

Fraser Valley Regional District Aggregate Pilot Project

Recommendations Report

March 31, 2009

EXECUTIVE SUMMARY

The FVRD Aggregate Pilot Project (APP) was initiated by the Minister of State for Mines in response to persistent and intense conflicts surrounding aggregate operations in the Fraser Valley Regional District. Its purpose is to develop recommendations, supported by local government and industry, for new approaches that reduce conflicts and secure a long-term stable aggregate supply.

The project was guided by a committee - chaired by Randy Hawes, MLA for Maple Ridge-Mission - comprised of the Aggregate Producers Association of British Columbia, local governments, and the Ministry of Energy, Mines & Petroleum Resources. It met more than 20 times between 2004 and 2009 to develop the recommendations contained in this report and the conceptual mapping that accompanies it.

The APP Committee recommendations - which are proposed as a package to be taken together - are briefly summarized as follows:

- **Land Designations for Aggregate Production**
Region-wide land designations for aggregate uses, including ‘aggregate reserves’ (Green Areas), should be established to provide clarity to industry and communities and to ensure a consistent and coordinated approach to the approval of new aggregate operations.
- **Processing and Manufacturing**
In most cases, aggregates should be processed at the location of extraction. Local governments should provide for a broader range of aggregate-based manufacturing activities within “Green Areas” provided that specified emissions standards are met.
- **Production-based Fees**
Production-based fees should be consistently applied across the Region, including the Electoral Areas, through Soil Removal and Deposit Bylaws. The amount of the fee should be determined through discussion between local government and representatives of the aggregate industry.
- **Security & Bonding**
MEMPR, local governments and industry should coordinate respecting the cumulative level of performance securities/ bonds required and their administration.
- **Harmonization of Soil Removal & Deposit Bylaws**
Local governments should identify opportunities to harmonize soil removal/deposit bylaws across the Region.
- **Long-range Planning for Aggregates**
Local governments, the provincial government and industry should share in the responsibility for planning for aggregate resources. A portion of production-based fees should be dedicated to this purpose.

This report details these recommendations and documents the understandings that have informed them.

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1.0 FVRD AGGREGATE PILOT PROJECT

The FVRD Aggregate Pilot Project (APP) was initiated by the Minister of State for Mines in 2004 in response to persistent and intense conflicts surrounding aggregate operations in the Fraser Valley Regional District.

The purpose of the project is to develop a set of recommendations to industry, local governments and the provincial government for new approaches that significantly reduce conflicts and secure a long term, economic, stable supply.

More specifically, it aims to:

- improve understanding of aggregate supply and demand;
- foster better communication between MEMPR, FVRD and industry;
- implement a 'RED-YELLOW-GREEN' approach to permitting aggregate operations, including identifying lands suitable for aggregate uses and lands not suitable for aggregate uses;
- ensure a sustainable supply of aggregate for the long term;
- develop a new approach for decision-making respecting aggregate management; and,
- provide a model that could be used in other jurisdictions in the Province.

The project is sponsored by the Minister of State for Mining, the Honourable Gordon Hogg, and is chaired by the Honourable Randy Hawes, MLA for Maple Ridge-Mission. It is guided by a committee comprised of representatives from:

- Aggregate Producers Association of British Columbia
- City of Abbotsford
- City of Chilliwack
- District of Hope
- District of Kent
- District of Mission
- Ministry of Energy, Mines & Petroleum Resources; and,
- Fraser Valley Regional District.

2.0 PROJECT CONTEXT

Aggregates are critical for the infrastructure and economy of our Region, not only for supporting new development but also for maintaining the existing infrastructure on which we depend. In fact, about two thirds of the current demand for aggregates is used for maintaining existing infrastructure. The remaining third is used in new development.¹

¹ Coriolis Consulting. *Development of a Model for Forecasting the Consumption of Aggregates in the Lower Mainland*. October, 1996. [<http://www.em.gov.bc.ca/mining/MiningStats/55lowmainaggstudy.htm>]

Construction of a new detached house uses about 208 tonnes of aggregates in various forms.² In August, 2006, this amounted to about 2% of the purchase price of a new house in the Fraser Valley Regional District.³

The key factor in the cost of aggregate to the end user is distance from the source. Transportation can easily account for 50% or more of the total cost to the user. It is vital, then, that sources of supply are maintained close to centres of demand.

Since governments purchase about two-thirds of the aggregate used within the Region – about 2.33 million tonnes annually - the issue is clearly one of broad public interest.

Aggregate operations also provide important local jobs.

2.1 Supply/Demand

Demand for aggregates in the Fraser Valley Regional District is increasing. Based on a consumption estimate of 15 tonnes per person per year⁴, current demand in the FVRD is approximately 3.5 million tonnes annually. With the expected population increase over the next 20-25 years, demand for aggregates within the Region will increase to nearly 6.5 million tonnes per year.

An understanding of the volume of aggregates produced within the Region is hampered by inadequate data. In 1997, annual production of aggregates within the FVRD was estimated at 8,000,000 tonnes.⁵ If this level of production has been maintained, then current production of aggregates may be estimated to be almost 2.3 times greater than the amount used within the Region. The majority of material produced within the FVRD is ‘exported’ to Metro Vancouver and other jurisdictions. Ultimately, the distinction between internal consumption and exports out of FVRD is arbitrary. Market areas for aggregates do not follow political boundaries. Still, it is important for discussions about: 1) sustainable long-term supply of aggregates for the Region; and, 2) the distribution of impacts and benefits.

² American Geological Institute. *Aggregate and the Environment*. 2004. [\[http://www.agiweb.org/news/AggFinal.pdf\]](http://www.agiweb.org/news/AggFinal.pdf) This figure is based on a house with a footprint of 185m². AGI's estimate is consistent with that used locally by Coriolis Consulting in *Development of a Model for Forecasting the Consumption of Aggregates in the Lower Mainland* (October, 1996).

³ This assumes: 1) an average cost of \$20/m³ for all aggregates used; 2) a source of gravel within 15 minutes of the house site; and, 3) a new house price of \$400,000. These assumptions generally reflect market conditions in August 2006.

⁴ This figure was supplied by the Aggregate Producers Association of BC. Different estimates are used in other jurisdictions: 7.8 tonnes/person/year in the Capital Regional District; American sources estimate 7 tonnes/person/year; 12 tonnes/person/year is cited as a national average in Canada. Local conditions and development patterns will influence actual demand. For more information, see Langer, W. 1995. *Geological Aspects of Natural Aggregate Resources and their Development in Canada and the United States*, Proceedings of Aggregate Forum, March 30-31, 1995, Information Circular 1996-6, Ministry of Energy, Mines and Petroleum Resources, Victoria, BC. 1996. Terence Coulter. *Changes in Aggregate Production and Use in Victoria, BC*. 2003.

⁵ Levelton Engineering LTD. *Sumas Mountain Aggregate Resource Mining and Reclamation Plan*. August 8, 1997.

2.2 Material Sources

Many of the sand and gravel deposits currently under permit in the Fraser Valley are projected to be exhausted within about 10 years.⁶ With increasing demand and existing permitted sites nearing depletion, new pits and quarries and/or expansions to existing operations will be required to meet demand. An increasing portion of the supply is expected to come from quarries producing crushed rock.

As a part of the FVRD Aggregate Pilot Project, known sand/gravel deposits, and some bedrock sources, in a specified area of the Regional District were inventoried and mapped. The *Fraser Valley Regional District Aggregate Inventory Atlas*⁷ builds substantially on existing information to identify and rate potential deposits, identify potential operational adversities, and estimate material quantities.

The *Atlas* identifies about 1,500 million m³ of granular aggregate supply in 87 “high” rated deposits in locations within the Region not currently ‘sterilized’ by urban development. On top of this, there is vast potential for hard rock quarry areas to produce crushed aggregates. While these volumes are generally unproven, the *Atlas* suggests that there are sufficient sources of aggregate material to meet long term demand (i.e. well over 100 years).

However, the current perspective is that there are significant constraints to developing new aggregate operations: characteristics of the resource, location, distance from market, access, land use conflicts, and regulations. As a result, most deposits or sites will not be considered feasible within the short term. Nevertheless, it is acknowledged that some jurisdictions accept a longer distance to aggregate sources and higher transportation and aggregate costs.

2.3 Jurisdiction

While provincial legislation shares jurisdiction over aggregate operations between local and provincial authorities, the fundamental authority with respect to aggregate extraction sits with the Province via the *Mines Act* and permits issued under it. The *Mines Act* focuses on mining activities, worker health and safety, environmental impacts, and reclamation at the mine site.⁸ It does not clearly address questions of where mines should be located and can be inadequate to deal with the full range of off-site impacts.

⁶ Levelton Engineering LTD. *Lower Mainland Aggregated Demand Study – Volume 1 Aggregates Supply and Consumption*. June 19, 1996. [<http://www.em.gov.bc.ca/mining/MiningStats/55lowmainaggstudy.htm>] Also: Ministry of Energy & Mines. *Sand & Gravel Study, 1985: Transportation Corridors and Populated Areas*. April, 1988. [<http://www.em.gov.bc.ca/Mining/Geosurv/Publications/OpenFiles/OF1988-27/toc.htm>] And: Ministry of Energy & Mines. *Sand and Gravel Study, 1980: British Columbia Lower Mainland*. June, 1981.

⁷ Thurber Engineering LTD. *Fraser Valley Regional District Aggregate Pilot Project, Aggregate Inventory Atlas*. December, 2005.

⁸ Other Provincial (and Federal) acts and regulations may be applicable. This section does not provide an exhaustive account of relevant legislation.

The appropriate location of land uses is a primary concern for local governments which generally regulate the use of land through zoning powers under the *Local Government Act*. However, gravel *removal* has been held by Canadian courts to be a consumption of land - rather than a use of land - and therefore is not subject to zoning powers.⁹

While extraction of aggregates may not be prohibited by local governments through zoning powers¹⁰, extraction is clearly subject to local government powers to regulate removal and deposit of sand, gravel and other soil provided in Section 723 of the *Local Government Act*.¹¹ Moreover, processing of aggregates and manufacture of aggregate-based products are uses of land subject to regulation and potentially prohibition under zoning controls. The ability of local governments to regulate or prohibit processing has been confirmed in a number of recent court decisions.¹²

Jurisdiction for the regulation of aggregate operations is shared between provincial and local authorities such that the interests of both may be accounted for in planning and approval processes. While this joint responsibility has been a source of conflict, notably when operations receive provincial approvals despite local objections, it is also the basis for effective cooperation in planning for and approving aggregate operations. Without a clear singular basis for addressing off-site impacts of aggregate operations, close coordination and cooperation between local and provincial authorities is necessary for efficient planning for aggregates, ensuring a sustainable supply and effective mitigation of off-site impacts.

2.4 Challenges

There have been intense and persistent conflicts surrounding aggregate operations, and the approval of aggregate operations, in the Fraser Valley Regional District. These conflicts have often centered on impacts, or perceived impacts, of aggregate operations related to:

- noise and dust;
- blasting and vibration;
- trucking and traffic;
- public health;

⁹ *Township of Pickering v. Godfrey* (1958), 14 D.L.R. (2d) 520. Subsequent amendments to the Ontario Planning Act specified that the making, establishment or operation of a pit or quarry shall be deemed to be a use of land subject to zoning powers. In *British Columbia: Vernon (City) v. Okanagan Excavating* (1993) LTD. (1993) BCSC, (1994) BCCA confirmed that extraction is not a use of land.

¹⁰ Note that 'extraction' includes only as much drilling, blasting and breaking necessary to permit transport of the resource off site.

¹¹ 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.

¹² *Pitt River Quarries Ltd. v. Dewdney-Alouette Regional District* (1995), 27 M.P.L.R. (2d) 257; *Squamish (District) v. Great Pacific Pumice* (1999) BCSC, (2000) BCCA 208, (2002) BCSC 933, (2003) BCCA 404; *Cowichan Valley (Regional District) v. Norton* (2005) BCSC 1056; *Nanaimo (Regional District) v. Jameson Quarries Ltd* (2005) BCSC 1639

- road safety;
- sediment, erosion control and drainage;
- impacts on agricultural uses;
- impacts to water supplies; and,
- community aesthetics.

In many cases, impacts associated with trucking and concerns with the capacity of local road infrastructure to safely support industrial traffic are at the heart of community opposition.

At the same time, the aggregate industry is concerned that:

- important sources of sand and gravel are being sterilized or encroached upon by incompatible land uses;
- time and costs of permitting processes can be onerous;
- current sources are being depleted without new sources being permitted;
- existing operations are being pressured to close before all the resource has been extracted; and,
- rules are different from jurisdiction to jurisdiction and between local government and the Province.

It appears that perspectives and opinions with respect to aggregate are deeply ingrained and may not be easy to change. This represents a challenge that industry and government must together overcome if public support for responsible balanced approaches are to be implemented. It is hoped that the FVRD Aggregate Pilot will substantially reduce conflicts and provide a basis for effective cooperation between local government, provincial agencies and the aggregate industry.

2.5 Project Methodology

The FVRD Aggregate Pilot Project Committee met more than twenty times between 2004 and 2009 to develop recommendations. The work of the Committee involved:

- identification of baseline information
- mapping inventory of sand/gravel deposits and potential quarry locations and volumes;
- review of the supply and demand picture in the Lower Mainland; and,
- examination of local government regulation in FVRD.

The APP Committee directed the technical efforts of a sub-committee comprised of local government, MEMPR, and industry. The Technical Sub-Committee prepared conceptual mapping, guided the work of consultants, provided analysis of potential policy directions, and drafted the recommendations document.

The conceptual maps of Red-Yellow-Green areas were developed collaboratively by the Technical Sub-committee. They are informed by the FVRD Aggregate Atlas, the location of current aggregate operations, official community plan areas

and policies, existing Soil Removal & Deposit Bylaws, the FVRD Regional Growth Strategy and a variety of other considerations. These maps provide an informed, realistic and carefully prepared illustration of how Aggregate Pilot Project recommendations may be implemented.

3.0 RECOMMENDATIONS

The Aggregate Pilot Project Committee offers the following recommendations which are interrelated and intended to be considered as a package:

3.1 Land Designations for Aggregate Production: Red–Yellow–Green Areas

3.1.1 ‘Red, Yellow and Green’ land designations should be established as a region-wide framework for industry and government decisions regarding aggregate operations. A consistent approach for mapping land designation for aggregate uses will:

- provide a clear picture of aggregate regulatory requirements across the Region;
- assist industry in making locational and business choices;
- guide the Provincial Government and local governments in approving aggregate operations; and,
- facilitate coordinated planning for aggregate resources at a Regional scale.

Coordinated, region-wide planning is important for ensuring a sustainable supply of aggregates; providing certainty to industry and residents; ensuring timely and efficient approval processes; and, minimizing land use, environmental impacts and other conflicts. It will also enable greater consistency among local governments in their bylaw and permit approach.

It is anticipated that established municipal frameworks (bylaws, plans, etc.) for planning and regulation of aggregate production will be compatible with a red-yellow-green approach.

The maps attached as Appendix A illustrate how these designations could be applied to the regional land base. While considerable effort and dialogue went into drafting the maps, further collaborative work is required to refine boundaries.

3.1.2 **Red Areas** are understood as follows:

- a) Red Areas include lands unsuited to industrial aggregate operations due to irresolvable conflicts and incompatible uses, including existing and planned built-up areas, parks, ecological reserves, designated archaeological sites, inadequate transportation routes, and others.

- b) Lands within Red Areas will be zoned and designated to prohibit aggregate extraction and processing. Except as indicated below, MEMPR will not issue Mines Permits for aggregate extraction within Red Areas.
- c) Temporary Industrial Permits (TIPs) may be issued by the local government for short-term or transitional aggregate uses within Red Areas. MEMPR may issue a Mines Permit for an operation working under a TIP, if appropriate. In this case, the Mines Permit will be consistent with the conditions of the TIP issued by the local government.

3.1.3 **Yellow Areas** are understood as follows:

- a) Yellow Areas are complex and varied, including lands within municipal boundaries, community plan areas, lands near settlement and residential uses, areas with amenity value or unique environmental attributes, locations where land use conflicts may be expected or have occurred, and places where it is necessary to balance a variety of important interests and values.
- b) Extraction of aggregates will be permitted in Yellow Areas subject to coordinated provincial and local government approval conditions, including but not limited to:
 - hours of work;
 - setback to property lines, watercourse, and settlement uses on surrounding lands;
 - access/egress and haul routes;
 - road upgrade issues;
 - noise, dust, and vibration;
 - mitigation of off-site impacts; and,
 - site-specific performance standards and covenants.
- c) In Yellow Areas, conditions of approval specified by local government must be included in Mines Permits issued by MEMPR.
- d) Normally, processing should be permitted at the extraction site. However, in some instances, operations may be limited to extraction.
- e) The approval of aggregate processing in Yellow Areas will generally require site-specific consideration and a public process to identify and address community interests.

3.1.4 **Green Areas** should be understood as follows:

- a) Extraction and processing of aggregates will be permitted within the Green Area.
- b) Manufacturing of aggregate-based products (i.e. concrete plants) will be permitted within Green Areas subject to application of air emission

standards equivalent to those in place in Metro Vancouver and effective monitoring and enforcement thereof.

- c) Zoning and OCP designation for extraction and processing in green areas should be in place ahead of time so that no land use approvals are required. Plan and bylaw amendments should be funded by production-based fees.
- e) There should be coordinated permitting for extraction in Green Areas provided that:
 - a standard set of local government conditions dealing with such matters as noise, dust, vibration, and mitigation of impacts to the surrounding areas are met and ensured by MEMPR;
 - the local government has a meaningful opportunity to comment on applications by referral; and,
 - means are in place for the collection of production-based fees in electoral areas.

This likely would mean that MEMPR would issue Mines Permits with referral of applications to local government. It may be necessary for local government to issue a complementary and consistent Soil Removal/Deposit Permit (SRDP) to meet legislative authority to collect fees and to retain enforcement capability.

- f) Important aggregate sources within Green Areas should be protected from encroachment by incompatible uses. Options for protection of Green Areas include:
 - Notices to property titles (perhaps similar to those used in the Agricultural Land Reserve) or restrictive covenants to notify interested parties that aggregate operations can be expected in Aggregate Reserve areas. A legislative change may be required to provide the authority necessary to do this.
 - Formal designation by the Province.

3.2 Effect of RED-YELLOW-GREEN Land Designations on Existing Operations

- 3.2.1 Red, Yellow and Green land designations will have no effect or meaning within the mine ‘footprint’ - as identified and approved in a Mines Permit as it existed on the ‘grandfathered’ date - for operations with all necessary provincial and local approvals existing on the ‘grandfathered’ date.

If these recommendations are accepted, the ‘grandfathered’ date will have to be determined through further discussions between APABC, MEMPR and local governments. A ‘grace period’ will be provided prior to the ‘grandfathered’ date in which operations that do not have all necessary approvals can obtain all necessary approvals and thereby achieve ‘grandfathered’ status.

3.3 Processing of Aggregates

- 3.3.1 For the purposes of this paper, ‘processing’ means drying, stockpiling, crushing, sorting, screening, mixing or washing of sand, gravel and rock to produce finished aggregate products.
- 3.3.2 Processing is a use of land subject to local government land use regulation and prohibition. Processing activities are subject to the Mines Act and associated permits.
- 3.3.3 In most cases, processing should occur at the location of extraction.

3.4 Manufacturing of Aggregate-based Products

- 3.4.1 For the purposes of this paper, ‘manufacturing’ means industrial processes which combine sand, gravel, and rock as aggregates with other material to create aggregate-based consumables like concrete products, ready-mix and asphalt.
- 3.4.2 Manufacturing is a use of land subject to local government land use regulation and prohibition. Manufacturing is not regulated under the Mines Act.
- 3.4.3 Like other ‘heavy’ industries, facilities for manufacturing require air quality controls, mitigation of environmental impacts, measures to attenuate off-site impacts, safe and reasonable access, suitable water supplies, and acceptable means of waste disposal among other things.

Manufacturing activities must meet air emissions standards equivalent to those in place in Metro Vancouver and an appropriate framework for monitoring and enforcement of these standards must be implemented.¹³ More discussion about monitoring and enforcement (who does it, how is it funded, etc) is required.
- 3.4.4 Air quality emissions standards for ‘portable’ manufacturing equipment (i.e. a movable asphalt plant) will be the same as those for ‘permanent’ facilities.

¹³ Refer to the following for more information: GVRD Air Quality Management Bylaw 1082, 2008; VRD Air Quality Management Bylaw No. 937, 1999; GVRD Air Pollution Control Bylaw No. 603 as applicable [<http://www.metrovancouver.org/boards/bylaws/Pages/default.aspx>]

3.5 Production-based Fees

- 3.5.1 A production-based fee that is consistent across the Region should be implemented by Soil Removal/Deposit Bylaw.¹⁴ The amount of the fee should be determined by discussion between local government and representatives of the aggregate industry. In any case, the fee should bear a relationship to the costs of: regulation, monitoring and enforcement; identifying, managing and mitigating off-site impacts to the environment and community; impacts to roads and road users; and long-term planning for aggregate production.¹⁵

Production-based fees would apply to material that is removed from the mine site. For clarity, it would not apply to aggregate material that is produced and stockpiled on-site until the material is sold or otherwise leaves the mine property or to material temporarily deposited on the Mine site for process or manufacture.

- 3.5.2 Fees should be consistent across the Regional District in order to ensure that all operations are ‘paying their share’ and to ensure a ‘level playing field’ for all.
- 3.5.3 Fees should continue to be collected by, and paid to, local governments under the authority of Soil Removal/Deposit Bylaws (SRDBs) for several reasons:
- a) Local governments have the ability to collect fees either at the place of removal or the site of deposit but fees for removal or deposit will be collected only once for unit of material removed or deposited.¹⁶
 - b) The payment of levies to local governments establishes a direct relationship between producers and local Councils/Boards and affords formal opportunities for recognition of the positive contributions aggregate producers make in our communities.
 - c) Local governments wish to retain control over the collection and administration of levies, in part to be able to respond to costs of regulation and administration.
 - d) Collection of levies by the Province for distribution to local governments would result in unnecessary bureaucracy and inefficiency. Costs of provincial handling would decrease the amount

¹⁴ The authority for municipalities to collect production-based fees has been confirmed by British Columbia courts. Thornhill Aggregate v. District of Maple Ridge (1990); Rempel Bros LTD vs. Chilliwack (1994); Coquitlam vs. Construction Aggregates (2000); Thornhill Aggregate vs. District of Maple Ridge (1990); and others.

¹⁵ In Coquitlam v. Construction Aggregates, the Court upheld the City’s fee scheme that was based on consideration of not only road maintenance costs, but also drainage, landslides, flooding, and administrative costs related to the aggregate industry.

¹⁶ For example, see Rempel Bros. LTD v. Chilliwack (1991) BCSC, (1994) BCCA.

of revenue flowing to local governments and thereby reduce benefit to communities.

- 3.5.4 Opportunities for formally acknowledging the financial (and other) contributions of aggregate producers to communities should be sought out and acted upon.
- 3.5.5 It has been assumed that the Regional District is not able to assess a production-based fee in electoral areas because it does not have jurisdiction for road maintenance.¹⁷ Assuming this is accurate, legislative amendments or other changes must be made such that production-based fees can be collected on aggregate production within the Electoral Areas.
- 3.5.6 With respect to production-based fees, FVRD should explore the possibility of a formal agreement with the Ministry of Transportation regarding use of a portion of fee revenues for road maintenance.

3.6 Security & Bonding

- 3.6.1 Local governments will continue to require performance securities/bonds in accordance with SRDBs. In green areas with FVRD's Electoral Areas, it may be possible for MEMPR to be the sole bond holder (unless an ALC bond is required) subject to an agreement with local governments respecting appropriate bonding levels and reclamation conditions.
- 3.6.2 There is a concern among local governments that bonding levels don't reflect actual costs of site reclamation. Further discussion between industry, local government and MEMPR should take place to review appropriate bond levels.

3.7 Harmonization of Soil Removal & Deposit Bylaws

- 3.7.1 Local governments should identify opportunities to harmonize soil removal/deposit bylaws across the Region. The report by Regional Consulting titled, *Aggregate Resource Regulation by Local Government in the FVRD* (produced as a part of the Aggregate Pilot Project) may serve as a starting point for identifying differences and harmonization opportunities.
- 3.7.2 As a priority, fees and other regulatory aspects of soil removal/deposit bylaws that are fundamental to establishing a 'level playing field' should be evaluated and harmonized to the extent possible.

¹⁷ Road maintenance has been held as the principal and most accepted use of fee revenues. However, British Columbia court decisions indicate that a broader range of uses is possible.

3.8 Long-range Planning for Aggregates

- 3.8.1 Local governments, the provincial government and industry will share in the responsibility for long-term planning for aggregate resources.

Local governments have some legislated responsibilities for aggregate resource planning. Section 877 of the Local Government Act requires that official community plans include the approximate location and area of sand and gravel deposits suitable for future extraction. As well, Regional Growth Strategies (RGS) should work towards maintaining the integrity of a secure and productive resource base and ensuring adequate inventories of suitable resources for future settlement (LGA s. 849).

- 3.8.2 The aggregate production levy will include a specified component for long range planning for aggregates. Further investigation and discussion is necessary to determine an appropriate amount to be dedicated to planning purposes.

- 3.8.3 For clarity, these funds would be a part of the overall production-based fee collected by local governments under Soil Removal Deposit Bylaws.¹⁸

- 3.8.4 Funds for long range planning will be collected and administered by individual local governments.

- 3.8.5 Local governments will cooperate with each other, industry and MEMPR in long range planning initiatives to ensure a coordinated regional approach.

- 3.8.6 Guidelines about how the long-range planning funds are spent and planning should be established through a memorandum of understanding between the Province, APABC and local governments. Such an agreement might address:

- a) coordination of planning activities with industry;
- b) coordination between local governments and the Provincial Government to ensure a level competitive playing field between all operators;
- c) improving mapping resources;
- d) public meetings;
- e) the provision, collection and sharing of data;
- f) priorities and work plans;
- g) development of best management practices;
- h) monitoring and enforcement;

¹⁸ With the possible exception of levies collected on behalf of FVRD for production within Green areas in the Electoral Areas

- i) development of industry-based self-reporting programs and codes or practice; and,
- j) reporting.

4.0 BENEFITS

Implementation of these recommendations would provide a variety of compelling benefits to the Province, local governments, industry and local communities.

For the Province of B.C., the benefits would include the enhanced management of aggregate activities within the Fraser Valley Regional District, and the availability of a model for aggregate management plans throughout the province to ensure an economic and long term supply of aggregate for the benefits of all British Columbians.

For local governments, the recommendations of the Aggregate Pilot Project would:

- ensure an affordable, sustainable aggregate supply;
- enable streamlined, coordinated approach to the permitting process;
- provide an opportunity for local government concerns and interests to be incorporated in MEPPR application review processes;
- prevent approval of permits in areas where local government does not want aggregate activities;
- support the establishment of consistent production-based fees supported by industry that are, in most cases, higher than currently exist;
- provide funding and a framework for long-range planning for aggregates;
- reduce conflict and related expenses; and,
- lead to improved knowledge of the industry.

Benefits to industry would include:

- clear guidance in making locational decisions;
- greater certainty regarding application process and outcomes;
- identification of long-term aggregate supplies and protection of important sources from sterilization and incompatible uses;
- increased opportunities for aggregate-based manufacturing uses;
- closer coordination between governments and agencies to ensure a level competitive playing field between all operators;
- improved regulatory consistency between jurisdictions; and,
- stronger connections and relationships between industry and local government.

In addition to the benefits listed above, the APP recommendations would assist local communities by:

- providing more certainty about where new aggregate operations will locate; and,
- enhancing public processes and opportunities for input regarding new aggregate operations in areas of community concern.

5.0 NEXT STEPS

5.1 Review of Recommendations

This report was prepared for submission to the Minister of State for Mines, the Honourable Gordon Hogg. It will also be referred to the Aggregate Producers Association of BC, municipal councils and the Regional Board for consideration.

5.2 Comments on Implementation

The Aggregate Pilot Project has focused on principles and direction. In many cases, mechanisms for implementation are straight-forward. In other case, further clarification is required. However, all recommendations are considered to be feasible by the APP Committee. If consensus emerges around these recommendations, additional collaborative efforts and funding will be required to implement them.

Implementation may involve:

- amendments to the FVRD Regional Growth Strategy (RGS), Official Community Plans (OCPs), zoning bylaws, and Soil Removal / Deposit Bylaws – all of which require public review;
- extensive public consultation;
- potential changes to provincial legislation, regulations and policy;
- industry acceptance and support; and,
- memorandums of understanding between project partners.

6.0 FUTURE PHASES OF THE FVRD AGGREGATE PILOT PROJECT

The Aggregate Pilot Project Committee has identified the following matters that could be addressed in future phases of this project if it continues to be supported by project partners:

- implementation of a aggregate-hauling truck registry;
- continued long-term planning for aggregate resources;
- development of best practices for mitigation of off-site impacts; and,

- foster the evolution of the Aggregate Producers Association of BC into an industry-wide association engaged in monitoring and enforcement activities and reclamation of abandoned mine sites. The concept of mandatory membership in an aggregate industry association is supported by the Aggregate Pilot Project Committee.

Production-based fees would fund future phases.

7.0 DEFINITIONS

For the purposes of this report:

“extraction” means the removal of sand, gravel, and rock for aggregates and includes drilling, blasting, and breaking necessary for extraction and transport. Extraction does not include any crushing, screening or similar activity carried out to make the gravel marketable.

“processing” includes drying, stockpiling, crushing, sorting, screening, mixing or washing of sand, gravel and rock to produce aggregate products but does not include manufacturing.

“manufacturing” means industrial processes which combine sand, gravel, and rock as aggregates with other material to create aggregate-based consumables like concrete products, ready-mix and asphalt.

Figure 1 - List of Acronyms Used

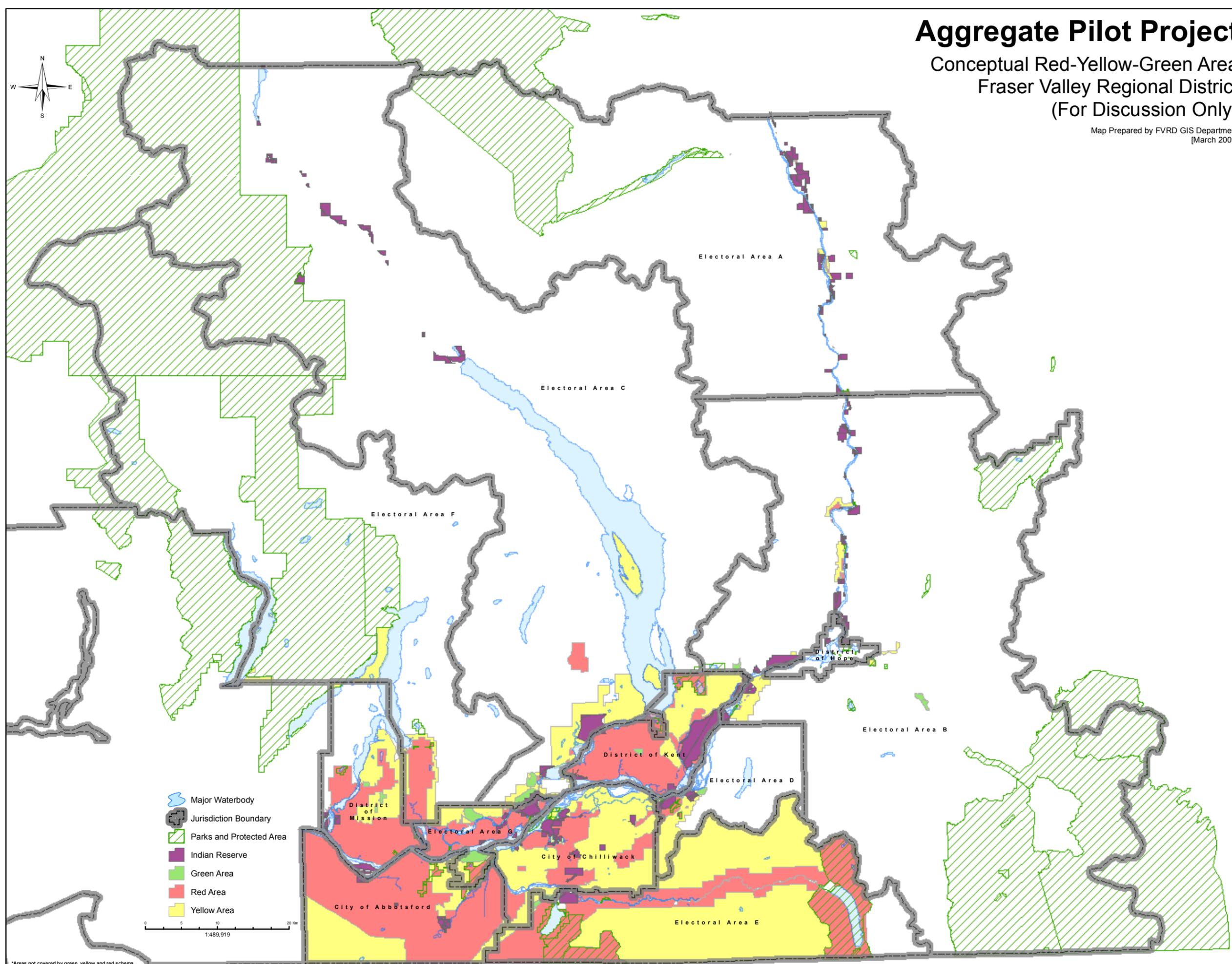
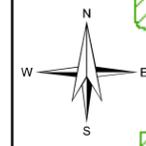
APABC	Aggregate Producers Association of British Columbia
APP	Aggregate Pilot Project
FVRD	Fraser Valley Regional District
GVRD	Greater Vancouver Regional District, or Metro Vancouver
IR	Indian Reserve
MEMPR	Ministry of Energy, Mines and Petroleum Resources
MLA	Member of the Legislative Assembly
MoTI	Ministry of Transportation & Infrastructure
SRDB	Soil Removal & Deposit Bylaw
SRDP	Soil Removal & Deposit Permit
TIP	Temporary Industrial Permit

APPENDIX A: Aggregate Pilot Project, Conceptual Red-Yellow-Green Area, Fraser Valley Regional District

Aggregate Pilot Project

Conceptual Red-Yellow-Green Area
Fraser Valley Regional District
(For Discussion Only)

Map Prepared by FVRD GIS Department
[March 2009]



- Major Waterbody
- Jurisdiction Boundary
- Parks and Protected Area
- Indian Reserve
- Green Area
- Red Area
- Yellow Area

*Areas not covered by green, yellow and red schema are subject to further review and planning.

APPENDIX B: Analysis of Potential Green Areas

Location: Twelve sites in relatively close proximity to sources of demand within the Region with good access to major transportation routes

Est. Gross Quantity ¹⁹ :	Sand/gravel	180,678,023 m ³
	Quarry	<u>1,534,209,971 m³</u>
		1,714,887,994 m ³

Adjusted Quantity ²⁰ :	Sand/gravel	117,440,715 m ³	11%
	Quarry	<u>997,236,481 m³</u>	89%
		1,114,677,196 m ³	100%

Material About 11% of the total estimated volume of material in green areas is in sand/gravel deposits. The remaining 89% is in hard rock quarry sites.

Regional Demand Regional Demand for aggregates is estimated as 8.157 m³ (15 tonnes) per person per year.²¹ Assuming a Regional population of 450,000 (in the year 2030), Regional Demand is estimated to be 3,670,650 m³ annually.²²

Est. Total Demand The majority of aggregates produced within FVRD are ‘exported’ out of the Region – primarily to Metro Vancouver. The volume of material produced within FVRD and exported out of the Region is currently thought to be about two times the quantity used within the Region. It is assumed that this ratio will continue into the future. Accordingly, Total Demand is estimated as 11,011,950 m³ annually.²³

Years Supply in Pot. Green Areas Pot. Green Areas alone could supply about 100 years of total demand.
 Adjusted Quantity 1,114,677,196 m³ divided by
Est. Total Demand 11,011,950 m³
 Years Supply 101

It is anticipated that significant additional supply will come from Yellow Areas with a lesser amount from any existing operations and new temporary operations (under TIP) within Red Areas.

¹⁹ Estimated Gross Quantity = area of deposit x estimated depth of deposit. Estimated depth of deposits are taken from Thurber Engineering, *Phase II Aggregate Study for Areas in the Fraser Valley Regional District*, December 7, 2005.

²⁰ Adjusted Quantity = Est. Gross Quantity x 0.65. Adjusted Quantity is a crude attempt to recognize that development of all green areas will be constrained by a number of factors including regulatory requirements and natural and cultural features. Moreover, some deposits have been reduced by existing aggregate operations. The conversion factor of 65% used to calculate Adjusted Quantity is arbitrary.

²¹ It is assumed that 2.17 tonnes of stockpile gravel equals 1.18 m³ of stockpile gravel. This conversion is derived from City of Chilliwack Soil Removal & Deposit Bylaw 1989 No. 1313. Accordingly, 15 t / 2.17t = 6.912 x 1.18m³ = 8.157 m³.

²² 450,000 x 8.157m³ = 3,670,650 m³. Projected Regional population for the year 2030 is used in an attempt to more accurately understand demand over the long term (i.e. 100 years). Using the current population would underestimate demand for much more of this period. The 2030 population projection is the longest term forecast available and it was used in developing FVRD’s Regional Growth Strategy.

²³ Est. Total Demand = (Regional Demand x 2) + Regional Demand, or (3,670,650 m³ x 2) + 3,670,650 m³ = 11,011,950 m³