m ²	\$35	\$23,100
3.2	Crush gravel shoulder (0.3m width)	440	m	\$10	\$4,400
A4	Misc. roadworks				
4.1	Line painting	220	m	\$20	\$4,400
4.2	Boulevard grading and seeding	220	m	\$20	\$4,400
				<i>Sub-total</i>	<i>\$113,700</i>
<u>B - Stormwater (50% Shared Cost)</u>					
B1	Storm drainage				
1.1	Dry well assembly c/w catch basins and leader piping at 75m spacings	3	ea.	\$12,000	\$36,000
				<i>Sub-total (50% by District)</i>	<i>\$18,000</i>

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Road Project #1: Murtle Crescent

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (220m) from 345-401-Fig 5
- Murtle Crescent is developed as a Collector Road (10.3m width, with a 3.0m pathway)
- Developer will construct road to centreline (50% of 10.3m width), District will continue road from centreline, including pathway
- District and Developer will share costs for stormwater and lighting (50% each)
- Total provided at the bottom of the cost estimate is for District portion only

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>C - Lighting (50% Shared Cost)</u>					
C1	Street lighting				
1.1	Street light precast bases at 35m spacings	6	ea.	\$1,200	\$7,200
1.2	Street light duct	220	m	\$40	\$8,800
1.3	Street light standards	6	ea.	\$3,000	\$18,000
1.4	Electrical wiring			Allow	\$3,000
<i>Sub-total (50% by District)</i>					\$18,500
<i>Sub-total (Parts A to C)</i>					\$150,200
<u>D - Contingencies & Engineering</u>					
D1	Contingencies & Engineering @ 30%				\$46,000
<i>Sub-total (Part D)</i>					\$46,000
TOTAL (c/w rounding)					\$195,000

Cost Estimate Notes

- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Road Project #2: Murtle Crescent

Prepared for: District of Clearwater

Last Updated: September 2, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (100m) from 345-401-Fig 5
- Murtle Crescent is developed as a Collector Road (10.3m width, with a 3.0m pathway)
- Developer will construct road to centreline (50% of 10.3m width), District will continue road from centreline, including pathway
- District and Developer will share costs for stormwater and lighting (50% each)
- Total provided at the bottom of the cost estimate is for District portion only

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>A - Roadworks</u>					
A1	Earthworks				
1.1	Strip and clear to centreline	800	m ²	\$2	\$1,600
A2	Roads				
2.1	Barrier curb and gutter c/w crushed gravel base	100	m	\$130	\$13,000
2.2	Asphalt - 65mm in roadway (half road width: 5.15m)	520	m ²	\$40	\$20,800
A3	Sidewalk				
3.1	Asphalt pathway (3m width) c/w crush gravel base	300	m ²	\$35	\$10,500
3.2	Crush gravel shoulder (0.3m width)	200	m	\$10	\$2,000
A4	Misc. roadworks				
4.1	Line painting	100	m	\$20	\$2,000
4.2	Boulevard grading and seeding	100	m	\$20	\$2,000
<i>Sub-total</i>					<i>\$51,900</i>
<u>B - Stormwater (50% Shared Cost)</u>					
B1	Storm drainage				
1.1	Dry well assembly c/w catch basins and leader piping at 75m spacings	2	ea.	\$12,000	\$24,000
<i>Sub-total (50% by District)</i>					<i>\$12,000</i>

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Road Project #2: Murtle Crescent

Prepared for: District of Clearwater

Last Updated: September 2, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (100m) from 345-401-Fig 5
- Murtle Crescent is developed as a Collector Road (10.3m width, with a 3.0m pathway)
- Developer will construct road to centreline (50% of 10.3m width), District will continue road from centreline, including pathway
- District and Developer will share costs for stormwater and lighting (50% each)
- Total provided at the bottom of the cost estimate is for District portion only

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>C - Lighting (50% Shared Cost)</u>					
C1	Street lighting				
1.1	Street light precast bases at 35m spacings	3	ea.	\$1,200	\$3,600
1.2	Street light duct	100	m	\$40	\$4,000
1.3	Street light standards	3	ea.	\$3,000	\$9,000
1.4	Electrical wiring			Allow	\$3,000
<i>Sub-total (50% by District)</i>					\$9,800
<i>Sub-total (Parts A to C)</i>					\$73,700
<u>D - Contingencies & Engineering</u>					
D1	Contingencies & Engineering @ 30%				\$23,000
<i>Sub-total (Part D)</i>					\$23,000
TOTAL (c/w rounding)					\$95,000

Cost Estimate Notes

- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE**Development Cost Charge Project****District of Clearwater****Road Project #3: Murtle Crescent**

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (110m) from 345-401-Fig 5
- Murtle Crescent is developed as a Collector Road (10.3m width, 1.5m sidewalk, and a 3.0m asphalt pathway on south side)

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>A - Roadworks</u>					
A1	Earthworks				
1.1	Strip and clear (±5m)	550	m ²	\$2	\$1,100
A2	Roads				
2.1	Mill and remove existing asphalt (7.0m width existing)	770	m ²	\$8	\$6,160
2.2	Barrier curb and gutter c/w crushed gravel	220	m	\$130	\$28,600
2.3	Asphalt - 65mm in roadway (10.3m width) c/w crushed gravel sub-base	1,200	m ²	\$40	\$48,000
A3	Sidewalk				
3.1	Asphalt pathway (3m width)	330	m ²	\$35	\$11,550
3.2	Pathway shoulder (0.3m width)	220	m	\$10	\$2,200
3.3	Concrete sidewalk (1.5m width)	170	m ²	\$100	\$17,000
A4	Misc. roadworks				
4.1	Line painting	110	m	\$20	\$2,200
4.2	Boulevard grading and seeding	110	m	\$20	\$2,200
<i>Sub-total</i>					<i>\$119,010</i>
<u>B - Stormwater</u>					
B1	Storm drainage				
1.1	Dry well assembly c/w catch basins and leader piping at 75m spacings	2	ea.	\$12,000	\$24,000
<i>Sub-total</i>					<i>\$24,000</i>

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Road Project #3: Murtle Crescent

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (110m) from 345-401-Fig 5
- Murtle Crescent is developed as a Collector Road (10.3m width, 1.5m sidewalk, and a 3.0m asphalt pathway on south side)

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
-------------	--------------------	--------------------------	-------------	-------------------	-------------

C - Lighting

C1	Street lighting				
1.1	Street light precast bases at 35m spacings	3	ea.	\$1,200	\$3,600
1.2	Street light duct	110	m	\$40	\$4,400
1.3	Street light standards	3	ea.	\$3,000	\$9,000
1.4	Electrical wiring			Allow	\$2,000
<i>Sub-total</i>					<i>\$19,000</i>

Sub-total (Parts A to C) \$162,010

D - Contingencies & Engineering

D1	Contingencies & Engineering @ 30%				\$49,000
<i>Sub-total (Part D)</i>					<i>\$49,000</i>

TOTAL (c/w rounding) \$210,000

Cost Estimate Notes

- This estimate represents a Class 'C' estimate
- Does not include existing underground infrastructure upgrading, e.g., water and sanitary sewer

CAPITAL COST ESTIMATE**Development Cost Charge Project****District of Clearwater****Road Project #4: Park Drive**

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (430m) from 345-401-Fig 5
- Park Drive is developed as a Collector Road (10.3m width, with a 3.0m pathway)
- Developer will upgrade north half to urban standards, including street lights, curb and gutter, concrete sidewalk and north side drainage

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>A - Roadworks</u>					
A1	Earthworks				
1.1	Strip and clear (±6m)	2,600	m ²	\$2	\$5,200
A2	Roads				
2.1	Sawcut existing asphalt edge	430	m	\$8	\$3,440
2.2	Barrier curb and gutter c/w crushed gravel	430	m	\$130	\$55,900
2.3	Asphalt - 65mm in roadway (1m width) c/w base gravel	430	m ²	\$40	\$17,200
A3	Sidewalk				
3.1	Asphalt pathway (3m width)	1,290	m ²	\$35	\$45,150
3.2	Crush gravel shoulder (0.3m width on each side)	860	m	\$10	\$8,600
A4	Misc. roadworks				
4.1	Line painting	430	m	\$10	\$4,300
4.2	Boulevard grading and seeding	430	m	\$30	\$12,900
<i>Sub-total</i>					<i>\$152,690</i>
<u>B - Stormwater</u>					
B1	Storm drainage on south side				
1.1	Dry well assembly c/w catch basins and leader piping at 75m spacings	6	ea.	\$6,500	\$39,000
<i>Sub-total</i>					<i>\$39,000</i>

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Road Project #4: Park Drive

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (430m) from 345-401-Fig 5
- Park Drive is developed as a Collector Road (10.3m width, with a 3.0m pathway)
- Developer will upgrade north half to urban standards, including street lights, curb and gutter, concrete sidewalk and north side drainage

Item	Description	Est. Quantity	Unit	Unit Price	Cost
------	-------------	------------------	------	------------	------

C - Lighting

C1 Street lighting

1.1 (to be completed by developer on north side)

n/a

Sub-total

\$0

Sub-total (Parts A to C)

\$191,690

D - Contingencies & Engineering

D1 Contingencies & Engineering @ 30%

\$58,000

Sub-total (Part D)

\$58,000

TOTAL (c/w rounding)

\$250,000

Cost Estimate Notes

- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE**Development Cost Charge Project****District of Clearwater****Road Project #5: Park Drive**

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (300m) from 345-401-Fig 5
- Park Drive is developed as a Collector Road (10.3m width, with a 3.0m pathway)
- Developer will upgrade north half to urban standards, including street lights, curb and gutter, concrete sidewalk and north side drainage

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>A - Roadworks</u>					
A1	Earthworks				
1.1	Strip and clear (±6m)	1,800	m ²	\$2	\$3,600
A2	Roads				
2.1	Sawcut existing asphalt edge	300	m	\$8	\$2,400
2.2	Barrier curb and gutter c/w crushed gravel	300	m	\$130	\$39,000
2.3	Asphalt - 65mm in roadway (1m width) c/w base gravel	300	m ²	\$40	\$12,000
A3	Sidewalk				
3.1	Asphalt pathway (3m width)	900	m ²	\$35	\$31,500
3.2	Crush gravel shoulder (0.3m width on each side)	600	m	\$10	\$6,000
A4	Misc. roadworks				
4.1	Line painting	300	m	\$10	\$3,000
4.2	Boulevard grading and seeding	300	m	\$30	\$9,000
<i>Sub-total</i>					<i>\$106,500</i>
<u>B - Stormwater</u>					
B1	Storm drainage on south side				
1.1	Dry well assembly c/w catch basins at 75m spacings	4	ea.	\$6,500	\$26,000
<i>Sub-total</i>					<i>\$26,000</i>

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Road Project #5: Park Drive

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (300m) from 345-401-Fig 5
- Park Drive is developed as a Collector Road (10.3m width, with a 3.0m pathway)
- Developer will upgrade north half to urban standards, including street lights, curb and gutter, concrete sidewalk and north side drainage

Item	Description	Est. Quantity	Unit	Unit Price	Cost
------	-------------	------------------	------	------------	------

C - Lighting

C1 Street lighting

1.1 (to be completed by developer on north side)

n/a

Sub-total

\$0

Sub-total (Parts A to C)

\$132,500

D - Contingencies & Engineering

D1 Contingencies & Engineering @ 30%

\$39,800

Sub-total (Part D)

\$40,000

TOTAL (c/w rounding)

\$175,000

Cost Estimate Notes

- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE**Development Cost Charge Project****District of Clearwater****Road Project #6: Park Drive**

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (500m) from 345-401-Fig 5
- Park Drive is developed as a Collector Road (10.3m width, with a 3.0m pathway)
- Developer will upgrade north half to urban standards, including street lights, curb and gutter, concrete sidewalk and north side drainage

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>A - Roadworks</u>					
A1	Earthworks				
1.1	Strip and clear (±6m)	3,000	m ²	\$2	\$6,000
A2	Roads				
2.1	Sawcut existing asphalt edge	500	m	\$8	\$4,000
2.2	Barrier curb and gutter c/w crushed gravel	500	m	\$130	\$65,000
2.3	Asphalt - 65mm in roadway (1m width) c/w base gravel	500	m ²	\$40	\$20,000
A3	Sidewalk				
3.1	Asphalt pathway (3m width)	1,500	m ²	\$35	\$52,500
3.2	Crush gravel shoulder (0.3m width on each side)	1,000	m	\$10	\$10,000
A4	Misc. roadworks				
4.1	Line painting	500	m	\$10	\$5,000
4.2	Boulevard grading and seeding	500	m	\$30	\$15,000
<i>Sub-total</i>					<i>\$177,500</i>
<u>B - Stormwater</u>					
B1	Storm drainage on south side				
1.1	Dry well assembly c/w catch basins at 75m spacings	7	ea.	\$6,500	\$45,500
<i>Sub-total</i>					<i>\$45,500</i>

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Road Project #6: Park Drive

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (500m) from 345-401-Fig 5
- Park Drive is developed as a Collector Road (10.3m width, with a 3.0m pathway)
- Developer will upgrade north half to urban standards, including street lights, curb and gutter, concrete sidewalk and north side drainage

Item	Description	Est. Quantity	Unit	Unit Price	Cost
------	-------------	------------------	------	------------	------

C - Lighting

C1 Street lighting

1.1 (to be completed by developer on north side)

n/a

Sub-total

\$0

Sub-total (Parts A to C)

\$223,000

D - Contingencies & Engineering

D1 Contingencies & Engineering @ 30%

\$67,000

Sub-total (Part D)

\$67,000

TOTAL (c/w rounding)

\$290,000

Cost Estimate Notes

- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE**Development Cost Charge Project****District of Clearwater****Road Project #7: Robson Street - Reconstruction**

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (470m) from 345-401-Fig 5
- Robson Street is developed as a Residential Road (10.0m width, with a 1.8m sidewalk)

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>A - Roadworks</u>					
A1	Earthworks				
1.1	Strip and clear to edge of right-of-way, not including area of existing asphalt	5,200	m ²	\$2	\$10,400
A2	Roadworks				
2.1	Mill and remove existing asphalt (9m width)	4,200	m ²	\$6	\$25,200
2.2	Grade and prepare subgrade (14.7m width)	6,900	m ²	\$3	\$20,700
2.3	Granular subbase - 300mm (13.3m width)	6,300	m ²	\$10	\$63,000
2.4	Mountable curb c/w crush base	940	m	\$110	\$103,400
2.5	Crush base	4,700	m ²	\$8	\$37,600
2.6	Asphalt - 65mm	4,700	m ²	\$30	\$141,000
A3	Sidewalk				
3.1	Concrete sidewalk c/w crush base (1.8m width)	900	m ²	\$100	\$90,000
A4	Misc. roadworks				
4.1	Line painting	470	m	\$10	\$4,700
4.2	Boulevard grading and seeding	470	m	\$30	\$14,100
4.3	Driveway ties	41	ea.	\$1,500	\$61,500
				<i>Sub-total</i>	<i>\$571,600</i>
<u>B - Stormwater Management</u>					
B1	Storm drainage				
1.1	200mm catch basin lead	120	m	\$120	\$14,400
1.2	300mm storm sewer	440	m	\$150	\$66,000
1.3	375mm storm sewer	20	m	\$170	\$3,400
1.4	Catch basins	16	ea.	\$2,000	\$32,000
1.5	Storm manholes	6	ea.	\$3,000	\$18,000
1.6	Infiltration basin			Allow	\$10,000
				<i>Sub-total</i>	<i>\$143,800</i>

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Road Project #7: Robson Street - Reconstruction

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (470m) from 345-401-Fig 5
- Robson Street is developed as a Residential Road (10.0m width, with a 1.8m sidewalk)

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>C - Lighting</u>					
C1	Street lighting				
1.1	(to use existing overhead wiring)				n/a
<i>Sub-total</i>					\$0
<i>Sub-total (Parts A to C)</i>					\$715,400
<u>D - Contingencies & Engineering</u>					
D1	Contingencies & Engineering @ 30%				\$210,000
<i>Sub-total (Part D)</i>					\$210,000
TOTAL (c/w rounding)					\$925,000

Cost Estimate Notes

- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE**Development Cost Charge Project****District of Clearwater****Road Project #8: Murtle Road - Reconstruction**

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (250m) from 345-401-Fig 5
- Murtle Road is developed as a Collector Road (10.3m width, with a 2.5m sidewalk)

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>A - Roadworks</u>					
A1	Earthworks				
1.1	Strip and clear to edge of right-of-way, not including area of existing asphalt	2,800	m ²	\$2	\$5,600
A2	Roadworks				
2.1	Mill and remove existing asphalt (9m width)	2,300	m ²	\$6	\$13,800
2.2	Grade and prepare subgrade (15.7m width)	3,900	m ²	\$3	\$11,700
2.3	Granular subbase - 300mm	3,600	m ²	\$10	\$36,000
2.4	Mountable curb and gutter	500	m	\$110	\$55,000
2.5	Crush base	2,600	m ³	\$8	\$20,800
2.6	Asphalt - 65mm	2,600	m ²	\$30	\$78,000
A3	Sidewalk				
3.1	Concrete sidewalk c/w crush base (2.5m width)	700	m ²	\$100	\$70,000
A4	Misc. roadworks				
4.1	Line painting	250	m	\$10	\$2,500
4.2	Boulevard grading and seeding	250	m	\$30	\$7,500
4.3	Driveway ties	17	ea.	\$1,500	\$25,500
				<i>Sub-total</i>	<i>\$326,400</i>
<u>B - Stormwater Management</u>					
B1	Storm drainage				
1.1	200mm catch basin lead	100	m	\$120	\$12,000
1.2	Catch basins	10	ea.	\$2,000	\$20,000
1.3	Drywells	5	ea.	\$4,000	\$20,000
				<i>Sub-total</i>	<i>\$52,000</i>

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Road Project #8: Murtle Road - Reconstruction

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Road length (250m) from 345-401-Fig 5
- Murtle Road is developed as a Collector Road (10.3m width, with a 2.5m sidewalk)

Item	Description	Est. Quantity	Unit	Unit Price	Cost
------	-------------	------------------	------	------------	------

C - Lighting

C1 Street lighting

1.1 (to use existing overhead wiring)

n/a

Sub-total \$0

Sub-total (Parts A to C) **\$378,400**

D - Contingencies & Engineering

D1 Contingencies & Engineering @ 30%

\$115,000

Sub-total (Part D) **\$115,000**

TOTAL (c/w rounding) **\$495,000**

Cost Estimate Notes

- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Parkways Project #1: Natural Path at Dr. Helmcken Memorial Hospital

Prepared for: District of Clearwater

Last Updated: July 24, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Pathway length (900m) from 345-401-Fig 6
- Pathway is developed as a 3.0m wide path, with gravel shoulders and chain link fencing on south side

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>A - Roadworks</u>					
A1	Earthworks				
1.1	Strip and clear (1m offset of path width)	4,000	m ²	\$2	\$8,000
A2	Pathway				
2.1	Grade and prepare subgrade (5m width)	4,000	m ²	\$3	\$12,000
2.2	Crushed material for subgrade and finished surface	2,400	m ²	\$8	\$19,200
				<i>Sub-total</i>	<i>\$39,200</i>
<u>B - Miscellaneous</u>					
B1	Fencing				
1.1	Chain link fence on south side	800	m	\$60	\$48,000
				<i>Sub-total</i>	<i>\$48,000</i>
<u>C - Lighting</u>					
C1	Lighting (not included)				n/a
				<i>Sub-total</i>	<i>\$0</i>
				<i>Sub-total (Parts A to C)</i>	<i>\$87,200</i>
<u>D - Contingencies & Engineering</u>					
D1	Contingencies & Engineering @ 30%				\$26,200
				<i>Sub-total (Part D)</i>	<i>\$26,200</i>
				TOTAL (c/w rounding)	\$113,000

Cost Estimate Notes

- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Parkways Project #2: Washroom Facilities at Weyerhaeuser Pioneer Park

Prepared for: District of Clearwater

Last Updated: August 27, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- Approximate building size of 15m²
- 2 washroom, each with toilet and sink
- Utility room for electrical, water service

<i>Item</i>	<i>Description</i>	<i>Est. Quantity</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Cost</i>
<u>A - General Construction</u>					
A1	Foundation excavation and under slab backfill				\$1,000
A2	Foundation and floor slab concrete	12	m ³	\$1,000	\$12,000
A3	Building including roof, doors, etc.	15	m ²	\$2,500	\$37,500
A4	Plumbing fixtures				\$5,000
A5	Electrical including service				\$8,000
A6	Sewer and water service				\$5,000
<i>Sub-total (Part A)</i>					<i>\$68,500</i>
<u>B - Engineering & Contingencies</u>					
B1	Engineering & Contingencies @ 30%				\$20,600
<i>Sub-total (Part B)</i>					<i>\$20,600</i>
<i>TOTAL (c/w rounding)</i>					<i>\$89,000</i>

Cost Estimate Notes

- This estimate represents a Class 'C' estimate

CAPITAL COST ESTIMATE

Development Cost Charge Project

District of Clearwater

Parkways Project #3: Park Building/Pavilion at Dutch Lake Park

Prepared for: District of Clearwater

Last Updated: August 27, 2014

Prepared By: Deanna Erickson, EIT

Checked By: Terry Underwood, P.Eng

Job #345-401

Description:

- 2 story structure as per Stantec Concept Plan
- Approximate building size of 90m² (each floor)
- 4 washrooms c/w 4 toilets, 4 sinks and 4 shower stalls
- Lower floor: washrooms, concession, storage
- Upper floor: meeting room, display

Item	Description	Est. Quantity	Unit	Unit Price	Cost
<u>A - General Construction</u>					
A1	Foundation c/w excavation				\$72,000
A2	Building structure	92	m ²	\$3,000	\$276,000
A3	Building servicing; water, sewer and electrical				\$8,000
A4	Sidewalks and decks				\$30,000
Sub-total (Part A)					\$386,000
<u>B - Architecture & Contingencies</u>					
B1	Architecture & Contingencies @ 30%			Allow	\$114,000
Sub-total (Part B)					\$114,000
TOTAL (c/w rounding)					\$500,000

Cost Estimate Notes

- This estimate represents a Class 'C' estimate
- Community sewer system service is assumed available. No allowance made for onsite treatment and disposal system