Market Analysis:
Inland Port Facility – Northern British Columbia

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Executive Summary

Substantial pressures exist to develop new container ports in British Columbia. Estimating the potential demand for a new port facility is critical for assessing its potential financial and economic success. However, it is extremely difficult to assess due to the many issues that must be considered. The idea of an Inland Port Facility in the Northern British Columbia Region has become extremely popular. However, development of container port facilities requires major investments and poses substantial risks to investors.

The key literature used in this study included numerous papers as shown in the bibliography that explain the requirements of Inland Port Facilities and demand estimation techniques. In addition, the Western Transportation Advisory Council (WESTAC) is working on a similar study that is being used by various groups in determining the potential feasibility of a regional port facility. Much of their information has been reviewed in terms of current export volumes and projected future export volumes. However, the WESTAC study includes export volumes from all of Western Canada. This is arguably not feasible in justifying a Northern British Columbia regional port facility, as Alberta and Saskatchewan volumes will likely be shipped through a different facility such as Edmonton or Vancouver. Other primary sources of information included Statistics Canada and BC Statistics, as well as a number of commodity associations and marketing boards.

The methodology included gathering as much information as possible to provide a reasonable estimate of potential export volumes. This included making use of all available National and Provincial statistics, including contacting numerous commodity agencies, marketing boards, and industry representatives and managers (see Appendix D).

The greatest difficulty in completing the project was in accurately estimating the " regional" volumes of Asian exports as this information is not readily available and does not exist in any clearly stated formats or reports. The first phase of the methodology involved the investigation and correlation of information to determine the volumes of the identified major potential commodities. The second phase of the analysis was to determine the forecasted future volumes of these regional commodities to be exported to Asian markets.

The result of the research shows that approximately 160,000 Twenty Foot Equivalent Units (containerized volumes) are currently being exported to Asian markets from the Northern British Columbia region. The breakdown between the volumes of the commodities is shown in Chart 1 below.

Chart 1 – Current Asian Export Volumes

	Asian Exports (TEU's)
Grain	15,000
Forest Products	145,000
Pork	49
Poultry	125
Beef	9.0
	160,183

Interestingly, two of the primary commodities identified in the Western Transportation Advisory Council study are not exported from the Northern BC region. This is extremely important, as local supporters of the Inland Port Facility have been making use of the Westac information provided in their analysis. A second very important observation is that the forest products currently accounts for more than 90% of the total exports from the

region. Therefore, the challenge would be to ensure that the facility was economic for wood industry exporters and in ensuring that the forest industry remains sustainable, at least until other manufacturing sectors are able to replace the wood export volumes.

Two methodologies are used to forecast the potential Asian exports of major regional commodities. The first methodology was qualitative in that it involved gathering forecast data estimates from industry experts. A number of industry experts were contacted and the data was retrieved through published documents and less formal communications.

The second forecasting methodology was more quantitative in nature and is based on a trend analysis of historical commodity export statistics related to the region's products being exported to the Asian markets. The results of the forecast methods are shown in the following charts. As can be seen from the two charts, the two forecast methods resulted in total estimated volumes with only an approximately 5% difference over a 10 year forecast estimate.

Chart 2

Forecasts Using Industry Expertise Estimates

	Current Production Volume	2007	2010	2015	Growth Estimate
Grain	15,000	15,759	16,971	19,201	2.50%
Forest Products	145,000	146,162	147,923	150,906	0.40%
Pork	992	1,079	1,224	1,511	4.30%
Poultry	125	132	143	164	2.77%
Beef	9	9.1	9.2	9.4	0.05%
	161,126	**163,142**	**166,271**	**171,792**	

The phase 1 expansion of the Prince Rupert container port will accommodate 500,000 TEU's . If an inland port facility is successful in capturing the entire

Chart 3

Forecasts Using Trend Analysis

	Current Production Volume	2007	2010	2015	Growth Estimate
Grain	15,000	15,821	17,137	19,579	2.70%
Forest Products	145,000	147,915	152,396	160,170	1.00%
Pork	992	1,038	1,111	1,245	2.30%
Poultry	125	131	140	157	2.30%
Beef	9	9.4	10.1	11.3	2.30%
	161,126	**164,914**	**170,795**	**181,163**	

local export volumes available, they will be able to fill approximately one third of the total containers moving westbound through the region. This is very important in determining the feasibility of the facility and the estimated size requirements of the facility. However, given that approximately 90% of the volumes are wood related, the long-term risk is quite substantial unless long term forest company commitments are obtained. There also exists the very important opportunity for regional entrepreneurs and non-local investing in the region to take advantage of the increased access to the massive Asian markets.

The results of this paper can be used to assist in determining the potential feasibility and scope of a North Central British Columbia Inland Port Facility. Obviously such a facility would be very important economically to the region.

1. Introduction

1.1 Economic and Trade Context

Canada's prosperity depends upon its success in world trade. British Columbia's ports handle half of Canada' s maritime exports and 85% of the western province's marine exports. The B.C. port system currently handles approximately $35 billion per year in trade and contributes approximately $4 billion annually to the Canadian economy, and $3 billion to the economy of British Columbia.

The British Columbia ports will continue to be critical to the economic future of Canada and British Columbia. China, the province's largest offshore trading partner, accounts for 60% of the growth in world trade. Asian markets offer major growth opportunities for resource exporters and manufacturers across Western Canada.

B.C. port container traffic demand is expected to quadruple by 2020 and has already lead to plans for more than $1.5 billion in terminal developments. Included in these developments is the expansion of the Prince Rupert Port. The proposed terminal at the Port of Prince Rupert will add 500,000 TEU's (twenty-foot equivalent units) by mid-2007. CN is investing $15 million for improving the rail lines from Prince Rupert to accommodate the increased movements of goods (Ministry of Small Business et. al.,2005).[1]

Based on the increased importance of the Asian markets in terms of global trading of commodities, there will likely be substantial opportunities for Western Canadian businesses and entrepreneurs. The ability to take advantage of the increased trade activities and the increased access to both the Asian markets, and the Asian goods will largely influence the prosperity of the Western Canadian provinces in the coming years.

[1] British Columbia Ports Strategy : Final "March 2005"

1.2 Importance of Analysis

Estimating the potential demand for a new or expanded port is critical for assessing its potential financial and economic success. Development of container port facilities requires a major investment and poses substantial risks to investors. Given the enormous scale of investment required and the risk involved, important questions invariably arise about the financial feasibility of the planned project to the developer and the net economic benefits of the project to the regions affected (Meifeng Luo et al., 2002).[2] Assessing the potential demand for container port services is a key element in weighing both private financial feasibility and net social benefits.

1.3 Purpose of Paper

The purpose of this paper will be to use the information gathered from key related individuals, organizations and secondary sources of information to estimate the need that could exist for an Inland Port facility located in the North Central British Columbia region. The facility would relate directly to the Prince Rupert Port expansion and would act as a source for regional exports to the Asian markets and potentially lead to further entrepreneurial activities in the region.

The demand analysis will be based on existing export commodities and will not include potential growth in regional manufacturing. The likelihood of major private capital investment to develop a facility based on the possibility of future exports is not defensible. The facility must be economically viable based on existing export sources. If the data

[2] Estimating the Demand for Container Port Services: The Importance of Including Substitute Ports, Meifeng Luo and Thomas A. Grigalunas, July 31, 2002

supports the need for a facility, the size of the operation can then be based upon existing and anticipated regional export volumes.

The purpose of this study is not, however, the feasibility of the North Central British Columbia Inland Port facility. Instead, it is restricted to the potential export volumes from the region to the Asian needs.

1.4 Scope of Analysis

The scope of the project is restricted to the potential exports associated with a regional facility. The volume of commodities imported are not likely to economically justify an inland port facility, which includes a distribution centre, or a multimodal import facility for inbound goods (Harold C. Westerman, 2005).[3] The market for imported Asian goods is not significant in Northern British Columbia. Asian imports to the larger Southern British Columbian markets would logically be routed through the Vancouver Port for obvious cost and time reasons. Further, it is anticipated that the vast majority of goods received through the Prince Rupert Port will be bound for the large Eastern Canadian and North Central / North Eastern United States markets. Therefore, it is not likely to be economically feasible to delay the transportation of imported goods in Northern British Columbia to offload a very small portion or to perform distribution functions such as repackaging or reloading onto other transport.

The needs analysis undertaken in this project is limited to the more likely possibility of having an Export Facility in the North Central British Columbia region, which would receive goods from regional manufacturing facilities to be containerized, then loaded onto

[3] Harold C. Westerman, P.Eng., Branch Manager, Moffatt & Nichol, Sept. 27, 2005

the rail transport bound for Asian markets. Further, the movement of containers from truck onto the rail to the Prince Rupert facility could be accommodated.

The completion of this Project has a number of potential benefits including:

- The demand estimation could, depending on the outcome, assist Initiatives Prince George in their planned feasibility study of an inland port facility to be located in Prince George and their pursuit of support for the facility.
- Depending on the statistical tools chosen, this project could lead to a new demand analysis model for Inland Port Facilities that are not located in Major Population Centres.
- There are a number of potential opportunities for local businesses including:
  - The development and operation of the facility could provide a great deal of work opportunities and assist the regional economy.
  - The facility could also lead to new jobs for the community in the areas of Rail and road transport sector.
  - Increased access to the massive Asian markets could lead businesses in the region to increase and gain in prosperity driving a new manufacturing sector in the regional economy.

The scope of this study does not include analysis of the feasibility of the regional inland port facility. The estimated volume of exports from the region may be used as a tool, or source of information, in such an analysis but it is beyond the scope of this paper.

2. Methodology

The export volume assessment for the Inland Port Facility involved different methodological approaches, which partly complemented each other and partly overlapped in order to validate the quality and consistency of findings. The methodology was developed with the intent of verifying the volume of export commodities from the Northern British Columbia region, which would be serviced by a North Central British Columbia Port Facility. The area included in the study as potential commodity export volumes encompasses North of Prince George to, and including those territory locations exporting through the Vancouver Port. Also included is the area West to the Ocean but realizing that those regions closer to Prince Rupert would take advantage of their proximity to truck goods directly to Prince Rupert for export rather than back to the Prince George region. The area also encompasses those commodities produced East to the Alberta – British Columbia border, and South to include 100 Mile House. Further east than the BC - Alberta border would likely be more efficiently serviced by the Edmonton loading facility, and the area South of 100 Mile House would be more economically serviced through shipments via the Vancouver Port facilities. The areas closer to Edmonton and Vancouver are not included as they have existent modal loading facilities that would make it economically prohibitive for them to use the proposed inland port facility. In addition, the City of Edmonton has expressed an interest in expanding their facilities to ensure that they are capable of distributing product and export loading to accommodate existing and prospective increases in demand.

2.1 Identification of Most Valuable Customers

Five main groups and three sub-groups of commodity exporters have been defined, based on commodity type, as potentially the main market participants in determining the transport demand with regards to commodity structure and volumes. A very small number of lesser exporters from British Columbia exist but will not materially impact the market analysis and are unlikely to support the infrastructure requirements of the facility.

The criteria applied for selecting commodities for determining potential regional export volumes include:

1. Known, existing manufacturing industries with current and stable business in the regional market.
2. Identified by Statistics Canada as current container Asian exporters from the Vancouver Port with export values great than $2,000,000 per year. These are the top 25 export commodities.
3. Identified by the Western Transportation Advisory Council as major Western Canadian commodity export volumes.

Brief descriptions of identified industry types that currently export goods to the Asian markets include:

1. Chemicals from Region

   This includes Chlorine, Diethylene Glycol, Ethylene Dichloride, Ethylene Glycol, Sodium Hydroxide, Sodium Chlorate, and Styrene Monomer. These products are produced throughout Western Canada. The Canadian Chemical Industry is the third largest of all manufacturing sectors in sales and third in value-added in Canada. The

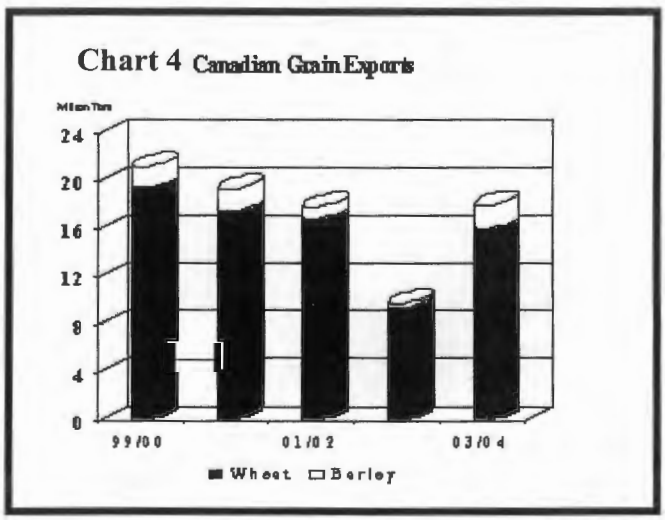
industry is located mainly in Ontario (51%), Quebec (21%), Alberta (22%), and British Columbia (3%) (Canadian Chemical Producers' Association, 2005). The chemical industry is Canada's fourth largest exporter of manufactured goods. For the purposes of this demand analysis, only the regional volumes of chemicals, which are exported to Asian markets, are to be included.

2. Fertilizers from Region

This includes potash, anhydrous ammonia, phosphate and sulphur solutions, mixed fertilizer materials and elemental sulphur and sulphate fertilizers & other fertilizers. There are total Canadian Annual exports of 20 million metric tonnes of fertilizers with an export value of $ 3.7 billion (Canadian Fertilizer Institute, 2002).[4]

3. Grains from Region

This includes wheat and durum, barley and malt, canola, oats, flax, dried peas, lentils, soybeans. Wheat exports in 2004 were estimated to rebound from 9.4 million tons (a 30-year low) to 16.0 million with expanding sales to many traditional markets in Latin America and Asia and indications that China will return as a major importer of Canadian wheat (Foreign Agricultural Service, 2004).[5] 85 to 90% of the grain crops



[4] Canadian Fertilizer Institute letter to the Canadian Transportation Agency, September 30, 2002
[5] Grain: World Markets and Trade, Foreign Agricultural Service Circular Series, FG 01-04, January 2004

grown in BC are grown in the Peace River region. Special varieties have been adapted for the soil and temperature conditions in the Peace district. There is also some production in the North Okanogan, around Vanderhoof, around Creston, and in the Lower Mainland (BC Ministry of Agriculture and Lands, 2005).[6]

4. Forest Products from the Region

This includes lumber, plywood and panels, newsprint, pulp, paper and paperboard. Forestry is the number-one industry in the Northern Interior region, producing more than one fifth of Canada's softwood lumber each year.

5. Meat Products from the Region

This includes primarily beef, poultry and pork products.

Beef

The total economic contribution of Canada's beef industry is approximately $23.7 billion. British Columbia represents 5.9% of Canada's beef industry and the total economic contribution by the beef industry to British Columbia is approximately $1.4 billion (British Columbia Cattlemen's Association, 2005).

Pork

Most pigs in BC are produced near Vancouver. This is to minimize transport costs to population centres when the hogs are sent to market. 80% of market hogs are produced in the Fraser Valley. The remainder are produced in the North Okanogan (15%), on Vancouver Island (5%) and the rest in the Peace River. About 300,000 market hogs are

[6] BC Ministry of Agriculture and Lands - Agri-food Statistical Information, 2005

slaughtered a year. 90% of this pork is bought in BC and the other 10% is exported. BC produces about 25 to 30% of the pork eaten in BC (BC Hog Marketing Commission, 2005).

Poultry

British Columbia's poultry industry is comprised of four major sectors: chicken (meat) growers, the layer (egg) industry, broiler breeders and turkey producers. Other smaller sectors include breeder pullet growers, layer pullet growers, layer breeders and turkey breeders. B.C.' s chicken, turkey and eggs are produced primarily in the Fraser Valley. Production also occurs on Vancouver Island and in the Interior.

2.2 Assessment of Current Market Potential

This section describes the assessment of transport flows originating in the region and destined to the Asian marketplace. The use of trade statistics and communications with major suppliers limited the data material to a manageable number of sources containing reliable and consistent indicators of current demand for freight movement.

In order to secure the validity for the market assessment, only major exports commodities (described in 4.1 above) were selected ensuring a degree of reliability and stability. Important variables in the trade statistics, in addition to origin and destination countries, include the volumes and value of goods traded by commodity categories.

2.3 Freight Forecasts; Future Market Potential

Expectations of growth in external trade in freight volumes are crucial for assessing the economic viability of the Inland Port Facility. While the analysis of current flows explores the types of goods, modes of transport, and origins and destinations for freight movement,

the flow forecast takes a somewhat broader view. The following four approximations have been used for projecting the future developments in flow volumes and the scope of transport markets:

- A summary of existing forecasts of national (aggregate) key indicators which are regarded as important determinants of growth in external trade, such as projected growth levels in exports. These indicators are believed to have the largest causal impacts on growth in international goods trade. These data do not, however, estimate the growth rates in particular types of goods, on particular origin/destination lanes, nor for movement by different transport modes. To compensate for the above deficiencies, the following are also used;
    - Elaboration of political and economic outlooks;
    - The Western Transportation Advisory Council (WESTAC) data gathered regarding commodity forecasts
    - Statistics Canada, Client Services Division, Government of Canada
    - Ministry of Small Business and Economic Development, Ministry of Transportation, British Columbia Ports Strategy

2.4 Data Analysis

The final stage of the methodology involves the amalgamation and examination of the results obtained from the above steps. This will involve an analysis of the anticipated export volumes from the Northern region and will assist in the determination of feasibility of a port facility. Although the primary goal of this project is the estimate of an export volume, not the feasibility of an inland port facility, a primary benefit of the projected

export volumes will be the use of this estimate in further analysis to determine the feasibility of the facility in the North Central British Columbia region. Chart 5 shows the importance of having access to the global economy through ocean transportation.

Chart 5 shows the increasing amount of trade (in Million metric tones). Accessing the enormous Asian market could prove very beneficial to the region economically as there will be a large amount of job creation and increased manufacturing opportunities.

	Chart 5 World Seaborne Trade			
Year	**Tanker**	**Dry Bulk**	**Other**	**Total**
1980	1,871.00	796	1,037.00	3,704.00
1990	1,755.00	968	1,285.00	4,008.00
2000	2,115.00	1,288.00	2,487.00	5,890.00
Compound Annual Growth Rates				
80-90	-0.6%	2.0%	2.2%	0.8%
90-00	1.9%	2.9%	6.8%	3.9%
80-00	0.6%	2.4%	4.5%	2.3%

Source: BST Associates using data from UNCTAD, USCOE and MARAD

3. Literature Review

The market analysis was conducted using a combination of existing data sources, market interviews and industry forecasts. These data and a number of industry consultations were then used to target an extensive campaign of interviews with exporters, producers, carriers, terminal operators and others regarding existing and potential markets for the Inland Port Facility.

There are a number of studies that have been reviewed that are moderately related to this paper. There are studies that tend to deal with specific topics within the paper and these are utilized to varying degrees as sources of information in the completion of this project. Likely, the most useful study is that in process by the Western Transportation Advisory Council (WESTAC). This group is performing a similar study as this paper for the purposes of identifying the potential export volumes. However, there is a large difference in scope between the two studies in that WESTAC is working with export volumes of all of Western Canada. These volumes are much more readily accessible and when used by local community groups such as Initiatives Prince George, are misleading in the extreme. The WESTAC numbers include enormous volumes of production and export that would likely never be economically feasible in being moved through a facility in Northern British Columbia. Therefore, the information from WESTAC is utilized to some extent in this paper, but the numbers are refined to just that portion of Asian Exports that realistically could be included in a regional facility.

This paper is not a continuation of other works but instead the exploration of the potential economic viability of a regional infrastructure development. The research utilized was

dependent on the stage of the development of this paper and included numerous sources and was extremely comprehensive in order to lead to a demand estimate that was as accurate as possible, utilizing proven tools and methods. Through the literature review, written, and telephone surveys, the research was used to assist in determining the market potential for a Inland Port Facility in the North Central British Columbia region. Both traditional sources and on-line sources were used to obtain information.

Many associations were contacted and provided information related to production and export volumes. In addition, in some cases individual companies were contacted to verify certain information.

The starting point of the study was to identify potential major commodities that would influence a total export volume from a Northern British Columbia regional facility. The sources for this information included local politicians, business members in the community, special groups including Initiatives Prince George and the Northwest Development Corridor, and the Western Transportation Advisory Council, which is carrying out a similar project.

The first stage of this project involved gaining a familiarization with various aspects of ports and shipping terminologies. There is a great deal of information available and this area of transportation is rather complex. Appendix A shows the most important collection of information that is required to gain an understanding of the Port Industry. The primary sources for this information included studies by Luo and Grigalunas (2002), and Dooms and Macharis (2003). In addition, much information was acquired through reports and

discussion with the Vancouver Port, the Prince Rupert Port and the Ministry of Transportation.

The second major task was to understand the proposed inland port facility and the perceptions of those individuals and organizations that would be most impacted locally by the development. Numerous contacts were made through meetings, telephone conversations and e-mails. Appendix B shows the list of contacts and summarized notes that were taken. The primary purposes of making these contacts was to:

(i) identify any opportunities for clarification of scope of the project,
(ii) make contact with individuals that will be able to provide support throughout the project and;
(iii) identify other areas of resources that might be available to assist in the project research ensuring that new information related to the proposed Inland Port Facility would be accessed.

There has been a great deal of work done in the area of Inland Port facilities and the studies that were reviewed for applicability to this study are shown in Appendix C. Locating Inland Port Demand Estimation studies was more difficult and those that do exist appear to use variables that are largely different from the variables applicable to this project. However, there are attributes of the studies that are employed in this paper and the studies assisted in providing detailed background information on requirements and other aspects of port facilities.

In addition to the studies, statistical tools were employed as part of the analysis in achieving and ensuring a reasonable degree of accuracy in the potential commodity exports. Finally, discussions with some potential suppliers to the Asian Market that could take advantage of a regional facility were done as part of the data collection process.

The statistical sources, shown in the List of Tables, used to determine the "potential" for the inland port facility export volumes included:

- Canadian Chemical Producers' Association
- Canadian Fertilizer Institute
- Grain: World Markets and Trade, Foreign Agricultural Service
- Statistics Canada, Client Services Division, Government of Canada
- Ministry of Small Business and Economic Development, Ministry of Transportation, British Columbia Ports Strategy
- Canadian Poultry Association
- Client Manager for Poultry Canada
- BC Grain Producer's Association
- Data Services BC STATS
- Council of Forest Industries
- Western Transportation Advisory Council (WESTAC)
- Environmental and Natural Resource Economics
- Information Services Department, Vancouver Port Authority
- Sr. Marketing and Trade Officer, International Team, Agriculture and Agri-Food Canada
- Controller, Pulp and Paper Operations, Canadian Forest Products Ltd
- Chicken Farmers of Canada / Les Producteurs de poulet du Canada, 350 Sparks St., Suite 1007, Ottawa ON K1R 7S8

The analysis is primarily related to the determination of demand using the past regional export volumes and potential future volumes.

4. Analysis

4.1 Assessment of Current Market Potential

This section describes the assessment of transport flows originating in the region and destined to the Asian marketplace. The use of trade statistics and communications with major suppliers limited the data material to a manageable number of sources containing reliable and consistent indicators of current demand for freight movement.

Estimation Tools

The conversion of metric tonnes to TEU's is necessary to convert the export volumes of the commodities. All export data is provided in weights and or value and therefore the conversion to TEU's is necessary to determine the potential export volumes. The Vancouver Port Authority (Ministry of Small Business, 2005)[7], states that one TEU is approximately 9.4 tonnes on average including all imports and exports. For the purpose of this paper and an anticipated demand analysis, this figure is sufficiently accurate to provide a reasonable estimation of the regions export volumes in TEU's . The process to provide the export volume estimation is on the basis of an analysis of all collected data to determine the most accurate estimate amount possible to determine. There is currently no statistical source available that provides the exact volumes from the Northern BC region of Asian exports for the commodities included in the study.

4.1.1 Chemicals from Northern British Columbia Region

The chemicals under consideration include chlorine, diethylene glycol, ethylene dichloride, ethylene glycol, sodium hydroxide, sodium chlorate, and styrene monomer. There are a

[7] British Columbia Ports Strategy : Final "March 2005", Co-published by the Ministry of Small Business and Economic Development and the Ministry of Transportation.

number of facts regarding British Columbia Chemicals that can be used to determine the estimated exports from the region to the Asian Markets. First, the Canadian Chemical Producer's published production numbers indicate that three percent of the total Canadian chemical industry is located in British Columbia (Canadian Chemical Producer's Association, 2005). This provides a level of assurance that there are provincial chemical production volumes.

In addition, the information from the Vancouver Port Authority indicates that the total containerized chemicals exported from the Vancouver Port to Asian markets were 1.376 million metric tonnes from December 2004 to November 2005 (Vancouver Port Authority, 2005)[8]. This verifies that there are Canadian chemical exports to the Asian markets.

The next step involved identifying regional chemical producers that may export to the Asian markets. In fact, there are only two major regional chemical producers - Chem-Trade and FMC, both located in the Prince George region. In discussion with the Financial Controller of Chem-Trade (Kal Rai, 2006)[9], they do not export any volumes of their chemicals produced. All of the chemicals are used regionally. The second chemical company that has regional operations is FMC Chemicals Ltd. In discussions with the Manager of Sales in their Prince George office, the indication is that they too, strictly supply regional volumes of chemicals and are not planning to export volumes to the Asian markets.

Based on the information that neither company exports to the Asian markets or will in the future, the estimated regional exports of chemicals is nil.

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[8] Sonya Muller, Reporting Coordinator, Decision Support, Information Services Department, Vancouver Port Authority, 2005

[9] Kal Rai, Controller, Chem-Trade, E-mail discussion, March 7th, 2006

Interestingly, despite there being no chemicals from the region being exported to the Asian markets, in the study estimate of the Western Transportation Advisory Council (WESTAC), there is a substantial volume of chemical exports included. The WESTAC data is being used by a number of Prince George groups with an apparent interest in having an Inland Port Facility. The scope of the WESTAC study includes all of Western Canada, which truly is impractical in its application to the Northern BC region.

4.1.2 Fertilizer from Region

As discussed, this includes potash, anhydrous ammonia, phosphate and sulphur solutions, mixed fertilizer materials and elemental sulphur and sulphate fertilizers & other fertilizers. There are a number of specifics regarding British Columbia Fertilizers that are used to determine the estimated exports from the region to the Asian Markets.

First, according to the statistics provided from the Vancouver Port Authority, the total containerized fertilizers exported from the Vancouver Port to the Asian markets was 8.005 million tonnes from December 2004 to November 2005 (Vancouver Port Authority, 2005)[10].

As with the chemicals from the region, there are little or no volumes of fertilizers from the Northern BC region being exported to the Asian markets. As shown in Chart 6, there is a small amount of Ammonia being produced in Kitimat (Canadian Fertilizer Institute, 2002)[11]. However, this production would not be included in potential export from a North Central

[10] Sonya Muller, Reporting Coordinator, Decision Support, Information Services Department, Vancouver Port Authority, 2005

[11] Fertilizer Production Capacity Data, Canada, Canadian Fertilizer Institute, Suite 802, 350 Sparks Street, Ottawa ON K1R 7S8, 2002

regional facility as the production location is very near to the existing port facility of Prince Rupert. The movement of the ammonia to an inland port facility would be impractical and not economically feasible.

Fertilizer Production Capacity Data - Canada

Chart 6 – Canadian Ammonia Production

Canadian Fertilizer Institute

Ammonia

Company	Location	Thousand Metric Tonnes Material per Annum
Agrium	Carseland, Alberta	535
Agrium	Fort Saskatchewan, Alberta	465
Agrium	Joffre, Alberta	450
Agrium	Redwater, Alberta	950
Canadian Fertilizers Limited	Medicine Hat, Alberta	1,060
Pacific Ammonia	Kitimat, British Columbia	260
Saskferco Products Inc.	Belle Plaine, Saskatchewan	625
Sherritt International	Fort Saskatchewan, Alberta	155
Simplot Canada Limited	Brandon, Manitoba	425
Terra Nitrogen	Courtright, Ontario	412
TOTAL CANADA		5337

In addition, in discussions with the office of the BC Ministry of Agriculture and Land, in Northern BC, there are no fertilizer manufacturers in the Peace region that would export to the Asian markets. All fertilizers would be for regional use only.

Again, fertilizers were included in my list of potential major export commodities as they were identified and included in the study estimate of the Western Transportation Advisory Council (WESTAC). In fact the WESTAC study identified 6.2 million metric tones of potential fertilizer export volume. Again, fertilizers are included within the scope of the WESTAC study as their information includes all of Western Canada export volumes but it is obviously not practical in its applicability to the potential volumes of an inland port facility in the Northern BC region.

4.1.3 Grain from Region

This includes wheat and durum, barley and malt, canola, oats, flax, dried peas, lentils, and forage seeds.

As 85 to 90% of these grain crops grown in BC are grown in the Peace River region, the office of the Ministry of Agriculture and Land in Northern BC was contacted to identify the production and export volumes. Chart 7 indicates the results of the discussions and the volumes related to the Peace district (BC Ministry of Agriculture and Lands, 2005).[12]

Chart 7 – Peace River Grain – Asian Exports

	Acres	Bushels / Acre	lbs / Acre	Bushels	lbs	tonnes	Production	Export	Total Asian Exports
Wheat	90,000	45		4,050,000		36.7	110,354	75%	82,766
Barley	80,000	50		4,000,000		45.9	87,146	5%	4,357
Canola	80,000	30		2,400,000		44.1	54,422	90%	48,980
Oats	60,000	66		3,960,000		64.8	61,111	10%	6,111
Forage Seeds	50,000		400		20,000,000		9,091	5%	455
									142,668

Ministry of Agriculture and Land in Northern BC., Dawson Creek, 1201 103rd Avenue, Dawson Creek BC

As per the Vancouver Port Authority reports, the total containerized fertilizers exported from the Vancouver Port to Asian markets was 5.6 million metric tonnes from December 2004 to November 2005 (Vancouver Port Authority, 2005)[13]. There is very little regional agricultural production outside of the Peace area and therefore, from the Peace District analysis chart above, the total estimated regional Asian exports in tonnes is 142,668. The conversion to TEU' s is 142,668 / 9.4 ~ **15,000**. Note that the remaining volume of exports, confirmed by the office of the Ministry of Agriculture and Land in Northern BC, is related to large Alberta and Saskatchewan export volumes.

[12] BC Ministry of Agriculture and Lands - Agri-food Statistical Information, 2005

[13] Sonya Muller, Reporting Coordinator, Decision Support, Information Services Department, Vancouver Port Authority, 2005

4.1.4 Forest Products from Region

This includes lumber, plywood and panels, newsprint, pulp, paper and paperboard.

Forestry is the number-one industry in the Northern Interior region, producing more than one fifth of Canada's softwood lumber each year.

As per the Vancouver Port, the total containerized Forest Products exported from the Vancouver Port to Asian markets was 5.7 million tonnes from December 2004 to November 2005 (Vancouver Port Authority , 2005)[14].

According to BC Statistics, Ministry of Labour and Citizen's Services, the total BC originating exports of forest products to the Asian markets is 3.424 million tones annually (BC Statistics, 2005).[15]

In discussions with Senior Accounting and Shipping Management in Canfor, they indicated that they currently ship approximately 42,000 tonnes of Pulp to Asian markets. They also ship plywood and 2x4's of widely varying amounts based on demand and prices. In addition, Cariboo Pulp of Quesnel sells half of their production volume to the Asian markets, which equates to approximately 200,000 tonnes annually.

The Council of Forest Industries have indicated that the Northern Region of British Columbia outputs over 40% of BC's annual softwood lumber production (COFI, 2004).[16]

Based on all of this information, the estimated total regional Asian exports in tonnes is 40% of 3.424 million tonnes, which is 1.37 million tonnes. The conversion to TEU's is 1.37 million / 9.4 ~**145,000 TEU's**. This is a fairly optimistic but fairly realistic Asian export volume. The amount of forest products exported to the Asian markets is largely influenced

[14] ibid
[15] BC Statistics, Ministry of Labour and Citizen's Services, 2005
[16] Council of Forest Industries, 2004

by demand and prices. It is also somewhat influenced by the current agreements and tariffs facing Canadian companies from the US Government.

4.1.5 Meat Products from Region

This includes primarily beef, poultry and pork products. The total containerized Meat Products exported from the Vancouver Port to Asian markets was 366,000 tonnes from December 2004 to November 2005 (Vancouver Port Authority, 2005).[17] BC Statistics, Ministry of Labour and Citizen' s Services, indicates the total BC originating exports of meat products to the Asian markets are 24,009 tonnes annually (BC Statistics, 2005).[18]

Beef

British Columbia represents 5.9% of Canada's beef industry. From Chart 8 shown below, it can be seen that 42% of beef in British Columbia is from the Northern Region.

Chart 8 – BC Regional Beef Production

Region in British Columbia	Cow Herd*	% of Provincial Cow Herd	Direct Economic Contribution ** from the sale of cattle & calves	Total Economic Contribution ***
Coast	15,960	5.7	20,235,000	79,703,100
Okanagan	24,124	8.62	30,601,000	120,533,460
Kootenays	21,220	7.58	26,909,000	105,991,140
Thompson-Nicola	57,291	20.47	72,668,500	286,232,010
Cariboo	57,498	20.54	72,917,000	287,210,820
Central	43,747	15.63	55,486,500	218,554,290
Peace	61,087	21.82	77,461,000	305,109,060
Total for BC	**279,927***	100	**$ 355 million****	**$ 1.4 billion*****

*** Source: BC Ministry of Agriculture, Food and Fisheries & Statistics Canada*

[17] Sonya Muller, Reporting Coordinator, Decision Support, Information Services Department, Vancouver Port Authority, 2005

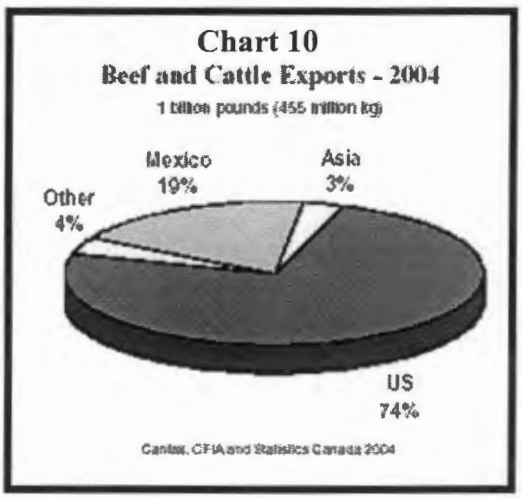
[18] BC Statistics, Ministry of Labour and Citizen's Services, 2005

Chart 9 – BC Meat Exports to Asia

BC Origin Exports of Meat Products to Asia, 2005 Commodity	Value - Cdn $	Quantity (kg)	Tonnes	TEU's
Beef, pork and poultry meat, unprocessed - kilograms	31,709,426	22,560,222	22,560	2,400
Beef - kilograms	242,603	189,433	189	20
Poultry - kilograms	11,915,643	13,046,089	13,046	1,388
Pork - kilograms	19,551,180	9,324,700	9,325	992

Produced by: BC STATS - Ministry of Labour & Citizens' Services
For Inquiries phone: 387-0376 Dan Schrier
Source: Statistics Canada

Given that the total Asian exports of Beef is 20 TEU' s and 42% of beef in BC is produced in the Northern region, a reasonable estimate of exports that could occur through a regional inland port facility is 9 TEU' s.



Pork

Most pigs in BC are produced near Vancouver to minimize transport costs to population centres when the hogs are sent to market. Eighty percent of BC market hogs are produced in the Fraser Valley. Only five percent of pigs in BC are produced in the North Central Region, all in the Peace River region.

Chart 11

BC Origin Exports of Meat Products to Asia, 2005 Commodity	Value - Cdn $	Quantity (kg)	Tonnes	TEU's
Beef, pork and poultry meat, unprocessed - kilograms	31,709,426	22,560,222	22,560	2,400
Beef - kilograms	242,603	189,433	189	20
Poultry - kilograms	11,915,643	13,046,089	13,046	1,388
Pork - kilograms	19,551,180	9,324,700	9,325	992

Produced by: BC STATS - Ministry of Labour & Citizens' Services
For Inquiries phone: 387-0376 Dan Schrier
Source: Statistics Canada

Chart 11 shows the total BC originating exports of Pork products to the Asian markets are 9,325 tonnes annually ((BC Statistics, 2005).[19] Of this volume, only 5% are from the proposed region. Therefore, the conversion to TEU' s is 9,325 x 5% / 9.4 ~ **49 TEU's**.

Poultry

BC has over 302 commercial chicken producers who produce over 72 million chickens weighing a total of 100 million kilograms (after evisceration). A very small portion of B.C.' s chicken, turkey and eggs are produced outside Fraser Valley and Vancouver Island. Over 80% of the production of chickens is located in the Fraser Valley while 10% is produced on Vancouver Island and 9% in the Interior.

Chart 12

BC Origin Exports of Meat Products to Asia, 2005 Commodity	Value - Cdn $	Quantity (kg)	Tonnes	TEU's
Beef, pork and poultry meat, unprocessed - kilograms	31,709,426	22,560,222	22,560	2,400
Beef - kilograms	242,603	189,433	189	20
Poultry - kilograms	11,915,643	13,046,089	13,046	1,388
Pork - kilograms	19,551,180	9,324,700	9,325	992
Produced by: BC STATS - Ministry of Labour & Citizens' Services For Inquiries phone: 387-0376 Dan Schrier Source: Statistics Canada				

[19] BC Stats, Ministry of Labour and Citizen's Services

Assuming that the interior chicken production is included in the region defined within the realm of the regional port facility, the Poultry export calculations are as shown in Chart 13.

Chart 13

BC Exports to Asian Markets

Annual Poultry Exports (TEU's)	1,388
Interior Production Percentage	9.0%
Interior Poultry Exports (TEU's)	125

4.1.6 Summary of Current Market Potential

As can be seen from the analysis, the volume of current exports to the Asian markets from the region is estimated using the available resources. The estimated volumes are expected to provide a reasonable degree of accuracy, which is not available through any other sources. Based on the analysis of the major identified potential industries that could support a northern region inland port facility, the following Asian export results were obtained.

Chart 14 – Summary of Export Commodities

	Asian Exports (TEU's)
Chemicals	-
Fertilizers	-
Grain	15,000
Forest Products	145,000
Meat Products	
Pork	992
Poultry	125
Beef	9
	160,183

As can be seen, the volume of Chemicals and Fertilizers are non-existent. The forest products, as expected is the largest volume. The grain exports are fairly substantial and meat products are substantially less.

4.2 Freight Volume Forecasts

There are a number of methods of estimating future freight volume exports from the northern region of British Columbia to the Asian market. In addition, there are a number of factors that will materially impact the forecasts. The major influencers of regional exports include:

- Asian demand for BC's forestry products will enormously influence the future export volumes. Forestry represents over 90% of the current exports to the Asian market from the region.
- The continue supply of forestry products will be a major influencer of future exports. With the questionable future supply of wood in the region due to the beetle infestation, there is some question of what volume of fibre will be available in the region in the future.
- The ability of entrepreneurs to take advantage of the facility to access the massive Asian markets will be a major influencer of the future export volumes.

4.2.1 Forecast Volumes Methodology 1 – Industry Estimates

The Western Transportation Advisory Council made contact with a sample of major western Canadian corporations in the production of commodities identified. The purpose was to identify current levels of production and exports to Asian markets. In addition, the organizations provided estimated growths in the export of their commodities. For each of the commodities identified above that are applicable to the northern region, the following estimates of growth are provided.

Grain Products Forecast

The following chart was provided to the Western Transportation Advisory Council by Lach Coburn: Regional Manager, Commodity Marketing Division, Cargill Ltd.[20] As can be seen by Chart 15, the westbound volumes, which includes the Asian exports from the Western markets are anticipated to grow at approximately 2.5% per year.

Chart 15 – WESTAC Grain Forecasts

Total Grains – Western Canada

(million metric tonnes)

Year	Westbound *Avg. Annual Growth Rate = 2.5%*	Total *Avg. Annual Growth Rate = 2.1%*
2005	**14.26**	**26.37**
2007	15.59	29.30
2010	17.04	31.68
2015	**17.74**	**32.96**

3

According to Mr. Coburn, the major influencers of this forecast include:

- The continued growth of the world' s population.
- There are still 1.2 billion people who are not able to access sufficient food volumes.
- People desire more food, more variety, and generally are able to pay more.
- Production, historically in Western Canada has never exceeded consumption by more that 4%.

[20] Lach Coburn, Cargill Limited, Westac Conference, Vancouver, BC, December 7th, 2005

Based on the expertise of the industry representative, an estimated growth in demand for grain products from the Northern BC region can be applied. This estimated increase of 2.5% is readonable for comparative purposes to be applied to the needs analysis of a North Central Inland Port Facility.

Forest Products Forecast

Csaba Hajdu, principle of Paprika Consulting Inc. indicates that the forecast drivers of forestry products are:

- Monetary – especially important is the exchange rates between trading countries
- Political, Legal, Negotiated – includes tariffs, freeness of trade, allowable cuts, stumpage rates, land claims and forest Practices Codes.
- Environmental – includes Old Growth Set-Asides, Certification and Mountain Pine Beetle Infestation.
- Economic – includes production related costs such as transportation, labour, wood retrieval costs, etc.

The following forecasts of forest shipments are provided by the Western Regional Advisory Council, taken from industry experts, including Mr. Csaba Hajdu.

Chart 16 – WESTAC Forest Products Forecasts

	Total Forest Products Shipments *(million metric tonnes)*				
	Year	Westbound	Southbound	Eastbound	Total
HISTORY	2000	11.01	13.55	9.48	34.04
	2004	10.93	13.50	16.45	40.89
FORECASTS	2005	10.51	15.43	17.89	43.84
	2006	10.74	16.43	19.18	46.48
	2007	10.80	17.34	19.27	47.42
	2008	11.06	17.79	19.97	48.91
	2009	11.27	18.55	20.65	50.48
	2010	11.34	18.76	21.03	51.13
	2015	11.42	19.42	21.94	52.78
	Avg. Annual Growth Rate 2015/2004	*0.4%*	*3.4%*	*2.7%*	*2.3%*

Meat Products Forecast

The following information was provided for long term meat forecasting. There were a number of sources for the estimated growth of each meat commodity.

Beef

A number of associations and representatives of the Beef industry were contacted to determine a reasonable forecast estimate of regional beef exports to the Asian market. Included in these associations were the National Farm Products Council and the British Columbia Cattlemen's Association. Based on communications with these groups, a forecast estimate was discussed and totaled only 0.47% growth.

Pork

A number of associations and representatives of the Pork industry were also contacted to determine a reasonable forecast estimate of regional pork exports to the Asian market. Included in these associations were the National Farm Products Council and the British Columbia Hog Commission. The BC Hog Commission provided a forecast for BC Pork, which was supported by the National Farm Products Council. The estimated increase in Pork estimates on average is 4.03%.

Poultry

A number of associations and representatives of the BC Poultry industry were also contacted to determine a reasonable forecast estimate of regional poultry exports to the Asian market. Included in the associations contacted were the British Columbia Chicken Marketing Board, BC Egg Producers, The National Farm Products Council, the Chicken Farmers of Canada and the Canadian Poultry Association. The estimated increase in regional Poultry estimates to Asian markets based on these contacts is 2.77%.

A summary of the meat products forecast based on communications with experts in the various meat commodity groups is shown in Chart 17:

Chart 17 – Meat Products Forecast Summary

Beef	Pork	Poultry
6450	5675	8685
6420	5455	8451
30	220	234
0.47%	4.03%	2.77%

Forecast Volumes Methodology 2 – Trend Analysis

The second method of forecasting that will be used to estimate potential future demand for an Inland Port Facility in the Northern BC Region, will be based on the trends of the past several years. The number of past years to be used will be based on available data.

Grain Products Forecast

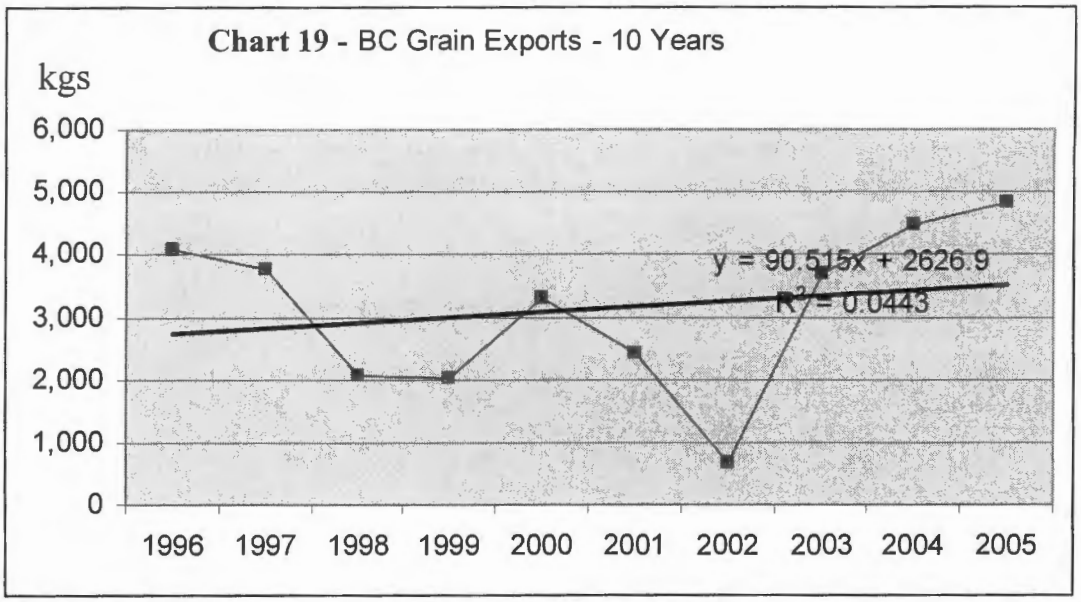
The following information is taken from Statistics Canada and represents the British Columbia Grain exports to all Asian markets. The information is shown in thousands of Canadian Dollars. From Table 2-14, the values have been adjusted by the annual Commodity Price Indices.

Chart 18 – Statistics Canada Historical Grain Exports to Asia

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
ASEAN (Total)	4,068	3,755	2,057	2,030	3,293	2,407	657	3,684	4,481	4,815

Source of data: Statistics Canada
Report Date: 10-Mar-2006

The following chart displays the past 10 years of BC Exports to Asian markets and the



trend line indicates an average increase per year of 2.7% per year compounded over the period. This is the trend forecast increase for Grain for the purposes of this report. For comparison purposes, the industry experts from 5.2.1 estimate an increase of 2.5%. This implies some consistency and possibly a result of the more regionality of the data in this trend forecast. In addition, despite the significant variance over the past ten years in the value of the exports, the most recent years have begun to show a degree of consistency which implies a higher level of credibility in the data than would otherwise be reasonable to assume.

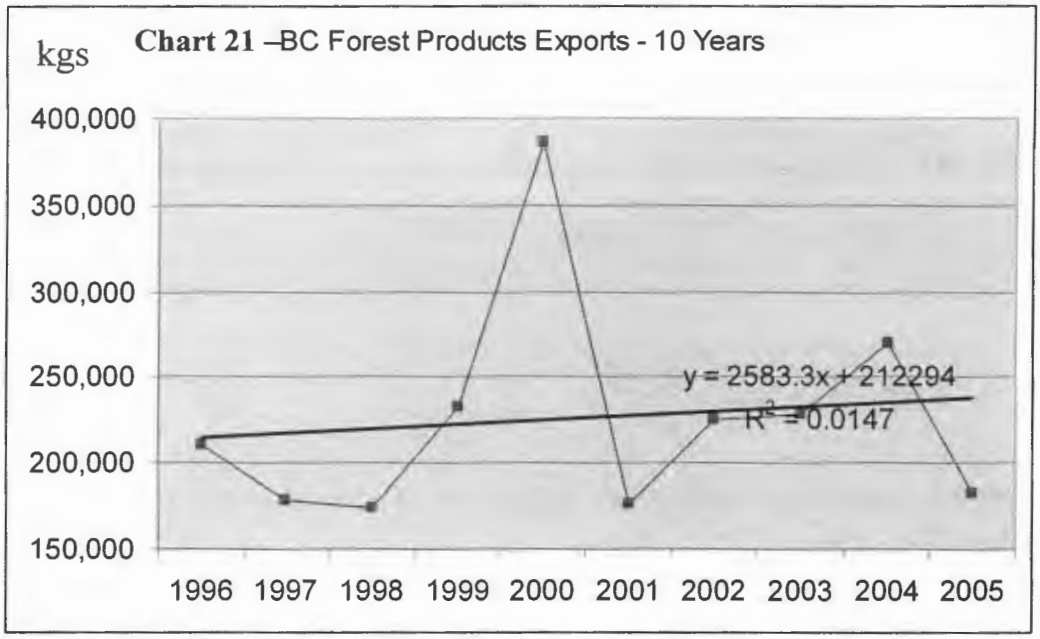
Forest Products Forecast

Chart 20 – Statistics Canada Historical Forest Products Exports to Asia

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
ASEAN (Total)	210,983	177,843	174,469	232,797	386,581	176,252	225,189	228,103	270,120	182,681

Source of data: Statistics Canada
Report Date: 10-Mar-2006

The following chart displays the past 10 years of BC Exports to Asian markets and the



trend line indicates an average increase per year of 1.0% per year over the period. This is the trend forecast increase for Forest Products for the purposes of this report. For comparison purposes, the industry experts from 5.2.1 estimate an increase of 0.4%. Again, this implies some degree of consistency. The likely reason for the more conservative long-term forecast by industry experts is likely related to the Pine Beetle issue and possibly the desire to move more aggressively into U.S. markets with the anticipated settlement of the Softwood Lumber Agreement.

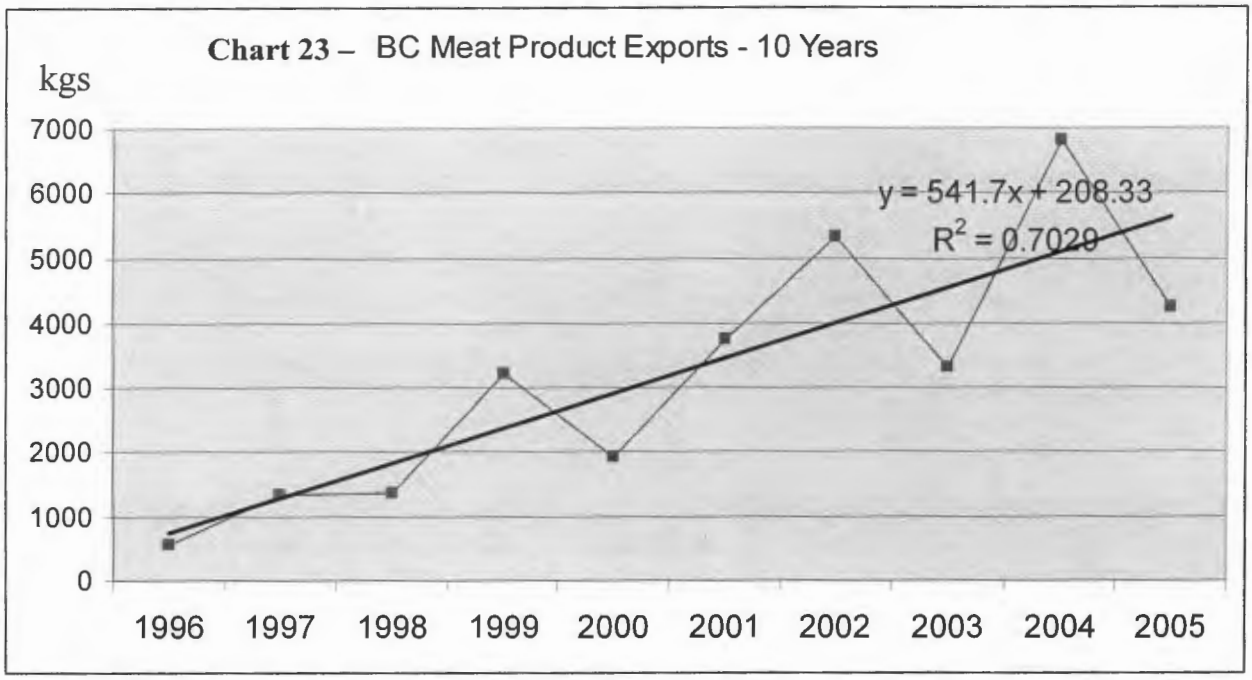
Meat Products Forecast

Chart 22 – Statistics Canada Historical Meat Exports to Asia

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
ASEAN (Total)	571	1,319	1,377	3,233	1,910	3,762	5,338	3,306	6,804	4,257

Source of data: Statistics Canada
Report Date: 10-Mar-2006

The following chart displays the past 10 years of BC Exports to Asian markets and the

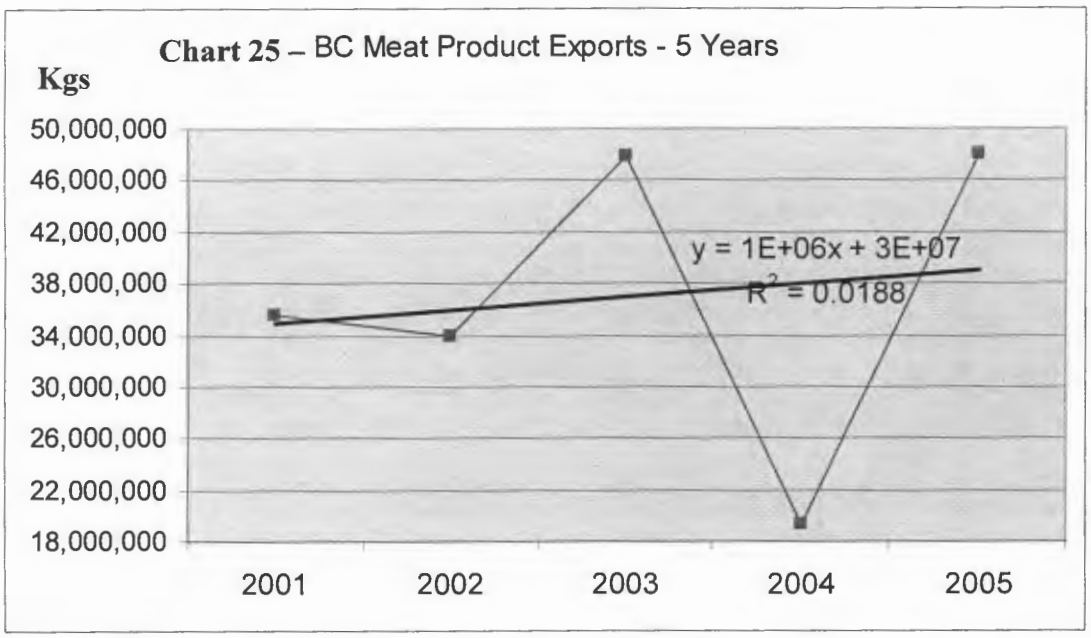


trend line indicates an average increase per year of 22.4% per year over the period. This is the trend forecast increase for Meat Products for the purposes of this report. The meat products historically have been grouped for statistical export purposes. For comparison purposes, the industry experts from 5.2.1 estimate increases for each of the subcategories of Pork, Beef and Poultry in the range of 0.4% to 4.0%. Unfortunately, there exists a significant variance that appears related to the large increases in current years. The large difference in the results obtained from the Statistics Canada data could also be related to the defining of the three commodity types and their numerous classifications and sub-classifications. For this reason, a further trend analysis will be done using information provided by BC STATISTICS - Ministry of Labour & Citizens' Services using more current statistics and volumes instead of monetary values.

Chart 24 – BC Canada Historical Grain Exports to Asia

2001	2002	2003	2004	2005
35,571,182	33,984,904	47,846,684	19,360,036	48,018,226

The following chart displays the past 5 years of BC Exports in Kilograms, according to BC



Statistics, to Asian markets and the trend line indicates an average increase per year of 2.3% per year over the period. This is the trend forecast increase for Meat Products for the purposes of this report. For comparison purposes, the industry experts from 5.2.1 estimate increases for each of the subcategories of Pork, Beef and Poultry in the range of 0.4% to 4.0%. This appears to be much more reliable than the ten year data provided by the values reported in Statistics Canada.

4.3 Analysis Results / Implications

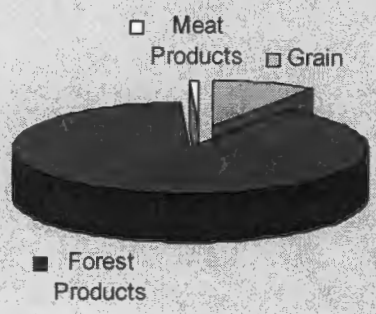
There are two series of results for analysis including the current North Central Regional production of the defined commodities and the forecasted volumes of each of the commodities.

The current production volumes in Twenty Foot Equivalent Units are shown in the following Summary charts.

Chart 26 – Current Regional Production Volumes

Chemicals	Fertilizers	Grain	Forest Products	Pork	Meat Products Poultry	Beef
0	0	15,000	145,000	49	125	9

Chart 27 - Current Commodity Exports to Asian Markets



As mentioned in the analysis section, the actual volumes of fertilizers and Chemicals that are exported from British Columbia to Asian markets as reported by the Western Transportation Advisory Council, are not produced in the North Central region of British Columbia. Further, obviously and not unexpectedly forest products make up over 90% of the volumes currently produced that are potential containerized volumes for an inland port facility. Grain products from the Peace River and North central regions of the province are

also fairly important and meat products are currently fairly insignificant in contribution to the potential supply of export commodities.

The following charts show the results of adding the forecasted volumes provided from the analysis to the existing regional commodity production.

Chart 28 - Forecasts Using Industry Expertise Estimates

	Current Production Volume	2007	2010	2015	Growth Estimate
Grain	15,000	15,759	16,971	19,201	2.50%
Forest Products	145,000	146,162	147,923	150,906	0.40%
Pork	49	53	60	75	4.30%
Poultry	125	132	143	164	2.77%
Beef	9.0	9.1	9.2	9.4	0.05%
	160,183	**162,115**	**165,107**	**170,355**	

As can be seen, there is some degree of difference between the two forecast methods in terms of total forecast volumes. The variance is only 5.5% over the 10 year forecast, and is entirely attributable to the difference in forestry export products, as other commodities are approximately offsetting. This difference associated with the forestry commodities and the growth estimate difference is only 0.5%.

Chart 29 - Forecasts Using Trend Analysis

	Current Production Volume	2007	2010	2015	Growth Estimate
Grain	15,000	15,821	17,137	19,579	2.70%
Forest Products	145,000	147,915	152,396	160,170	1.00%
Pork	49	51	55	62	2.30%
Poultry	125	131	140	157	2.30%
Beef	9.0	9.4	10.1	11.3	2.30%
	160,183	**163,928**	**169,738**	**179,979**	

5. Conclusions

5.1 Review of Observations

The purpose of this study was to determine the regional commodity volumes that could potentially be transported to the Asian market through a North Central British Columbia Inland Port Facility. The purpose did not include a determination of the viability or feasibility of a North Central British Columbia Inland Port Facility.

The results of this data analysis indicate that approximately 160,000 Twenty Foot Equivalent Unit (TEU) container loads of commodities are currently available in the North Central British Columbia region for Asian export. Further, a forecasted increase of 10,000 to 20,000 TEU's will be available for Asian export by 2015. The initial capacity of the Prince Rupert Container Facility is estimated at 500,000 TEU's , to be expanded to approximately 2,000,000 TEU's during the second phase of development.

The implication of this study indicates that there is the potential for approximately one third of the phase 1 containers to be filled in the out-bound direction. Again, as suggested, this is not to imply a feasibility of the Inland Port Facility, only an estimated potential export volume.

In addition, lesser export volumes have not been included from regionally produced, Asian export commodities. In looking at the commodities that are containerized and are moved through the BC Ports to the Asian markets however, there are no other regionally produced commodities that in 2005 exceeded $2 million in export value per year (Statistics Canada, 2005).

5.2 Summary

Based on the observations, analysis and data, there are a number of very interesting and important results. As the preliminary commodity choices were made based on prior research and export volume statistics, it was important to understand that the regional export volumes, those that could be attributed to a North Central British Columbia Inland Port Facility, are dissimilar to the broader western Canadian export volumes provided through the Westac studies. This is especially important as a number of those groups promoting the feasibility of the inland port facility are using the broader scope of data as justification. Major examples of this in my research include both chemicals and fertilizers. Interestingly, there are no chemicals, and no fertilizers from the region being exported to the Asian markets that would be feasibly routed through a regional facility. This is of particular interest as these commodities are included in the study estimate of the Western Transportation Advisory Council (WESTAC), which is the data that appears to be being used by a number of Prince George groups with an interest in the development an Inland Port Facility. The scope of the WESTAC study includes all of Western Canada, which truly is impractical in its application to the Northern BC region. Westac makes no representations regarding this application, it is only noted that the Western Canadian data could be misapplied locally.

5.3 *Limitations of the Study*

There are two main limitations to the information provided through the study of the potential commodity containerized export volumes from the Northern BC region to Asian markets. First, the data availability is very sparse in that there is no single source to determine regional export commodity productions and export volumes. The information is tracked by total export volumes from British Columbia, however this information includes such items as Grains and Livestock from Alberta, Saskatchewan and even Manitoba. This information was available through both Statistics Canada and the Vancouver Port Authority. The details of regional commodities being exported to Asian markets was available provincially through BC statistics with some limitations. Again, the volumes and or values were not available regionally to estimate regional volumes, communication was required between experts in the various commodity industries including marketing boards and associations. The net result is that there is only a reasonable degree of accuracy in the estimated volumes. Attempts were made to verify the accuracy of the estimates by correlating information between different expert groups and published statistics. In addition, estimates were verified by determining which areas in British Columbia are producing the different commodities. This lack of clear data availability dramatically increased the difficulty of the study. The end result however, is an estimated supportable potential export volumes that could be directed through an inland port facility. The limitation involves the fact that the accuracy is not one hundred percent. However, with annual production variations and changes in Asian demand, any data would be subject to inaccuracies over any period of time.

The second significant limitation of the study is related to which industries would be induced to make use of the inland port facility. It was the purpose of this study to estimate potential

export volumes. There is no attempt to claim that the volumes would exist for the facility. The decision for organizations to direct their commodities through the inland port facility would likely be nearly entirely economic. Therefore, for the actual volumes to be directed through the facility, it would be based on the total transportation cost and would have to be a maximum of what currently exists and likely the costs would have to be a reduction to induce the movement of the volumes to counter the risk that the organizations would face in dealing with a new transportation system. Related to this limitation is the fairly low volumes of potential exports, both that currently exist and those that may be enticed to start operations based on the construction of the port facility. The facility size is not likely to ever be driven by the import volumes and the import volumes are anticipated to grow extremely large with continued demand.

5.4 Areas for Further Research

There are a number of areas for relevant further research regarding the proposed inland port facility in Northern British Columbia. First, there would likely be a number of new export opportunities once the port facility was operational. By reviewing other Inland Port facilities in the world, it may be determined what types of business opportunities might exist. Further, if this study was completed by a regional government, they could better plan for and assist in the success of the facility. The government could provide incentives to motivate companies to invest and they could also form partnerships to encourage opportunities for development of the region. These new developments will become increasingly important as the forest industry struggles with it's major issues including the lost harvestable fibre related to the Pine Beetle.

A second area for further research is in the defining of the most effective and efficient facility type and size. As mentioned in the introduction of the scope of this study, there are very limited, if non-existent import opportunities and therefore the facility would have to be constructed based entirely on export opportunities. The facility would have to have input and cooperation from large forestry companies such as Canfor to ensure that the immediate volumes of forest products are captured through the inland port facility. In addition, this paper can be a valuable resource to build upon in that the potential existing and future regionally developed commodities are known with some degree of certainty.

A final area that would be important research is in defining available funding sources for the inland port facility development and the addition of new manufacturing facilities that could be very important to the future economic success of the regions, as well as the success of the Port Facility. For example, there are a number potential funding sources including Northern

Development Initiatives, Community Futures, etc. The research could involve working with these groups to focus marketing efforts towards the entrepreneurs and the existing businesses that have an interest in the areas of manufacturing where the region may have success in exporting to the Asian markets.

List of Appendices

Appendix A Port / Shipping Background Information

- Inland ports are sites away from traditional borders where international trade is processed and value-added services are provided.
- Growth in the global economy over the last decade, incorporating new manufacturing and agricultural production techniques and markets, has increased the demand for efficient transportation service. This demand is a result of locating manufacturing worldwide in an effort to reduce labor cost and efficiently place distribution centers. In an effort to become globally competitive, shippers have begun to focus attention on streamlining production and distribution. The management of the streamlining process has been termed supply chain management.
- A key facet of the supply chain concept important for transportation planners and policy makers to recognize is that transportation capabilities can be "a source of competitive advantage" (Morash 1999, p. 395) for companies. The two most important emphases in supply chain management are the minimization of transportation cost and the reduction of inventory.
- It is apparent that global supply chains are increasingly important for successful business operations and the reduction of "transportation-related waste that can add cost but no value" (Morash 1999, p. 396).
- As the private sector becomes more focused on globalization and efficient supply chains, inland ports may become more important.
- Inland ports may also promote more efficient multi-modal corridors.
- Inland ports appear to offer a number of attractive attributes to shippers and may complement the transportation corridors they serve by raising service levels and lowering total costs.
- Inland ports provide an opportunity to enhance corridor investments because of the capability to balance truckloads on highway, air, rail, or water modes.
- Inland ports have the capability to create local employment, enhance corridor efficiencies, and reduce costs—both private and social—at border points of entry.
- Inland ports can provide the means to eliminate some "transportation-related wastes" associated with inefficient supply chains. Provision of combinations of modes at inland ports can potentially provide opportunities to eliminate these inefficiencies.
- Additional opportunities can occur when value-added services are all commonly located at an inland port.
- An inland port can also provide "a shared location for partners" (Robinson 1999) that want to improve the efficiency of their supply chains.

- An inland port can remove some link inefficiencies by focusing on secondary activities not directly related to production. At inland ports, transportation capabilities in the form of direct interstate highway connections, intermodal rail facilities, or air cargo operations can be building blocks for businesses looking for a competitive advantage (Morash 1999). The provision of all modes allows businesses to choose the best alternative for their needs.

- Standard shipping containers are specified by the International Standards Organization as 20 feet long by 8.5 feet square. These are the standard unit for measuring container throughput-one such standard container is one twenty-foot equivalent unit or one TEU.

- Prince Rupert Phase 1, already under construction, will cost $170 million and provide a capacity for 500,000 TEU's (20-foot containers, or equivalents).

- Phase 2 will cost roughly twice that, and will quadruple the capacity. That means as many as 500 short-term jobs, and perhaps that many long-term ones – plus spin-offs -- down the line.

- The revival, however, is based on national, not regional, needs. It's to stock the shelves of Wal-Marts and Home Depots and other retailers in communities across the continent, and to ship out all kinds of products made in those places to Asia and beyond.

- "We don't have a local market," Krusel said. "And that's actually an advantage." It takes 30 hours less for a ship from Asia to get here than to Vancouver, he said. Because all containers on board are destined for inland cities, there's no sorting to be done. All can be quickly loaded and moved out, and can be in Edmonton, or close to it, by the time a competing ship is tying up in Vancouver.

- The Port of Prince Rupert is the gateway between Asia-Pacific and key North American markets. As the closest port to Asia by 30 hours of sailing time compared to any other West Coast port in North America, it gives shippers approximately one extra round-trip voyage per year. Other advantages:

- Distance from Prince Rupert to key ports in Asia:
    - Hong Kong - 5,286 nautical miles
    - Shanghai - 4,642 nautical miles
    - Tokyo - 3,830 nautical miles

- Deepest harbour in North America

- Year-round service - ice-free harbour

- Safest West Coast port in terms of navigational risk factors

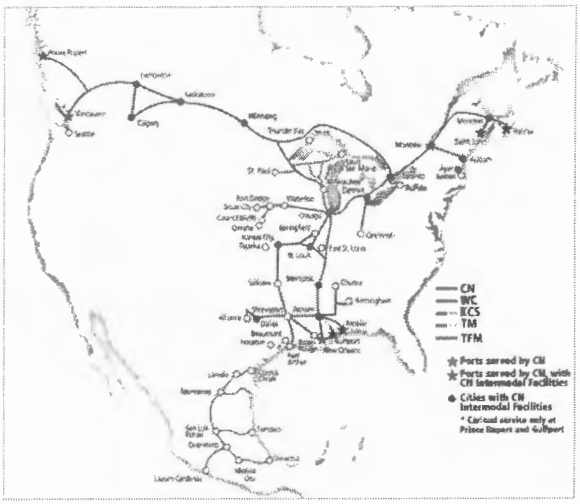
- Closest port to open ocean - minimizes pilotage time in Canadian waters and reduces costs

- Six modern terminals - dedicated facilities to handle grain, coal, forest products and specialty grain

- Ready for tomorrow's 12,000 TEU superships

- Fast access to every major market in North America. Transit times from Prince Rupert are:

  107 hours - to Chicago
  136 hours - to Memphis
  108 hours - to Toronto
  115 hours - to Montreal



- The CN mainline begins directly at the Port of Prince Rupert's door, where 7 daily trains will depart every week.

- New container ships cost an average of $80 million

- Five ships are needed for a service string, such as between the Pacific Northwest and Asia.

- Container equipment to support a single new-generation vessel costs in the $10-to-15 million range.

- An average dry container costs about $3,000, and with refrigerated units ranging from $25,000 for an insulated container with a standard generation unit, up to $50,000 for a container that uses microprocessors to continuously monitor and control temperature and humidity.

- A typical trans-Pacific round trip voyage takes 42 days and incurs a daily operating cost in excess of $40,000

- A typical linehaul container vessel carries 4,000 to 5,000 TEU, including capital, administrative and operating costs.

- Linehaul ships are designed for loading and service flexibility, making fewer port calls and spending less time in each port. In the Pacific, for example, they deliver huge container volumes at high capacity "load center" or trans-shipment ports, for regional distribution via smaller "feeder" vessels, truck or rail.

Appendix B Contacts

Pat Bell, MLA - August 5th Meeting

What Types of Business Opportunities will Exist?
Direct Potential Opportunities include:

- Transportation
- Backhauling to Asian Market
- Asians are looking for products that they can add value to as they have extremely low labor costs.
- Product examples: Specialty Grains, Lawn Seed, Tree-tops
- Trucking
- House Package Business

Indirect opportunities may include: Tires, Fuel, Etc.

Cathy Scouten, Manager, Corporate Affairs, Initatives Prince George - August 24th Meeting

- Task Force may be created regarding the feasibility of a Inland Port in Prince George. Myself, and Keith Hampe are potential candidates for the task force.
- Will share information.
- Look forward to the results of our analysis and papers.

Stieg Hoeg, Manager, Prince George Airport & Board Member of NWDC – Sept. 5th Meeting

- Discussed implications of the Port for the Airport
- Primary opportunity is fuel supply should the airport become successful in becoming a Refueling Centre

Professor Thomas A. Grigalunas, Environmental and Natural Resource Economics, Coastal Institute, Kingston, RI - Correspondence

- Discussed use of the forecast model developed by Grigalunas and Luo
- Recommended looking at models developed in UBC.

Meifeng Luo (Ph.D), Environmental and Natural Resource Economics, University of Rhode Island, Kingston,RI

- Discussed use of the forecast model developed by Grigalunas and Luo
- Recommended looking at model: Determinants of the demand for maritime imports and exports by Pablo Coto-Milla´n,, Jose´ Ban˜os-Pino, and Jose´ Villaverde Castro

Graham Kedgley, Board Member of NWDC – Sept. 7th, Meeting

- Very little discussion – recommended sources for additional information.

Don Krusel, President and CEO of the Prince Rupert Port Authority, Sept. 8th Meeting

Port Expansion is Containers only

- Genetically Modified Grains
- High Value Trade
- Main Target is Asian Goods Imports
- Asia to Mid-North America
- Pork / Beef, etc going back.
- Opportunities for back-haul – inexpensive
- Transformational Infrastructure – This infrastructure increases opportunities.
- Asian Markets taken from other Pacific Coastline
- Vancouver and Fraser River are Container Port
- Market is growing faster than facilities
- 2 million TEU's

Harold C. Westerman, P.Eng., Branch Manager, MOFFATT & NICHOL – Sept. 27th Meeting

- Look at Port of Savannah – Distribution Centres
- Export Facilities – ie: Specialty Grains (Hopper Cars)
- CN is going to be the key!
- 7,000 foot long train headed to Eastern Markets is not going to stop in Prince George
- Truck from PG to Prince Rupert may be more feasible than stopping train
- Prince Rupert is discretionary port – no local market
- One day less travel time – 2 Million TEU's to Rupert

David Farrell, Sessional Lecturer, Transportation and Logistics, University of British Columbia, Vancouver – Oct. 12 Correspondence

- Awaiting response to questions e-mailed.
- Recommended talking to Don Krusel and Chamber of Commerce.

Graham Dallas – Regional Manager Communications, CN Rail

- $3 to $4 million for container moving equipment
- On rolled concrete
- Up to mkt. Forces re Prince George Region
- CN is not interested in the investment as much as letting local entrepreneurs
- Economic Volumes – would not define
- Prince Rupert Model unique in that there is no local market
- Edmonton Intermodal - $25 Million – but has some market

Faye Wu, MBA, Sr. Marketing and Trade Officer/Agente principale de commerce & de marché, International Team/Équipe Internationale Agriculture and Agri-Food Canada/Agriculture et Agroalimentaire Canada, 420 - 4321 Still Creek Drive, Burnaby, BC, V5C 6S7

- Volume of grains and fertilizers are exported to Asian markets from Northern British Columbia

Mr. Dennis Pervis, BC Ministry of Agriculture and Land in Northern BC, Dawson Creek, 1201 103rd Avenue, Dawson Creek BC V1G 4J2

- Volume of grains and fertilizers are exported to Asian markets from Northern British Columbia

Sonya Muller, Reporting Coordinator, Decision Support, Information Services Department, Vancouver Port Authority

- Statistics for Inbound and Outbound to Asia - The top level categories included are:
    - Forest Products
    - Grain Products
    - Meat and Fish
    - Chemical Products
    - Fertilizers

Lisa Baratta, BCom, LLB, Manager, Corporate Services, Western Transportation Advisory Council (WESTAC)

Container imports forecasts

Appendix C Literary Research

The literary research, in order of perceived value to this paper, includes the following:

- **Estimating the Demand for Container Port Services: The Importance of Including Substitute Ports, July 31, 2002, Meifeng Luo and Thomas A. Grigalunas, Department of Environmental and Natural Resource Economics, University of Rhode Island**

- **Port of Sacramento Maritime Demand Analysis, Draft Report, September 2004, Parsons Brinckerhoff, PB Ports & Marine, Inc. In Association With BST Associates**

- **A MULTIMODAL TRANSPORTATION SIMULATION MODEL FOR US COASTALCONTAINER PORTS, July 31, 2002, Meifeng Luo and Thomas A. Grigalunas, Department of Environmental and Natural Resource Economics, University of Rhode Island**

- **A TRANSPORTATION DEMAND SPLIT MODEL FOR, INTERNATIONAL PORTS IN TAIWAN AREA, Chien-Chang CHOU, Department of International Trade, Ta Hwa Institute of Technology, Ching-Wu CHU, Associate Professor Dept. Shipping & Transportation Management, National Taiwan Ocean University, Gin-Shuh LIANG, Professor, Dept. Shipping & Transportation Management, National Taiwan Ocean University Journal of the Eastern Asia Society for Transportation Studies, Vol.5, October, 2003**

- **Determinants of the demand for maritime imports and exports, 29 May 2004,Pablo Coto-Milla´n a,*, Jose´ Ban˜os-Pino b, Jose´ Villaverde Castro a Department of Economics, University of Cantabria, Avenida Los Castros, Department of Economics, Campus del Cristo, University of Oviedo, Oviedo, Spain**

- **British Columbia Ports Strategy : Final "March 2005", Co-published by the Ministry of Small Business and Economic Development and the Ministry of Transportation.**

- **A framework for sustainable port planning in inland ports: a multistakeholder approach., Michaël Dooms and Cathy Macharis,, (2003) Vrije Universiteit Brussel, Department of Business Economics and Strategic Management**

- **INLAND PORTS: PLANNING SUCCESSFUL DEVELOPMENTS, Jolanda Prozzi, Russell Henk, John McCray, Rob Harrison, Center for Transportation Research, The University of Texas at Austin, International Journal of Maritime Economics, 2002**

- **Challenging the Derived Transport Demand: Geographical Issues in Freight Distribution, Jean-Paul Rodrigue1, Department of Economics & Geography, Hofstra University, Hempstead, New York 11549, USA, (April 2005)**

- **Balancing Port Planning: Demand, Capacity, Land, Cost, Environment, and Uncertainty, Ports Conference 2004, Stephan A. Curtis - Editor, May 23–26, 2004, Houston, Texas, USA**

- **COMPETITION, EXCESS CAPACITY, AND THE PRICING OF PORT INFRASTRUCTURE, H.E. HARALAMBIDES, Center for Maritime Economics and Logistics (MEL), Erasmus University Rotterdam, Burg.**

- **Port Pricing Structures and Ship Efficiency, SIRI PETTERSEN STRANDENES, Centre for International Economics and Shipping, Norwegian School of Economics and Business Administration**

- **Demand Planning and Sales Forecasting: A Supply Chain Essential, Edward J. Marien, Supply Chain Management Review, Winter 1999.**

- **DEMAND FORECAST BASED MODELLING AND CONTROL OF SUPPLY CHAIN, Heli Laurikkala*, Mikko Ek**, Juuso Rantala****) Machine Design, Tampere University of Technology, 33101 Tampere, Finland **) Department of Accounting and Finance, University of Vaasa, 65101 Vaasa, Finland ***) Automation and Control, Tampere University of Technology, 33101 Tampere, Finland**

- **Grain: World Markets and Trade, Foreign Agricultural Service Circular Series, FG 01-04, January 2004**

- **PORT OF VANCOUVER FOREST, GRAINS, FERTILIZER, MEAT & FISH, CHEMICAL PRODUCTS (in metric tonnes) ASIA IMPORT & EXPORT, YTD NOVEMBER 2005 VS YTD NOVEMBER 2004, Sonya Muller, Reporting Coordinator, Decision Support, Information Services Department, Vancouver Port Authority**

- **Fertilizer Production Capacity Data, Canada, Canadian Fertilizer Institute, Suite 802, 350 Sparks Street, Ottawa ON K1R 7S8**

Appendix D Industry Contacts

The following industry contacts provided information regarding commodity production and forecast volumes.

Kristy Nudds, Editor, Canadian Poultry
P.O. Box 530, 150 Donly Dr.S.
Simcoe, ON N3Y 4N5

Tanya Dykstra
Client Manager for Poultry anada
Tel: 1-866-467-6920 Fax: 1-866-467-1371

Irmi Critcher
Director
BC Grain Producer's Association

Paul Gosh, Manager, Data Services BC STATS
Mail Address Box 9410, Stn Prov Govt, Victoria, BC V8W 9V1
Location 1st Floor, 553 Superior Street, Victoria

Dan Schrier, Manager, Data Services BC STATS
Mail Address Box 9410, Stn Prov Govt, Victoria, BC V8W 9V1
Location 1st Floor, 553 Superior Street, Victoria

Kai Huei Lin
Data Dissemination Officer | Agente de diffusion des données
Statistics Canada | Statistique Canada
Client Services Division | Division des services à la clientèle
R.H. Coats Building 1 W | Statistics Canada | 120 Parkdale Avenue Ottawa ON K1A 0T6

Steven F. Kozuki, RPF
General Manager, Forestry
Council of Forest Industries
400-1488 4th Ave
Prince George, BC

Gilles Laurin
Administrative & Systems Support Specialist
Spécialiste administratif et en systèmes informatiques
CCPA - ACFPC, 805-350 Sparks, Ottawa, ON, K1R 7S8

Lisa Baratta, BCom, LLB
Manager, Corporate Services
Western Transportation Advisory Council (WESTAC)

Meifeng Luo (Ph.D)
Environmental and Natural Resource Economics
University of Rhode Island, 1 Greenhouse Rd, Suite 209
Kingston, RI 02881, USA

Sonya Muller
Reporting Coordinator, Decision Support
Information Services Department
Vancouver Port Authority

Faye Wu, MBA
Sr. Marketing and Trade Officer/Agente principale de commerce & de marché
International Team/Équipe Internationale
Agriculture and Agri-Food Canada/Agriculture et Agroalimentaire Canada
420 - 4321 Still Creek Drive
Burnaby, BC

Rick Remesch, C.A.
Controller
Pulp and Paper Operations
Canadian Forest Products Ltd

Stéphanie Turple
Communications Coordinator/
Coordonnatrice des communications
Chicken Farmers of Canada / Les Producteurs de poulet du Canada
350 Sparks St., Suite 1007, Ottawa ON K1R 7S8

List of Tables

Table 2-1 Vancouver Port Cargo Statistics

PORT VANCOUVER

CARGO STATISTICS REPORT *

Period: January to OCTOBER 2005 / 2004

Printed: 12/2005 10:07
Page 1 of 3

All figures are expressed in metric tonnes except where indicated

CARGO TONNAGE BY COMMODITY	2005	2004	% Change
COAL	21,343,131	20,246,126	5 %
			5 %
GRAIN	6,831,993	6,863,528	0 %
Barley	247,811	410,636	-40 %
Rapeseed (Canola)	2,179,593	1,965,716	11 %
Specialty and Other Grain Products	296,457	356,711	-17 %
Wheat	4,108,132	4,130,465	-1 %
FOREST PRODUCTS	6,532,628	6,839,418	-4 %
Lumber and Sawn Timber	1,643,290	1,914,883	-14 %
Other Forest Products	1,361,183	1,341,850	1 %
Wood Pulp	3,528,235	3,582,685	-2 %
FERTILIZER COMMODITIES	10,182,418	10,829,177	-6 %
Other fertilisers	118,755	193,696	-39 %
Phosphate Rocks	87		0 %
Potash	4,870,141	5,353,145	-9 %
Sulphur	5,193,435	5,282,336	-2 %
CHEMICALS	2,231,586	2,314,434	-4 %
Caustic Soda	282,414	342,432	-18 %
Organic chemicals	1,700,075	1,677,367	1 %
Other Chemicals	249,097	294,635	-15 %
PETROLEUM PRODUCTS	4,793,556	3,290,740	46 %
Crude Petroleum	970,634	461,339	110 %
Fuel Oil	1,975,388	1,065,556	85 %
Gasoline	1,239,914	1,155,244	7 %
Other Petroleum Products	607,620	608,601	0 %
OTHER COMMODITIES	12,365,995	10,685,581	16 %
Animal Feed	2,047,368	1,333,679	54 %
Animal Vegetable Oils, Fats & Waxes	456,589	611,980	-25 %
Food Products, Beverages and Tobacco	2,513,477	2,065,430	22 %
Machinery and Equipment	1,059,879	997,953	6 %
Metals and Ores	2,413,866	2,051,913	18 %
Other General Cargo	2,400,686	2,255,338	6 %
Other Minerals	762,029	675,696	13 %
Sand and Gravel	712,181	693,672	3 %
TOTAL ALL COMMODITIES	64,281,317	61,069,054	5 %

Notes:

Figures in this report may be subject to adjustments for year-end reporting.

1 Other Forest Products includes Newsprint, Woodchips, Logs, Plywood and Fibre Liner Board

2 Other Fertilizers includes Urea and Sulphur Compounds

3 Organic Chemicals consists primarily of ethylene dichloride, ethylene glycol, methanol, styrene monomer and Nitre (a gasoline additive)

4 TEU, or Twenty-foot Equivalent Unit, is an industry standard measurement of container size

* Calculation of TEUs has been adjusted to count 45' containers as 2.25 TEUs whereas prior to 2004, they were only counted as 2 TEU's

5 GRT, or Gross Registered Tonnage, is an industry standard measurement of vessel capacity

PORT VANCOUVER

CARGO STATISTICS REPORT *

Period: January to OCTOBER 2005 / 2004

All figures are expressed in metric tonnes except where indicated

CARGO TONNAGE BY VARIOUS GROUPINGS	2005	2004	% Change
TONNAGE BY DIRECTION	64,281,315	61,069,051	5 %
INBOUND	8,189,039	7,353,821	11 %
OUTBOUND	56,092,276	53,715,230	4 %
TONNAGE BY CARGO TYPE	64,281,316	61,069,051	5 %
BREAK BULK	2,810,265	2,768,747	1 %
CONTAINERIZED	11,812,966	11,534,921	2 %
DRY BULK	42,669,398	40,888,377	4 %
LIQUID BULK	6,988,687	5,877,006	19 %
FOREIGN/DOMESTIC TONNAGE	64,281,316	61,069,051	5 %
DOMESTIC	2,939,634	2,747,123	7 %
FOREIGN	61,341,682	58,321,928	5 %

OTHER PORT STATISTICS	2005	2004	% Change
CONTAINER STATISTICS BY TEU *			
TOTAL CONTAINER TEU	1,461,233	1,383,089	6 %
TOTAL INBOUND TEU	739,101	692,098	7 %
TOTAL OUTBOUND TEU	722,132	690,911	5 %
TOTAL EMPTY TEU	201,343	160,253	26 %
EMPTY INBOUND TEU	23,442	38,499	-39 %
EMPTY OUTBOUND TEU	177,901	121,754	46 %
TOTAL LADEN TEU	1,259,890	1,222,756	3 %
LADEN INBOUND TEU	715,659	653,599	9 %
LADEN OUTBOUND TEU	544,231	569,157	-4 %
CRUISE SHIP VOYAGES AND PASSENGERS			
REVENUE PASSENGERS	910,172	929,976	-2 %
VOYAGES	272	286	-5 %
FOREIGN VESSELS AND GRT			
FOREIGN VESSEL CALLS	2,269	2,332	-3 %
GROSS REGISTERED TONNAGE	90,261,654	98,229,432	8 %

Notes:

Figures in this report may be subject to adjustments for year-end reporting.

1 Other Forest Products includes Newsprint, Woodchips, Logs, Plywood and Fibre/Linerboard

2 Other Fertilizers includes Urea and Sulphate Compounds

3 Organic Chemicals consists primarily of ethylene dichloride, ethylene glycol, methanol, styrene monomer and Methyl tertiary butyl ether

4 TEU or Twenty-foot Equivalent Unit, is an industry standard measurement of container size

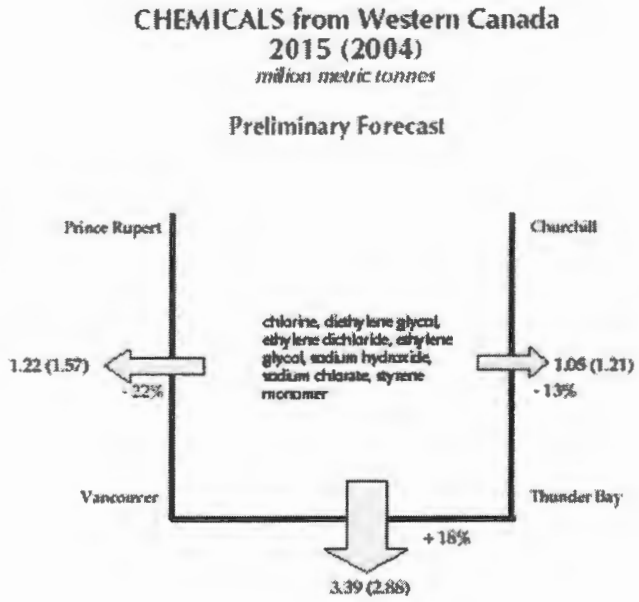
* Calculation of TEUs has been adjusted to count 45' containers at 2.25 TEUs whereas prior to 2004, they were only counted as 2 TEUs.

5 GRT, or Gross Registered Tonnage, is an industry standard measurement of vessel capacity

REPORTED FROM THE PORTS WEBSITE

For further information contact PA Information Services Dept. Tel (604) 665-9153

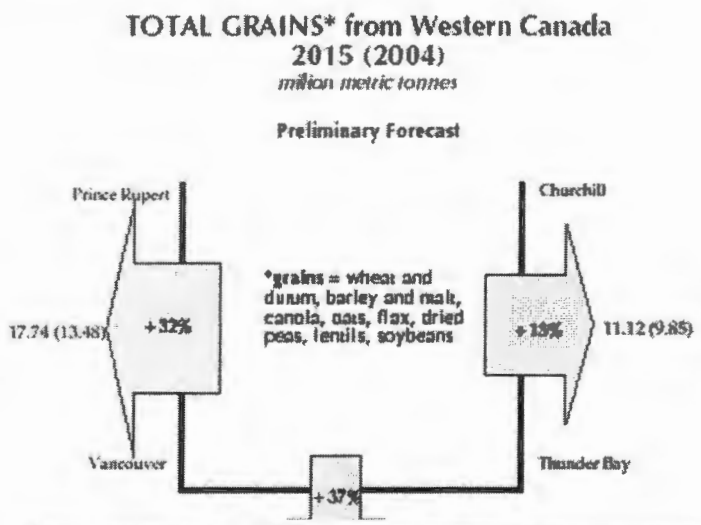
Table 2-2 Western Canadian Chemical Exports



	Chemicals Shipments *(million metric tonnes)*			
Year	Westbound	Southbound	Eastbound	Total
HISTORY 2000	2.02	1.97	.92	4.92
HISTORY 2004	1.57	2.88	1.21	5.66
FORECASTS 2005	1.76	2.76	1.02	5.54
FORECASTS 2006	1.78	2.99	1.02	5.80
FORECASTS 2007	1.75	3.39	1.05	6.20
FORECASTS 2008	1.56	3.41	1.05	6.02
FORECASTS 2009	1.40	3.37	1.05	5.82
FORECASTS 2010	1.22	3.39	1.05	5.66
FORECASTS 2015	1.22	3.39	1.05	5.66
Avg. Annual Growth Rate 2015/2004	*-2.3%*	*1.5%*	*-1.3%*	*0%*

Western Transportation Advisory Council, Vancouver, BC

Table 2-3 Western Canadian Grain Exports



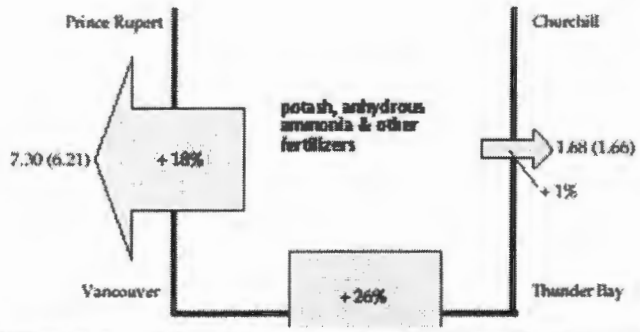
	Total Grains* Shipments *(million metric tonnes)*				
	Year	Westbound	Southbound	Eastbound	Total
HISTORY	2000	17.40	3.58	11.05	32.03
	2004	13.48	2.99	9.85	26.32
FORECASTS	2005	14.26	2.45	9.67	26.37
	2006	15.14	3.19	10.12	28.44
	2007	15.59	3.44	10.28	29.30
	2008	15.99	3.55	10.45	29.98
	2009	16.54	3.76	10.61	30.90
	2010	17.04	3.91	10.74	31.68
	2015	17.74	4.11	11.12	32.96
	Avg. Annual Growth Rate 2015/2004	*2.5%*	*2.9%*	*1.1%*	*2.1%*

Western Transportation Advisory Council. Vancouver. BC

Table 2-4 Western Canadian Fertilizer Exports

TOTAL FERTILIZERS from Western Canada
2015 (2004)
million metric tonnes

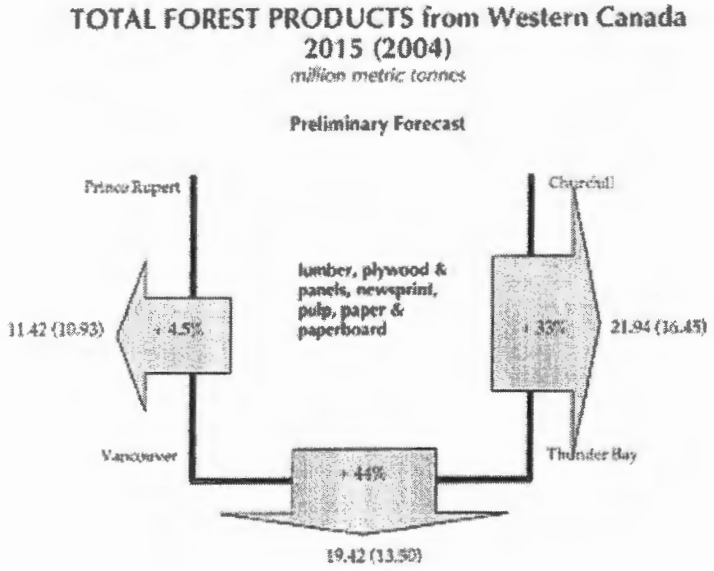
Preliminary Forecast



	Total Fertilizer Shipments *(million metric tonnes)*			
Year	Westbound	Southbound	Eastbound	Total
HISTORY 2000	4.18	11.72	1.89	17.79
2004	6.21	12.09	1.66	19.96
FORECASTS 2005	6.35	12.38	1.55	20.27
2006	6.30	13.11	1.63	21.04
2007	6.60	14.00	1.64	22.24
2008	6.60	14.77	1.65	23.02
2009	7.10	14.93	1.67	23.70
2010	7.30	15.09	1.68	24.07
2015	7.30	15.29	1.68	24.27
Avg. Annual Growth Rate 2015/2004	*1.5%*	*2.2%*	*0.1%*	*1.8%*

Western Transportation Advisory Council. Vancouver. BC

Table 2-5 Western Canadian Forest Products Exports

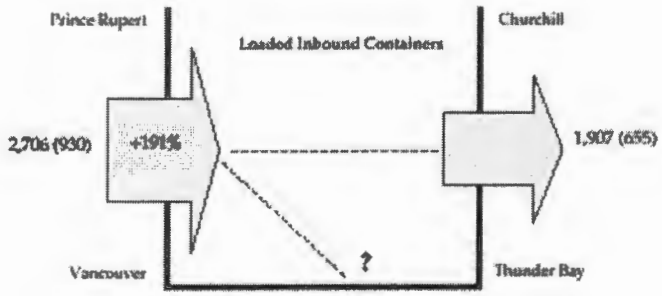


	Total Forest Products Shipments *(million metric tonnes)*				
	Year	Westbound	Southbound	Eastbound	Total
HISTORY	2000	11.01	13.55	9.48	34.04
	2004	10.93	13.50	16.45	40.89
FORECASTS	2005	10.51	15.43	17.89	43.84
	2006	10.74	16.43	19.18	46.48
	2007	10.80	17.34	19.27	47.42
	2008	11.06	17.79	19.97	48.91
	2009	11.27	18.55	20.65	50.48
	2010	11.34	18.76	21.03	51.13
	2015	11.42	19.42	21.94	52.78
	Avg. Annual Growth Rate 2015/2004	*0.4%*	*3.4%*	*2.7%*	*2.3%*

Table 2-7 Western Canadian Container Exports

CONTAINERS from Western Canada
2015 (2004)
'000 TEU's

Preliminary Forecast



	Loaded Import Containers *('000 teu's)*			
	Year	In through West Coast	Southbound	Eastbound[1]
HISTORY	2000	488	?	344
	2004	930	?	655
FORECASTS	2005	1,058	?	746
	2006	1,195	?	842
	2007	1,319	?	930
	2008	1,440	?	1,015
	2009	1,598	?	1,126
	2010	1,776	?	1,252
	2015	2,706	?	1,907
	Avg. Annual Growth Rate 2015/2004	*10.2%*	*0*	*10.2%*

Western Transportation Advisory Council, Vancouver, BC

Table 2-8 Total Western Canadian Exports by Product

2004 Western Canada Exports

	TOTAL TONNES
coal	**31,000,000**
grains	**26,320,000**
forest products	**40,890,000**
fertilizers & potash	**19,960,000**
sulphur	**8,200,000**
other food products	7,009,748
chemicals	**5,279,000**
other chemicals	3,351,809
sand & gravel	2,846,268
stone & limestone	2,494,627
cement	1,836,754
other forest products (logs, bolts, chips)	1,550,000
primary iron & steel	1,113,746
non-ferrous products & alloys	922,620
residual (textiles, etc)	920,604
fabricated steel products	590,532
machinery & related eqmt.	519,999
non-metallic products	458,742
fresh & frozen fruits & vegetables	289,454
live animals	225,530
non-ferrous metals	203,653
Furniture, major appliances and household equipment	162,032
passenger & other motor vehicles	72,010
electrical machinery & elect. Eqmt.	63,001
plastics & rubber	15,882
total foreign exports	**156,280,129**
forecasts as % of total	82.06%

Western Transportation Advisory Council. Vancouver. BC

Table 2-9 Statistics Canada – British Columbia Exports

Industry Canada Industrie Canada

Canada

strategis.gc.ca

▸ Trade and Investment ▸ Trade Data Online

Title Canadian Total Exports

Industries Listing of Top 25 Industries (5-digit NAICS codes)

Origin
- B.C. AND TERRITORIES ---- British Columbia
- B.C. AND TERRITORIES ---- Nunavut
- B.C. AND TERRITORIES ---- North-West Territories
- B.C. AND TERRITORIES ---- Yukon

Destination
ASIA (Total) Afghanistan
ASIA (Total) Bangladesh
ASIA (Total) Bhutan
ASIA (Total) Brunei Darussalam
ASIA (Total) Burma (Myanmar)
ASIA (Total) Cambodia (Kampuchea)
ASIA (Total) China
ASIA (Total) East Timor
ASIA (Total) Hong Kong
ASIA (Total) India
ASIA (Total) Indonesia (includes East Timor)
ASIA (Total) Japan
ASIA (Total) Korea, North
ASIA (Total) Korea, South
ASIA (Total) Laos
ASIA (Total) Macau (Macao)
ASIA (Total) Malaysia
ASIA (Total) Maldives
ASIA (Total) Mongolia
ASIA (Total) Nepal
ASIA (Total) Pakistan
ASIA (Total) Philippines
ASIA (Total) Singapore
ASIA (Total) Sri Lanka
ASIA (Total) Taiwan (Taipei)
ASIA (Total) Thailand
ASIA (Total) Vietnam

Period Latest 5 years

Units Value in Thousands of Canadian Dollars

	2000	2001	2002	2003	2004
32211 - Pulp Mills	1,935,272	1,263,095	1,247,371	1,336,485	1,525,046
32111 - Sawmills and Wood Preservation	1,847,647	1,572,736	1,436,739	1,310,361	1,500,998
32212 - Paper Mills	412,485	362,673	279,584	260,299	275,767
11331 - Logging	161,063	180,799	289,207	275,547	244,812
32199 - All Other Wood Product Manufacturing	40,989	50,274	57,305	53,026	55,750
32121 - Veneer, Plywood and Engineered Wood Product Manufacturing	160,957	142,998	100,450	88,498	97,532

	2000	2001	2002	2003	2004
32519 - Organic Chemical Manufacturing	188,154	182,201	222,653	429,622	156,878
32518 - Other Basic Inorganic Chemical Manufacturing	11,722	13,519	112,581	39,095	47,082
31161 - Animal Slaughtering and Processing	120,335	89,701	117,565	109,249	135,735

Table 2-10 Total British Columbia Beef Production

REGION in BC	**1986**	**1996**	**2001**
Coast	12,875	20,480	15,960
Okanagan	23,562	23,702	24,124
Kootenays	19,485	22,240	21,220
Thomspon-Nicola	47,039	52,574	57,291
Cariboo	47,464	54,874	57,498
Central	25,939	37,762	43,747
Peace	31,134	56,151	61,087
Total in British Columbia	**207,498**	**267,783**	**279,927**

Table 2-11 Total Vancouver Containerized Export Volumes

PORT OF VANCOUVER
FOREST, GRAINS, FERTILIZER, MEAT & FISH, CHEMICAL PRODUCTS (In metric tonnes)
ASIA IMPORT & EXPORT
YTD NOVEMBER 2005 VS YTD NOVEMBER 2004

	2005 . YTD Nov			2004 . YTD Nov		
	Inbound	Outbound	TOTAL	Inbound	Outbound	TOTAL
Forest Products	**305,610**	**5,682,021**	**5,987,631**	**262,729**	**6,089,112**	**6,351,842**
Logs, bolts, and other wood	148,973	316,357	465,330	132,039	414,153	546,192
Articles of wood or plaiting mat'ls(incl plywood, barrels, basketwork	72,509	97,017	169,526	79,045	123,071	202,116
Logs, bolts and other wood	76,464	219,340	295,804	52,994	291,082	344,076
Lumber and sawn timber	4,076	1,572,404	1,576,480	3,236	1,860,762	1,863,999
BASSWOOD	0	21	21	14	21	35
CEDAR BOARD	0	4	4	0	18	18
CEDAR LUMBER	206	26,340	26,546	93	24,709	24,803
FINISHED LUMBER	0	26	26	0	136	136
LUMBER	2,594	1,545,837	1,548,431	1,461	1,833,151	1,834,612
PLANK	768	0	768	680	0	680
PROCESSED WOOD	463	116	579	922	527	1,449
SAWN TIMBER	44	0	44	53	2,200	2,253
WALL STRIPPING	0	0	0	12	0	12
WHITE SPRUCE LUMBER	0	60	60	0	0	0
Newsprint	0	202,796	202,796	229	214,713	214,943
NEWSPRINT	0	202,619	202,619	4	213,985	213,989
NEWSPRINT PAPER	0	177	177	225	590	815
NEWSPRINT ROLL	0	0	0	0	139	139
Other paper and paper board	152,248	123,992	276,240	127,044	140,095	267,140

PORT OF VANCOUVER
FOREST, GRAINS, FERTILIZER, MEAT & FISH, CHEMICAL PRODUCTS (In metric tonnes)
ASIA IMPORT & EXPORT
YTD NOVEMBER 2005 VS YTD NOVEMBER 2004

Cartons, boxes, bags and similar articles of paper, paperboard	16,501	8,482	24,983	12,699	4,810	17,509
Newspapers,journals and periodicals	478	1,374	1,852	471	2	473
Other paper/paperboard and articlesthereof (incl cups, plates, tra	24,841	11,282	36,123	18,824	12,815	31,639
Other products of the printing industry	6,854	2,004	8,858	6,191	2,003	8,195
Paper stock used for household or sanitary purposes,of a width >	139	0	139	184	27	211
Paper/paperboard, coated only with inorganic substances (incl ka	519	1,311	1,830	633	3,516	4,149
Paper/paperboard,cellulose wadding,webs of cellulose fibre, coat	41,107	1,570	42,677	32,528	19,118	51,646
Paper/paperboard,corrugated,creped,perforated, not for ha	0	120	120	4	611	614
Printed books, brochures, leaflets and similar printed matter	15,331	1,616	16,947	15,712	583	16,295
Sanitary articles and apparel of paper or cellulose fibres	3,602	2,332	5,935	2,887	2,756	5,643
Stationery articles of paper or paperboard	33,026	715	33,741	32,377	329	32,706
Trade advertising material, commercial catalogues (incl flyers)	632	1,696	2,328	665	323	989
Uncoated kraft paper/paperboard,in rolls/sheets(incl sack kraft pa	1,116	81,072	82,188	819	79,725	80,544
Uncoated paper/paperboard in rolls/sheets (incl linerboard) nes	5,302	9,768	15,070	1,974	13,378	15,352
Uncoated paper/paperboard, used forprinting or writing	2,633	416	3,049	1,037	72	1,109
Wallpaper, similar wall coverings; window transparencies of pape	65	234	299	37	28	65
Pulpwood	**0**	**296,898**	**296,898**	**0**	**295,046**	**295,046**
Logs for pulping (pulpwood)	0	520	520	0	10	10
PULPWOOD	0	520	520	0	10	10
Pulpwood chips	0	296,378	296,378	0	295,036	295,036
HEMLOCK CHIP	0	21	21	0	0	0
PULPWOOD CHIP	0	33,307	33,307	0	0	0
WOODCHIP	0	263,050	263,050	0	295,036	295,036
Woodpulp	**313**	**3,169,573**	**3,169,886**	**180**	**3,164,342**	**3,164,522**

PORT OF VANCOUVER
FOREST, GRAINS, FERTILIZER, MEAT & FISH, CHEMICAL PRODUCTS (in metric tonnes)
ASIA IMPORT & EXPORT
YTD NOVEMBER 2005 VS YTD NOVEMBER 2004

Pulp of wood/oth fibrous cellulosic;waste and scrap, paper/paj	313	3,169,573	3,169,886	180	3,164,342	3,164,522
Chemical wood pulp,soda or sulphate(exc dissolving grades)	313	2,611,632	2,611,946	180	2,620,355	2,620,535
Mechanical wood pulp	0	17	17	0	0	0
Other chemical wood pulp; other fibrous cellulosic pulps	0	103,677	103,677	0	215,423	215,423
Waste and scrap of paper/paperboard	0	454,247	454,247	0	328,565	328,565
Grain Products	**90,691**	**5,601,725**	**5,692,417**	**92,766**	**5,949,083**	**6,041,849**
Barley	0	170,948	170,948	40	358,341	358,380
BARLEY SEED	0	17,904	17,904	23	0	23
MALT BARLEY	0	153,044	153,044	17	358,341	358,357
Corn	3	999	1,002	0	66	66
CORN SEED	0	103	103	0	18	18
POPCORN	3	895	898	0	47	47
Flaxseed	752	17,581	18,333	253	16,453	16,705
FLAXSEED	752	17,509	18,260	253	16,453	16,705
LINSEED	0	73	73	0	0	0
Oats and rye	25	25,926	25,950	42	121,102	121,144
OAT	25	16,626	16,650	42	15,469	15,511
RYE SEED	0	9,300	9,300	0	105,633	105,633
Other cereals	89,844	195,385	285,229	92,385	153,042	245,427
Preparations of cereals/flour/starch/milk; pastrycooks' prods	*24,171*	*2,011*	*26,182*	*25,390*	*1,533*	*26,923*
Bread/pastry/cakes/biscuits and other fresh bakery products	3,665	1,218	4,882	4,020	1,192	5,212
Other preparations of cereals, flour, starch or milk	4,016	697	4,712	1,106	319	1,425
Pasta,whether or not cooked/stuffedor otherwise prepared	16,492	96	16,587	20,265	23	20,287

PORT OF VANCOUVER
FOREST, GRAINS, FERTILIZER, MEAT & FISH, CHEMICAL PRODUCTS (in metric tonnes)
ASIA IMPORT & EXPORT
YTD NOVEMBER 2005 VS YTD NOVEMBER 2004

Products of milling industry; malt;starches; inulin; wheat gluten	*4,973*	*188,412*	*193,386*	*4,628*	*145,705*	*150,334*
Malt	0	149,044	149,044	135	118,835	118,969
Other milling industry products; starches, inulin, wheat gluten	4,656	18,154	22,810	4,085	8,950	13,035
Wheat flour	317	21,215	21,532	409	17,921	18,330
Rice and other cereals	*60,699*	*4,962*	*65,661*	*62,366*	*5,803*	*68,170*
Rapeseed	0	2,074,271	2,074,271	0	1,897,240	1,897,240
CANOLA	0	2,068,329	2,068,329	0	1,891,841	1,891,841
RAPESEED	0	5,942	5,942	0	5,399	5,399
Wheat	69	3,116,616	3,116,684	46	3,402,841	3,402,887
GRAIN	48	2,109	2,157	22	1,484	1,506
GRAIN SEED	0	45	45	20	144	164
WHEAT	20	3,114,462	3,114,482	4	3,401,213	3,401,217
Meat and fish	**201,494**	**436,677**	**638,171**	**181,927**	**425,139**	**607,066**
Fish and crustaceans	70,576	38,025	108,601	66,723	40,462	107,184
Aquatic invertebrates,fresh,frozen,dried, salted or cooked in wate	43,255	2,603	45,859	35,575	2,513	38,089
Fish fillets and other fish meat, fresh, chilled or frozen	11,968	699	12,667	12,823	655	13,478
Fish, dried, salted or smoked, fishmeal fit for human consumption	191	9	200	238	20	258
Fish, fresh or chilled, exc fish fillets and other fish meat	92	3,731	3,823	324	7,135	7,458
Fish, frozen, exc fish fillets and other fish meat	15,070	30,983	46,053	17,763	30,139	47,902
Meat and edible meat offal	1,293	366,031	367,324	1,667	350,122	351,789
Meat and edible meat offal (exc poultry), fresh chilled or frozen	524	337,393	337,917	1,103	328,536	329,639
Meat and edible offal of poultry, fresh, chilled or frozen	769	28,614	29,383	564	21,481	22,045
Other meat and edible meat offal	1	24	25	0	105	105

PORT OF VANCOUVER
FOREST, GRAINS, FERTILIZER, MEAT & FISH, CHEMICAL PRODUCTS (in metric tonnes)
ASIA IMPORT & EXPORT
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Prep'tions of meat/fish/crustaceans/molluscs/other a	129,624	32,621	162,246	113,537	34,556	148,093
Prep of meat (incl sausage, hams, prepared meals, meat extracts	74,112	14,956	89,068	61,526	13,584	75,110
Preparations of fish or aquatic invertebrates (incl prepared meals,	55,512	17,666	73,178	52,011	20,971	72,982
CHEMICAL PRODUCTS	**216,856**	**1,376,512**	**1,593,368**	**195,406**	**1,370,639**	**1,566,045**
Organic chemicals	74,342	1,257,767	1,332,108	70,484	1,237,424	1,307,908
Other inorganic chemicals; compnds of prec metals,radioactive ele	54,836	97,717	152,553	45,597	106,483	152,080
Other prods of chem industries (pharmaceut prods, paints, soap)	77,194	21,014	98,208	76,641	26,722	103,363
Sodium hydroxide (caustic soda)	10,484	14	10,498	2,685	9	2,694
FERTILIZERS	**1,556**	**8,005,136**	**8,006,692**	**1,040**	**7,578,899**	**7,579,939**
Potassium chloride	0	4,237,586	4,237,586	0	4,114,363	4,114,363
Sulphur	0	3,765,807	3,765,807	0	3,462,911	3,462,911
Phosphate rocks	87	0	87	0	0	0
Other fertilisers	1,469	1,763	3,232	1,040	1,625	2,665

Table 2-12 Total Vancouver Containerized Export Volumes

BC Origin Exports of Selected Goods to Asia, 2005					
Commodity	**Value-Cdn $**	**Quantity (kg)**	**M^3**	**Tonnes**	**TEU's**
Beef, pork and poultry meat, unprocessed - kilograms	31,709,426	22,560,222		22,560	2,400
Processed meat products - kilograms	6,179,261	1,448,891		1,449	154
				24,009	2,554
Wheat, rye and barley - Metric tonnes	18,011,288			93,719	9,970
Oats, corn, rice, etc. - kilograms	1,206,406	2,983,405		2,983	317
Flours, starches, powders etc., of grains - kilograms	13,430,207	28,573,791		28,574	3,040
Logs - cubic metres	253,054,061		1,990,868	82,953	
Lumber - cubic metres	1,159,196,560		4,001,292	166,721	
Veneer, siding, flooring - square metres	6,668,531		1,910,258	79,594	
Plywood, OSB, fibreboard, panelling, etc. - cubic metres	51,777,974		137,600	5,733	
Wood chips - metric tonnes	20,232,165			190,691	20,286
Sawdust and wood shavings - kilograms	1,137,929	7,022,365		7,022	747
Various wood products - metres	255,092		47,116	1,963	
Various wood products - number	140,611	10,661		11	1
Various wood products - cubic metres	450,901		631	26	
Various wood products - square metres	1,403,675		122,673	5,111	
Various wood products with no available quantity measure	44,428,464	N/A			
Pulp - metric tonne air dry	1,208,490,502			2,237,420	238,023
Paper, newsprint, etc. - metric tonnes	281,610,996			645,200	68,638
Paper, paper products, etc. - kilograms	2,420,164	1,323,701		1,324	141
				3,423,769	327,837

Produced by: BC STATS - Ministry of Labour & Citizens' Services
For Inquiries phone: 387-0376 Dan Schrier
Source: Statistics Canada

BC Origin Exports of Meat Products to Asia, 2005				
Commodity	**Value - Cdn $**	**Quantity (kg)**	**Tonnes**	**TEU's**
Beef, pork and poultry meat, unprocessed - kilograms	31,709,426	22,560,222	22,560	2,400
Beef - kilograms	242,603	189,433	189	20
Poultry - kilograms	11,915,643	13,046,089	13,046	1,388
Pork - kilograms	19,551,180	9,324,700	9,325	992
Processed meat products - kilograms	6,179,261	1,448,891	1,449	154

Produced by: BC STATS - Ministry of Labour & Citizens' Services
For Inquiries phone: 387-0376 Dan Schrier
Source: Statistics Canada

Table 2-13 Grain Commodity Forecasts

Total Grains – Western Canada

(million metric tonnes)

Year	Westbound *Avg. Annual Growth Rate = 2.5%*	Total *Avg. Annual Growth Rate = 2.1%*
2005	**14.26**	**26.37**
2007	15.59	29.30
2010	17.04	31.68
2015	**17.74**	**32.96**

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Wheat & Durum – Western Canada

(million metric tonnes)

Year	Westbound *Avg. Annual Growth Rate = 1.2%*	Total *Avg. Annual Growth Rate = 1.2%*
2005	**7.60**	**15.10**
2007	8.20	16.65
2010	8.70	17.75
2015	**9.10**	**18.55**

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Barley & Malt – Western Canada

(million metric tonnes)

Year	Westbound *Avg. Annual Growth Rate = 3.5%*	Total *Avg. Annual Growth Rate = 3.3%*
2005	**1.82**	**2.95**
2007	1.90	3.08
2010	2.20	3.60
2015	**2.30**	**3.73**

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Canola – Western Canada

(million metric tonnes)

Year	Westbound *Avg. Annual Growth Rate = 5.5%*	Total *Avg. Annual Growth Rate = 3.6%*
2005	**3.20**	**4.16**
2007	3.80	4.80
2010	4.40	5.30
2015	**4.50**	**5.40**

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Dried Peas – Western Canada

(million metric tonnes)

Year	Westbound *Avg. Annual Growth Rate = 3.1%*	Total *Avg. Annual Growth Rate = 2.5%*
2005	**1.20**	**1.72**
2007	1.25	1.87
2010	1.30	1.96
2015	**1.40**	**2.08**

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Table 2-14 Bank of Canada – Commodity Price Index

Commodity Price Index 1982-90=100 (U.S. dollars)
Indice des prix des produits de base (dollars É.-U.); 1982-1990#100

	Total *Total*	Excluding Energy *Énergie exclue*	Energy *Énergie*	Food *Alimentation*	Industrial Materials *Matières industrielles*
1993	94.95	104.83	76.49	105.96	104.37
1994	98.05	112.71	70.68	104.03	116.23
1995	106.17	125.21	70.62	108.08	132.17
1996	110.25	123.74	85.05	119.36	125.52
1997	106.22	118.44	83.39	106.71	123.20
1998	89.97	103.57	64.58	92.68	108.00
1999	96.02	105.17	78.94	88.28	112.03
2000	113.71	108.80	122.87	93.95	114.84
2001	107.85	101.34	118.83	96.31	103.86
2002	101.45	94.69	112.50	94.55	95.13
2003	121.82	103.00	153.38	101.76	103.94
2004	146.82	125.02	183.32	114.76	129.93
2005	180.63	129.78	266.53	116.25	136.11