

Bylaw No. 0866, 2009
Official Community Plan
Electoral Area G

Not For Legal Purposes

RECORD OF AMENDMENTS

Official Community Plan
Electoral Area G

Bylaw No	Type of Amendment		Summary of Amendment	Date of Adoption
	Text ✓	Map ✓		
FVRD 0866, 2009			Base Bylaw – REPEALS DARD BL 436, FVRD BL 584 and amendments	2009 04 28
1266, 2014	✓		Riparian Areas	2014 05 27
1278, 2014		✓	Rural to Institutional	2015 02 24
1487, 2018		✓	Limited Use to Industrial- 38447 Bell Rd	2019 02 26
1668, 2022	✓		Omnibus Amendment re Regional Consolidated Zoning Bylaw 1638, 2021	2022 10 27

See Next Page for Prior History

Deroche-Lake Errock-Nicomen

STATUTORY AUTHORITY	Type of Amendment		SUMMARY	DATE AUTHORIZED
	Text	Map		
Deroche-Lake Errock OSP - REPEALED by DARD BL 0436-1986				
DARD BL 159-1978			Deroche-Lake Errock OSP	1979-12-19
234-1980	✓		Floodplain regulations	1981-11-25
385-1984	✓		Policy Guidelines and Land Use Designations	1985-03-27
397-1984		✓	Institutional to Rural Residential	1985-04-24
Deroche-Lake Errock-Nicomen OCP - REPEALED By FVRD BL 0866, 2009				
DARD BL 436-1986			Deroche-Lake Errock-Nicomen OCP	1987-01-28
584-1992????				
628, 1993		✓	Institutional Designation	1993-12-22
FVRD BL 0048, 1996		✓	Rural 1 to Institutional	1998-03-24
0219, 1998	✓	✓	Temporary use permit policies, maps	1999-10-26

Sumas Mountain, Area H OCP

STATUTORY AUTHORITY	Type of Amendment		SUMMARY	DATE AUTHORIZED
	Text	Map		
FVRD BL 0584, 2003			Sumas Mountain, Area H OCP REPEALED By FVRD BL 0866, 2009	2004-10-26

FRASER VALLEY REGIONAL DISTRICT

Bylaw No. 0866, 2008

A Bylaw to Adopt the Official Community Plan for Electoral Area “G”

1. CITATION

This bylaw may be officially cited for all purposes as “Fraser Valley Regional District Official Community Plan for Electoral Area “G” Bylaw No. 0866, 2008”.

2. AREA OF APPLICATION

This bylaw shall apply to the areas shown on the map attached hereto as Schedule 0866-A Official Community Plan Boundary which forms an integral part of this Bylaw.

3. SCHEDULES

- a) “Fraser Valley Regional District Official Community Plan for Electoral Area “G” Bylaw No. 0866, 2008” is comprised of the following:

Schedule 0866-A	Official Community Plan Boundary
Schedule 0866-B	Official Community Plan which includes text, maps, tables, figures, and the following schedules:
Schedule 1	Boundary of the Plan Area
Schedule 2	Area Designations
Schedule 3	Parks
Schedule 4	Development Permit Area 1-G
Schedule 5	Development Permit Area 2-G

- b) The Schedules listed in Paragraph 3(a) are an integral part of this bylaw.
- c) If any schedule, section, subsection, sentence, clauses or phrase of this Bylaw is for any reason held to be invalid by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Bylaw.
- d) Upon adoption by the Regional Board, the Schedules listed in Paragraph 3(a), signed by the Chairman and Secretary, constitute the Official Community Plan applicable within Electoral Area “G” of the Fraser Valley Regional District as outlined on Schedule 0866A Official Community Plan Boundary.

4. REPEAL & AMENDMENT

- a) Dewdney-Alouette Regional District Deroche-Lake Errock-Nicomen Official Community Plan By-law No. 436-1986, as amended, is hereby repealed.
- b) Fraser Valley Regional District Official Community Plan for Electoral Area “H”, Sumas Mountain, Bylaw No. 0584, 2003 is hereby repealed.
- c) Dewdney-Alouette Regional District Dewdney-Hatzic Lake Official Community Plan Bylaw No. 478-1988, as amended, is hereby amended by repealing all text, maps and references in the said Bylaw only as they pertain to Electoral Area “G” of the Fraser Valley Regional District as outlined on Schedule 0866A. In all other respects, Dewdney-Alouette Regional District Dewdney-Hatzic Lake Official Community Plan Bylaw No. 478-1988, as amended, shall remain in full force and effect.

5. READINGS & ADOPTION

READ A FIRST TIME THIS 30h DAY OF SEPTEMBER, 2008

A PUBLIC HEARING WAS HELD ON THE 14th DAY OF OCTOBER, 2008

READ A SECOND TIME THIS 28th DAY OF OCTOBER, 2008

READ A THIRD TIME THIS 28th DAY OF OCTOBER, 2008

APPROVED BY THE MINISTER OF COMMUNITY SERVICES THIS 1st DAY OF APRIL, 2009

ADOPTED THIS 28th DAY OF APRIL, 2009

Chairman/Vice-Chairman

Administrator/Deputy

6. CERTIFICATIONS

I hereby certify the foregoing to be a true and correct copy of Fraser Valley Regional District Bylaw No. 0866, 2008 as read a third time by the Board of Directors on the XXth day of XXXXXX, 2008. Dated at Chilliwack, BC this XXth day of XXXXXX, 2008.

I hereby certify that this a is true and correct copy of Bylaw No. 0866, 2008 adopted by the Board of Directors of the Fraser Valley Regional District on the XXth day of XXXXXX, 2008. Dated at Chilliwack, BC this XXth day of XXXXXX, 2008.

Administrator / Deputy

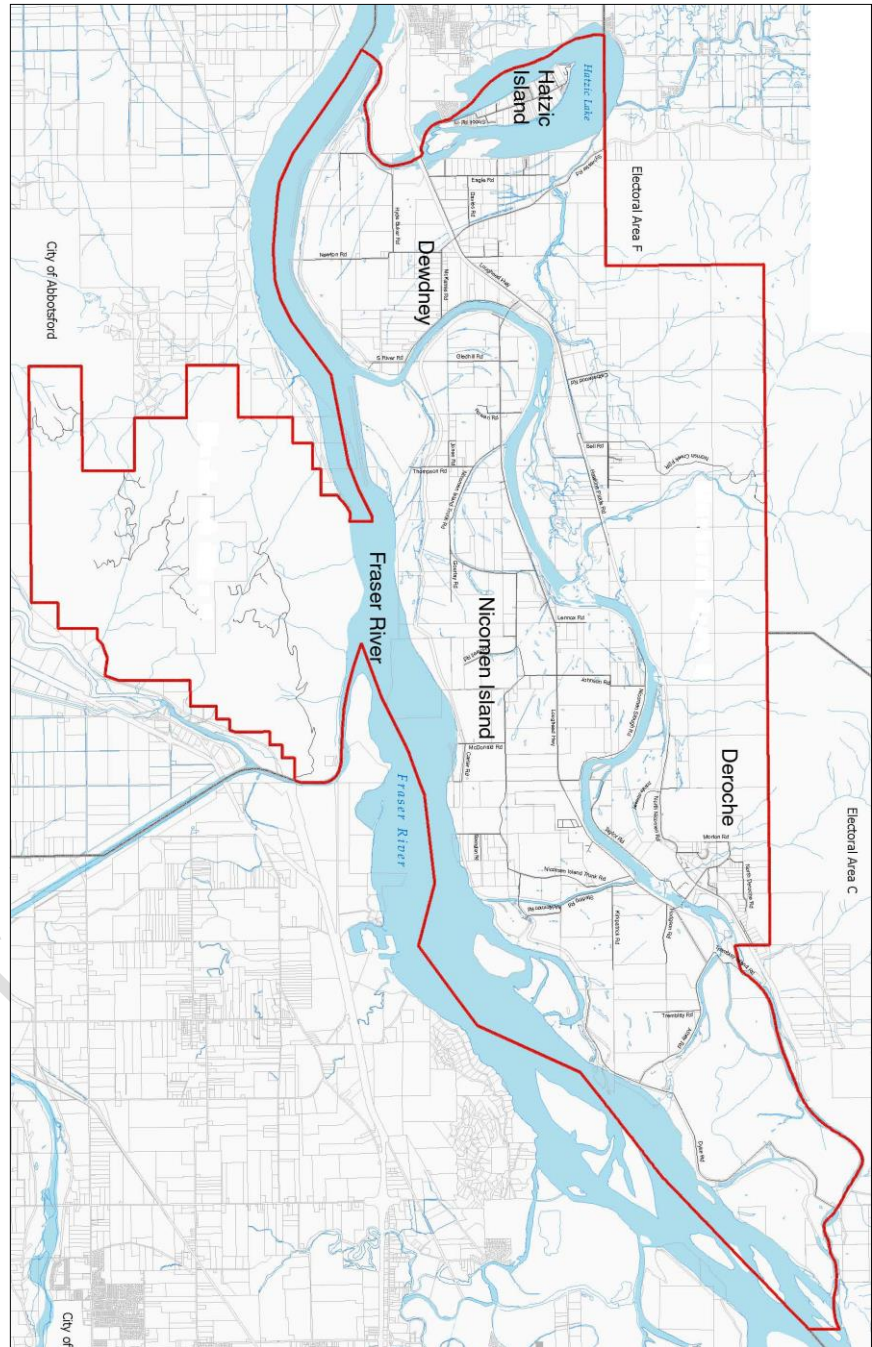
Administrator / Deputy

**FRASER VALLEY REGIONAL DISTRICT
OFFICIAL COMMUNITY PLAN FOR ELECTORAL AREA "G"
BYLAW No. 0866, 2008**

**Schedule 0866-A
Official Community Plan
Boundary**

LEGEND

-  Electoral Area G"
-  Official Community Plan Boundary



THIS IS OFFICIAL COMMUNITY PLAN SCHEDULE 0866-A ATTACHED TO AND AN INTEGRAL PART OF FRASER VALLEY REGIONAL DISTRICT OFFICIAL COMMUNITY PLAN FOR ELECTORAL AREA "G" BYLAW No. 0866, 2008.

Chair/Vice Chair

Administrator/Deputy



**Fraser Valley Regional District
Official Community Plan for Electoral Area “G”
Bylaw No. 0866, 2008**

SCHEDULE 0866-B

OFFICIAL COMMUNITY PLAN

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1.0 PLAN PURPOSE AND STRUCTURE

Since the late 1980's, the Official Community Plan policies for Electoral Area "G" were provided in two separate documents;

- *Dewdney-Alouette Regional District Dewdney-Hatzic Lake Official Community Plan Bylaw No. 478-1988*"; and,
- *Dewdney-Alouette Regional District Deroche-Lake Errock-Nicomien Official Community Plan Bylaw No. 436-1986*".¹

The Dewdney-Alouette Regional District plans have served the community well for many years. However, they are due for comprehensive updates and consolidation to reflect current community values, legislation, and development trends.

On July 8, 2008, Province of British Columbia Order in Council No. 566 came into effect. It amalgamated settlement lands within Electoral Area "H" (Sumas Mountain) with the City of Abbotsford and placed the remainder - about 2,100 hectares of crown land – within Electoral Area "G".² As a result, this Plan was amended at a late stage to incorporate policies with continuing relevance from the *Official Community Plan for Electoral Area "H" Bylaw No. 0584, 2004* so that one Plan would apply to all of the electoral area. Due to time constraints, integration of policies from the EA "H" plan into this document has been done in a functional manner, but not always gracefully. In all cases, the integrity of the policies was maintained.

1.1 Purpose of the Official Community Plan

Official community plans (OCPs) are defined by the Local Government Act as broad statements of objectives and policies which guide planning and land use management decisions. OCPs are forward-thinking and provide strategic direction on land use and community matters and policy respecting future land use. It reflects community values and goals. In contrast, zoning bylaws establish current regulations for the use of land and the siting of uses and structures. As legislation and community values change, the Plan may require amendments to remain current.

The Official Community Plan for Electoral Area "G" must meet the content requirements for OCPs established in the Local Government Act (s. 877), including:

- a. An official community plan must include statements and map designations for the area covered by the plan respecting the following:
 - i. the approximate location, amount, type and density of residential development required to meet anticipated housing needs over a period of at least 5 years;
 - ii. the approximate location, amount and type of present and proposed commercial, industrial, institutional, agricultural, recreational and public utility land uses;
 - iii. the approximate location and area of sand and gravel deposits that are suitable for future sand and gravel extraction;
 - iv. restrictions on the use of land that is subject to hazardous conditions or that is environmentally sensitive to development;

¹ In 1996, Dewdney-Alouette Regional District amalgamated with the Central Fraser Valley Regional District and the Regional District of Fraser-Cheam to form the present day Fraser Valley Regional District.

² The extension of the City of Abbotsford boundary came into effect on July 8/08. The 'remainder' of EA "H" will become a part of Electoral Area "G" on December 8, 2008.

- v. the approximate location and phasing of any major road, sewer and water systems;
 - vi. the approximate location and type of present and proposed public facilities, including schools, parks and waste treatment and disposal sites;
 - vii. other matters that may, in respect of any plan, be required or authorized by the minister.
- b. An official community plan must include housing policies of the local government respecting affordable housing, rental housing and special needs housing.

The Local Government Act (s. 878) also permits official community plans to include:

- a. policies of the local government relating to social needs, social well-being and social development;
- b. a regional context statement, consistent with the rest of the community plan, of how matters dealt with in the community plan apply in a regional context;
- c. policies of the local government respecting the maintenance and enhancement of farming on land in a farming area or in an area designated for agricultural use in the community plan;
- d. policies of the local government relating to the preservation, protection, restoration and enhancement of the natural environment, its ecosystems and biological diversity; and,
- e. objectives respecting matters not within the jurisdiction of the local government.

1.2 Effect of the Plan

In accordance with the provisions of the Local Government Act, the Regional Board is required to comply with the policies of the Official Community Plan as follows:

- a. a zoning bylaw enacted prior to the effective date of this Plan is not altered by this Plan. Where such a bylaw is amended, the amending bylaw must be consistent with the provisions of the Official Community Plan.
- b. in accordance with Section 884(1) of the Local Government Act, the adoption of this Plan does not commit the Regional Board or any other governmental body to undertake any project outlined herein, nor authorize the Regional Board or any other governmental body to proceed with a project except in accordance with the procedures and restrictions laid down by any Act.
- c. in accordance with Section 884(2) of the Local Government Act, all bylaws enacted and works undertaken by the Regional Board shall be consistent with the Official Community Plan.
- d. Consolidated Zoning Bylaw: The Board intends on consolidating and updating all nine zoning bylaws within the Regional District for the limited purposes of creating one new, more user-friendly, region-wide consolidated Zoning Bylaw applicable to all electoral areas. It is a policy of the Regional District that this Plan facilitates that zoning bylaw consolidation including by not requiring that all regulations applicable to each property and each zone implement fully the policies and land use designation of this Plan. While an objective of the consolidation is to avoid significantly altering the regulations applicable to any particular parcel of land or zone, there will inevitably be different

regulations in certain instances as the current zoning bylaws were adopted between 1976 and 1992, and many similar zones can and should be consolidated. Where similar zones have different regulations, it is generally intended the most permissive would apply, and permitted land uses would not be taken away with the consolidation, which may result in land uses becoming available after the consolidation. Therefore, OCP Policies in this Plan, including land use designations and zone categories, permitted uses, densities, and subdivision regulations for the creation of new parcels, are, where necessary to achieve consistency, expanded to include the existing regulations under the various zoning bylaws and the new consolidated zoning bylaw. For certainty, these accommodations are limited to the Consolidated Zoning Bylaw Project and the situation where the existing zoning of a property or new consolidated zoning bylaw permits a use, density, or other development regulation different than otherwise identified in this Plan; by virtue of this provision, this Plan incorporates and permits those zoning regulations for that property such that there is no inconsistency with this Plan. Also, lands that have no zoning, may continue as such in the new zoning bylaw. However, all subsequent amendments to the new zoning bylaw must be consistent with this Plan without recourse to this policy. [Bylaw No. 1668, 2022]

A legally established land use which does not conform to the zoning bylaws may be rezoned to render it conforming regardless of the use policy for the area designation in which it is located, provided that rezoning applies only to that portion of the parcel in which the nonconforming use is situated and is otherwise in accordance with the policies of this Plan. Section 5.7 of this Plan addresses legally non-conforming uses and siting.

1.3 Plan Area Location and Boundaries

Electoral Area “G” is primarily located east of the District of Mission on the north side of the Fraser River. It is bounded by the District of Mission in the west, the Fraser River and the City of Abbotsford to the south, the lower slopes of Dewdney and Nicomen Peaks to the north and Nicomen Slough in the east. The settlement communities of Electoral Area “G” are located along the Lougheed Highway. These settlement areas include Hatzic Lake, Dewdney, Nicomen Island, and Deroche.

The boundary of Electoral Area “G” was altered by Province of British Columbia Order in Council No. 566. As of December 8, 2008, Electoral Area “G” will include crown lands on Sumas Mountain south of the Fraser River and adjacent to the City of Abbotsford.

Activities in upper watersheds which drain through the Plan area, but are not within it, may have significant effects on settlement in Electoral Area “G”. In these instances, the Plan contains policies intended to address possible affects on lands and people within the Plan area.

The boundaries of this OCP area are shown on *Schedule 1 – Boundary of the Plan Area*.

It is the policy of the Regional Board that:

- 1.3.1 This Plan shall apply within the boundaries established in *Schedule 1 – Boundary of the Plan Area*.

1.4 Planning Process

The preparation of this Official Community Plan involved extensive consultation with Electoral Area “G” residents, government agencies, First Nations and others, including:

- a public information meeting on June 25, 2003 to launch the planning process and present overview geotechnical hazard mapping;³
- a newsletter and survey mailed to all households in the Plan area;
- early and ongoing consultation with government agencies and First Nations;
- extensive dialogue with an Advisory Planning Commission (APC) comprised of local residents;
- a community discussion forum regarding the Deroche Bench held on February 26, 2004; and,
- open houses and public hearing prior to plan adoption.

Consultation efforts were guided by the Consultation Strategy adopted by the Regional Board in November, 2003. Additional details about some components of the planning process are provided below.

Advisory Planning Commission

Pursuant to s.898 of the Local Government Act, an Advisory Planning Commission (APC) consisting of nine local residents and a representative of the Leq'á:mel First Nation was established by *FVRD Bylaw No. 511, 2002* to guide the development of the Plan. APC members were appointed by the Regional Board with the intention of providing even geographical representation. The APC met fourteen times between September 2003 and June 2008 to consider the details of the Plan.

Community Planning Survey

In 2004, a *Community Planning Survey* was mailed to all households in Electoral Area “G”. The survey asked common questions related to water systems, recreation facilities, a regional trail system and the importance of fish and wildlife habitat protection. However, the surveys also asked questions specific to the individual community. For Deroche, the survey focused on questions about land use planning; for Dewdney/Nicomien, the focus was waste collection service and farming; for Hatzic Lake, the focus was sewage and issue identification.

Each of the surveys was mailed out to all known addresses in January, 2004. The surveys included a stamped return envelope to facilitate replies. Of the total 1,125 surveys mailed out, 17.2% were returned. Table 1-A summarizes the return rate for the three communities.

³ The meeting was advertised in two editions of the Mission City Record and held at the Deroche Community Hall.

Community	# Mailed Out	# Completed	% Return Rate
Deroche	128	38	29.7%
Hatzic Island	493	78	15.8%
Dewdney - Nicomen	504	78	15.5%
Total	1,125	194	17.2%

The analysis of survey results focused on qualitative observations expressed as simple percentage relationships rather than quantitative methods due to the low numbers of returns and the structure of survey questions.

The main themes that emerged from survey responses were:

- Electoral Area “G” residents place very high value on the natural environment. About 82% of survey respondents place great importance on the protection of the habitat for fish and wildlife. Of note, more than 90% of the respondents from Dewdney-Nicomen and Deroche feel that the protection of habitat for fish and wildlife should be the first priority or a high priority. With regard to park facilities, respondents favour wilderness/natural areas.
- Maintenance of the rural landscape and lifestyle is of primary importance.
- Flood protection is important to all respondents.

The surveys asked about water systems. About 83% of survey respondents use private sand points or wells for their water supply. Seventy one percent of respondents are satisfied with their water systems. Hatzic Islanders reported the lowest level of satisfaction with their drinking water. Only 60% were satisfied. Concerns with insufficient quantity, poor taste, offensive colour or odour, and bacterial contamination were reported.

Residents of Deroche, Dewdney and Hatzic Island expressed different opinions about what they liked best, what they thought was the worst and what could be done to improve their community. Deroche respondents feel strongly about the rural nature of the area and value the natural environment. The Dewdney-Nicomen Island community emphasized flood protection and drainage improvement. Hatzic Island respondents overwhelmingly identified recreational opportunities, the rural atmosphere and the area's natural beauty as the best attributes of their community.

Open Houses and Public Hearing

After the Plan received first reading from the Regional Board, ‘open houses’ were held in Deroche and Dewdney to present the plan to residents and interested parties. The ‘open house’ format provided a casual atmosphere and opportunities for questions and discussion with individuals or small groups. Notice of the open houses was bulk mailed to all households within the Plan area and sent by addressed mail to non-resident property owners.

The public hearing for Official Community Plan for Electoral Area “G” Bylaw No. 0866, 2008 was held on August 13, 2008. Notice of the public hearing was provided in accordance with *FVRD Procedures Bylaw No. 0831, 2007* and the requirements of the Local Government Act. A

second public hearing was necessitated by the decision to integrate policies from the Official Community Plan for Electoral Area “H” into this Plan. It was held on October 14, 2008.

1.5 Plan Structure and Interpretation

In this Official Community Plan, plan policies are numbered and clearly identified. They follow the phrase, “it is the policy of the Regional Board that”. Policies are often preceded by a discussion which is intended only to provide the reader with context. Discussions are brief summaries only and are not comprehensive. They do not constitute plan policies and must not be interpreted as complete statements of the intention of the Regional Board with respect to the policies that follow them. Ultimately, plan policies stand on their own.

Particular attention should be given to the wording of the Regional Board policies contained in the Plan:

- “**shall**” describes an imperative course of action which is within the scope of the Regional Board’s powers to provide, enact, regulate or enforce;
- “**should**” describes a desirable course of action to be taken by the Regional Board or other body or person;
- “**may**” describes a permitted course of action which is available to the Regional Board or other bodies or persons; and,
- “**will**” describes a result to be expected on the basis of present information.

This Plan contains both *Schedules* and *Maps*. Schedules contain official designations of the Regional Board including area designations, current and potential parks and development permit areas. Schedules will be updated and amended as required. Maps display information that is useful in understanding Plan policies. Maps are unlikely to be updated; data shown on Maps may become out-of-date.

Terms in bold print are generally defined in the Section 17 of the Plan.

It is the policy of the Regional Board that:

- 1.5.1 In this Plan, only statements clearly identified as policies of the Regional Board should be understood as Plan policies. Plan policies stand on their own as expressions of the Regional Board.
- 1.5.2 Discussions, or non-policy statements, within the Plan are brief summaries provided for context only. They do not constitute plan policies and must not be interpreted as complete statements of the intention of the Regional Board with respect to the policies that follow them.

1.6 Review and Amendment

From time to time, this Official Community Plan may be amended to allow for a development or project of major significance or a series of development proposals which warrant revision of the policies within the Plan. The Plan may be amended through two procedures. First, applications for rezoning to permit developments that are inconsistent with the OCP shall be accompanied by applications for Plan amendments. The Board may reject the applications or initiate Plan review and amendment procedures in accordance with the provisions of the Local Government Act and *FVRD Development Procedures Bylaw No. 0831, 2007*. Secondly, the Board may periodically initiate review and amendment of the Plan where warranted by development trends, new information regarding natural hazards, or at the request of local, provincial or federal governments. In any case, it is important that the Plan policies and objectives reflect the community interests. To remain current, the Plan should be updated every five to eight years. All Plan reviews should be substantially justified by new circumstances and provide ample opportunity for public input.

It is the policy of the Regional Board that:

- 1.6.1 The Official Community Plan should be reviewed at intervals not exceeding eight years and this review should be followed by appropriate amendments to guide development and land use for the following five to eight years.
- 1.6.2 The Official Community Plan may be reviewed and amended where deemed necessary by the Board only after consultation and public hearing and in accordance with the provisions of the Local Government Act.
- 1.6.3 All rezoning applications which are inconsistent with the Official Community Plan shall be accompanied by applications for amendment to the Plan.
- 1.6.4 Applications for amendments to the Plan may be made to the Regional Board, in accordance with the provisions of the Local Government Act and *FVRD Development Procedures Bylaw No. 0831, 2007*, and *FVRD Development Application Fees Bylaw No. 0050, 1996*.
- 1.6.5 *FVRD Development Procedures Bylaw No. 0831, 2007* permits the Regional Board to defer Plan amendment applications. The Board may give particular consideration to deferring applications for major amendments to the Plan – especially amendments to facilitate developments or land uses which are particularly complex, require services not provided for in the Plan, or involve uses not contemplated within the Plan area - until a broader Plan amendment and consultation process can be undertaken. Additionally, the Board may wish to consider such Plan amendment applications separate from any related zoning amendment applications.

1.7 Consultation

Implementation of the Official Community Plan depends upon community support and co-operation. The Regional Board will endeavor to maintain and improve opportunities for public consultation on planning and development matters. Policies within this Plan reinforce the Regional Board's commitment to open discussion and local involvement in community development. Property owners and residents are encouraged to consult with Regional District staff and Board members on issues that affect the community.

Section 879 of the Local Government Act outlines requirements for consultation with affected parties and specified groups and organizations during the development, amendment or repeal of an Official Community Plan. These requirements may be seen as a baseline; consultation respecting major plans or developments will often be fuller than the minimum required under the Act.

Electoral Area "G" shares a border with the District of Mission and Electoral Areas "C" and "F" on the north shore and the City of Abbotsford on Sumas Mountain. There is a clear need for the north shore electoral areas to coordinate land use, services, parks and other matters with the District of Mission. As well, developments on Crown land on Sumas Mountain should be coordinated with the City of Abbotsford.

The Leq'á:mel First Nation, Sumas First Nation and Stó:lō Nation also have interests which may potentially be impacted by land use regulation and planning in Electoral Area "G". Lands on the north shore of the Plan area are used by members of the Leq'á:mel First Nation for traditional activities such as hunting, gathering and ceremonial duties. Lands on Sumas Mountain are used by members of the Sumas First Nation for traditional activities such as hunting, gathering, and ceremonial duties. There are several documented First Nations archeological sites within the Plan area and high likelihood of undocumented sites.⁴ As well, all or parts of Electoral Area "G" may be subject to aboriginal title claims.

For these reasons, the Regional District should consider the potential affects of land use plans and development approvals on the interests of First Nations as well as appropriate means of consultation. This Plan contains policies supporting the inclusion of First Nations in community planning processes for Electoral Area "G". Consultation regarding land use matters may also be seen as an avenue for increased cooperation, understanding, and dialogue between First Nations and the Regional District and a basis for 'good-neighbour' relations.

It is policy of the Regional Board that:

- 1.7.1 Consultation during the development, amendment or repeal of this official community plan will meet and often exceed the requirements of Section 879 of the Local Government Act. Consultation should be commensurate with the scope of the change contemplated.
- 1.7.2 Property owners and residents are invited to meet privately or in groups with Regional District staff and Board members to discuss individual or local concerns.

⁴ Further discussion and policies related to archaeological resources are outlined in Section 10 of this Plan.

- 1.7.3 Regional District staff will, where requested, assist in coordinating discussions between property owners and residents, school districts and Provincial agencies on matters of land use, roads and services.
- 1.7.4 The District of Mission and the City of Abbotsford shall be consulted respecting amendments to this Plan that may affect their interests. The scope and form of consultation shall be determined by the Regional Board and informed by discussion with the municipalities.
- 1.7.5 Leq'á:mel First Nation, Sumas First Nation and Stó:lō Nation shall be consulted respecting amendments to this Plan that may affect their interests. The scope and form of consultation shall be determined by the Regional Board and informed by discussion with First Nations.
- 1.7.6 Leq'á:mel First Nation, Sumas First Nation and Stó:lō Nation are encouraged to consult with the Regional District on matters that may affect the land and residents of Electoral Area "G".

1.8 Implementation

The policies of the Plan may be implemented in a number of ways. Policies respecting matters within the jurisdiction of the Regional District can be implemented through the subdivision and development control process, including zoning bylaws, subdivision standards, and the issuance of permits. The Plan also contains advocacy policies which relate to matters that are the jurisdiction of provincial agencies or other authorities. These policies may be implemented or advanced through liaison with the responsible authority, including referral responses. Moreover, this Plan may be taken by the Subdivision Approving Officer as a statement of the public interest.

It is the policy of the Regional Board that:

- 1.8.1 The policies of this Plan will be implemented by the Regional Board in a variety of ways, including subdivision and development control, servicing decisions and policy approaches. Plan policies which relate to matters that are the jurisdiction of provincial agencies or other authorities will be advanced through liaison, advocacy and referral responses.
- 1.8.2 This Plan may be taken by the Subdivision Approving Officer as a statement of the public interest.
- 1.8.3 The policies of this Plan, including minimum parcel sizes, should be considered and addressed in subdivision approval processes. Where this Plan establishes an Area Designation and/or parcel size policy that differs from zoning, the conditions identified in the Plan should be addressed.

2.0 HISTORY AND DEVELOPMENT OF THE PLAN AREA

2.1 A History of the Plan Area to 1930 (North of the Fraser River)⁵

Glaciation

The physical landscape of the lower Fraser Valley, including Electoral Area “G”, was shaped by the advance and retreat of ice and glacial melt water during the last ice age. 15,000 years ago the landscape of what is now Electoral Area “G” was radically different. The lower Fraser Valley was covered with a singular ice sheet up to 1600 metres thick; only the highest mountain peaks remained uncovered. Dewdney Peak and Nicomen Peak were likely buried in the glacier. The Fraser River did not exist. Sea level was, in turns, much higher and lower than it is today, partly owing to the mass of ice weighting the land down and the great volume of water held in the glaciers. About 13,000 years ago this enormous glacier began melting. The ice receded first from the tributary valleys, then from the Fraser Valley. The Lower Fraser was largely ice free by 10,000 years ago.⁶ Exposed lands were quickly colonized by plants, animals then humans.

The Fraser River was created by melt water from the vast glacial ice covering most of British Columbia. The ice also shaped the hillsides on each side of the river. As the ice advanced, retreated and melted, it reworked the slopes by scouring surface materials and bedrock in some areas and depositing great volumes of material in others.

Westward moving ice scoured the mountain front that borders Electoral Area “G” at the north leaving exposed bedrock and a typically thin and discontinuous layer of glacial soils. These thin, unconsolidated soils are susceptible to erosion.⁷ Much of this soil was transported to the lower elevations in large pre-historic debris flows and landslides more than 4,500 years ago.

As the glacier retreated, melt water flowing along the valley side in contact with wasting ice on the valley floor deposited thick, bouldery glacial sand and gravel in 20 to 40 m high terraces in the areas surrounding the settlement of Deroche.⁸

By 4500 years ago, the physical landscape we know today was largely formed. Sea level was near its present state and the rate of geological processes like landslides and debris flows began to slow. Although they have slowed, processes of soil transport continue. Debris flows, floods and landslides continue to move glacial soils from upper slopes to the valley bottom. Consideration of these processes is central to land use planning in Electoral Area “G”.

First Nations Settlements⁹

As the glacial ice receded and the land colonized by plants and animals, areas of the Lower Fraser became suitable for human habitation. “The physical presence of aboriginal people within the deglaciated landscape can be traced back approximately 10,000 years through the

⁵ This history does not address the portion of the Plan area on Sumas Mountain south of the Fraser River.

⁶ WH Mathews, *From Glaciers to the Present. The Fraser's History from Glaciers to Early Settlement*. Burnaby Historical Society, 1977.

⁷ particularly when the vegetation cover and associated root mass is lost, from logging for example

⁸ Thurber Engineering LTD. *Area G Official Community Plan (Hatzic Lake to Deroche) Geotechnical Hazard Overview*. September 21, 2004.

⁹ This section is drawn from David Schaepe, *Origins: The First Peopling of S'ólh Téméxw. A Sto:lo Coast Salish Historical Atlas*. K. T. Carlson, Ed.. Douglas & McIntyre, Sto:lo Heritage Trust, 2001.

archaeological record... The Stó:lō explain that their occupation began with the arrival of sky-born beings and through the transformation of ancestral animals and fish, such as the mountain goat, beaver and sturgeon. They express their original connection with the land through such phrases as, ‘we have always been here,’ or, ‘we have been here since time immemorial’.”¹⁰ Stó:lō believe their ancestors witnessed the transformation of their world from chaos to order; from a less fixed, more fluid world, where distinctions between things was not so clear and people could take non-human forms and travel to worlds beyond, to a more orderly and circumscribed place where things are ‘right’.¹¹

“In establishing locations for villages, the Stó:lō balanced many factors, including ties to ancestral transformation sites, resource access, and social, political and defensive considerations. During the late pre-contact and early contact era, the Stó:lō selected intersections of major waterways and outlets to watersheds as locations for their largest and most permanent settlements. Smaller, but still regularly occupied settlements were established along the tributary river systems, usually at junctions with streams and side channels. Less regularly occupied settlements appear to have been set back from towns and villages along connected river valleys. These patterns demonstrate a close connection between Stó:lō settlements and major rivers (the primary avenues of transportation and communication) that extends back into the earlier pre-contact times.”¹²

“Landscape features greatly influenced settlement patterns...In the central Fraser Valley...the Stó:lō generally settled along side-channel waterways and sloughs rather than directly beside the Fraser River...Slough-side villages allowed for better protection against enemies, since large Coastal war canoes could not easily navigate the narrow, twisting side channels. Also the Stó:lō could avoid fighting the swift and churning current of the Fraser by traveling upriver through these slack water passages.”¹³

The largest settlement within the Plan area was the pit house community of Leq’á:mel in the area of present Indian Reserve No. 11 (Lakahamen). “The name Leq’á:mel interpreted means, ‘level center meeting place’. Traditionally this community was the center of trading routes where people of all cultures would stay to rest, eat, visit, socialize and trade.”¹⁴ 400 to 1200 people may have lived in this community in the early 1800’s.

Millennia of First Nations’ settlement have undoubtedly influenced the landscape of Electoral Area “G”. Aboriginal communities required systems for food production, transportation, waste and sewage disposal and other necessities. A well developed network of overland trails linked village sites and resources. Waterways were worked to improve fishing. Controlled burns were used to increase berry production and control vegetation. In these and other ways, the landscape was shaped to meet the needs of First Nation communities. However, the productive systems of First Nations did not require widespread land clearing or alterations and the impact on the overall landscape was, in light of the changes to come, moderate.

¹⁰ David Schaepe. *Origins: The First Peopling of S’ólh Téméxw. A Sto:lo Coast Salish Historical Atlas*. K. T. Carlson, Ed.. Douglas & McIntyre, Sto:lo Heritage Trust, 2001.

¹¹ Brian Thom. *Sxwoxwiyam Seyt te Xwelmexw (Central Coast Salish Transformation Stories): Connecting Humans and Non-humans through Kinship and Place*. September, 1997.

¹² David Schaepe. *Village Arrangements and Settlement Patterns. A Sto:lo Coast Salish Historical Atlas*. K. T. Carlson, Ed.. Douglas & McIntyre, Sto:lo Heritage Trust, 2001.

¹³ David Schaepe. *Village Arrangements and Settlement Patterns*.

¹⁴ <http://www.lakahahmen.com/news.htm>. Accessed July 23, 2004.

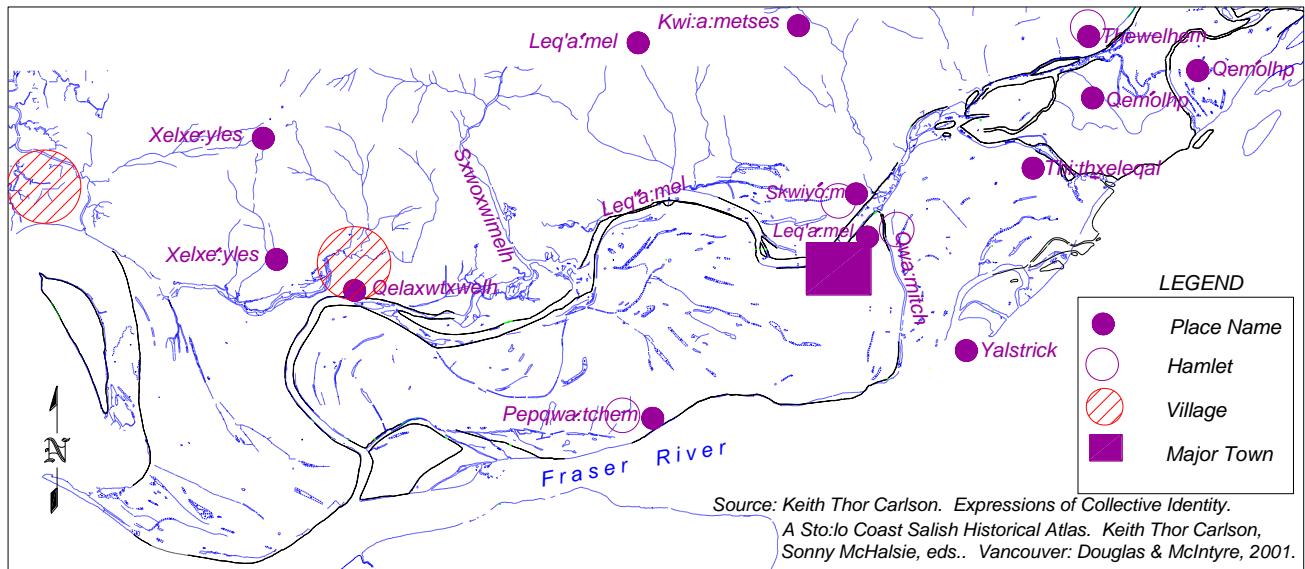


Figure 2-1 First Nations Settlements & Place Names

Historic Vegetation

“When European colonists arrived...the river margin was a complex of swamps and wetlands. These wetlands were dominated by sedge and cattail meadows at the wettest regions, grading to willow, hardhack, wild crab apple, and pin cherry in dryer areas and finally to cottonwood and cedar. At higher elevations were dense forests of Western Hemlock and Douglas Fir.”¹⁵ Despite the widespread influence aboriginal peoples had on the landscape, it seemed to early-arriving Europeans that the Lower Fraser was wild and pristine.

Margret North and J.M. Teversham have used early surveyors’ notes to paint a picture of vegetation of the Fraser River area during the early period of colonial settlement.¹⁶ At that time, Nicomen Island was dominated by grass with shrub, willow, alder and crab-apple scrub, cranberry swamp and mixed scrub. Lower elevations on the Island, typically formed by overland flows from the Fraser, supported a mixed conifer forest probably dominated by western red cedar. Higher parts of the Island, and the better drained alluvial fan complexes to the north of it, supported deciduous woodlands of alder and cottonwood. The area of Dewdney was covered with scrub and grassland with smaller areas of deciduous forest. Hatzic Island was dominated by alder, cottonwood and associated species. Overall, vegetation patterns reflected frequent disturbance from Fraser River floods and debris flows/floods on alluvial fans (and the soils these forces deposited over time), as well as the long-standing vegetation management practices of the Leq’á:mel.

In 1875, an observer viewing the Plan area from a sternwheeler on the Fraser River remarked that, “the valley narrows in and about the Catholic Mission and above this point there is only a narrow belt of flat land between the river and the mountains. The flat wooded land is nearly impenetrable. The woods are not exclusively of pine, large areas of lower ground being covered

¹⁵ M.C. Healy. *Fraser Basin Ecosystem Study*. June, 1997. P. 3.

¹⁶ Margaret North & J.M. Teversham. *The Vegetation of the Floodplain of the Fraser, Serpentine and Nicomekl rivers, 1859-1890*. *Syesis*, 17: 47-66 (1984).

with poplar. These trees in many places have preserved a great uniformity in growth, fringing the river like a gigantic hedge.”¹⁷

It was this landscape European and Asian fur traders, then gold seekers and colonists, encountered, found so strange yet full of potential, and set about reworking. The rate of human-induced landscape change would radically increase with European colonization.

1858 – 1884: The Gold Rush and After¹⁸

News of the discovery of gold along the Fraser River brought 30,000 miners into the region in 1858 alone. Miners likely utilized overland routes through the area, perhaps attempting to enter the goldfields illegally (without paying the required Miners License fee). By late 1858, paddle-wheelers were ferrying miners and cargo up the Fraser to Hope and Yale as well as up Harrison Lake to Port Douglas. The paddle-wheelers, which could not travel distances without picking up cut wood to fire boilers, stopped at Nicomen Island to take on fuel wood, passengers and goods.

Mining for gold on the bars of the Fraser was grueling work under harsh conditions. While fortunes could be gained, stakes could more easily be lost. It quickly became apparent to some that more reliable opportunity was to be found, not in mining, but in servicing the miners who flooded into the area. This activity provided the first impetus for colonial development within the Plan area.

In 1865, James Codville took up 480 acres of land on Nicomen Island, surrounding what is now McDonald Road, to produce hay and over-winter livestock. He also provided hotel and ferry services. Mr. Codville was able to produce 200 tons of hay in his second season of operation, which may indicate that native grasslands already existed on the site and extensive land clearing was unnecessary, at least for immediate needs. Codville Landing, as it was known, quickly became a stop on the paddle-wheeler route and a mail and supply drop for the area. James Codville did not register a claim for the land and ultimately moved on in 1869. The site was taken over by Samuel McDonald, a teamster from the southern United States, and the site became known as McDonald’s Landing.

The only other known non-native inhabitant of the Plan area at this time was Joseph Deroche, a gold miner turned teamster from Quebec who wintered his oxen team on the grasslands of Nicomen Island as early as 1862. Deroche was the first to pre-empt land in the area. In 1866 he submitted an application for 160 acres south of Nicomen Slough in the area of the present Deroche Bridge (District Lot 475).

It would take Deroche almost twenty years to complete the land clearing and cropping required to finalize his claim to District Lot 475, in part because of the magnitude of the task of land clearing but also because he filed a second claim in 1878. His second claim, for 160 acres north of Nicomen Slough and west of the present town site of Deroche (District Lot 7), may have been motivated by the prospect of the Canadian Pacific Railway line passing through it. Speculation was a powerful force in early land pre-emption.

¹⁷ Douglas Cole & Bradley Lockner, eds.. *The Journals of George M. Dawson: British Columbia, 1875-1878*. Vancouver, BC: University of British Columbia Press, 1989. p. 53.

¹⁸ This section depends heavily on the excellent local history, *Discovering Deroche: From Nicomen to Lake Errock* by Daphne Sleight (BC Heritage Trust, 1983).

Expectation of opportunities that would come with the trans-national rail line also spurred early development in the Dewdney area. In 1872 and 1874 N.C. Johnson and R.G. McKamey applied to pre-empted land, 160 acres each, strategically located along the route the rail line was likely to take. However, by this time the gold rush economy had tapered off and, along with it, much of the market for local products and services. A period of recession ensued and settlers focused on subsistence agriculture.¹⁹ There was little development in the Plan area during this period.

The 'gold rush' provided the impetus for settlement by creating strong markets for agricultural products and livestock. The colonial administration made land available cheaply; in the 1860's up to 160 acres of unsurveyed land could be had for the labour it took to clear and crop it. However, "most lands took years of hard work to clear....and the loneliness, the dull winter climate, the seemingly endless forests, the plagues of mosquitoes and floods in summer made it a period of depression."²⁰ "As late at 1892, some 72 percent of the land was still treed; 22 percent was swamp, marsh or pasture; and only 6 percent had been cleared and cultivated."²¹ Yet, there was light at the end of the tunnel: the train.

1884 – 1919: Agricultural Settlement & Industrial Resource Extraction

Construction of the Canadian Pacific Railway ushered in a new period of development of transportation infrastructure, agriculture and related services, and industrial forestry. But first, groundwork had to be laid. These developments were preceded by surveying and enclosure which imposed a system of inventory, administration, and enforcement necessary for capital markets in land and market-oriented production.

Surveying in the Plan area started in the 1860's with delineation of Indian Reserves (IRs). In 1864, the Royal Engineers mapped several large reserves that encompassed much of the Plan area. In subsequent years, reserve lands were significantly reduced. For example, the Tlat-whas Reserve as mapped in 1864 covered approximately 2,000 acres and included all of the flat land on the north side of Nicomen Slough, west of the present village of Dewdney, including Norrish Creek. This reserve was removed in its entirety in 1879/1880. The net effect of this action was the disappearance of the community of Tlat-whas and the demise of the Tlat-whas chieftainship.²² The establishment of IRs along with the surveying of land were central to the process of alienation of land from aboriginal peoples and its transfer to colonial settlers in the following decades.

A widespread program of surveying was prompted by the entry of British Columbia into confederation in 1871. The Provincial Survey laid out six square mile townships further divided into one square mile (640 acre) sections.²³ Prior to the Provincial Survey, land grants were individually recorded as district lots.

In the Railway Belt - a strip of public lands twenty miles in width on each side of the rail line granted from the Province to the Dominion as a subsidy for rail construction – the Provincial

¹⁹ John E. Gibbard. *Agricultural Settlement of the Fraser Valley. The Fraser's History from Glaciers to Early Settlements*. Burnaby Historical Society, 1977.

²⁰ John E. Gibbard. *Agricultural Settlement of the Fraser Valley*.

²¹ Fred Thirkel & Bob Scullion. "Deroche, A Village Remembered" in *Places Remembered, Greater Vancouver, New Westminster and the Fraser Valley*. Surrey, BC: Heritage House, 1997.

²² Leq'á:mel First Nation. *A Brief History of the Leq'á:mel First Nation*. Unpublished.

²³ For a more complete description, see W.A. Taylor. *Crown Lands: A History of Survey Systems*. Province of British Columbia, 1975.

Surveys were soon overridden. A slightly different system of township survey was used in the Railway Belt. While differences in survey systems may seem academic, they had meaningful implications for subdivision and property rights. In the period when Railway Belt lands were owned by the Dominion Government (which ended in 1930), there were two different processes for homesteading and land disposition – one administered by the Dominion in the Railway Belt and another by the Province most everywhere else. While they were similar in many ways, meaningful differences existed. For example, property rights transferred to individuals from the Dominion generally included the beds of non-navigable streams²⁴ while transfers from the Province did not.²⁵ This difference has continuing meaning for watershed management today.

Certainly, Crown surveys established and amended landscape and subdivision patterns, and also human relationships, that continue to this day.

Agricultural Development

Rail construction in the Plan area began in 1883 when primarily Chinese labourers built the Canadian Pacific Railway line through Nicomen. The first train to Yale ran the following year and trans-national service started the year after that. The railway provided new access to regional, national and international markets that spurred agricultural settlement and growth, particularly in dairying and berry production. However, animal husbandry continued to be the principle land use and the type and location of crops planted remained limited by shortages of labour for land clearing and seasonal flooding.

Flooding has been an important factor in the history of the Plan area, particularly in the early days. The period of agricultural growth following rail construction coincided with successive floods in 1882, 1883, 1894, and 1900. Settlers responded by building informal dykes, but ultimately had to incorporate seasonal flooding into their farm practices. Erosion was also a constant problem, especially at McDonald's Landing. In 1902, settlers pressured the Provincial government for dredging to remove sand bars which deflected water toward Nicomen Island. This remains an issue today.

In 1892, the Provincial government authorized the creation of Nicomen Municipality and Dewdney Municipality. Nicomen Municipality existed largely on paper alone. However, Dewdney Municipality organized and initiated a dyking scheme which collapsed in the wake of the 1894 flood. The municipality then folded.

Increased population and agricultural production spurred development of a range of economic and administrative activities. In 1890, general stores were opened in Dewdney and on Nicomen Island; settlers previously had to travel the often difficult path to Hatzic to purchase supplies. Cooper's store at McDonalds Landing served as the post office. It would later move to the Deroche store which was established in 1902. The first schools were built on Nicomen Island and Deroche in the early 1890's.

²⁴ However, property rights with respect to riparian areas were later constrained by the provincial *Water Act* (and other legislation).

²⁵ W.A. Taylor. *Crown Land Grants: A History of the Esquimalt and Nanaimo Railway Land Grants, the Railway Belt and the Peace River Block*. 1975.

Logging, Milling and Quarrying²⁶

In the early days of colonial settlement, industry in the Plan area was generally limited to the production of fuel wood for steamers, milling timber for local construction, and logging for spars. Trees were harvested with oxen and horse teams from areas within easy reach of the Fraser River. Mills were often short-lived and moved frequently to be close to logging areas.

This would change with the construction of the rail line. “The CPR was a major impetus for the forestry industry. The mills on the north shore of the Fraser had a ready market for ties and other lumber during construction. After construction, the railroad provided a link between inland mills and the prairie market to the east and to the Pacific coast terminals to the west.”²⁷

The Stave Lake Cedar Mill was established in Dewdney around 1900. There was also a mill in the Athey Road area at this time. The Kelliher Mill was built in Deroche in 1908. It was supplied with logs from the slopes above transported by flume to the mill. Minor mills also operated on Nicomen Island. By 1912, the low-lying forests were largely logged off. One result was that the Kelliher Mill at Deroche was sold and re-tooled for more-accessible cottonwoods.

Steam engines were introduced to logging shows in the Fraser Valley in the early 1900, but the primary means of logging continued to be horse teams until the introduction of the truck in the 1920’s. These technologies extended the reach of the industry further upslope and into ‘backcountry’ areas. At the same time, double-tracking of the CRP line created renewed demand for ties, generally fir, and also pilings and poles. As a result, by the early 1930’s much of the accessible upland area was logged and portable mills began to disappear. The larger mills that remained were those such as the Stave Lake Cedar Mill with access to the Fraser River for transportation.

Construction of the CPR not only spurred forestry, it also created a great demand for aggregates. The CPR established a quarry just west of Deroche in 1911 to produce ballast for the rail line. After 1916 the quarry changed hands and begun to produce materials primarily for road construction.

Roads

There were gazetted roads in the Plan area as early as 1889. However, for at least another twenty years waterways were the favoured means of transport. Roads were often little better than foot trails and were impassable in the rainy season.²⁸ And there were few bridges; the first bridge across Nicomen Slough was built in 1901. By 1908, Nicomen Island Trunk Road ran the length of the island but followed a winding route around sloughs. It was often in poor condition and inundated by water. Dewdney Trunk Road was improved in 1916 to follow the north side of Nicomen Island from Dewdney Bridge to Deroche Bridge.

1919 – 1930: Stabilization and Entrenchment

By 1930, the pattern of settlement in the Plan area, and its relationship to the region, was largely determined. The basic elements of the road network were developed, accessible forests were

²⁶ This section draws heavily on A McCombs and W. Chittenden. *The Fraser Valley Challenge: An Illustrated Account of Logging and Sawmilling in the Fraser Valley*. Treeline Publishing, 1990.

²⁷ McCombs and Chittenden. P. 15

²⁸ Ronald H. Meyer. *The Evolution of Roads in the Lower Fraser Valley*. *Lower Fraser Valley: Evolution of a Cultural Landscape*. Alfred H. Siemens, ed.. Vancouver: Tantalus Research LTD, 1976. P. 73.

logged off and forestry declined in economic importance. Agriculture advanced through dyke construction, drainage projects, road improvements, and enhanced links to the regional economy.

The Lougheed Highway came through the area in 1929 and provided a strong link between the Plan area and the larger region. However, regional transportation routes focused on the Fraser Valley south of the river and placed Dewdney, Hatzic Island, Nicomen Island and Deroche, not unhappily, on the periphery of the Region.

Throughout this period, and after, the Leq'á:mel people continued traditional practices, particularly fishing and hunting, but also participated in the new colonial society and economy in important ways.

2.2 SUBDIVISION PATTERNS (North of the Fraser River)

Subdivision is perhaps second only to the physical attributes of the land – slope, water features, etc. – in shaping the rural landscape. A cursory review of subdivision in Electoral Area “G” north of the Fraser River indicates the importance of changing economic circumstances, transportation technology and, perhaps most importantly, government policy, in determining how land is divided.

Initial Crown grants in the Plan area were invariably large in area and adjacent to water. The Fraser River and its sloughs were likely as important for transportation and sources of foods for the first settlers as they were for First Nations.

This pattern changed in the years immediately preceding and following rail construction. Crown grants remained large but began to cluster along the rail route, or the route the line was speculated to take. More often than not these settlement lands were land-locked. Clearly, access to water became less important as the rail line and road/trail network developed and agricultural products became available for trade and purchase.

Crown grants were generally about 64 hectares (160 acres) in size, the maximum permitted. Subsequent subdivisions of Crown grants often created parcels in the area of 16 hectares (40 acres), presumably to accommodate working farms.

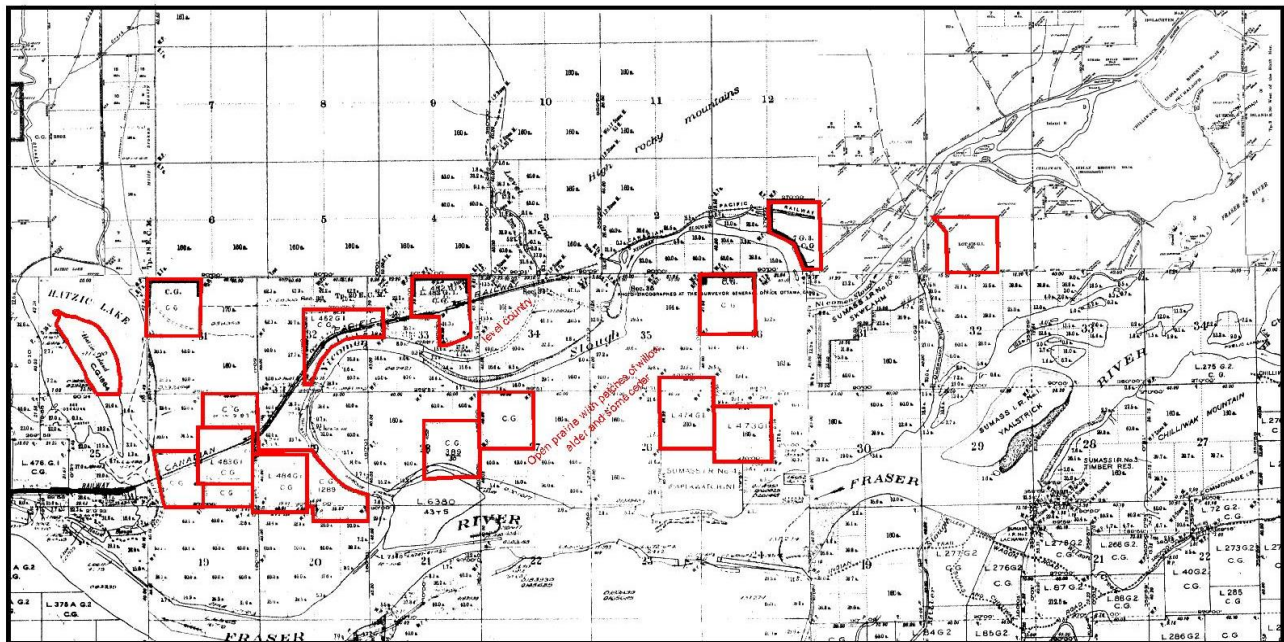


Figure 2-2 Early Crown Grants

Another major shift in subdivision pattern is evident in the early 1900's, particularly 1909-1917 when pockets of rural parcels were created on Hatzic Island, Dewdney, west Nicomen Island (Jones Road, Johnson Road) and McDonald's Landing. These parcels were typically about 4 hectares (10 acres) in area. This change in pattern likely reflects the transformation brought about by the railway, intensification of agricultural practices, and the diversification of the local economy. Owners of smaller rural parcels would have primarily derived their livelihoods from industrial wage labour in forestry or mining and perhaps secondarily from agriculture. However,

it was likely common for farmers to own several adjacent smaller parcels which together provided an area large enough to farm efficiently - a practice that continues on Nicomen Island today.

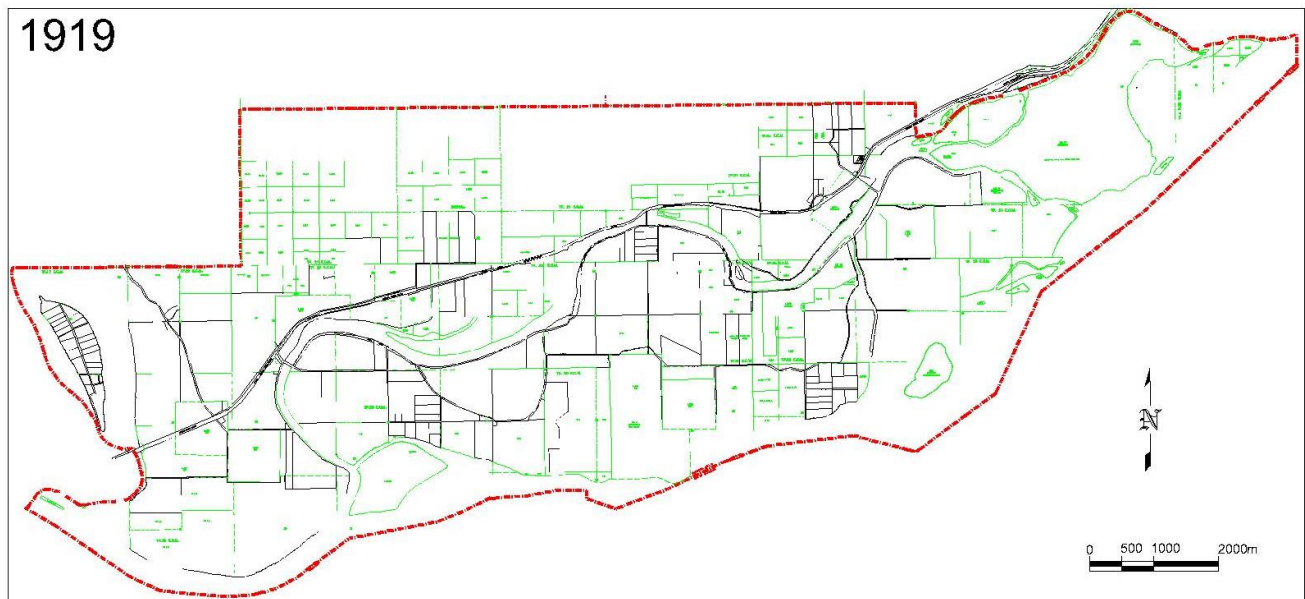


Figure 2-4 Subdivision Pattern, 1919

The Deroche town site was subdivided in 1909 in response to economic activity associated with a nearby sawmill, rock quarry and, of course, the rail station. A couple of years later a private water supply was developed for the town site utilizing water from Braeburn Creek before switching to Deroche Creek. The Dewdney town site developed around the rail station in 1920.

Provincial and federal ‘soldier settlement’ programs to plant WW1 veterans on the land provided a new drive for subdivision in the Plan area. “In the early 1900s, British Columbia embarked on a brief but intense effort to manufacture a modern countryside. The government wished to reward veterans of the Great War with new lives: soldiers and other settlers would benefit from living in a rural community, considered a more healthy and moral alternative to urban life.”²⁹ The federal Soldier Settlement Act (1917, 1919) allowed veterans to purchase land with the help of government loans, with additional funds for livestock and equipment.

As a result, there was a proliferation of new parcels created between 1917 and 1922. For example, from 1919 to 1922, about 80 new parcels were subdivided, many east of Hatzic Lake around Eagle Road, south Dewdney, and west Nicomen Island. This amounted to at least a doubling of the total number of properties within the Plan area in a period of three years. Most of these new parcels were 2 to 5 hectares (5-12 acres) in area.

²⁹ James Murton. *Creating a Modern Countryside: Liberalism and Land Resettlement In British Columbia*. Vancouver: UBC Press, 2007.

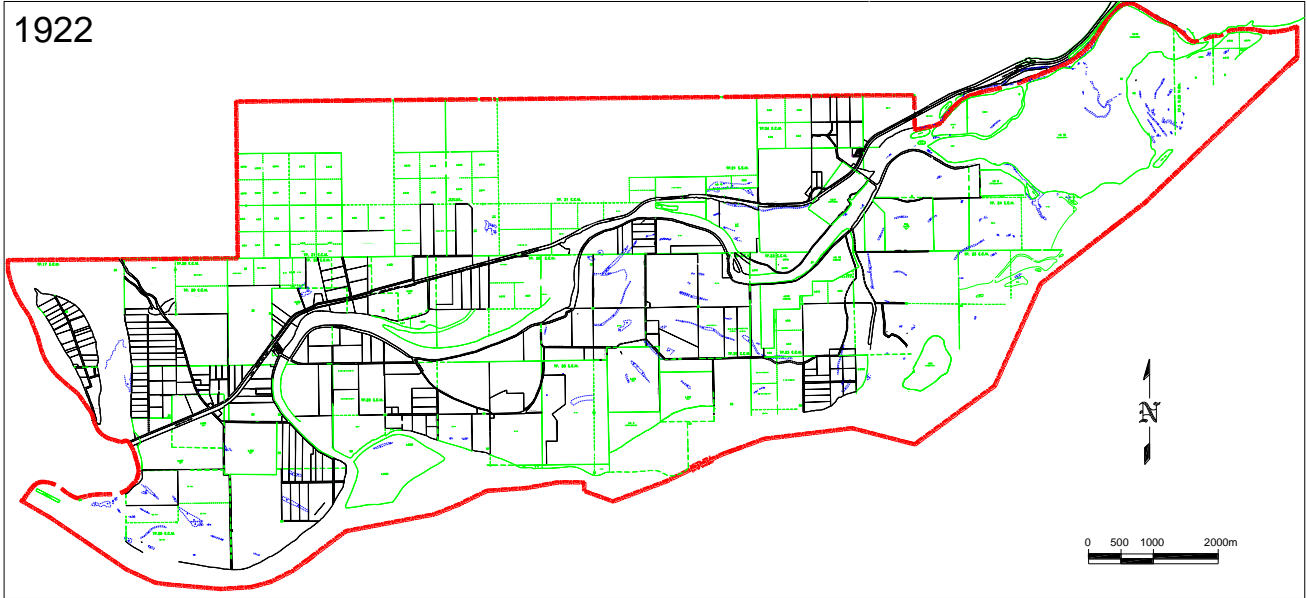


Figure 2-3 Subdivision Pattern, 1922

After this glut of new parcels, little subdivision occurred until the 1940’s when another round of soldier settlement programs encouraged further parcelization. By 1952, the landscape of private property we understand today had largely taken shape. The introduction of the Agricultural Land Reserve in 1972 and zoning bylaws in the following years limited subdivision to the lower hillsides on the north side of the Plan area and the occasional ‘home site severance’ on agricultural land in the floodplain.

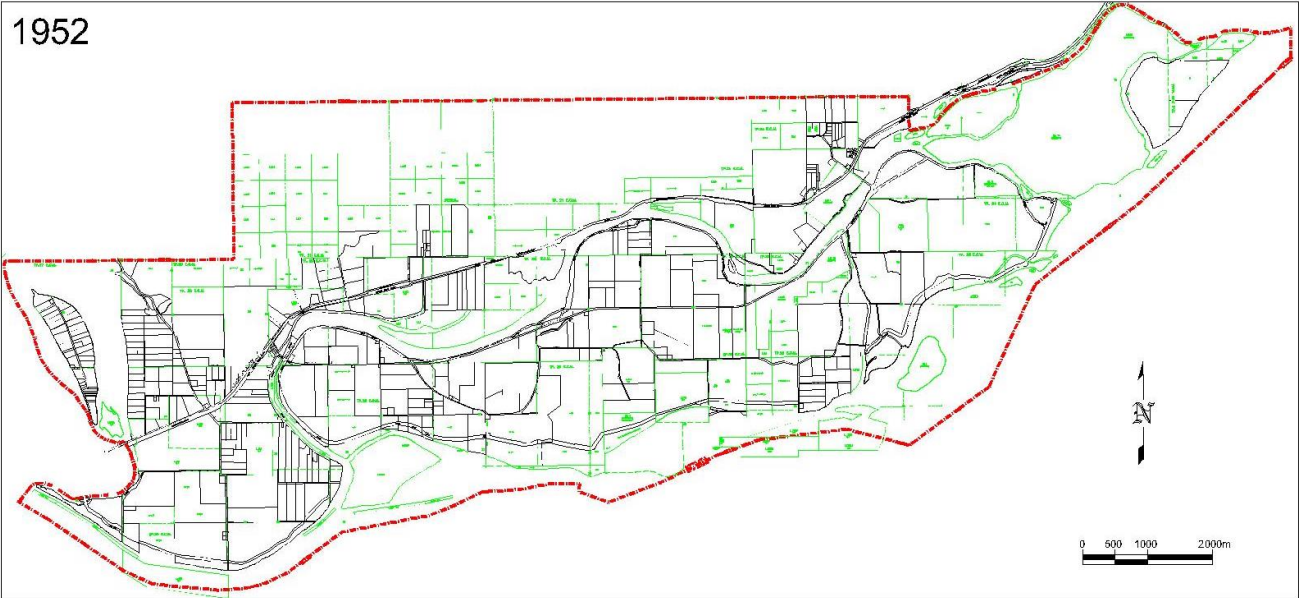


Figure 2-3 Subdivision Pattern, 1952

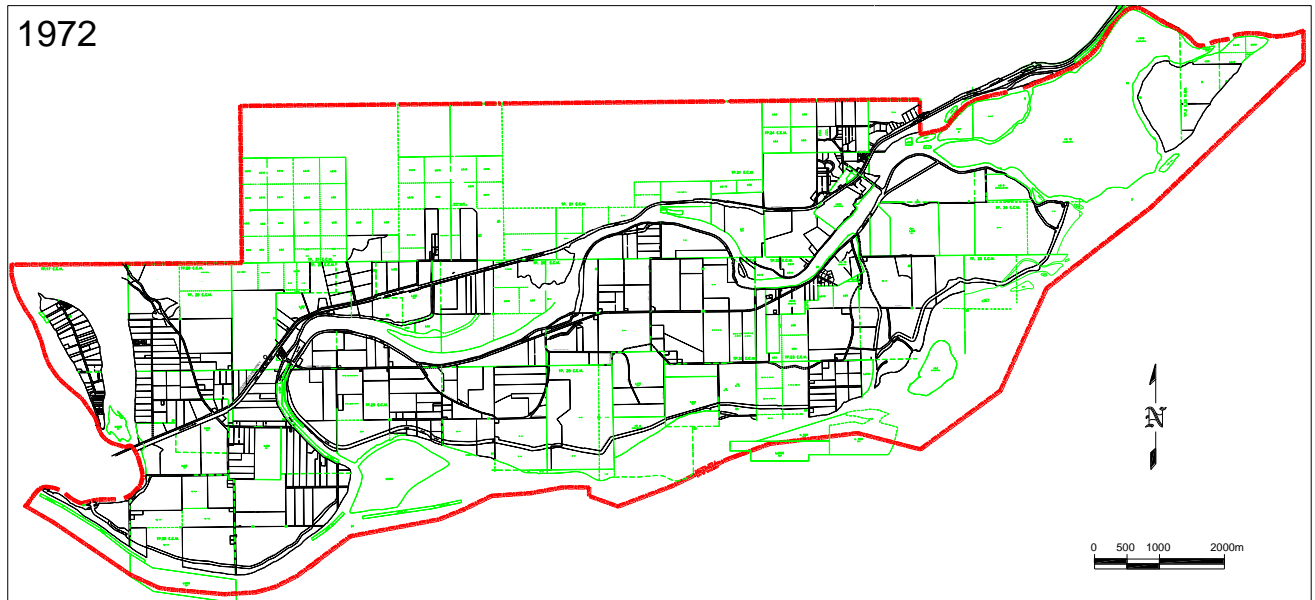


Figure 2-3 Subdivision Pattern, 1972

This history of subdivision in Electoral Area “G” is grossly incomplete. It does not consider important aspects such as the effect of road and dyke construction on subdivision patterns. Nevertheless, what is clear from this basic study is the central importance of government policy to the landscape structure of settled lands. Government policy influences every aspect of property and subdivision from the initial crown surveys that allowed the orderly conferral of private property rights to current zoning and community plans. This history brings home the effect and importance of land use planning, and notably this community plan, and places the Plan policies within a particular history of subdivision and development.

3.0 COMMUNITY PROFILE

3.1 Land Use and Development Potential

Overview

Electoral Area “G” is approximately 11,470 hectares in area – about 9,370 hectares north of the river and 2,100 hectares south of it on Sumas Mountain. The Sumas Mountain lands are generally steep north-facing slopes draining to the Fraser River. North of the Fraser, EA “G” consists largely of relatively flat floodplain agricultural land bordered by the Fraser River to the south and mountain slopes to the north. Over half of the area is within the Agricultural Land Reserve and two-thirds is within the Fraser River floodplain. Private lands comprise about 54% of the Plan area (67% north of the Fraser). Crown land makes up approximately 40% (26% of the north side) and First Nations’ land account about 7% of the total area. These figures are summarized in the table below. The Agricultural Land Reserve is shown on Map 1, the Fraser River floodplain is delineated on Map 2 and land tenure is displayed on Map 3.

	Area (ha)	% of Total Area	% North Fraser Area	No. of Fee Simple Parcels	% of Total Parcels
Electoral Area “G”	11,470	100%		710	
EA “G” – Sumas Mountain	2,100	18%		0	0%
EA “G” – North Fraser	9,372	82%	100%	710	100%
Fraser River Floodplain	6,239	55%	67%		
Agricultural Land Reserve	5,126	45%	55%	470	66%
Private Lands	6,239	54%	67%	710	100%
Crown Lands	2,440	40%	26%	n/a	n/a
Indian Reserve Lands	696	6%	7%	n/a	n/a

Note: all figures are approximate

Land Use

In the portion of the Plan area on Sumas Mountain, land use is dominated by forestry use of Crown land and recreation uses surrounding Sumas Mountain Regional Park. There are several designated archaeological sites along the Fraser River and a First Nations cemetery on IR 12. There are no private lands within the Plan area on Sumas Mountain.

North of the Fraser, land use in Electoral Area “G” is primarily agriculture on floodplain lands and rural uses on the lower slopes and alluvial fans. Commercial nodes exist at Dewdney and Deroche with isolated commercial properties along Lougheed Highway. There are a mix of land uses on Hatzic Island, including mobile home parks, RV campsites, and residential and rural residential uses. A notable industrial use is Stave Lake Cedar on River Road in Dewdney. Zoned land uses north of the Fraser River are summarized in Table 3-B.

**TABLE 3-B
SUMMARY OF NORTH FRASER LAND USE BY ZONE³⁰**

Zone	No. of Parcels	% No. of Total Parcels	Area (ha)	% Total Area	Ave Parcel Size (ha)
Floodplain Agriculture (A-2)	470	66.20%	4,282.1	87.6%	9.13
Commercial (C-1 and C-2)	23	3.24%	7.7	0.16%	0.34
Industrial (M-1 and M-2)	2	0.28%	6.9	0.14%	3.47
Civic Assembly (P-1)	7	0.99%	10.6	0.22%	1.51
Civic Institutional (P-2)	6	0.85%	13.0	0.27%	2.17
Rural 1 (R-1)	46	6.48%	145.0	2.97%	3.15
Rural 2 (R-2)	14	1.97%	102.9	2.11%	7.52
Rural 3 (R-3)	84	11.83%	242.8	4.9%	2.89
Rural 4 (R-4)	7	0.99%	5.5	0.11%	0.79
Rural Residential (RS-1)	4	0.56%	2.2	0.04%	0.55
Rural Residential (RS-2)	38	5.35%	48.2	0.99%	1.27
Tourist Campsite (TC)	2	0.28%	14.7	0.30%	7.61
Other	7	0.99%	5.2	0.11%	0.74

note: all figures are approximate

Clearly, agriculture is the dominant land use in Electoral Area “G”. In 2006, the great majority of farm properties were used for dairy production, followed by forage crops and small fruits, primarily blueberries (see Table 3-C).

Development Potential

There is significant potential for new development within the Plan area, including:

- continued agricultural development on existing farm properties, including opportunities for agri-tourism and direct farm sales;
- vacant and under utilized commercial properties in Dewdney and Deroche;
- residential construction on properties on which no dwellings have yet been built;
- new subdivision permitted under existing zones and densities; and,
- limited opportunities for development through zoning amendments.

Table 3-D illustrates the potential for new subdivision north of the Fraser under existing zoned densities established in *DARD Land Use and Subdivision Regulation Bylaw No. 559-1992*. While actual lot yields would undoubtedly be lower due to physical constraints, an examination of existing lot sizes and permitted densities indicates that there is outside potential for the creation of 144 new parcels which could add about 450 people to the Electoral Area “G”

Farm Use	No. of Properties (2006)
Dairy	200
Grain & Forage	25
Small Fruits	12
Beef	10
Poultry	2
Vegetables	2
Mixed Farms	31
Other	26

³⁰ Zones are established in Dewdney-Alouette Regional District Land Use and Subdivision Regulation Bylaw No. 559-1992

³¹ BC Assessment, 2006.

population.³² This assumes perfect efficiency; in other words, that every parcel can be subdivided to the maximum extent permitted by zoning.

Zone	No. Existing Parcels	No. Potential New Parcels	% Increase over Existing	% of Total New Lots	% of Potential New Lots
A-2	470	70	15%	49%	49%
R-1	46	40	87%	28%	28%
R-2	14	13	93%	9%	9%
R-3	84	8	10%	6%	6%
RS-1	4	0	0%	0%	0%
RS-2	38	13	34%	9%	9%
TOTAL	656	144		100%	100%

Note: all figures are approximate

Lands within Electoral Area “G” on Sumas Mountain are subject to *CFVRD Sumas Mountain Rural Land Use Bylaw No. 500-1992*.

3.2 Population Characteristics

This section will look at the indicators that identify the character of the community, specifically population, mobility, household and family characteristics, and economic properties. Unless otherwise noted, data used in this section is derived from the 2001 and 2006 Statistics Canada Census.

Total Population

In 2006, Canada Census reported a population of 1,914 for Area G, an increase of 4.5% since 2001. At 75 sq km (excluding Sumas Mountain), Area G is the second smallest Electoral Area in the FVRD. It comprises 0.6% of the land area and has 0.7% of the total population of the FVRD. Table 3-E shows the population growth pattern between 1996 and 2006.

	1996	2001	2006	% Growth 2001 - 2006	% Growth 1996 - 2006
Area G Population	1,700	1,827	1,914	4.5%	11.2%
Area G Pop Density (km ²)	---	24.4	25.5	---	---
FVRD Population	222,397	237,550	257,031	7.8%	13.5%

Age Composition

Table 3-F examines the distribution of population by age group. The majority of the population is found in the 25 – 54 age group. Of note is the significant decrease in population under age 15

³² In 2006, there was an average of 2.56 people per household in Electoral Area “G”. Assuming that one house would be built on each of 144 potential new parcels, the population of Electoral Area “G” would grow by 453 persons.

from 2001 to 2006. This suggests that the population is relatively stable with the children growing into older age groups. Indeed the figures show a corresponding increase in the next age group. However, the population is aging without recruitment of youths.

Total Population by Age Groups	2001 Area G	2006 Area G	% Growth 2001 - 2006
Total Population	1820	1915	5%
< 15	390	335	-16.4%
15 – 24	210	245	14.3%
25 – 54	800	845	5.3%
55 – 74	335	390	4.3%
75+	85	100	15%

Housing Characteristics

Area G is a relatively homogenous, stable community. The number of housing units increased marginally between 2001 and 2006 from 700 to 745. The average value of housing was \$235,975 in 2007, an increase of 26.9% since 2001.³⁴ In 2006, over 75% of all homes in Electoral Area “G” were occupied by the owners. Table 3-G shows the proportion of owned to rented dwellings in 2001 and 2006. In 2006, there was on average 2.56 persons living in each dwelling.

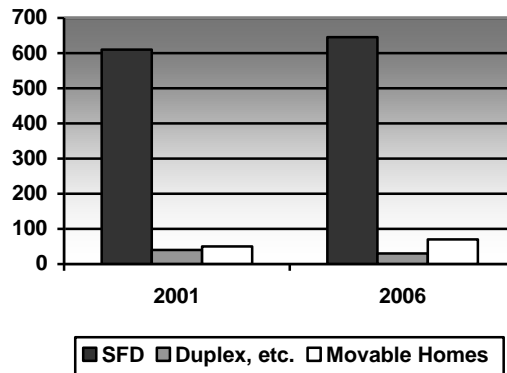
Area G Population	2001	2006	% Growth 2001 - 2006
Occupied Private Dwellings	700	745	6.0%
# Owned Dwellings	470	580	19.0%
# Rented Dwellings	230	165	-39.4%

Figure 3-1 illustrates the dominance of single family dwellings within Area G. In 2006, 80% of the housing stock was single, unattached dwellings and 9.4% were movable dwellings, including mobile homes. Multiple unit dwellings are generally not permitted in the area.

³³ Note: Statistics Canada rounds age group numbers up to the nearest multiple of five to protect privacy. This accounts for the discrepancy between Tables 3-E and 3-F in total population numbers for Electoral Area “G”.

³⁴ BC Assessment, 2007

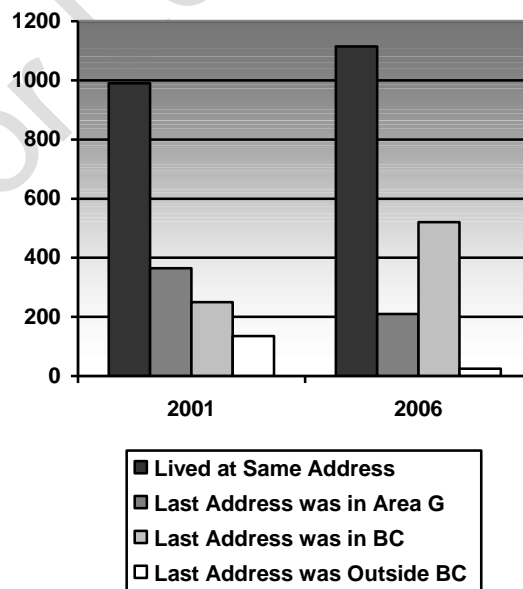
Figure 3-1 - Distribution of Housing Types



Mobility

Residential mobility was minimal with the majority of the residents living in Area G for five years or longer. This includes those who remained in the same house and those who moved houses within the area. Figure 3-2 compares place of residence five years ago for 2001 and 2006.

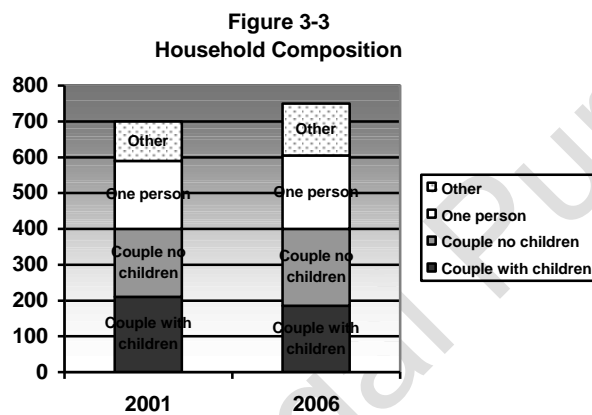
Figure 3-2 - Place of Residence 5 Years Ago



This minimal mobility of the Area G population is indicative of an established community with a population committed to long term investment in their community.

Household, Family and Language Characteristics

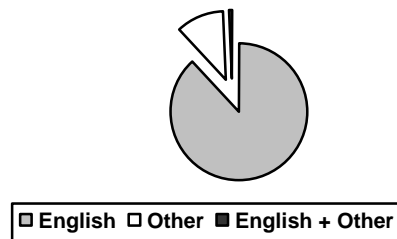
There was a slight growth of the number of households in Area G in 2006. In general, households are comprised of two or more people – evenly distributed between families and couples with a smaller portion of single parent families. Just over one quarter of the households are single person households, a growth of 2% since 2001. These proportions are relatively the same as those found in 2001. Figure 3-3 illustrates the proportion of household types for 2001 and 2006. Note that the decrease in number of family households is offset by the number of couple households.



Between 2001 and 2006, people within the Plan area identifying themselves as aboriginal decreased from 125 to 85.³⁵

In 2006, the majority of Electoral Area “G” residents (83%) were Canadian born. Approximately 20% of the 2006 Area G population is classed as immigrant, however only 11% of the population spoke a language other than English when at home.³⁶ This is illustrated by Figure 3-4.

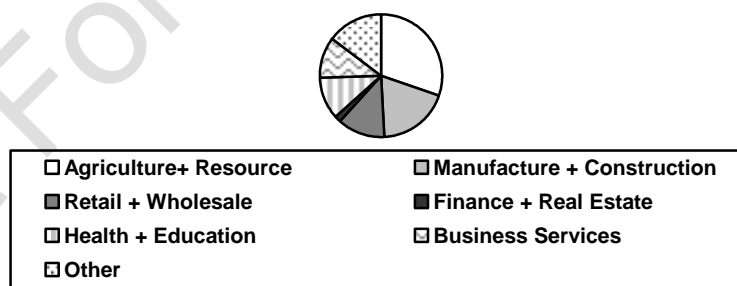
Figure 3-4 - Language Most Often Spoken at Home



Employment and Education Characteristics

Of the total 2006 population over 15 years of age, 56% have High School Certificate or lower while 43% have post secondary education, including trade diploma, college certificate, or university degree. The labour force of Area G was 56.2% of the total population in 2006, an increase of 7.2% from 2001. One quarter of the labour force worked from home, a statistic in keeping with the rural nature of the community.

Figure 3-5 - Employment by Industrial Sector



The biggest employment sector in this area is Agriculture and Resources, followed by Business Services and Manufacturing. Figure 3-5 shows the breakdown for the major industrial sectors of the area.

³⁵ This includes those who identified with an aboriginal group, those who reported being a treaty or registered Indian and those who reported membership with an Indian band or First Nations. This statistic may be questionable. Canada Census identified general reporting inaccuracies for aboriginal identified populations.

³⁶ Canada Census defines immigrant as an individual who was or is currently a landed immigrant in Canada.

3.4 Building Statistics

The major portion of the existing building stock in Area G was built before 1986. Since 1986, there has been a net increase of 45 dwellings. Only 13% of buildings reportedly require major repairs.

	2001	2006	% Change
Total Occupied Private Dwellings	700	750	6.7%
Dwellings Built < 1986	565	565	
Dwellings Built 1986 to Census Yr	130	175	25.7%
Regular Maintenance Only	345	385	10.4%
Minor Repairs	265	265	0%
Major Repairs	80	100	20%

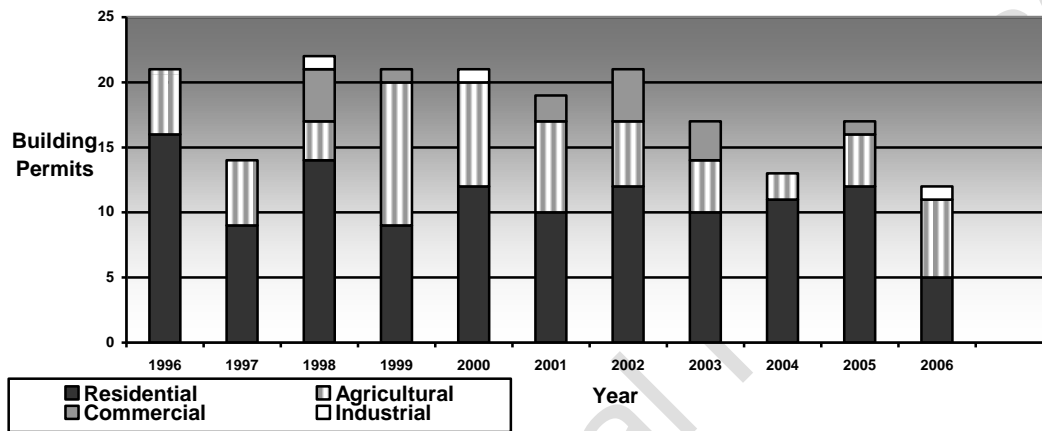
The pace of development in the Plan was relatively modest between 1996 and 2006. The total number of completed annual building permits ranged from 13 to 22 during this period. The most active years were in the late 1990's. Construction activity was focused on the residential and agricultural sectors reaffirming this area's principal economic activity as farming.

Year	Residential		Agricultural		Commercial		Industrial		Demo	Total No.	Total Value (\$)
	No.	Value (\$)	No.	Value (\$)	No.	Value (\$)	No.	Value (\$)			
1997	9	188,270	5	231,968	0	0	0	0	0	14	420,238
1996	16	710,740	5	484,888	0	0	0	0	1	22	1,195,628
1998	14	679,783	3	303,584	4	494,743	1	85,759	0	22	1,563,869
1999	9	514,585	11	932,832	1	18,000	0	0	0	21	1,465,417
2000	12	689,728	8	318,196	0	0	1	192,000	1	22	1,199,924
2001	10	890,615	7	829,020	2	337,639	0	0	3	22	2,057,274
2002	12	902,136	5	229,008	4	488,000	0	0	1	22	1,619,144
2003	10	529,975	4	397,140	3	60,564	0	0	2	19	987,679
2004	11	919,842	2	43,456	0	0	0	0	2	15	963,298
2005	12	861,824	4	593,880	1	97,440	0	0	5	22	1,553,144
2006	5	241,590	6	673,932	0	0	0	0	2	13	915,522
Total	120	7,129,088	60	5,037,904	15	1,496,386	2	277,759	17	214	13,941,137

³⁷ new construction and renovation

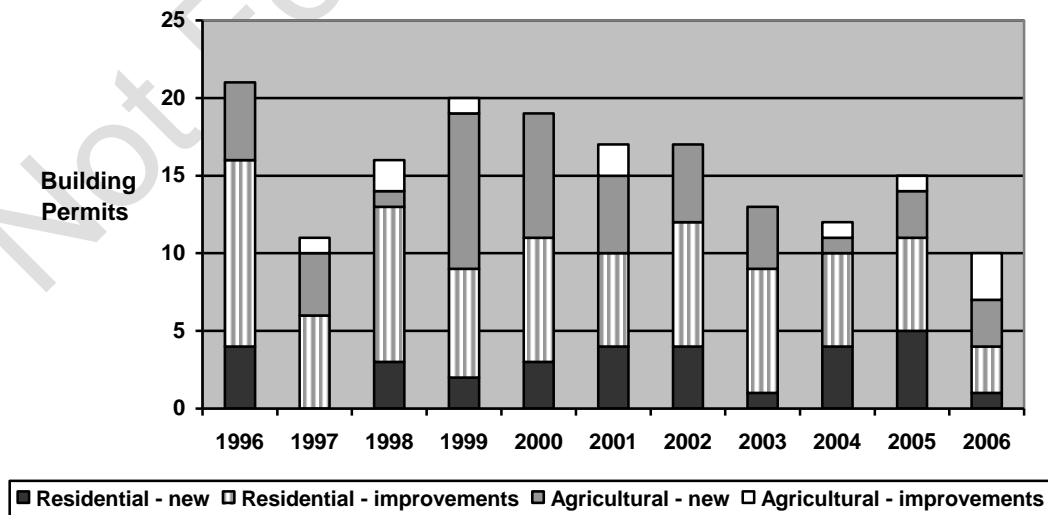
Figure 3-6 illustrates the distribution of building permits between residential, agricultural, commercial, and industrial construction for each year. The most building permits were issued for agricultural and residential construction - principally single family residential and accessory farm building construction. Commercial and industrial building during this time period was for building renovations rather than for new construction.

Figure 3-6 - Building Permits, Electoral Area "G", 1996-2006



Renovations made up the greatest portion of residential building permits issued. For agriculture, the greatest activity occurred with the construction of new structures such as barns, silos, and manure pits. This may be an indication of the health of the agricultural sector in Area G; farmers appear to be investing in their operations.

Figure 3-7 - Residential and Agricultural Building Permits, 1996 - 2006



4.0 COMMUNITY PLAN VISION & OBJECTIVES

4.1 Vision for Electoral Area “G”

Electoral Area “G” is best known by its collection of settlement communities: Hatzic Lake, Dewdney, Nicomen Island and Deroche. While these communities have much in common, the challenges they face may be subtly or drastically different. Still, the community consultation process has identified a set of common expectations and a shared vision for the Plan area. The vision describes a preferred future for the community and emphasizes values residents care most about.

Vision for Electoral Area “G”

To maintain the rural character and lifestyle of our agricultural and rural-residential community in an environmentally sustainable manner while providing opportunities for outdoor recreational activities

4.2 Plan Objectives

The following seven overlapping objectives have guided the policies of this Plan:

1. conserve agricultural lands
2. preserve fish, wildlife and water resources
3. encourage sustainable development and environmental stewardship
4. maintain and enhance rural character
5. safeguard human health
6. ensure development is appropriately planned and serviced
7. protect people and development from natural hazards

As a whole, the policies of the Plan are intended to achieve these objectives. In many cases, individual Plan policies achieve several objectives. For example, sewage disposal standards ensure that developments are provided with appropriate services, protect fish and water resources, and safeguard human health. This overlap reflects the many ways human and natural systems are interconnected.

While an actual diagram connecting Plan policies to objectives would appear as a complex web, Table 4-A provides a few examples of how policies arise from the Plan objectives.

TABLE 4-A EXAMPLES OF CONNECTIONS BETWEEN PLAN OBJECTIVES & POLICIES	
Objective	Policy Response (examples)
conserve agricultural lands	<ul style="list-style-type: none"> ▪ The AGRICULTURAL area designation reinforces ALR policies and discourages fragmentation of farm lands (s. 6.1)
preserve fish, wildlife and water resources	<ul style="list-style-type: none"> ▪ Development Permit Area 2-G protects riparian zones (s. 15.2) ▪ Major development will be required to assess and mitigate environmental impacts during development approval processes (s. 12.3.3) ▪ Plan policies ensure that stormwater from new development will not degrade streams by requiring professional assessments during development approval processes (s. 13.2.3)
encourage sustainable development & environmental stewardship	<ul style="list-style-type: none"> ▪ Development densities established in the Plan are predicated on sustainable service levels, compatibility of uses and minimizing environmental impacts (s. 6) ▪ Consolidation of undersized commercial parcels is encouraged to provide viable development opportunities for the long term (s. 7.3.3, 7.4.5) ▪ Landowners and developers are encouraged to retain native vegetation and use native species in landscaping (s. 12.3.7)
maintain and enhance the rural character	<ul style="list-style-type: none"> ▪ The commercial nodes of Dewdney and Deroche are recognized as 'gateways' to the area; policies encourage enhancement of this value (s. 7.3.1, 7.4.9) ▪ Plan policy advocates for protection of visual values along the Highway 7 corridor through forest stewardship planning (s. 14.1.9)
safeguard human health	<ul style="list-style-type: none"> ▪ Plan policies recognize groundwater values and support stewardship efforts (13.1.5)
ensure development is appropriately planned and serviced	<ul style="list-style-type: none"> ▪ Area designations establish use, density and servicing policies (s. 6) ▪ The feasibility of providing public sewer and water services to Hatzic Island will be investigated (s. 7.1) ▪ New developments are required to demonstrate the feasibility of proposed sewer and water systems through professional assessment (s. 8.2.10, 8.3.7)
protect people and development from natural hazards	<ul style="list-style-type: none"> ▪ Development Permit Area 1-G addresses development in areas with potential geologic or stream hazards (s. 15.1) ▪ Plan policies provide comprehensive guidance respecting management of development in floodplains and flood protection infrastructure (s. 11.2) ▪ Advocacy policies respecting watershed management and forestry activities place emphasis on the potential for impacts to down stream / down slope settlement areas (s. 14.1) ▪ Mapping and advocacy policies recognize interface fire and earthquake hazards (s. 11.3, 11.4)

4.3 Regional Context

The Plan objectives and policies of the Electoral Area “G” Official Community Plan must respond not only to local circumstances, but also to the context of Electoral Area “G” in the Region. The Fraser Valley Regional District *Choices for Our Future: Regional Growth Strategy*, adopted in 2004, outlines a broad framework for achieving a sustainable, socially

responsible, and environmentally sound development which protects agricultural and rural areas and makes efficient use of public facilities, services, land and other resources.³⁸

Official community plans (OCPs) are a primary means of implementing the Regional Growth Strategy (RGS). Community plans apply broad RGS goals to local communities and provide detailed policies for achieving those goals as well as a range of compatible community objectives. Section 865 of the Local Government Act requires that all bylaws adopted by the Regional District be consistent with the Regional Growth Strategy. A discussion of the regional context and the compatibility of this Plan with the RGS follow.

FVRD is nearly 14,000 square kilometres in area, yet over 90% of the population resides on less than 1% of the land base. Only a small portion of the Region, mostly located in the fertile Fraser Valley floor, is considered habitable. Virtually all development pressures are directed to this small area. However, growth on the valley floor is greatly constrained by the Agricultural Land Reserve and the floodplain of the Fraser River and its tributaries. As a result, growth will be accommodated by densifying existing urban centres and by new development in upland areas within the Urban Growth Boundaries established in the RGS.

While the rate of population growth in the Fraser Valley is expected to slow down in relation to the past decade, the valley's population could double over the next twenty to thirty years to approximately 450,000. The District of Mission – located immediately west of the Plan area - is expected to grow from 34,505 people³⁹ about 70,000 by 2031⁴⁰, an increase of 90%. It is expected that the development necessary to accommodate this population growth will be concentrated within municipalities. In the Mission area, this growth is expected in the southwest and downtown parts of the community. Nonetheless, it remains that Electoral Area “G” will be subject to development pressures.

Continued population growth and development in the Region may increase the value placed on remaining natural areas for their recreational and conservation uses. Electoral Area “G” contains a variety of the settings most desired by the regional population for parks, including foreshore areas, dykes, sloughs, alluvial fans, wetlands, and hillsides. Increasing regional demand for outdoor recreation – which is expected to grow by 75% over the next twenty years⁴¹ – will place greater importance on both existing and potential park lands within Electoral Area “G”.

Similarly, the value placed on the natural areas, and their perceived contribution to the regional environment and landscape, will increase over time as the Region develops and the population increases. The Plan area provides visual qualities; sustains fish and wildlife populations; affords opportunities for recreation and nature study; and, gives a sense of proximity to wilderness to residents of the Fraser Valley. All of these are central to the idea many residents have of the region and its livability and appeal. And certainly, the upland and riparian habitats of the Plan area make a significant contribution to the biodiversity of the region.

The Official Community Plan for Electoral Area “G” shares many of the growth management goals of the Regional Growth Strategy (RGS), particularly the RGS goals to:

- support and enhance the agricultural sector;

³⁸ Fraser Valley Regional District. *Choices for our Future: Regional Growth Strategy*. 2004.

³⁹ Canada Census, 2006.

⁴⁰ Urban Futures Institute. *Population Growth and the Context for Managing Change*. January, 2005.

⁴¹ FVRD *Regional Parks Plan* Bylaw No. 225, 1998

- protect the natural environment and promote environmental stewardship;
- protect and manage rural and recreational lands;
- achieve sustainable economic growth;
- minimize development costs to communities and the risks associated with geotechnical and environmental constraints; and,
- manage water, energy resources and waste responsibly.

These goals parallel the objectives of this Plan and support the relevant actions identified in the RGS. This community plan is consistent and complementary with *Choices for our Future, Regional Growth Strategy for the Fraser Valley Regional District*.

5.0 GENERAL LAND USE POLICIES

5.1 Permitted Uses and Parcel Sizes

Permitted land uses are identified within the Use Policies section of each Area Designation in Section 6 of this Plan. A summary index of the permitted land uses in each Area Designation is provided in Table 5-A for convenience. Specific conditions of use may apply, as prescribed in Area Designations or other parts of this Plan, in zoning bylaws and in other regulations. Use Policies outlined in each Area Designation are particularly relevant to the Regional Board's consideration of proposals to establish, or temporarily permit, new uses not currently permitted by zoning. Area Designations also establish minimum parcel size policies for subdivision (which are summarized for convenience in Table 5-B).

Permitted uses and minimum parcel sizes are based on a number of considerations including the suitability of the land for on-site services; hazards; access; community planning objectives; regional growth strategies; environmental carrying capacity and thresholds; and others. Moreover, they facilitate effective planning by providing a basis for avoiding land use conflicts and predicting density levels, servicing needs and environmental impacts.

Permitted Land Uses*	AGRICULTURAL	FOREST	HIGHWAY COMMERCIAL	INDUSTRIAL	INSTITUTIONAL	LIMITED USE	PARK & CONSERVATION AREA	RESORT	RURAL	SUBURBAN RESIDENTIAL
RESIDENTIAL										
Single Family Residential	✓					✓			✓	✓
Accessory Residential	✓		✓	✓	✓	✓		✓		
Associated Rural Residential	✓		✓			✓			✓	✓
RESOURCE & INDUSTRIAL										
Resource Extraction		✓		✓		✓				
Resource Industrial		✓		✓		✓				
Industrial				✓						
AGRICULTURAL										
Agriculture	✓					✓				
COMMERCIAL										
Local Commercial			✓							
Highway Commercial			✓							
Low Density Commercial Recreation					✓	✓	✓	✓		
PUBLIC & INSTITUTIONAL										
Park and Park Reserve	✓	✓			✓	✓	✓		✓	
Semi-public Use			✓		✓	✓				
Public Use	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Conservation Use	✓	✓		✓	✓	✓	✓	✓	✓	
Recreation Use	✓	✓			✓					
Institutional Use					✓					
* Table 5A is intended as a summary of the uses provided for within each Area Designation. Please consult the applicable Area Designation to confirm permitted uses. Area Designations within this Plan, and zoning bylaws, may establish conditions of use. Various approvals from the Regional District, senior governments, or others may be required before a specific use is permitted.										

TABLE 5-B AREA DESIGNATIONS & PARCEL SIZES FOR SUBDIVISION *	
Area Designation	Minimum Parcel Size
AGRICULTURAL	16 ha
FOREST	35 ha
HIGHWAY COMMERCIAL	0.4 ha with approved community water supply; 2.0 ha with on-site services
INDUSTRIAL	16 ha
INSTITUTIONAL	
LIMITED USE	8 ha
PARK & CONSERVATION AREA	
RESORT	12 ha
RURAL	2 ha
SUBURBAN RESIDENTIAL	0.5 ha with approved community water supply; 1.0 ha with on-site services
* Table 5B is intended as a summary of parcel size policies within each area designation. Please consult the applicable Area Designation to confirm minimum parcel sizes. Various approvals from the Regional District, senior governments, or others are required to subdivide property.	

It is the policy of the Regional Board that:

- 5.1.1 Where an existing legally established use is at variance with the use policies of the area designation, an extension of that use into an adjacent portion of the same parcel may be permitted by the Regional Board through rezoning.
- 5.1.2 The Regional Board should update Subdivision and Development Control Bylaw No. 1110, 1992 and extend it to apply to the Electoral Area “G” to provide current and consistent development servicing standards.

5.2 Residential Uses

Section 877 of the Local Government Act requires that an official community plan must include statements and map designations respecting the approximate location, amount, type and density of residential development required to meet anticipated housing needs over a period of at least 5 years.

As discussed in Section 4.3 of this Plan, it is anticipated that housing needs associated with the growing Regional population will be met by both new development and densification within municipal boundaries. Only minor population growth is expected to occur within Electoral Area “G” over the next 5-10 years.

Between 2001 and 2006, the population of the Plan area increased by 87 persons from 1,827 to 1,914. During this period, the number of dwellings within the Plan area increased by fifty from 700 to 750. It would appear, then, that over the previous five years, supply of housing has been keeping up with population growth in the area.

Over the next 5-10 years, population growth within the Plan area can easily be accommodated by the construction of new houses on existing properties without residences and by subdivision permitted under existing zoning. Conservative estimates indicate that the housing stock within the Plan area could grow by over 150 units by these two methods. Moreover, this Plan identifies the potential for new residential development on the Deroche Bench.

This Plan permits single family residential use in all designations except PARK, FOREST and INSTITUTIONAL. Under certain conditions, a second dwelling may be permitted by zoning amendment.

It is policy of the Regional Board that:

- 5.2.1 Single family residential uses are permitted in the AGRICULTURAL, LIMITED USE, RURAL and SUBURBAN RESIDENTIAL area designations.
- 5.2.2 Under certain conditions zoning regulations may be established in areas designated LIMITED USE, RURAL, and SUBURBAN RESIDENTIAL to permit second detached dwellings:
 - a) on parcels that are larger than the minimum parcel size for subdivision in the applicable area designation; or,
 - b) where a local area plan is in place which permits second detached dwellings.
- 5.2.3 Multi-family residential dwellings are not permitted within the Plan area.

5.3 Associated Rural Residential Uses

Accessory residential uses include a variety of uses associated with, but clearly ancillary to, a residential use. They are typically small-scale, low impact, commercial activities which occur either within the dwelling (a home occupation or bed & breakfast, for example) or in a separate structure (i.e. an artisan craft workshop).

It is policy of the Regional Board that:

- 5.3.1 In keeping with the variety of rural lifestyles in the Plan area, provisions for a broad range of uses associated with rural land use shall be made wherever possible.
- 5.3.2 **Accessory boarding, bed and breakfasts, and home occupations** shall be permitted in the AGRICULTURAL, LIMITED USE, RURAL, and SUBURBAN RESIDENTIAL area designations unless prohibited by a zoning bylaw and shall be referred to as **associated rural residential uses**.
- 5.3.3 Small scale enterprises including **artisan craft workshops**, hobby greenhouses, and **cottage industries** shall be permitted in the AGRICULTURAL, LIMITED USE, and RURAL area designations unless prohibited by a zoning bylaw and shall be referred to in this Plan as **associated rural residential uses**.

5.4 Agricultural Uses

Electoral Area “G” contains a cohesive and well-defined community of agricultural lands generally free from encroachment by incompatible uses. Farming activities centre on dairy, forage, berry and corn operations. While the agricultural capability rating of soils in the Plan area are complex and vary considerably, soils in the ALR lands typically have an agricultural capability rating of ‘Class 2’. ‘Class 2’ soils have minor limitations that require good ongoing management practices or which slightly restrict the range of crops. Class 2 soils are deep, hold moisture well and can be managed and cropped with little difficulty. More than half of the land base of Electoral Area “G”, over two-thirds of its parcels, and 65% of the total assessed value of improvements, are within the Agricultural Land Reserve.⁴²

It is policy of the Regional Board that:

- 5.4.1 All uses of Agricultural Land Reserve land shall be in accordance with the provisions of the Agricultural Land Commission Act, regulations thereto, and Orders of the Commission.
- 5.4.2 In keeping with the variety of uses associated with agricultural lands, accessory farm uses shall be permitted provided that all uses of ALR lands are in accordance with the provisions of the Agricultural Land Commission Act, regulations thereto, and Orders of the Commission.
- 5.4.3 The Regional Board will work closely with the Agricultural Land Commission to provide for a broader range of opportunities and land uses within the AGRICULTURAL Area Designation which are supplementary and ancillary to farm use and will not jeopardize the long term productivity of farmland.
- 5.4.4 Potential conflicts between intensive agricultural operation and other land uses should be minimized by establishing minimum separation distances between conflicting uses.
- 5.4.5 The Regional Board should consider the development of a plan or policy to guide the provision of seasonal farm labour accommodations in the Electoral Areas of the Regional District.

5.5 Commercial Uses

Section 877 of the Local Government Act requires that official community plans identify the approximate location, amount and type of present and proposed commercial land uses. Existing and potential commercial lands are identified in the HIGHWAY COMMERCIAL Area Designation in Section 6 of this Plan.

⁴² BC Assessment, 2004.

In general, the Plan area is well served with local commercial services and commercial properties. There is currently a surplus of commercially designated properties. Plan policies support consolidation and rationalization of undersized commercial lands to create viable development opportunities.

It is the policy of the Regional Board that:

- 5.5.1 All commercial uses shall be provided with adequate parking on-site and safe access/egress.

5.6 Industrial Uses

Section 877 of the Local Government Act requires that official community plans identify the approximate location, amount and type of present and proposed industrial land uses. Existing and potential commercial lands are identified in the INDUSTRIAL Area Designation in Section 6 of this Plan.

5.7 Legally Non-Conforming Use and Siting

Legally established existing land uses which are not permitted uses in the zone within which they are located, are considered to be nonconforming under Section 911 of the Local Government Act. Most legally nonconforming uses are associated with development constructed before zoning bylaws were established.

In many cases, the appropriate existing zone to establish conformity is not an acceptable option, although continuance of the use under certain restrictions may be acceptable. In recognition of these special circumstances, three classes of nonconformity are defined in order to provide guidelines for further actions by the Board.

In addition to nonconformity situations, limited use circumstance policies are established for properties with potential geological hazards. The four categories of special circumstances are summarized on Table 5-C and discussed below.

TABLE 5-C LEGALLY NON-CONFORMING USES				
	Class I Nonconformity	Class II Nonconformity	Class III Nonconformity	Limited Use Circumstances
Land Use Circumstances	non-conforming land use under zoning bylaw	non-conforming land use but compatible with surrounding uses and not hazardous	siting of buildings and structures non-conforming with siting regulations	land located within Development Permit Area 1-G and designated LIMITED USE or RURAL

Board Policy	no special action; rely on Section 911 of the <u>Local Government Act</u>	opportunity to apply for rights to continue existing use and to rebuild to same scale	opportunity to apply for rights to continue existing building and structure siting and to rebuild to same scale	opportunity to apply for rezoning or to vary subdivision regulations in accordance with a geotechnical study
Implementation Process	bylaw enforcement procedures	rezoning application, public hearing and covenant registered on title	development variance permit application and public meeting	geotechnical study and re-zoning application and/or development permit application

“Class I nonconformity” involves a land use, legally established prior to enactment of the zoning bylaw, which is not included as a permitted land use in the present zoning of the property. Under Section 911 of the Local Government Act, such a nonconforming use is permitted until the use is discontinued or until the building or structure in which the nonconforming use is taking place is destroyed. In these situations, existing land uses are considered nonconforming, and long-term use rights are limited to those in Section 911 of the Local Government Act, and the Board will take no action. Fortunately, there are relatively few of these inappropriately located uses in the community plan area.

“Class II nonconformity” involves a land use, legally established prior to enactment of the zoning bylaw, which is not included as a permitted land use in the present zoning of the property, but whose continued existence under certain conditions and restrictions would not create a serious hazard or conflict with surrounding land uses. Often, however, the legally established use cannot be rendered conforming through rezoning because such zoning would permit the expansion of the use or the addition of other related uses which could prejudice neighbouring land values or amenities or create a hazard. In such cases, where the applicant indicates a desire to negotiate a covenant with the Regional Board limiting future uses, buildings and structures to those legally established at present, upon application for rezoning, the Board may rezone the property to reflect the actual use. The covenant would restrict future development and use of the property to existing levels but would allow the landowner to secure a long-term right to use and to rebuild existing buildings and structures, though not necessarily with the same siting, in the event of destruction by fire or other causes. The public hearing which is required for rezoning is a critical component of this process.

“Class III nonconformity” involves a land use which is appropriately zoned, but where buildings and structures do not meet current building or siting regulations in the zoning bylaw and will not be able to meet such regulations in the event of a need to reconstruct the building and structure.

Upon application of the landowner, the Regional Board is prepared to consider, subsequent to a public meeting, the issuance of a development variance permit which would have the effect of varying the siting regulations and rendering the building and structure conforming, provided that no increase in density is permitted. This procedure allows the landowner relief from specific building and setback regulations and thereby secures the right to rebuild on the existing site for the long term. The right to repair, alter and extend any building and structure which might be eligible for a development variance permit is protected, subject to certain limitations, by 911 of the Local Government Act.

“Limited Use Circumstances” involve lands which are subject to geological hazards within Development Permit Area 1-G and designated LIMITED USE or RURAL. In addition to procedures for reducing nonconformity, special consideration is given to properties with limited use constraints imposed by geotechnical problems so as to offset these constraints by allowing greater flexibility in the use of land within safe building areas. Siting and subdivision policies may be altered by development permit and development variance permit in accordance with the results of a geotechnical study.

It is the policy of the Regional Board that:

- 5.7.1 To streamline the building process and to minimize hardships for landowners, the Regional Board intends to reduce nonconformity wherever possible in the Plan area and will give special consideration to the problems created by geotechnical hazards.
- 5.7.2 In cases of “Class II nonconformity” of land use, where neighbouring property values and amenities would not be prejudiced and where there is no hazard to public health and safety, the Regional Board may, upon application of the landowner and upon the offer of a covenant by the landowner subsequent to a public meeting, rezone a property to an open zone and enter into a covenant pursuant to Section 219 of the Land Title Act or other legal agreement. The terms of this instrument would not change without a further public meeting and would have the effect of limiting the uses to those presently existing.

5.8 Transportation and Utility Corridors

In recognition that additional capacity in transportation and utility corridors and facilities will be required to serve future growth areas of the Lower Mainland, and that the construction of new transportation and utility corridors has major impacts on the land base, growth potential and economic well-being of the Region, in May, 2001, the Regional Board adopted the *Transportation and Utility Corridors of Regional Significance Policy*.

It is the policy of the Regional Board that:

- 5.8.1 Any proposed new transportation or utility corridor of regional significance will be regarded as a “Corridor Under Study”. Regional District support for such proposals will be contingent upon submission of studies that demonstrate:
 - (a) the proposal meets the land use, environmental and air quality policies of the Regional Board as expressed in the Regional Growth Strategy, Fraser Valley Air Quality Plan, this Official Community Plan, and other Board policies;
 - (b) the proposal minimizes the disruption to existing communities and settlement areas, the consumption of agricultural land, the impact on the natural environment, and provides for safe and unrestricted movement of agricultural vehicles and goods in agricultural areas;

- (c) the proposal does not restrict the development of adjacent land areas which are designated or identified for future growth and development, or where the proposal does impact such lands, adequate compensation is provided to the local government in consideration of long range impacts on financial plans, capital expenditure programs, and foregone taxation opportunities;
- (d) the proposal does not adversely affect the drainage or productivity of agricultural land;
- (e) the transportation and utility service demand projections are deemed credible by the Board; and,
- (f) the proposal represents a variety of benefits to communities in the region that are traversed by the proposal including providing access to service not previously available to areas of the region, and enjoys broad-based support from the affected communities.

5.8.2 Transportation and utility proposals of regional significance that satisfy the aforementioned criteria should be designated to make use of existing transportation and utility right-of-ways wherever possible.

5.8.3 Visual impacts associated with major utility corridors and infrastructure should be assessed and mitigated.

5.9 Use of Crown Lands

The Area Designations and policies of this Plan may not apply, or may not be binding on, lands or resources owned and administered by federal and provincial governments. Regulating the use of federal land is beyond the jurisdiction of local governments. As well, the use and development of Provincial Crown lands by the Provincial Government, or an agent of the Provincial Government, is immune to local government regulations and policies.

Tenants or third party users of Provincial Crown land for non-governmental purposes are subject to local bylaws and regulations. The exception is mineral and aggregate extraction which is not considered to be a use of the land under Provincial legislation and is therefore not subject to prohibition in local zoning bylaws.

The Canadian Pacific Railway and Canadian National Railway rights-of-way cross through the Plan area. Inter-provincial railways and railway undertakings fall under federal jurisdiction and are not subject to the land use regulations of the Regional District.

While local government regulations may not be binding on federal and provincial governments and national railways, the provisions of the Plan should be taken into account by those bodies as an expression of Regional Board objectives and a basis for co-operation between different levels of government. Should a government ministry, agency or other organization propose a development which is contrary to the policies of this Plan, then the Responsible Authorities are encouraged to make application for Plan amendment as outlined in this Plan. Not only would the application allow the Board to express its interest in the proposed development and provide for public input at a local level, but this procedure will enable the Regional Board to adjust policies

for adjacent land over which it has jurisdiction and thereby securing integrated and compatible development throughout the Plan area.

It is policy of the Regional Board that:

- 5.9.1 Provincial and federal governments should use Crown land in a manner that conforms to Regional District bylaws, policies and regulations.
- 5.9.2 Where a government ministry, agency or other organization proposes a land use which is contrary to the policies of this Plan, the Responsible Authorities are encouraged to make application for Plan amendment as outlined in this Plan.
- 5.9.3 Rail companies should use their lands in a manner that conforms to Regional District bylaws, policies and regulations.

6.0 AREA DESIGNATIONS

Area Designations provide a policy framework for guiding land use and services in keeping with the Official Community Plan objectives and the requirements of the Local Government Act. Section 877 of the Local Government Act requires that official community plans include statements and map designations respecting:

- the approximate location, amount, type and density of residential development required to meet anticipated housing needs over a period of at least 5 years;
- the approximate location, amount and type of present and proposed commercial, industrial, institutional, agricultural, recreational and public utility land uses; and,
- the approximate location and type of present and proposed public facilities.

Area Designations are implemented primarily through permits, zoning, and other regulatory bylaws.

Electoral Area “G” is divided into the following area designations summarized below. Policies established in each of the Area Designations shall apply to land within that designation as shown on *Schedule 1 - Area Designations*.

AGRICULTURAL (AG)	Land within the Agricultural Land Reserve or suitable for farming
FOREST (F)	Land within the working forest
HIGHWAY COMMERCIAL (HC)	Existing and potential commercial lands
INDUSTRIAL (M)	Industrial sites
INSTITUTIONAL (I)	Land reserved for public and public assembly uses
LIMITED USE (LU)	Land with significant geotechnical or flooding hazards, access limitation, and/or limitations to on-site servicing
PARK AND CONSERVATION AREA (P)	Existing or potential parks, conservation areas or recreational reserves
RESORT (RT)	Existing resort developments and lands suitable for recreational uses with on-site services
RURAL (R)	Land generally suitable for low density residential development with on-site services
SUBURBAN RESIDENTIAL (SR)	Lands within existing hamlets with community water supply that may be suitable for suburban development

Each designation contains the following sub-headings:

- **Description** - a brief outline and general summary of the purpose and rationale for the designation.

The legally exact statements of Regional Board policy are contained in the four following headings. On questions of interpretation, these should be consulted as the statement of Regional Board policy.

- **General Policies** - the policies of the Regional Board regarding the amount and location of land to be designated and the local and regional development policies in a particular Area Designation.
- **Designation Policies** - state the type of land placed in a particular designation and the conditions for extending existing areas or creating new areas in the designation.
- **Use Policies** - list the uses that may be permitted on land within a designation and, in some cases, state the standards under which a given permitted land use must be developed.

Subdivision Policies - specify the minimum lot size permitted within a designation and other conditions of subdivision.

6.1 AGRICULTURAL (AG)

About 45% of lands in Electoral Area “G” (55% of EA “G” north of the Fraser) are within the Agricultural Land Reserve (ALR), including a significant number of large intact agricultural parcels. Most of these parcels are also in the 1:200 year floodplain of the Fraser River, a contributing factor to the high quality soils found in the area and a limitation for higher density land uses. Generally, land within the AGRICULTURAL designation is also within the ALR.

Plan policies aim to preserve ALR land within the Official Community Plan area. The Agricultural Land Commission Act, regulations thereto and Orders of the Commission take precedence on matters of land use and subdivision of land in the ALR. Designating ALR lands as AGRICULTURAL will ensure that only agricultural uses and uses associated with and complementary to agriculture are permitted.

The Regional Board assists in the administration of ALR land by commenting on applications for subdivision, non-farm use, and exclusion of land from the ALR. The policies established in this Plan will provide guidance for future Regional Board comments on these applications.

It is the policy of the Regional Board that:

General Policies

- 6.1.1 Agricultural land shall be preserved by discouraging subdivision and fragmentation of farm parcels and the introduction of incompatible uses.
- 6.1.2 The agricultural economy and land base should be protected and enhanced by providing for a variety of uses, supplementary and ancillary to farm use which support farm incomes without jeopardizing the long term viability of farm land.

Designation Policies

- 6.1.3 The Plan map designates as AGRICULTURAL land with some or all of the following characteristics:
 - within the ALR;
 - suitable for farming; and,
 - flood hazards.
- 6.1.4 AGRICULTURAL areas may be extended or created through Plan amendment where additional areas suited to farm production are identified pursuant to the Agricultural Land Commission Act.
- 6.1.5 Where land presently within the Agricultural Land Reserve is, pursuant to the Agricultural Land Commission Act, excluded from the Agricultural Land Reserve; exempted by the Agricultural Land Commission Act; or exempted by Regulations or an Order of the Commission; the provisions of the Official Community Plan shall be binding and the land shall remain in the AGRICULTURAL designation unless and until the land is re-designated by bylaw amendment.

Use Policies

- 6.1.6 AGRICULTURAL areas shall be used for only **agricultural, conservation, park and park reserve, recreation, silviculture, single family residential, accessory residential, and associated rural residential** uses.
- 6.1.7 The Regional Board may consider site-specific zoning amendments to permit seasonal farm labour accommodations on parcels sixteen hectares (16 ha) or greater where the following conditions apply:
- a. the land is within the Agricultural Land Reserve and the AGRICULTURAL Area Designation of this Plan;
 - b. on a parcel classified as “Farm” under the British Columbia Assessment Act; and,
 - c. the seasonal farm labour accommodation use is incidental and necessary to the farm operation.
- 6.1.8 AGRICULTURAL areas in the Agricultural Land Reserve shall be used in accordance with the Agricultural Land Commission Act, regulations thereto, and Orders of the Commission. New non-farm uses on land within the ALR that are not exempted under Agricultural Land Commission Act must be approved by the Provincial Agricultural Land Commission and shall be in accordance with the standards of the Responsible Authorities.
- 6.1.9 The removal of soil or placing of fill on land in AGRICULTURAL areas shall be undertaken only in accordance the Agricultural Land Reserve Use, Subdivision and Procedure Regulation and FVRD Soil Removal and Deposit Bylaw No. 0729, 2006.
- 6.1.10 Pursuant to Section 21 of the Private Managed Forest Land Act, forest management activities shall be permitted on lands classified as private managed forest land.
- 6.1.11 Agri-tourism uses which are ancillary or supplementary to a farm use may be supported provided that parking and other needs can be met on-site and the operation is compatible with surrounding agricultural uses.
- 6.1.12 Potential conflicts between intensive agricultural operation and other land uses should be minimized by establishing minimum separation distances between conflicting uses.
- 6.1.13 The preservation and enhancement of existing agricultural operation in the AGRICULTURAL designation shall have priority over newly proposed non-farm uses.

Subdivision Policies

- 6.1.14 Land in AGRICULTURAL areas within the Agricultural Land Reserve shall only be subdivided in accordance with the provisions of the Agriculture Land Commission Act, regulations thereto, and Orders of the Commission.

6.1.15 Land in AGRICULTURAL areas within the Agricultural Land Reserve that is exempted under the Agricultural Land Commission Act shall only be subdivided in accordance with the standards of the Responsible Authorities, except that the parcel size shall be not less than sixteen (16) hectares.

6.1.16 New parcels created by subdivision within the AGRICULTURAL Area Designation shall be configured to maximize agricultural suitability and minimize potential conflicts between farm and non-farm uses.

Not For Legal Purposes

6.2 FOREST (F)

Description

The FOREST Area Designation policies of this Plan recognize that approximately 1,500 hectares of Crown land north of the Fraser and 1,300 hectares on Sumas Mountain are a part of the Province's Working Forest. These lands are actively managed by the Ministry of Forests and Range and forest licensees. A range of forestry uses and activities are expected to continue in this area. Forestry activities within the Provincial Forest, including logging, reforestation and stand tending, are regulated by the Provincial agencies, primarily under the Forest Act and the Forest and Range Practices Act.

FOREST lands in the Plan area contain steep slopes and streams located above community areas. Hazards originate on Crown land which may impact private lands and infrastructure below. Given these limitations, special consideration should be given where forest uses may have an environmental impact on adjacent parks or rural residential development. In these situations, the Regional Board will recommend to the Provincial agencies having jurisdiction that environmental impact studies by professional soils and engineering specialists be undertaken in association with any plans for forest use or management. Geotechnical studies should also be conducted if deemed to be required.

Public recreation on Crown forest lands is the responsibility of the Ministry of Tourism, Culture and the Arts. Logging roads on Crown land are used heavily for recreation, including mountain biking and hiking. The Regional Board strongly supports the maintenance and protection of this recreation resource.

The land use and subdivision policies for FOREST areas reflect the interests of responsible forest management and recreation use. Further discussion and policies relating to the management of forest resources within the Plan area are provided in *Section 14 – Resource Extraction*.

It is the policy of the Regional Board that:

General Policies

- 6.2.1 The Ministry of Forests and Range should preserve the integrity of Provincial forest boundaries in the long-term economic interests of the region and in recognition of the area's forest production.
- 6.2.2 Crown lease applications and development schemes involving land uses not compatible with forest development or conservation use in the FOREST area will not be supported or encouraged by the Regional District.

Designation Policies

- 6.2.3 This Plan designates as FOREST Crown lands within the Douglas and Chilliwack Provincial Forests; tree farm licenses and other Crown lands used for forestry activities licensed by the Province of BC; and, private managed forest lands not within the Agricultural Land Reserve.

6.2.4 FOREST areas may be extended or created through plan amendments when new areas having forest resource potential are identified. FOREST areas may be reduced or removed if land is removed from the Provincial Forest.

Use Policies

6.2.5 The use of FOREST land for forestry related activities is governed primarily by the Forest Act and the Forest and Range Practices Act.

6.2.6 FOREST areas shall be used only for forestry activities including logging, reforestation and stand tendering approved by the Ministry of Forests and Range; **conservation use, park and park reserve, public use, recreation use, resource extraction, resource industrial use** and silviculture.

6.2.7 Pursuant to Section 21 of the Private Managed Forest Land Act, forest management activities shall be permitted on lands classified as private managed forest land.

6.2.8 Where permitted by zoning and, where applicable, *FVRD Soil Removal and Deposit Bylaw No. 0729, 2006*, **resource industrial** uses may be permitted in the FOREST designation.

6.2.9 Sustainable green energy projects, which do not involve the use of incinerators or the burning of fossil fuels, may be permitted in the FOREST designation subject to rezoning, where applicable. Concerns related to transmission facilities, hydrological impacts and habitat impacts will be among those that must be addressed prior to rezoning.

6.2.10 The Ministry of Tourism, Culture and the Arts, along with the Ministry of Forests and Range, should consult the Regional District respecting any plans or facilities for recreation use within the FOREST Area Designation.

6.2.11 The Regional Board will support the establishment of an interpretive forest within the Provincial Forest to educate and promote sustainable integrated forest resource management.

Subdivision Policies

6.2.12 Land within the FOREST area designation shall be subdivided only when subdivision is required in the interests of responsible forest management, in which case no parcel smaller than thirty five (35) hectares shall be created.

6.3 HIGHWAY COMMERCIAL (HC)

Description

The HIGHWAY COMMERCIAL designation accommodates local and highway oriented commercial uses. The boundaries of the HIGHWAY COMMERCIAL designation are based on land utilized for existing commercial activities and those anticipated for future commercial development.

Existing commercial uses in Electoral Area “G” are located along the Lougheed Highway corridor in Dewdney, Nicomen Island and Deroche. In Dewdney and Deroche, some commercial lands in the historic town sites are undeveloped or under-utilized. These lands are typically small lots established during the early settlement of the area that, due to their size, are challenged to meet the current standards for parking, services and setbacks. In some cases, this creates unsafe conditions by leading patrons to park on the highway. Consolidation and redevelopment of these lands may provide opportunities to overcome these challenges in a manner sensitive to the historical and rural/agricultural character of the community. The policies of this Plan support consolidation of undersized commercial properties and cooperative efforts to resolve parking and other challenges in commercial nodes.

It is the policy of the Regional Board that:

General Policies

- 6.3.1 Land be designated HIGHWAY COMMERCIAL to accommodate commercial needs of the local community and the traveling public.
- 6.3.2 Development proposals shall ensure that adequate on-site parking facilities and safe access/egress are provided.
- 6.3.3 HIGHWAY COMMERCIAL uses need to provide adequate on-site sewage disposal and safe water supply, as required by the Responsible Authorities.
- 6.3.4 HIGHWAY COMMERCIAL uses must have good arterial or collector road access that is approved by the Ministry of Transportation and Infrastructure and does not generate traffic through settlement areas.
- 6.3.5 Development proposals are encouraged to respect the historical and rural character of the area in selecting the proposed use, design and layout of new development.

Designation Policies

- 6.3.6 The Plan map designates as HIGHWAY COMMERCIAL lands with some or all of the following characteristics:
 - existing commercial uses;
 - good road access;
 - potential geotechnical or flood hazards.

- 6.3.7 HIGHWAY COMMERCIAL areas may be extended or created through Plan amendment where:
- a. an inadequate supply of commercial lands exists;
 - b. on-site sewage disposal, water supply and site drainage facilities are adequate;
 - c. hazard mitigation and flood construction requirements can be met; and,
 - d. additional land is shown to meet the designation policy criteria.

Use Policies

- 6.3.8 HIGHWAY COMMERCIAL areas shall be used for only **accessory residential, associated rural residential, highway commercial, local commercial, semi-public and public uses.**
- 6.3.9 All new HIGHWAY COMMERCIAL uses, other than residential uses, shall be subject to the following special conditions:
- a. that suitable buffer area or setback distances are maintained around commercial developments;
 - b. that suitable facilities can be provided for safe public access from an arterial and collector road and parking areas;'
 - c. that services suitable for the intended use are provide for; and,
 - d. that levels of development are compatible with the natural environment.
- 6.3.10 The Regional Board may not support proposals to rezone HIGHWAY COMMERCIAL properties with frontage on Cooper Road in Deroche for commercial uses except where the parcel is also proposed to be consolidated with a parcel fronting Lougheed Highway.

Subdivision Policies

- 6.3.11 Lands in the HIGHWAY COMMERCIAL areas shall be subdivided only in accordance with the standards of the Responsible Authorities, except that the parcel size shall not be less than:
- (a) two (2) hectares where on-site services are proposed; and,
 - (b) zero point four (0.4) hectares where there is an approved community water supply.
- 6.3.12 Notwithstanding Section 6.3.11, consolidation of existing small lots which do not satisfy the parcel size requirements in the HIGHWAY COMMERCIAL designation is encouraged in order to provide space for on-site services and sufficient parking facilities in accordance with the requirements of the Responsible Authorities.
- 6.3.13 Parcels with frontage along the east side of Cooper Road in Deroche are designated HIGHWAY COMMERCIAL to facilitate consolidation with commercial properties fronting Lougheed Highway to improve the viability of the commercial area and provide alternate access.
- 6.3.14 Subdivisions for residential lots are not permitted in the HIGHWAY COMMERCIAL Area Designation.

6.4 INDUSTRIAL (M)

Description

The INDUSTRIAL Area Designation includes lands with existing permitted industrial uses.

It is the policy of the Regional Board that:

General Policies

6.4.1 Buffers shall be provided along all lot lines to mask the industrial use from adjacent uses.

Designation Policies

6.4.2 The Plan map designated existing industrial sites as INDUSTRIAL. The Regional Board does anticipate the designation of significant additional lands as INDUSTRIAL.

Generally, industrial uses should be directed to serviced industrial parks and locations with public sewer and water systems, access to transit, proximity to labour, and other necessary amenities.

6.4.3 Lands with approved aggregate extraction operations may be designated INDUSTRIAL for the purpose of resource industrial uses provided that:

- a. uses of the lands can be limited to resource industrial use;
- b. off-site impacts can be mitigated to the satisfaction of the Regional Board;
- c. the use will not result in environmental contamination or hazards; and,
- d. the parcel size is not less than sixteen (16) hectares.

Use Policies

6.4.4 Lands in INDUSTRIAL areas shall be used for only **accessory residential**, general industrial, heavy industrial, **resource**, and **resource industrial** uses.

Subdivision Policies

6.4.5 Lands in INDUSTRIAL areas shall only be subdivided in accordance with the standards of the Responsible Authorities, except that the parcel size shall not be less than sixteen (16) hectares.

6.5 INSTITUTIONAL (I)

Description

The INSTITUTIONAL Area Designation recognizes publicly-owned lands that have been identified or reserved for community facilities or infrastructure, including

- Deroche Elementary School;
- Dewdney Elementary School;
- FVRD Community Access Centre; and,
- FVRD North Fraser Fire Hall.

The INSTITUTIONAL designation also includes private lands intended for use for churches, child care or educational facilities, or other assembly uses that serve the general public.

It is policy of the Regional Board that:

General Policies

- 6.5.1 The Regional Board may consider the development of a community park in conjunction with a community facility, such as a community hall or fire hall, within the INSTITUTIONAL Area Designation.
- 6.5.2 The public shall be consulted on any proposed community facilities.
- 6.5.3 Opportunities for partnerships with Mission School District No. 75, Leq'á:mel First Nation, and other groups for development of community facilities in the INSTITUTIONAL designation should be considered.

Designation Policies

- 6.5.4 This Plan designates as INSTITUTIONAL lands identified and reserved for community uses and lands zoned for public assembly uses.
- 6.5.5 INSTITUTIONAL areas may be created or extended through amendment subject to:
 - a. established community need for expanded or improved facilities which serve the general public;
 - b. compatibility of the proposed use with existing and proposed land uses adjacent to and in the vicinity of the subject property;
 - c. certification that services such as water supply and sewage disposal can be provided on-site or through a community service;
 - d. physical capability of the subject property to accommodate development in an environmentally sustainable manner; and,
 - e. projected traffic generation and parking requirements.

Use Policies

- 6.5.6 Land within the INSTITUTIONAL area designation shall be used for only **accessory residential, conservation, institutional, park and park reserve, public and semi-public, low density commercial recreation, and recreation uses.**
- 6.5.7 With the possible exception of a caretaker's residence, residential use shall not be permitted in the INSTITUTIONAL area designation.

Subdivision Policies

- 6.5.8 Land in INSTITUTIONAL areas shall only be subdivided under circumstances where subdivision is required to facilitate the efficient and effective delivery of services to the general public.

6.6 LIMITED USE (LU)

Description

The LIMITED USE Area Designation is intended to constrain development in areas with significant geological and flood hazards, limited road access, areas isolated from community services and areas which are environmentally sensitive. However, LIMITED USE lands may be re-designated if future studies show that an area can accommodate a broader range of uses without being affected by geological hazards or damaging environmentally sensitive areas, and where access and other requirements can be met.

It is the policy of the Regional Board that:

General Policies

- 6.6.1 LIMITED USE areas are established to minimize development in remote, inaccessible, hazardous or environmentally sensitive areas with limited or no access to community services and to maintain low density development on suitable development sites.
- 6.6.2 Development shall be controlled and uses may be restricted in areas of natural hazard potential and environmental sensitivity.
- 6.6.3 Environmentally sensitive areas shall be identified, preserved and buffered from development.

Designation Policies

- 6.6.4 The Plan map designates as LIMITED USE areas with some or all of the following characteristics:
 - significant geologic hazard;
 - significant flooding hazard;
 - environmental sensitivity;
 - no community and development services; and,
 - poor road access.
- 6.6.5 LIMITED USE areas may be extended or created through Plan amendment.
- 6.6.6 LIMITED USE areas may be reduced and re-designated if future studies show that an area can safely accommodate a broader range of uses without environmental damage, unacceptable public risk, or excessive public expenditure on access or other public works.

Use Policies

- 6.6.7 LIMITED USE areas may be used only for **agriculture, assembly, conservation, low density commercial recreation, park and park reserve, public and semi-public, resource extraction, resource industrial, single family residential, accessory residential, and, associated rural residential** uses.

- 6.6.8 Rezoning applications to permit **assembly use, low density commercial recreation, resource extraction, and resource industrial** uses shall include an **environmental impact assessment** and, if deemed necessary by the Regional Board, a **engineering feasibility study** to ensure that the proposed use will not result in unacceptable public expenditures or service demands; unacceptable environmental or geotechnical impacts; or, negatively affect surrounding properties.
- 6.6.9 Subject to rezoning, **low density commercial recreation uses** may be permitted in the LIMITED USE designation on parcels four (4) hectares in area or greater. The minimum parcel size for **low density commercial recreation** uses involving **assembly use** or **outdoor recreation use** shall be eight (8) hectares.

Subdivision Polices

- 6.6.10 Land in LIMITED USE areas shall only be subdivided in accordance with the standards of the **responsible authorities**, except that the parcel size shall not be less than eight (8) hectares.

6.7 PARK AND CONSERVATION AREA (P)

Description

The PARK AND CONSERVATION AREA designation allows for the identification, protection and preservation of wilderness and environmentally sensitive areas and places for the enjoyment of outdoor recreational activities, community use, and environmental or heritage conservation. This designation includes existing and potential parks and open space, wildlife management areas, provincial and regional parks, community parks, conservation areas and recreation reserves. It also includes the portions of the Fraser River, Nicomen Slough, Quaamitch Slough, and Zaitscullachan Slough within the Plan area.

It is the policy of the Regional Board that:

General Policies

- 6.7.1 Areas of significant recreation or conservation potential should be reserved for future park development.
- 6.7.2 The acquisition and maintenance of recreational land that provides access to rivers and lakes will be pursued where economically feasible.
- 6.7.3 PARK AND CONSERVATION AREA designation is established to:
 - identify designated and proposed local, regional or Provincial parks or protected areas;
 - provide walking and cycling access to park and recreation areas and facilities for the enjoyment of the natural environment; and,
 - conserve environmental assets including unique natural features, distinctive landscapes and areas of high recreational value.

Designation Policies

- 6.7.4 The Plan designates as PARK AND CONSERVATION AREA lands with some or all of the following characteristics:
 - areas owned or under long-term lease by a Responsible Authority for public recreation use of regional or local significance including regional parks, recreation reserves and areas with recreation potential;
 - areas that may have geologic or flood hazards;
 - areas of important wildlife or environmental value;
 - land with significant recreation potential which may be suitable for future park use; and,
 - the portions of the channels of the Fraser River, Nicomen Slough, Quaamitch Slough, and Zaitscullachan Slough within the Plan area.
- 6.7.5 PARK AND CONSERVATION AREAs may be extended or created through Plan amendment provided that additional lands that meet the required designation are identified.

Use Policies

- 6.7.6 PARK AND CONSERVATION AREAs shall be used only for **conservation, park and park reserve, public and semi-public, and recreation uses**; except for those lands within the Agricultural Land Reserve (ALR) which may also be used for **agriculture** uses.
- 6.7.7 Channel maintenance and gravel removal for the purpose of community flood protection may be permitted in stream and river channels within the PARK AND CONSERVATION AREA designation subject to the necessary approvals from the **responsible authorities**.
- 6.7.8 Communication towers shall be permitted in PARK AND CONSERVATION AREAs within Sumas Mountain Regional Park provided that:
- a. they do not compromise sensitive ecosystems or park values; and,
 - b. they provide direct benefit to the Regional Park service.

Subdivision Policies

- 6.7.9 Land in PARK areas shall only be subdivided under circumstances where subdivision is required in the interests of responsible park or environmental management.

6.8 RESORT (RT)

Description

The RESORT designation is intended to ensure that both year round and seasonal private resort developments maintain public access to natural assets, mitigate impacts to the natural environment, and provide adequate water and sewer systems. The designation policies require improved infrastructure services and encourage the establishment of integrated resort developments with a variety of compatible uses and services.

It is the policy of the Regional Board that:

General Policies

6.8.1 Developments in the RESORT Area Designation should be fiscally self-supporting in terms of the infrastructure and recreational facilities they provide.

Designation Policies

6.8.2 This Plan designates existing resort uses as RESORT.

6.8.3 The RESORT Area Designation may be created through Plan amendment where additional lands are shown to meet the designation polices, where comprehensive, integrated plans, including environmental impact assessments and feasibility studies, are presented and where recreational development trends warrant such extension or creation.

6.8.4 New RESORT areas:

- a. may have minor geological and flood hazards which can be mitigated on-site;
- b. must have good transportation access;
- c. must have suitable locations and conditions for on-site services or access to community services; and,
- d. must have areas suited, because of their location, scenic landscape, natural environment, physical characteristics, or natural amenities for RESORT uses.

Use Policies

6.8.5 Development in RESORT areas must avoid or mitigate environmental impacts, maintain public access to water bodies, and avoid alienation of public amenities.

6.8.6 RESORT areas may only be used for **accessory residential, conservation, low density commercial recreation, public**, outdoor recreation, motel campground, tourist campground, natural campground, and accessory retail uses.

Subdivision Policies

6.8.7 Land in RESORT areas shall only be subdivided in accordance with the standard of the Responsible Authorities, except that the parcel size shall not be less than twelve (12) hectares.

6.9 RURAL (R)

Description

The primary purpose of the RURAL designation is to maintain the existing rural character of the Plan area and to provide for residential uses that are environmentally sustainable and compatible with existing development and levels of servicing. The RURAL designation exists on rural lots that have good road access but that may have potential geotechnical hazard, servicing limitations, or other constraints.

Subdivision policies of the RURAL designation accommodate the creation of new parcels two hectares (2 ha) in area or greater. In recognition of the difficulties of site development within the Plan area, subject to zoning amendment, the clustering of parcels may be permitted in the RURAL designation provided that average density of the parent parcel being subdivided will not exceed one parcel per two hectares. Clustered subdivisions will normally take the form of bare land strata developments with the remaindered lands becoming common property that is protected from further subdivision, development, or disturbance by way of a restrictive covenant in favour of the Fraser Valley Regional District.

The Plan identifies RURAL designated lands in the community of Deroche as having potential for suburban residential densities if planned in a comprehensive manner. This unique pocket of land outside of the Agricultural Land Reserve features few hazards and minimal environmental constraints, with opportunities for community water, local commercial and education services, and shared on-site services. In order to encourage orderly and efficient use of this limited land area, the Plan has identified these lands as within the **Deroche Bench Special Planning Area**. The development of a local area plan is needed to define a development strategy, including suitable densities, for these lands.

It is policy of the Regional Board that:

General Policies

- 6.1.1 RURAL areas are established to accommodate a variety of rural lifestyles and maintain the low density rural character of the Plan area.
- 6.1.2 RURAL areas shall generally limit the demand for infrastructure through the provision of on-site services.

Designation Policies

- 6.1.3 The Plan map designates as RURAL areas with some or all of the following characteristics:
 - outside the ALR and floodplain;
 - predominantly rural in character;
 - expected to be suitable for on-site servicing;
 - good access to public roads;
 - existing rural or small lot subdivisions within a rural or agricultural context.

- 6.1.4 Development on RURAL lands may be constrained by geological or flooding hazards. However, it is anticipated that safe building sites can be identified based and protected through site-specific measures.
- 6.1.5 RURAL areas may be extended or created through Plan amendment where additional lands are shown to meet the designation policy criteria above and it can be shown that safe building sites exist.

Use Policies

- 6.1.6 RURAL areas may only be used for **agricultural use** excluding intensive agriculture, **conservation use, park and park reserve, public use, single family residential,** and, **associated rural residential** use.

Subdivision Policies

- 6.1.7 Land in RURAL areas shall only be subdivided in accordance with the standards of the **responsible authorities**, except that the minimum parcel size shall not be less than two (2) hectares.
- 6.1.8 Notwithstanding Section 6.1.7 of this Plan, subject to zoning amendment **density averaging** may be permitted to facilitate the clustering parcels away from hazard or environmentally sensitive areas provided that average density of the parent parcel being subdivided will not exceed one parcel per two hectares, and provided that each lot is suitable for its intended use.
- 6.1.9 Where a clustered subdivision is proposed:
- (a) the subdivider shall be required to register a restrictive covenant in favour of the Regional District which prohibits any further subdivision of a remainder parcel in a bare land strata development; or, in the case of a fee simple subdivision, the hazard or environmentally sensitive areas which the clustering of lots is intended to avoid. For clarity, the covenant shall prohibit further subdivision of the lands which would result in an overall density within the parent parcel greater than one parcel per two hectares. The prohibition by covenant of further subdivision shall be in effect until such time as the lands are serviced by public water and sewer systems and zoned for development at urban densities.
 - (b) the subdivider may be required to register a restrictive covenant in favour of the Regional District which prohibits the alteration of: any remainder parcel in a bare land strata development; or, in the case of a fee simple subdivision, the hazard or environmentally sensitive areas which the clustering of lots is intended to avoid; except:
 - alterations or construction necessary to protect the residential parcels from geotechnical or other hazards;
 - the location of services; and,
 - pedestrian trails.

- 6.1.10 The remainder parcel of a clustered bare land strata subdivision, or the covenanted areas of a fee simple clustered subdivision, should normally be continuous and not fragmented. However, in some circumstances, fragmentation may be desirable to avoid development in hazard areas or preserve identified environmental values.
- 6.1.11 Where possible, the remainder parcel of a clustered bare land strata subdivision, or the covenanted areas of a fee simple clustered subdivision should:
- border Crown land, park, or a remaindered parcel or covenanted area on an adjacent property; and,
 - include stream corridors, wetlands, sensitive or hazardous slopes and other areas of hazard or environmental value.
- 6.1.12 The Regional Board or Subdivision Approving Officer may require, upon rezoning or subdivision of land within the RURAL area designation, that advance street and conceptual lot layout plans be provided to demonstrate how the proposed lot layout would facilitate future subdivision.

6.10 SUBURBAN RESIDENTIAL (SR)

Description

The purpose of the SUBURBAN RESIDENTIAL Area Designation is to encourage an orderly growth of residential areas at suburban and country residential densities around the hamlet of Deroche while protecting the environment and rural landscape aesthetics.

The SUBURBAN RESIDENTIAL designation provides for a basic minimum parcel size of one (1) hectare with on-site water and sewage disposal. The purpose of establishing this minimum is to protect the tax base of the area from premature or haphazard development which could result in the need for emergency public servicing schemes and other such expenditures. However, with adequate forward planning, including a servicing plan to connect to the approved community water system and to provide storm drainage facilities, and other services and amenities upon subdivision, and subject to approval of the Responsible Authority for on-site sewage disposal, the minimum lot size is zero point five (0.5) hectares.

It should be noted that the Plan has identified an area of SUBURBAN RESIDENTIAL and RURAL lands on the 'Deroche Bench' as the **Deroche Bench Special Planning Area**. The development of a local area plan is needed to define a development strategy, including suitable densities, for these lands.

It is the policy of the Regional Board that:

General Policies

6.10.1 In the design and layout of new developments in SUBURBAN RESIDENTIAL AREAS special consideration should be given to the following:

- a. the character, scale and layout of existing adjacent residential areas;
- b. updating and improving servicing facilities of existing areas;
- c. the traffic flow on existing residential streets and pedestrian circulation;
- d. conservation of areas of natural or cultural significance; and,
- e. orderly growth of residential communities.

Designation Policies

6.10.2 The plan map designates as SUBURBAN RESIDENTIAL areas within the community of Deroche:

- a. within the Deroche Community Water Supply area;
- b. already subdivided into small parcels;
- c. above the floodplain and generally free from geologic and flood hazards;
- d. easily accessible by public roads;
- e. located outside the Agricultural Land Reserve and Fraser River floodplain; and,
- f. expected to be suitable for on-site sewage disposal at the planned density.

6.10.3 SUBURBAN RESIDENTIAL areas may only be extended or created through plan amendment provided:

- a. comprehensive, integrated plans are presented which demonstrate that additional lands that meet the designation policies are identified;
- b. development trends warrant such an extension or creation;
- c. the creation or extension does not contravene the Official Community Plan objectives and policies.

Use Policies

6.10.4 SUBURBAN RESIDENTIAL areas may only be used for **public, residential, and associated rural residential uses.**

Subdivision Policies

6.10.5 Land in SUBURBAN RESIDENTIAL areas shall only be subdivided in accordance with the standards of the **Responsible Authorities** except that the minimum parcel size shall not be less than:

- a. one (1) hectare where there is no approved community water system;
- b. zero point five (0.5) hectares provided that the proposed development is to be serviced by an approved community water system;
- c. that specified in a Local Area Plan adopted by the Regional Board as a schedule to this Plan.

6.10.6 Where land in SUBURBAN RESIDENTIAL areas is proposed to be developed on the basis of on-site sewage disposal, land shall only be subdivided in accordance with the standards of the **Responsible Authorities** and where:

- a. provision has been made for a “back-up” tile field on each lot; and
- b. an engineering study and related documentation has demonstrated that the proposed development is suitable for long term on-site sewage disposal and that no danger exists for ground water pollution which could lead to environmental or human health problems.

7.0 LOCAL AREA POLICIES

The Plan area is comprised of distinct hamlets and communities. While they have much in common, their circumstances are also different in important ways. This section of the Plan outlines policies aimed at the unique challenges of individual hamlet areas.

7.1 Hatzic Island

The recreational amenities and rural atmosphere of Hatzic Island have made it a popular recreation and residential location for many decades. However, the attraction of the area, combined with its particular development history and environmental attributes, have created a number of difficult challenges for the community:

- The average density of development on Hatzic Island is high for an unserviced rural area due to the presence of non-conforming urban-type residential developments, mobile home parks, and recreational resorts. By most standards, unserviced development at the density found on Hatzic Island is not sustainable. Redevelopment of several non-conforming developments is unlikely due to legislation, land ownership structures, and form of the development currently existing.
- On-site sewage disposal fields may be contaminating groundwater and water supplies in some locations.
- Hatzic Island is within the Fraser River floodplain. Even high points on the Island are two metres below the elevation of a 1:200 Fraser River flood. Locations on the island are also subject to frequent minor flooding from within the Hatzic watershed which cause the most disruption and damage in low lying areas such as Everglades Resort.
- Residents of the Island are dependent on one access road and bridge; access may be cut off during major Hatzic floods.

For these and other reasons, the land use plans and zoning bylaws since the late 1960's have generally designated the Island for low density rural uses. In doing so, they rendered a number of existing developments "nonconforming".⁴³

This plan continues the objective of these previous plans to generally limit development to existing levels. However, it includes important new directions that may improve the situation in meaningful ways. This plan contains new policies regarding:

- a. legitimization of some non-conforming uses if current servicing, site development and flood mitigation standard can be met;
- b. investigation of public sewer and water services to address environmental and human health risks;
- c. the prospect of limited 'country residential'-type subdivision if community water or sewer infrastructure is achieved; and,

⁴³ The 1968 Official Regional Plan for the Lower Mainland Planning Area designated the Island as a lowland rural area best suited to large rural holdings. Zoning was introduced to the community in 1972 by the Dewdney-Alouette Regional District. DARD Bylaw No. 28-1972 zoned much of the Island Rural-3 with a minimum site area of 20 acres. This direction has since been maintained in land use plans and zoning bylaws.

- d. advocacy for infrastructure improvements to reduce flood hazards and enhance recreational values.

Non-conforming Uses

Occasionally, the adoption or amendment of a zoning bylaw will prohibit uses that were previously permitted. In these cases, lawfully existing uses established before the prohibiting bylaw are considered to be nonconforming, or ‘grandfathered’. Rights surrounding lawfully non-conforming uses are set out in Section 911 of the Local Government Act (LGA). Section 911 allows lawfully established non-conforming uses to continue while eventually facilitating their elimination. The tension inherent in this purpose is obvious. Not surprisingly, a large and complex body of case law dealing with statutory nonconforming use has evolved which, from time to time, changes how the legislation is understood. It is essential to consider this case law when applying Section 911 in a particular instance.

Generally, Section 911 actively works towards conformance by preventing an increase in the scale of the use and limiting the duration of the use to the ‘natural’ life of the structure. In addition, nonconformance with zoning may depress the value of a property and increase difficulty in obtaining insurance, mortgages and financing. The net effect is to encourage replacement of the nonconforming use with one that conforms to the zoning bylaw.

However, in some instances the legal framework combined with practical considerations such as ownership structure and the nature of the use, leaves little or no expectation that conformity will be achieved, even in the long term. The result may be that a nonconforming use is permitted, and expected, to continue indefinitely but is still subject to the depressing affects of non-conforming status. In these instances, nonconforming status may create uncertainty and stifle investment necessary for the maintenance of safe and healthy residences or neighbourhoods. It can become difficult to sell or transfer interests, achieve market value, and obtain mortgages or financing necessary for upgrades and repairs. As a result, developments may steadily degrade over time without any clear mechanism for renewal and replacement. Some of the lawfully nonconforming developments on Hatzic Island may fall into this category.

It is the policy of the Regional Board that:

- 7.1.1 Where the Regional Board considers that there is low likelihood of achieving conformity with zoning over time, the Board may treat lawfully non-conforming uses on Hatzic Island as Class II nonconformities under Section 5.7 of this Plan and rezone to reflect actual existing uses subject to:
 - a. connection to a community water or sewer system, or where no public system is available, upgrade of on-site systems to meet acceptable standards;
 - b. implementation of appropriate site development standards;
 - c. no increase in density, scale or intensity of development;
 - d. no increase in hazard or exposure to risk;
 - e. ability to meet flood construction levels and setbacks; and,
 - f. adequate access.

Services

Sewage Disposal

Development on Hatzic Island relies on on-site water supplies and sewage disposal systems. The sewage disposal systems that are most commonly used on Hatzic Island are deep trench type systems where the trench depths are extended to the more permeable, deeper sand layer to avoid the less permeable top soils.⁴⁴ This may bring systems into conflict with groundwater, which is typically high on Hatzic Island, at least seasonally.

Many significant developments on Hatzic Island were constructed in the 1960's and 1970's, often before Provincial regulations respecting septic field design were introduced. "There are numerous sewage disposal systems of which some may be inadequately sized, subject to seasonal failure, failing currently, and/or encroaching on water wells."⁴⁵ These septic fields are likely not fully functioning or are nearing the end of their anticipated lifespan.

In the case of nonconforming developments, replacing failed septic systems may be difficult due to the hydro-geological conditions and the extent of development on the properties. Package treatment plants or alternative disposal systems may be an option, but potentially a costly one. Moreover, package treatment plants may be more difficult to operate and maintain than conventional systems. In any event, failure of a septic system in such a development could affect a significant number of people and result in pressure for public sanitary sewer and water systems.

In 2004, of residents who respond to the Community Planning Survey, 47% were very concerned that improper treatment and disposal of sewage may be reducing water quality. Another 25% of respondents were somewhat concerned. 35% of respondents reported problems with their own sewage disposal system. It is not surprising, then, that 75% of respondents to the Community Planning Survey supported the concept of a community sewage system for Hatzic Island.⁴⁶

As a part of the OCP update process, the Regional District, in partnership with the District of Mission, commissioned Dayton & Knight Consulting Engineers to assess the feasibility of developing a sanitary sewer system for Hatzic Island and Hatzic Estates (in Mission). Dayton & Knight evaluated three potential options: 1. individual on-site ground-disposal systems; 2. a community collection system and treatment plant; and, 3. connection to the District of Mission collection system for conveyance to the JAMES Plant for treatment.

While individual on-site systems may have some application, they were not recommended as the basis of a servicing strategy for the area due to high water table, high capital costs, and high operations/maintenance costs. A community treatment plan was not recommended because of challenges with siting the plan, operation/maintenance issues, and social issues. Dayton & Knight recommend connection to the District of Mission system for conveyance to the JAMES Plant. This would involve a local collection system – either a partial gravity system or a low pressure system - and a conveyance system to move the sewage into the Mission system and on to the JAMES Plant. The capital costs were estimated at five to seven million dollars.

⁴⁴ Fraser Health Authority. Letter to FVRD dated April 5, 2004 regarding Sewage Disposal on Hatzic Island.

⁴⁵ Central Fraser Valley Health Unit. *Hatzic Island Water Quality Survey*. April, 1994.

⁴⁶ For more information on the 204 Community Planning Survey, please see Section 1 of this Plan.

Certainly, the costs for a public sanitary sewer system for Hatzic Island and Hatzic Estates are high. It is likely that significant financial assistance from senior governments would be necessary to make capital costs affordable to the community. However, community perceptions of acceptable cost levels could change, particularly with greater awareness of the costs involved with replacement of failed individual on-site systems with new ones that meet current requirements.

A public sanitary sewer system for Hatzic Island would address existing concerns with water quality, human health, density of development, and impacts to the environment. It would not facilitate significant new development because land use and density on Hatzic Island is constrained by local and Fraser River flood hazards; limited access; existing land use and development patterns and other limitations. Accordingly, costs would not generally be offset by new development. Nevertheless, the presence of a sanitary sewer would undoubtedly generate substantial pressure for intensification of development.

Water Supply

Most Hatzic Island residents have acceptable water supplies. Sixty percent of respondents to the *2004 Community Planning Survey*⁴⁷ were generally satisfied with their drinking water. Yet, the quality of drinking water is a concern for many.

Hatzic Island residents generally obtain drinking water from on-site shallow (- 10 m) wells or sand points.⁴⁸ Shallow wells and sand points are at greater risk of contamination from septic fields, agricultural wastes or other surface pollutants compared to deeper wells. In addition, the Nicomen Slough Aquifer, the source of Hatzic Island drinking water, is classified by the Ministry of Environment as “highly vulnerable” to contamination from surface sources. The aquifer has little natural protection against surface contaminants. Furthermore, Hatzic Lake is undergoing sedimentation and eutrophication. Water is exchanged between the lake and groundwater which may also negatively impact drinking water quality, particularly phosphate levels.⁴⁹ This is an ongoing process which is not likely to be reversed.

Some private water systems serving high density non-conforming developments and recreational resorts regularly face boil orders. In a recent test of 12 wells on Hatzic Island, four wells had nitrate levels “of concern” (+3 mg/l) and one well exceeded national drinking water standards for nitrate concentration (+10 mg/l).⁵⁰ Wells with high nitrates were near or within urban-type developments; septic systems appear to be the source of contaminants.

The dense concentration of septic fields, the natural vulnerability of the aquifer to surface contamination, shallows wells, and the effect of Hatzic Lake on drinking water quality all interact to increase overall risk to the water supply. The risk can be expected to increase over time if the status quo is maintained.

Sixty eight percent of *Community Planning Survey* (2004) respondents supported the concept of a community water system. While a subsequent proposal for a water system to serve Hatzic Island and Hatzic Prairie was opposed, presumably due to cost, it may be appropriate to now investigate the potential for a water system to serve Hatzic Island only.

⁴⁷ See Section 1.4 of this Plan for more information about the 2004 Community Planning Survey.

⁴⁸ In the 2004 Community Planning Survey, 84% of respondents stated that they rely on a well or sand point for drinking water.

⁴⁹ Magwood, 2004.

⁵⁰ Simone Magwood. *Drinking Water Quality in the Hatzic Valley, BC*. UBC Master's Thesis. 2004.

It is the policy of the Regional Board that:

- 7.1.2 The Regional District will undertake a study to assess the feasibility of providing a public sewage disposal system to Hatzic Island and canvas the Hatzic Island community to gauge interest in establishing a Service Area.
- 7.1.3 The Regional District will liaise with the District of Mission regarding the potential to develop for Hatzic Island a community sewage collection system which connects to the District of Mission sanitary sewer.
- 7.1.4 If there is community interest in establishing a public sewage disposal system for Hatzic Island, the Regional District will seek funding support from senior governments.
- 7.1.5 The Regional District will continue to investigate the feasibility and costs of providing a public water system to Hatzic Island, including connection to the Abbotsford-Mission Water and Sewer Commission system. Liaison with Abbotsford-Mission Water and Sewer Commission to determine feasibility and potential impacts on the water supply is an essential part of this investigation.
- 7.1.6 In the event that public community water or sewer services become available on Hatzic Island, the Regional Board may consider Plan and zoning amendments to facilitate limited 'country-residential' type subdivision of one (1) hectare parcels on Hatzic Island.

7.2 Hatzic Lake

Lake Levels

Low summer lake level was rated as the most important issue facing Hatzic Island in the *2004 Community Planning Survey*.⁵¹ During summer months, the water levels naturally drop so low that recreational use of the lake is severely impacted. The Dewdney Area Improvement District is investigating modifications to the Hatzic Pump Station which would allow water impoundment in the summer to raise water levels. Such modifications are supportable provided that they do not increase the risk of flooding or negatively impact habitat and fish passage.

Flooding

The 90 km² Hatzic watershed drains through Hatzic Lake to the Fraser River. During moderate to heavy rainfall events, low lying areas surrounding Hatzic Lake experience minor floods which impact private property, particularly at Everglades Resort. In more extreme events, flood water levels within the Hatzic system could reach 5.2 metres above sea level which would result in more significant property impacts and safety risks.⁵² A number of factors contribute to the

⁵¹ Please see Section 1 of this Plan for information about the 2004 Community Plan Survey.

⁵² Associated Engineering. *Hatzic Prairie Drainage Study*. August, 1992.

flooding, including low watercourse gradients, historical channel alterations, channel constrictions, sedimentation, and pump capacity.

When the Fraser River level is lower than water levels in the Hatzic system, water drains by gravity to the Fraser. When the Fraser River rises above the level of the Hatzic system, the flood boxes at the Hatzic Pump Station close and water from the Hatzic watershed must be pumped into the Fraser. Existing pumps are insufficient to move the volume of water draining from the Hatzic system during even moderate rainfall events.

Hatzic Lake flooding was examined in 1992 by Associated Engineering (AE) and in 2003 by Golder Associates. AE concluded that tripling pump capacity would not eliminate flooding during 1:10 year / 2-day storm events. However, it would significantly reduce the frequency of minor flood events and reduce flood elevations and durations during major floods. Golder recommended upgrades to increase pumping capacity to 14.0-20.5 m³/s.⁵³ Upgrades to the Hatzic Pump Station are discussed Section 11 of this Plan. The effects of the Hatzic Pump Station on fish passage are discussed in Section 12.

Lake Access

Public access to Hatzic Lake is problematic. The Crown has preserved public access points, but they are generally impassible due to vegetation, fencing or other barriers. Understandably, landowners have little interest in increasing public access. It is a relatively small lake. Existing levels of use, especially with low summer lake levels, may already approach its recreational capacity. On the other hand, Hatzic Lake is a public resource and amenity. As such, it should be available to those who do not own land along its shore. In other areas, as a matter of policy and principle, the Regional Board has sought to protect properly-managed public access to lakes and to resist the tendency toward privatization and alienation of public amenities.

It is the policy of the Regional Board that:

- 7.2.1 The Regional Board encourages the efforts of the Dewdney Area Improvement District to maintain summer water levels in Hatzic Lake that are suitable for recreation provided that:
 - a. there is no increase in the risk or consequence of flooding;
 - b. there is no negative impact on habitat and fish passage between the Fraser River and the Hatzic system is not impeded;
 - c. the works are designed and supervised by a qualified hydraulic engineer; and,
 - d. all necessary Federal, Provincial and local approvals are obtained.
- 7.2.2 The Responsible Authorities are encouraged to undertake a study of user needs related to public access to Hatzic Lake.

⁵³ Golder Associates LTD. *Hatzic Pump Station Upgrade Strategic Plan*. July 16, 2003.

7.3 Dewdney

The Dewdney town site contains a significant heritage building and other unique features that make it a 'gateway' to the communities of Dewdney, Nicomen Island and Deroche:

- the historic store and post office reflect the history of the area and provide visual and cultural interest;
- small building setbacks from the highway right-of-way create a closer relationship between the road and buildings and foster a sense of gateway and arrival; and,
- the proximity between the commercial town site and the rail line and slough contribute to the 'sense of place' and provide insight into the community's historical development.

Yet, these special features also create challenges. Small setbacks from the highway may make access and egress difficult and leave little room for parking – a particular challenge adjacent to a provincial highway. Conflicts between vehicular, pedestrian and rail traffic must be carefully managed. Flood hazard must also be addressed in new building construction. The Regional District and the Ministry of Transportation and Infrastructure will have to work together to find solutions that fit these particular circumstances.

It is the policy of the Regional Board that:

- 7.3.1 The Dewdney town site is recognized as both a heritage landmark and as a gateway to the communities of Dewdney, Nicomen and Deroche. As such, it is a cultural and economic asset to the community. The Regional District will consider these values in land use decisions and, if the need arises, may consider formal designations to maintain or enhance them.
- 7.3.2 The Regional Board encourages development proposals for the Dewdney town site which enhance its cultural and heritage values and gateway function.
- 7.3.3 Owners of commercial land in the Dewdney town site are encouraged to consider the benefits of consolidating parcels to create viable commercial properties with adequate space for off-street parking, on-site sewage disposal, and other needs.
- 7.3.4 The Regional Board will consider extension of the Dewdney Community Water Supply to the Dewdney town site as the need arises.
- 7.3.5 The Regional District will liaise with the Ministry of Transportation and Infrastructure regarding access, egress and parking issues in the Dewdney town site.

7.4 Deroche

Deroche Bench

The Deroche bench is an upland area encompassing approximately forty hectares of relatively gently sloping land along North Deroche Road contiguous with the hamlet of Deroche. These lands warrant special attention. They are a part of an existing community with a school,

community hall, post office, commercial services, a water system and other assets. What is more, the bench lands are not subject to the constraints to development that exist in most of the rural parts of the Region. The Deroche bench is:

- above the Fraser River floodplain;
- not in the Agricultural Land Reserve;
- largely free of geotechnical hazards;
- potentially serviceable with an existing community water system;
- comprised of soils likely to be suitable for on-site sewage disposal.

As such, development on the bench would not be an example of isolated rural sprawl. Rather, it would integrate with, and strengthen, the existing community. In fact, development of the bench lands has the potential to bring a variety of community benefits, including improvements to the water system and roads and a stronger population base to support services. Yet, it must not do so at the expense of the natural environment or rural landscape.

The *2004 Community Planning Survey* reveals that Deroche residents feel that preservation of the rural landscape and environmental protection/conservation are the central principles that should guide land use planning for Deroche over the next ten years.⁵⁴ When asked how important it is to protect fish and wildlife, over 90% of respondents felt it should be either the first priority (50%) or a high priority (over 40%). This commitment to the rural environment was also evident in responses to questions about parks and recreational facilities. Sixty two percent of respondents wanted parks and recreational places with wild/natural areas in their community. Responses to questions about development were less definite. Just over 50% of survey respondents want to see very little change in their community over the next ten years. Over a third of respondents wanted moderate change. When asked about the size of lots suitable for the Deroche area, the majority (48%) favoured 1.0 hectare parcels while 36% supported parcels less than 0.5 hectares.

While there is support for some development, most Deroche residents are apprehensive about change in their community. Still, there are compelling reasons to consider increased development on the Deroche bench. It is a rare area with physical attributes amenable to development within an existing community with a public water supply. Development on the bench could provide community benefits such as improvements to infrastructure and a more sustainable base for local services. It is evident that if development plans are to gain widespread support, they must protect environmental and landscape values and improve the overall community.

‘Conservation subdivision design’ and ‘rural smart growth’ are models of rural development that place emphasis on maintaining environmental values and rural landscape aesthetics. They typically:

- encourage active community participation and involvement throughout the planning process;
- inventory and preserve natural values;
- utilise ‘clustering’ of parcels to reduce the development footprint and preserve green space;
- stress sustainable development and ‘design with nature’;

⁵⁴ For more information about that 2004 Community Planning Survey, please see Section 1.4 of this Plan.

- highlight trail and other connections between places, not just roads; and,
- approach development from a holistic landscape perspective, rather than individual properties.

The policies below set the stage for the development of a comprehensive plan for the Deroche bench that would implement sustainable rural subdivision based on the ‘conservation subdivision design’ or ‘rural smart growth’ models. The policies seek a coordinated and planned approach for the community as a whole rather than piecemeal development of individual properties.

It should be noted that the condition of North Deroche Road has been a barrier to subdivision of the Deroche Bench. The Ministry of Transportation and Infrastructure has considered the road inadequate to support additional users. This situation must be resolved prior to significant land use changes.

Deroche Town Site

Consolidation of commercial parcels and major improvements in access and parking are necessary to create viable and sustainable commercial properties in the Deroche town site. Parking and access are significant challenges that will require planning, cooperation between landowners, and innovative approaches to resolve. Additionally, for many of the same reasons as Dewdney, the Deroche town site provides a ‘gateway’ to the Plan area which should be recognized and enhanced as redevelopment occurs

It is the policy of the Regional Board that:

- 7.4.1 The Deroche Bench is identified in this Plan as a Special Study Area with the purpose of developing a comprehensive plan for sustainable rural development of the Bench lands.
- 7.4.2 The Regional District will actively pursue funding and partnerships to develop a Local Area Plan for Deroche which:
 - a. identifies community values through a community-based design charette or similar process;
 - b. inventories environmental features, habitats and values and identifies goals for green space preservation, trail development, and natural asset protection;
 - c. determines suitable and sustainable densities for development of the Bench;
 - d. develops objectives and guidelines for the management of storm water;
 - e. outlines a liquid waste management plan to determine sustainable sewage disposal strategies;
 - f. assesses the capacity of the Deroche community water system;
 - g. addresses the condition of North Deroche Road and identifies mechanisms for upgrade;
 - h. develops a conceptual plan for development based on principles such as conservation subdivision design, clustered development and rural ‘smart growth’;
 - i. sets out policies and regulations necessary to achieve the development vision.

- 7.4.3 Development of the Deroche Bench should follow a comprehensive local area plan rather than piecemeal and uncoordinated development of individual properties. The Regional Board will not support zoning or community plan amendments prior to the development of a Local Area Plan for Deroche.
- 7.5.4 The Regional District will liaise with the Ministry of Transportation and Infrastructure to identify mechanisms for funding improvements to North Deroche Road.
- 7.4.5 Owners of commercial land in the Deroche town site are encouraged to consider the benefits of consolidating parcels to create viable commercial properties with adequate space for off-street parking, on-site sewage disposal, and other needs.
- 7.4.6 The Regional District should, as resources permit, undertake a study of commercial lands and uses in the Deroche town site to determine strategies for parking, access, protection from fan hazards, future commercial growth and land use along the highway frontage. If possible, this should be done as a part of the Deroche Local Area Plan described in Section 7.4.2.
- 7.4.7 Owners of commercial properties in Deroche are encouraged to work cooperatively to find solutions to issues associated with the lack of parking and inadequate access.
- 7.4.8 Opportunities to share services - particularly flood protection, water supply and recreational facilities - with the Leq'á:mel First Nation will be explored as opportunities arise.
- 7.4.9 The form and character of new development within the Deroche town site should reflect the historic character of the commercial area and enhance its 'gateway' function.

8.0 INFRASTRUCTURE AND SERVICES

Pursuant to Section 877 of the Local Government Act, official community plans must include statements and map designations respecting the approximate location and phasing of any major road, sewer and water systems and the approximate location and type of present and proposed public facilities including schools, parks and waste treatment and disposal facilities.

8.1 Roads and Transportation

The following classes of roads are recognized in the Plan area:

CONTROLLED ACCESS HIGHWAY is a highway designated under Part 6 of the Highway Act as a “controlled access highway” for through traffic.⁵⁵ No new direct access to such highways are permitted where there exists, or can be created, alternate means of access.

ARTERIAL is a street allowing high speed movement of inter and intra-provincial traffic. They are expected to provide high overall travel speeds with minimum interference to through movement. Arterial streets will usually be fed by 2 or more collectors.

COLLECTOR is a street carrying vehicles between major traffic generating areas or between such areas and the primary and secondary highways.

LOCAL is a street primarily designed for and providing access with little or no provision for through traffic. Direct access is allowed to all abutting properties. The maximum length of a local street is 450 metres.

The road network and road classifications in the Plan area are shown on *Map 5 - Transportation Network*.

Roadway and Right-of-Way Widths

Road standards in Electoral Area “G” are under the jurisdiction of the Ministry of Transportation and Infrastructure. *Regional District of Fraser Cheam Subdivision and Development Control Bylaw No. 1110, 1992* may also be referenced as a guide. Standards for new roads must be established in the context of local site conditions and engineering requirements.

Access

Under the provisions of the Land Title Act and the applicable land use and subdivision control bylaws of the FVRD, each new parcel must be provided with adequate legal access and vehicle parking. In the case of high traffic generating uses, the policies of the Plan recognize the need for more than one legal access, especially for emergency vehicles.

Transit

There is presently no public transit service within the Plan area. The cost of serving low density rural areas with transit is usually prohibitive and therefore service is not likely to be provided in

⁵⁵ Highway Act [R.S.B.C., 1996, Ch. 188]

the foreseeable future. However, commuter service linking the rural settlements along the Highway 7 corridor with Mission should be explored for the future.

It is policy of the Regional Board that:

- 8.1.1 The Regional District will liaise with the Ministry of Transportation and Infrastructure regarding any local road issues and conflicts between local traffic, including agricultural traffic, and through traffic on Lougheed Highway.
- 8.1.2 Where existing roads have deficient right-of-way widths or where surveyed rights-of-way do not exist, the Ministry of Transportation and Infrastructure is encouraged to secure additional land to remedy all or part of the road deficiency.
- 8.1.3 Where possible, upgrades to arterial and collector roads within the Plan area should include road shoulders which provide suitable and safe paths for pedestrians and cyclists. The Regional District will liaise with the Ministry of Transportation and Infrastructure about the dedication of bicycle routes within Electoral Area “G”.
- 8.1.4 New roads within the Plan area should:
 - a. provide for extension and connection to existing or proposed roadways adjacent to or beyond the subdivision and to provide alternate route choices; and,
 - b. be aligned to minimize stream crossings and avoid environmentally sensitive areas.
- 8.1.5 The Regional District will liaise with the Ministry of Transportation and Infrastructure regarding forward road planning for the North Deroche Road area, including a road connection between North Deroche Road and Brooks Road.
- 8.1.6 When undertaking major repairs to Shook Road and the Shook Road Bridge, the Ministry of Transportation and Infrastructure should:
 - a. consider the use of the road as an evacuation path during Hatzic Lake flooding events and the elevation of road and bridge in relation to expected flood elevations, particularly the minimum ponding elevation of 5.2 metres GSC established in FVRD Bylaw No. 0681.
 - b. incorporate a fastening system for water and sanitary sewer lines into any new bridge design.
- 8.1.7 Road allowances required to facilitate the development of higher density development within the Plan area in the long term should be dedicated as a part of the subdivision process.
- 8.1.8 Land uses in the Plan area shall be provided with adequate and safe access for all traffic including emergency vehicles.
- 8.1.9 Existing, new and expanded commercial and residential developments shall be provided with legal access commensurate with the use proposed, subject to the approval of the Ministry of Transportation and Infrastructure.

- 8.1.10 The Regional Board will support property owners in acquiring legal access to their properties where it does not presently exist.
- 8.1.11 Each new parcel of land shall have frontage on, and reasonable and practical access to, a public road.
- 8.1.12 The Ministry of Transportation and Infrastructure requires that a Highway Access Permit be issued for commercial, industrial, public and institutional uses as well as accesses onto Controlled Access Highways.
- 8.1.13 Rezoning applications for commercial uses with access off the Lougheed Highway that may impede traffic flow or compromise public safety will not be supported.
- 8.1.14 The Regional Board may require that development proposals include a traffic impact analysis report prepared by a qualified professional.
- 8.1.15 Access for residential uses on side roads should be constructed in accordance with the Ministry of Transportation and Infrastructure standards outlined in *Location, Design and Construction of Residential Driveways on Side Roads Outside Municipalities*.
- 8.1.16 While likely not feasible in the short term, the provision of basic commuter transit service along the Lougheed Highway corridor to connect rural areas with transit nodes in the District of Mission should be considered for the future.
- 8.1.17 New or expanded road dedications at the time of subdivision should avoid fragmenting agricultural lands and minimize impacts to agriculture operations.

8.2 Sewage Disposal

Throughout the Plan area, sewage is disposed of into the ground via on-site disposal fields. Soil, groundwater, topography, and other conditions relevant to ground-based sewage disposal vary throughout the Plan area. In some locations, ground-based sewage disposal may be limited by hydro-geological conditions, and particularly by the high water table.

In Dewdney and Nicomen Island, on-site disposal is usually by shallow trench disposal fields which are limited by seasonally high water tables, especially in low-lying areas. Limitations to on-site disposal may be most acute on Hatzic Island where the density of development is much greater, parcel sizes are often small and conventional septic disposal is constrained by seasonally high water table and low soil permeability. The challenges of sewage disposal on Hatzic Island are addressed in more detail in Section 7.1 of this Plan.

The Fraser Health Authority and the Ministry of Environment have established requirements for the construction and operation of disposal systems and should be consulted for the current requirements. Standards generally take account of the depth of native soil, slope and soil percolations rates.

This Plan generally establishes servicing standards for new development. Regional District zoning bylaws also contain siting requirements that may impact the location of on-site disposal systems. With the possible exception of a collection system for Hatzic Island, it is not anticipated that any public sewer utility will be constructed in the Official Community Plan area within the life of this Plan. Moreover, the policies of this Plan should ensure that no public sewer system will be required as long as the area remains at rural densities as subdivision standards and development densities are designed on the basis of on-site disposal.

Accordingly, the availability of suitable areas for on-site sewage disposal will be a central consideration in development approvals, the layout and design of new subdivisions, and in the siting of development within existing parcels. This Plan requires that alternate sewage disposal fields be identified and that engineering studies be undertaken at the time of subdivision or zoning amendment to ensure that the proposed development will be viable with on-site sewage disposal in the long term.

It is policy of the Regional Board that:

- 8.2.1 With the possible exception of a collection system for Hatzic Island, it is not anticipated that any public sanitary sewer utility will be constructed within the life of this Plan.
- 8.2.2 Existing and new commercial development proposals shall comply with current health regulations for septic disposal.
- 8.2.3 Where it is not possible to develop a conventional septic field to serve development of a use permitted in the zoning bylaw on an existing lot, other innovative on-site disposal systems including package treatment plants that meet the requirements and regulations governing sewage disposal may be accepted by the Fraser Health Authority or the Ministry of Environment.
- 8.2.4 The method, cost and environmental impact of proposed methods of sewage disposal will be a major consideration in all development approvals.
- 8.2.5 All new developments shall provide on-site sewage disposal that meets the requirements of the Health Act or the Environmental Management Act, as applicable.
- 8.2.6 The consolidation of small lots will be encouraged to provide for adequate long-term sewage disposal and may be imposed as a condition of development approvals where necessary for the health and safety of residents or the protection of the environment.
- 8.2.7 Holding tanks for sewage shall not be supported.
- 8.2.8 The Regional District will not monitor, audit, operate or maintain private disposal systems.
- 8.2.9 Where on-site sewage disposal is proposed, new development shall be required to provide secure 'back up' sewage disposal field locations.

- 8.2.10 Applications for zoning and community plan amendments to facilitate new development may be required to include a report by a qualified professional engineer to demonstrate the feasibility of sewage disposal. The report must certify that the proposed system will not result in environmental contamination or risk to human health and address:
- a. the authorities having jurisdiction and their relationship to the approvals required for the servicing of the site;
 - b. the provincial regulations and criteria on which conformance with the regulations will be determined;
 - c. the adequacy of the system for the proposed development and long-term performance of the system;
 - d. the inter-relationship of all systems proposed for the site, including the layout of the proposed systems and the set-backs and protection zones that will influence the siting of the various components; and,
 - e. where appropriate, hydro-geotechnical and geotechnical parameters of the site, including:
 - i. consideration of seasonal water table elevations with respect to performance of the in-ground disposal systems;
 - ii. defining the property of the soils which underlie the site;
 - iii. transmissivity of the soils; and,
 - iv. the suitability and stability of underlying soils to accept the proposed hydraulic loading.

8.3 Drinking Water

There are two community water systems in the Plan area. The Deroche Community Water System was established in 1992 when the Dewdney-Alouette Regional District took over a private water system. At that time, Deroche Creek was the source of water but debris flows in the watershed severely affected the creek and caused supply interruptions and water quality problems. As a result, the system was upgraded in 2000 and changed over to a groundwater well source. In addition to the well, there is a 325 m³ reservoir that provides storage for the system. There are currently approximately 42 users on the system. The Deroche Community Water System is shown on *Map 6 – Local Service Areas*.

The Dewdney Community Water System was established in 2004. It services the Stave Lake Cedar mill site with water from the Abbotsford Mission Water & Sewer Commission system which draws from Norrish Creek. There may be potential to expand the service area to the Dewdney town site in the future. This issue is explored further in Section 7.3 of this Plan. The Dewdney Community Water System is shown on *Map 6 – Local Service Areas*.

Some residents utilize surface water for drinking, but the great majority relies on groundwater for domestic use, mostly from shallow wells or sand points. Residents of Dewdney, Nicomen and Deroche who depend on ground water report high levels of satisfaction with their water supply.⁵⁶ Residents of Hatzic Island report only moderate levels of satisfaction. Where residents

⁵⁶ Fraser Valley Regional District. Electoral Area "G" Official Community Plan Update Survey. 2004. For details about this survey, please see Section 1.4 of this Plan.

were dissatisfied, mineral concentration was the most cited reason, perhaps because of the aesthetic and taste implications.

Yet, user perceptions may not accurately indicate water quality. Tests of water from a sample of wells on Hatzic Island revealed an isolated instance of lead concentrations exceeding drinking water standards and a pattern of elevated nitrate levels in some locations. While further investigation of drinking water quality on Hatzic Island is needed, it appears that there is reason for concern. In any case, reliance on wells for domestic water and the particular hydro-geological characteristics of the Plan area point to the strong need to protect groundwater quality. Policies related to the protection of ground and surface water are outlined in Section 13 of this Plan.

It is policy of the Regional Board that:

- 8.3.1 The Regional District will liaise with the Leq'a:mel First Nation regarding the possibility of connecting the Deroche Water System with the water system for IR 11.
- 8.3.2 Prior to the approval of zoning or community plan amendments to facilitate development within the Deroche Community Water System area at densities higher than currently permitted, the capacity of the water system to supply the added demand, along with any improvements necessary, must be determined by a qualified professional engineer.
- 8.3.3 Costs for any upgrades to the Deroche Community Water System made necessary by new development should be borne by the developer.
- 8.3.4 The Dewdney Community Water Supply may expand to include the Dewdney town site when sufficient demand exists.
- 8.3.5 The Regional District should canvas the Hatzic Island community to determine whether there is interest in establishing a community water supply for the Island.
- 8.3.6 All approved private water systems, surface water sources and wells should meet the Guidelines for Canadian Drinking Water Standards for chemical and bacteriological criteria and be capable of producing, year-round, a minimum of 2500 litres (550 gallons) per day, with a minimum sustained yield of 18 litres (4 gallons) per minute over a one hour period.
- 8.3.7 Upon subdivision, the Responsible Authority should require the applicant to provide a report by a professional engineer which confirms the ability of the water supply to meet the standards referenced in Section 8.3.6 and includes:
 - a. accurate location sketch of the well or intake (and supply line where applicable);
 - b. well log provided by well driller, or a sketch of the intake well;
 - c. pump test and/or quantity test results;
 - d. recovery test results; and,
 - e. water quality test results from the laboratory.

- 8.3.8 Applications for zoning and community plan amendments to facilitate new development may be required to include a preliminary feasibility report by a qualified professional engineer. The report must:
- a. provide reasonable assurances respecting the feasibility and long-term suitability of the proposed water supply;
 - b. assess the relationship between the proposed water supply and other on-site services; and,
 - c. in the case of groundwater sources, identify the type of aquifer from which the well will draw water and any implications.
- 8.3.9 The protection of groundwater will be a consideration in all zoning and community plan amendments.
- 8.3.10 Present users of surface water for domestic purposes are encouraged to convert to a private well or, where one is available, an approved community water supply system to improve the security of water quality.

8.4 Solid Waste Management

All waste management strategies and initiatives in the FVRD are governed by and implemented through the FVRD Solid Waste Management Plan. This plan is currently under a 5 year review and will be updated in the near future.

Residents and business of Electoral Area “G” are responsible for their own refuse collection. Many make arrangements with a private firm for residential pick-up or haul their wastes to a transfer station. The Regional District operates two transfer stations in the vicinity: Harrison Mills Transfer Station at 14050 Chehalis Forest Service Road, Harrison Mills, BC and Sylvester Road Transfer Station at 10033 Sylvester Road, Dewdney, BC.⁵⁷ Recycling facilities are available at the transfer stations. Waste deposited at the transfer stations is taken to the Mission Sanitary Landfill. Under the provisions of District of Mission Refuse Collection and Disposal Bylaw 1387-1984, residents of Electoral Area “G” can also take their waste directly to the Mission Sanitary Landfill.

Illegal dumping of residential garbage, construction waste, stolen vehicles and other materials is a persistent problem in Electoral Area “G” (and all other electoral areas). Dumping presents an environmental hazard and degrades the aesthetic and recreational experience of the area. FVRD has created an illegal dumping hotline – 1-800-655-3867 or 1-800-655-DUMP - to receive and track reports of illegal dumping and dump sites.

This Official Community Plan contains policies to ensure reasonable access to disposal facilities, public input into any proposed facilities and to combat illegal dumping. These policies supplement the *FVRD Solid Waste Management Plan* which should be consulted for detailed guidance respecting waste management, composting, recycling and waste reduction.

It is the policy of the Regional Board that:

⁵⁷ In 2007, 98 tonnes of waste was disposed and 34 tonnes recycled at the Sylvester Road Transfer Station. Forty-seven tonnes of waste was disposed and 20 tonnes recycled at the Harrison Mills Transfer Station.

- 8.4.1 Reasonable access to recycling, composting and disposal facilities should be ensured.
- 8.4.2 The public shall be consulted on any proposed facilities.
- 8.4.3 Wastes should be reduced and reused to the greatest extent possible.
- 8.4.4 Improved public awareness of solid waste issues and programs, including the proper disposal of materials, will be promoted through education programs.
- 8.4.5 Undesirable waste handling and disposal methods will be minimized, including littering and illegal dumping.
- 8.4.6 The Regional District will support citizen efforts to clean up dumped material and monitor for illegal dumping.
- 8.4.7 The Regional District will work with Provincial ministries, Royal Canadian Mounted Police, Insurance Corporation of BC, and other appropriate organizations to combat the dumping of stolen vehicles and solid waste.

8.5 Electricity and Utilities

Residential electricity, cable, and telephone service is available within the Plan area. Natural gas may be available to portions of the Plan area. Contact the utility companies directly for more detailed information.

8.6 Fire Protection, Police and E911 Services

Fire Protection

With the exception of the undeveloped Strawberry, Yallstrick (IR 1) and Skumalasp (IR 16) Islands, all lands within the Plan area are within the North Fraser Fire Protection Service Area (see *Map 6 – Local Service Areas*). The volunteer North Fraser Fire Department has a hall at 8840 Rowan Road (at Lougheed Highway). The Deroche Community Water Service area is served with fire hydrants. There are currently four hydrants along North Deroche Road; more are planned. The undeveloped areas receive fire protection from the Provincial Forest Service.

Policing

Police services within the Plan area are provided by the Royal Canadian Mounted Police from the Mission Detachment.

E911 Services

The Plan area is served by ambulance, police and fire services through E-911 operations.

Emergency Management

The Regional District is responsible for emergency planning and management within the Plan area. This involves coordinating responses to emergencies such as natural disasters and providing emergency social services to affected people. A dedicated group of local volunteers, coordinated by the FVRD, provide initial emergency response and social services.

It is the policy of the Regional Board that:

- 8.6.1 The level of existing emergency services should be maintained and expanded if required.
- 8.6.2 The Regional Board encourages Neighborhood Watch and Block Watch programs within the community.
- 8.6.3 The Regional Board will encourage and assist in the maintenance of the volunteer fire department.
- 8.6.4 The quick response time and efficient service residents receive should be maintained.
- 8.6.5 Where possible, all new major developments should be serviced with fire hydrants for fire protection.
- 8.6.6 The Regional District will liaise with the Ministry of Forests and Range and Leq'a:mel First Nation regarding fire protection services.
- 8.6.7 Where appropriate, the Regional District will coordinate bylaw enforcement efforts with the RCMP.

8.7 School and Library Services

Schools

Electoral Area “G” lies within Mission School District #75. There are two elementary schools in the Plan area - Deroche Elementary and Dewdney Elementary – and a third just west of the Plan area in the District of Mission (Hatzic Elementary) that serves the Electoral Area “G” community. Secondary students attend schools located in the District of Mission. School District #75 presently provides bus service to most of the Plan area. The location of schools is shown on *Map 5 – Community Facilities*.

In accordance with Division 10.1 of the Local Government Act and School District No. 75 School Site Acquisition Charge Bylaw 5-2008, the Regional District collects school site acquisition charges at the time of subdivision on behalf of the School District. The rate is determined by the School District.

Library

While there is no library within the Plan area, residents are served by Fraser Valley Regional Library branch in Mission at 33247 Second Avenue. Fraser Valley Regional Library provides a collection of on-line books and mobile library service to those who are unable to attend branch libraries. Canadian National Institute for the Blind provides a shut-in library service for the visually impaired.

It is the policy of the Regional Board that:

- 8.7.1 The Regional Board will continue to consult with the School Board concerning developments in the Plan area which may impact school enrollment or the provision of school services.
- 8.7.2 The Regional District will continue to collect school site acquisition charges on behalf of Mission School District #75.
- 8.7.3 Library service should be maintained to those people who are physically unable to make use of the local Branch facilities.

9. PARKS AND RECREATION

9.1 Regional Parks

Electoral Area “G” contains a variety of the settings most desired by the regional population for parks, including foreshore areas, dykes, sloughs, alluvial fans, wetlands, and hillsides. A 1994 survey of park and recreational use in the Lower Mainland indicates that Valley residents perceive there to be “definitely not enough” parks.⁵⁸ The shortage of parks with freshwater beaches was felt to be most acute, followed by parks with greenways, urban forests, wetlands and rural forests. Increasing demand for outdoor recreation – which is expected to grow by 75% over the next twenty years⁵⁹ – will exacerbate the park shortage and place greater importance on both existing and potential park lands.

Two Fraser River foreshore areas, Dewdney Nature Regional Park and Deroche Regional Park, have been formally dedicated for public and conservation uses, as has a portion of Sumas Mountain. However, there are heavily used informal recreation sites and other locations with great conservation and recreational value that are unmanaged. The intense use of recreation sites within Electoral Area “G” attests to desirability of these settings as well as the demand for, and shortage of, park land in the Region.

Existing and Proposed Regional Parks

Dewdney Nature Regional Park consists of seven hectares of undyked floodplain along Nicomen Slough east of River Road. It provides boat access to the Fraser River, a staging area for walking along the Dewdney Dyke, and opportunities for wildlife viewing and nature appreciation. The Park also preserves several hectares of floodplain habitat. Over 50,000 people from across the Region visit Dewdney Nature Regional Park annually.

Deroche Regional Park is boat launch site on leased land adjacent to Athey Road.⁶⁰ It provides access to the Fraser River and is very popular with anglers throughout the Lower Mainland for fishing and boat launching. Deroche Regional Park receives up to 80,000 visitors annually.⁶¹ Informal recreation sites within the Plan area, such as the proposed Strawberry Island and Norrish Creek regional parks, receive a similarly high level of use.

Sumas Mountain Regional Park was created in 1995 to conserve sensitive wilderness areas and provide opportunities for public recreation and nature appreciation. The two flanks of the park total almost 1,500 hectares. The western flank is within the City of Abbotsford. The eastern flank, largely within Electoral Area “G”, includes Taggart and Sumas Peaks and lands draining to the Sumas River lowlands. Portions of the Centennial / Trans Canada Trail traverse Sumas Mountain Regional Park.

⁵⁸ Greater Vancouver Regional District. *Major Parks Plan Study*, 1994

⁵⁹ FVRD *Regional Parks Plan* Bylaw No. 225, 1998

⁶⁰ As of October, 2008, Deroche Regional Park is situated on land leased from private owners. The lease will expire at the end of 2008. FVRD, in conjunction with the land owner, is pursuing Provincial Agricultural Land Commission approval for non-farm use (park) and subdivision to facilitate transfer of about 1.6 acres of land to the Regional District for park purposes. The outcome of this process is as yet uncertain.

⁶¹ Extrapolated from vehicle counts taken Spring, 2004.

Informal recreation sites satisfy some of the demand for recreation not accommodated within parks, but unmanaged use often leads to problems with environmental degradation, trespassing, inadequate parking, littering, dumping and illegal activities. Formalizing these sites as regional parks or recreation areas would improve facilities and address problems associated with uncontrolled activities.

Potential Regional Trail System

“The combination of the setting and occurrence of natural features make Nicomen Island one of the more attractive areas in the Lower Mainland for potential public use along dykes for hiking, bird watching, fishing, photography, canoeing, etc.”⁶²

Some sections of the dykes, which are under the jurisdiction of the Nicomen Island and Dewdney Area Improvement Districts, are currently accessible to the public, if only informally. However, other sections are private or inaccessible and a connected system of formal trails using dykes does not exist. The existing system of dykes could provide natural trail linkages between existing and proposed park sites within Electoral Area “G” and the District of Mission, or become part of a greater Fraser River trail system.

Surveys of both local and regional populations demonstrate strong demand for recreational pathways for walking and bicycling. About 70% of local residents who responded to the 2004 *Community Planning Survey* were in favour of a regionally administered trail network utilizing existing dykes.⁶³ When asked what settings and facilities are desired in Regional Parks, local residents expressed strong support for wilderness areas and pathways.⁶⁴ Results from regional surveys are similar. Walking and bicycling on trails are among the top three most popular outdoor recreation activities across all age groups in the Lower Mainland.⁶⁵ Nature study, bird watching and wildlife viewing also rank in the top ten regionally. A trail system utilizing existing dykes would offer exceptional opportunities for these popular activities.

Providing recreational pathways is not within the mandate of the Improvement Districts and accordingly they may be reluctant to permit recreational use of their dykes. In order to utilize dykes as a formal trail network an agreement with the Improvement Districts to allow access to dykes would presumably be required. Such an agreement would likely involve:

- contributions to dyke maintenance costs;
- mitigation of impacts to adjacent farmers including trespass, vandalism, dumping, noise and interference with agricultural operations;
- addressing existing grazing agreements and agricultural practices involving the dykes;
- clear transference of liability associated with recreational uses to the Regional District;
- provision of adequate staging areas; and,
- community consultation.

Local Impacts

Recreational use within Electoral Area “G” on the scale envisioned in this Plan and the *Regional Parks Plan* would have impacts on the local area. Negative impacts may include increased

⁶² Nature Conservancy of Canada. *Lower Mainland Natural Areas Inventory*. March, 1977.

⁶³ Electoral Area “G” Community Planning Survey, 2004. About 18% of households participated in the survey.

⁶⁴ Electoral Area “G” Community Planning Survey, 2004.

⁶⁵ GVRD. *Major Parks Plan Study*, 1994

traffic, conflicts between passenger and farm vehicles, trespassing, interference with agricultural activities, dumping and other illegal activities. While there is support for recreational facilities in the Plan area, there is also strong and valid concern from some agricultural landowners. With input from the local community and careful management, negative impacts can be minimized.

The potential benefits to the local area are considerable. The Regional Park network envisioned would conserve for public enjoyment elements of the rural landscape and environment highly valued by residents. It would also provide quality recreational facilities the local area could not otherwise sustain and may provide a variety of economic opportunities.

Recreational activities, if managed and developed in a consultative fashion, can be compatible with, and even enhance, agriculture use. The park network would present opportunities in recreational and agricultural tourism and direct farm sales which would diversify the local economy. A network of parks and trails as envisioned in the Plan could provide a long term benefit to the local area. However, such a plan should only be considered if acceptable to the community and adjacent land owners.

Relationship Between this OCP and the *Regional Parks Plan*

According to the *Regional Parks Plan*, regional parks should complement and support the Official Community Plans in place throughout the Region.⁶⁶ OCPs should also support the *Regional Parks Plan*. This section of the Plan complements the *Regional Parks Plan* to present a long-term vision, from the local area perspective, of a regional park system within Electoral Area “G”. Plan policies are intended to identify potential Regional Park sites to meet growing demand for outdoor recreation and habitat conservation. It should be understood that the concept outlined here is a long-term vision which will not likely be achieved in the life of this Plan. Moreover, the policies related to Regional Parks contained in this plan are intended to provide a local perspective for consideration within the context of amendments to updates to the *Regional Parks Plan*. The *Regional Parks Plan* should be consulted for the official policies of the Regional District related to regional parks.

The location of Dewdney Nature Regional Park and potential Regional Park sites and trails are shown on *Schedule 3 – Parks*. Further details respecting proposed regional parks can be found in the *Regional Parks Plan*.

It is the policy of the Regional Board that:

- 9.1.1 Regional Park planning, development, and management should include strategies to identify and mitigate potential negative impacts to the local area – including traffic, vandalism, crime, dumping, trespass, noise and interference with agricultural uses - which may result from Regional Parks and Park facilities.
- 9.1.2 In order to protect local values, an environmental assessment should be carried out prior to park development to identify conservation areas and mitigate development impacts.

⁶⁶ Fraser Valley Regional District, *Regional Parks Plan* (S. 2.1).

- 9.1.3 Electoral Area “G” residents will be consulted respecting the development of Regional Parks and Park facilities within the Plan area.
- 9.1.4 The Regional District, in conjunction with the Dewdney Area and Nicomen Island Improvement Districts and the District of Mission, should develop a program to investigate the potential recreational use of dykes through the Regional Parks function and the *Regional Parks Plan*.
- 9.1.5 The Regional District should seek map reserves for park, recreation or conservation purposes pursuant to Section 15 of the Land Act for Crown lands within Electoral Area “G” identified as proposed regional parks in the Regional Parks Plan and in this Plan. These reserves should be maintained until such time as the lands are formally designated as Regional Parks or are designated for park, recreation or conservation by the Province.
- 9.1.6 Land uses and activities on Crown land identified as a potential Regional Park should not interfere with, or diminish, the future use of the land for park purposes.
- 9.1.7 Lands within Sumas Mountain Regional Park that are not explicitly zoned as park land should be rezoned to an appropriate designation which reflects their park status.

9.2 Community Parks

The need for community parks in the Plan area is moderated by the wealth of outdoor recreation opportunities available in the rural landscape. There are places to swim and boat in Hatzic Lake, Nicomen Slough and elsewhere. Hiking and walking trails abound. As well, playfields and playgrounds are available at elementary schools and other locations within each hamlet (shown on *Map 5 – Community Facilities*).

Although there are many recreational opportunities in Electoral Area “G”, residents of Deroche and Nicomen Island identified the need for formal community park facilities, especially for youth.

It is a challenge to cost-effectively provide community park services to areas with small, dispersed populations. Accordingly, park proposals that utilize existing community facilities, involve partnerships, and engage the community in park development and maintenance will receive priority consideration. Potential community park locations are shown on *Schedule 3 – Parks*.

A community parks function has been established for Electoral Area “G”.⁶⁷ The function provides funding through a service area for community parks within the Plan area. It also enables the Regional District to accept either park land dedication or cash in lieu of land for the purposes of future parkland acquisition when land is subdivided. This section of the Plan outlines policies relating to the operation of the community parks function, including the development and maintenance of community parks and park dedication through subdivision.

⁶⁷ Dewdney-Alouette Regional District Local Service Community Parks Establishment Bylaw No. 647-1993.

It is the policy of the Regional Board that:

- 9.2.1 Community park proposals involving the following will receive priority consideration from the Regional Board:
 - a. locations within the hamlets of Deroche, Dewdney and Hatzic Island;
 - b. partnerships for funding and ongoing maintenance;
 - c. lands with unique natural features, distinctive landscape and outdoor recreation potential;
 - d. facilities for outdoor activities for youth; and,
 - e. existing community facilities and sites.
- 9.2.2 Subject to the availability of funds and other constraints, the Regional District may acquire land to provide community parks and local trails.
- 9.2.3 Community groups are encouraged to develop and maintain community parks in consultation with the Regional District.
- 9.2.4 The Regional District will explore opportunities to develop community parks in partnership with First Nations, School District #75 and other groups.
- 9.2.5 New subdivisions requiring the dedication of park land under Section 941 of the Local Government Act shall provide park land in an amount not less than five (5) percent of the land being subdivided or an equivalent value.
- 9.2.6 Notwithstanding Section 9.2.5, the Regional Board will consider accepting an area of land less than five (5) percent of the land being subdivided where improvements acceptable to the Regional Board have been made to provide for park facilities.
- 9.2.7 Where a developer wishes to dedicate an amount of park land in excess of five (5) percent of the land proposed for subdivision, the Board may consider a minor reduction in the minimum parcel size for subdivision, subject to the approval of the Responsible Authority, provided that the excess does not include lands that would otherwise be conserved through other means.
- 9.2.8 Notwithstanding Section 9.2.5, the Regional Board may elect to require cash-in-lieu of park land dedication pursuant to Section 941 of the Local Government Act.
- 9.2.9 Landscaping of any community park or trail should, as much as possible, involve the use of native plant species.

9.2.10 Where possible, any trail systems and greenways developed on Sumas Mountain should connect to trails and green spaces in the City of Abbotsford to form an integrated trail network.

Not For Legal Purposes

10.0 CULTURAL RESOURCES

10.1 First Nations Cultural Resources

Electoral Area “G” is within the traditional territory of the Stó:lō people, and particularly the Leq'á:mel First Nation and Sumas First Nation. The Stó:lō, the ‘people of the river’, believe they have occupied this place - the Fraser Valley - since the beginning of time. Their ancestors witnessed the transformation of their world from chaos to order; from a less fixed, more fluid world, where distinctions between things was not so clear and people could take non-human forms and travel to worlds beyond, to a more orderly and circumscribed place where things are ‘right’.⁶⁸ According to Stó:lō beliefs, the transforming of the world is evident in the landscape, including Hatzic Rock and Sumas Mountain which both figure in the oral histories (sxwôxwiyám) describing the transformations. Many of the transformation stories involve Xexá:ls, agents of the Creator, “whose actions...account in part for ‘making the world right’.”⁶⁹ According to the *Stó:lō Heritage Policy Manual*, these stories “account for the origins and connections of the Stó:lō, their land, resources, and sxoxomes (‘gifts of the creator’).

“In one sxwôxwiyám, for instance, people survived a devastating flood by tying their canoes to the top of Sumas Mountain. When the flood began to subside, the canoes drifted gently down. People took refuge in a cave on the side of the mountain and waited for the waters to completely recede. When they did, Xexá:ls visited these survivors and showed them the right way to live, work and pray.”⁷⁰

It is not possible here to give justice to the rich and complex oral histories and their meaning to Stó:lo people. For the purposes of this plan, it is sufficient to give some sense of the significance of Sumas Mountain, and other sites associated with sxwôxwiyám, as landscape features connected with the transformation time. There are many heritage sites throughout Stó:lō Territory that relate to sxwôxwiyám. These sites are among the most culturally important Stó:lō heritage sites and continue to function as essential parts of the contemporary Stó:lō world.”⁷¹ The places described in the oral histories of transformation symbolize the obligations of reciprocity Stó:lō have with the environment; they form a part of people’s community identity and attachment to the land; and, are tangible illustrations of fundamental Stó:lō beliefs about the world, its creation, and human’s role in it.⁷²

Archaeological sites – the physical evidence of how and where people lived in the past – are another aspect of First Nations’ cultural heritage in the Plan area. There are a number of documented archaeological habitation sites adjacent to the Fraser River and the sloughs on the north side. The largest settlement within the Plan area was the pit house community of Leq'á:mel in the area of present Indian Reserve No. 11 (Lakahamen). The cluster of sites at Liyomxetel, or ‘Devil’s Run’, at the confluence of the Sumas and Fraser Rivers was also a major settlement. Indian Reserve No. 12, an historic cemetery site connected to the Leq'á:mel First

⁶⁸ Brian Thom. *Sxwoxwiyam Seyt te Xwelmexw (Central Coast Salish Transformation Stories): Connecting Humans and Non-humans through Kinship and Place*. September, 1997.

⁶⁹ Stó:lo Nation. *Stó:lō Heritage Policy Manual*. May, 2003.

⁷⁰ Keith Thor Carlson, ed., et al. *Stó:lō Coast Salish Historical Atlas*. 2001.

⁷¹ Stó:lo Nation. *Stó:lō Heritage Policy Manual*. May, 2003.

⁷² Brian Thom. *Coast Salish Transformation Stories: Kinship, Place and Aboriginal Rights and Title in Canada*. 1998.

Nation is located in the northeast corner of Sumas Mountain. Documented archaeological sites within the Plan area are shown on *Map 7 - Cultural Resources*.

In addition to documented archaeological sites, there is high potential for undocumented archaeological sites within the Plan area. Burial mounds and pit houses may exist in low lying areas. Culturally modified trees may be found in stream corridors, particularly those used as transportation routes. Both documented and undocumented archaeological sites are protected under the Heritage Conservation Act.

Provincially, protected archaeological sites are being accidentally damaged with increasing frequency. This is usually due to a lack of knowledge about archaeological sites and the legislation that protects them. Heritage sites and objects are protected under the Heritage Conservation Act which is administered by the Archaeology Branch of the Ministry of Tourism, Culture and the Arts. Through this Act, the Province has primary responsibility for protecting and managing archaeology resources. The Stó:lō Nation are have a central role in managing archaeology and cultural resources. The policies of Stó:lō Nation respecting archaeological resources are laid out in the *Stó:lō Heritage Policy Manual*.

In order to ensure that archaeological resources are not damaged in contravention of the Heritage Conservation Act, and in respect for Stó:lō culture and beliefs, landowners are encouraged to consider having an archaeological impact assessment performed prior to site development. This is particularly encouraged for major developments.

The Archaeology Branch and Stó:lō Nation will be able to provide landowners who have archaeological resources on their property with advice on how to proceed with development in a way that will avoid or minimize damage to the archaeological site. That advice may include a recommendation to engage a professional archaeologist to conduct an archaeological impact assessment. The Archaeology Branch should also be notified if an archaeological site is found on one's property. Landowners should be aware that it is an offence under the Heritage Conservation Act to remove heritage objects from archaeological sites.

It is the policy of the Regional Board that:

- 10.1.1 Landowners are recommended to consider having an archaeological impact assessment performed prior to site development, particularly where significant disturbance to the ground is involved.
- 10.1.2 Proposals for significant developments in areas of known or potential archaeological value will be referred to the Archaeology Branch of the Ministry of Tourism, Culture and the Arts and made known to Stó:lō Nation.
- 10.1.3 Property owners proposing development in the area of a known archaeological site should contact the Archaeology Branch of the Ministry of Tourism, Culture and the Arts for advice and guidance on how to proceed in a way that will avoid or minimize damage to the archaeological site.
- 10.1.4 Any discovery of archaeological artifacts should be reported to the Archaeology Branch of the Ministry of Tourism, Culture and the Arts, Stó:lō Nation and Leq'á:mel First Nation or Sumas First Nation as appropriate.

10.1.5 The Regional District will liaise with Stó:lō Nation, Leq'á:mel First Nation, Sumas First Nation, the Archaeology Branch and others regarding incorporating archaeological values into development review procedures.

10.1.6 As opportunities arise, the Regional District will liaise with Stó:lō Nation, Leq'á:mel First Nation and Sumas First Nation regarding external funding opportunities to improve archaeological predictive mapping.

10.2 Rural Landscape Aesthetics

The 2004 *Community Planning Survey* indicated that maintenance of the rural landscape is of primary importance to the Electoral Area “G” community.⁷³ The policies of this Plan attempt to maintain the rural landscape in a variety of ways. Perhaps most importantly, the density levels established herein are generally rural. However, density limits and environmental protections alone are insufficient for maintaining and enhancing the aesthetic quality of the area.

Accordingly, the policies in Section 7.3 and 7.4 of this Plan advocate for the enhancement of the Dewdney and Deroche commercial ‘gateways’ to the area. Policies under Section 14.1 advocate for measures to protect visual values during forestry planning. This section focuses on things landowners can do when developing their property to keep, and even improve, the visual quality of the rural landscape.

It is also recognized that Sumas Mountain makes a substantial contribution to the visual values of the Plan area and the Region. Visual values of areas which may be seen from Lougheed Highway No. 7 should be protected by the Ministry of Forests and Range in the logging approval process.

Centennial trail, which traverses Sumas Mountain, may be considered as a heritage resource. The trail segment along the north slope passes through logged areas and offers views to the Fraser River. In this area logging is consistent with the heritage values of the trail. However, the segment of trail within the Plan area that links the east and west flanks of Sumas Mountain Regional Park should be protected by a buffer strip to maintain the experience of hiking through an interior forest and to provide an environmental corridor.

It is the policy of the Regional Board that:

10.2.1 In order to preserve and enhance rural landscape aesthetics, landowners are encouraged to:

- a. design buildings and structures that reflect the culture, history, and environment of the surrounding community;
- b. utilize trees and plantings to define home sites;
- c. integrate utility building and structures into the surrounding landscape by planting buffers, preferably of native plant species, to reduce visual impacts; and,
- d. restore riparian zones with the planting of appropriate native species;

⁷³ For more information about the 2004 *Community Planning Survey*, please see Section 1.4 of this Plan.

10.2.2 Visual values of areas visible from Lougheed Highway No. 7 should be protected by the Ministry of Forests and Range in the logging approval process.

10.2.3 The length of Centennial Trail between the eastern and western flanks of Sumas Mountain Regional Parks should be protected by thirty (30) metre buffer strips on either side of the trail.

Not For Legal Purposes

11.0 HAZARD AND RISK MANAGEMENT

Section 877 of the Local Government Act requires that official community plans contain statements and map designations respecting restrictions on the use of land that is subject to hazardous conditions.

Lands within Electoral Area “G” are subject to a variety of hazards, including geological and mountain stream hazards associated with the slopes at the north of the Plan area; flooding from the Fraser River; seismic slope instability and soil liquefaction caused by earthquakes; and, wild fires.

11.1 Geologic and Mountain Stream Hazards

The Thurber Engineering LTD report, *Area G Official Community Plan (Hatzic Lake to Deroche) Geotechnical Hazard Overview* (September 21, 2004) provides a reconnaissance-level overview assessment of geotechnical hazards on private lands on the north shore of the Plan area.⁷⁴ It is intended for planning purposes and geotechnical engineering guidance during building and development review processes. The report is based primarily on map and photo interpretation and literature review with limited field work. It may not capture all potential hazards on private land in Electoral Area “G” and does not consider crown land outside the study area.

In general, the steep slopes along the northern margin of the north shore slopes present potential and significant hazards associated with rock fall, debris slides and landslides. The streams draining this slope, especially Norrish and Deroche Creeks but also several smaller streams, present debris and flood hazards. Hazards associated with Norrish and Deroche Creeks have been documented in several studies. A study of the Deroche Creek alluvial fan was conducted in 2000 by Hay & Company Consultants to document past events, assess current hazards and identify measures to mitigate hazards.⁷⁵ A variety of studies of Norrish Creek have been completed, including the 2002 Norrish Creek ‘orphan dyke’ report by BC Rivers Consulting and Amec Earth & Environmental LTD which describes the potential for flash flooding, high velocity flows, debris flow and erosion and documents major problems with the non-standard dyke.⁷⁶

Hazard information is implemented in development approval processes in a number of ways. Deroche Creek fan hazards mapped by Hay & Company, along with areas of geologic or mountain stream hazards identified by Thurber, are included in Development Permit Area 1-G and shown on *Map 8 - Geologic and Mountain Stream Hazards*. *FVRD Floodplain Management Bylaw No. 0681, 2005* establishes flood construction elevations and setbacks that apply to streams outside of alluvial fan areas. As well, under Section 56 of the Community Charter, if a building inspector considers that construction would be on land that is subject to, or is likely to

⁷⁴ This study may be consulted for a small area of land within EA “G” on Sumas Mountain: Thurber Engineering Ltd. *Sumas Mountain Official Community Plan, Stage 1 Study, Overview of Geotechnical Hazards*. December, 2002.

⁷⁵ Hay & Company Consultants. *Deroche Creek Flood Hazard Management Study*. June, 2000.

⁷⁶ BC Rivers Consulting. Amec Earth & Environmental LTD. *Norrish Creek Dike – Norrish Creek, Information gathering for Dikes with no Local Authority*. March, 2002. See Section 14.1 of this Plan for discussion of other Norrish Creek studies.

be subject to, hazardous conditions the inspector may require site-specific assessment by a professional engineer or geoscientist to certify that the land may be used safely for the use intended. The hazard information described above is used by building inspectors in making such determinations.

The policies below complement DPA 1-G and *Bylaw No. 0681* and provide direction for hazard management in specific instances. Descriptions of ongoing processes in the Norrish and Deroche Creek watersheds that relate to alluvial fan hazards, and policies related to the management of upper watershed areas, are contained in *Section 14 - Resource Extraction* of this Plan.

It is the policy of the Regional Board that:

- 11.1.1 Minimizing exposure to risk and the consequences of hazard events will be central concerns in land use planning decisions.
- 11.1.2 The Ministry of Environment *Flood Hazard Area Land Use Management Guidelines*⁷⁷ shall be considered by the Regional Board when developing land use policy and regulation for alluvial fan and flood-prone areas.
- 11.1.3 The following principles shall be applied to development approvals on lands subject to geologic and mountain stream hazards:
 - a. Where possible, and as a priority, development should be sited to avoid hazards. Where it is impossible or impractical to avoid a hazard, mitigation measures may be considered.
 - b. Proposed developments within the 200 year floodplain of a natural watercourse shall be flood-proofed in accordance with the flood construction level and setback established in *FVRD Floodplain Management Bylaw No. 0681, 2005*. Where *Bylaw No. 0681* does not apply, flood construction levels and setbacks shall be determined by a professional Engineer with experience in river hazards.
 - c. Pursuant to Section 56 of the Community Charter, where construction would be on land that is, or is likely to be, subject to hazards, a Building Inspector may require site-specific geotechnical or hydrological engineering reports prepared by a professional engineer or geoscientist to certify that the land may be used safely for the use intended.
- 11.1.4 Acceptable hazard thresholds for development approvals shall be those set out in *Hazard Acceptability Thresholds for Development Approvals by Local Government*.⁷⁸
- 11.1.5 Geotechnical studies submitted in support of development applications must meet the requirements outlined in *Assistance to Developers and Building Permit Applicants*

⁷⁷ Ministry of Environment. *Flood Hazard Area Land Use Management Guidelines*. May, 2004 (or as updated).

⁷⁸ Regional District of Fraser Cheam. *Hazard Acceptability Thresholds for Development Approvals by Local Government*. November, 1993.

*Undertaking Geotechnical Studies*⁷⁹ and, as applicable, *Guidelines for Legislated Landslide Assessments for Proposed Residential Development in British Columbia*⁸⁰.

11.1.6 In circumstances where land is subject to geological hazards and located within a Development Permit Area, the Regional Board may give special consideration to offset the constraints caused by geotechnical problems. These special considerations may include altering siting and subdivision policies through a Development Variance Permit in accordance with the results of a geotechnical study. These considerations may allow greater flexibility within a safe building area.

11.1.7 Property owners are advised that the following activities may exacerbate hazards and contribute to slope failure:

- placing fill, organic wastes, and debris along or below the crest of slopes;
- excavation of the base of slopes;
- discharge of surface or ground water on or below the crest of slopes; and,
- cutting trees on or below the crests of slopes;

Deroche Creek

11.1.8 The approval of development on the Deroche Creek alluvial fan shall be in accordance with the recommendations of the *Deroche Creek Flood Hazard Management Study* (2000).

11.1.9 To follow up on the *Deroche Creek Flood Hazard Management Study* (2000), as opportunities arise the Regional District should:

- a. seek external funding for a conceptual design study of community protection works; and, as a corollary,
- b. canvass the interest of the community and the Leq'á:mel First Nation in pursuing a community flood protection service area.

11.1.10 In accordance with the recommendations of the *Deroche Creek Flood Hazard Management Study* (2000), the Regional Board endorses the management of gravel in the depositional reaches of Deroche Creek to reduce the risk of avulsion provided that:

- a. the works are designed and supervised by a professional engineer with experience in river hydraulics;
- b. negative impacts to fish and riparian habitat are avoided or effectively mitigated;
- c. all necessary approvals are obtained; and,
- d. local residents are informed of the works and community impacts are addressed.

11.1.11 A flood emergency plan should be developed for the Deroche Creek alluvial fan hazard area to guide monitoring of the stream and the evacuation of residents.

⁷⁹ Fraser Valley Regional District. *Assistance to Developers and Building Permit Applicants Undertaking Geotechnical Studies*.

⁸⁰ Association of Professional Engineers and Geoscientists of British Columbia. *Legislated Landslide Assessments for Proposed Residential Development in British Columbia*. March 2006 (or as updated).

Norrish Creek

- 11.1.12 As opportunities arise, the Regional District will pursue external funding to assess upgrades necessary to bring the Norrish Creek ‘orphan dyke’ to provincial standard, and, as a corollary, canvass the interest of the community in establishing a service area for dyke maintenance should upgrades prove possible.
- 11.1.13 As resources permit, the Regional District should commission a secondary hydrological study to consider debris loading and flood issues on the lower Norrish Creek fan and determine flood scenarios, paths and profiles and gravel management strategies.
- 11.1.14 The Regional Board endorses efforts to manage gravel in the depositional reaches of Norrish Creek to reduce the risk of flooding and infrastructure damage provided that:
- the works broadly benefit surrounding landowners and do not transfer or increase hazard to other locations on the alluvial fan;
 - the works are designed and supervised by a professional engineer with experience in river hydraulics in consultation with qualified environmental professionals;
 - negative impacts to fish and riparian habitat are avoided or effectively mitigated;
 - all necessary approvals, such as those required under the Water Act and Fisheries Act, are obtained; and,
 - local residents are informed of the works and community impacts are addressed.

Sumas Mountain

- 11.1.15 Activities within ravines on Sumas Mountain may impact settlement areas within the City of Abbotsford. Accordingly, the portions of the Wades, Chadsey, Slough and North/South Quarry Creek ravines within the Plan area should remain unaltered and free of development with the possible exception of foot trails.

11.2 Fraser River Flooding and Flood Protection Infrastructure

Electoral Area “G” is dominated by the presence of the Fraser River floodplain. It covers about 75% of the Plan area and extends across Hatzic Lake, Dewdney, Nicomen Island, and parts of Deroche. Three dyke systems - administered by autonomous and independent improvement districts - provide protection to floodplain lands and infrastructure within the Plan area: the Dewdney, Nicomen Island and the North Nicomen dykes. Together, these systems are over fifty kilometres in length and protect about 4,300 hectares of land. Electoral Area “G” dykes are administered by autonomous local improvement districts that maintain, improve and inspect the dykes. The Fraser River Floodplain and flood protection infrastructure are shown on *Map 2*.

The Dewdney and Nicomen dykes were substantially reconstructed after the 1948 flood by the Fraser Valley Dyking Board. The Dewdney dyke was later upgraded under the Fraser River Flood Control Program to meet the 1969 1:200 year design flood profile. Under this program, the Nicomen dyke received several kilometres of bank protection along the Fraser but the

benefit/cost ratio was deemed insufficient to justify further improvements.⁸¹ Both dykes received further improvements more recently.

New hydraulic modelling of the lower Fraser River indicates that the 1:200 year flood profile is higher than originally estimated in 1969.⁸² A design flood would overtop the Nicomen Island and North Nicomen dykes over most of their lengths and the Dewdney dyke would be overtopped in various locations. Moreover, the Nicomen dykes are not built to Provincial standards and their integrity is uncertain. Significant upgrades to dykes within the Plan area are necessary in order to protect against a 1:200 year design flood.

The consequences to the Plan area of a major Fraser River flood would be great. Though the area has a relatively small population, 1,914 people in 2006, the value of land and improvements within the floodplain is significant. The assessed value of floodplain properties in EA “G” alone is \$179,865,455. The assessed value of all properties protected by EA “G” dykes is \$234,903,044.⁸³ Much of this value is in agricultural land and buildings. The value of agricultural production in EA “G” alone is about \$30 million annually.⁸⁴ However, the total value of agricultural products from lands protected by EA “G” dykes is closer to \$60 million annually.⁸⁵

The dykes also protect vital transportation infrastructure. Lougheed Highway (No. 7) is one of two highway routes connecting Vancouver with the interior of the province. It carries almost 5,000 vehicles through the Plan area each day.⁸⁶ The Canadian Pacific Railway carries an average of 30 freight trains per day.⁸⁷ The interruption of flows on these routes would have implication at the Provincial, even national, scale.

Dewdney Dyke System

The Dewdney dyke system consists of a 12 kilometre standard dyke extending from Dyke Road (Mission) to Bell Road (EA “G”) in the east, a floodbox at Hawkins Pickle Road and a pump station/floodbox at Hatzic Slough. These works, administered by the Dewdney Area Improvement District, protect about 2,092 hectares of land. The Improvement District undertook substantial upgrades to portions of the dyke in 2007.

A 2003 study of the Hatzic Pump Station by Golder Associates LTD concluded, “the hydraulic capacity of the pump station is 6.06 m³/s, which is insufficient to drain Hatzic Slough during significant storm events. This results in widespread flooding and extended periods of high water in the slough and upstream, with detrimental effects on agriculture and other land uses.”⁸⁸ Golder recommended upgrades to increase pumping capacity to 14.0 to 20.5 m³/s. The Improvement District is currently investigating cost-effective upgrades to the pump station.

⁸¹ A.A. Brown. *Report on Review of the Fraser River Flood Control Program*. 1994.

⁸² Northwest Hydraulic Consultants. *Lower Fraser River Hydraulic Model*. December, 2006.

⁸³ Total value of land and improvements. BC Assessment. 2007

⁸⁴ Statistics Canada. *Census of Agriculture*. 2006.

⁸⁵ Statistics Canada. *Census of Agriculture*. 2006. This figure includes lands within Electoral Area “F”.

⁸⁶ Annual average daily trips according to: Ministry of Transportation. Total Traffic Volumes for TMPs 17-039E and 17-039W. 2002.

⁸⁷ Canadian Pacific Railway. *Annual Information Form*. March 12, 2001.

⁸⁸ Golder Associates LTD. *Hatzic Pump Station Upgrade Strategic Plan*. July 16, 2003.

Nicomen Island Dyke System

The Nicomen Island dyke system is complex. The dyke is about 35 kilometres in length. It protects 2,290 hectares of land on Nicomen and Skumpalasp Islands from the Fraser River on the south side and Nicomen Slough on the north. Bell Dam prevents the Fraser from entering the upstream end of Nicomen Slough (near Bell Road). Internal drainage is managed with twelve floodboxes and five pump stations. The dyke and associated infrastructure is administered by the Nicomen Island Improvement District.

The Nicomen Island dyke was assessed by river engineers Kerr Wood Leidal (KWL) during the 2007 freshet.⁸⁹ They found that the dykes do not meet Provincial standards in several ways; most importantly, they are at least one metre below the design dyke elevation (including 0.6 m freeboard). They also documented a number of localized problems especially in the area of the wing dyke. Overall, KWL found that the integrity of the dyke system is uncertain and that action is required to maintain dyke safety at water levels above the 2007 peak.

North Nicomen Dyke

The North Nicomen dyke, administered by the North Nicomen Improvement District, consists of 3.5 kilometres of dyke and two floodboxes. It protects about 101 hectares of land between Taylor Road and the CPR tracks, including IR 11 (Lakahamen). The dyke does not meet Provincial standards in a number of important ways. The level of protection provided by the dyke is uncertain, particularly in the event of a breach of the Nicomen Island Improvement District dam at the Nicomen Slough inlet. The dyke is also subject to significant seepage problems. The North Nicomen area will require evacuation more frequently and at lower water levels than other parts of the Plan area.

Undyked Lands

The Plan area includes over 1,000 hectares of undyked floodplain lands along the Fraser River and Nicomen Slough (around 300 hectares along the Fraser River and 700 hectares along Nicomen Slough). The undyked lands are a mix of private and Crown lands, riverine and terrestrial environments. These lands are primarily designated AGRICULTURAL as they are in the Agricultural Land Reserve. Some of the lands are suited to farming and are cropped; other may not be. *FVRD Floodplain Management Bylaw No. 0681, 2005* prohibits the construction of buildings and structures in the designated floodplain of the Fraser River outside the area protected by dykes.

Although dykes are administered by autonomous Improvement Districts, knowledge of the dykes is vital to the performance of Regional District responsibilities. Accordingly, the policies below are intended to:

- clarify the roles for the Regional District with respect to Fraser River flood hazards and infrastructure to be:
 - the management of development in the floodplain;
 - emergency management including preparedness and response; and,
 - advocacy and support for citizens;
- provide guidance for the management of development within the Fraser River floodplain;

⁸⁹ Kerr Wood Leidal. *Nicomen Island Dyke System 2007 High Water Inspection*. July 24, 2007.

- assist with emergency management, especially in the production of information necessary for effective emergency preparedness decision-making during emergencies; and,
- advocate for the interests of Electoral Area “G” citizens and the three Improvement Districts, particularly in matters that transcend the boundaries of any one District.

It is the policy of the Regional Board that:

Management of Development

- 11.2.1 Minimizing exposure to flood risk and consequences of Fraser River flood events will be central concerns in land use planning decisions.
- 11.2.2 The Regional District will utilize floodplain management and zoning bylaws, official community plan policies and covenants to limit development within the floodplain and minimize exposure to risk.
- 11.2.3 The 1:200 year design flood will continue to be the basis for flood proofing measures.
- 11.2.4 The Regional District will continue to rely on dykes and associated flood protection infrastructure combined with secondary (on-site) flood-proofing measures including the implementation of flood construction levels, siting, and floodplain setbacks to minimize exposure to flood hazards.
- 11.2.5 The Ministry of Environment *Flood Hazard Area Land Use Management Guidelines*⁹⁰ shall be considered by the Regional Board when amending bylaws under Section 910 of the Local Government Act (construction requirements in relation to flood plain areas) and generally when developing land use policy and regulation for the Fraser River floodplain within the Plan area.
- 11.2.6 *Fraser Valley Regional District Floodplain Management Bylaw No. 0681, 2005* should be updated to reflect the most current Fraser River flood profile modelling.
- 11.2.7 In consultation with landowners, relevant Provincial agencies, and other interested parties, the Regional District should, as resources permit, conduct an assessment of undyked lands within Electoral Area “G” to identify land use possibilities and opportunities for conservation of floodplain functions and habitats.

Emergency Management

- 11.2.8 The Regional District should develop flood response plans to identify water level triggers for emergency response actions and establish communication protocols with local dyking authorities for reporting water levels and dyke conditions.
- 11.2.9 As opportunities arise, the Regional District will seek external funding to undertake a comprehensive quantitative flood risk assessment of the Fraser River floodplain within and adjacent to the Plan area to:

⁹⁰ Ministry of Environment. *Flood Hazard Area Land Use Management Guidelines*. May, 2004 (or as updated).

- a. better understand flood scenarios, paths and profiles; economic loss and various flood stages; the duration of inundation; and,
 - b. inform and guide the responsible authorities in the major investment in dyke upgrades that are required.
- 11.2.10 The responsible authorities should conduct a physical assessment of the North Nicomen dyke to evaluate the condition of the dyke, determine the level of protection it provides, and outline implications and guidelines for emergency preparedness and response.

Advocacy

- 11.2.11 Fraser River flood protection works should be upgraded based on the 1:200 design event described in the *Water Surface Profile* by Northwest Hydraulic Consultants (March, 2008) or more recent information as available.
- 11.2.12 As opportunities arise, the Regional District will seek external funding for an assessment of the threat of seismic events to the dykes and flood protection infrastructure within the Plan area. The assessment would assist the Improvement Districts and the responsible authorities to understand and respond to the risks to vital flood protection infrastructure associated with earthquakes.
- 11.2.13 Significant upgrades to Fraser River flood protection works will require major contributions from provincial and federal governments. Normally, senior governments should pay costs of capital improvements and the local community should pay costs for ongoing operation and maintenance.
- 11.2.14 The Dewdney Pump Station and floodboxes should be upgraded by the responsible authorities to improve pumping capacity. The Regional District should assist efforts to upgrade the Dewdney Pump Station by supporting the Dewdney Area Improvement District in making grant applications and liaising with government agencies and funding bodies.
- 11.2.15 Nicomen Island is uniquely vulnerable to Fraser River floods and should be considered a priority for upgrades by the responsible authorities. Following the recommendations of the *Nicomen Island Dyke System 2007 High Water Inspection* report by Kerr Wood Leidal, the responsible authorities should prepare a comprehensive upgrading program for the Nicomen dykes and assess the reliability of the Nicomen Slough 'wing dam'. The Regional District should assist efforts to upgrade the Nicomen Island Dyke by supporting the Nicomen Island Improvement District in making grant applications and liaising with government agencies and funding bodies.
- 11.2.16 The responsible authorities should monitor bank erosion upstream of the Quaamitch Slough outlet and assess potential mitigation measures, including bank armouring and gravel removal from the Fraser to reduce flow against the bank, to protect the integrity of the dyke and structures on private land outside the dyke.

11.3 Earthquake Hazards

Seismic slope stability and soil liquefaction hazards may require specific consideration in development approvals. The 2006 BC Building Code requires that the design of some buildings, notably buildings for assembly and institutional uses and buildings in excess of 600 m² in building area or exceeding 3 storeys in height, address earthquake liquefaction hazards.

Moreover, *Geotechnical Slope Stability (Seismic) Regulation M268* – a Ministerial order under the Local Government Act - states that, “where the intended use of land is the construction of a building, the geotechnical study and geohazard assessment for slope stability of that land must be based on ground motion values having a 10% probability of exceedence in 50 years.” This means that a 10% in 50 year (475-year return) seismic acceleration must be applied in slope stability analyses for residential and other buildings defined under the *2006 BC Building Code*.⁹¹

In ideal circumstances, government agencies commission geotechnical investigations to produce data or maps showing ground susceptibilities to seismic shaking and soil liquefaction. There are no such maps currently available for the Plan area. In some cases, specialized and expensive geotechnical drilling, ground water investigations and geotechnical analyses may be required to evaluate soil liquefaction potentials for valley floor building sites and to a lesser degree for seismically induced landslides.

Although there is an absence of earthquake hazard mapping, “zones of loose, saturated sand susceptible to earthquake-induced liquefaction undoubtedly occur in the flood plain [of the plan area] but their location and extent are unknown.”⁹² Undifferentiated potential earthquake hazards, along with areas of potential and significant slope hazards, are shown on *Map 8 - Geologic & Mountain Stream Hazards*. However, areas of liquefiable soils and seismic slope stability hazards must be defined by detailed geotechnical investigation. Furthermore, the risk to the area’s flood protection infrastructure associated with earthquake activity must be assessed.

It is the policy of the Regional Board that:

- 11.3.1 Investigation and design of buildings on liquefiable sites should utilize, to the extent applicable, the best practices outlines in the Task Force Report titled *Geotechnical Design Guidelines for Buildings on Liquefiable Sites in Accordance with NBC 2005 for Greater Vancouver Region* (May 8, 2007).
- 11.3.2 Geotechnical analytical techniques for evaluating seismic slope stability should follow any best practices developed or endorsed by the Association of Professional Engineers and Geoscientists of British Columbia.
- 11.3.3 Senior governments are encouraged to commission geotechnical investigations to produce data or maps of the Plan area showing ground susceptibilities to seismic shaking and soil liquefaction to assist with development approvals.

⁹¹ This section is substantially drawn from: Qcd Geotechnics. *Overview Geotechnical Hazard Assessment – Electoral Area F (Hatzic Valley)*. December 18, 2007.

⁹² Thurber Engineering LTD. *Area G Official Community Plan (Hatzic Lake to Deroche) Geotechnical Hazard Overview*. September 21, 2004.

11.4 Interface Fire Hazards

Areas of rural or urban settlement adjacent to the Provincial Forest are often called ‘interface’ zones. They are at particular risk of wild fire. Fire is a natural part of forest ecology, but its occurrence in interface zones, as well as its consequences, is greatly increased by proximity to human activities. The consequences of fire in interfaces areas can be great, including the loss of homes, business and even lives.

The Ministry of Forests and Range Coastal Fire Centre has developed Wildland / Urban Interface Fire Hazard mapping. The forest margins adjacent to private lands in the Plan area have received a high hazard rating. Interface Fire Hazards are mapped in *Map 9 - Interface Fire Hazards*.

It is the policy of the Regional Board that:

- 11.4.1 Planned new development within areas of high wild fire hazard should be placed within a development permit area for the protection of development from wild fire hazards to minimize risk to people and property.
- 11.4.2 To reduce the risk to people and property from wild fires, landowners building on existing properties subject to high wild fire hazard are strongly encouraged to:
 - a. build in accordance with the *BC Firesmart Homeowners Manual*⁹³ which recommends the use of non-combustible materials and other building and property management techniques; and,
 - b. utilize fire resistant native plants in landscaping⁹⁴.

⁹³ BC Forest Service. *BC Firesmart Homeowners Manual*.

⁹⁴ Generally speaking, fire resistant plants have moist, supple leaves; little dead wood and tend not to accumulate dry, dead material within the plant; and, water-like sap that does not have a strong odour. For further information, please see: <http://www.bcwildfire.com/Prevention/Property/Landscape>

12.0 BIOLOGICAL DIVERSITY

Residents of Electoral Area “G” place much value on the natural environment. Overall, 82% of respondents to the 2004 *Community Planning Survey* placed great importance on the protection of the habitat for fish and wildlife.⁹⁵ More than 90% of the respondents from Dewdney-Nicomen and Deroche felt that the protection of habitat for fish and wildlife should be the first priority or a high priority for community planning.

The following sections provide a brief overview of the riparian and upland habitats of the Plan area and policies for impact mitigation and habitat enhancement. Fish presence, wetlands, plant/wildlife observations, and other habitat information is shown at an overview level on *Map 10 – Habitat*.

12.1 Riparian Habitats

The Plan area is comprised of numerous and abundant stream and riparian habitat types, including Fraser River gravel reaches, slough and wetland habitats, and mountain stream habitats. All of these contribute to the rich floral and faunal biodiversity found within the area.

“The gravel reach [of the Fraser River] contains a greater diversity of fish species than any other freshwater ecosystem in British Columbia... approximately 30 different fishes that use this area for rearing, spawning or migration, or have a mixture of all three life-history stages. This species diversity is largely the result of post-glacial colonization patterns and the great number of niches that the gravel reach affords fish.”⁹⁶

Sumas Mountain is drained by numerous streams and springs which directly and indirectly support fish and wildlife populations. Given the varied topography and elevation, the majority of streams and springs are headwaters. Headwaters are often small but play a very important role in overall watershed ecology and maintenance of downstream reaches and main stems by providing a flow of cold, clean water. Flow from upland areas is essential in maintaining the water quality and temperature necessary to sustain fish populations.

A portion of Strawberry Island and Fraser River foreshore along Sumas Mountain are within the proposed McGillivray Slough Wildlife Management Area.

Fish

Large populations of all five species of Pacific salmon - pink, chinook, coho, sockeye and chum – utilize the Fraser River gravel reach during at least one of their life-history stages. Most populations of salmon in the Fraser River migrate through the gravel reach to tributary streams for spawning and rearing upstream of Mission, and use the same area as a migration corridor when their juveniles go out to sea. Pink and chum salmon physically spawn in substantial numbers in the active channel of the gravel reach.⁹⁷ Steelhead trout and anadromous cutthroat

⁹⁵ For more information respecting the 2004 *Community Planning Survey*, please see Section 1.4 of this Plan.

⁹⁶ Pacific Fisheries Resource Conservation Council. *Saving the Heart of the Fraser: Addressing Human Impacts to the Aquatic Ecosystem of the Fraser River, Hope to Mission, British Columbia*. November, 2007.

⁹⁷ Pacific Fisheries Resource Conservation Council. 2007.

trout utilize this habitat, as do eulachon, white sturgeon, three-spine stickleback, Dolly Varden char, Mountain whitefish, pea-mouth chub, Northern pike minnow, suckers, minnows (dace, shiner, etc), sculpins, lamprey and numerous other species.

The sloughs, streams and wetlands between dyked upland areas of the Plan area also provide exceptional habitat for a variety of species.⁹⁸ A number of fish species are found there, including white sturgeon, rainbow and cutthroat trout, stickleback, sculpin, suckers, Nicomen Squawfish, and coho salmon.⁹⁹ Chinook and chum are also present.¹⁰⁰ Salmon are keystone species and are central to the slough ecology; they directly support populations of key species such as eagle and heron and indirectly support many other species by providing nutrients to the system.

The riparian habitats of the Plan area are extremely productive and biologically diverse. Although they are highly valued by residents¹⁰¹ and users, riparian habitats are subject to a variety of pressures and influences which appear to degrade them over time.

In 1997, Fisheries & Oceans Canada classified many streams of the lower Fraser Valley as *lost*, *endangered*, *threatened* or *wild* depending on factors such as amount of riparian vegetation, impermeable watershed area, water diversion, forestry activity, and urban development.¹⁰² The table below summarizes classifications for the major streams of the Plan area.

Stream	Classification	Reason
Chilqua Creek/Slough	endangered	Riparian removal, water quality, logging
Deroche Creek	threatened	Riparian removal
Hatzic Slough	endangered	Riparian removal, channelization/dyking, water quality, urbanization
Mud Slough	endangered	Channelization/dyking, water quality
Nicomen Creek/Slough	endangered	Riparian removal, channelization/dyking, water quality
Norrish Creek	endangered	Channelization/dyking, water diversion
Quaamitch Slough	endangered	Channelization/dyking, water quality
Zaitscullachan Slough	endangered	Riparian removal, channelization/dyking, water quality

While far from a definitive statement on any one stream, these classifications may indicate area-wide trends in stream health. It appears that riparian removal, channelization and dyking, invasive and introduced species (e.g., bullfrogs, carp, red-side shiners, Purple Loosestrife, False Bamboo, Eurasian blackberry, etc.), water withdrawals, and water quality impacts from agriculture is degrading streams and limiting fish production in the Plan area, especially in lowland waterways.¹⁰³ Sedimentation and plant growth are also factors in Nicomen Slough where, “back flooding during peak Fraser River discharges coupled with reduced flows, have resulted in the deposition of a thick layer of silt over most of the slough bottom. Clear gravel

⁹⁸ Province of British Columbia, Land Use Coordination Office. *Fraser Lowlands Protected Area Strategy, Report of the Working Group*. November, 1998.

⁹⁹ Lakahahmen First Nation. *Environmental Youth Team Report*. 2001

¹⁰⁰ Ministry of Environment. FISS – Fish Distribution Query. February 22, 2008.

¹⁰¹ As indicated by the community survey results described previously in this section.

¹⁰² Fisheries & Oceans Canada. *Wild, Threatened, Endangered and Lost Streams of the Lower Fraser Valley, Summary Report*. 1997.

¹⁰³ Also see: Fisheries & Oceans Canada. *Fraser River Basin Strategic Water Quality Plan, Lower Fraser River*. 1997.

only exists at channel constrictions and in areas with upwelling water, especially above Deroche.”¹⁰⁴

Anadromous fish populations in the Hatzic watershed upstream of the Hatzic Pump Station are limited by the pump station. Out-migration of salmonid smolts from the Hatzic watershed often coincides with periods of higher water in the Fraser River when the Hatzic floodgates are closed and drainage from the watershed relies on pumping. When the pumps are operating, fish must travel through them to get to the Fraser River. The propeller-style pumps at the Hatzic Station kill or damage fish as they pass through. A 1999 study commissioned by Fisheries & Oceans Canada concluded that, “of all the pump / fish migration conflicts that exist in the lower mainland, the one that exists at the Hatzic pumping station is likely the most pressing of all.”¹⁰⁵

Mammals and Amphibians

Otter, muskrat, and beaver are among the mammals that utilize riparian habitat within the Plan area. A variety of amphibians, including red-legged frog, Oregon spotted frog, Pacific tree frogs, rough-skinned newts, northwestern salamanders, and others are also expected to occur. The Red-legged frog and the Oregon spotted frog are listed as either *special concern* and *endangered* respectively by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

Trumpeter Swan

By 1933, trumpeter swans had been hunted to the verge of extinction. There were 77 known breeding adults in Canada. Since then, conservation efforts have resulted in increases in the trumpeter swan population. Still, “the species still faces a number of threats, with the loss of migratory traditions and reduced quality and quantity of winter habitat being chief among them.”¹⁰⁶ The lowland sloughs of the Plan area provide winter habitat for trumpeter swans. Significant numbers of trumpeter swans have been documented in Nicomen Slough, Hatzic Slough and other waterways.

Great Blue Heron

A major great blue heron rookery exists on the east side of Hatzic Lake. In 2002, 93 nests in 40 mature cottonwood trees were observed. The number of nests suggests that the Hatzic colony is provincially significant. The coastal variety of the great blue heron is on the provincial Blue List of vulnerable species and is considered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) to be Vulnerable.

The great blue heron is protected by federal legislation under the Migratory Bird Convention Act and Provincially under the Wildlife Act which prohibits the possession, taking, injuring, molesting, or destruction of a heron, its egg or nest.¹⁰⁷ Still, the colony may be negatively impacted by nearby human activities.

“Most heron colonies are extremely sensitive to human disturbance, particularly during the early stages of nest selection, nest building, pair formation and egg-laying... As the chicks grow, there appears to be a growing commitment by the adult herons and they are much less likely to

¹⁰⁴ Lakahahmen First Nation. *Environmental Youth Team Report*. 2001

¹⁰⁵ Alan R Thomson & Associates. *Study of Flood Proofing Barriers in Lower Mainland Fish Bearing Streams*. May, 1999.

¹⁰⁶ Ducks Unlimited Canada. *Conservator*. Vol. 26, No. 1, 2005

¹⁰⁷ Province of British Columbia. *Wildlife Act*. [RSC 1996] CHAPTER 488. Section 34.

abandon a nest when disturbed... [The herons in the Hatzic colony] reacted more strongly to human disturbance than those at colonies in urban settings.”¹⁰⁸

The location of the existing Hatzic colony, primarily on Crown land with limited access and little threat of development-related impacts, helps to minimize human disturbance of the herons. Moreover, peak summer recreational activities on Hatzic Lake generally occur after the period when herons are most vulnerable to disturbance, though some overlap may exist in late June or early August. Accordingly, no special measures to protect the colony (on the part of the Regional District) are identified at this time.¹⁰⁹ If the need changes in the future, the Regional Board may consider a more proactive approach.

Bald Eagle

A large number of bald eagles utilize the Plan area for wintering, for feeding, and to a lesser extent, for nesting. While specific population numbers for the Plan area do not exist, the lower Fraser Valley is believed to contain over two hundred breeding pairs who stay in the region to nest and rear young, and thousands of bald eagles who visit the region in the late fall and early winter to feed on salmon carcasses that have returned to the region to spawn. Peak bald eagle numbers often occur in early December, with nesting and breeding occurring between mid-February and late summer.

Important bald eagle habitat within the Plan area includes: tall trees and snags, usually near water, that are used as nesting sites as well as perching sites for resting, looking for food, and preening; feeding sites, both along riparian edges and agricultural fields (to feed on chicken manure); and conifer stands on forested slopes that serve as night roosts. Night roosts, typically occurring on large mature conifers that are in the vicinity of an abundant food source, may be used communally by multiple individuals with the same trees often routinely re-visited each night over many years.¹¹⁰ These roosts provide a sheltered location, used more frequently during poor weather and periods of food shortages, and may also provide important social and non-social functions of the population.¹¹¹

Compared to great blue herons, bald eagles are believed to more easily adapt to the presence of humans; however, development-related impacts associated with habitat loss, pollution, and factors that reduce their food supply, can significantly affect bald eagle populations and health. They are particularly sensitive when their natural food sources, fish and fish carcasses and small birds and waterfowl, are not readily available, during strong winters or high water flows.

Pacific Watershrew

Pacific watershrew is a small mammal that inhabits riparian zones of mature Western red cedar and Western hemlock, with dense vegetation and woody debris. They are a very rare species that have been placed on the provincial Red List of extirpated, endangered or threatened species and

¹⁰⁸ BC Environment. *Status of the Great Blue Heron in British Columbia*. March, 2001.

¹⁰⁹ Riparian Areas Development Permit Area 2-G, established in this Plan, may help to protect nearby wetlands, sloughs and marshes used by herons as forage areas, though the principle intention of DPA 2-H is to protect fish habitat as required under the Riparian Areas Regulation.

¹¹⁰ Demarchi, M.W., Bentley, M.D., 2005. *Best Management Practices for Raptor Conservation during Urban and Rural Land Development in British Columbia*. LGL Limited Environmental Research Associates, prepared for BC Ministry of Environment. March 31, 2005.

¹¹¹ Yackel Adams, A.A., S.K. Skagen and R.L. Knight. 2000. Functions of Perch Relocations in a Communal Night Roost of Wintering Bald Eagles. *Canadian Journal of Zoology* 78:809-816.

have been designated threatened under the federal Species At Risk Act (SARA). There are no documented occurrences of Pacific watershrew in the Plan area (as of February, 2008). However, they have been observed in Hatzic Prairie, and predictive mapping developed by the South Coast Conservation Program indicates that Pacific watershrew may be present in lowland riparian zones of the Plan area.¹¹²

12.2 Upland Habitats

The mountain front on the north side of Plan area – part of the Pacific range of the Coast Mountains - is heavily forested, generally very steep, and has several bedrock cliffs.¹¹³ Places where the steep mountain slopes abruptly meets the flat floodplain or slough channel are interspersed with the small alluvial fans associated with Madill Creek, several unnamed streams, and the large fans of Norrish and Deroche Creeks.

The lower to mid elevation slopes are within the Coastal Western Hemlock Biogeoclimatic Zone and generally consist of Douglas fir, Western hemlock and Western red cedar with Big leaf maple in riparian zones and alluvial fan areas. High rainfall and mild temperatures predominate. Upper elevations fall within the Mountain Hemlock Zone which is characterized by heavy snowfall and a short growing season.

Choices for Our Future, the Regional Growth Strategy for the Fraser Valley Regional District, identifies the north shore slopes as Habitat Reservoir and Sumas Mountain as Habitat Refuge.¹¹⁴ “Habitat Reservoirs are large tracts of natural or semi natural habitat that contain self-sustaining vegetation and wildlife populations. Reservoirs provide a population base that can help to sustain and add genetic diversity to plant and animal communities living in habitat fragments throughout urban or agricultural areas.”¹¹⁵ “Habitat refuges are...substantial remnant islands of largely forested habitat surrounded by landscapes that are mostly employed for human endeavours. These refuges can be self-sustaining for some plant and animal species, but many species that would normally form part of the...habitat type...are not sustainable over the long term.”¹¹⁶

Sumas Mountain has relatively intact forests, wetlands and a complex drainage network that provide a variety of habitats including marshes, riparian areas, freshwater wetlands and vernal pools, and interior forest areas. These habitats support hundreds of species including bear and deer populations, neotropical migrant birds, and the red-listed Tall Bugbane, Trowbridge’s Shrew, Tailed Frogs, and Mountain Beaver. Documented species observations on Sumas Mountain are shown on Map 10 and in the table below. These observations, by Mr. Glenn Ryder of the Central Valley Naturalists, indicate historic and, in some cases current, species ranges.

TABLE 12-B SPECIES OBSERVATIONS, SUMAS MOUNTAIN
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¹¹² South Coast Conservation Program Atlas. Accessed at <http://www.shim.bc.ca/atlasses/sar/main.cfm> on February 19, 2008.

¹¹³ Thurber Engineering. *Area G Official Community Plan (Hatzic Lake to Deroche) Geotechnical Hazard Overview*. September 21, 2004.

¹¹⁴ Fraser Valley Regional District. *Choices for Our Future: Regional Growth Strategy for the Fraser Valley Regional District*. 2004.

¹¹⁵ Quadra Planning Consultants. *Environment and Ecological Working Paper, Part II: Potential Impacts of Growth on Environmental and Ecological Health in the FVRD*. February, 1999.

¹¹⁶ Quadra Planning Consultants. February, 1999.

A few of the many species found in the upland habitats of the Plan area are discussed below.

Mammals

The upland habitat of the Plan area to an elevation of about 450 metres are winter ranges on which ungulates, primarily black-tailed deer, from surrounding areas depend.¹¹⁷ Other mammal species noted within the upland habitats of the Plan area include black bear, coyote, red fox (now extremely rare), cottontail rabbit, snowshoe hare, and red and flying squirrels.¹¹⁸

Map #	Species	Status*	Date
1-3	Peregrine Falcon	Red	1955-9
9	Spotted Owl	Red	1950s
11-13	Spotted Owl	Red	1950s
15	Keen's Long Eared Bat	Red	1959
16-17	Marbled Murrelets	Red	1950s
29	Mountain Beaver	Blue	1955
31	Mountain Beaver	Blue	2002
35	Tailed Frog or Coastal Tailed Frog	Blue	1957
37	Red-Legged Frog	Blue	1996
45-46	American Pika	Yellow	1990s
62-66	Old Growth Douglas Fir		
67	Turkey Vulture	Yellow	1959
68	Turkey Vulture	Yellow	1984
70	Mountain Beaver	Blue	1955

Please See Map 10 – Habitat for species observation locations
* BC Conservation Status

Tall Bugbane

Tall bugbane is an endangered plant species of old growth forests in BC. It was designated *Endangered* by the Committee on the Status of Endangered Wildlife (COSEWIC) in 2001 and included in the SARA list of species-at-risk. It is on the provincial Red List of extirpated, endangered or threatened species. Tall bugbane is primarily found south of the Fraser River, including Sumas Mountain, and generally occurs on forested slopes with a Douglas fir component that range between 7 – 33 degrees.¹¹⁹ Predictive mapping developed by the South Coast Conservation Program indicates that tall bugbane may be found on the northern slopes of the Plan area.¹²⁰

Oregon Forestsnail

Oregon forestsnails are large land snails found primarily in the Mission/Abbotsford/Chilliwack areas. They occupy older mixed-wood and deciduous lowland forests, typically dominated by bigleaf maple, at elevations below 360 m. The Oregon forestsnail, designated *endangered* under SARA and red-listed by the Province, has been observed in Hatzic Prairie, but no occurrences within the Plan area have been registered (as of February, 2008). Still, it is expected that the Oregon forestsnail may be found in Electoral Area “G”.¹²¹

Dun Skipper

The Dun Skipper, “a dull-coloured butterfly with fast, erratic flight,” is Provincially blue-listed and designated *threatened* under the SARA.¹²² It may also be found within the Plan area.¹²³

¹¹⁷ Canada Lands Inventory. *Soil Capability for Ungulates*. 1971.

¹¹⁸ Fisheries and Oceans Canada. Nicomen Slough Watershed Overview (DRAFT). Unpublished.

¹¹⁹ Brian Klinkenberg. *Predictive Mapping of Potential habitat for Tall Bugbane (actaea elata) in British Columbia*. June, 2005.

¹²⁰ *South Coast Conservation Program Atlas*. Accessed at <http://www.shim.bc.ca/atlas/sar/main.cfm> on February 19, 2008.

¹²¹ *South Coast Conservation Program Atlas*. Accessed at <http://www.shim.bc.ca/atlas/sar/main.cfm> on February 19, 2008.

¹²² Ministry of Environment, Lands & Parks. *Rare Butterflies of Southeast Vancouver Island and the Gulf Islands*. March, 1999.

¹²³ *South Coast Conservation Program Atlas*. Accessed at <http://www.shim.bc.ca/atlas/sar/main.cfm> on February 19, 2008.

12.3 Avoidance and Mitigation of Environmental Impacts

Official Community Plans may set out policies related to the preservation, protection, restoration and enhancement of the natural environment, its ecosystems, and its biological diversity.¹²⁴ This Plan approaches the avoidance and mitigation of environmental impacts in a variety of ways. Planned land uses and densities are shaped by environmental constraints. Riparian Areas Development Permit Area 2-G will protect fish and fish habitat and will benefit amphibians, waterfowl, eagles and other species that rely on riparian habitat. Ground and surface water are addressed in Section 13. Policies related to watershed protection, specifically from forestry-related impacts, are contained in *Section 14 - Natural Resources*. The policies below focus on the recognition and preservation of species-at-risk and biological diversity within the Plan area.

It is the policy of the Regional Board that:

- 12.3.1 New development should be designed in a way that minimizes water and riparian crossings.
- 12.3.2 New development should comply with the *Environmental Best Management Practices for Urban and Rural Development in British Columbia*.¹²⁵
- 12.3.3 Applications for zoning and community plan amendments to facilitate new developments may be required to include an assessment report prepared by a qualified environmental consultant to:
 - a. generally identify species and habitats present;
 - b. assess development-related impacts;
 - c. identify appropriate best practices; and,
 - d. provide strategies to avoid, mitigate or minimize impacts to species and habitats.
- 12.3.4 Activities that generate loud noise, vibrations or other disturbances that may negatively affect the Hatzic heron colony should be avoided between mid-February and early August if possible.
- 12.3.5 If negative impacts to the Hatzic heron colony from human activities are documented, the Regional Board may consider whether the Regional District should enact appropriate formal protection measures.
- 12.3.6 Wildlife trees or snags regularly used by herons or bald eagles as nesting, roosting, perching, and feeding sites should be left standing whenever possible.

¹²⁴ Local Government Act (1996, c. 323), Section 878(d).

¹²⁵ Ministry of Water, Air & Land Protection. *Environmental Best Management Practices for the Development of Urban and Rural Land in British Columbia*. June, 2004 (or as updated).

- 12.3.7 Land owners are recommended to:
- a. retain as much of the natural vegetation cover as possible when clearing land for housing or other forms of development.
 - b. avoid land clearing between April 1 and July 30 to avoid conflicts with activities of nesting birds, their nests, eggs and trees; and,
 - c. use native plant species for landscaping.
- 12.3.8 The Regional District encourages the stewardship initiatives of responsible community groups and will support them as resources permit, primarily through in-kind contributions.
- 12.3.9 The Responsible Authorities are encouraged to consider the upgrade of the Hatzic Pump Station to improve fish passage as a priority action for habitat restoration.
- 12.3.10 The Responsible Authorities are encouraged to address the lack of data about the habitat species of the sloughs and wetlands of Electoral Area “G” by undertaking biophysical inventories and identifying enhancement opportunities and priorities.
- 12.3.11 The Responsible Authorities are encouraged to undertake a comprehensive bio-physical inventory and habitat assessment of Sumas Mountain. Accurate stream and topographic mapping should be included in this work.
- 12.3.12 The Regional District will work in partnership with the Cities of Abbotsford and Chilliwack, provincial ministries, federal agencies, First Nations, and other groups towards establishing designated wildlife corridors and forest ecosystem networks on Sumas Mountain.

13.0 GROUND AND SURFACE WATER

13.1 Groundwater

Groundwater is vital to both human and environmental health. Yet, because it is largely unseen, its importance is often underemphasized. In Electoral Area “G”, groundwater is particularly critical as the great majority of households rely on shallow wells and sand points for drinking water.¹²⁷ Shallow wells are especially sensitive to groundwater contamination from surface sources.¹²⁸ There is, then, a strong connection between human health and groundwater quality in the Plan area. What is more, stream water quality is often dependent on a supply of clean and cold groundwater, so groundwater has a great effect on environmental health too.

Aquifers of the Plan Area

The Plan area is situated over three distinct aquifers, as shown on *Map 11 - Aquifers*. The Nicomen Slough Aquifer underlies most of Electoral Area “G”. It extends from Hatzic Lake to Harrison Knob and is bounded by the Fraser River to the south and alluvial fans and bedrock slopes to the north. The Nicomen Slough Aquifer is composed of permeable Fraser River sediments. The aquifer is unconfined and near the ground surface. As a result, it has little natural protection against contaminants introduced at the ground surface and is classified by the Ministry of Environment as highly vulnerable to contamination.¹²⁹

The Norrish Creek Aquifer is generally coincident with the Norrish Creek alluvial fan. The Deroche area is located on the Lake Errock / Deroche Creek Aquifer. Both of these aquifers are fed by surface and subsurface water draining off the slopes to the north rather than Fraser River flows. While their soils are generally coarser alluvial deposits of sand and gravel, they too are unconfined, shallow, and highly vulnerable to contamination from surface sources.¹³⁰

Risks to Groundwater

Ground-based sewage disposal and agricultural activities pose the greatest risks to groundwater in the Plan area. “Agricultural activities can result in an increase in bacterial, nutrient, and pesticide levels and possibly sterol levels (in shallow wells).”¹³¹ The Fraser Valley is experiencing an increasing supply of nutrients - nitrogen, phosphorus, and potassium found in animal manure, fertilizer and feed - due to intensive animal husbandry and the switch to lower nitrogen uptake crops such as forage. In some locations, the manure supply is greater than can be used in agricultural operations. This raises the potential for inappropriate applications and over-supply of nutrients to the aquifer. Groundwater contamination from agricultural nutrients has been linked to public health concerns related to groundwater quality (particularly nitrate concentrations) and fisheries concerns related to surface water and habitat quality.¹³²

¹²⁸ Central Fraser Valley Health Unit. *Hatzic Island Water Quality Survey*. April, 1994.

¹²⁹ Ministry of Environment. *Aquifer Classification Database*.

¹³⁰ Ministry of Environment. *Aquifer Classification Database*.

¹³¹ Environment Canada. *Nutrients, Metals, Bacteria and Organic Compounds in the Lower Fraser Valley, British Columbia*. March, 2004.

¹³² Fraser Basin Council. *Nutrient Management Planning Strategies for the Fraser Valley*. May 14, 2001.

In the Plan area, sewage is infiltrated into the ground by dispersal fields. Where development has been planned or limited by the Agricultural Land Reserve, the density of sewage disposal fields is expected to be within sustainable limits and the risk of groundwater contamination is low. Where unplanned development with on-site services approaches urban densities, the risk of groundwater contamination is significantly increased. Recent research (2004) indicates that on-site sewage disposal on Hatzic Island is causing elevated nitrate concentrations in some shallow wells and sand points.¹³³ In a couple of instances, well sampling revealed nitrate concentrations that exceeded Canadian drinking water standards and posed health risks to users. A 1994 study by the Central Fraser Valley Health Unit yielded similar results.¹³⁴

Indicators of Groundwater Quality

With the exception of the Hatzic Island studies mentioned above, there has been no systematic investigation of groundwater quality in the Plan area. As a result, it is not possible to speak conclusively about ground water quality. However, indicators suggest groundwater quality within the Plan area is generally good, with the noted exception of Hatzic Island. Residents of Dewdney, Nicomen and Deroche who depend on ground water report high levels of satisfaction with their water supply.¹³⁵ Residents of Hatzic Island report only moderate levels of satisfaction. Where residents were dissatisfied, mineral concentration was the most cited reason.

Yet, user perceptions provide only a rudimentary indication of groundwater quality. Local water users seem to base perceptions of water quality on mineral content and aesthetic indicators alone and are unlikely to be aware of less obvious, but potentially more harmful, forms of contamination such as nitrates unless regular testing is done.¹³⁶

The policies below focus on education and awareness of groundwater within the Plan area, resource stewardship by property owners, and consideration of groundwater impacts in development approval processes.

It is the policy of the Regional Board that:

- 13.1.1 The Regional District will investigate the feasibility of providing community sanitary sewer service to Hatzic Island to address the risk of groundwater contamination from on-site sewage disposal.
- 13.1.2 The Fraser Health Authority should fully consider aquifer properties and specific risks of groundwater contamination and its effect on human and environmental health when considering proposed sewage disposal systems and developing standards for sewage disposal.
- 13.1.3 The potential for negative impacts to groundwater and soil from ground-based disposal of sewage will be a central consideration in land use planning.

¹³³ Simone Magwood. *Groundwater and Surface Water Management and Drinking Water Issues in the Hatzic Valley*. M.Sc. Thesis (UBC), April, 2004.

¹³⁴ Central Fraser Valley Health Unit. *Hatzic Island Water Quality Survey*. April, 1994.

¹³⁵ Fraser Valley Regional District. Electoral Area "G" Official Community Plan Update Survey. 2004. For details about this survey, please see Section 1 of this Plan.

¹³⁶ Magwood, 2004.

- 13.1.4 Developments with potentially significant on-site sewage disposal requirements, or quarries and other developments which could affect the groundwater system, will require hydrological assessment to identify and mitigate negative impacts.
- 13.1.5 The Regional Board will encourage responsible stewardship of the groundwater resources, including:
- a. agricultural practices, particularly on-farm plans for nutrient management, that minimizes the potential for groundwater impacts; and,
 - b. efforts to educate Electoral Area “G” residents and landowners about the groundwater resource.
- 13.1.6 Unused wells should be promptly deactivated or closed in accordance with the *Groundwater Protection Regulation* of the Water Act.
- 13.1.7 Property owners utilizing a groundwater-based potable water supply are recommended to have drinking water tested regularly.
- 13.1.8 The Responsible Authorities are encouraged to systematically test and monitor groundwater quality in the Plan area.
- 13.1.9 The Regional District will participate in the efforts of senior governments, community groups and industry representatives to develop plans and strategies to protect groundwater for the long term.

13.2 Stormwater

Stormwater is created when land alterations change the pre-existing water balance. When vegetation and soils are replaced with roads and buildings, less rainfall infiltrates into the ground, less is taken up by vegetation, and more becomes surface runoff.¹³⁷ Rural development, particularly the construction of impervious surfaces and land clearing, may increase stormwater flows and negatively impact streams, groundwater reservoirs and down-slope properties.

Even relatively low levels of impervious cover can produce significant and often irreversible impacts on streams and aquatic resources.¹³⁸ In fact, stormwater begins to have a negative impact on streams when the amount of impervious surface in a watershed equals as little as ten percent (10%) of the watershed area.¹³⁹ Parcel size is also an important indicator. Most residential developments of densities greater than one parcel per hectare will exceed 10% impervious area and alter drainage regimes.¹⁴⁰

¹³⁷ Ministry of Land, Water & Air Protection. *Stormwater Planning: A Guidebook for British Columbia*. May, 2002.

¹³⁸ Center for Watershed Protection. *Site Planning for Urban Stream Protection*. 1995.

¹³⁹ This is a generally accepted threshold. For a British Columbia source, see: Ministry of Land, Water & Air Protection. *Stormwater Planning: A Guidebook for British Columbia*. May, 2002. A Washington State example is: Derek Booth. *Forest Cover, Impervious-Surface Area, and the Mitigation of Urbanization Impacts in King County, Washington*. September, 2000.

¹⁴⁰ Ministry of Land, Water & Air Protection. *Stormwater Planning: A Guidebook for British Columbia*. May, 2002.

As a result, best management practices are needed at densities greater than one parcel per hectare, and where impervious cover may exceed 10% of the watershed area, to avoid:

- damage to aquatic environments;
- public expense for unplanned infrastructure; and,
- possible flood damage associated with increased runoff.

The policies below outline expectations for stormwater management in new developments and encourage landowners to develop and manage existing properties with stormwater in mind. Together with other Plan policies, including Development Permit Area 2-G, they provide a response to the need for stormwater management in Electoral Area “G”.

It is the policy of the Regional Board that:

- 13.2.1 Post-development stormwater flows should maintain the natural flow pattern and water quality of receiving waters. 1:2 year post-development flows should not exceed 1:2 year predevelopment flows.
- 13.2.2 Foundation, roof drainage and other surface drainage shall be disposed of on-site, returned to ground, and not be connected to collector systems for roads or discharged to any stream or wetland. The use of ‘bio-swales’ and other means of detaining and infiltrating stormwater on-site are encouraged.
- 13.2.3 Applications for zoning and community plan amendments to facilitate new developments may be required to include a stormwater management plan prepared by a professional engineer to:
 - a. ensure post-development storm water flow volumes will not exceed pre-development flow volumes in receiving waters;
 - b. maintain, to the extent possible, predevelopment flow patterns and velocities;
 - c. provide conveyance routes for major storms;
 - d. demonstrate the use of best practices;
 - e. certify that water quality of receiving surface and ground waters will not be negatively effected by stormwater surface run-off during and post development; and,
 - f. certify, where applicable, that there will be no negative effect on down-slope or down-stream properties.
- 13.2.4 Stormwater management plans shall design for:
 - a. rainfall capture for small storms;
 - b. runoff control for large storms; and,
 - c. flood risk management for extreme storms and peak flow conveyance.
- 13.2.5 Significant new hillside developments should be placed within a development permit area to ensure that best management practices for stormwater are identified and implemented.

- 13.2.6 Owners of non-agricultural hillside properties are encouraged to retain at least 65% of the forest cover on their property to reduce stormwater runoff and maintain hydrological processes.
- 13.2.7 Where possible, landowners are encouraged to limit impervious surfaces, which include buildings, pavement and any surface through which water can not pass, to 10% of the total property area.

Not For Legal Purposes

14.0 RESOURCE EXTRACTION

14.1 Forestry

The northern portion of Electoral Area “G” includes lower to mid elevation slopes of Dewdney, Nicomen and Deroche Peaks. With the exception of private lands, these forested slopes are within the Douglas Provincial Forest – designated as Working Forest by the Province - and are subject to a range of forestry activities. Forestry has been culturally and economically important to Electoral Area “G” communities since their inception. Residents should expect forestry uses in these mountain watersheds to continue.

Forestry provides rural communities with recreational access to Crown lands, local job opportunities, and general economic and social benefits. The continued presence of forest management in Electoral Area “G” will support the rural character and lifestyle as well as outdoor recreation opportunities greatly valued by residents. In fact, many of the values identified in the Plan are shared with landscape and stand level forestry strategies and objectives established in the Forest and Range Practices Act.

On the other hand, forestry and other activities in the watersheds that drain these slopes (see Figure 14-1) may influence geologic, stream and fire hazards; water quality and quantity; landscape aesthetics; ecological integrity; and the general quality of life for rural residents.

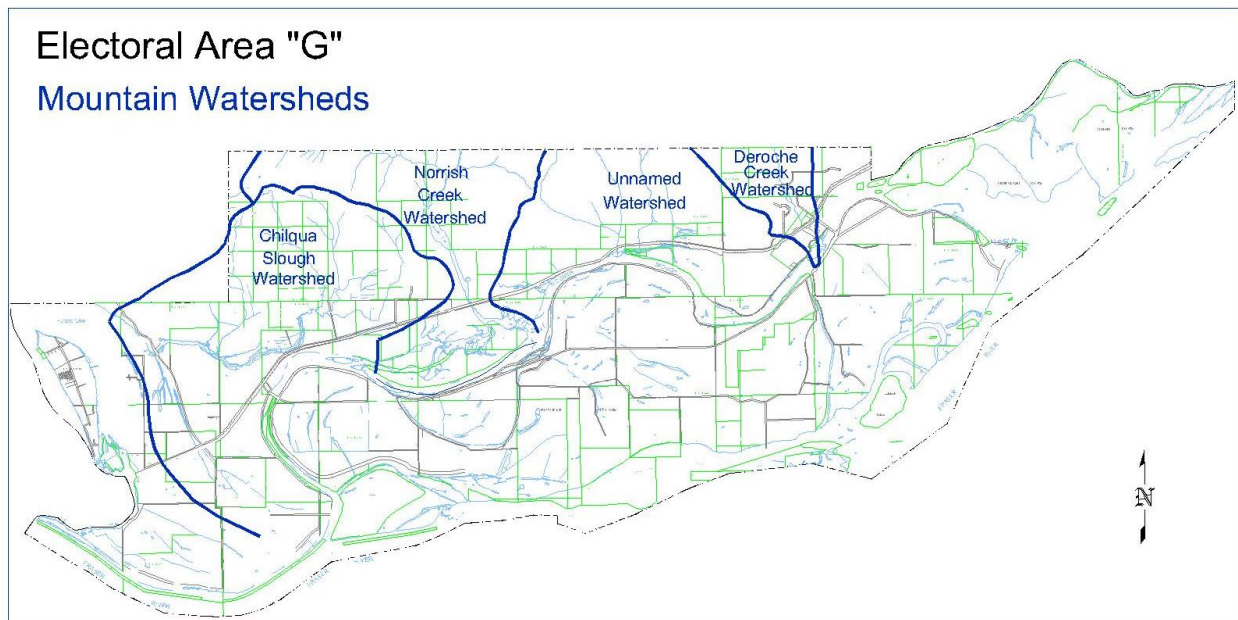


Figure 14-1 Mountain Watersheds in Electoral Area “G” North of the Fraser River

The Norrish Creek and Deroche Creek watersheds are of particular concern because of their size, the history of debris and flooding events, the magnitude of historic forestry-related impacts, and the level of development on their fans. These watersheds, and the part of Sumas Mountain within the Plan area, are discussed in more detail below.

Norrish Creek Watershed

Norrish Creek drains a large watershed of about 118 km² of land between the Hatzic/Stave drainage to the west and the Harrison basin to the east. It is roughly fork-shaped with nine sub-basins. Since the 1940s, approximately 62% of the watershed has been logged and 245 km of roads built.¹⁴¹ In 2003, it was estimated that approximately 735,000 cubic meters of accessible old growth timber remain in the watershed under the current licenses.¹⁴²

From the point above the Abbotsford Mission Water & Sewer Commission intake, it is designated under the Forest and Range Practices Act as a *Community Watershed* as Norrish Creek is the main source of water for about 160,000 people in Mission and Abbotsford.

The creek has formed a broad alluvial fan of approximately 4.5 km². The lower portion of the fan forms below the confine of the Canadian Pacific Railway bridge and extends into Nicomen Slough. The upper portion of the fan extends from the apex about 2.2 km upstream of the CPR bridge along the valley sides and terminates in the area of Hess/Bell Roads and the CPR line. The fan is mapped on *Map 8 - Geologic and Mountain Stream Hazards*.

There are about 50 private properties on the Norrish Creek alluvial fan, about 13 households and over \$4,000,000 of improvements that are subject to flooding and debris flood hazards. The main line of the Canadian Pacific Railway crosses Norrish Creek by bridge at the lower end of the fan.

In 2004, Thurber Engineering LTD stated that, “debris loading and flood issues on Norrish Creek’s lower channel are approaching a critical state.”¹⁴³ Norrish Creek has a history of damaging floods and debris transport which appear to have been significantly exacerbated by forestry activities. Northwest Hydraulic Consultants concluded that mass wasting from clear cut areas is contributing significant volumes of sediment to the main channel (1999).¹⁴⁴ In 2000, Chapman Geoscience reported that, “forestry operations in the Norrish Creek watershed have resulted in substantial negative cumulative effects on the main stem channel, mainly aggradation of coarse bed material.”¹⁴⁵ A 2006 watershed assessment by Madrone Environmental Services indicates that the situation may improve as sediment supply is decreasing.¹⁴⁶ However, Madrone also observed several new landslides.

Flooding and debris transport on the fan appear to be affected by higher elevation landslides and slope failures. The Norrish Creek watershed has a higher rate of landsliding than surrounding watersheds.¹⁴⁷ Several large landslides and a multitude of smaller landslides (as many as 200) have been observed.¹⁴⁸ While many slides are natural in origin, a significant number originate in cut blocks or at forestry roads. Of the 20 open-slope slides evaluated by Chapman Geoscience in 2000, 20% appeared to be related to forestry activities.¹⁴⁹ It is of particular concern that slides

¹⁴¹ QA Environmental Consulting. *Water Quality Objectives for Norrish Creek – Overview Report*. March, 2003.

¹⁴² QA Environmental Consulting. 2003.

¹⁴³ Thurber Engineering LTD. *Area G Official Community Plan (Hatzic Lake to Deroche) Geotechnical Hazard Assessment*. September 21, 2004.

¹⁴⁴ Northwest Hydraulic Consultants. *Geomorphology and Hydraulics of Norrish Creek*. August, 1999.

¹⁴⁵ Chapman Geoscience. *Assessment of the Norrish Creek Watershed*. 2000.

¹⁴⁶ Madrone Environmental Services. *Preliminary Watershed Assessment – Norrish Creek Community Watershed and Norrish Creek Drainage* (Draft). June 20, 2006.

¹⁴⁷ Madrone Environmental Services, 2006.

¹⁴⁸ Northwest Hydraulic Consultants, 1999.

¹⁴⁹ Chapman Geoscience, 2000.

evaluated by Chapman occurred in areas previously mapped for the purposes of forestry planning as having low potential for landsliding following harvesting.

Deroche Creek Watershed

The Deroche Creek watershed drains an area of about 9 km² between Nicomen Mountain to the west and Deroche Mountain to the east. Drainage from this area is conveyed to the Fraser River via Nicomen Slough. The Deroche Creek fan abuts Nicomen Slough to the south and extends 1.5 km upstream to the fan apex. There are about 133 properties on the fan, including a mobile home park on IR 11 and Deroche Elementary School. In 1999, the value of improvements on the fan was assessed at over \$8,000,000.¹⁵⁰ Deroche Creek has a history of flood and debris events that have impacted the fan. Events have been documented in 1962, 1974, 1980, 1983, 1984, 1986, 1989, 1990 and 2006.

In 2006, Kerr Wood Leidal documented, “extensive aggradation from a debris flood event on the creek during November storms. Two avulsions, which were arrested by an excavator, also occurred and caused some minor flooding of downstream properties. There was scour and debris impact and abrasion along the banks in many sections, particularly where channel capacity was reduced due to aggradation. The aggraded channel left limited flow capacity at three bridges on the lower fan.”¹⁵¹

The Deroche community water supply originally drew water from the creek. However, several debris flow incidents within the watershed severely affected the creek and caused interruptions of supply and water quality challenges for the system. As a result, in 1999-2000 the system was upgraded and changed over to a groundwater well source. The system serves about 42 households. Accordingly, above the fan apex the watershed is designated as a *Community Watershed* under the Forest and Range Practices Act.

The Deroche Creek watershed was the subject of an extensive flood hazard study in 2000.¹⁵² Hay & Company found that:

- about 40% of the upper catchment has been logged, which has led to an accelerated rate of mass movements and sedimentation in the upper channel of Deroche creek;
- debris flows have occurred at least ten times in the upper watershed over the past 50 years. Of these, nine were associated with logging road failures and poor drainage control;
- an interpretation of air photos from 1963 to 1993 has shown that there have been 13 landslides associated with logging activity and three that occurred naturally. This has caused the sediment load of Deroche Creek to increase substantially over the last three decades; and,
- substantial areas of the watershed are prone to post-logging landsliding.

Sumas Mountain

Sumas Mountain is an inselberg land feature – an isolated mountain feature functioning as an island of biological diversity - surrounded by a floodplain landscape substantially altered for

¹⁵⁰ BC Assessment, 2000.

¹⁵¹ Kerr Wood Leidal. November 2006 Flood Damage Assessment. January, 2007.

¹⁵² Hay & Company Consultants. *Deroche Creek Flood Hazard Management Study*. June, 2000.

human endeavours. The mountain is regionally important in maintaining biological diversity, habitat, water quality and even air quality. It contains numerous streams, wetlands and their riparian areas, interior forest habitats, and other sensitive ecosystems which provide habitat for numerous flora and fauna, including many species at risk. Forestry operations on Sumas Mountain are constrained by these environmental values, as well as by:

- thin soils which may affect regeneration, post-harvesting stability and sediment transport;
- unpredictable blow-down from high outflow winds;
- steep slopes and geotechnical hazards;
- visual values associated with the north slopes;
- first nations archeological resources;
- recreational use of Crown land;
- proximity to settlement; and,
- difficult road conditions for mixing industrial and residential traffic.

For these reasons, the Regional Board has supported the woodlot license program on Sumas Mountain and in similar situations elsewhere. Local woodlot holders with long term interest and intimate knowledge of the community and environment may be well positioned to minimize conflicts and adequately manage environmental values.

The Forest and Range Practices Act (FRPA), which took effect in 2004, contains objectives aimed at avoiding negative impacts to watersheds. It introduces new ‘due diligence’ requirements and enhanced reliance on private sector professionals to interpret the public interest. Its predecessor, the 1995 Forest Practices Code, was successful in reducing post-harvesting landslides.¹⁵³ It is hoped that the new approach in FRPA will further reduce forestry-related landslides.

The policies in this section are intended to:

- support forestry activities that are compatible with down-slope and downstream rural land uses;
- assist forest licensees and forestry professionals in interpreting ‘due diligence’ and matters of public interests within the local context;
- guide the use of land that may be subject to hazardous conditions or that is environmentally sensitive; and,
- foster the preservation, protection, restoration and enhancement of the natural environment.

They will guide the Regional District in responding to Forest Stewardship Plan and other forestry referrals and assist forest licensees, professionals, and Provincial ministries in managing forestry activities.

It is the policy of the Regional Board that:

- 14.1.1 Forest licensees are encouraged to refer forest and recreation management plans to the Regional District for comments respecting potential consequences or effects on private land, Regional Parks, and existing community areas.

¹⁵³ Forest Practices Board. *Managing Landslide Risk from Forest Practices in British Columbia*. July, 2005.

- 14.1.2 Forest licensees are encouraged to refer forest and recreation management plans relating to the Norrish Creek Community Watershed to the Abbotsford-Mission Water Sewer Commission for comment.
- 14.1.3 The Regional Board wishes to be consulted respecting the deactivation of major forestry roads that are relied upon for recreational purposes.
- 14.1.4 The Regional District should develop, in consultation with the Ministry of Forests and Range, a 'crown-community interface' policy to guide forestry operations in areas upslope and upstream of settlement areas and reduce the need for site-specific comments on individual forestry referrals.
- 14.1.5 The Regional Board recommends that, where forestry activities are proposed upstream or upslope of settled areas, forest licensees:
- a. hold community meetings to present forestry plans to residents and receive community input; and,
 - b. directly consult the owners of property in the vicinity of proposed forestry activities during the development of forest stewardship plans and also through operational phases to coordinate activities.
- 14.1.6 Visual values along the Highway 7 corridor are important to the local and regional economy and should be preserved through visual impact assessment and mitigation.
- 14.1.7 The Regional Board wishes to be consulted respecting the deactivation of major forestry roads that are relied upon for recreational purposes.
- 14.1.8 The Ministry of Forests and Range and forest licensees should integrate forest planning and uses with recreation uses and values where possible.
- 14.1.9 Forestry activities upslope and upstream of settled areas should be reviewed by a professional engineer or geoscientist to demonstrate that no increase in risk to human safety, private property, or water supplies will result.
- 14.1.10 The Regional Board will not support forestry activities in the Norrish and Deroche Creek Community Watersheds prior to the preparation of positive watershed risk assessments which take into consideration the current condition of the watershed, cumulative impacts, and consequences to development and infrastructure on the alluvial fan. Watershed risk assessments must be prepared by qualified professionals and involve the community in determining acceptable levels of risk.
- 14.1.11 Given the significance of development on the Norrish and Deroche Creek alluvial fans, the history of flood and debris events, and the cumulative impacts of forestry, new forestry activities in the Norrish and Deroche Creek watersheds warrant the highest level of assessment and due diligence.

- 14.1.12 In accordance with the recommendations of the *Deroche Creek Flood Hazard Management Study*, with respect to the Deroche Creek watershed the responsible authorities should:
- a. prepare and implement detailed logging road deactivation plans as soon as possible;
 - b. prior to road deactivation, construct proper drainage paths across the upper logging roads and maintain all natural flow paths;
 - c. ensure that natural drainage paths remain clear and that no diversions into the Deroche Creek catchment are made; and,
 - d. have all logging and road construction plans reviewed by a suitably qualified geotechnical engineer or geoscientist to determine that there will be no increase in sediment loads to Deroche Creek and no increase in hazards to development on the fan.
- 14.1.13 Forestry roads within the Deroche Creek and Norrish Creek watersheds which have been determined to pose high to very high risk of instability and sedimentation should be prioritized for deactivation by the responsible authorities.
- 14.1.14 The 1992 *Sumas Mountain Local Resource Use Plan* recommends that cut blocks on Sumas Mountain should be not larger than ten (10) hectares in area and that the total annual disturbance from logging and other events should not exceed fifteen (15) hectares annually. The Regional Board, when responding to forestry referrals, will support this recommended sustainable harvest rate until more precise rates are determined through detailed study.
- 14.1.15 The Regional Board may support an expansion of the Provincial woodlot program on Sumas Mountain.
- 14.1.16 The Responsible Authority is encouraged to prepare local or landscape level biodiversity and habitat management plans to guide forest development on Sumas Mountain. The Regional District will support the preparation of such a plan.

14.2 Aggregate

Aggregates are critical for the infrastructure and economy of our Region, not only for supporting new development but for the maintenance of existing infrastructure. About two thirds of the current demand for aggregates in the Lower Mainland is used in the maintenance of existing infrastructure. The remaining third is used in new development.¹⁵⁴

Demand for aggregates in the Fraser Valley Regional District is increasing. Based on a consumption estimate of 15 tonnes per person per year¹⁵⁵, current demand in the FVRD is approximately 3.5 million tonnes annually. With the expected population increase over the next

¹⁵⁴ Coriolis Consulting. *Development of a Model for Forecasting the Consumption of Aggregates in the Lower Mainland*. October, 1996.

¹⁵⁵ Ministry of Energy, Mines & Petroleum Resources

20-25 years, demand for aggregates within the Region is expected to increase to nearly 6.5 million tonnes per year. Clearly, the aggregate industry is of vital importance to the Region. Furthermore, there is proportionate demand for aggregates in Metro Vancouver where supplies are perceived to be dwindling or unavailable. As a result, a large proportion - perhaps two-thirds - of aggregate produced in the FVRD is transported to markets in Metro Vancouver.

Yet, the impacts of extraction and processing are experienced primarily at the local level. Common concerns of rural residents include noise, dust, vibration, truck traffic, impacts to ground and surface water supplies, aesthetic impacts, and loss of property value. These concerns are forcefully raised by residents across the electoral areas of the Regional District. Unfortunately, the responsible authorities have not been particularly successful in addressing off-site impacts of aggregate operations.

Provincial legislation surrounding aggregate operations divides jurisdiction between Provincial and local authorities. While extraction of aggregates may not be prohibited by local governments, it is subject to local government powers to regulate removal and deposit of soil provided in Section 723 of the Local Government Act.¹⁵⁶ Moreover, primary and secondary processing of aggregates is a use of land subject to regulation and prohibition under zoning controls. However, the ultimate authority for mineral extraction lies with the Ministry of Energy, Mines & Petroleum Resources. While this joint responsibility has been a source of conflict, most notably when operations receive provincial approvals despite local objections, it may also be the basis for effective cooperation in planning for aggregate operations.

Given that:

- the experience of living alongside aggregate operations is similar in all Electoral Areas;
- aggregate is a vital commodity of regional, even provincial importance; and,
- jurisdiction for the regulation of aggregate extraction and processing is divided between local and provincial authorities;

solutions may need to be found at the regional level rather than within individual community plans. There is a compelling need for regional planning for aggregates, impact mitigation strategies, and improvements to permitting processes.

At the time of writing this Plan, the FVRD Aggregate Pilot Project (APP) is underway. The APP was initiated by the Regional District and the Ministry of Energy, Mines and Petroleum Resources (MEMPR) in response to persistent and intense conflicts surrounding aggregate operations in FVRD's electoral areas. The purpose of the project is to:

- improve understanding of aggregate supply and demand;
- foster better communication between MEMPR, local government and industry to resolve issues and conflicts;
- improve aggregate planning and permitting processes to reduce conflicts;
- ensure a sustainable supply of aggregate for the long term; and,
- develop a new approach for decision-making respecting aggregate management.

The Local Government Act requires that official community plans identify the approximate location of sand and gravel deposits suitable for future extraction.¹⁵⁷ The suitability of a deposit

¹⁵⁶ Local Governments can prohibit extraction through Soil Removal & Deposit Bylaws (SRDBs). However, a SRDB that prohibits the removal of soil in any location requires the approval of the Minister of Energy, Mines and Petroleum Resources.

¹⁵⁷ Local Government Act (1996, c. 323), Section 877(c)

for extraction will depend on the quality and quantity of the deposit; depth of ‘overburden’; environmental, social and cultural constraints; the potential for impacts to the community; access; distance from sources of demand; provincial and local regulations and requirements; market economics and other forces. Clearly, the level of analysis required to assess the suitability of a deposit for extraction is beyond the scope and resources of an official community plan. However, known sand and gravel deposits and locations of extraction are shown on *Map 12 - Sand and Gravel Deposits* and further documented in the *Aggregate Inventory Atlas* produced as a part of the FVRD Aggregate Pilot Project.¹⁵⁸

This Plan may require amendment upon completion of the Aggregate Pilot Project. In the interim, the policies in this section are intended to:

- support aggregate activities that are compatible with surrounding rural land uses;
- guide the use of land that may be subject to hazardous conditions or that is environmentally sensitive; and,
- foster the preservation, protection, restoration and enhancement of the natural environment.

It is the policy of the Regional Board that:

- 14.2.1 The Regional District will work with the Ministry of Energy, Mines & Petroleum Resources, other provincial agencies, FVRD municipalities, and the aggregate industry to develop a strategy for aggregate extraction and processing in the electoral areas of the FVRD.
- 14.2.2 A permit under *FVRD Electoral Area Soil Removal and Deposit Bylaw No. 729, 2006* shall be required prior to the removal or deposit of sand, gravel, rock, and other substances of which land is composed, from any new mine or quarry, including bulk sample site except as exempted by the bylaw. A permit under *Bylaw No. 729, 2006* must also be obtained for existing mine operations.
- 14.2.3 Aggregate processing, which includes the use of machinery and equipment to wash, screen, crush, and size sand, gravel, aggregate and mineral resources, shall only occur where permitted by zoning.
- 14.2.4 The secondary processing of aggregate and mineral resources and the manufacture of semi-finished and finished products from aggregate and mineral resources, including the production of asphalt and concrete, shall only occur where permitted by zoning.
- 14.2.5 New and existing aggregate operations shall employ an array of measures to mitigate off-site impacts, including but not limited to screening, noise deflection berms, enclosure of processing equipment, dust suppression systems, and blasting noise suppression.

¹⁵⁸ Thurber Engineering LTD. *FVRD Aggregate Pilot Project - Aggregate Inventory Atlas*. December, 2005.

- 14.2.6 The ability to effectively mitigate off-site impacts will be a major consideration in Regional Board decisions respecting zoning and community plan amendments related to aggregate uses.
- 14.2.7 All mining activities should maintain a thirty (30) metre ‘no disturbance’ riparian buffer from all watercourses and wetlands.
- 14.2.8 The Regional Board recommends that the Minister of Energy and Mines require all aggregate mining or quarrying proposals, including bulk samples and expansion of existing operations, be supported by professional assessment and mitigation of:
- cumulative environmental impacts;
 - cumulative hydro-geological impacts including effect on groundwater quality and quantity, wells, and water movements;
 - cultural (archaeological) impacts if appropriate;
 - cumulative road maintenance, road safety and traffic impacts; and,
 - community impacts, including noise, dust, and vibration.
- 14.2.9 The Regional Board recommends that mining proposals and associated technical information be presented to residents at a public meeting prior to the issuance of any permit or approval under the Mines Act.
- 14.2.10 The development, management and reclamation of aggregate operations should follow the best practices outlined in the *Environmental Objectives and Best Management Practices for Aggregate Extraction* and *Aggregate Operators Best Management Practices Handbook for British Columbia*.¹⁵⁹
- 14.2.11 All sand, gravel and other sites used for commercial or industrial extraction of aggregate minerals should have a plan, approved by the Chief Inspector of Mines, for the safe operation, abandonment, recontouring and reclamation of the site. Progressive reclamation is strongly encouraged. Where necessary, there should be consultation between the Ministry of Energy, Mines and Petroleum Resources, the proponent, and the Regional District to ensure there is no conflict between land use bylaws and the approved reclamation program.
- 14.2.12 The approval of new aggregate uses on Sumas Mountain should be done in consultation with the Ministry of Energy, Mines and Petroleum Resources, the City of Abbotsford, the Regional District and First Nations.

¹⁵⁹ Ministry of Water, Air & Land Protection. *Environmental Objectives and Best Management Practices for Aggregate Extraction*. 2002 (or as updated). Ministry of Energy & Mines. *Aggregate Operators Best Management Practices for British Columbia*. April, 2002 (or as updated).

15.0 DEVELOPMENT PERMIT AREAS

The following areas are hereby designated as development permit areas:

15.1 Geologic & Stream Hazard Development Permit Area 1-G

Category of Designation

“Geologic and Stream Hazard Development Permit Area No 1-G” is designated pursuant to Section 919.1(1)(b) of the Local Government Act for the protection of development from hazardous conditions.

Area of Application

Development Permit Area 1-G encompasses the lands identified on *Schedule 4 - Development Permit Area 1-G*.

Justification

The landscape of Electoral Area G is mostly comprised of flat Fraser River floodplain. However, approximately twenty-five percent of its area is mountainous terrain which can feature geological hazards. Development Permit Area 1-G (DPA 1-G) has been established to protect development from hazards in areas with known or expected geotechnical or stream hazards identified in the September, 2004, report by Thurber Engineering LTD titled, *Area G Official Community Plan (Hatzic Lake to Deroche) Geotechnical Hazard Overview*.¹⁶⁰

The Thurber study identified areas hazard to private lands from debris and alluvial fans, landslides, rock fall, debris landslides, flooding and earthquakes. Hazard mapping from the Thurber study is presented in *Map 8 – Geologic and Stream Hazards*.

Lands identified by Thurber as subject to potential or significant hazards are included in Development Permit 1-G. DPA 1-G sets out areas within which a geotechnical study may be required of an owner pursuant to Section 920(11) of the Local Government Act prior to the issuance of a development permit or building permit.

Site-specific geotechnical studies are expected to independently verify types of hazard, hazard magnitudes, and hazard probabilities based on field evidence and appropriate analyses. Safe building sites within the Development Permit Area may also be identified through site-specific geotechnical study.

¹⁶⁰ Thurber Engineering LTD. *Area G Official Community Plan (Hatzic Lake to Deroche) Geotechnical Hazard Overview*. September 21, 2004.

Potential Hazards

The following conditions exist, or are expected to exist, within the development permit area:

- debris flood/flow and alluvial fan hazards;
- rock fall, debris landslide and other landslide hazards; or,
- stream flooding, erosion and avulsion hazards.

Objectives

The objectives of Development Permit Area 1-G are to:

- direct development away from hazardous areas;
- allow for land use suitable under hazardous conditions, in accordance with geotechnical studies;
- ensure adequate professional evaluation of geological hazards and mitigation works;

so as to minimize the potential for damage to properties and the risk to life.

Activities requiring a permit

15.1.1 A development permit must be obtained prior to:

- a. subdivision of land;
- b. alteration of land; and,
- c. construction of, addition to, or alteration of a building or structure; within the development permit area.

Exemptions

15.1.2 Notwithstanding Section 15.1.1, a development permit may not be required for construction of, addition to or alteration of, a single family residential building, accessory building or structure where:

- a) the potential risk of any geotechnical hazard which may affect the site, as determined by a professional geotechnical engineer in a certified site-specific geotechnical report, is within the levels deemed acceptable in the Regional Board policy *Hazard Acceptability Thresholds for Development Permit Approvals by Local Government*¹⁶¹; **and,**
- b) where mitigation measures including, but not limited to, siting requirements, are not required either by the Regional Board policy *Hazard Acceptability Thresholds for Development Approvals by Local Governments* or by a professional geotechnical engineer in a certified, site-specific geotechnical report; **and,**
- c) the type of construction, addition, or alteration does not affect or relate to matters of health, safety, or the protection of property from damage; **and,**

¹⁶¹ Peter Cave. *Hazard Acceptability Thresholds for Development Approvals by Local Government*. 1992.

- d) the development proposal complies in all respects with the policies of this Development Permit area, the zoning regulations, and all other bylaws of the Regional District.

Guidelines

In order to achieve the objectives of Development Permit Area 1-G, the following guidelines shall apply to the issuance of development permits:

- 15.1.3 Where possible, development should be sited to avoid hazards. Where it is impossible or impractical to avoid a hazard, mitigative measures may be considered.
- 15.1.4 A development permit may vary or supplement a bylaw under Division 7 or 11 of the Local Government Act provided that the variance or supplement is in accordance with the objectives and guidelines of Development Permit Area 2-G.

Site specific geotechnical report

- 15.1.5 A site-specific geotechnical study may be required pursuant to Section 920(11) of the Local Government Act.
- 15.1.6 Development permits for specific land uses and densities shall accord with the recommendations of site-specific geotechnical studies.
- 15.1.7 Geotechnical studies submitted in support of development permit applications shall meet the requirements outlined in *Assistance to Developers and Building Permit Applicants Undertaking Geotechnical Studies*¹⁶², and, as applicable, the *Guidelines for Legislated Landslide Assessments for Proposed Residential Development in British Columbia*¹⁶³.
- 15.1.8 The Regional Board may refuse to issue a development permit where the hazard frequency, as determined by a professional engineer, exceeds the acceptability threshold for the proposed development stipulated in *Hazard Acceptability Thresholds for Development Approvals by Local Government*.¹⁶⁴

Alluvial Fans

- 15.1.9 All proposed development on an alluvial fan or in a debris flood/flow hazard area may require a site specific geotechnical report by a professional engineer with training and experience in river and high energy creek engineering.
- 15.1.10 Proposed developments within Low and Moderate Hazard Areas of Deroche Creek alluvial fan as defined in the Hay & Company Consultants *Deroche Creek Flood*

¹⁶² Fraser Valley Regional District. *Assistance to Developers and Building Permit Applicants Undertaking Geotechnical Studies*.

¹⁶³ Association of Professional Engineers and Geoscientists of British Columbia. *Legislated Landslide Assessments for Proposed Residential Development in British Columbia*, March 2006.

¹⁶⁴ Peter Cave. *Hazard Acceptability Thresholds for Development Approvals by Local Government*. 1992.

Hazard Management Study, dated June, 2000 (and shown on *Schedule 4 – Development Permit Area 1-G*) should satisfy the flood proofing design requirements outlined in the Hay & Company Consultants study and generally described in the following table¹⁶⁵:

Hazard Area	Site-Specific Assessment	Elevation	Means of Achieving Elevation	Scour protection
Low	Geotechnical assistance for site-specific application of Hay & Co recommendations	1.0 m above grade or Fraser River FCL ¹⁶⁶ (whichever is higher)	structural armoured fill with fill mound oriented with the direction of floodwaters	Riprap (300 mm) at base of existing of footings
Moderate below 24 metre elevation	Geotechnical and/or hydrotechnical study as per s. 920(11) of the <u>Local Gov't Act</u> and s. 56 of the <u>Community Charter</u>	1.2 metres above grade or Fraser River FCL (whichever is higher)	structural armoured fill OR concrete foundation on footings below scour depth of (least 0.8 m below grade)	Riprap (300 mm – 450 mm) at base of existing of footings
Moderate above 24 metre elevation	Geotechnical and/or hydrotechnical study as per s. 920(11) of the <u>Local Gov't Act</u> and s. 56 of the <u>Community Charter</u>	1.5 metres above grade	open foundation of piles or piles or columns OR concrete foundation with: - footings at least 1.0 m below grade; - scour protection; - aligned in direction of overland flows	to be determined on site-specific basis by professional engineer

15.1.11 Development should be avoided within the High Hazard Area of the Deroche Creek alluvial fan as defined in the Hay & Company Consultants *Deroche Creek Flood Hazard Management Study* (June, 2000) and shown on *Schedule 4 – Development Permit Area 1-G*. Where an existing parcel does not have a building site outside of the High Hazard Area, the Regional Board may consider issuing a Development Permit in accordance with the recommendations of a site specific geotechnical report by a professional engineer which certifies that the land is safe for the use intended and which identifies suitable hazard mitigation measures. However, significant hazard mitigation works may be anticipated.

Riparian Area Regulation

15.1.12 Where the proposed development requires a riparian assessment pursuant to Development Permit Area 2-G, the site-specific geotechnical study shall be co-

¹⁶⁵ In the event of a conflict between this table and Hay & Company Consultants *Deroche Creek Flood Hazard Management Study*, dated June, 2000, the Hay & Company report shall take precedence.

¹⁶⁶ FCL = flood construction level

ordinated with the riparian assessment in order to provide a comprehensive development permit application.

Slope setbacks

- 15.1.13 Except in accordance with the conditions recommended in site-specific geotechnical studies, all buildings and structures shall be setback from the crest and base of any slope with a vertical height greater than eight (8) metres and inclined at 27 degrees (50%) or more in accordance with the table below:

	Setback in horizontal metres	
	from crest of slope:	from base of slope:
Potential Hazard Areas*	10 m	15 m
Significant Hazard Areas*	20 m	50 m

*As identified in *Map 9 – Geologic and Flood Hazards*

Field measurements will be required to locate the base and crest of slopes and slope setbacks on individual sites. Please refer to the Thurber Engineering LTD report, *Area G Official Community Plan (Hatzic Lake to Deroche) Geotechnical Hazard Overview* (September 21, 2004), for assistance in field definitions of slopes, crests and bases, and setbacks.

Slope Hazards – Preventative Actions

- 15.1.14 The following slope hazard prevention strategies shall be considered as a part of development permit prior to construction or alteration of the land:
- avoid building on or near the crest of the base of a steep slope;
 - do not place fill (including lawn clippings, brush cuttings or trash) along or below the crest of a steep slope;
 - do not excavate the base of a steep slope;
 - do not allow surface water or significant quantities of ground water to discharge on or below the crest of a steep slope; and,
 - do not cut trees on or below the crest of a steep slope.

Floodproofing

- 15.1.15 Proposed developments susceptible to flooding from the Fraser River, streams, lakes, or other bodies of water shall be flood-proofed in accordance with the flood construction level and floodplain setbacks established by the *Fraser Valley Regional District Flood Hazard Management Bylaw No. 681, 2005* or the recommendations of a qualified professional engineer with expertise in river hydraulics.
- 15.1.16 A development permit may include conditions or restrictions respecting the uses and densities permitted in the zoning bylaw, the sequence and timing of construction, areas to remain free of development, vegetation or trees to be planted or retained, natural drainage to be maintained or enhanced, or other matters as specified in Sections 920 (7)(a), (b), (c), (d) and (e) of the Local Government Act.

Permit Security

- 15.1.17 The Regional District may require the applicant to provide security in the form of cash or an unconditional, irrevocable and automatically renewing letter of credit in cases where:
- a. security for the performance of conditions respecting landscaping is necessary;
 - b. the Regional District considers that damage to the natural environment could result as a consequence of a contravention of a condition in a development permit;
 - c. the Regional District considers that unsafe conditions could result as a consequence of a contravention of a condition in a development permit; and,
 - d. the permit holder is required to retain, restore or replace native vegetation.
- 15.1.18 The amount of the security shall be sufficient to cover the cost of any work that might be undertaken by the Regional District to correct deficient landscaping conditions; an unsafe condition; or, damage to the natural environment that could reasonably be expected to result from the contravention of the permit.

Offence

- 15.1.19 Failure to:
- a. obtain a development permit where one is duly required; or,
 - b. develop land strictly in accordance with a development permit issued;
- are offences under the Local Government Act and are contrary to the bylaws, regulations or policies of the Regional District. Upon summary conviction, penalties for offences may be up to \$10,000.
- 15.1.20 Employees, officers and agents of the Regional District may enter, at all reasonable times, a property to inspect and determine whether the requirements of Development Permit Area 2-G and the terms and conditions of a development permit are being met.

15.2 Riparian Areas Development Permit Area 2-G

Category of Designation

“Riparian Areas Development Permit Area 2-G” is designated pursuant to Section 919.1(1)(a) of the Local Government Act for the protection of the natural environment, its ecosystems and biological diversity.

Area of Application

Development Permit Area 2-G consists of all those parcels of land:

- a. within the area of this Official Community Plan; and,
- b. entirely or partially within a Riparian Assessment Area, which is:
 - i. for a stream, the 30 meter strip on both sides of the stream, measured from the high water mark;
 - ii. for a ravine less than 60 meters wide, a strip on both sides of the stream measured from the high water mark to a point that is 30 meters beyond the top of the ravine bank; and,
 - iii. for a ravine 60 meters wide or greater, a strip on both sides of the stream measured from the high water mark to a point that is 10 meters beyond the top of the ravine bank.

For convenience, mapped streams are generally shown on *Schedule 5 – Development Permit Area 2-G*. Note that Riparian Areas Development Permit Area 2-G includes the Riparian Assessment Areas associated with all streams within the Plan area, whether mapped or unmapped, including but not limited to the streams shown on *Schedule 5*.

Justification

Electoral Area “G” contains streams and riparian areas that directly or indirectly provide natural features, functions and conditions that support fish life processes. The Fish Protection Act and the Riparian Areas Regulation require local governments to protect these streams and riparian areas when exercising powers with respect to residential, commercial and industrial development. In the opinion of the Regional Board, this development permit area provides a level of protection that is comparable to or exceeds that of the Fish Protection Act and the Riparian Areas Regulation.

Objectives

The objective of Development Permit Area 2-G is to protect the natural environment, its ecosystems and biological diversity. More specifically, this DPA will protect streams and riparian habitat primarily through the involvement of qualified environmental professionals and the identification of Streamside Protection and Enhancement Areas (SPEAs) that should remain free of development, including the disturbance of soils and vegetation.

Activities Requiring a Permit

15.2.1 A development permit must be obtained prior to:

- a. the subdivision of land;
- b. residential, commercial, institutional or industrial development including:
 - i. the alteration of land;
 - ii. the disturbance of soil or vegetation; or,
 - iii. construction of or addition to a building or structure; within a riparian assessment area.

Exemptions

15.2.2 Notwithstanding Section 15.2.1, a development permit is not required for:

- a. development that does not involve residential, commercial, institutional or industrial uses;
- b. residential, commercial, institutional and industrial development that is demonstrated to be outside of a Riparian Assessment Area;
- c. residential, commercial, institutional and industrial development within a riparian assessment area where the development is separated from the stream by a dedicated and developed public road right-of-way;
- d. renovations or repair of a permanent structure on an existing foundation to an extent which does not alter or increase the building footprint area;
- e. minor additions to an existing building or structure, such as an increase in floor area up to 25% of the existing footprint, provided that the addition is located on the side or part of the building or structure most distant from the stream;
- f. development in accordance with a registered covenant or approved development permit that pertains directly and explicitly to riparian habitat protection which:
 - i. is registered in favour of the Fraser Valley Regional District and/or Provincial or Federal interests; and
 - ii. establishes a riparian buffer
- g. routine maintenance of existing landscaping or lawn and garden areas;
- h. removal of trees determined by a Certified Arborist or Registered Professional Forester (who is qualified to do tree risk assessment) to represent an imminent risk to safety of life and buildings;
- i. forestry activities on Crown land undertaken under an approved Forest Stewardship Plan approved by the Ministry of Natural Resource Operations in accordance with the Forest & Range Practices Act;
- j. riparian habitat enhancement or restoration works under the guidance of Provincial and Federal agencies;
- k. installation of seasonal play or recreational equipment on existing yard/lawn areas, such as sandboxes or swing sets;
- l. paths for personal use by the parcel owners, provided they do not exceed approximately 1.0 metre in width; are constructed of pervious natural materials with

- no concrete, asphalt, pavers or treated wood; do not involve structural stairs; require no removal of streamside vegetation; and do not impair stream bank stability;
- m. local and regional park facilities;
 - n. emergency actions necessary to prevent, control or reduce immediate and substantial threats to life or property during flood, debris flood/flow, erosion, landslide, avalanche, stream avulsion and other geohazards events;
 - o. repair, maintenance and improvement of flood protection infrastructure and all related ancillary or accessory works, regulated and approved by Federal or Provincial agencies;
 - p. the development of an approved community water or sanitary sewer system that is not ancillary to a residential, commercial or industrial development;
 - q. Federal and Provincial regulated utilities, including railways, transmission lines or pipelines;
 - r. public road or highway works;
 - s. repair or replacement of an existing driveway, culvert or bridge; and,
 - t. the construction of a single storey, detached residential accessory building or structure which is not intended to be used for any “residential occupancy” and which has a floor area not exceeding 20 square metres (215 square feet) and where:
 - i. the building or structure is located as far from the stream as possible and in the location on the parcel that minimizes impacts to riparian habitat; and,
 - ii. it is not possible to construct the building, structure or deck outside the riparian assessment area.

[Byl # 1266, 2014]

- 15.2.3 Where the uncertainty regarding the location of development in relation to a Riparian Assessment Area or the nature of stream, the Regional District may require:
- a. a plan prepared by a BC Land Surveyor or Qualified Environmental Professional to confirm whether the planned disturbance is within the Riparian Assessment Area; or
 - b. a report prepared by a Qualified Environmental Professional to determine if the stream satisfies the definition criteria. [Byl #1266, 2014]

Guidelines

In order to achieve the objectives of Development Permit Area 2-G, the following guidelines shall apply to the issuance of Development Permits:

Issuance of Development Permits

- 15.2.4 Each development permit application should, as a minimum, be accompanied by:
- a. where applicable, an Assessment Report prepared by a QEP in accordance with the Assessment Methods and Development Permit Area 2-G guidelines, for the purpose of determining the applicable SPEA and other measures necessary for the protection of riparian areas; [Byl # 1266, 2014]

- b. a scaled siting proposal clearly and accurately identifying all streams and water features, high water mark, top of bank, top of ravine bank, edge of wetland, riparian assessment area and the SPEA boundary in relation to existing and proposed property lines and existing and proposed development, as well as the locations of works and activities recommended in the Assessment Report; and,
- c. written certification that the proposed development is consistent with the Guidelines of Development Permit Area 2-G and the Riparian Areas Regulation, and identifying any mitigation or compensation measures that are consistent with the Guidelines, including measures that may be specified as Development Permit conditions.

15.2.5 Pursuant to the Riparian Area Regulation and the Local Government Act, the Assessment Report prepared by a QEP should specifically consider and make recommendations respecting: [Byl # 1266, 2014]

- a. the siting of buildings, structures or uses of land;
- b. areas to remain free of development;
- c. the preservation, protection, restoration or enhancement of any specified natural feature or area;
- d. works to preserve, protect, or enhance a natural watercourse or other specified environmental feature;
- e. protection measures to be taken to preserve, protect, restore or enhance fish habitat or riparian areas, control drainage, or control erosion or protect the banks of watercourses; and,
- f. timing of construction to avoid or mitigate impacts.

15.2.6 Where a development permit relates to the subdivision of land, an Assessment Report prepared by a QEP should also:

- a. identify adequate building sites - including but not limited to building locations; front, rear and side yard areas; site services, access and parking - on each proposed lot;
- b. identify streams that may be impacted by the proposed development; and [Byl # 1266, 2014]
- c. consider whether any natural watercourses should be dedicated pursuant to Section 920(7)(c) of the Local Government Act.

15.2.7 The Regional District is authorized to issue a Development Permit after receiving:

- a. notification by the Ministry of Environment that Fisheries & Oceans Canada and the Ministry have been:
 - i. notified of the development proposal; and,
 - ii. provided with a copy of an assessment report which meets the requirements of the Riparian Areas Regulation; or,
- b. documentation demonstrating that Fisheries & Oceans Canada has, with respect to the proposed development, authorized the “harmful alteration, disruption or

destruction” of fish habitat pursuant to Section 35 of the Fisheries Act or amendments thereto. [Byl # 1266, 2014]

- 15.2.8 A development permit may include as a term or condition any recommendation made by a QEP in an Assessment Report respecting:
- a. the siting of buildings, structures or uses of land;
 - b. areas to remain free of development;
 - c. the preservation, protection, restoration or enhancement of any specified natural feature or area;
 - d. dedication of natural water courses to the Crown;
 - e. works to preserve, protect, or enhance a natural watercourse or other specified environmental feature; and,
 - f. protection measures to be taken to preserve, protect, restore or enhance fish habitat or riparian areas, control drainage, or control erosion or protect the banks of watercourses. [Byl # 1266, 2014]
- 15.2.9 A development permit may impose terms and conditions respecting the:
- a. sequence and timing of construction including but not limited to timelines for completion of the works identified in the permit.
 - b. co-ordination of geotechnical recommendations by a Qualified Environmental Professional or Professional Engineer licensed in the Province of British Columbia;
 - c. minor modification of a SPEA as generally described in the Riparian Area Regulation Implementation Guidebook where no impacts to fish habitat occur and as recommended in an Assessment Report by a Qualified Environmental Professional. [Byl # 1266, 2014]
- 15.2.10 A development permit may vary or supplement a bylaw under Division 7 or 11 of the Local Government Act provided that the variance or supplement is in accordance with the objectives and guidelines of Development Permit Area 2-G.

Measures to Protect the Streamside Protection and Enhancement Area

- 15.2.11 Land shall be developed strictly in accordance with the development permit issued.
- 15.2.12 No building or structure of any kind should be located, no vegetation should be disturbed, and no soils should be removed or deposited within a Streamside Protection and Enhancement Area except in accordance with the development permit and Assessment Report.
- 15.2.13 The SPEA boundary should be clearly flagged, staked or otherwise marked during all development phases to avoid encroachment into the Streamside Protection and Enhancement Area.

Geotechnical Hazards

- 15.2.14 Where a proposed development requires geotechnical evaluation pursuant to Development Permit Area 1-G or Section 56 of the Community Charter, the riparian assessment should be coordinated with the geotechnical evaluation in order to provide a comprehensive development permit application.

Permit Security

- 15.2.15 The Regional District may require the applicant to provide security in the form of cash or an unconditional, irrevocable and automatically renewing letter of credit in cases where:
- security for the performance of conditions respecting landscaping is necessary;
 - the Regional District considers that damage to the natural environment could result as a consequence of a contravention of a condition in a development permit;
 - the Regional District considers that unsafe conditions could result as a consequence of a contravention of a condition in a development permit; or,
 - the permit holder is required to retain, restore or replace native vegetation.
- 15.2.16 The amount of the security should be sufficient to cover the cost of any work that might be undertaken by the Regional District to correct deficient landscaping conditions, an unsafe condition, and damage to the natural environment that could reasonably be expected to result from the contravention of the permit.
- 15.2.17 A Letter of Undertaking signed and sealed by a Qualified Environmental Professional may be accepted in lieu of security where:
- the nature of the required works, such as landscaping, are minor and the risk of damage to the natural environment is low;
 - the Letter of Undertaking is signed and sealed by a Qualified Environmental; and, the Qualified Environmental Professional will undertake the works and provide to the Regional District a post-construction certification and inspection report as outlined in Section 15.2.18. [Byl # 1266, 2014)

Post-Construction Certification and Inspection

- 15.2.18 Upon completion of the works authorized by a development permit - and for certainty upon expiry of any timeline for completion of works established as a term or condition of a development permit - the holder of the permit must submit to the Regional District and the Ministry of Environment post-construction certification from a QEP which:
- certifies that the development has been carried out in accordance with the Assessment Report and that terms and conditions set out in the assessment report and the development permit have been properly implemented; or,
 - identifies and documents all instances of non-compliance with the assessment report and the development permit and any measures necessary to correct deficiencies, including any works that should be undertaken by the Regional District as contemplated by Section 15.2.18.

15.2.19 The requirement for post-construction certification and inspection described in Section 15.2.17 may be waived by a condition in a development permit.

Offence

15.2.20 Failure to:

- a. obtain a development permit where one is duly required; or,
 - b. develop land strictly in accordance with a development permit issued;
- are offences under the Local Government Act and are contrary to the bylaws, regulations or policies of the Regional District. Upon summary conviction, penalties for offences may be up to the maximum set out in the Local Government Act. [Byl # 1266, 2014]

15.2.21 Employees, officers and agents of the Regional District may enter, at all reasonable times, a property to inspect and determine whether the requirements of Development Permit Area 2-G and the terms and conditions of a development permit are being met.

Definitions

15.2.22 In DPA 2-G, the following terms have the meanings described below:

“Assessment Methods” means the assessment methods set out in the Schedule to the Riparian Areas Regulation.

“Assessment Report” means a report certified by a Qualified Environmental Professional and prepared in accordance with the Riparian Areas Regulation Assessment Methods and the guidelines of Development Permit Area 2-G to assess the potential impact of a proposed development in a riparian assessment area.

“development” includes the alteration of land, the disturbance of soil or vegetation, and construction of or addition to buildings and structures.

“high water mark” means the visible high water mark of a stream where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the stream a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself, and includes the active floodplain.

“Qualified Environmental Professional” and “QEP” mean a qualified environmental professional as defined in the Riparian Areas Regulation.

“ravine” means a narrow valley with an average grade on either side greater than 3:1 measured between the high water mark of the watercourse contained in the valley and the top of the valley bank, being the point nearest the watercourse beyond which the average grade is less than 3:1 over a horizontal distance of at least 15 metres measured perpendicularly to the watercourse;

“Riparian Assessment Area” means

- a. for a stream, the 30 meter strip on both sides of the stream, measured from the high water mark;
- b. for a ravine less than 60 meters wide, a strip on both sides of the stream measured from the high water mark to a point that is 30 meters beyond the top of the ravine bank; and,
- c. for a ravine 60 meters wide or greater, a strip on both sides of the stream measured from the high water mark to a point that is 10 meters beyond the top of the ravine bank.

“Riparian Areas Regulation” means B.C. Reg. 376/2004 and amendments thereto.
[Byl # 1266, 2014]

“Streamside Protection and Enhancement Area” and “SPEA” mean an area:

- a. adjacent to a stream that links aquatic to terrestrial ecosystems and includes both existing and potential riparian vegetation and existing and potential adjacent upland vegetation that exerts an influence on the stream; and,
- b. the size of which is determined in accordance with the Riparian Areas Regulation on the basis of an Assessment Report provided by a Qualified Environmental Professional.

“stream” includes any of the following that provides fish habitat:

- a. a watercourse, whether it usually contains water or not;
- b. a pond, lake, river, creek or brook;
- c. a ditch, spring or wetland that is connected by surface flow to something referred to in paragraph (a) or (b).

16.0 TEMPORARY USE PERMITS

Sections 920.2 and 921 of the Local Government Act allow for the issuance of Temporary Use Permits for short-term commercial and industrial uses in areas designated within an Official Community Plan. In general, a Temporary Use Permit may be issued for a period of up to two (2) years and renewed, at the discretion of the Regional Board, only once. The Regional Board may impose special conditions under which the temporary industrial or commercial use may be carried on and require a security to guarantee the performance of the terms of use of the Temporary Use Permit. The security may be in the form of cash or a letter of credit, the amount of which is to be determined by the Regional Board. A major purpose of collecting the security is to ensure that the land is returned to the condition prior to issuance of the permit when the permit has expired. The Regional Board may ‘cash in’ and utilize the security in the event that the conditions of the permit are not met.

Section 921 of the Local Government Act and *FVRD Development Procedures Bylaw No. 0831, 2007* specify the process by which a temporary commercial or industrial permit may be issued. Public notification and input is a central part of the process. Notification of the Regional Board’s consideration of a permit application must be mailed out to owners and occupiers of property within a specified distance of the subject land and placed in a local newspaper. As well, the Board will normally require the holding of a public information meeting to present the application to the community and hear the concerns of residents.

It is the policy of the Regional Board that:

- 16.1 The Official Community Plan area, as shown on *Schedule 1: OCP Boundary*, is designated for the issuance of Temporary Commercial or Industrial Use Permits.
- 16.2 A Temporary Commercial or Industrial Use Permit may be issued for the following commercial or industrial uses:
 - a. special events of a commercial nature which are of limited duration and which will not preclude or compromise future permitted uses on the proposed site of the temporary use;
 - b. short-term industrial activity such as portable sawmills, heavy equipment storage, log home building operations and construction yards related to specific industrial projects of limited duration;
 - c. a temporary sand and gravel extraction where a permit has been issued pursuant to *FVRD Soil Deposit and Removal Bylaw No. 0729, 2006*; and,
 - d. industrial or commercial uses which comply with the area designation policies but where appropriate zoning does not presently allow for such uses.
- 16.3 Notwithstanding Section 16.2, a Temporary Commercial or Industrial Use Permit may be issued to provide for temporary approval of transitional uses, or uses where uncertainty exists respecting appropriateness or viability of the use, and where it is premature to decide upon rezoning and long-term land use rights, a temporary use permit may be issued for a limited period.

- 16.4 The Regional Board will normally require the holding of a public information meeting prior to the issuance of a Temporary Use Permit.
- 16.5 As a condition of issuing a Temporary Use Permit, the Regional Board will normally require a security in an amount adequate to facilitate completion of permit conditions and the return of the land to its pre-existing state.

Table 16-A summarizes the types of uses which may be permitted by Temporary Use Permits within the Plan area.

TABLE 16-A TEMPORARY USE PERMITS	
Type of Use Which May be Permitted	Area Where Permit May Be Issued
(a) Special commercial events	All designations
(b) Temporary Sand and Gravel Operations	All designations
(c) Short-term Industrial and Construction Uses	All designations
(d) Transitional industrial/commercial uses which comply with area designation policies but where appropriate zoning is not available	All designations
(e) Other industrial or commercial uses	All designations

17.0 INTERPRETATION

Unless otherwise stated in this Plan, the following terms have the meaning defined below. Terms not defined in this section carry the same meaning as in Provincial statutes and the bylaws of the Fraser Valley Regional District.

ACCESS means the way, or means of connection, between lands adjacent to a public roadway and the public roadway; which connection provides access to and from the private lands. Access may also mean the access permitted and specified in a Highways Access Permit issued by the Ministry of Transportation and Infrastructure; see also **PUBLIC ACCESS**.

ACCESSORY BOARDING USE means a use accessory to a residential use and contained within the principal residence where no more than two (2) sleeping rooms, which do not contain cooking facilities, are rented for the accommodation of no more than four (4) persons.

ACCESSORY RESIDENTIAL USE means a use accessory to a commercial use, a tourist accommodation use, or an industrial use, where the building or buildings include one dwelling unit for the accommodation of the owner, operator or manager.

ADVISORY PLANNING COMMISSION means a commission established under Section 898 of the Local Government Act, responsible for advising the Regional Board on planning concerns of the local community referred to it by the Board.

AGGREGATE EXTRACTION USE means a use involving the extraction and removal of aggregate materials from a lot and the subsequent reclamation and revegetation of the site. It includes sufficient breaking to allow the material to be transported from the site, but does not include processing of aggregates.

AGRICULTURAL USE means a use providing for the growing, rearing, producing and harvesting of agricultural products and includes the processing on an individual farm of the products harvested, reared or produced on that farm only; and, retail sale of agricultural products which are produced on the same parcel or on other parcels within the area that farm and are managed as part of the same farm operation. For lands within the Provincial Agricultural Land Reserve and designated AGRICULTURAL in this Plan, agricultural use also includes activities designated as farm use pursuant to the Agricultural Land Reserve Act and Section 2 of the Agricultural Land Reserve Use, Subdivision and Procedure Regulation.

ALLUVIAL FAN means the alluvial deposit of a stream where it issues from a steep mountain valley or gorge upon a plain or at the junction of a tributary stream with the main stream.

ANCILLARY or ACCESSORY USE means a use auxiliary or subordinate to the principal use permitted in the land use designation.

APPROVAL means approval in writing from the responsible authority.

ARTISAN-CRAFT WORKSHOP USE means an activity of a gainful nature which is carried on by an artisan who practices, cultivates or instructs in craftsmanship and/or arts; **includes** artists' and potters' studios, workshops for the assembly and manual repair of specialized equipment by skilled artisans, musicians, horologists and the like, antique furniture and painting, restoration and repair, glass blowing, wood or stone carving, and all other similar activities; **specifically excludes** automobile, trailer and bicycle workshops, yards for trade and landscape contractors, boat building, service establishments for small appliances, office and amusement machinery and audio-visual equipment, food processing, personal service establishments, gunsmithing, locksmithing and similar pursuits, taxidermy, tanneries and pet breeding or care facilities, laboratories and professional offices, audio-visual production services and all other related occupations and businesses.

ASSOCIATED RURAL RESIDENTIAL USES means a variety of uses associated with, but clearly ancillary or accessory to, a residential use; includes home occupations, cottage industries, accessory off street parking, artisan craft workshop, and outside storage of firewood for sale.

ASSEMBLY USE means use providing for the assembly of persons for religious, charitable, philanthropic, cultural, private recreational or private educational purposes, and includes churches, auditoriums, youth centres, social halls, group camps, private and public schools kindergartens, play schools, day nurseries and day care schools.

BED AND BREAKFAST means a use accessory to a residential use and contained within the principal residence in which no more than two (2) sleeping rooms without cooking facilities, accommodation for no more than four (4) persons, are used for the temporary accommodation of the traveling public, and in which breakfast but no other meal may be served to the registered guests.

BUFFER means any device arranged and maintained to screen or separate adjoining land uses or properties, and includes any combination of setbacks, existing vegetation, ditches, roads, landscaping, berming and fencing.

BUILDING BYLAW means any building bylaw applicable to Electoral Area "G" of the Fraser Valley Regional District enacted pursuant to the Local Government Act.

COMMERCIAL CAMPGROUND AND RECREATIONAL VEHICLE (R.V.) PARK USE means a commercial use of land for the purpose of providing two or more recreational camping spaces for recreational trailers, or motor homes, together with all supporting, common leisure and service facilities for the exclusive use of, and occupancy for part of the year only, holiday-makers who are renting, leasing, or own the said spaces or sites; may include: strata R.V. sites under the Condominium Act, a Holiday park, a co-operative ownership recreational camping club incorporated under the Society Act; but does not include a social club, mobile home park, motel, campground or camp licensed under the Community Care Facility Act.

COMMERCIAL USE means a use providing for the retail sale, repair and servicing of household, non-household, personal and non-personal goods, or for providing services to people.

CONSERVATION USE means the preservation and protection of natural resources and assets in their natural state, including the habitat of birds, fish and other wildlife.

COTTAGE INDUSTRY USE means an activity of a gainful nature which is not defined as an offensive trade in the Health Act, R.S.B.C. Ch 179, 1996 Section 113, which occupies a building accessory to residential and agriculture land uses, which includes ancillary retail and office facilities and which does not employ or involve more than three operators or employees, the principal of whom shall be resident on the parcel. Cottage industry use includes custom stone, textile, wood and metal working facilities, wholesale bakeries, plants processing and packing food grown or raised on the parcel, cottage wineries, locksmiths, gunsmiths, tinsmiths, print shops, audio visual and photographic studios, small appliances and office machinery repair, non-motorized bicycle repair shops.

DEBRIS FLOOD means a channelized slope hazard involving uncontrolled water flow which can result in water damage to unprotected buildings, erosion, deposition of gravel and timber debris and silting damage.

DEBRIS FLOW means a channelized slope hazard generally involving considerable amounts of sediments and debris, including trees and boulders, with small amounts of water, and is relatively confined to areas at the mouth of gullies, normally near the apex of the alluvial fans.

DENSITY AVERAGING means the process used to calculate the maximum number of parcels achievable by subdivision from a parent parcel for the purposes of clustering the development, using the following formula:

$$\frac{\text{gross area of parent parcel}}{\text{minimum parcel size}} = \text{maximum number of parcels achievable}$$

DEVELOPMENT APPLICATION means an application pursuant to an enacted provision of a Responsible Authority which affects the development of any land within the area covered by this Plan.

ENVIRONMENTAL IMPACT ASSESSMENT means a field-based technical assessment conducted, prepared and supported by a **qualified professional** including but not limited to a professional biologist, in accordance with the Ministry of Environment recommended methodologies and best practices, which assessment provides:

- a) an inventory of fish and wildlife species and their habitats; threatened, rare and endangered species and their habitats; and, other sensitive ecosystems in the proposed development area, and in adjacent habitats or ecosystems which may be impacted by the proposed development area; and,
- b) recommendations for the avoidance then mitigation of impacts associated with a proposed development area.

EXTEND means the enlarging of an area designation by adding contiguous areas to it.

FEASIBILITY STUDY means a study or studies prepared by a professional engineer licensed in the Province of British Columbia concerned with:

- the effect on soil stability of disturbing natural grades or natural growth, or changing the moisture content of the soil by developing, using or occupying the land;
- groundwater levels and conditions; and,
- the depth and extent of flooding and likely frequency of its occurring

FLOOD PLAIN means an area of land, whether floodproofed or not, which is susceptible to flooding by a watercourse, lake, ocean or other body of water.

GEOTECHNICAL STUDY means a study prepared by a professional engineer with training and experience in geotechnical engineering and licensed in the Province of British Columbia which interprets the physical conditions of surface or subsurface features in a study area with respect to stability, potential seismic disturbance, interrelated chemical activity, and size and volume analysis; specifically addresses the possible effects of physical alterations or deformations of the land related to proposed building or other projects; and may establish standards for siting and construction of proposed buildings or the nature and location of proposed uses. Geotechnical studies meet the requirements outlined in *Assistance to Developers and Building Permit Applicants Undertaking Geotechnical Studies*¹⁶⁷, and, as applicable, the *Guidelines for Legislated Landslide Assessments for Proposed Residential Development in British Columbia*¹⁶⁸.

HOLIDAY PARK means any lot or parcel operated and maintained for the sole purpose of providing two or more recreational camping spaces or holiday or summer home sites together with all supporting common leisure and service facilities for the exclusive use of and occupancy for part of the year only by holiday-makers who are the owners or lessees of the said spaces or sites; may include: strata lots or sites under the Condominium Act, a co-operative ownership recreational camping, club incorporated under the Society Act; but does not include a social club, mobile home park, motel, campground, or a camp licensed under the Community Care Facility Act.

HOME OCCUPATION USE means a use accessory to a one-family residential use where the householder carries on an occupation, craft or profession within the residential dwelling unit.

IMPERVIOUS AREA means the total area of impervious surface expressed as a percentage of the total area of the parcel of land. Impervious surfaces are those which water can not penetrate such as buildings, paved roads, and driveways.

INDUSTRIAL USE means the use of land, buildings and structures for the manufacturing, processing, fabricating, repair, packaging or assembly of goods; warehousing or bulk storage of goods; and related accessory uses.

INSTITUTIONAL USE means a use providing for civic, educational, religious, fraternal, hospital or cultural facilities

¹⁶⁷ Fraser Valley Regional District. *Assistance to Developers and Building Permit Applicants Undertaking Geotechnical Studies*.

¹⁶⁸ The Association of Professional Engineers and Geoscientists of British Columbia. *Legislated Landslide Assessments for Proposed Residential Development in British Columbia* March 2006.

INTENSIVE AGRICULTURE means the use of land, buildings or structures by a commercial enterprise or institution for the confinement of poultry, livestock or fur bearing animals.

LOCAL COMMERCIAL USE means a commercial use intended to serve the day-to-day needs of the local population residing in the vicinity of the local commercial use; includes general stores, convenience stores, small personal service establishments and artisan-craft workshop uses.

LOW DENSITY COMMERCIAL RECREATION means a low density group recreation use carried out on a seasonal or temporary basis, including ranches, lodges, recreation camps and private recreational, institutional or cultural facilities; but excludes natural campgrounds, commercial campgrounds, R.V. Parks and outdoor recreation uses.

MAXIMUM SITE COVERAGE means the proportion of a parcel of land which is used for buildings, structures, driveways, patios, swimming pools and other development covering the surface of land.

NATURAL BOUNDARY means the visible high-water mark of any lake, river, stream or other body of water, where the presence and action of the water are so common and usual, and so long continued in all ordinary years as to mark upon the soil of the bed or the lake, river, stream or other body of water, a character distinct from that of the banks thereof in respect to vegetation, as well as in respect to the nature of the soil itself.

NATURAL CAMPGROUND means a use of land for camp sites on an overnight rental basis, which involves no buildings, structures or service connections; excludes commercial campgrounds and R.V. parks, sites owned or leased under the Condo Act, and camps licensed under the Community Care Facility Act of the Province of British Columbia.

NATURAL GROUND means the level of the surface of the ground which occurs or occurred naturally and before any excavation or construction.

OFFICIAL COMMUNITY PLAN means a plan prepared and adopted by a Regional Board by bylaw pursuant to the Local Government Act which applies to all or parts of an electoral area of a Regional District. It forms the basis for preparing development bylaws in an electoral area.

ON-SITE SERVICES means the provision of an individual water supply and on-site sewage disposal in accordance with the standards of the Responsible Authorities pursuant to the requirements of the Health Act, the Environmental Management Act, and bylaws of the Fraser Valley Regional District.

OUTDOOR RECREATION means providing for extensive open air recreation facilities for the enjoyment of the natural environment including natural camp grounds use.

PARK and PARK RESERVE means open space dedicated to the preservation of the natural environment and recreation use.

PLAN AMENDMENT means a bylaw amending a schedule of this Plan prepared and adopted pursuant to the Local Government Act.

PUBLIC ACCESS means the unrestricted right of the general public to cross lands without the need for any approvals or specified permits.

PUBLIC USE means a use providing for public activities or public functions within facilities established by a government, and includes cemeteries, public parks, public play grounds and public utilities or any other facilities established by a government.

QUALIFIED PROFESSIONAL means an applied scientist or technologist specializing in a relevant applied science or technology including, but not limited to, agrology, forestry, biology, engineering, geomorphology, geology, hydrology, hydrogeology or landscape architecture, and,

- a) who is registered in British Columbia with their appropriate professional organization and acting under that association's Code of Ethics is subject to disciplinary action by that association; and,
- b) who, through demonstrated suitable education, experience, accreditation and knowledge relevant to the particular matter, may be reasonably relied on to provide advice within their area of expertise.

RECREATION USE means public park, conservation, recreation and other ancillary uses as permitted by the Responsible Authorities; excludes commercial recreation uses.

RESPONSIBLE AUTHORITY means a governmental and/or administrative body, operating in part or in total within the region, which is charged with or capable of enacting government provisions affecting the development of land or the construction of public works within the region; includes a member municipality, a Regional District, the Province of British Columbia, the Government of Canada, and their agencies.

RESOURCE EXTRACTION means the pulling out or drawing out of primary forest, mineral and other natural resources and includes mining, the extraction of aggregate materials, forestry, fishing and associated local transportation uses.

RESOURCE INDUSTRIAL USE means a use related to the extraction, primary processing, and transport of products from primary natural resource materials; includes log booming, sawmills, and gravel sorting and screening plants and similar related industries.

RURAL RESIDENTIAL USE means the use of land for single-family residences with on-site services with a minimum lot density of one (1) parcel per two (2) hectares (4.74 acres).

SEMI-PUBLIC USE means the use of land by a religious organization, club, lodge fraternal organization, society or association intended to serve the needs of the population residing in the vicinity of the semi-public use; includes churches, daycare facilities, meeting halls and club uses.

SINGLE FAMILY DWELLING means a structure providing for a single family residential use for person or persons, includes accessory residential as well as mobile homes and ‘park model’ mobile homes where permitted in the zoning bylaw.

SPECIAL EVENT means the use of land for temporary commercial or industrial use including fairs or concerts, campsites, assembly use, recreation use, emergency operations and other event-related land uses.

TEMPORARY DWELLING means the use of a single-width manufactured home as a dwelling unit, on a non-permanent foundation, for the accommodation of a person or persons employed in an agricultural activity taking place on that parcel.

TEMPORARY USE means a commercial or industrial use for which a Temporary Use Permit pursuant to Section 921 of the Local Government Act is issued.

WATERCOURSE means any natural depression with well defined banks and a bed zero point six (0.6) metres or more below the surrounding land serving to give direction to a current of water at least six (6) months of the year or having a drainage area of two (2) square kilometres or more upstream of the point of consideration.

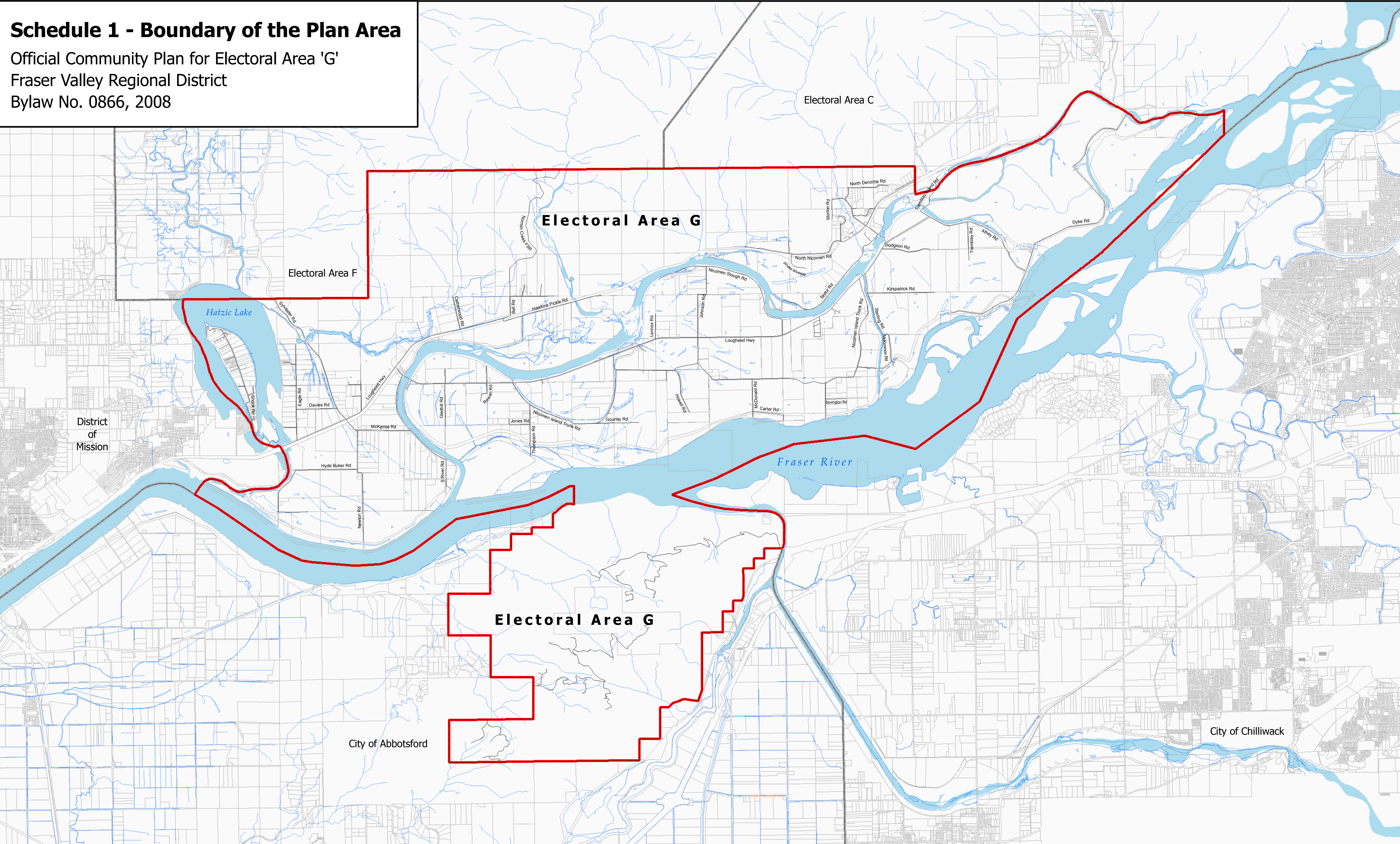
WETLAND means land that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal conditions that supports, vegetation typically adapted for life in saturated soil conditions, including, swamps, marshes, bogs, fens, estuaries and similar areas that are not part of the active floodplain of a stream, that may not contain surface water, and that may not be connected to a stream.

Official Community Plan for Electoral Area "G" Bylaw No. 0866, 2008

SCHEDULES AND MAPS

Schedule 1 - Boundary of the Plan Area

Official Community Plan for Electoral Area 'G'
Fraser Valley Regional District
Bylaw No. 0866, 2008



Electoral Area G

Electoral Area F

Electoral Area C

District of Mission

City of Abbotsford

City of Chilliwack

Electoral Area G

Fraser River

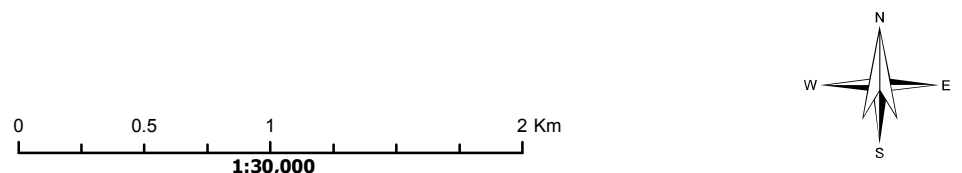
Hatzic Lake

This map comprises Schedule 1: Boundary of the Plan Area of Fraser Valley Regional District Official Community Plan for Electoral Area 'G', Bylaw No. 0866, 2008 adopted this 28th day of April, 2009.

Chair _____
Administrator _____

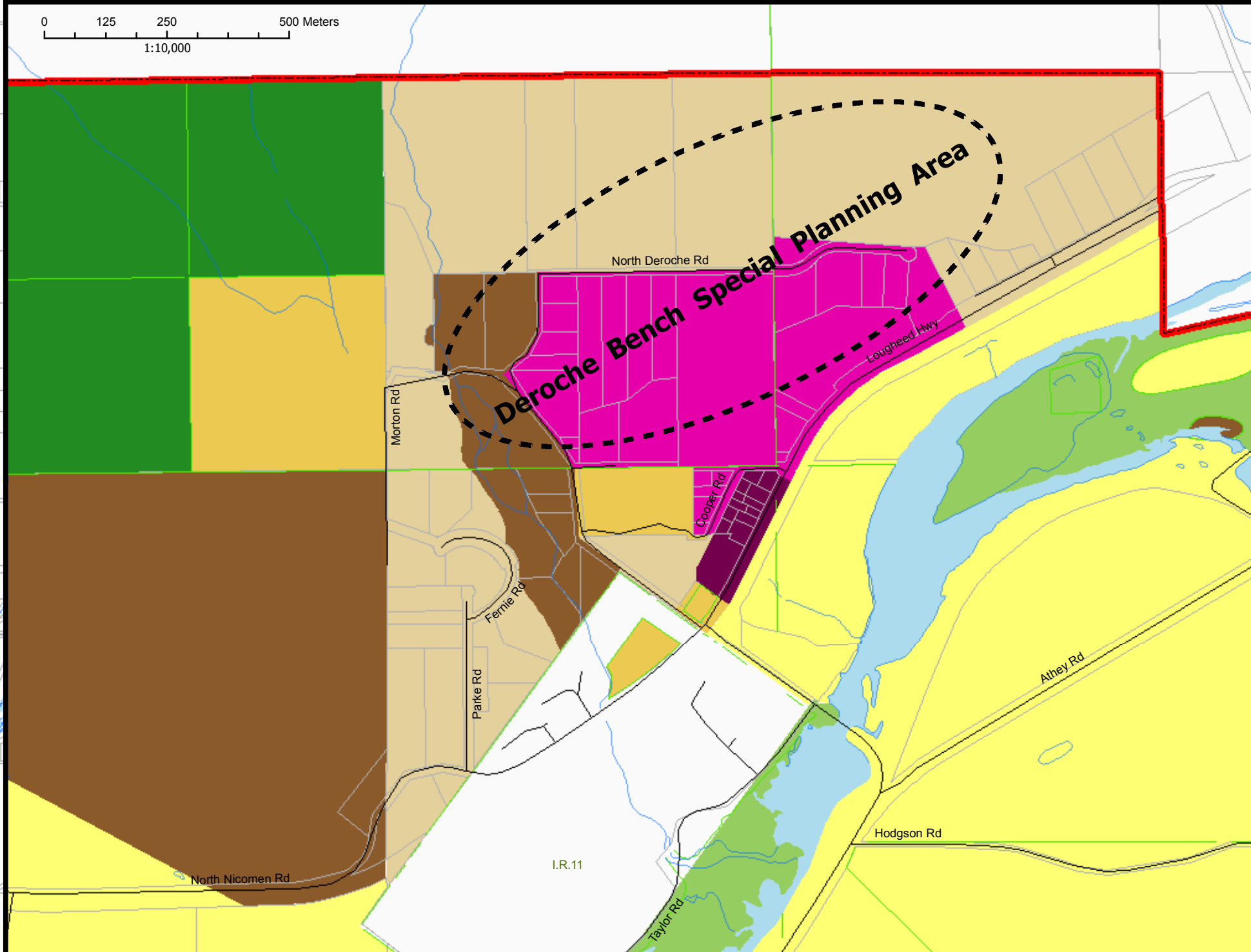
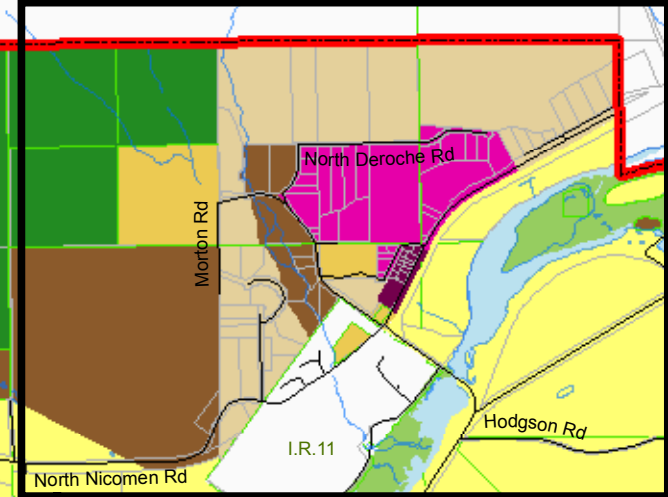
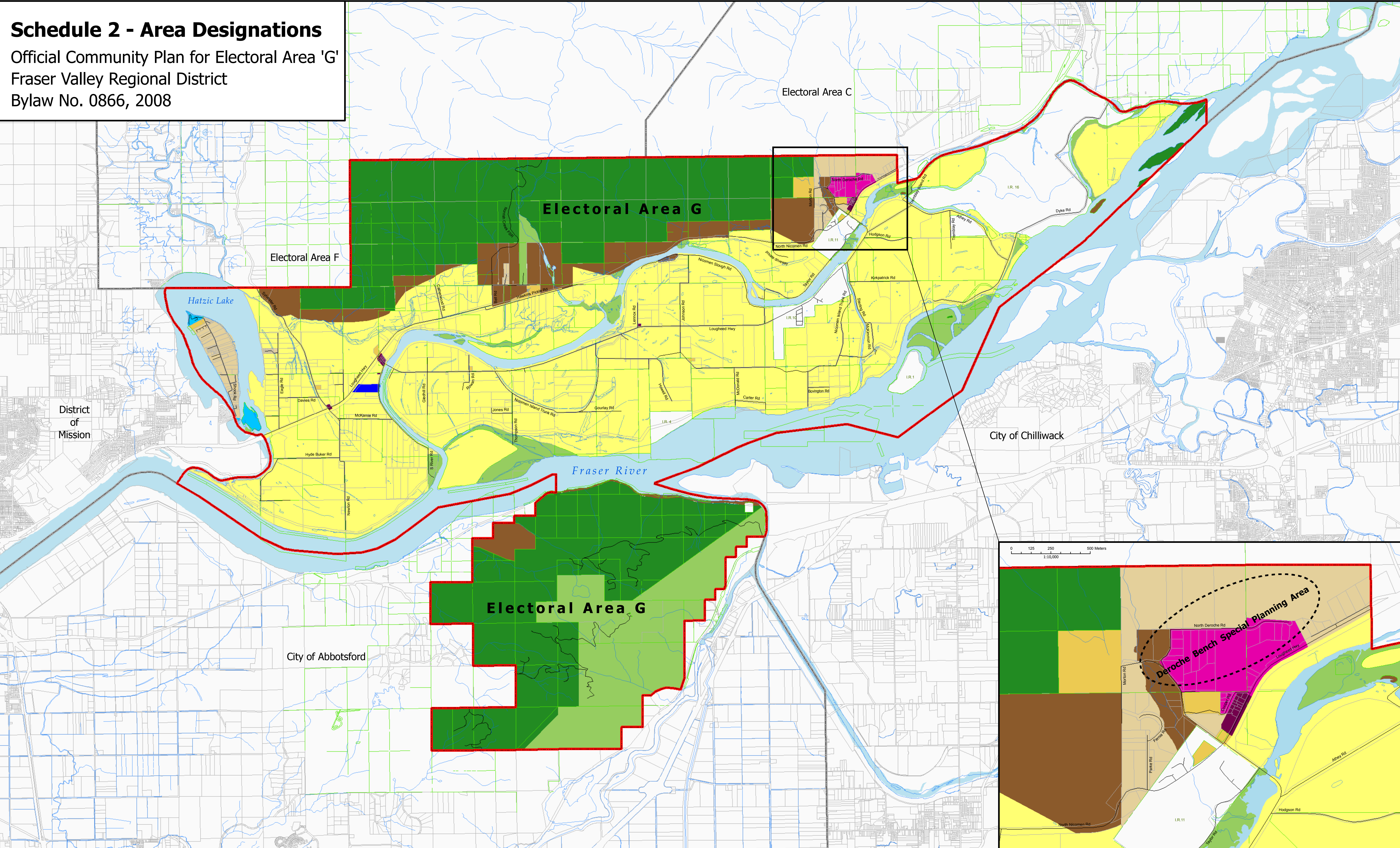
- Road
- Electoral Area/Municipal Boundary
- OCP Boundary Area
- Creek/Stream
- Major Waterbody
- Parcels

Distances and locations are approximate. Map produced: May 2008
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983



Schedule 2 - Area Designations

Official Community Plan for Electoral Area 'G'
Fraser Valley Regional District
Bylaw No. 0866, 2008

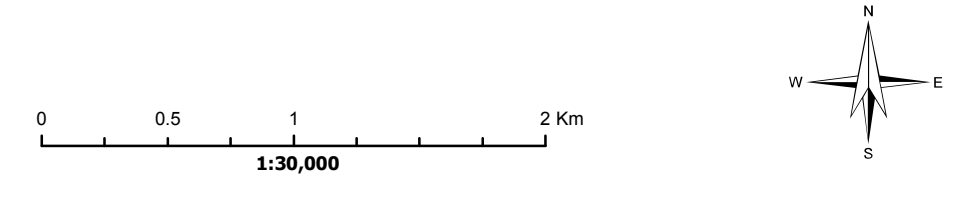


This map comprises Schedule 2 - Area Designations of Fraser Valley Regional District Official Community Plan for Electoral Area 'G', Bylaw No. 0866, 2008 adopted this 28th day of April, 2009.

Chair _____
Administrator _____

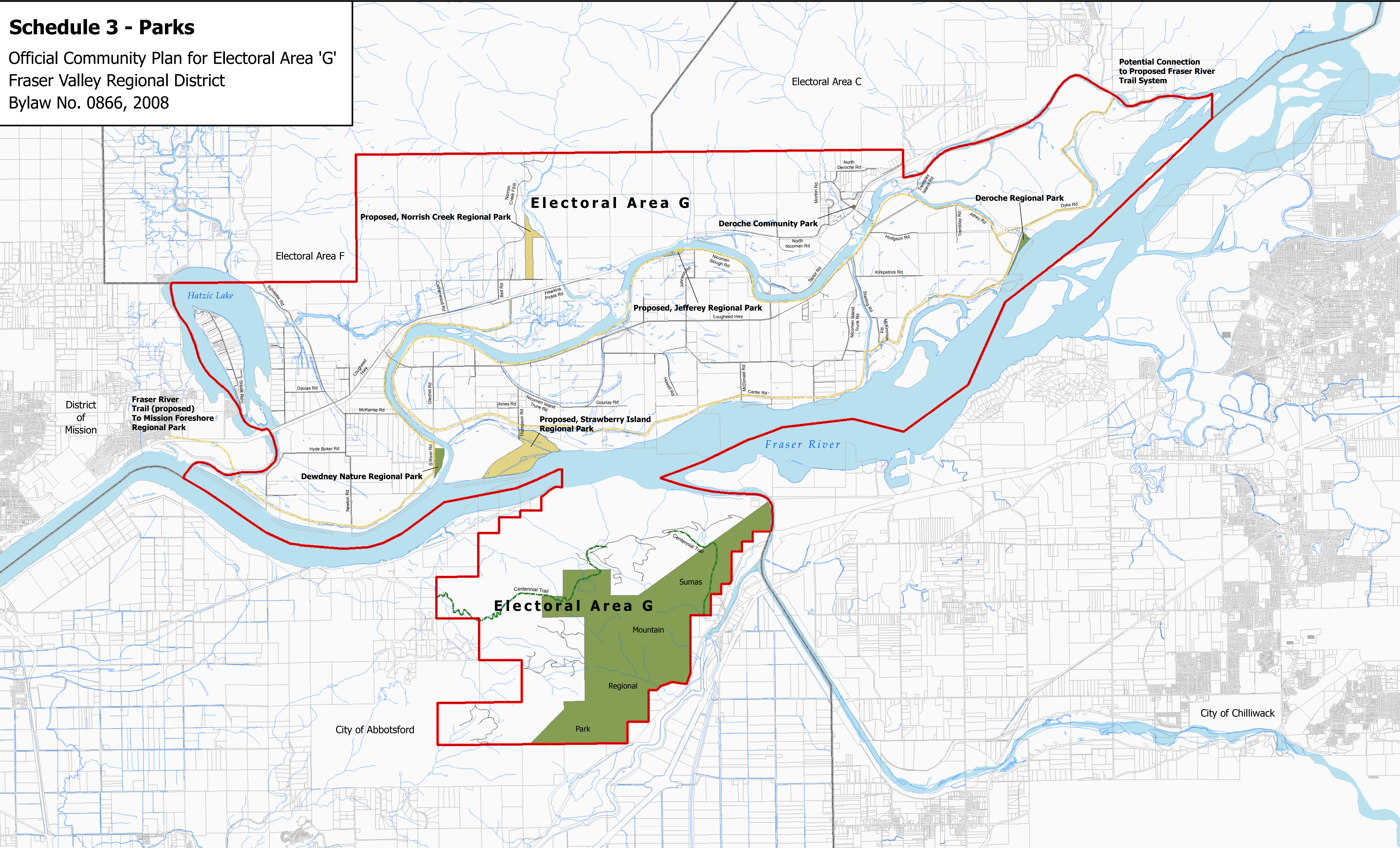
Road	Creek/Stream	Area Designation	Industrial	Resort
Crown Parcels	Major Waterbody	Agricultural	Institutional	Rural
Electoral Area/Municipal Boundary	Parcels	Forest	Limited Use	Suburban Residential
OCP Boundary Area		Highway Commercial	Park And Conservation Area	

Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983
This map is compiled from FVRD base data. Distances are approximate. Map produced: May 2008



Schedule 3 - Parks

Official Community Plan for Electoral Area 'G'
Fraser Valley Regional District
Bylaw No. 0866, 2008



This map comprises Schedule 3 - Parks of Fraser Valley Regional District Official Community Plan for Electoral Area 'G', Bylaw No. 0866, 2008 adopted this 28th day of April, 2009.

Chair _____

Administrator _____

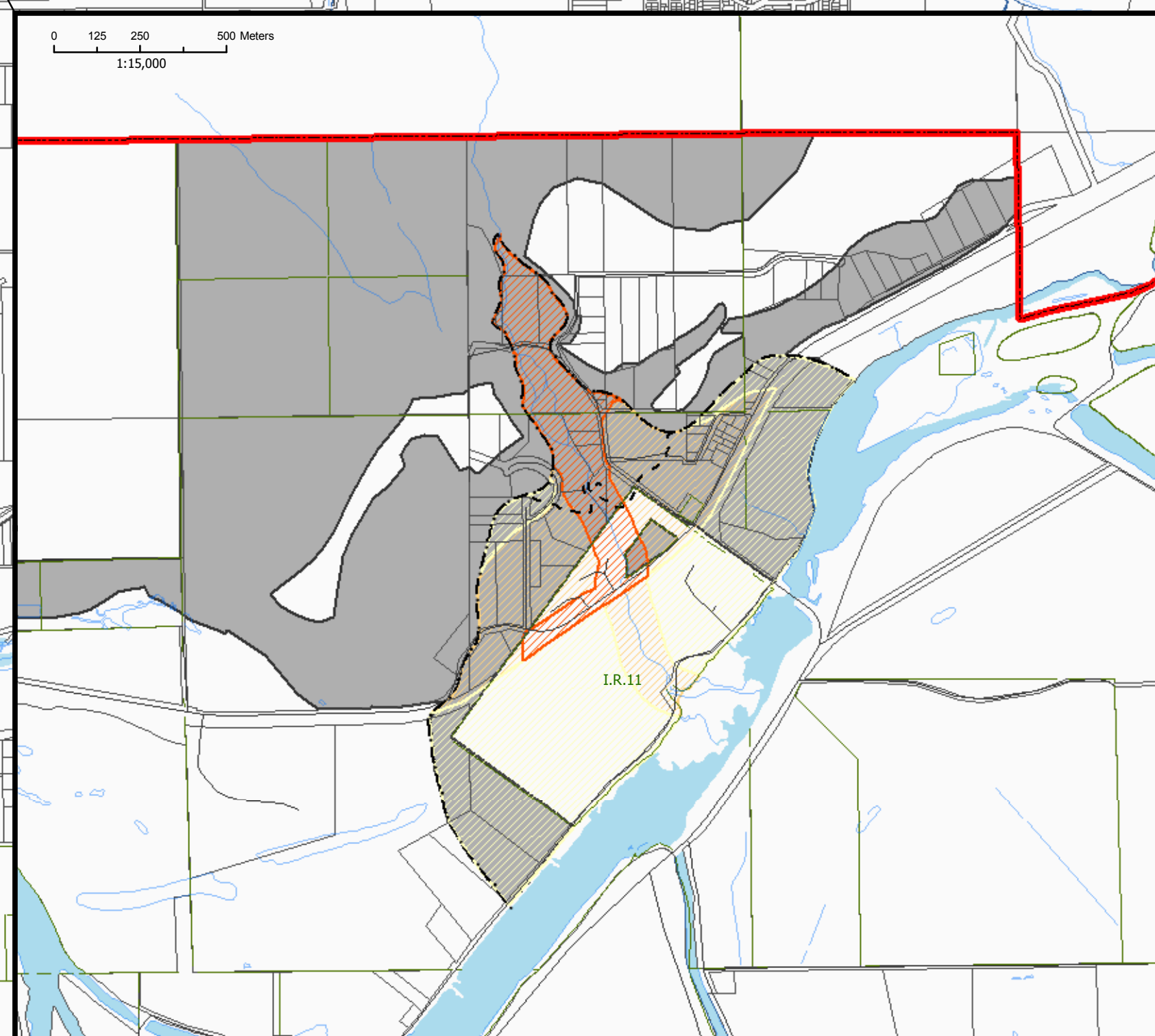
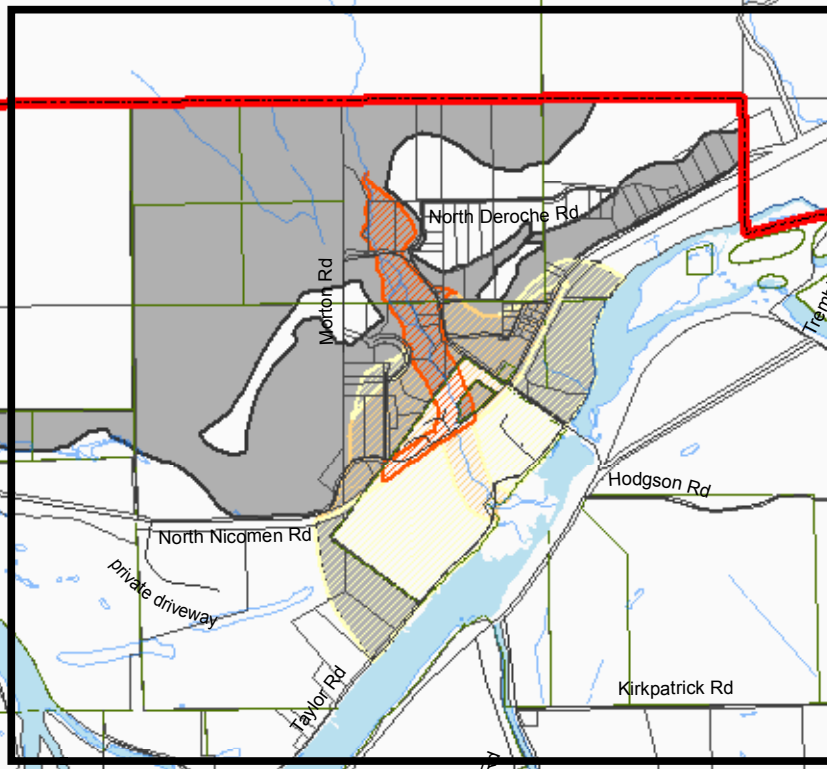
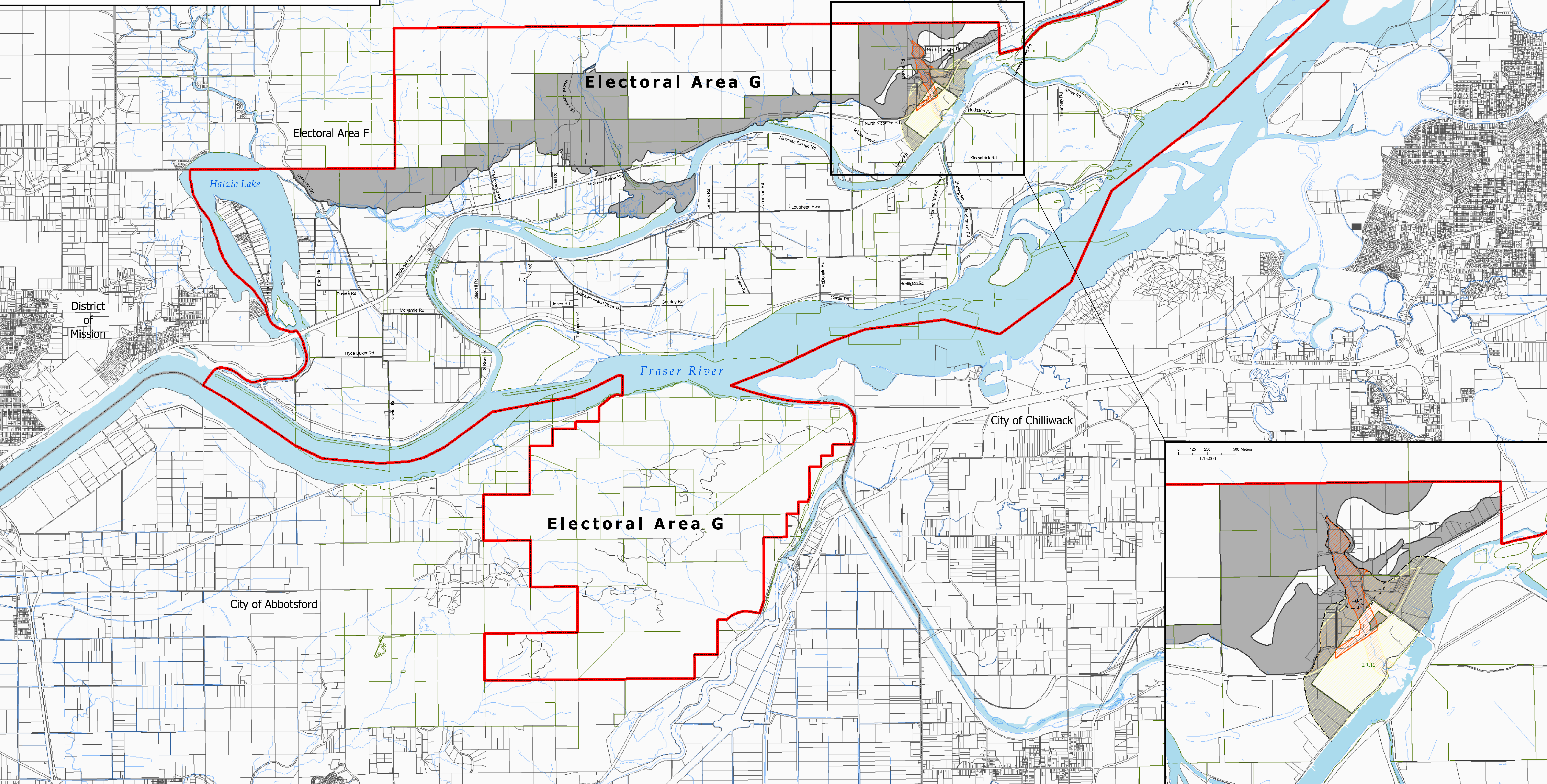
	Road		Regional Trail, Proposed	Park Designation	
	Electoral Area/Municipal Boundary		Centennial Trail		Potential Community Park
	OCP Boundary Area		Creek/Stream		Regional Park, Proposed
	Parcels		Major Waterbody		Regional Park

Distances and locations are approximate. Map produced: May 2008
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983

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Schedule 4 - Development Permit Area 1-G

Official Community Plan for Electoral Area 'G'
Fraser Valley Regional District
Bylaw No. 0866, 2008

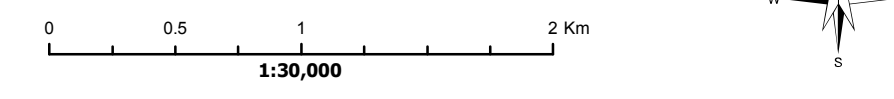


This map comprises Schedule 4 - Development Permit Area 1-G of Fraser Valley Regional District Official Community Plan for Electoral Area 'G', Bylaw No. 0866, 2008 adopted this 28th day of April, 2009.

Chair _____
Administrator _____

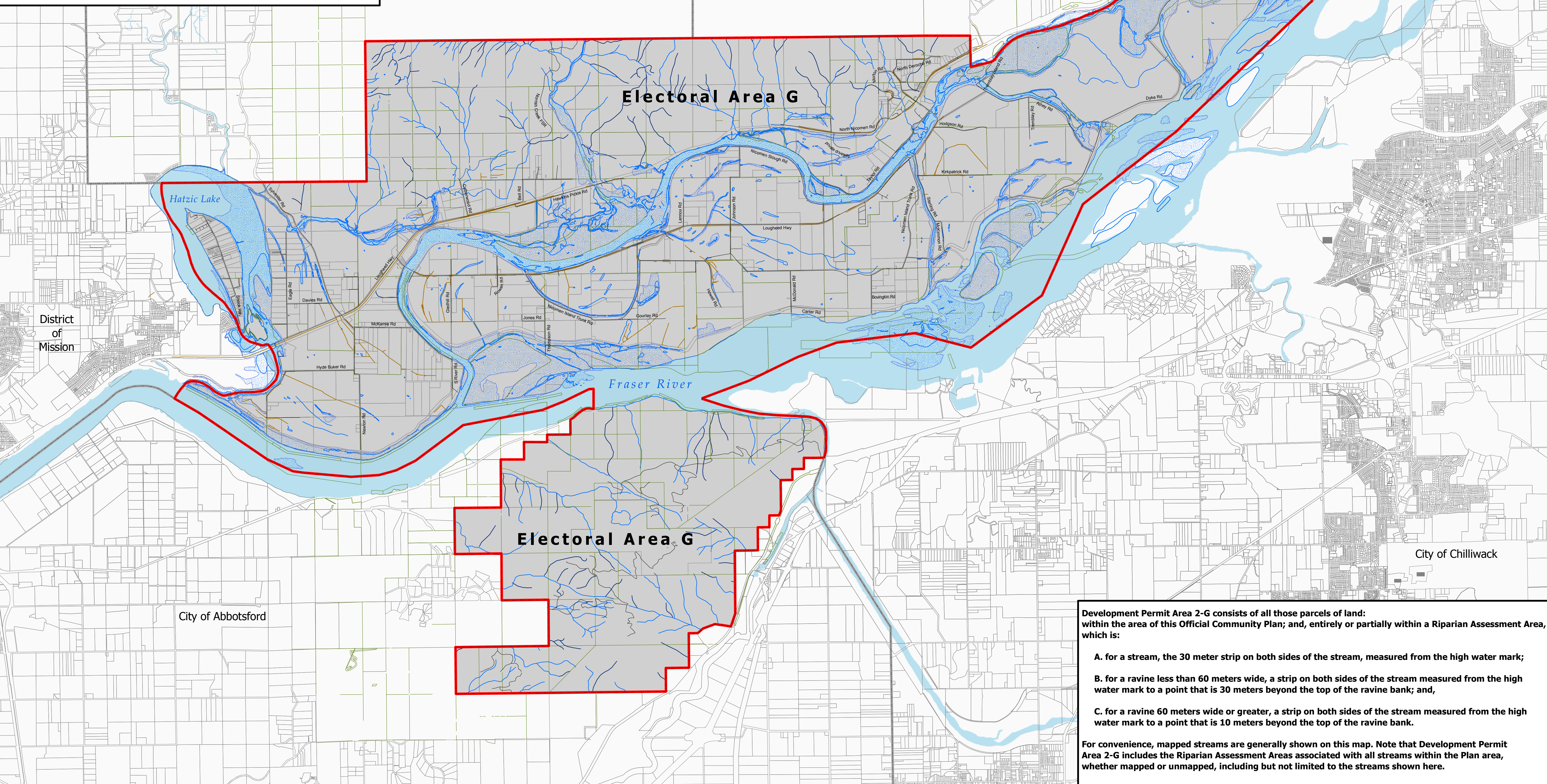
- | | | |
|-----------------------------------|------------------------------|-----------------------------|
| Crown Parcels | 24 Meter Elevation (approx.) | Deroche Fan Hazard High |
| Road | Deroche Creek Fan Boundary | Deroche Fan Hazard Moderate |
| Electoral Area/Municipal Boundary | Major Waterbody | Deroche Fan Hazard Low |
| OCP Boundary Area | Parcels | |
| Creek/Stream | Development Permit Area 1-G | |

Deroche Creek fan hazards are based on the Deroche Creek Flood Hazard Management study by Hay & Company Consultants (2000). This information is for planning purposes. Map produced: May 2008
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983



Schedule 5 - Development Permit Area 2-G

Official Community Plan for Electoral Area 'G'
Fraser Valley Regional District
Bylaw No. 0866, 2008



Development Permit Area 2-G consists of all those parcels of land: within the area of this Official Community Plan; and, entirely or partially within a Riparian Assessment Area, which is:

- A.** for a stream, the 30 meter strip on both sides of the stream, measured from the high water mark;
- B.** for a ravine less than 60 meters wide, a strip on both sides of the stream measured from the high water mark to a point that is 30 meters beyond the top of the ravine bank; and,
- C.** for a ravine 60 meters wide or greater, a strip on both sides of the stream measured from the high water mark to a point that is 10 meters beyond the top of the ravine bank.

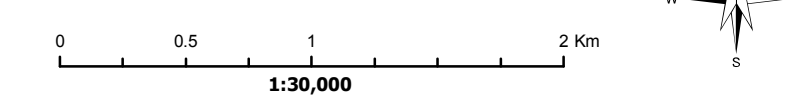
For convenience, mapped streams are generally shown on this map. Note that Development Permit Area 2-G includes the Riparian Assessment Areas associated with all streams within the Plan area, whether mapped or unmapped, including but not limited to the streams shown here.

This map comprises Schedule 5 - Development Permit Area 2-G of Fraser Valley Regional District Official Community Plan for Electoral Area 'G', Bylaw No. 0866, 2008 adopted this 28th day of April, 2009.

Chair _____
Administrator _____

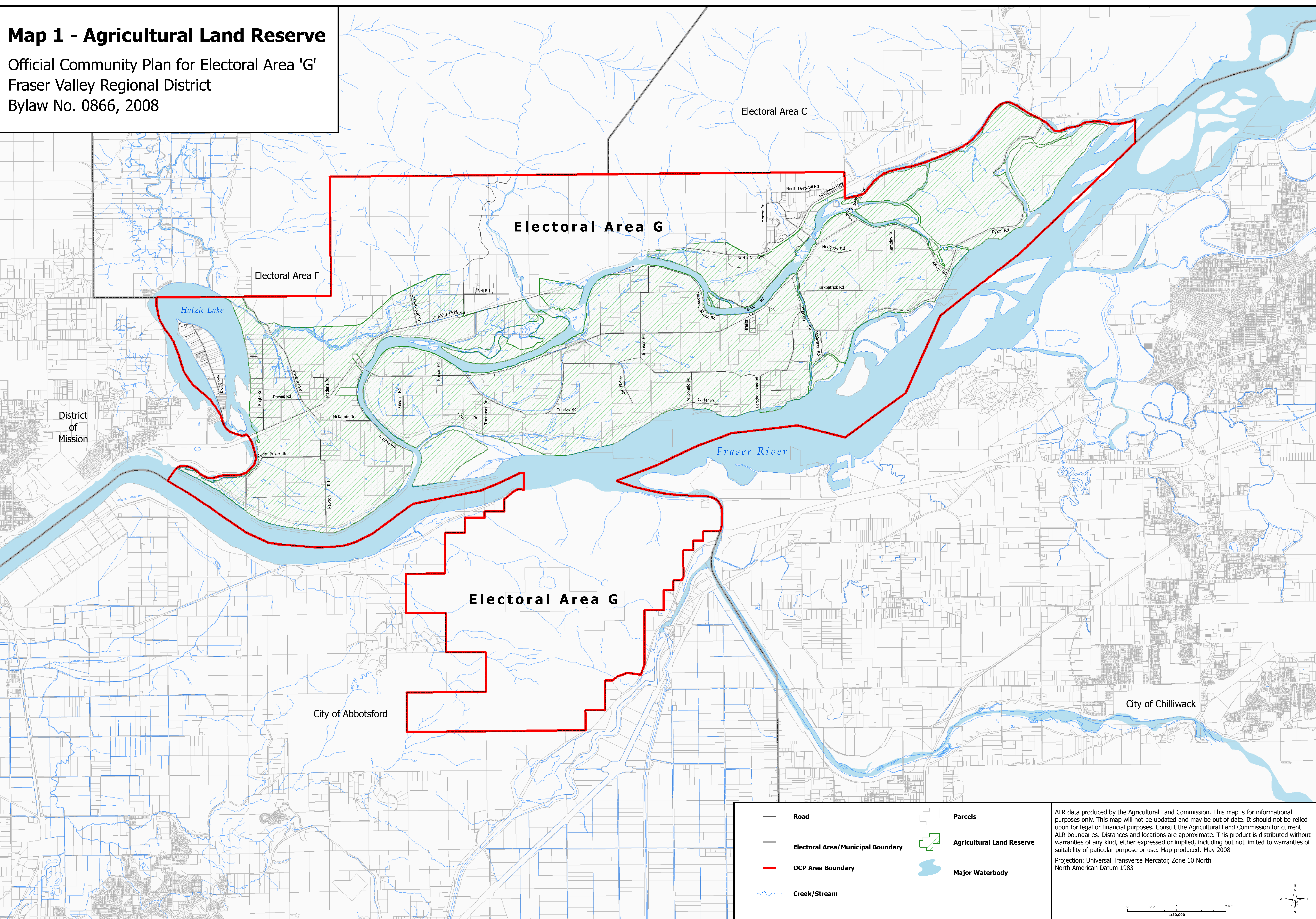
- Road
- Crown Parcels
- Electoral Area/Municipal Boundary
- OCP Boundary Area
- Creek/Stream
- Unverified Watercourse
- Channelized or Constructed Watercourse
- Parcels
- Development Permit Area 2-G
- Potential Wetland
- Major Waterbody



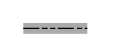




This map utilizes data from a variety of sources prepared at different scales. Stream information is compiled primarily from the FVRD Habitat Atlas and derived from interpretation of aerial photos at scales between 1:30,000 and 1:70,000 and orthophotography at 1:15,000 and 1:20,000. Wetland data is taken from Ward et al. Wetlands of the Fraser Lowland, 1989: An Inventory, Canadian Wildlife Service, 1992. Stream and wetland features shown are not ground-truthed. The ability to represent streams, wetlands and Riparian Assessment Areas is limited by the accuracy and completeness of existing stream mapping. Stream and wetland locations are approximate and potentially uncertain. They are provided for planning purposes only and should not be relied upon for legal or financial purposes. Site-specific investigation is required to determine the presence and location of streams, wetlands and Riparian Assessment Areas on individual properties.
Map produced: May 2008
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983



Map 1 - Agricultural Land Reserve

Official Community Plan for Electoral Area 'G'
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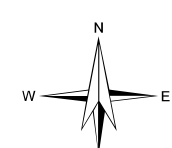


	Road		Parcels
	Electoral Area/Municipal Boundary		Agricultural Land Reserve
	OCF Area Boundary		Major Waterbody
	Creek/Stream		

ALR data produced by the Agricultural Land Commission. This map is for informational purposes only. This map will not be updated and may be out of date. It should not be relied upon for legal or financial purposes. Consult the Agricultural Land Commission for current ALR boundaries. Distances and locations are approximate. This product is distributed without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability of particular purpose or use. Map produced: May 2008

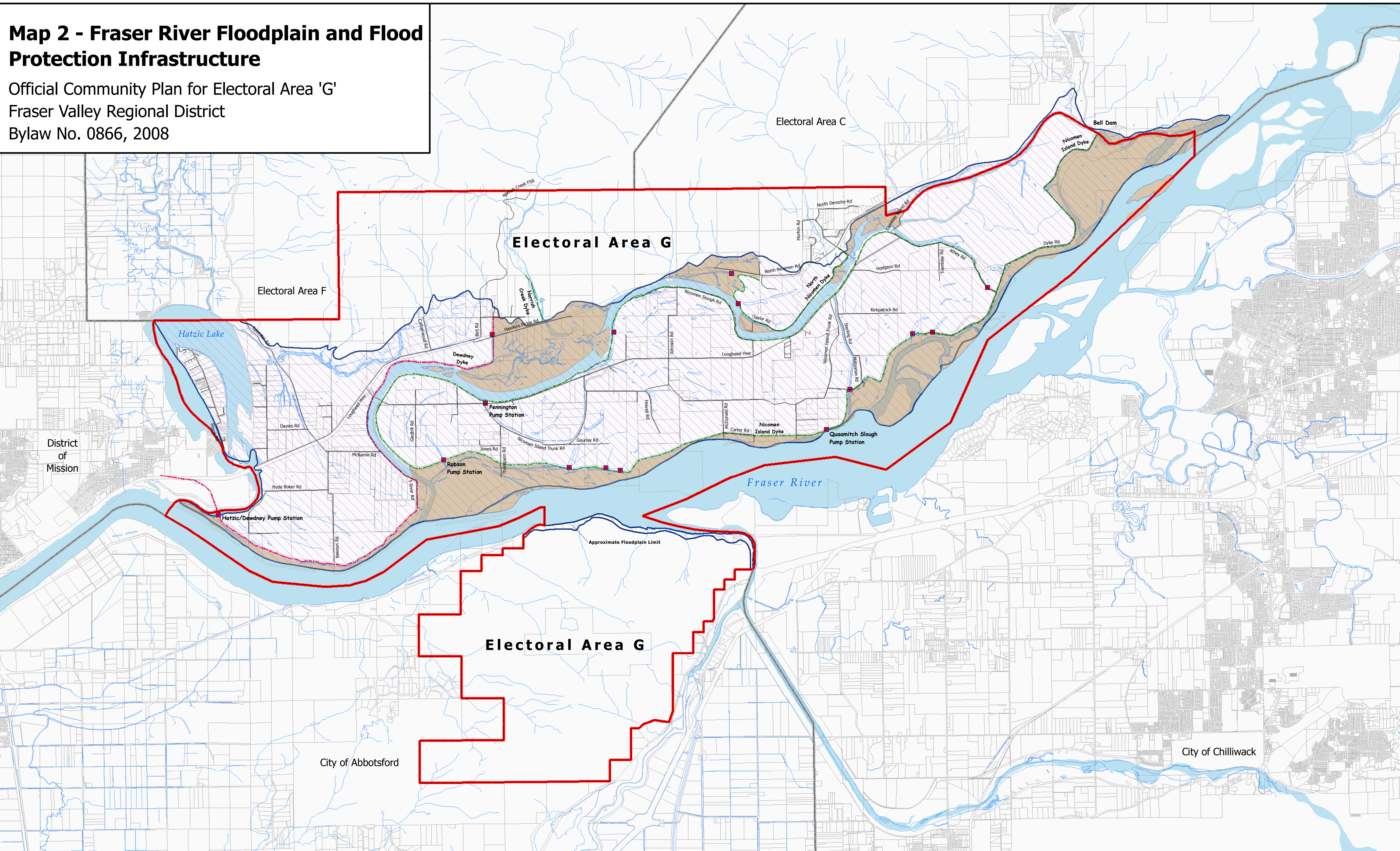
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983

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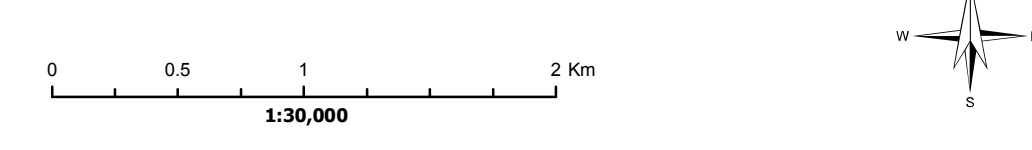
Map 2 - Fraser River Floodplain and Flood Protection Infrastructure

Official Community Plan for Electoral Area 'G'
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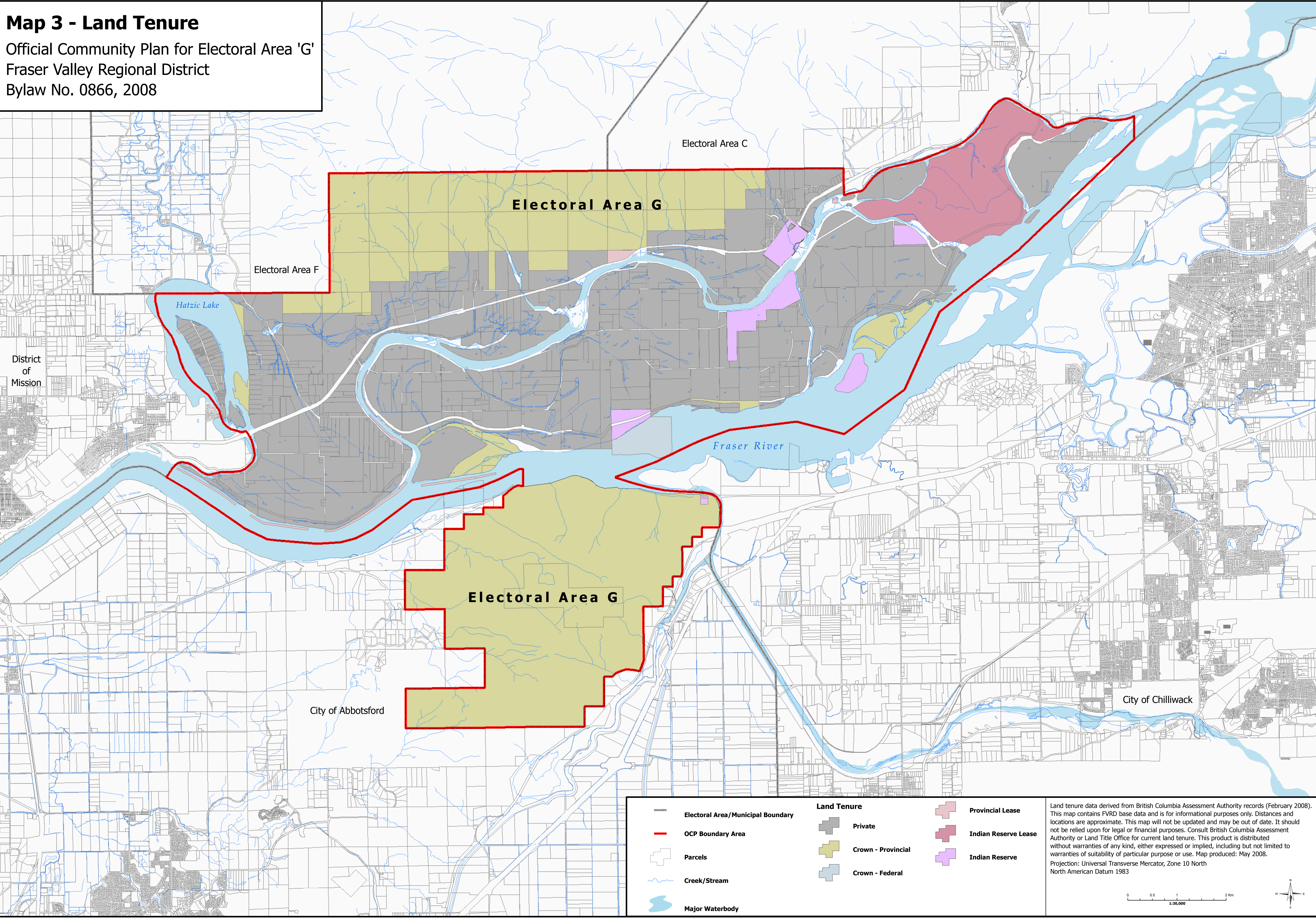
Road		Creek/Stream		Dyke Classification		Flood Control Feature	
	Road		Creek/Stream		Non-Standard		Floodbox and/or Pump Station
	Electoral Area/Municipal Boundary		Major Waterbody		Standard		
	OCP Boundary Area		Fraser River Floodplain		Undyked Lands		

Floodplain boundary, dyke locations and classifications, and flood control features are derived from Ministry of Environment data. Floodbox and pumpstation locations are subject to ongoing corrections and revisions. This map is for informational purposes only. It should not be relied upon for legal or financial purposes. This map will not be updated and may be out of date. Please consult FVRD Floodplain Management Bylaw No. 0681, 2005 and Ministry of Environment for current information. This product is distributed without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability of particular purpose or use. Map produced: May 2008
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983



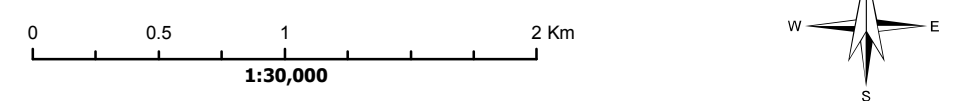
Map 3 - Land Tenure

Official Community Plan for Electoral Area 'G'
Fraser Valley Regional District
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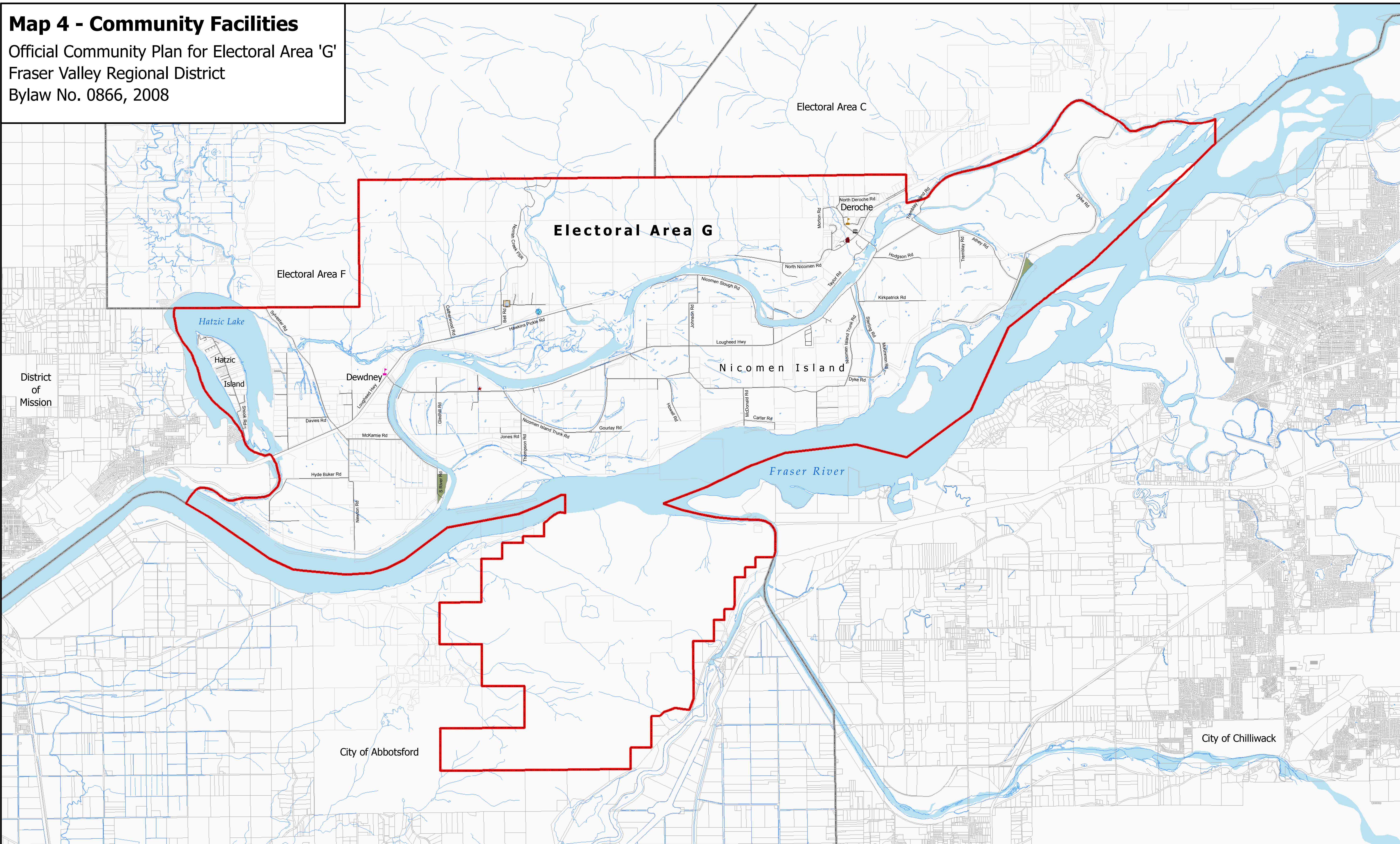
Electoral Area/Municipal Boundary		Land Tenure		Lease/Reserve	
	OCP Boundary Area		Private		Provincial Lease
	Parcels		Crown - Provincial		Indian Reserve Lease
	Creek/Stream		Crown - Federal		Indian Reserve
	Major Waterbody				

Land tenure data derived from British Columbia Assessment Authority records (February 2008). This map contains FVRD base data and is for informational purposes only. Distances and locations are approximate. This map will not be updated and may be out of date. It should not be relied upon for legal or financial purposes. Consult British Columbia Assessment Authority or Land Title Office for current land tenure. This product is distributed without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability of particular purpose or use. Map produced: May 2008. Projection: Universal Transverse Mercator, Zone 10 North North American Datum 1983



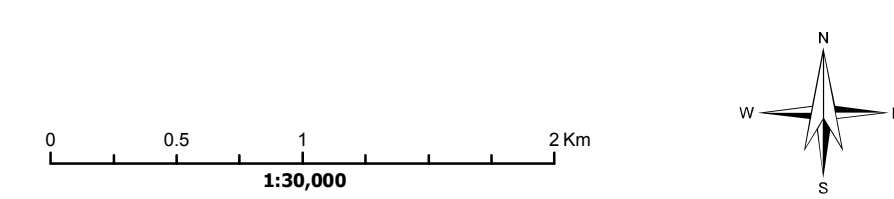
Map 4 - Community Facilities

Official Community Plan for Electoral Area 'G'
Fraser Valley Regional District
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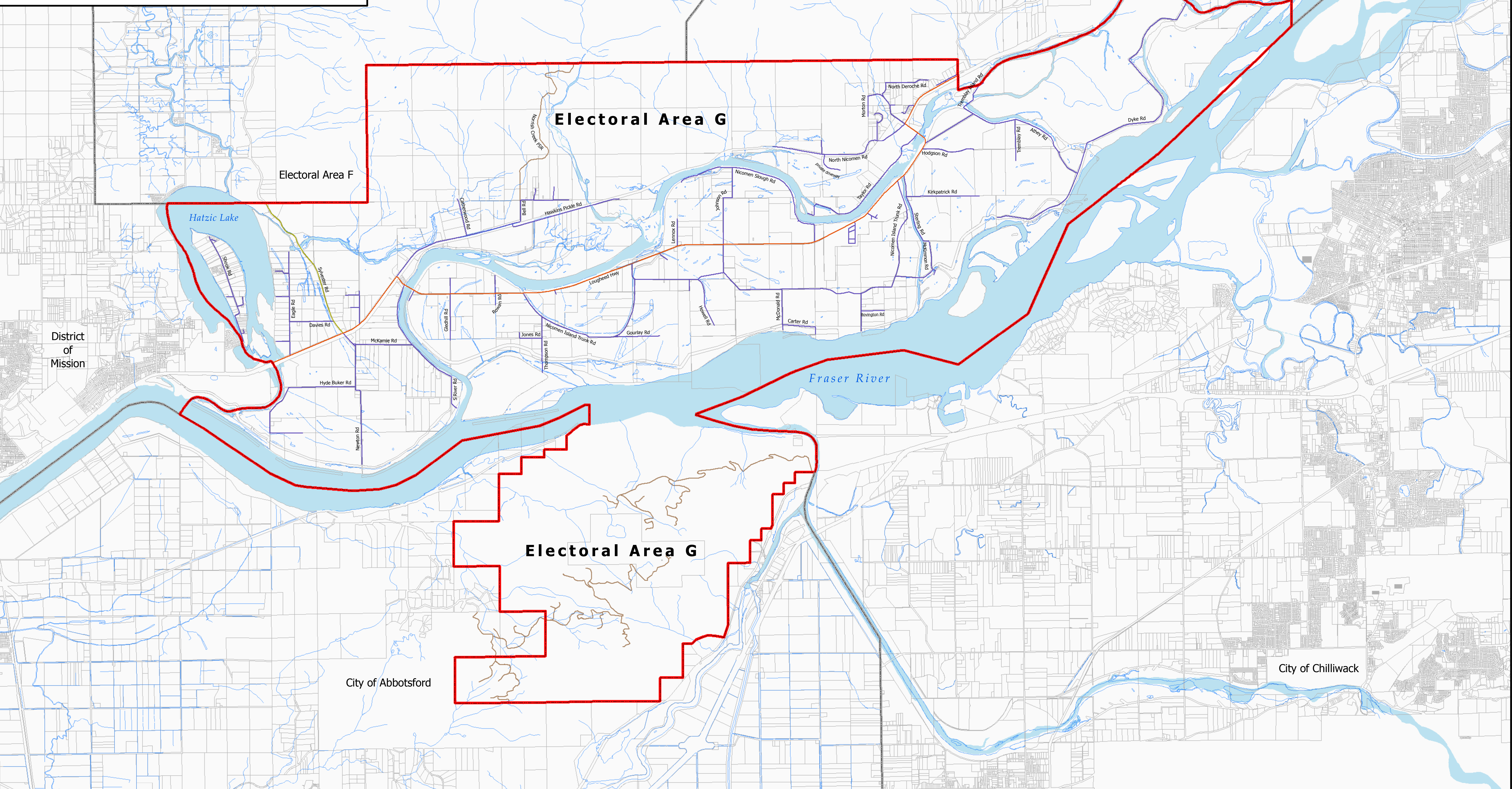
Road	Parcels	Community Facility	Fraser Valley Regional District Office
Electoral Area/Municipal Boundary	Regional Park	North Fraser Firehall #1	Deroche Community Hall
OCP Boundary Area	Major Waterbody	Deroche Elementary School (SD #75)	Abbotsford Mission Water & Sewer Commission
Creek/Stream		Dewdney Elementary School (SD# 75)	
		Inch Creek Hatchery (DFO)	

This map contains FVRD base data and is for informational purposes only. Distances and locations are approximate. This product is distributed without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability of particular purpose or use. Map produced: May 2008
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983



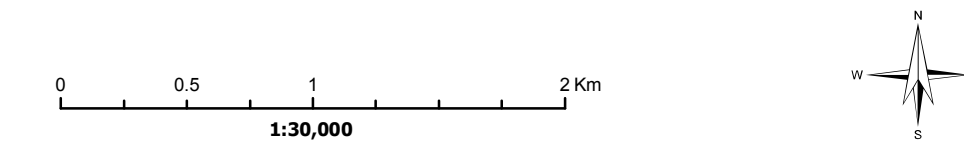
Map 5 - Transportation Network

Official Community Plan for Electoral Area 'G'
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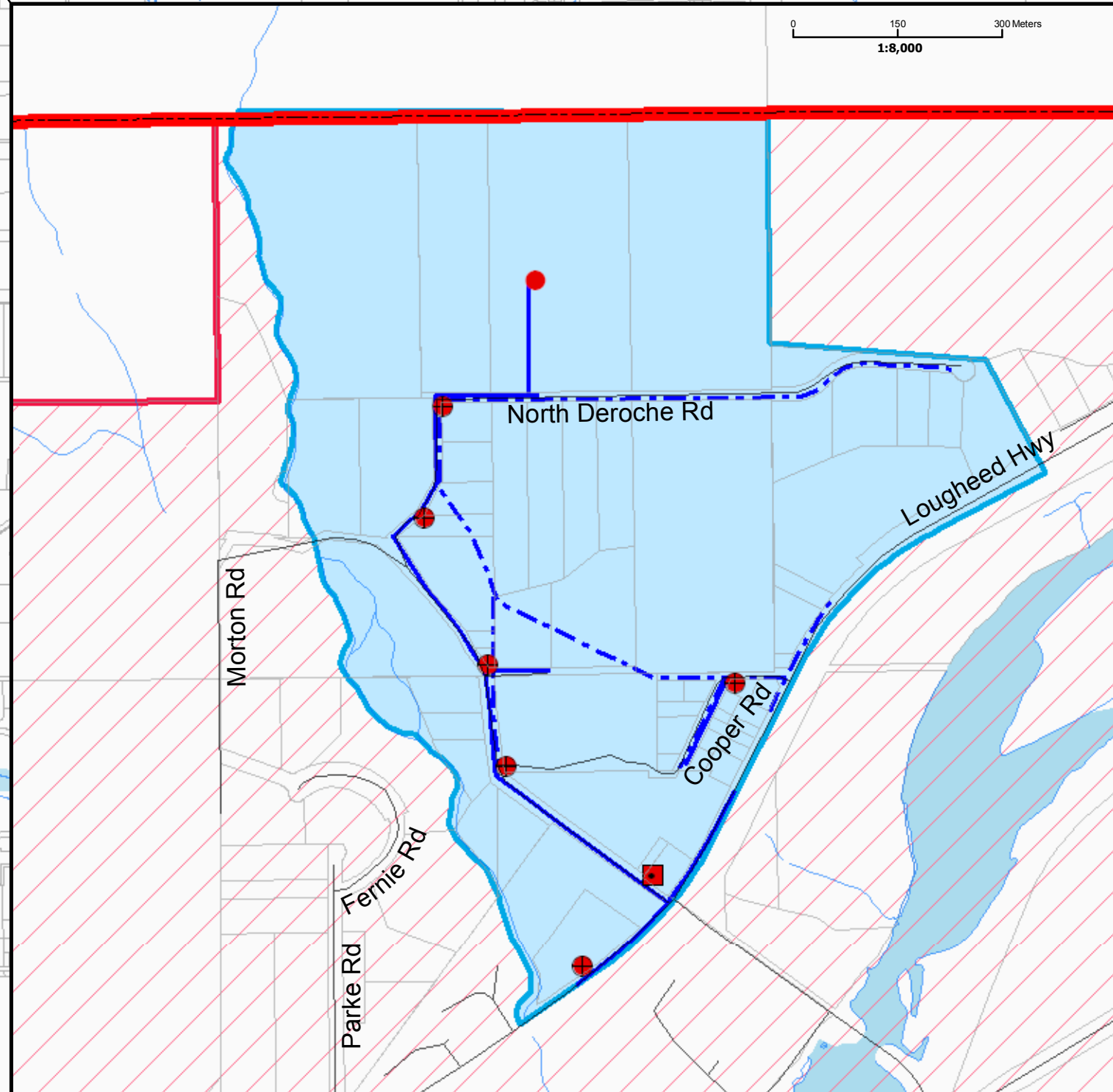
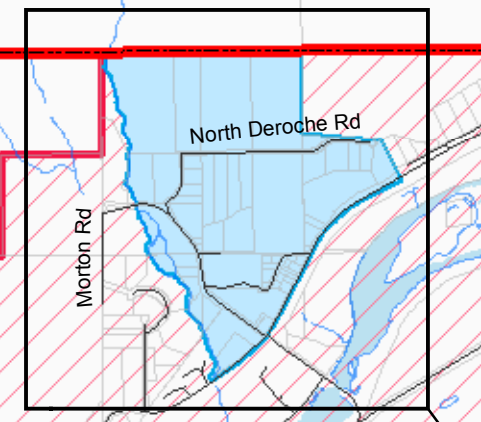
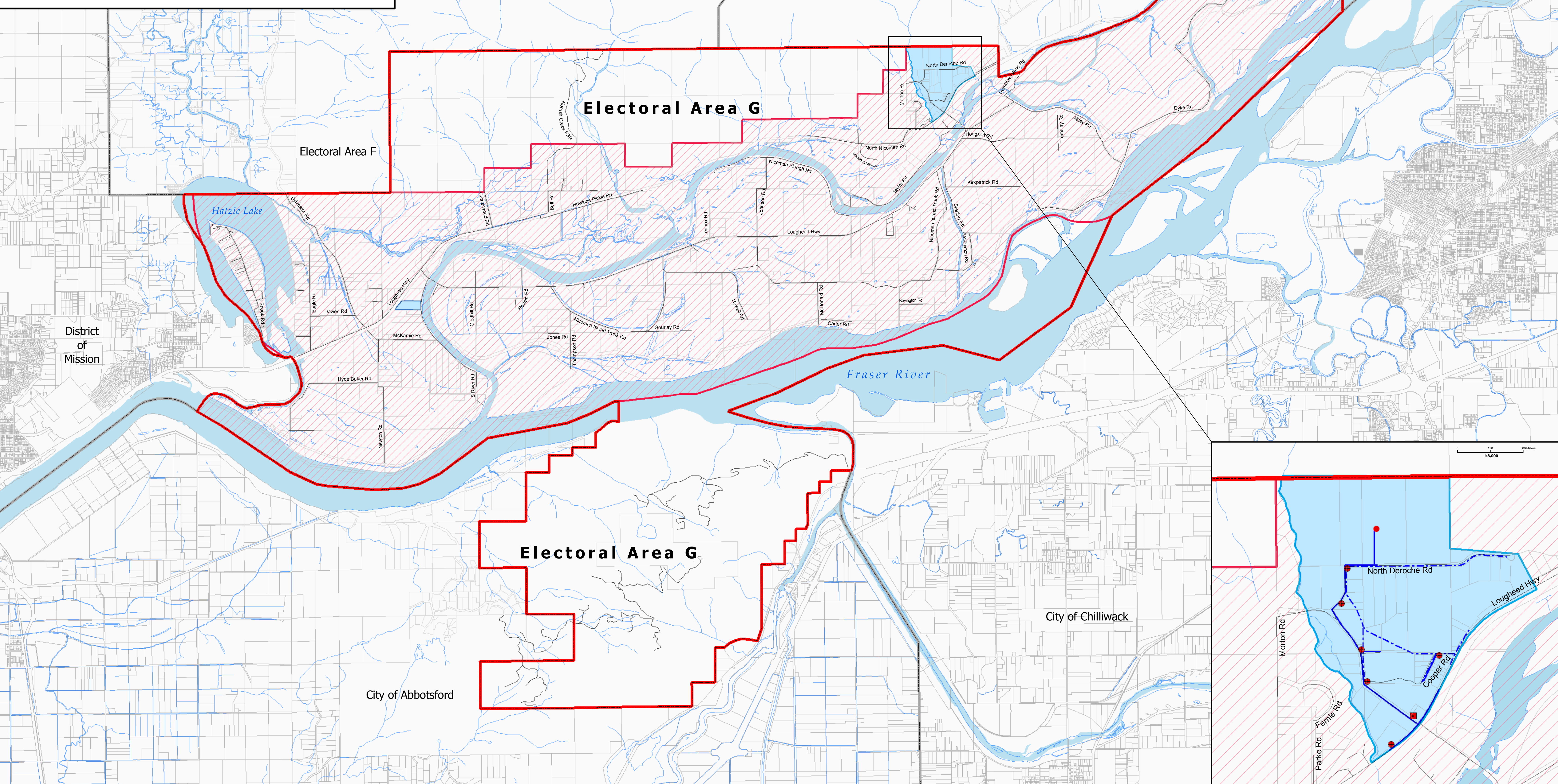
Electoral Area/Municipal Boundary		Creek/Stream		Road Classification	
	OCP Boundary Area		Major Waterbody		Highway
	Parcels				Collector
					Arterial
					Local
					Forest Service Road

Road classification data courtesy of GIS Innovations (2007). This map contains FVRD base data and is for informational purposes only. This map will not be updated and may be out of date. Consult the Ministry of Transportation for current road classifications. Distances and locations are approximate. This product is distributed without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability of particular purpose or use.
Map produced: May 2008
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983



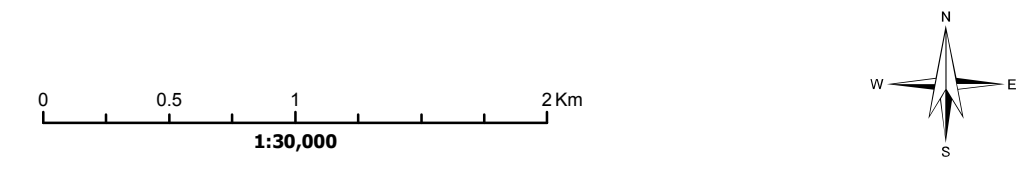
Map 6 - Local Service Areas

Official Community Plan for Electoral Area 'G'
Fraser Valley Regional District
Bylaw No. 0866, 2008



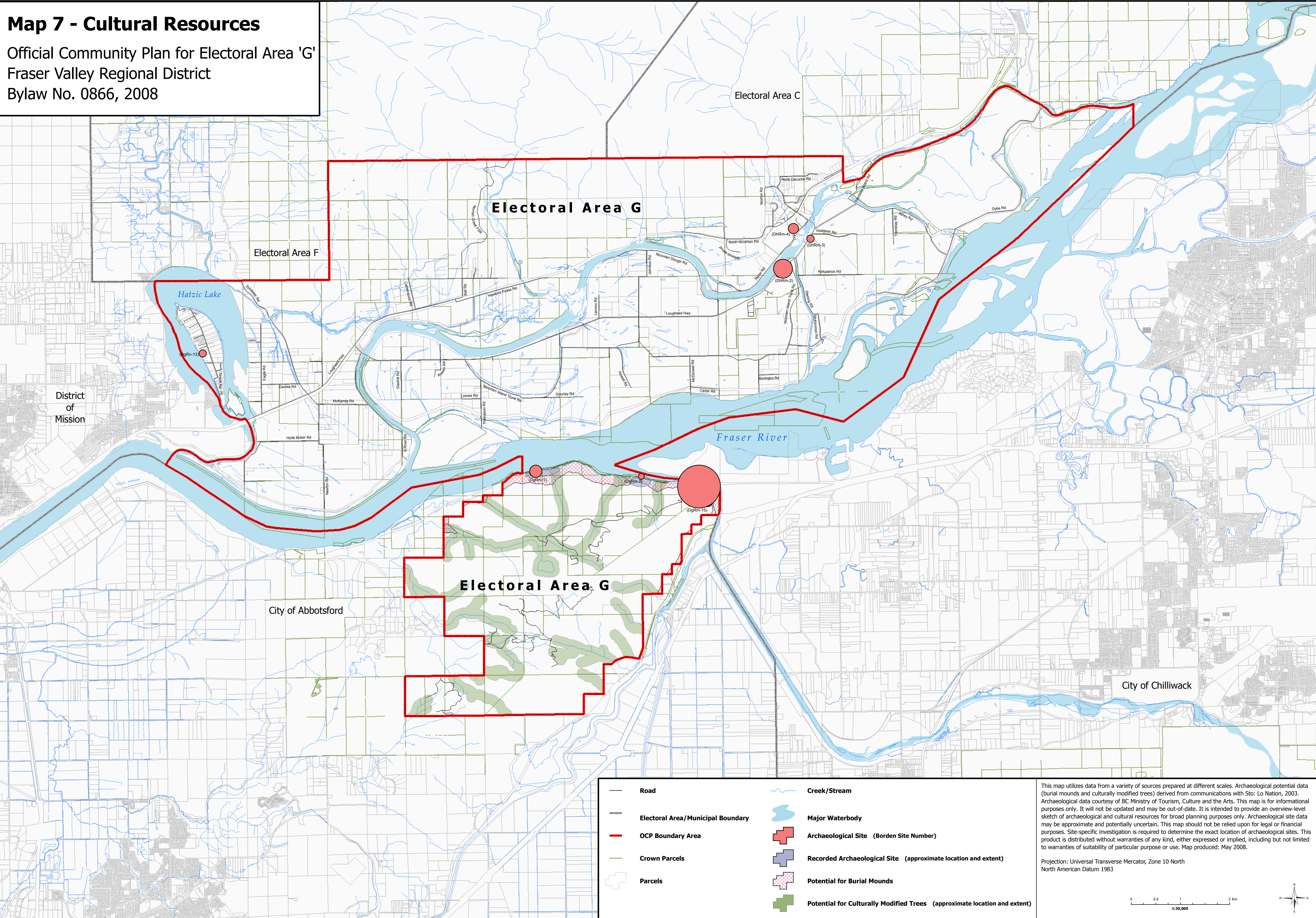
Road	Service Infrastructure	Watermain Status	Deroche Water Service Area
Electoral Area/Municipal Boundary	Hydrant	Existing Watermain	Dewdney Water Service Area
OCP Boundary Area	Reservoir	Old Watermain	Fire Service Area
Parcels	Well Source		
Creek/Stream			
Major Waterbody			

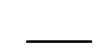










Utility data courtesy of FVRD Engineering Department (2007). This map is for informational purposes only, is not updated and may be out of date. It should not be relied upon for legal or financial purposes. Contact FVRD Engineering Department for current service area boundaries and utility information. Distances and locations are approximate. This product is distributed without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability of particular purpose or use.
Map produced: May 2008
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983



Map 7 - Cultural Resources

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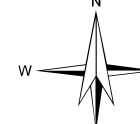


-  Road
-  Electoral Area/Municipal Boundary
-  OCP Boundary Area
-  Crown Parcels
-  Parcels
-  Creek/Stream
-  Major Waterbody
-  Archaeological Site (Borden Site Number)
-  Recorded Archaeological Site (approximate location and extent)
-  Potential for Burial Mounds
-  Potential for Culturally Modified Trees (approximate location and extent)

This map utilizes data from a variety of sources prepared at different scales. Archaeological potential data (burial mounds and culturally modified trees) derived from communications with Sto: Lo Nation, 2003. Archaeological data courtesy of BC Ministry of Tourism, Culture and the Arts. This map is for informational purposes only. It will not be updated and may be out-of-date. It is intended to provide an overview-level sketch of archaeological and cultural resources for broad planning purposes only. Archaeological site data may be approximate and potentially uncertain. This map should not be relied upon for legal or financial purposes. Site-specific investigation is required to determine the exact location of archaeological sites. This product is distributed without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability of particular purpose or use. Map produced: May 2008.

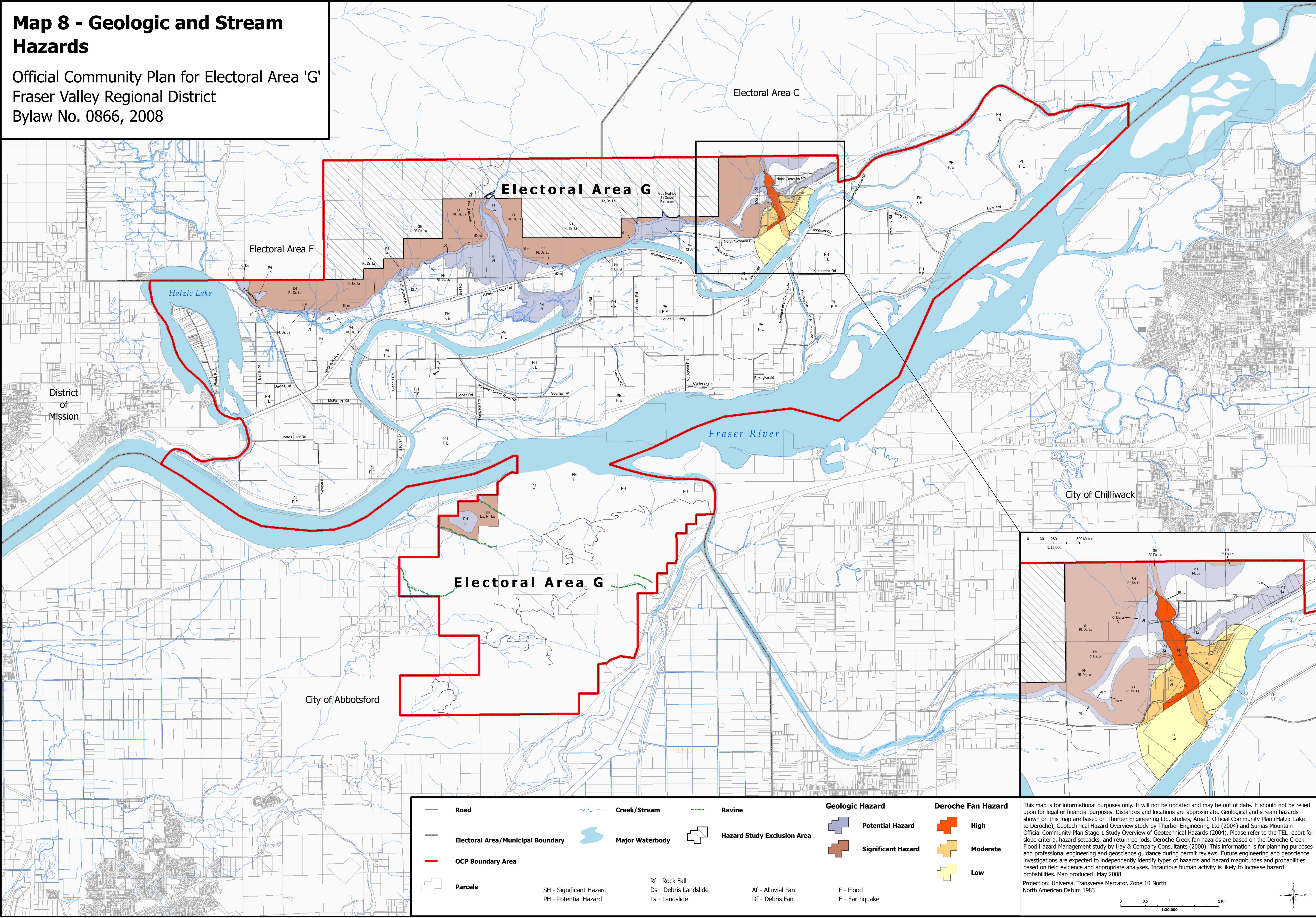
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983

0 0.5 1 2 Km
1:30,000

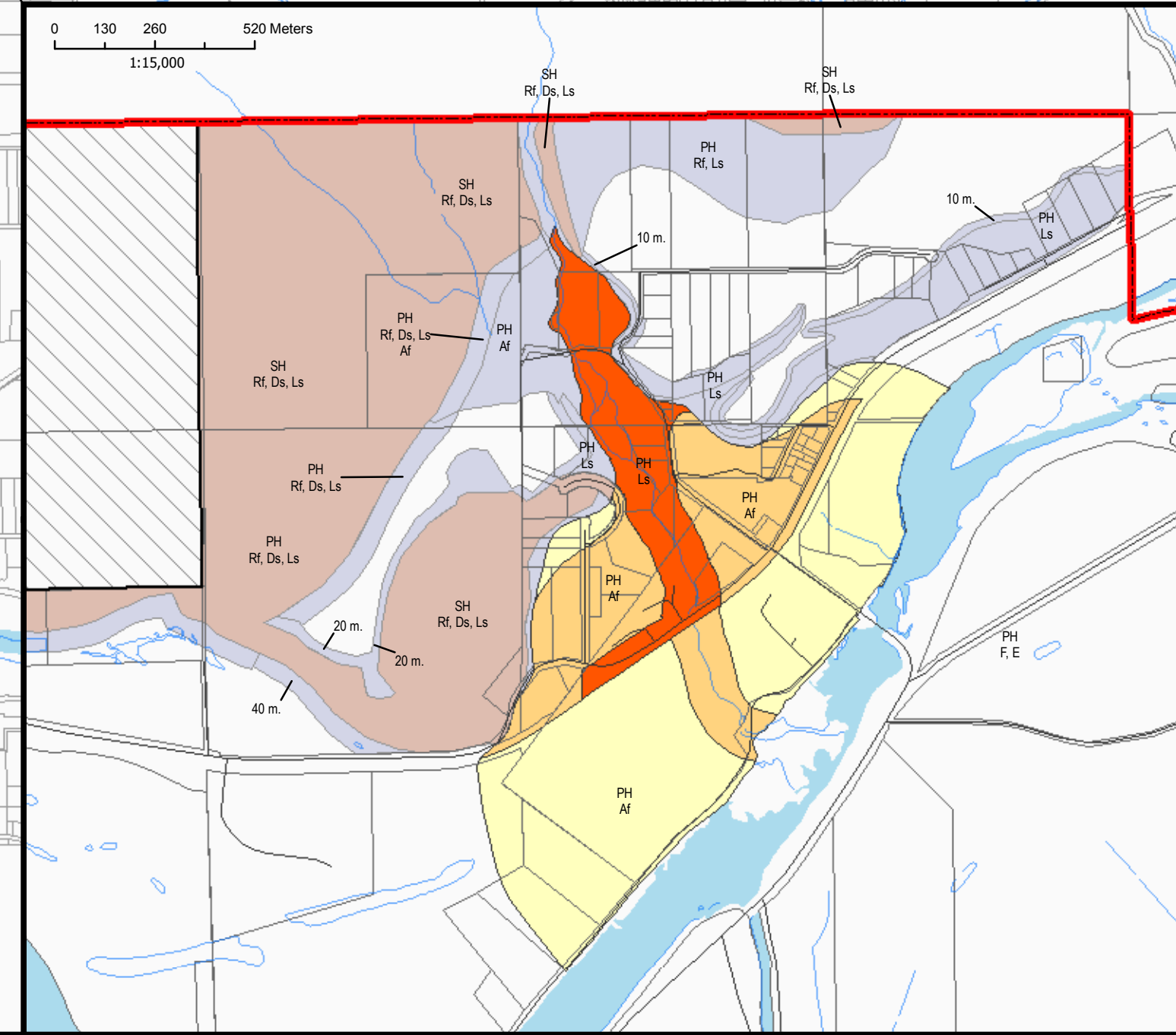


Map 8 - Geologic and Stream Hazards

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	Road		Creek/Stream		Ravine		Potential Hazard		High
	Electoral Area/Municipal Boundary		Major Waterbody		Hazard Study Exclusion Area		Significant Hazard		Moderate
	OCP Boundary Area								Low
	Parcels	SH - Significant Hazard	PH - Potential Hazard	Rf - Rock Fall Ds - Debris Landslide Ls - Landslide	Af - Alluvial Fan Df - Debris Fan	F - Flood E - Earthquake			

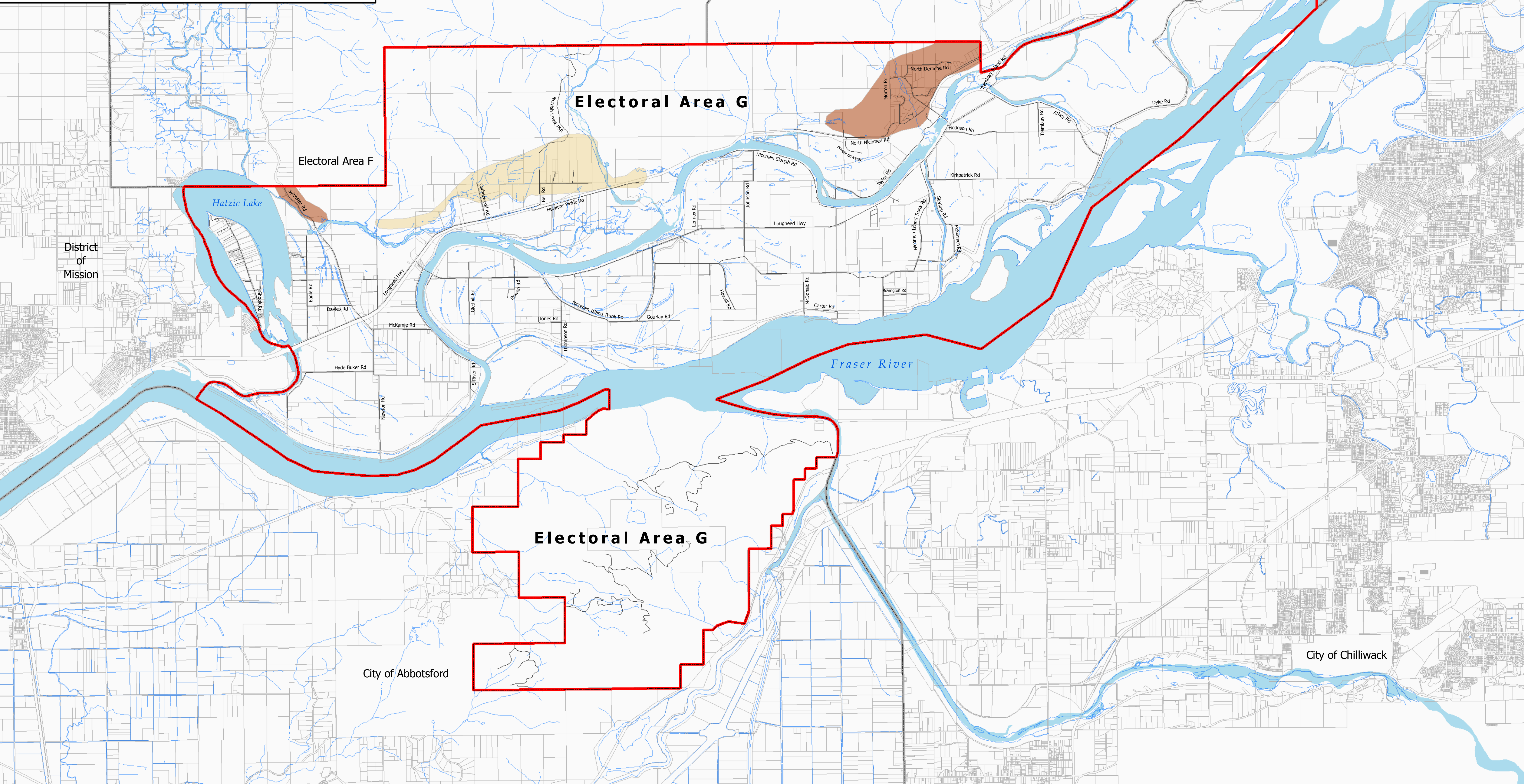


This map is for informational purposes only. It will not be updated and may be out of date. It should not be relied upon for legal or financial purposes. Distances and locations are approximate. Geological and stream hazards shown on this map are based on Thurber Engineering Ltd. studies, Area G Official Community Plan (Hatzic Lake to Deroche), Geotechnical Hazard Overview study by Thurber Engineering Ltd (2004) and Sumas Mountain Official Community Plan Stage 1 Study Overview of Geotechnical Hazards (2004). Please refer to the TEL report for slope criteria, hazard setbacks, and return periods. Deroche Creek fan hazards are based on the Deroche Creek Flood Hazard Management study by Hay & Company Consultants (2000). This information is for planning purposes and professional engineering and geoscience guidance during permit reviews. Future engineering and geoscience investigations are expected to independently identify types of hazards and hazard magnitudes and probabilities based on field evidence and appropriate analyses. Incautious human activity is likely to increase hazard probabilities. Map produced: May 2008

Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983

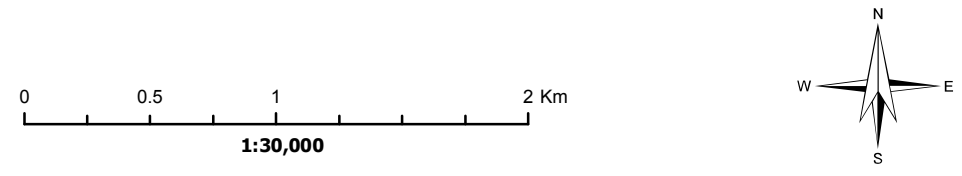
Map 9 - Interface Fire Hazards

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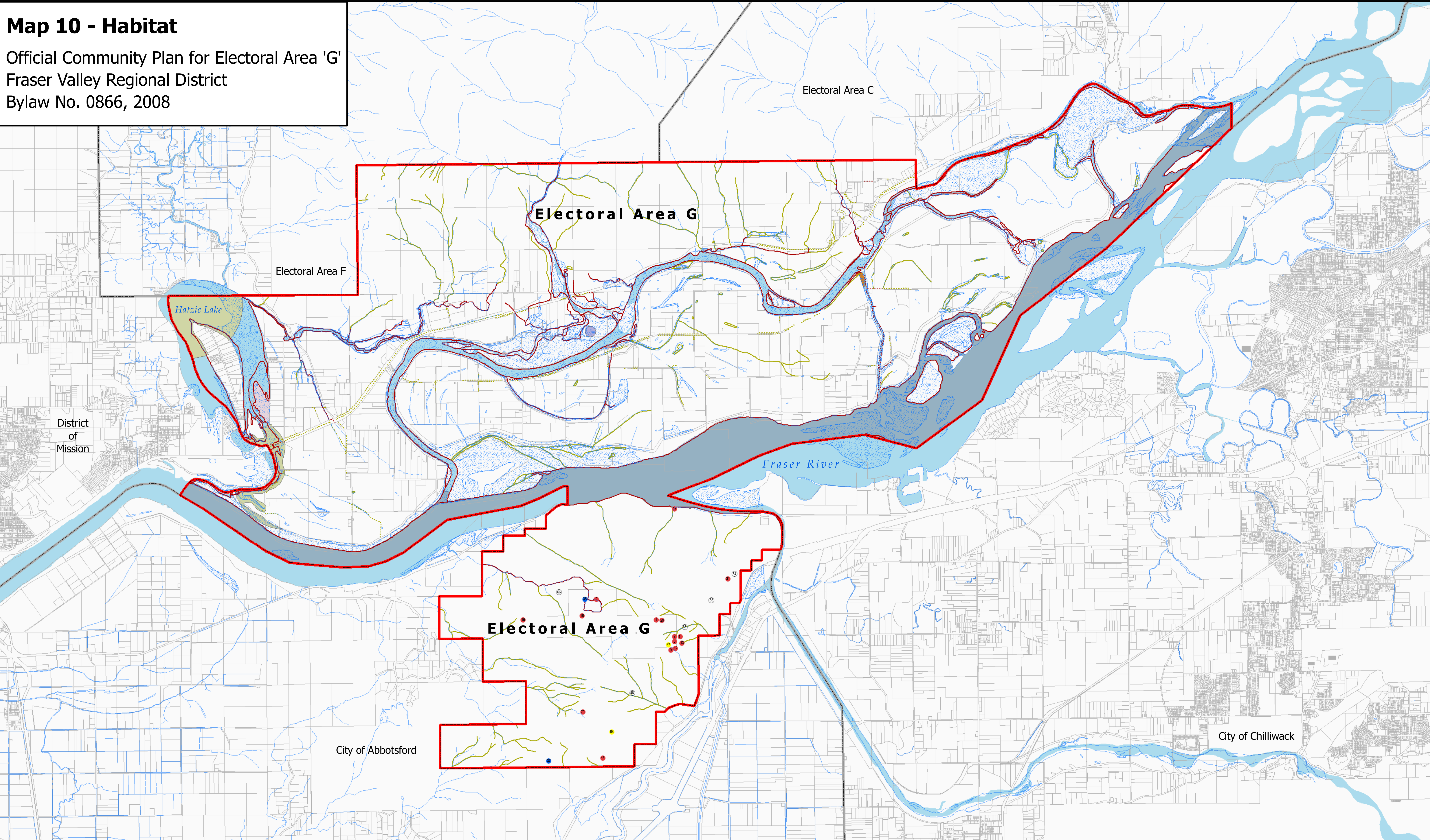
	Road		Parcels	Interface Fire Hazard
	Electoral Area/Municipal Boundary		Creek/Stream	
	OCP Boundary Area		Major Waterbody	
			High	
			Moderate	
			Low	

Interface Fire Hazard data is taken from the Office of the Fire Commissioner Interface Fire Hazard maps. This map is for informational purposes only. It will not be updated and may be out-of-date. The Office of the Fire Commissioner should be contacted for current information. This map should not be used for legal or financial purposes. Distances and locations are approximate. This product is distributed without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability of particular purpose or use. Map produced: May 2008
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983



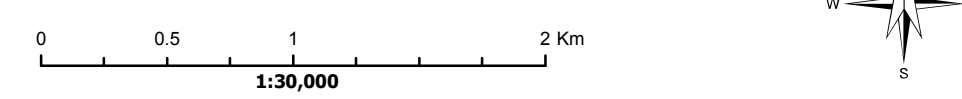
Map 10 - Habitat

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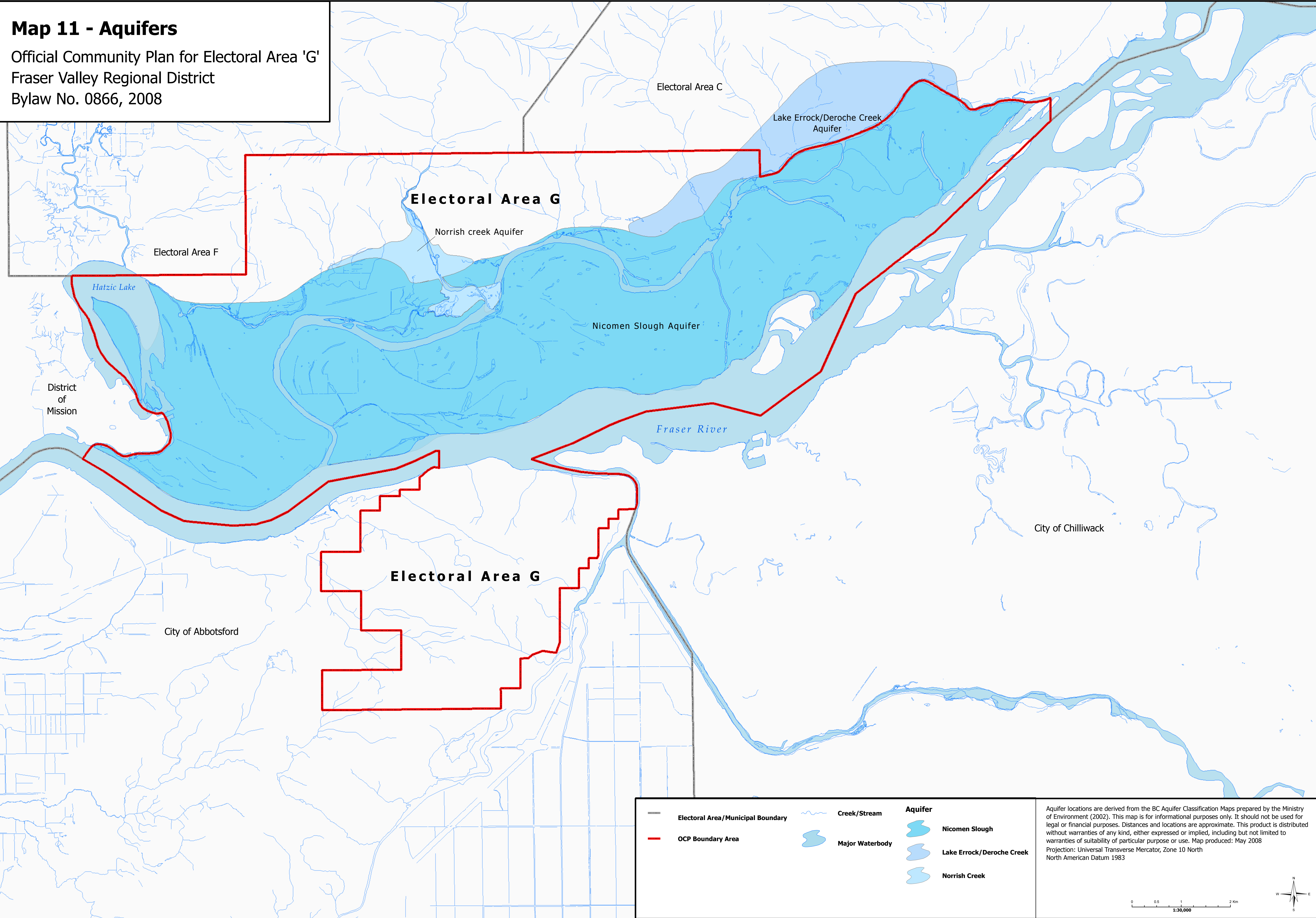
Electoral Area/Municipal Boundary	Natural Watercourse	Constructed Ditch Watercourse	Species Occurrence	Soft-leaved Willow	Species Observation
OCP Boundary Area	Fish Bearing	Fish Bearing	Bald Eagle	Ussurian Water-milfoil	Red Listed
Parcels	Unknown	Unknown	Great Blue Heron	White Sturgeon	Blue Listed
Creek/Stream		Channelized Stream Watercourse	Oregon Forestsnail		Yellow Listed
Major Waterbody		Fish Bearing			Not Listed
Potential Wetland		Unknown			

This map utilizes data from a variety of sources prepared at different scales. Species occurrence data is from the BC Conservation Data Centre (March, 2008). Wildlife and plant observation on Sumas Mountain were compiled by Mr. Glenn Ryder of the Central Valley Naturalists between 1950 and 2003. Fish presence and stream information is from the FVRD Habitat Atlas which utilized interpretation of aerial photos at scales between 1:30,000 and 1:70,000 and orthophotography at 1:15,000 and 1:20,000. This map is for informational purposes only. It will not be updated and may be out-of-date. It is intended to provide an overview-level sketch of habitat resources and species presence for broad planning purposes only. The ability to represent streams and fish presence is limited by the accuracy and completeness of stream mapping. Stream locations and categories, as well as fish presence data, are approximate and potentially uncertain. They are provided for planning purposes only and should not be relied upon for legal or financial purposes. Site-specific investigation is required to determine the presence and location of streams, fish and other species individual properties. This product is distributed without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability of particular purpose or use. Map produced: May 2008. **see section 12.2 for identification of Sumas Mountain wildlife and plant occurrences. Projection: Universal Transverse Mercator, Zone 10 North North American Datum 1983



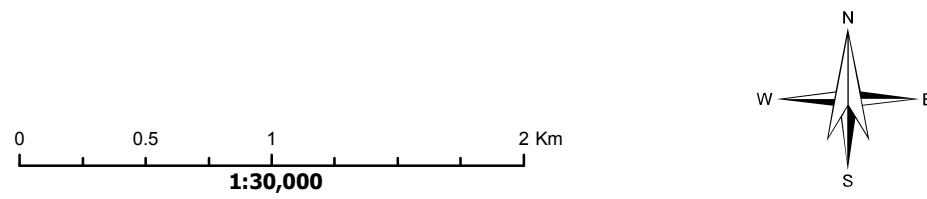
Map 11 - Aquifers

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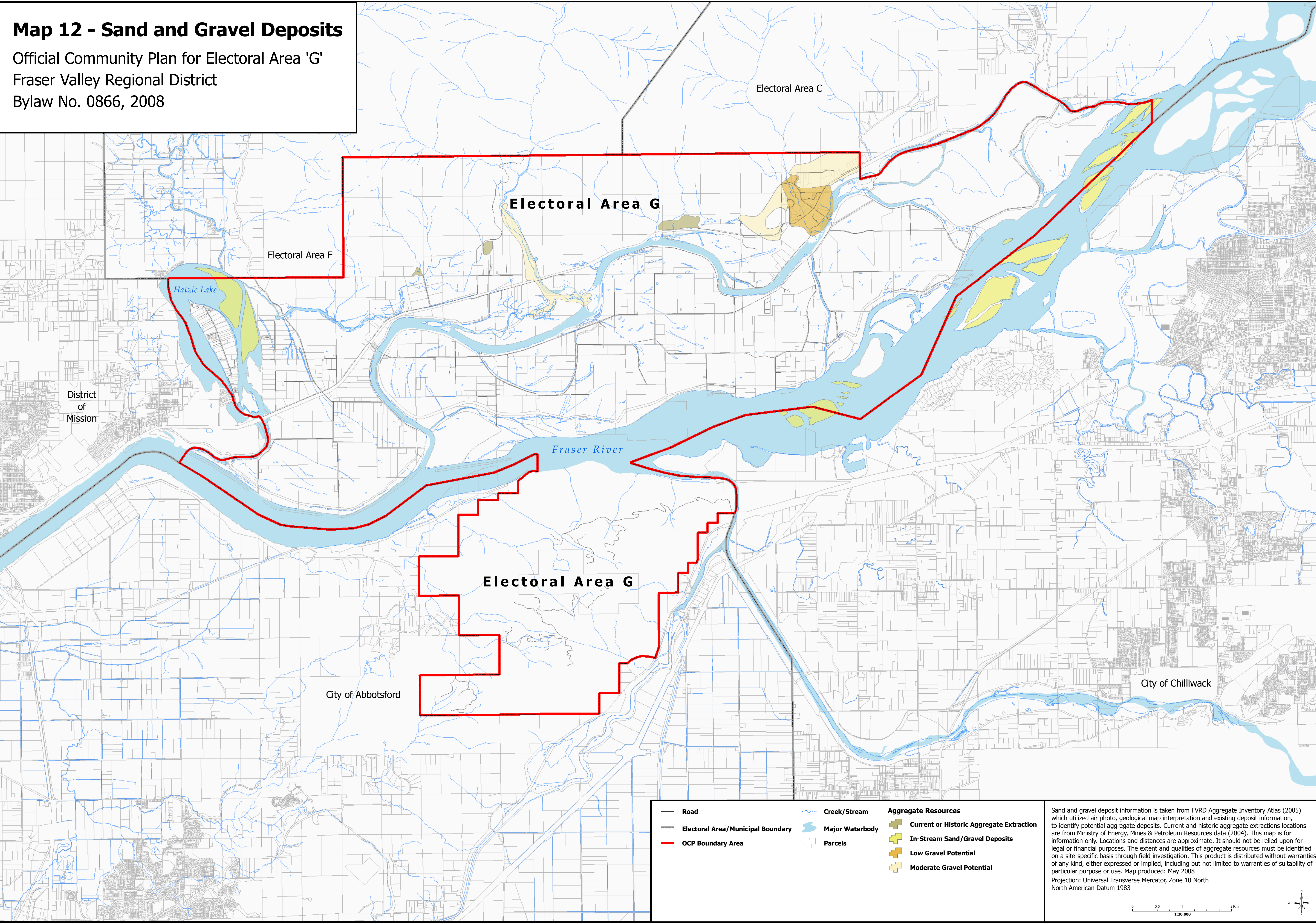
Electoral Area/Municipal Boundary	Creek/Stream	Aquifer
OCP Boundary Area	Major Waterbody	Nicomen Slough
		Lake Errock/Deroche Creek
		Norrish Creek

Aquifer locations are derived from the BC Aquifer Classification Maps prepared by the Ministry of Environment (2002). This map is for informational purposes only. It should not be used for legal or financial purposes. Distances and locations are approximate. This product is distributed without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability of particular purpose or use. Map produced: May 2008
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983



Map 12 - Sand and Gravel Deposits

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Sand and gravel deposit information is taken from FVRD Aggregate Inventory Atlas (2005) which utilized air photo, geological map interpretation and existing deposit information, to identify potential aggregate deposits. Current and historic aggregate extractions locations are from Ministry of Energy, Mines & Petroleum Resources data (2004). This map is for information only. Locations and distances are approximate. It should not be relied upon for legal or financial purposes. The extent and qualities of aggregate resources must be identified on a site-specific basis through field investigation. This product is distributed without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability of particular purpose or use. Map produced: May 2008
Projection: Universal Transverse Mercator, Zone 10 North
North American Datum 1983

