



THE CORPORATION OF DELTA

2000 DCC BYLAW

DCC BACKGROUND REPORT

**Summary of DCC Rates
DCC Calculations
Supplementary Information**

Prepared by:

**Corporation of Delta
Engineering Department
Contact: Bob Twerdoff, 946-3362**

June 30, 2000

TABLE OF CONTENTS

1.	INTRODUCTION	Pg. 1
1.1	Purpose of a DCC Bylaw	Pg. 1
1.2	DCC Issues	Pg. 1
1.3	Public Consultations	Pg. 1
1.4	Offsite Improvements	Pg. 2
1.5	Best Practices Guide	Pg. 2
2.	PROPOSED DCC BYLAW	Pg. 3
2.1	Municipal Act Exemptions	Pg. 3
2.2	DCC Rate Comparisons	Pg. 3
2.2.1	Proposed DCC Rates - 2000	Pg. 3
2.2.2	Proposed 2000 DCC Rate Comparison to 1998 Rates	Pg. 4
2.2.3	Agricultural DCCS	Pg. 4
2.2.3.1	Definition	Pg. 5
2.3	Growth Projections	Pg. 5
2.3.1	Residential Growth	Pg. 5
2.3.2	Industrial Growth	Pg. 7
2.3.3	Commercial Growth	Pg. 7
2.3.4	Institutional Growth	Pg. 8
2.3.5	Agricultural Growth	Pg. 8
2.3.6	Congregate Care - Congregate Care Growth	Pg. 8
2.4	DCC Projects	Pg. 8
2.5	Municipal Assist Factor	Pg. 9
3.	IMPLEMENTATION OF NEW DCC RATES	Pg. 9
3.1	Grace Period	Pg. 9
3.2	Building Permit & Subdivision	Pg. 10
4.	DCC CALCULATIONS	Pg. 10
4.1	Growth Projections	Pg. 10
4.2	Cost Estimates Used for DCC Projects	Pg. 11
4.3	Determination of DCC Equivalency Factors	Pg. 12
4.3.1	Equivalency Factor Calculations - Roads	Pg. 12
4.3.2	Equivalency Factor for Drainage	Pg. 13
4.3.3	Equivalency Factor of Water and Sewer	Pg. 13
4.4	DCC Reserves	Pg. 14
4.5	Detailed DCC Calculations	Pg. 14
4.5.1	Roads	Pg. 14
4.5.2	Drainage	Pg. 15
4.5.3	Sewer	Pg. 16
4.5.4	Water	Pg. 17

5.	PARKS	Pg. 18
5.1	Parkland Requirements	Pg. 18
5.2	Park Development Requirements	Pg. 19
5.3	Park DCC Calculation	Pg. 19
6.	DCC PROJECT LIST	Pg. 21
	Roads	Pg. 21
	Water	Pg. 23
	Sanitary	Pg. 24
	Drainage	Pg. 25

LIST OF TABLES

Table 1	Proposed 2000 DCC Rates	Pg. 3
Table 2	Proposed DCC Rates as Compared to Existing DCC Rates	Pg. 4
Table 3	Number of Dwellings Permitted by Building Permits 1991 - 1999 by Area	Pg. 5
Table 4	Number of Dwelling Permitted by Building Permits 1991 - 1999 by Type	Pg. 6
Table 5	Summary of Dwelling Projections per Year 1998-2008	Pg. 6
Table 6	Projection of Commercial Floor Space 1998 - 2008	Pg. 7
Table 7	Total DCC Projects by Utility	Pg. 9
Table 8	Adjusted Growth Projections 1998 - 2008	Pg. 10
Table 9	Drainage, Sewer and Water Facilities - Cost Estimates	Pg. 11
Table 10	Roads - Cost Estimates	Pg. 12
Table 11	Equivalency Factor Calculations - Drainage	Pg. 13
Table 12	Equivalency Factor Calculations - Sewer & Water	Pg. 13
Table 13	Equivalent Trips Calculation	Pg. 14
Table 14	Road DCC Calculations	Pg. 15
Table 15	Drainage Equivalent Units Calculation	Pg. 15
Table 16	Drainage DCC Calculations	Pg. 16
Table 17	Sanitary Sewer Equivalent Population Calculation	Pg. 16
Table 18	Sanitary DCC Calculations	Pg. 17
Table 19	Water Equivalent Population Calculation	Pg. 17
Table 20	Water DCC Calculations	Pg. 18
Table 21	Parkland Requirements	Pg. 19
Table 22	Park Equivalent Population Calculation	Pg. 19
Table 23	Park DCC Calculations	Pg. 20

1. INTRODUCTION

1.1 PURPOSE OF A DCC BYLAW

The purpose of a DCC Bylaw is to establish a revenue reserve fund to allow municipalities the opportunity to fund capital intensive improvements which will assist in the orderly growth of their community.

Development Cost Charges (DCCs) are an important component of municipal infrastructure planning. Division 10 - Development Costs Recovery, in the Municipal Act, defines and sets out the regulations concerning DCC Bylaws.

When considering a DCC Bylaw, Delta Council must consider whether the charges:

- i) are excessive in relation to the capital cost of prevailing standards of service;
- ii) will deter development; or
- iii) will discourage the construction of reasonably priced housing or the provision of reasonably priced serviced land.

The purpose of the 2000 DCC Bylaw Review is to consider the impact of intensive agriculture impacts on Delta's infrastructure, including roads, water, sewer, drainage, and nature reserve.

It is proposed to create two separate DCC Bylaws within Delta to consider these impacts. The first DCC Bylaw would amend Delta's Development Cost Charges Bylaw No. 5600, 1998 to incorporate impacts to roads, water, sewer, and drainage. A separate second DCC Bylaw would create an assessment for acquisition of natural parkland and wildlife reserves for the benefit of all growth within Delta. This report relates to the proposed amendment to DCC Bylaw No. 5600 for roads, water, sewer and drainage only.

1.2 DCC ISSUES

Issues relative to incorporating an intensive agriculture DCC include:

- C definition for intensive agriculture;
- C precedence setting; and
- C scattered nature of agricultural development throughout Delta.

1.3 PUBLIC CONSULTATION

The extent of public consultation has not been as extensive as the previous DCC Bylaw review. The 2000 DCC Bylaw Review utilizes the same principles and procedures as the current 1998 DCC Bylaw. This current review is primarily related to incorporating a new DCC category for intensive agricultural projects and updating the DCC Projects List. The proposed DCC rates are similar for all other land use categories, hence the public consultation process

has not been extensive.

The Delta Farmers Institute, BC Horticultural Coalition, local greenhouse growers, and the Ministry of Agriculture, Food and Fisheries have been aware of the proposed DCC Bylaw amendment, since the Council resolution of April 4, 2000. There have been a number of informal discussions with these industry representatives, and extensive reporting in the local print media on this proposed DCC amendment. Some electronic media coverage has also assisted in providing province-wide recognition of this initiative.

1.4 OFFSITE IMPROVEMENTS

One important point requiring clarification is the relationship of DCCs to various offsite improvements required by the municipality under various development applications. The intent of Delta's DCC Bylaw is to capture most significant offsite projects required to fund new development proposals. It is not intended to capture all necessary off-site infrastructure improvements, consequently each development application will likely require a blend of DCCs and offsite improvements. The extent of offsite improvements will be governed by the sufficiency of roads, water, sewer, drainage and parks along the development frontage and/or the immediate area.

Developers and property owners should be aware that the DCC levy will not necessarily fund all infrastructure improvements required for their development proposal. Developers should review the DCC Projects List and consult with staff at the Delta Municipal Hall regarding specific development proposals.

1.5 BEST PRACTICES GUIDE

The Best Practices Guide released in October, 1997 was used extensively during the previous DCC Bylaw review in 1998. This proposed amendment incorporates the principles identified within the Best Practices Guide. Some issues which should be addressed during the next DCC review include:

- C non-residential park DCCs;
- C residential density gradients for small units;
- C consideration of assessing industrial DCCs on a building area basis;
- C project definition and land requirements; and
- C parkland requirements.

Readers of this document are encouraged to obtain a copy of the Best Practices Guide from the Ministry of Municipal Affairs and Housing, Growth Strategies Office, to assist in the interpretation and understanding of this DCC Background Report.

2. PROPOSED DCC BYLAW

2.1 MUNICIPAL ACT EXEMPTIONS

Under Section 933 of the Municipal Act the following exemptions to the DCC Bylaw shall apply for **building permit applications**:

- i) a building permit that authorizes the construction, alteration or extension of a building used for the public worship of God or a church hall which Delta Council considers necessary for public worship;
- ii) a building permit that authorizes the construction, alteration or extension of a building containing less than 4 self contained residential dwelling units; and
- iii) a building permit where the value of work does not exceed \$50,000.

2.2 DCC RATE COMPARISONS

2.2.1 PROPOSED DCC RATES - 2000

TABLE 1

Proposed 2000 DCC Rates

	Roads	Drainage	Sewer	Water	Parks	Totals
Low Density	\$5,388	\$1,209	\$648	\$557	\$3,427	\$11,229/unit
Townhouse	3,489	507	513	441	2,677	7,627/unit
Apartment	3,268	266	351	302	1,821	6,008/unit
Congregate Care	1,104	266	202	174	1,071	2,817/unit
Commercial	17.66	3.63	2.97	2.55	-	26.81/m2
Industrial	68,536	14,109	8,680	7,459	-	98,784/ha
Industrial - Annacis	68,536	-	-	-	-	68,536/ha
Institutional	6.62	2.42	2.97	2.55	-	14.56/m2
Intensive Agricultural*	9,362	5,041	-	8,700	-	23,103/ha

* add sewer at industrial rate, if applicable

2.2.2 PROPOSED 2000 DCC RATE COMPARISON TO 1998 RATES

TABLE 2
Proposed DCC Rates as Compared to Existing DCC Rates

	1998 Rates	2000 Rates
Low Density	\$11,328/unit	\$11,229/unit
Townhouse	7,674/unit	7,627/unit
Apartment	6,020/unit	6,008/unit
Congregate Care	2,844/unit	2,817/unit
Commercial	27.28/m ²	26.81/m ²
Industrial - Annacis	67,598/ha	68,536/ha
Industrial	100,272/ha	98,784/ha
Institutional	15.07/m ²	14.56/m ²
Intensive Agricultural	n/a	23,103/h/a.

2.2.3 AGRICULTURAL DCCS

The current DCC Bylaw does not incorporate a DCC for agricultural projects located outside the urban boundaries within Delta.

Most municipalities do not assess agricultural DCCs for a variety of reasons, principally due to the fact most agricultural developments are not intensive users of municipal infrastructure. Delta is becoming unique within British Columbia with recent large, intensive agricultural developments. Most of these intensive agricultural projects place an additional capital cost burden on Delta's infrastructure (primarily for roads, drainage and water), and as such, make use of the DCC projects to a standard similar to other land uses. Due to favorable weather conditions, Delta can anticipate strong agricultural growth in the foreseeable future.

The Best Practices Guide indicates *a DCC Bylaw should reflect sufficient land use categories to reflect the development patterns for which the DCC servicing program is being provided.* Therefore a DCC incorporating an intensive agricultural category has been included within the proposed DCC Bylaw.

DCCs for intensive agricultural uses shall include roads, water, drainage and sewer, where direct connections are required to the municipal systems. DCCs for nature reserves shall be assessed under a separate DCC Bylaw.

2.2.3.1 Definition

The proposed DCC Bylaw incorporates a new land use category for intensive agricultural projects which would include greenhouses, retail nurseries, agricultural manufacturing & processing plants, facilities used for intensive livestock operations and commercial businesses. It is proposed not to assess DCCs for the following types of commercial businesses, as their impact on Delta's infrastructure is negligible: fruit, vegetable and flower stands; temporary commercial uses; and retail uses less than 100 m².

All other agricultural uses would not be assessed DCCs, as the impact on Delta's infrastructure is negligible.

2.3 GROWTH PROJECTIONS

2.3.1 RESIDENTIAL GROWTH

A review of building permit activity over the last 6 years in North Delta, Tsawwassen and Ladner was completed to determine historical trends. Table 5 indicates the majority of residential growth over the last 5 years has occurred in Tsawwassen. The Delta overall average is 390 dwelling units per year. Table 6 indicates more than half of these new dwelling units were multiple family projects.

TABLE 3

Number of Dwellings Permitted by Building Permits, 1991 - 1999 by Area

Year	North Delta	Tsawwassen	Ladner	Farmlands	Total
1991	47	141	199	3	390
1992	73	275	131	0	479
1993	61	199	166	8	434
1994	43	284	150	7	484
1995	29	139	29	5	202
1996	66	95	189	5	355
1997	38	41	70	7	156
1998	53	51	77	1	182
1999	43	9	50	3	105
9 Year Total	453	1,234	1,061	39	2,787
Average Per Year	50	137	118	4	310

TABLE 4

Number of Dwellings Permitted by Building Permits, 1991 - 1999, by Type

Year	Single Family*	All Other Types	Total
1991	207	183	390
1992	258	221	479
1993	270	164	434
1994	165	319	484
1995	76	126	202
1996	113	242	355
1997	101	55	156
1998	78	104	182
1999	66	39	105
9 Year Total	1,334	1,453	2,787
Average Per Year	148	162	310

* includes single family demolitions

In making growth projections the Community Planning and Development Department has taken into account OCP development policies and the availability of development sites. It is anticipated, that over the next 10 years, the bulk of new housing will be multiple family rather than single family.

TABLE 5

Summary of Dwelling Projections per Year 1998 - 2008

	North Delta	Ladner	Tsawwassen
Total	112	135	103

Summary of Dwelling Type Projections per Year 1998 - 2008

	Single Family	Townhouse	Apartment
Total	51	118	181

When determining the residential growth anticipated over the next 10

years to be utilized in the DCC calculation an allowance of 40 units per year in each of the townhouse and apartment categories has been incorporated to account for projects and lands where DCCs have been previously paid. The single family unit projection is based on a net gain exclusive of demolitions where DCCs will likely not be assessed.

2.3.2 INDUSTRIAL GROWTH

A review of building permit activity for industrial projects indicates a relatively consistent absorption of 30 hectares (74 acres) of gross site area each year. The Community Planning & Development Department predicts this trend will continue over the next 10 years. Similar to the residential growth projections an allowance of 7.5 hectares per year for the industrial category has been made to account for projects and lands where DCCs have been previously paid.

Over the next decade it is anticipated industrial growth will place the greatest needs on infrastructure improvements. The majority of Delta's green-field developments will occur on lands designated industrial within the OCP. Most of this growth will occur within the industrial areas adjacent to River Road from Nordel Way to Highway # 99.

In addition to green-field type projects Delta is experiencing an intensification of land use where large industrial holdings and plants are being converted to much smaller industrial park type businesses. This intensification will create additional demands on the infrastructure, especially road requirements. For this reason the roads category accounts for ½ or more of the total DCC rates in the proposed DCC Bylaw.

2.3.3 COMMERCIAL GROWTH

Harris Hudema Consulting Group Limited prepared a study titled "Delta Economic Development Strategy, 1996". Their projections of commercial floor space are shown below. The anticipated commercial growth is 250,000 sq. ft. (23,226 sq. m) over the next 10 years.

TABLE 6

Projection of Commercial Floor Space 1998 - 2008

	Existing Floor Space (sq.ft.)	Additional Floor Space (sq.ft.)
Tsawwassen Town Center	400,000	37,000 - 50,000

Ladner	348,500	58,000 - 70,000
Scott Road, North Delta	1,551,500	135,000 - 150,000
Total	2,300,000	230,000 - 270,000*

* equates to 21,367 - 25,083 m²

2.3.4 INSTITUTIONAL GROWTH

It is difficult to project the extent of institutional growth over the next 10 years, as these type of projects are typically dependent upon expenditure of public funds. An allowance of 80,000 sq. ft. (7,432 sq. m.) has been determined for institutional projects.

2.3.5 AGRICULTURAL GROWTH

Recent trends in agricultural developments suggests Delta will experience substantial growth in the near future for large capital intensive agricultural developments, such as, greenhouses, nurseries, agricultural manufacturing & processing plants and commercial businesses. All projects require improvements to Delta's road network, and most require utility connections, usually water and drainage. Agricultural DCCs will be assessed for each utility directly connected to the project.

A range of projections by the Community Planning and Development Department shows new intensive agricultural projects could range from 10 to 30 hectares per year. A projection of 20 hectares per year (49 acres) has been determined for establishing the DCC rates.

2.3.6 CONGREGATE CARE GROWTH

It is difficult to predict the amount of congregate care housing projected over the next 10 years, as these projects are not typical development types. An allowance of 15 units per year has been determined for congregate care type projects.

2.4 DCC PROJECTS

The total DCC projects for each utility is shown below. Due to the isolated nature of Delta the emphasis continues to be placed on road-works over the next decade.

TABLE 7
TOTAL DCC PROJECTS BY UTILITY

Utility	Total Project Cost	Total DCC Cost
Roads	\$76,615,725	\$35,736,125
Water	\$20,413,161	\$7,803,762
Sanitary	\$20,448,696	\$6,323,957
Storm	\$24,480,346	\$9,391,842
Parks	n/a	\$6,895,125

2.5 MUNICIPAL ASSIST FACTOR

The Municipal Assist Factor reflects a municipality's desire to encourage development within the community and is largely a political decision. The Best Practices Guide recommends *the municipal assist factor is a discretionary vehicle which should be a reflection of the community's financial support towards the financing of services for development.*

Section 933 (2) of the Municipal Act states that the purpose of DCCs is to provide funds to **assist** the local government to pay for costs of infrastructure necessitated by new development. Ministry of Municipal Affairs policy requires a minimum Municipal Assist Factor of 1%.

The impact of using a 10% Municipal Assist Factor translates to a contribution by the taxpayers of 10% of the total DCC eligible projects as noted in Table 8 above, which is approximately \$7 million dollars over 10 years.

Historically Delta has assigned a 10% Assist Factor which translates to a 10% contribution towards infrastructure required for growth. This level of assistance is recommended with the proposed 2000 DCC Bylaw.

3.0 IMPLEMENTATION OF NEW DCC RATES

3.1 GRACE PERIOD

The Best Practices Guide *recommends a suitable period of notification before a new DCC bylaw is in effect, known as a grace period should be considered when establishing DCC rates.*

It is anticipated 2 to 3 months will transpire during the approval process by the Ministry of Municipal Affairs and Housing between third reading and final adoption of the DCC Bylaw. During this period Delta will place notices in the Delta Page, place notices at the Municipal Hall, update Delta's web page and conduct a direct mail-out campaign to advise all interested parties of the pending DCC Bylaw

changes. This document will be used to communicate the intentions and ramifications of the new DCC Bylaw once adopted by Council.

3.2 BUILDING PERMIT AND SUBDIVISION

No changes are proposed to the implementation process outlined during the 1998 DCC Bylaw review process.

4. DCC CALCULATIONS

4.1 GROWTH PROJECTIONS

The projected growth for the 10 year DCC time frame has been detailed in Section 2.3. As these projections include subdivisions and building permits where old DCCs will apply or where DCCs have been prepaid, the growth projections should be reduced accordingly. A factor of 80 multiple family units per year for residential growth has been determined to be required for this adjustment. Similarly, a 25% reduction factor has been determined applicable for industrial growth projections.

TABLE 8

Adjusted Growth Projections

Low Density	51 units/year x 10 years	510 units
Townhouse *	78 units/year x 10 years	780 units
Apartment *	141 units/year x 10 years	1,410 units
Congregate Care	15 units/year x 10 years	150 units
* allowance of 40 units per year where DCC's have been paid		
Commercial	250,000 sq.ft	23,226 m ²
Industrial	30 ha./year less 25%*	225 ha. (556 acres)**
* allowance of 25% for industrial lands where DCC's have been paid * allowance of 34 ha. for Annacis Island		
Institutional	80,000 sq.ft.	7,432 m ²
Agricultural	20 ha./year	200 ha. (494 acres)

Townhouse is defined as predominantly ground oriented housing with densities ranging from 20 - 60 units per gross hectare (typically 30 units per hectare). Apartment is defined as predominantly not ground oriented housing (entrances to units located within the building) with densities at 60 units per hectare or greater.

4.2 COST ESTIMATES USED FOR DCC PROJECTS

The following tables show the 1998 unit costs used for calculating the DCC project values. These unit costs are considered appropriate for the 2000 DCC Bylaw review. Unit costs listed in the table are “all-inclusive” costs, and have included the following percentages:

17%	Engineering design, inspection and administration
3%	GST (after rebate)
5%	Interim financing
10%	Contingency
35%	TOTAL

TABLE 9

Drainage, Sewer and Water Facilities - Cost Estimates

Pipe Size mm	Drainage cost per/m	Sewer cost per/m	Water cost per/m	Forcemain cost per/m
200		\$192	\$348	\$290
250	\$265	\$208	\$412	\$343
300	\$313	\$296	\$497	\$414
350			\$574	\$478
375	\$340	\$296		
400			\$672	\$560
450	\$389	\$312	\$749	\$625
500			\$834	\$695
525	\$413	\$338		
600	\$464	\$441	\$996	\$830
675	\$520			
750	\$651			
900	\$819			
1050	\$1,002			\$1,415
1200	\$1,188			

NOTE:

- Above pipe costs include imported backfill.
- Drainage facilities include manholes, catch/lawn basins, leads, wyes and all other appurtenances.
- Sewer costs include manholes, wyes, service leads, inspection chambers and all other

- appurtenances.
- Water costs includes fire hydrants, valves, fittings and all other appurtenances.
- A depth of 0 - 2m was assumed for all underground utilities, unless a detailed design indicates otherwise.

TABLE 10
Roads - Cost Estimates

	Unit Price
Ditch Infill	\$150/m
Sidewalk (one side)	\$50/m
Pave shoulder (one side)	\$33/m
Ornamental Street Lights (one side)	\$90/m
Curb & Gutter c/w Drainage (both sides)	\$160/m
Curb & Gutter (both sides)	\$90/m
Pavement widening (both sides, collector std.)	\$200/m
General intersection capacity improvement	\$150,000/ea
Retaining Wall	\$250/m
Add 2 lanes to existing 2 lane road	\$1,000/m
Traffic Signals	\$120,000/ea

4.3 DETERMINATION OF DCC EQUIVALENCY FACTORS

The reader should refer to pages 75 to 87 of the Best Practices Guide for interpretation. DCC equivalency factors were introduced for the first time in Delta during the 1998 DCC Bylaw review. No adjustments are considered necessary, however new equivalency factors have been incorporated for intensive agricultural projects.

4.3.1 Equivalency Factor Calculations - Roads

Low Density = 1.02 trips/unit
x Adjustment @ 1.20 = 1.22 trips/unit

Townhouse = 0.66 trips/unit
x Adjustment @ 1.20 = 0.79 trips/unit

Apartment = 0.62 trips/unit
x Adjustment @ 1.20 = 0.74 trips/unit

Congregate Care = 0.21 trips/unit
X Adjustment @ 1.20 = 0.25 trips/unit

Commercial = $R_W = [(1 - P) \times R_C] \times (1 - T) + (R_T \times T)$
 $= (0.75 \times 0.0049) \times 0.95 + (0.0098 \times 0.05)$
 $= \underline{0.0040 \text{ weighted trips / m}^2 \text{ of building}}$

Industrial = $R_W = [(1 - P) \times R_C] \times (1 - T) + (R_T \times T)$
 $= (0.90 \times 16.25) \times 0.95 + (32.50 \times 0.05)$
 $= \underline{15.52 \text{ weighted trips/hectare of site}}$

Intensive Agriculture = $R_W = [(1 - P) \times R_C] \times (1 - T) + (R_T \times T)$
 $= (1) \times (2.00) \times 0.94 + (4.00 \times 0.06)$
 $= \underline{2.12 \text{ weighted trips/hectare of site}}$

Institutional = 0.0015 trips / m² of building

4.3.2 EQUIVALENCY FACTOR FOR DRAINAGE

TABLE 11

Equivalency Factor Calculations - Drainage

Land Use	Unit of Development (a)	Density (b)	Run-off Coefficient (c)	Impervious Area/Unit (m ² /unit) (a÷b)xcx10,000	Equivalence Factor
Low Density	1 dwelling unit	10/ha	0.60	600	1.00
Townhouse	1 dwelling unit	30/ha	0.75	250	0.42
Apartment	1 dwelling unit	60/ha	0.80	133	0.22
Commercial	1 m ² gross floor area	50%	0.85	1.7	0.003
Industrial	1 ha. gross site area	100%	0.70	7,000	11.67
Intensive Agriculture*	1 ha. gross site area	100%	0.25	2,500	4.17
Institutional	1 m ² gross floor area	50%	0.60	1.2	0.002

* Run-off coefficient adjusted to 0.25 in consideration of onsite detention requirements

4.3.3 EQUIVALENCY FACTOR FOR WATER AND SEWER

TABLE 12

Equivalency Factor Calculations - Sewer & Water

Land Use	Unit of Development	Adjusted Density or Equivalent Population
----------	---------------------	---

Low Density	1 dwelling unit	48/ha
Townhouse	1 dwelling unit	112/ha
Apartment	1 dwelling unit	153/ha
Congregate Care	1 sleeping unit	90/ha
Commercial	m ² gross floor	.022/m ²
Industrial	ha gross site	64.3/ha
Intensive Agriculture*	ha gross site	75/ha
Institutional	m ² gross floor	.022/m ²

* Summer demands = 10 l/m²/day
Discount for 24 hour withdrawal (50%), and site coverage (25%)

4.4 DCC RESERVES

As of April 28, 2000 Delta's DCC Reserves were as follows:

C	Roads	\$7,746,725
C	Drainage	\$4,198,290
C	Sewer	\$3,309,375
C	Water	\$3,469,006
C	Parks	\$ 327,471

4.5 DETAILED DCC CALCULATIONS

4.5.1 ROAD

Refer to page 76 of the Best Practices Guide for an example of detailed road DCC calculations.

TABLE 13
Equivalent Trips Calculation

	Equivalent Factor	Equivalent Trips
Low Density	510 units x 1.22	622
Townhouse	780 units x 0.79	616
Apartments	1,410 units x 0.74	1,043
Congregate Care	150 units x 0.25	37
Commercial	23,226m ² x 0.0040	93
Industrial	225 hectares x 15.52	3,492

Institutional	7,432m ² x 0.0015	11
Agricultural	200 hectares x 2.12	424
TOTAL EQUIVALENT TRIPS		6,338 trips

10% M.A.F.

New Road DCC Program	35,736,125
Less Reserves	<u>\$7,746,725</u>
Net DCC Funding Required	\$27,989,400

DCC per trip (÷ 6,338) \$4,416/trip

TABLE 14

Road DCC Calculation - 10% M.A.F.

Low Density Residential	1.22 x 4,416	\$5,388 per unit
Townhouse	0.79 x 4,416	\$3,489 per unit
Apartment	0.74 x 4,416	\$3,268 per unit
Congregate Care	0.25 x 4,416	\$1,104 per unit
Commercial	0.0040 x 4,416	\$17.66 per m ² gross floor area
Industrial	15.52 x 4,416	\$68,536 per hectare gross site area
Institutional	0.0015 x 4,416	\$6.62 per m ² floor area
Agricultural	2.12 x 4,416	\$9,362 per hectare gross site area

4.5.2 DRAINAGE

Refer to page 79 of the Best Practices Guide for a detailed example of a drainage DCC calculation.

TABLE 15

Drainage Equivalent Units Calculation

	Equivalent Factor	Equivalent Drainage Units
Low Density	510 units x 1.00	510
Townhouse	780 units x 0.42	328
Apartment/Congregate Care	1410 units x 0.22	310
Commercial	23,226m ² x 0.003	70
Industrial	191* ha. x 11.67	2,229
Intensive Agriculture	200 ha x 4.17	834
Institutional	7,432m ² x 0.002	15

* excludes 34 hectares for Annacis Island	Total Equivalent Drainage Units	4,296
---	--	-------

10% M.A.F.

New Storm Drainage DCC Program	\$9,391,842
Less Reserves	<u>\$4,198,290</u>
Net DCC Funding Required	\$5,193,552

DCC per Equivalent Drainage Unit (\div 4,296) \$1,209/ drainage unit

TABLE 16

Drainage DCC Calculation - 10% M.A.F.

Low Density Residential	1.00 x 1,209	\$1,209 per unit
Townhouse	0.42 x 1,209	\$507 per unit
Apartment/Congregate Care	0.22 x 1,209	\$266 per unit
Commercial	0.003 x 1,209	\$3.63 per m ² gross floor area
Intensive Agriculture	4.17 x 1,209	\$5,041 per ha. gross site area
Industrial	11.67 x 1,209	\$14,109 per ha. gross site area
Institutional	0.002 x 1,209	\$2.42 per m ² gross floor area

4.5.3 SEWER

Refer to page 83 of the Best Practices Guide for an example of a detailed sewer DCC calculation.

TABLE 17

Sanitary Sewer Equivalent Population Calculation

	Equivalent Factor	Equivalent Population
Low Density	510 x 4.8	2,448
Townhouse	780 x 3.8	2,964
Apartment	1410 x 2.6	3,666
Congregate Care	150 x 1.5	225
Commercial	23,226m ² x 0.022	511

Industrial	191* x 64.3	12,281
Intensive Agriculture	n/a	
Institutional	7,432m ² x 0.022	164
* Excludes 34 ha. for Annacis Island		
Total Equivalent Population		22,259

10 % M.A.F.

New Sanitary DCC Program	\$6,323,957
Less Reserves	<u>\$3,309,375</u>
Net DCC Funding Required	\$3,014,582

DCC per Equivalent Person (÷ 22,259) \$135 /equiv. person

TABLE 18

Sanitary DCC Calculation - 10% M.A.F.

Low Density Residential	4.8 x 135	\$648 per unit
Townhouse	3.8 x 135	\$513 per unit
Apartment	2.6 x 135	\$351 per unit
Congregate Care	1.5 x 135	\$202 per unit
Commercial	0.022 x 135	\$2.97 per m ²
Industrial	64.3 x 135	\$8,680 per ha.
Intensive Agriculture	n/a*	
Institutional	0.022 x 135	\$2.97 per m ²

* Assess only if connected to municipal sewer

4.5.4 WATER

Refer to page 85 of the Best Practices Guide for an example of a detailed water DCC calculation.

TABLE 19

Water Equivalent Population Calculation

	Equivalent Factor	Equivalent Population
--	--------------------------	------------------------------

Low Density	510 x 4.8	2,448
Townhouse	780 x 3.8	2,964
Apartment	1,410 x 2.6	3,666
Congregate Care	150 x 1.5	225
Commercial	23,226m ² x 0.022	511
Industrial	*191 ha. x 64.3	12,281
Institutional	7,432m ² x .022	164
Intensive Agriculture	200 ha x 75	15,000
*Excludes 34 ha. for Annacis Island Total Equivalent Population		37,259

10% M.A.F.

New Water DCC Program	\$7,803,762
Less Reserves	<u>\$3,469,006</u>
Net DCC Funding Required	\$4,334,756

DCC per Equivalent Person (÷ 37,259) \$116/equiv. person

TABLE 20

Water DCC Calculation - 10% M.A.F.

Low Density	4.8 x 116	\$557 per unit
Townhouse	3.8 x 116	\$441 per unit
Apartment	2.6 x 116	\$302 per unit
Congregate Care	1.5 x 116	\$174 per unit
Commercial	0.022 x 116	\$2.55 per m ² gross floor area
Industrial	64.3 x 116	\$7,459 per ha. gross site area
Institutional	0.022 x 116	\$2.55 per m ² gross floor area
Intensive Agricultural	75 x 116	\$8,700 per ha. gross site area

5. PARKS

5.1 PARKLAND REQUIREMENTS

Delta staff conducted a review of actual park lands against the standard identified within the Parks and Recreation Master Plan. Table 24 identifies a shortfall of 2.6 acres per 1,000 people in Delta.

**TABLE 21
Parkland Requirements**

Park Type	Parks & Rec Master Plan (acres)	Actual (acres)	Difference (acres)
Neighborhood	3	1.95	1.05
Community	3	1.55	1.45
Municipal	4	3.90	0.10
	10 acres/1000 people	7.4 acres/1000 people	2.6 acres/1000 people

5.2 PARK DEVELOPMENT REQUIREMENTS

Delta’s standard for development improvements in accordance with Section 935 of the Municipal Act is estimated to be \$300,000 per acre. As there is a lag between when the municipality assesses the DCCs and acquires the parkland required, it is projected that Delta will only be able to develop approximately ½ of the parkland acquired through DCCs over the 10 year period. Therefore the parkland development requirements are based upon \$150,000 per acre. Parks & Recreation estimates 4.0 acres will be improved annually through the DCC fund.

5.3 PARK DCC CALCULATION

DCC Parkland Deficiency = 2.6 acres x \$250,000/acre (land cost)* = \$650,000 per 1000 persons

* based on average assessed value of Delta parks.

DCC Park Development = 4.0 acres x \$150,000/acre = \$600,000 per 1000 persons

**TABLE 22
Park Equivalent Population Calculation**

	Equivalent Population Factor	Equivalent Population
Low Density	3.2 x 510 dwelling units	1,632

Townhouse	2.5 x 780 dwelling units	1,950
Apartment	1.7 x 1410 dwelling units	2,397
Congregate Care	1.0 x 150 sleeping units	150
Total Equivalent Population		6,129 people

- 20 -

10% M.A.F.

Total Parkland DCC Program + \$650,000 x 6.129	\$3,983,850
Total Park Development = \$600,000 x 6.129	\$3,677,400
Less Municipal Assist Factor (10%)	\$ 755,125 - M.A.F.
Less Reserves	\$ 327,471
Net Park DCC Program	\$6,567,654
Net DCC per equivalent population (-6129)	\$ 1,071/ equiv. person)

TABLE 23

Park DCC Calculation - 10% M.A.F.

Low Density	3.2 x 1,071	\$3,427/dwelling unit
Townhouse	2.5 x 1,071	\$2,677/dwelling unit
Apartment	1.7 x 1,071	\$1,821/dwelling unit
Congregate Care	1.0 x 1,071	\$1,071/sleeping unit

ROAD PROJECTS

PROJ. #	LOCATION	EXPENDITURES	GRANTS	TOTAL	APPLICABLE TO NEW DEV. %	SUB TOTAL	LESS 10% ASSIST FACTOR
R-100	112 Street: 87A Avenue - 88 Avenue	\$320,000.00	\$0.00	\$320,000.00	50	\$160,000.00	\$144,000.00
R-101	92A Avenue, 112 Street - River Road	\$235,500.00	\$0.00	\$235,500.00	50	\$117,750.00	\$105,975.00
R-102	92nd Avenue, 114 Street - 120 Street	\$612,000.00	\$0.00	\$612,000.00	40	\$244,800.00	\$220,320.00
R-106	Centre Street: River Road - Dunlop Drive	\$277,200.00	\$0.00	\$277,200.00	20	\$55,440.00	\$49,896.00
R-112	Scott Road: Hwy #10 - 120 Street	\$1,875,000.00	\$0.00	\$1,875,000.00	85	\$1,593,750.00	\$1,434,375.00
R-114	River Way: Alexander Road - Nordel Way	\$6,368,400.00	\$0.00	\$6,368,400.00	100	\$6,368,400.00	\$5,731,560.00
R-117	Linden Drive: Westminster - Trunk Road	\$480,000.00	\$0.00	\$480,000.00	40	\$192,000.00	\$172,800.00
R-119	Westminster: Elliot Street - Crescent Drive	\$685,500.00	\$0.00	\$685,500.00	60	\$411,300.00	\$370,170.00
R-121	Hwy #10: 66 Street intersection	\$150,000.00	\$0.00	\$150,000.00	60	\$90,000.00	\$81,000.00
R-123	Trunk Road: 53 Street - 57 Street	\$1,900,500.00	\$0.00	\$1,900,500.00	70	\$1,330,350.00	\$1,197,315.00
R-145	57 St./Crescent Dr: Trunk Road to River Road	\$1,250,000.00	\$0.00	\$1,250,000.00	80	\$1,000,000.00	\$900,000.00
R-146	Trunk Road: 57 Street to Hwy #17	\$682,000.00	\$0.00	\$682,000.00	70	\$477,400.00	\$429,660.00
R-128	Boundary Bay Road - Phase I & II	\$1,583,370.00	\$0.00	\$1,583,370.00	30	\$475,011.00	\$427,510.00
R-129	52 Street: Upland Drive - 12th Avenue	\$427,000.00	\$0.00	\$427,000.00	30	\$128,100.00	\$115,290.00
R-130	12th Avenue: 52 Street intersection improvements	\$270,000.00	\$0.00	\$270,000.00	30	\$81,000.00	\$72,900.00
R-132	12th Avenue: 53A Street - Hunter Road	\$405,000.00	\$0.00	\$405,000.00	40	\$162,000.00	\$145,800.00
R-134	56 Street: Hwy #17 to US Border	\$2,288,000.00	\$0.00	\$2,288,000.00	60	\$1,372,800.00	\$1,235,520.00
R-136	16th Avenue: Beach Grove Road - 56 Street	\$620,800.00	\$0.00	\$620,800.00	10	\$62,080.00	\$55,872.00
R-137	52 Street: Hwy #17 - 16th Avenue	\$465,000.00	\$0.00	\$465,000.00	35	\$162,750.00	\$146,475.00
R-138	1st Avenue: 56th Street intersection improvements	\$250,000.00	\$0.00	\$250,000.00	20	\$50,000.00	\$45,000.00
R-142	Traffic Studies	\$150,000.00	\$0.00	\$150,000.00	100	\$150,000.00	\$135,000.00
R-143	Right of Way Acquisitions	\$1,000,000.00	\$0.00	\$1,000,000.00	100	\$1,000,000.00	\$900,000.00
R-144	Various road improvements	\$5,650,000.00	\$0.00	\$5,650,000.00	60	\$3,390,000.00	\$3,051,000.00

ROADS PROJECTS CONTINUED

R-109	River Road intersection E/O Alex Fraser Bridge	\$900,000.00	\$0.00	\$900,000.00	80	\$720,000.00	\$648,000.00
R-111	Nordel Way	\$716,000.00	\$0.00	\$716,000.00	80	\$572,800.00	\$515,520.00
R-113	South Fraser Perimeter Road	\$70,000,000.00	\$63,000,000.00	\$7,000,000.00	90	\$6,300,000.00	\$5,670,000.00
R-116	River Road; Hwy #17 - Nordel Way	\$15,273,750.00	\$0.00	\$15,273,750.00	50	\$7,636,875.00	\$6,873,188.00
R-124	72nd Street: Ladner Trunk Road intersection	\$330,000.00	\$0.00	\$330,000.00	80	\$264,000.00	\$237,600.00
R-125	80th Street: Ladner Trunk Road intersection	\$330,000.00	\$0.00	\$330,000.00	80	\$264,000.00	\$237,600.00
R-126	72nd & 80th Streets: Hwy #10 - Airport	\$1,268,000.00	\$0.00	\$1,268,000.00	100	\$1,268,000.00	\$1,141,200.00
R-148	Intersection improvements, Deltaport Way @ 57B	\$75,000.00	\$0.00	\$75,000.00	80	\$60,000.00	\$54,000.00
R-149	Intersection improvements, 56 St. @ 28 Ave	\$100,000.00	\$0.00	\$100,000.00	80	\$80,000.00	\$72,000.00
R-150	Intersection improvements, 53 St. @ 28 Ave	\$30,000.00	\$0.00	\$30,000.00	80	\$80,000.00	\$72,000.00
R-151	Intersection improvements, 57B St. @ 34B Ave	\$30,000.00	\$0.00	\$30,000.00	80	\$24,000.00	\$21,600.00
R-152	Intersection improvements, 64 St. @ 34B Ave	\$60,000.00	\$0.00	\$60,000.00	80	\$48,000.00	\$43,200.00
R-153	Intersection improvements, 64 St. @ 60 Ave	\$55,000.00	\$0.00	\$55,000.00	80	\$44,000.00	\$39,600.00
R-154	41B Street: Deltaport Way to River Road West	\$2,670,000.00	\$0.00	\$2,670,000.00	80	\$2,136,000.00	\$1,922,400.00
R-156	River Road West: Church Street - 46A Street	\$580,000.00	\$0.00	\$580,000.00	80	\$464,000.00	\$417,600.00
R-157	Trunk Road: 64 Street - 9500 block	\$836,500.00	\$0.00	\$836,500.00	80	\$669,200.00	\$602,280.00
TOTALS		\$121,199,520.00	\$0.00	\$58,199,520.00		\$39,705,806.00	\$35,735,226.10

WATER PROJECTS

PROJ. #	LOCATION	EXPENDITURES	GRANTS	TOTAL	APPLICABLE TO NEW DEV. %	SUB TOTAL	LESS 10% ASSIST FACTOR
W-102	Scott Road: 80th Avenue - 84th Avenue	\$1,061,736.00	\$0.00	\$1,061,736.00	60	\$637,042.00	\$573,337.00
W-104	84th Avenue: 114A Street - 120th Street	\$928,800.00	\$0.00	\$928,800.00	70	\$650,160.00	\$585,144.00
W-105	116th Street: Hellings Reservoir - 84th Avenue	\$298,800.00	\$0.00	\$298,800.00	80	\$239,040.00	\$215,136.00
W-106	Scott Road: 64th Avenue Reservoir up to Scott Rd.	\$2,456,720.00	\$0.00	\$2,456,720.00	40	\$982,688.00	\$884,419.00
W-111	83rd Avenue: 112A Street - 114 Street	\$139,200.00	\$0.00	\$139,200.00	80	\$111,360.00	\$100,224.00
W-112	70th Avenue: Scott Road - Nicholson Road	\$115,360.00	\$0.00	\$115,360.00	15	\$17,304.00	\$15,574.00
W-113	116th Street: 73A Avenue - 75th Avenue	\$152,440.00	\$0.00	\$152,440.00	80	\$121,952.00	\$109,757.00
W-120	Nordel Way to 8400 blk on River Road	\$2,059,200.00	\$0.00	\$2,059,200.00	60	\$1,235,520.00	\$1,111,968.00
W-116	Trunk Road: Kelly Drive - Mason Canal	\$770,721.00	\$0.00	\$770,721.00	15	\$115,608.00	\$104,047.00
W-117	River Road West: 46A Street - Westham Is. Bridge	\$1,607,200.00	\$0.00	\$1,607,200.00	30	\$482,160.00	\$433,944.00
W-118	47A Avenue/River Road West	\$546,700.00	\$0.00	\$546,700.00	30	\$164,010.00	\$147,609.00
W-128	53rd Street: 45th Avenue - Linden Drive	\$412,000.00	\$0.00	\$412,000.00	90	\$370,800.00	\$333,720.00
W-121	56th Street: 13B Avenue - 16th Avenue	\$402,570.00	\$0.00	\$402,570.00	80	\$322,056.00	\$289,850.00
W-122	14B Avenue: 55th Street - 56th Street	\$115,360.00	\$0.00	\$115,360.00	80	\$92,288.00	\$83,059.00
W-123	55th Street: 12th Avenue - 15B Avenue	\$578,508.00	\$0.00	\$578,508.00	80	\$462,806.00	\$416,526.00
W-124	55A Street: 14th - 16th Ave, & along 16th Ave.	\$99,528.00	\$0.00	\$99,528.00	80	\$79,622.00	\$71,660.00
W-129	Oversizing for future development	\$200,000.00	\$0.00	\$200,000.00	100	\$200,000.00	\$180,000.00
W-132	28th Avenue: Arthur Drive (53rd) - 57B Street	\$432,600.00	\$0.00	\$432,600.00	70	\$302,820.00	\$272,538.00
W-133	28th Avenue: 48th Street - Arthur Drive	\$309,000.00	\$0.00	\$309,000.00	60	\$185,400.00	\$166,860.00
W-134	46A Street: 28th Avenue - 34B Avenue	\$525,300.00	\$0.00	\$525,300.00	70	\$367,710.00	\$330,939.00
W-135	44th Avenue: 80th Street - 88th Street	\$494,400.00	\$0.00	\$494,400.00	90	\$444,960.00	\$400,464.00
W-136	44th Avenue: 88th Street - 96th Street	\$494,400.00	\$0.00	\$494,400.00	90	\$444,960.00	\$400,464.00
W-137	96th Street: 44th Avenue - Hornby Drive	\$247,200.00	\$0.00	\$247,200.00	90	\$222,480.00	\$200,232.00
W-138	Hornby Drive: 96th Street - 102nd Street	\$309,000.00	\$0.00	\$309,000.00	90	\$278,100.00	\$250,290.00
W-139	New PRV Station @ 34B Ave. @ GVRD #2 main	\$200,000.00	\$0.00	\$200,000.00	70	\$140,000.00	\$126,000.00

TOTALS	\$14,956,743.00	\$0.00	\$14,956,743.00		\$8,670,846.00	\$7,803,761.10
---------------	-----------------	--------	-----------------	--	----------------	----------------

SANITARY PROJECTS							
PROJ. #	LOCATION	EXPENDITURES	GRANTS	TOTAL	APPLICABLE TO NEW DEV. %	SUB TOTAL	LESS 10% ASSIST FACTOR
S-100	82nd Avenue: 111B Street - 112 Street	\$30,192.00	\$0.00	\$30,192.00	100	\$30,192.00	\$27,173.00
S-103	Upgrade Garry Street Pumpstation	\$895,800.00	\$0.00	\$895,800.00	70	\$627,060.00	\$564,354.00
S-104	Downtown Core: along 47 Avenue & Elliot Street	\$459,060.00	\$0.00	\$459,060.00	70	\$321,342.00	\$289,208.00
S-105	47 Avenue: 52A Street - 57 Street	\$812,864.00	\$0.00	\$812,864.00	70	\$569,005.00	\$512,104.00
S-108	Twin Forcemain: Manor North PS - 4400 block	\$2,075,000.00	\$0.00	\$2,075,000.00	30	\$622,500.00	\$560,250.00
S-109A	Twin Forcemain: 57 Street to east side Hwy #17	\$523,100.00	\$0.00	\$523,100.00	30	\$156,930.00	\$141,237.00
S-106	Twin Forcemain: Ladner PS to 68 Street & - 55 Avenue	\$3,037,800.00	\$0.00	\$3,037,800.00	30	\$911,340.00	\$820,206.00
S-107	Twin Forcemain: 68 Street/65 Avenue to GVS&DD interceptor	\$12,027,500.00	\$0.00	\$12,027,500.00	30	\$3,608,250.00	\$3,247,425.00
S-110	Oversizing for future development	\$180,000.00	\$0.00	\$180,000.00	10	\$180,000.00	\$162,000.00
TOTALS		\$20,041,316.00	\$0.00	\$20,041,316.00		\$7,026,619.00	\$6,323,957.10

DRAINAGE PROJECTS

PROJ. #	LOCATION	EXPENDITURES	GRANTS	TOTAL	APPLICABLE TO NEW DEV. %	SUB TOTAL	LESS 10% ASSIST FACTOR
D-105	Drainage Diversion Nordel Way - Fraser River	\$1,827,470.00	\$0.00	\$1,827,470.00	10	\$182,747.00	\$164,472.00
D-111	84 Avenue: 112 Street east 400m	\$165,200.00	\$0.00	\$165,200.00	50	\$82,600.00	\$74,340.00
D-112	112 Street: 75 Avenue - 76A Avenue	\$169,260.00	\$0.00	\$169,260.00	10	\$16,926.00	\$15,233.00
D-116	North East Interceptor Canal Improvements	\$500,000.00	\$0.00	\$500,000.00	50	\$250,000.00	\$225,000.00
D-107	Tasker Pump Station	\$824,948.00	\$0.00	\$824,948.00	100	\$824,948.00	\$742,453.00
D-115	McDonald Drainage Pump Station	\$843,750.00	\$0.00	\$843,750.00	50	\$421,875.00	\$379,688.00
D-117	Gravel Ridge Pump Station	\$200,000.00	\$0.00	\$200,000.00	100	\$200,000.00	\$180,000.00
D-118	Silda Pump Station	\$824,945.00	\$0.00	\$824,945.00	100	\$824,945.00	\$742,451.00
D-122	River Way: Alexander Road - Nordel Way	\$1,190,340.00	\$0.00	\$1,190,340.00	100	\$1,190,340.00	\$1,071,306.00
D-101	44 Avenue & 44A Avenue: East of Ladner Ditch	\$432,380.00	\$0.00	\$432,380.00	80	\$345,904.00	\$311,314.00
D-124	River Road: Westminster Avenue - Elliot Street	\$986,408.00	\$0.00	\$986,408.00	70	\$690,486.00	\$621,437.00
D-125	Westminster Avenue: Elliot Street - Crescent Dr.	\$125,200.00	\$0.00	\$125,200.00	70	\$87,640.00	\$78,876.00
D-103	Ferguson Road: Ferguson Court north 113m	\$130,620.00	\$0.00	\$130,620.00	10	\$13,062.00	\$11,756.00
D-104	12th Ave. Drainage Pump Station Replacement	\$758,750.00	\$0.00	\$758,750.00	20	\$151,750.00	\$136,575.00
D-106	3rd Avenue Pump Statio (Phase 1 & 2)	\$843,750.00	\$0.00	\$843,750.00	30	\$253,125.00	\$227,813.00
D-127	Boundary Bay Road - Phase II	\$681,360.00	\$0.00	\$681,360.00	30	\$204,408.00	\$183,967.00
D-128	56 Street: 4th Avenue - 6th Avenue	\$253,890.00	\$0.00	\$253,890.00	60	\$152,334.00	\$137,101.00
D-109	52 Street: Hwy #17 - 16th Avenue	\$491,400.00	\$0.00	\$491,400.00	35	\$171,990.00	\$154,791.00
D-119	Drainage studies throughout Corporation	\$300,000.00	\$0.00	\$300,000.00	100	\$300,000.00	\$270,000.00
D-123	River Road: Hwy #17 - Nordel Way	\$4,032,600.00	\$0.00	\$4,032,600.00	50	\$2,016,300.00	\$1,814,670.00
D-100	River Road: Hwy #91 to 96th Avenue	\$270,000.00	\$0.00	\$270,000.00	80	\$216,000.00	\$194,400.00
D-132	Oversizing for future development	\$308,000.00	\$0.00	\$308,000.00	100	\$308,000.00	\$277,200.00
D-133	Oliver Pump Station Upgrade	\$3,500,000.00	\$0.00	\$3,500,000.00	20	\$700,000.00	\$630,000.00
D-134	Centre Ditch Pump Station	\$1,100,000.00	\$0.00	\$1,100,000.00	40	\$440,000.00	\$396,000.00
D-135	44 Avenue Ditch Improvements	\$650,000.00	\$0.00	\$650,000.00	60	\$390,000.00	\$351,000.00

TOTALS	\$21,410,271.00	\$0.00	\$21,410,271.0 0		\$10,435,380.0 0	\$9,391,843.10
---------------	-----------------	--------	---------------------	--	---------------------	----------------

**THE CORPORATION OF DELTA
BYLAW NO. 5830, 2000**

A Bylaw to Impose Development Cost Charges

WHEREAS the Council may, by Bylaw, impose development cost charges (DCCs) on every person who obtains:

- (a) approval of a Subdivision; or
- (b) a Building Permit authorizing the construction, alteration or extension of a building or structure;

for the purpose of providing funds to assist the Municipality to pay the capital costs of providing, constructing, altering, or expanding sewage, water, drainage and highway facilities, other than off-street parking facilities, and providing and improving parkland to service, directly or indirectly, the development for which the charge is being imposed;

AND WHEREAS in the consideration of the Council, a charge imposed by this Bylaw:

- (a) is not excessive in relation to the capital cost of prevailing standards of service in the Municipality;
- (b) will not deter development in the Municipality; and
- (c) will not discourage the construction of reasonably priced housing or the provision of reasonably priced serviced land in the Municipality;

AND WHEREAS in the opinion of the Council, the charges imposed by this Bylaw are:

- (a) related to capital costs attributable to projects included in the capital budget of the Municipality; and
- (b) related to capital projects consistent with the Official Community Plan of the Municipality.

THEREFORE the Council of The Corporation of Delta, in open meeting assembled, ENACTS AS FOLLOWS:

1. This Bylaw may be cited for all purposes as “DELTA DEVELOPMENT COST CHARGES IMPOSITION BYLAW NO. 5830, 2000”.

2. Those Development Cost Charges set out in Schedule “A” hereto, which said schedule is hereby incorporated in and forms part of this Bylaw, are hereby imposed on every person who obtains:

(a) approval of a Subdivision, or

(b) a Building Permit authorizing the construction, alteration or extension of a building or structure,

in the Municipality.

3. The total Development Cost Charges imposed pursuant hereto shall be credited one unit for each existing fully serviced dwelling unit which existed prior to the Subdivision approval, or Building Permit issue.

4. A Development Cost Charge imposed pursuant hereto shall be paid to the Municipality:

(a) immediately before the approval of the final plan of Subdivision by the Approving Officer where the Subdivision creates Low Density Residential Use parcels or bare land strata parcels under the Condominium Act, calculated at the charge applicable at the date of application for Subdivision; or

(b) for all other types of development, including townhouse and apartment, to which this Bylaw applies, immediately before the issuance of a Building Permit, calculated at the charge applicable at the date of application for Building Permit, provided the application is not older than 12 months.

5. Notwithstanding the provisions of Sections 2, 3, and 4 hereof, no Development Cost Charge shall be required to be paid where:

- (a) a 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, set apart for public worship including a church hall which the Council considers is necessary to such public worship building;
 - (b) a building permit authorizes the construction, alteration or extension of a building that will, after the construction, alteration or extension:
 - (i) contain fewer than 4 self-contained dwelling units; and
 - (ii) be put to no other use than the residential use in those dwelling units;
 - (c) the value of the work authorized by a building permit does not exceed \$50,000.00 or any other amount the Minister of Municipal Affairs may, by regulation, prescribe;
 - (d) a development does not impose any new capital cost burden on the Municipality; or
 - (e) a Development Cost Charge has previously been paid for the same development unless, as a result of a further development, new capital cost burdens will be imposed on the Municipality;
6. (a) A Development Cost Charge payable under this bylaw shall be calculated using the applicable charges set out in Schedule "A", and utilizing the calculation of development units as described in Schedule "B";
- (b) A development is not exempt from payment of applicable Development Cost Charges if the application for development which might otherwise qualify under sections 5 (b) or (c) relates to a site which, if fully or partially developed, would allow 4 or more self contained residential dwelling units; or the total value of the work possible would exceed \$50,000.00.

7. Notwithstanding the provisions of Sections 2, 3, 4 and 6 hereof, where the owner of land being subdivided or developed has provided parkland or "parkland improvements" or provided or paid the cost of providing specific works and services outside the boundaries of the land being subdivided or developed, which parkland or "parkland improvements" or works and services were included in the calculations used to determine the amount of a Development Cost Charge, the value of the parkland or "parkland improvements" or the cost of providing the works and services shall be deducted from those classes of Development Cost Charges set out in Schedule "A" hereto which are applicable to the parkland or parkland improvements or the types of works and services provided by the owner.

8. "DELTA DEVELOPMENT COST CHARGES IMPOSITION BYLAW NO. 5600, 1998" is hereby repealed.

READ A FIRST time the day of , 2000

READ A SECOND time the day of , 2000

READ A THIRD time the day of , 2000

RECEIVED THE APPROVAL of the Inspector of Municipalities the
day of , 2000.

FINALLY CONSIDERED AND ADOPTED the day of , 2000

Lois E. Jackson
Mayor

Gil Mervyn
Municipal Clerk

Bylaw No. 5830, 2000 - Development Cost Charges (DCCs)

APPLICATION:

Development Type	Category of DCC					Totals
	Roads	Drainage	Sewer	Water	Parks	
Low Density	\$5,388	\$1,209	\$648	\$557	\$3,427	\$11,229/unit
Townhouse	3,489	507	513	441	2,677	7,627/unit
Apartment	3,268	266	351	302	1,821	6,008/unit
Congregate Care	1,104	266	202	174	1,071	2,817/unit
Commercial	17.66	3.63	2.97	2.55	-	26.81/m ²
Industrial	68,536	14,109	8,680	7,459	-	98,784/ha
Industrial - Annacis*	68,536	-	-	-	-	68,536/ha
Institutional	6.62	2.42	2.97	2.55	-	14.56/m ²
Intensive Agriculture**	9,362	5,041	-	8,700		23,103/ha

* For development applications on Annacis Island as shown on Schedule "C" which is incorporated in and forms part of this Bylaw, only Roads Development Cost Charges shall be imposed.

** For intensive agriculture development applications, as shown on Schedule "D" which is incorporated in and forms part of this Bylaw, where a sewer connection is required to a municipal system, the industrial sewer rate shall apply.

Bylaw No. 5830, 2000 - Development Cost Charges (DCCs)

CALCULATION OF UNITS FOR EACH DEVELOPMENT TYPE:

a) **Low Density Residential (Single Family, Duplex or Triplex Residential)**

Low Density includes single family, duplex and triplex residential development. The calculation of units is determined by the maximum number of dwelling units lawfully permitted on the site being subdivided.

b) **Townhouse**

Townhouse includes a multi-unit residential development where each dwelling unit has one or more exterior entrances on the ground floor, and shares one or more party walls with an adjacent dwelling unit, and does not include Low Density residential development. The calculation of units is determined by the maximum number of dwelling units contained in the building permit application.

c) **Apartment**

Apartment includes a multi-unit residential development which does not include Low Density Residential or Townhouse. The calculation of units is determined by the maximum number of dwelling units contained in the building permit application.

d) **Congregate Care**

Congregate Care includes a multi-unit development which contains principally sleeping units without kitchen facilities, and where common dining and living areas are provided within the development. The calculation of units is determined by the maximum number of sleeping and dwelling units contained in the building permit application.

e) **Commercial or Institutional**

This development type includes all Commercial and Institutional development, other than Congregate Care and Intensive Agriculture. The measurement unit for Commercial and Institutional development is square metres of floor area. The calculation of floor area of a commercial or institutional building is based on the gross floor area which is measured from the outside edge of all exterior walls, less the area used for parking of motor vehicles and bicycles in the building permit application.

f) **Industrial**

Industrial includes all industrial uses and all greenhouses, retail nurseries, manufacturing & processing plants for agriculture related products and commercial businesses not located within the area outlined in bold in Schedule D. The measurement unit for Industrial development is hectares of site area. The calculation of industrial site area is based on the gross area of the site that is proposed for development in a building permit application, including access, parking, loading and landscape areas, and excludes the undeveloped portion of the site that is being held in its pre-developed state for future additional development.

g) **Mixed Use Developments**

The calculation for mixed use development shall be calculated separately for each portion of the development attributable to two or more development types noted herein which are contained in the building permit application, and will be the sum of the DCCs for each type.

h) **Intensive Agriculture**

Intensive agriculture includes greenhouses, retail nurseries, manufacturing and processing plants for agriculture related products, facilities used for intensive livestock operations, and commercial businesses located within the area outlined in bold in Schedule D. Produce stands, temporary uses (less than 6 months) and retail less than 100 m² shall not be considered intensive agriculture.

The measurement unit for intensive agriculture is hectares of site area. The calculation of site area is based on the gross area of the site that is proposed for development in a building permit application, including access, parking, loading, tanks, and excludes the undeveloped portion of the site that is not disturbed, ponds, residential farm facilities, and landscape areas.

THE CORPORATION OF DELTA

COUNCIL REPORT

REGULAR MEETING

To: Chief Administrative Officer **File No.:** DCCs
From: Engineering Department **Bylaw No.:** 5600
Date: June 26, 2000

Proposed Development Cost Charges

RECOMMENDATIONS:

- A. That first, second, and third reading be given to Bylaw No. 5830, 2000, Delta's Development Cost Charges Bylaw (Attachment A);
- B. That Bylaw No. 5830 be forwarded to the Ministry of Municipal Affairs and Housing, Inspector of Municipalities, for approval;
- C. That staff advertise notices of the proposed DCCs in the local newspapers; and
- D. That this report be referred to the local greenhouse growers association, Delta Farmers Institute (DFI), BC Horticultural Coalition, and the Ministry of Agriculture, Food and Fisheries for their information.

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS:

I support the recommendations.

PURPOSE:

The purpose of this report is to describe the amendments to Delta's Development Cost Charges Bylaw necessary to incorporate intensive agriculture, and to obtain three readings of the proposed bylaw prior to forwarding Bylaw No. 5830 to the Ministry of Municipal Affairs and Housing, Inspector of Municipalities, for approval.

BACKGROUND:

At the April 4, 2000 Regular Meeting of Council the following resolution was adopted by Council:

THAT WHEREAS Delta conducted an extensive review of the DCC bylaw in 1998; and

WHEREAS the initial review included DCC's for intensive agriculture with respect to roads and water totaling approximately \$21,000/hectare of building area; and

WHEREAS the Council of the day upon representation by the agriculture community deleted that portion of the DCC bylaw; and

WHEREAS concerns with the effect of intensive agriculture remain very high in Delta; and

WHEREAS recent consultations, attempting to seek a compromise between the agriculture community and the environmental community, have not been as successful as anticipated; and

WHEREAS intensive agriculture takes away habitat for wildlife purposes that could otherwise be available; and

WHEREAS it is generally accepted that land for habitat purposes should be provided by the community as a whole;

THEREFORE BE IT RESOLVED that staff bring back a revised DCC bylaw as soon as possible incorporating intensive agriculture into the existing bylaw. This would result in a DCC bylaw which would include a roads and water component as originally anticipated and also a parks acquisition component to provide lands for habitat purposes.

Council Policy:

Bylaw No. 5600, 1998 imposes Development Cost Charges (DCCs) for all projects requiring a building permit or subdivision approval in Delta, except for agricultural uses.

DISCUSSION:

During the 1998 DCC review staff presented a draft Discussion Paper to Council at an Information Workshop on January 27, 1998. This Discussion Paper presented a number of significant proposed

changes to Delta's DCCs. An intensive agricultural DCC was discussed with Council at that time. Following the Information Workshop further public workshops were arranged describing the full impact of the proposed changes to the DCC Bylaw and a detailed review of how the DCC rates were established. This was the first time in Delta's history a fully transparent DCC process was utilized prior to presenting proposed DCC Bylaws.

As a result of this transparent process, a number of letters were received by Council objecting to the imposition of DCCs for intensive agricultural projects. Copies of these letters are included in Attachment B. Council subsequently instructed staff to remove all references and projects relating to intensive agriculture, and bring forward a bylaw for readings. Council requested staff to defer implementation of intensive agriculture DCCs until further discussions took place with the agriculture industry. In conjunction with extensive discussions with the local greenhouse growers, DFI, and the BC Horticultural Coalition regarding engineering servicing standards for greenhouse projects, DCCs for intensive agricultural projects were generally discussed.

The proposed DCC Bylaw has not been discussed with the agricultural industry. Staff have prepared a revised DCC Background Report - June 30, 2000 to provide details with respect to the DCC rate calculations, assumptions, and DCC Projects List (Attachment C).

Some issues relative to incorporating intensive agriculture in Delta's DCC Bylaw are outlined below.

Impact on Delta's Infrastructure

The Council motion outlines DCCs to include roads, water and parks acquisition for habitat purposes. Upon further review by staff, drainage has also been incorporated into the proposed bylaw. Parks acquisition for habitat purposes has not been addressed within this bylaw, and staff propose a separate second DCC Bylaw to address this issue. Due to the uniqueness of this issue, staff plan to present a Discussion Paper on a nature reserve DCC to Council this fall. This type of DCC Bylaw is unique to British Columbia, and as such, requires an evaluation of need and equivalency factors prior to preparation of a proposed bylaw.

Staff have included drainage as upgrades to the Oliver Pump-Station and a new Centre Ditch Pump-Station will be required to accommodate additional run-off generated by greenhouses in East Ladner. The equivalency factor calculation considers the onsite detention requirements recently established for greenhouses.

Definition for Intensive Agriculture

During the 1998 DCC Bylaw review some concerns were expressed relative to the definition for “intensive agriculture” to be used within the DCC Bylaw. DFI has recently forwarded a letter to Council (Attachment B) describing concerns relative to a definition for intensive agriculture. The proposed definition within Bylaw No. 5830 is:

“projects shall include greenhouses, retail nurseries, manufacturing and processing plants for agriculture related products, facilities used for intensive livestock operations and commercial businesses. Produce stands, temporary uses (less than 6 months) and retail less than 100 m² shall not be considered intensive agriculture”.

All agricultural operations which are not included within this definition shall not be assessed DCCs. By narrowing the definition of intensive agriculture, most agricultural projects would not be assessed DCCs.

It is important to note other bylaws, such as a zoning bylaw, could utilize different definitions for intensive agriculture. The intent of the DCC Bylaw definition is to only assess those projects with a demonstrable impact on our municipal infrastructure.

Precedent Setting

Agricultural DCCs are not commonplace in British Columbia. Staff are aware of only one instance where DCCs are consistently applied to agricultural projects. The City of Abbotsford assesses a regional water DCC for all agricultural projects greater than \$60,000. No other agricultural DCCs are assessed in Abbotsford. Staff have confirmed the Ministry of Municipal Affairs, Inspector of Municipalities, intends to process Delta’s proposed DCC Bylaw on its own merits and not refer it to the Ministry of Agriculture, Food and Fisheries for endorsement.

Scattered Nature of Agricultural Development

Intensive agricultural projects are permitted under Delta’s A1 zoning, which is the common designation for land uses within the agricultural regions of Delta. As a result intensive development can occur in a scattered and widely distributed area within Delta. This broad variation in location creates difficulties for the Engineering Department to plan and maintain adequate infrastructure to accommodate agricultural industry needs. An attempt has been made to target DCC projects based on the locations of current greenhouse projects, however a building application may still require completion of offsite infrastructure, primarily water main construction, in order to satisfy the needs and servicing standards at a specific location. This could result in projects contributing towards significant offsite construction, in addition to DCCs. Under the proposed bylaw the DCCs assessed for a typical 10 hectare greenhouse project (one phase), would be

\$231,030.

Community Planning and Development Department:

The imposition of DCCs on intensive agricultural projects has been a contentious issue within the community since staff first introduced this initiative in January, 1998. Staff believe it is appropriate to create two separate DCC bylaws, in order to address the effect of establishing a nature reserve fund as an independent process.

The attraction of the agricultural processing industry has been seen as an important component of the economic development strategy, and as a means to support soil based farming. Clause 5(d) of the bylaw does exempt development from DCCs for projects which do not impose a new capital cost burden on the municipality. It is hoped that most on farm processing, such as local wineries for example, would fall within this exemption.

Community Implications:

The proposed bylaw has not been specifically discussed with any community group, stakeholders, or the agricultural industry. This current DCC review has been limited to incorporating a new DCC category for intensive agriculture, and updating the DCC Projects List. The proposed DCC Bylaw utilizes the same principles and procedures as Delta's current DCC Bylaw No. 5600. In addition the DCC rates for most land use categories are slightly lower than the current DCC Bylaw rates.

The DFI, BC Horticultural Coalition, local greenhouse growers, and the Ministry of Agriculture, Food and Fisheries have been aware of the proposed DCC Bylaw amendment, since the Council resolution of April 4th. There have been a number of informal discussions with industry representatives in a general way, and extensive reporting in the local print media. Some electronic media coverage has also assisted in providing a province wide general awareness of this initiative; however the specific proposed bylaw has not been discussed.

Financial Implications:

The adoption of the proposed DCC Bylaw, based on growth projections in the DCC Background Report, could generate an additional \$460,000 annually over the current DCC rates, primarily attributable to intensive agricultural projects.

CONCLUSION:

Staff believe the proposed rate structure is reasonable, fair and equitable to all developers and taxpayers in Delta. This DCC Bylaw review has been limited to incorporating intensive agricultural projects and updating the DCC Projects List. The proposed DCC rates are similar to the current DCC rates for all other land use categories.

Rob Wilson, P.Eng.
A/Director of Engineering

Department submission prepared by: Bob Twerdoff, P.Eng., MBA

This report has been prepared in consultation with the following listed departments.

Concurring Departments		
Department	Name	Signature
Community Planning & Development	Judy McLeod	
Parks & Recreation	D. Kalinovich	
Finance Department	K. Preuss	
Municipal Solicitor	Greg Vanstone	

ATTACHMENTS:

- A:** Bylaw No. 5830, Development Cost Charges
- B:** Various letters pertaining to agricultural DCCs
- C:** DCC Background Report - June 30, 2000