Westcoast CED

PG Inland Port:
First Nations Economic Opportunities

Phase 1 Report

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1. INTRODUCTION

1.1. WHY THIS RESEARCH AND REPORT

This report has been prepared at this time because the construction of the Prince Rupert container port facilities are close to becoming operational, creating a number of potential economic opportunities for the northern interior. The subsequent announcement by CN, during the research stage of the investigation, that they are going to locate in Prince George expanded terminal facilities establishes the being of an inland port in Prince George. This research is focused on identifying business opportunities associated with the inland port for First Nations people, and companies, in the North Central Interior region of BC.

This report represents completion of Phase 1 of a two phase process. This draft report is to be reviewed amended and then finalized. Once the report is finalized Phase 2 – the preparation of two pre-feasibility studies on the top two opportunities will get underway.

1.2. NORTHERN BC CONTAINER TERMINAL OPPORTUNITY STUDY[1]

The Prince Rupert Port Authority is currently undertaking **Phase 1** of a new container facility at its Fairview Terminal. The terminal will include a berth and three container cranes, and will have an annual capacity of 500,000 TEUs (Twenty-foot Equivalent Units) which translates into 125,000 containers in and 125,000 containers out on an annual basis. To meet the Port's capacity would require 2.5 trains per day each way with 100 cars for each train stacked double high, operating 5 days a week, 50 weeks of the year. The project, which is scheduled for completion in 2007, will cost $170 million, with funding provided as follows: $30 million from the federal government, $30 million from the provincial government, $25 million from CN, and $85 million from the private sector and the Port of Prince Rupert. The Port in Prince Rupert has limited physical space to hold and/or sort both east and west bound containers, requiring most of the holding and sorting to take place at a location east of Prince Rupert.

Phase 2 of the port development project, to be completed by 2010, will add at least three additional cranes, and increase annual capacity to 1.5 million TEUs, with total on-site storage capacity of 25,000 TEUs (roughly one week of traffic). Phase 2 of the terminal project is estimated to cost $380 million. Even after completion of Phase 2, Prince Rupert will be able to serve only a small portion of the total projected increase in Pacific sea container traffic, which will rise to a total of 33.5 million TEUs per annum.

Given the lack of space in Prince Rupert to sort and store containers, there is an economic opportunity to create an inland sorting, filling, reloading and intermodal facility (planes to trucks to rail to sea) referred to as an **inland port**. To operate a sorting, reloading and intermodal facility requires a minimum level of 20,000 standard 40' containers (40,000 TEUs) per year. That represents approximately 400 containers per week being processed and transiting the terminal. Forest products in Northern BC in 2005 generated enough lumber and pulp exports to East Asia to fill 62,000, 40-foot containers. Other types of cargo would increase this base amount.

[1]InterVISTAS Consulting Inc. "Northern BC Container Terminal Opportunity Study" (key points), November 2006. www.initiativespg.com/ipg/media/downloads/ExecSumNorthBCContainerOpp.pdf

With 62,000 40-foot containers, representing 124,000 annual TEUs, the preliminary analysis indicates that Northern BC should be able to generate sufficient traffic to support the operation of an intermodal centre. Any additional sources of containerized exports, such as other forest products and specialty grains, would increase the maximum number of containers which could be exported from an intermodal centre. The additional need for sorting and storage of containers, given the limited space in Prince Rupert, creates the economic opportunity to establish an inland port in Prince George.

Figure 1 shows the estimated potential market for annual forest product exports from Northern BC by container.

Figure 1: Estimated Potential Forest Product Containers per year

Market	Product	Estimated Exports from Northern BC	40-ft Containers per year**
Japan	**Lumber**	**2790,068 mfbm**	**25,486**
Japan	**Pulp**	**262,107 tonnes**	**10,081**
China	**Pulp**	**589,784 tonnes**	**22,684**
East Asia (other than Japan)*	**Lumber**	**108,428 mfbm**	**3,498**
Totals	**Lumber Pulp**	**898,496 mfbm 851,891 tonnes**	**61,749**

Source: Northern BC Container Terminal Opportunity Study
**Includes China*
***Assumes 31 mfbm of lumber per 40 foot container and 26 tonnes of pulp per 40 foot container*
These numbers are considered conservative.
Mfbm = thousand board foot measure
Export estimates are based on 2005 actual exports.

1.3. CN RAIL – EXPANDED PRINCE GEORGE TERMINAL

At the end of March, 2007 CN Rail announced that they would construct a $20 million transload operation and intermodal rail terminal in Prince George. This facility will consist of an 84,000-square-foot warehouse and 10 acres of outside storage. It will be capable of loading containers with products arriving at the facility by rail or by truck. The loaded containers will then be lifted onto railway flatcars at CN's new adjacent intermodal yard.

The facility is scheduled to open in the fall of 2007, approximately the same time as the new container terminal at the Port of Prince Rupert. CN has stated daily service will be offered from the Prince George Terminal to Prince Rupert. The rationale CN has used to develop the facility is based on the volume of export traffic to and from Asian markets and on backhaul opportunities.

Prince George is in close proximity to large fibre reserves and other natural resources and is also CN's divisional headquarters and main operations hub in northern BC connecting through the Cariboo to Vancouver and Peace region. CN considers backhaul opportunities by container from Prince George to Asian markets that include: lumber, panels, wood pulp and paper, ores, plastics, and metals.

1.4. WHY A PRINCE GEORGE INLAND PORT?

Prince George could be well positioned to be part of a growing network of intermodel and inland port facilities along the CN rail line that links the eastern United States with Asia. However obtaining substantial revenues will require Prince George's Inland Port to collect a significant volume of the forest products from within Northern BC that are destined for Asian markets. Existing pulp and lumber exports from Northern BC destined for East Asia, Japan and China could use Prince George as the staging area.[2] Presently, CN is promoting the Prince Rupert Port as a windfall for its southeastern US staging area, Memphis, as the new port is expected to bring 500 to 1,000 additional shipping containers to that city a week. In Memphis, these containers will be shifted from one mode of transportation, such as rail, to another mode, such as truck, barge or airplane.

The CN Intermodal Gateway Memphis Terminal[3] is a $35 million facility in the southwest Memphis Frank C. Pidgeon Industrial Park. Their terminal has the capacity to transfer 200,000 containers a year. CN is contemplating expanding their presence by creating a regional logistics park at the 2,500-acre industrial park because they believe it would help Memphis become an alternate port to the crowded Los Angeles and Long Beach ports. BNSF Railway[4] transformed a former U.S. Army base in Joliet, Ill. into a 2,200-acre logistics park. This shipping and warehousing centre is anchored by 3.4 million square feet of Wal-Mart warehouse space. To CN, shipping from Prince Rupert represents a key component within their Memphis strategy since Pacific sailing times are reduced by two days compared to any other west coast port. With 117-hour rail shipping times to Memphis, fast delivery times to eastern US markets would occur.

In North America, more intermodal facilities are being constructed to enhance the capacity of seaports, often within the framework of a regional logistics park which has similar characteristics to an inland port. The volume of container handling required for critical mass to create a prime market for a larger regional logistics park has become clear. CN Rail and Burlington Northern Santa Fe Railway (BNSF) are involved in such parks.

1.5. BASE ASSUMPTIONS

An inland container terminal or intermodal distribution center serves as a building block for an inland port. An inland port is a site located away from traditional land, air, and coastal borders. It facilitates and processes international trade, by building assets and promoting value-added services for goods that move through it, referred to as strategic investments in multimodal transportation. The establishment of an inland port in Prince George will largely depend on whether ancillary services can be established which complements the new CN Intermodal Terminal in Prince George. The CN terminal is being established because there is strong evidence that a sufficient regional volume of exports exist that will be outbound from a 200-mile radius surrounding Prince George. These exports are primarily forest products from the large producers in the region.

[2] Ibid, pg iv.
[3] http://www.cn.ca/productsservices/intermodal/overseas/gateway_memphis/terminal/en_intermodal.shtml
[4] http://www.bnsf.com/aboutbnsf/

To realize the opportunities of a full-fledged inland port, additional and existing facilities and services will need to be expanded or established. To achieve this, the following key components will need to be successfully addressed:

- Partnerships that include government and private sector as well as customers.
- A diverse and effective transportation mix.
- A diverse and effective tenant mix.
- An Export Distribution Centre that includes customs and brokerage services.
- Best Practices Agreements with other ports and transportation networks.

What remains as an unknown, to be answered in the next six months after the Prince Rupert terminal opens, is what string of service (ships have routes and ports of call referred to as "strings of service") will be available to the new port. This will determine export opportunities to Japan, China, or Korea or any combination of the three. As a result of this unknown, it cannot be determined whether existing Asian customers of Northern BC forest products can be serviced efficiently from the Port of Prince Rupert. Specifically, it is not known whether or not the transport patterns belonging to Canfor and West Fraser will shift to the Port of Prince Rupert from the Lower Mainland and the Port of Vancouver.

2. INLAND PORT – CONCEPT

2.1. DEFINITIONS

An "inland port" refers to a defined inland location where the consolidation and distribution of goods takes place similar to those of a seaport, and which most often includes customs clearance services. An inland port is also described as an umbrella or collection of many facilities, services, and modes of transportation (intermodal) that anchor the many aspects of a global transportation and shipping network in a terminus area. An inland port is also referred to as "dry land port" given its location away from water. An inland port is a facility that allows shippers to undertake consolidation and distribution activities as well as export/import procedures at locations that are at relatively short distances from factories or the source of goods. Completing necessary documentation and procedures at inland port facilities reduces congestion and delays at border crossings and ports, thereby reducing transaction costs for exporters and importers. "Inland port," as the term suggests, is a freight Break-Bulk[5] point away from the sea. The three transportation modes of highway, rail, and air typically come together at an inland port, making it a hub for market distribution. See Diagram 1.

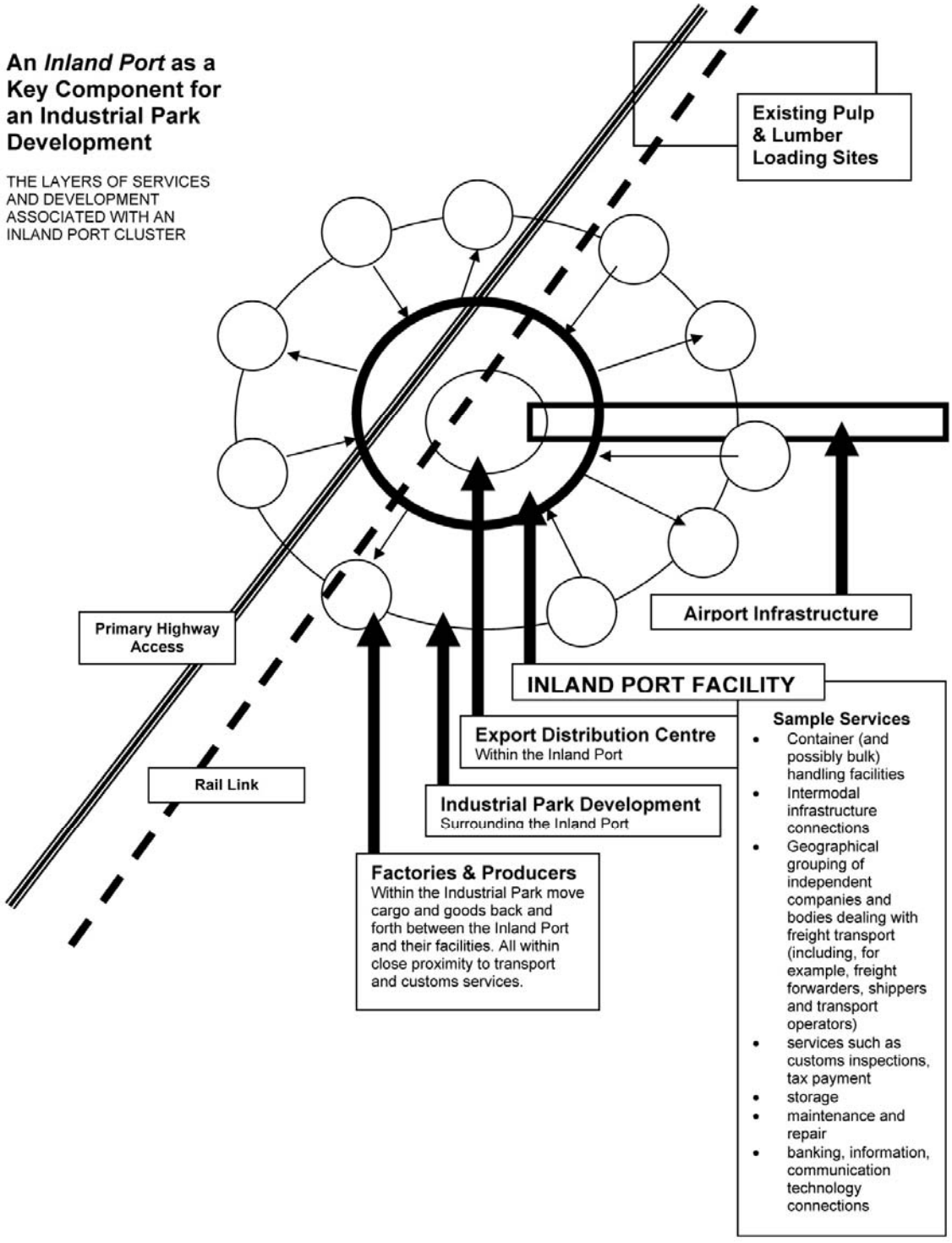
Intermodal transport refers to the movement of cargo or containers between transport modes, e.g. between road, rail, water or air carriers. The fact that the containers are of consistent size, shape and have common handling characteristics permits them to be transferred from truck to railroad to air carrier to ocean carrier without unpacking or repacking the goods. Completing necessary documentation and procedures at inland port facilities reduces congestion and delays at border crossings and ports, thereby reducing transaction costs for exporters and importers. Presently, terminals and distribution centres are the most common freight facilities found in BC a sub set of the facilities and services found in a comprehensive inland port. Such facilities represent the base unit within intermodal facilities. Often, they are privately owned and limited in scope to specific forms of freight. Some are part of a larger consortium effort which provides a venue for the packing, unpacking, and storage of goods.

In Europe, the concept of "freight villages," which have functions and facilities similar to those of inland ports, can be defined as: "…area[s] within which all activities relating to transport, logistics and the distribution of goods, both for national and international transit, are carried out by various operators. These operators can either be owners or tenants of buildings and facilities … which have been built there. Also, in order to comply with free competition rules, a freight village must allow access to all companies involved in the activities set out above. … In order to encourage intermodal transport for the handling of goods, a freight village must preferably be served by a multiplicity of transport modes (road, rail, deep sea, inland waterway, air)."[6]

Similar to the economic activity around coastal regions and ports, an inland port facilitates broader benefits, by attracting the same types of associated services and manufacturing as a sea port. It also can nurture the development of manufacturing and service clusters. Such an expansion would be particularly beneficial to small- and medium-sized enterprises in providing opportunities for joint procurement, and shipping as well as consolidation and distribution services.

[5] Loose cargo, such as cartons, stowed directly in the ship's hold as opposed to containerized or bulk cargo
[6] United Nations Economic and Social Council - Agenda Report for the Economic and Social Commission for Asia and the Pacific, "Cross-cutting Issue for Managing Globalization Related to Trade and Transport: Promoting Dry Ports as a Means of Sharing the Benefits of Globalization with Inland Locations" (August 17, 2006).

Diagram 1: Key Component for Industrial Park Development



Inland ports or freight villages can anchor a larger industrial park facility, which places manufacturing and services within direct proximity to transport services. Table 1 contains a summary of the differences between a terminal/distribution centre, freight village, and inland port. Table 1 also shows types of partnerships and examples within the Prince George context for the three types of load centres.

Table 1: Types of Load Centres

COMPARING DIFFERENT TYPES OF LOAD CENTRES		
Terminal or Distribution Centre • Container (and possibly bulk) handling facilities • Intermodal infrastructure connections	**Freight Village or Interchange Depot** • Container (and possibly bulk) handling facilities • Intermodal infrastructure connections • Geographical grouping of independent companies and bodies dealing with freight transport (including, for example, freight forwarders, shippers and transport operators)	**Inland Port** • Container (and possibly bulk) handling facilities • Intermodal infrastructure connections • Geographical grouping of independent companies and bodies dealing with freight transport (including, for example, freight forwarders, shippers and transport operators) • services such as customs inspections, tax payment • storage • maintenance and repair • banking • information, communication technology connections
Partnerships: Often a single business operates a Terminal or perhaps they subcontract with another company to manage the handling within the terminal particularly if the cargo requires specialized expertise, however this is becoming less common. Examples: • Proposed CN Transload, Intermodal Yard in Prince George • CN Edmonton Grain Distribution Centre • CN North Vancouver Lumber Distribution Centre	**Partnerships:** This scenario can be presented as a single business enterprise or a series of business partnerships. This facility or cluster of operations could be located at an anchor participant like the CN Rail yard or at a pulp mill property. Examples: • Northern Plains Commerce Centre, Bismarck, North Dakota • Ingolstadt Freight Village, Germany	**Partnerships:** This scenario would see a large property designated for freight and ideally have an adjoining industrial park and warehouse area. It would have within it full intermodal services with container storage. This scenario more than likely has within it public and private partners with significant public investment. Examples: • Frank C. Pidgeon industrial Park. Memphis, Tennessee • McCook-Hodgkins Enterprise Zone with the Chicago Area Consolidation Hub (CACH) • BNSF Logistics Park-Chicago/ Joliet, Ill.
Scenario – PG Context: • Lumber Transloading/Reloading Centre operated by CN • Pulp & Paper Loading Terminal operated by West Fraser and or Canfor	**Scenario – PG Context:** • CN CargoflowTransloading Centre operated by CN. • Pulp & Paper Loading Terminal operated by West Fraser and or Canfor • One or more of the terminals would provide access to other companies for additional break-bulk services and container packing.	**Scenario – PG Context:** • A CN Cargoflow Centre operated by CN and linked to present Pulp & Paper loading facilities within a larger framework of a freight loading and warehouse area. • The freight area would be linked to air services and customs security area and could be linked to an industrial park.

2.2. AN INLAND PORT AS PART OF A GLOBAL LOGISTICS NETWORK

A variety of trends—from globalization of the supply chain to increasing fuel costs, from security issues to increasingly powerful technology—has created a paradox in the world of logistics: It's now both easier and harder to get the goods from place to place. As is the case in most industries, customers are always demanding better and faster service. And as has happened in nearly every business, industry consolidation is changing the face of logistics through international standards and harmonization.

The use of containers in international traffic which for all but the bulk goods has dramatically lowered freight costs, has generated tremendous growth in container movement through Canadian and US ports. Most of this growth is attributable to international traffic. Intermodal transport has now surpassed coal as the largest single revenue source for the US railroad industry, demonstrating how rail is becoming an increasingly important link within the global supply chain. Most countries have recognized that the way to strengthen the land-bridge connection between seaports is through inland ports. Inland ports provide short-haul rail movement to shuttle containers away from crowded port facilities, where land is very expensive, to less congested and much lower land cost, inland sites for processing and consolidation for specific destinations by rail and alternatively by truck or air services.

The development of a network of dry ports as load centres also has the potential to promote traffic on railways rather than roads, which would have significant environmental benefits. This insight has been one of the major driving forces for European policy makers' support of the development of dry ports. For example, Swiss and German estimates of the external costs of freight transport by road show them to be about four times higher than those of rail transport. Increasingly, energy costs have emerged as another important factor encouraging the movement towards rail transport.

Multinational corporations combined with general global trade demand for efficiency have required that the transportation industry create a "Best Practices" approach to logistics. As a result, systems and facilities are standardized as much as possible through certification like ISO (International Organization of Standardization). Inland ports have become a cell of Best Practices and global standardization. They have also become anchors for consortiums to develop transport corridors to further efficiencies. These corridors are linked by a network of inland ports all adhering to the same system of Best Practices. This Best Practices system is not a government-standards system, but a private-sector system whereby a company that wants to participate needs to meet this standard. In essence, it is a carrot-based system where if you do comply then you get to participate and if you don't then you are excluded completely, similar to the bar code system on packaged food products.

2.3. INTERNATIONAL TRANSPORTATION CORRIDORS

The following are Transport Corridors that include networks of inland ports:

- North America Inland Port Network/North America Super Corridor (NASCO)
- Trans-Asian Railway/Trans-Asian Highway
- Trans European Corridor

The **North American Inland Port Network (NAIPN)**, a sub-committee of NASCO, has been tasked with developing an active inland port network along a north/south corridor from Mexico inland to Dallas, Kansas City, and ending in Winnipeg. This corridor seeks to specifically alleviate congestion at maritime ports. The NAIPN envisions an integrated, efficient, and secure network of inland ports that specialize in the transportation of containerized cargo in North America. The main guiding principal of the NAIPN is to develop logistics systems that enhance global security, but at the same time do not impede the cost-effective and efficient flow of goods.

NASCO works to develop key relationships along the existing transportation corridors and seeks to maximize economic development opportunities along the NASCO Corridor, as well as coordinate the development of technology integration projects, inland ports, environmental initiatives, university research, and the sharing of "best practices." NASCO is particularly focused on coordinating the efforts of local, state, provincial, and federal agencies and the private sector to integrate and secure a multimodal transportation system along the existing "NASCO Corridor."

The following represents components of an Inland Port which link to a larger globalization effort linked to Transport Corridors:[7]

- Best Practices is a system of operations procedures shared by participants within an inland port as well as other ports along the transportation corridor.
- ISO and other forms of international standardization
- Container Freight Stations (CFS) described as a kind of cargo movement by container. Delivered loose at origin point with vanning or stuffed by carrier, devanned by carrier at destination, and picked up loose at destination.
- Port of Discharge or a Port of Loading is where cargo is discharged from vessel or mode of transport. When trans-shipment is needed, there can be a number of PODs (Portable On-Demand Storage) during the course of shipment until it reaches the final POD.
- Point or Place of Receipt is the starting point of a carrier's liability where cargo is received from a shipper and under carrier's custody for transportation to final destination.
- A Through Service (Thru Service) is a combination of transportation by sea and land services to/from the West Coast. From West Coast locations, freight is transported by rail and/or truck to central or eastern North America non-water port cities. These are also known as Microbridge Service and Inland Points Intermodal (I.P.I.).
- A Transit Port is a port where goods received are merely en route and from which they have to be transferred and dispatched to their ultimate destination by coasters, barge, and so on. This is also called trans-shipment port.
- A Consortium is a group of carriers pooling resources in a trade lane, network, or port facility to maximize their resources efficiently.
- An Export Distribution Centre, known in the US as a Foreign Trade Zone, would contain certain Canadian Customs and brokerage services.

[7] The following website contains a glossary of terminology used in container liner shipping services http://www.cscl.com.cn/info/glossary.jsp

3. PG INLAND PORT – THE OPPORTUNITY

3.1. LEVEL OF REGIONAL EXPORTS – PRINCE GEORGE

The success of an inland port depends a great deal on the volume or "traffic" of goods that need to be unloaded or loaded into containers or onto trucks and railcars. The success of the inland port in this regard will be conditional upon several factors, including choosing locations that are close to existing or potential production or consumption centres, international demand for local goods, support from national Governments, partnerships between local government and business, lower cost land and the human resources including upper level management.

At present, forest products and pulp represent the lion's share of export products moving from northern BC into Pacific ports, primarily the Port of Vancouver. In Prince George, Canfor and West Fraser represent two of the largest BC exporters to Asia. The key challenge for an inland port in Prince George will be to cluster existing freight volumes so that rail and truck transport will make regular stops. The following freight should be considered as significant when considering major volumes from the Prince George area and presently provides the primary reason why trains already stop in Prince George:

- Pulp & paper
- Wood/forest products
- Minerals

Secondary volumes may be found within the following:

- Value-added wood products
- Log and prefabricated homes
- Food products and beverages
- Wood pellets
- Concentrates
- Industrial equipment

It should be considered that some of these items require container shipping while others do not. However, primary to the target of an inland port is providing *packing*, *unpacking, and storage infrastructure* which requires a mix of transportation and carrying modes regardless of whether there is a container involved or not. Table 2 provides a breakdown of primary outbound export volumes for Canfor and West Fraser. Table 3 provides an indication of which port is currently used for exporting, the destination of the products and mode used, while Table 4 provides a breakdown of the magnitudes of export sales revenue from a sample primary exporter.

Table 2: Primary Outbound Export Volumes from Northern BC

Export & Domestic Transport – Forest Products Sourced from the Northern BC Area			
Customer	**Primary Cargo**	**Projected Volume Annual Sales**	**Transport Requirements**
Canfor	Pulp Kraft Paper Panels Lumber	982,105 tonnes 139,823 tonnes 904,908 Msf 3/8" 4,681,065 Mfbm	Rail/Truck/Ship • Container and Break-bulk
West Fraser	Pulp (includes Hinton, AB) Kraft Paper Newsprint Panels Lumber	1,120,000 tonnes 567,000 tonnes 123,000 tonnes 1,000,200 Msf 3/8" 4,275,000 Mfbm	Rail/Truck/Ship • Container and Break-bulk

Table 3: High Volume Exporters Transport Service Profiles

High Volume Exporters – Offshore Service Profile			
Exporter	**Primary Cargo**	**Port**	**Destination and Modes**
Canfor	Pulp & Kraft Paper	Vancouver or Squamish	Europe(30%); Asia (27%) Container Ship/Multi-cargo Vessels/Dedicated Forest Product Vessels
	Panels	Vancouver	Japan – 80% Container Ship/20% Break-bulk (non-container) carrier
	Lumber	Vancouver	Primarily Japan, secondary markets Korea, China, Taiwan and Europe. 80% Container Ship/20% Break-bulk (non-container) carrier.
West Fraser	Pulp (includes Hinton, AB) Kraft Paper Newsprint Panels and Lumber	Vancouver via truck to Reload Centre in Surrey	By barge or rail to Vancouver where pulp is stuffed in containers or shipped break-bulk. Primary market Japan, secondary Asia and Middle East. Containers or Break-bulk

Table 4: Magnitudes of Export Sales Revenue from a Sample Primary Exporter

Export Sales Revenues – Canfor *(%s)*		
Customer	**2005**	**2004**
Canada	12	20
US	67	61
Europe	7	7
Far East and Other	14	12
Total	100	100

Comparing break-bulk exports between the Port of Prince Rupert and the Port of Vancouver can offer insight as to the minor role Prince Rupert has played in pulp and forest product exports. Table 5 provides the total volume of exports from the Port of Vancouver while Table 6 provides the same for the Port of Prince Rupert. This table represents a comparison based on categories of export found in the Prince Rupert table and represents a very small portion of their entire exports. Note that the volume of break-bulk pulp and lumber through the Port of Vancouver compared to the Port of Prince Rupert is significantly higher. Table 7 contains information on forest products container export through the Port of Vancouver.

Table 5: Port of Vancouver – Break-bulk Export

Break-Bulk Export – Outbound through the Port of Vancouver in 2005 *(metric tonnes)*		
Type	**Transport Method (s)**	**Estimated Volume**
Major Grains	Rail – Grain Hopper Car	7,971,000
Coal	Rail – Coal Hopper	25,234,000
Metal Ores and Concentrates	Rail	883,000
Logs	Truck/Rail – Break-bulk	98,000
Lumber	Truck/Rail – Break-bulk	719,000
Wood Pulp	Truck/Rail – Break-bulk	1,989,000
Other Wood Products	Truck/Rail – Break-bulk	65,000
Chemicals	Truck/Rail – Break-bulk	2,382,000
2005 Total of items listed on this chart		39,341,000

Table 6: Port of Prince Rupert - Break-bulk Export Volume

Break-bulk Export Outbound through the Port of Prince Rupert in 2005 *(metric tonnes)*		
Type	**Transport Method (s)**	**Estimated Volume**
Lumber	nil	0
Wax	Truck/Rail – Break-bulk	15,696
Wood Pellets	Truck/Rail – Break-bulk	86,165
Barley	Rail – Grain Hopper Car	315,154
Canola	Rail – Grain Hopper Car	63,000
Grain Screen	Rail – Grain Hopper Car	8,475
Wheat	Rail – Grain Hopper Car	2,727,321
Coal	Rail – Coal Hopper	632,365
Pet.Coke	Rail – Coal Hopper	382,667
Iron Ore Pellets	Rail – Coal Hopper	0
General Harbour Cargo	Truck/Rail – Break-bulk	41,698 956
Logs	Truck/Rail – Break-bulk	168,732
Wood Pulp	nil	0
Chemicals	Truck/Rail – Break-bulk	27,204
Explosives	nil	0
L.P. Gas	n/a	5,006
2005 Total		4,474,439 tonnes
Comparison 2004 Total		*4,409,511 tonnes*

Table 5: Port of Vancouver – Forest Products Container Export Volume

Forest Products Container Export Outbound through the Port of Vancouver in 2005 *(metric tonnes)*			
Type	**2006**	**2005**	**% Change**
Wood Pulp	2,371	1,840	29%
Lumber	1,501	1,272	18%
Waste Paper	429	510	-16%
Newsprint	278	229	21%
Total	4,579	3,851	

Secondary exports from Northern BC remain largely unknown by both CN and the Port of Prince Rupert. While there is a belief that there are secondary export products that would utilize a container terminal in Prince George, *asset mapping* is required for the region to determine, in detail, the following:

- What exporters exist?
- What are their products?
- What are their destination markets?
- What are the present modes of transportation being utilized?

Determining an export asset map which covers northern BC and perhaps even northwestern Alberta would be very beneficial for solidifying partnerships for an inland port and would also assist CN and the Port of Prince Rupert with building further freight volumes.

3.2. BACKHAUL, EMPTY CONTAINERS AND EMPTY RAILCARS

Empty containers, as part of a backhaul, are a concern of any transport company; however, with Canada having a trade deficit with Asia, it's guaranteed that there will always be empty containers or railcars heading west. While empty containers are considered by many to be a liability, many companies recognize them as an opportunity. These companies specialize in brokering, tracking, storing, and maintaining containers. Such container depots can be found within inland port facilities, since such containers, if not managed properly, can cause congestion at seaport terminals. Without a terminal in Prince George that regularly handled containers, Northern BC exporters have been required to ship their goods, usually by truck to Edmonton or Vancouver, in order to meet with container services. This adds at least $600 to shipping costs per container.

With full intermodal service in Prince George, shipping costs both east and west will decrease significantly. Existing cabotage[8] regulations on containers in Canada restrict the movement of international containers loaded with domestic cargo to a single internal move without having to pay Canadian import duty and taxes on the container itself. Since most empty containers would be returning to Asia, west through a Pacific port, this single move positions Prince George at an advantage since it is on a straight east/west rain line. As a result, Prince George as an intermodal terminal would serve the same function as Edmonton and would be a hub that would facilitate deliveries of product within a 200-mile radius that require a container.

The fundamental issue with shuttling containers to an inland terminal is the additional cost of handling. However, there are balancing cost benefits associated with inland development such as reduced inland location and labour costs, consolidated rail traffic, reused empty backhauls and value-added services. For instance, 20-foot and 40-foot standard marine containers can be loaded into 53-foot domestic boxes. The consolidation of cargo into fewer double-stacked trains hauling domestic containers can decrease transport costs for shippers and reduce outbound traffic on rail lines by approximately 45 percent. Another alternative is to load cargo into RoadRailer trailers that can be pulled directly behind other freight equipment without the use of trailer flatcars. RoadRailer is a highway trailer, or semi-trailer, that is specially-equipped for use in railroad intermodal service.

Back-haul empty international containers can be intercepted and loaded with international export cargo from the northern BC region and hauled by rail to the port of export. Current CN operations involve hauling a train of hopper cars filled with bulk cargo often followed by hauling a train of empty containers on the main line. By consolidating bulk cargo into empty container cars, the same commodities can be moved using fewer resources, thereby improving asset utilization. In addition, this would further increase the capacity of the rail lines, leaving additional track capacity for other railcars. Essentially, more containerization of bulk products would reduce the

[8] **Cabotage** is the transport of goods or passengers between two points in the same country. Originally starting with shipping, cabotage now also covers aviation, railways and road transport. Cabotage is "trade or navigation in coastal waters, or, the exclusive right of a country to operate the air traffic within its territory." Cabotage is commonly used as part of the term "cabotage rights," the right of a company from one country to trade in another country. In aviation terms, it is the right to operate within the domestic borders of another country. Most countries do not permit cabotage by foreigners, although this is changing within Europe for member states of the European Union. Politically, cabotage regulations restricting trade to domestic carriers are a form of protectionism. Justifications for cabotage regulations include national security and the need to regulate public safety (http://en.wikipedia.org/wiki/Cabotage#_note-0).

number of eastbound trains of empty hopper cars returning to the prairies and the number of westbound trains filled with empty containers.

Projected Volume of Empty Containers

The shipping giant Evergreen states that there is a general, perhaps "rule of thumb" in which it anticipates how the volume of empty containers will be managed as they are returned to source.

- One-third of the empty containers will be filled with cargo and returned to source.
- One-third will be lent to a rail company such as CN for a "special rating" where CN can allow one of their customers to use it once.
- One-third will be returned to the source empty.

Backhauling – Cabotage Restrictions

The "one move" must be in the direction of, or to, the location where export cargo will be loaded into the container. "The one move requirement in Canada does not allow for triangular or quadrangular strategies that could reduce costs significantly. The inability to re-divert containers in order to take advantage of market variations inhibits the ability of steamship companies to offer competitive rates. As a result, shippers in Canada, particularly rural or remotely located shippers, have difficulty accessing intermodal equipment and are thus limited in their flexibility to choose alternative modes and routes. Furthermore, empty repositioning costs are frequently passed on to shippers, reducing their competitiveness in export markets."[9]

The Transport Institute at the University of Manitoba performed an assessment of the impact that container cabotage regulations have on Canadian operations and determined that the policy causes containers to accumulate in certain areas of the country, takes up rail capacity, burns fuel, and increases costs to shippers when carriers charge for empty repositioning moves. "These policies may have been designed to reduce cabotage and protect domestic Canadian container carriers, but at considerable cost to the Canadian importer/exporter community".[10]

Within a Prince George context, it is possible that domestic container shipments from the east could be transported at a reduced rate where they are unpacked in Prince George then reloaded with international export product that is destined for the Port of Prince Rupert. The unpacked freight from the east might then be distributed in the region or shipped south to larger metropolitan areas.

Lost Opportunity Cost

Both steamship and rail companies encourage a central point at which containers can be accessed by smaller exporters and other shippers. A key goal for transport companies is to have containers available for primary customers, which are shipping high-value product. The higher value the product per tonne, the more apt a customer is to paying higher freight rates and for ancillary services.

The most profitable part of the "string of service" remains the ocean voyage from port to port. Holding containers inland for days at a time is costly and often represents lost opportunity as a container is sitting idle in a remote area. Within backhauls the cost it is often measured against having a container returned empty but in a quick and timely fashion to a preferred customer.

[9] Vido et al., 2001.
[10] Ibid.

To insure a dependable supply of railcars, Canfor leases a fleet of 300 railcars specifically for their wood products so that they can maintain customer demand and adequate delivery times. Tolko has their own rail cars for the same reason. Within a Prince George context an inland container terminal provides a location where containers can be gathered and loaded efficiently for smaller regional shippers without lost opportunity to steamship and rail companies. Tables 8 and 9, show the forecasted potential backhaul of containers both full and empty containers.

Table 6: Forecast of Backhaul Containers through Northern BC*

Return Logistics	Transport Method (s)	# of Containers	Storage & Destinations
Filled with cargo	Rail	83,330	Port of Prince Rupert of Port of Vancouver
Loaned to CN under "special rating"	Rail	83,330	Various domestic locations and destinations
Empty	Rail	83,330	Port of Prince Rupert or Port of Vancouver

**Based on a projected volume of 500,000 TEUs annually at the Port of Prince Rupert which translates into 250,000*

Table 7: Forecast of Loaded Backhaul Containers through Northern BC*

Return Logistics	Transport Method (s)	# of Containers	Storage & Destinations
Filled with cargo from eastern locations in Canada and the US	Rail	41,665	Flow through to the Port of Prince Rupert
Stuffed with Grain in Edmonton	Rail	20,000**	Empty container packed in Edmonton and flows through to the Port of Prince Rupert.
Stuffed with Pulp and Forest Products in Prince George	Rail	62,000**	Empty container stuffed in Prince George then flows through to the Port of Prince Rupert.

**Based on having access to 83,330 empty containers in Edmonton and Prince George. It should be noted that containers may get diverted to the Port of Vancouver for return.*
*** A total of 82,000 containers would be required annually to meet backhaul demands under this scenario that includes demand from Edmonton and Prince George terminals.*

3.3. STRATEGIC PARTNERSHIPS (INCLUDING TRANSPORTATION AND TENANT MIX)

Public and private sector partnerships remain key for any inland port facility. Some services require highly regulated government involvement such as customs services, while the private sector provides transportation services and represents the primary source of tenants for the facility. A good example would be an *International Airport*. Often governments, including local government, provide the infrastructure while the private sector provides the tenants for the airport facility.

In Prince Rupert, the Port Authority entered into a partnership with Maher Terminals, a private company to manage the new Fairview container facility. Maher has significant experience managing container terminals and the move represents a framework by which a specific part of a port can be managed by an independent company in conjunction with a Port Authority.

Examples of Private Sector Partnerships

The private sector remains the key source for strategic partnerships, which begins with the primary buyer and seller of commodities. The following are examples of private sector partnerships within the logistical layers of an inland port.

Customers

A single large customer exporting to Asia, or a consortium of customers, requiring inland port services could solidify the entire inland port infrastructure. Similarly a single large importer, or consortium, from Asia could do the same. A number of prospective export customers exist in the Prince George area, as do potential importers interested in the northern gateway to North America through the Port of Prince Rupert.

Road Transport Companies

Diverse transportation partnerships are required in order to meet the needs of freight forwarding demands. Ideally inbound and outbound services should be available daily in order to maintain inland port characteristics. At present, Prince George does have carriers, which provide daily service, however they have not been grouped together within a common strategic alliance or consortium that may lead to clustering services within an inland port. Joining together to form an alliance with the inland port would create an example of a sector partnership.

Cargo Handlers

Presently, Prince George has warehousing and yard storage including two rail yards and pulp storage and CN plans for substantial additions. Upon determining transport and primary cargo logistics, the inland port would have to determine requirements for specific cargo handling, including packing and unpacking containers as well as other freight.

CN presently has a number of facilities across Canada and in the United States, which can be called distribution or reloading centres. Such centers are either managed directly by CN or they are managed by a separate company under contract or within some sort of partnership agreement. It's important to note that CN is now making a corporate decision to manage their facilities at Prince George in-house without the aid of sub-contactors. However, there still remains the opportunity to build and manage an ancillary facility or dovetail a service that complements the CN terminal but is still external to the terminal proper and still part of the greater inland port.

Often companies which provide management for distribution or reloading centres are in the business of constructing such facilities and, in some cases, even own the distribution rights for supplying heavy equipment. It is not unusual for a company that manufactures commercial cargo equipment to also be in the business of constructing and managing freight or container terminals. It appears that inland ports have within them a culture of private sector partnerships that allow the main proponents of a port to offer opportunities to a core group of companies that they already do business with. This practice of repeating existing partnerships in different centres contributes to best practices between ports, including inland ports.

Like any partnership, creative proposals can be considered whereby a Prince George-based company or agency could approach a management company to join with them in providing a certain function for an inland port in Prince George. The following facilities or infrastructure could be created through such a partnership:

- Warehouse
- Container storage

- Wood reloading yard
- Trucking and specialty logistics services

Labour Force Partnerships

A number of unions are involved within the transportation networks between Prince George and Prince Rupert that may have direct links with potential freight and warehousing partners. Among others, Teamsters, Steelworkers of America, the Canadian Autoworkers Union, and the International Longshore and Warehouse Union all have a presence in the region. The International Longshore and Warehouse Union Canada (ILWU) is involved in the loading, unloading, and checking of cargo to and from vessels, and the storage of these goods on the docks and in warehouses.

The cargo which is handled includes:

- Forest Products: lumber, pulp, craft, woodchips, and logs
- Bulk Ores: coal, sulphur, zinc, lead, copper, phosrock, potash, and pellets
- Liquid Bulk: methanol, glycol, styrene, and seed oil
- Grains
- Containers
- Break Bulk: steel, ingots, and general cargo

Local 505 of the Longshore Division in Prince Rupert has 56 Union Members, 30 Welfare Casuals[11] and about 100 Casuals. Local 517 represents: Office, Harbour Patrol Officers, and Maintenance Staff for the Vancouver Port Authority. Office staff working for Local 500, Westshore Terminals, Fraser Surrey Docks, Squamish Terminals, the Port of Nanaimo, and the Prince Rupert Port Authority also belong to Local 517. The membership is currently about 145.

Local 519 is the Longshore Division in Stewart. The Stewart Local is a small local involved in the loading of forest products and general cargo. It has two union members and a large number of Casuals due to the highly seasonal nature of the Port.

Government Partnerships and Export Distribution Centres

The Canada Border Services Agency (CBSA) is the federal agency that manages the access of people and goods to and from Canada. CBSA responsibilities include:

- Administering legislation that governs the admissibility of people and goods into and out of Canada.
- Establishing how people and goods move through our borders.
- Detaining those people who may pose a threat to Canada.
- Removing people who are inadmissible to our country, including those involved in terrorism, organized crime, and war crimes or crimes against humanity.
- Interdict illegal goods entering or leaving the country.
- Protecting food safety and the environment by stopping prohibited or hazardous products arriving at our air, land, and sea ports.

[11] Work on the waterfront is performed by union members and casual labourers. In 1978, a casual worker had to start on E Board and work his way up through levels D, C, and B to A Board before he could become a union member. The system presently in place has only A, B, C and T Boards, as D and E have been removed. Once at A Board, an employee gets access to all of the benefits provided for in the collective agreement, pension and welfare benefits. "A" Board casuals are known as welfare casuals. http://www.chrt-tcdp.gc.ca/search/files/t142_1987de_08_17.pdf , page 2, paragraph 10.

- Promoting Canadian business and economic benefits by administering trade legislation and trade agreements to meet Canada's international obligations.
- Enforcing trade remedies that help protect Canadian industry from the harmful effects of dumped and subsidized imported goods.
- Administering a fair and impartial redress mechanism.
- Promoting Canadian interests at various international organizations.
- Collect any applicable duties and taxes.

Presently in Prince George, the CBSA provides services from the Prince George Airport, as well as the Sufferance Warehouse, which is a special warehouse for perishable goods that is managed by an independent contractor, Interport Sufferance Warehouse Ltd.

The following services are presently offered at the airport:

- Airport of Entry (AOE/30)
- Designated Export Office (EXPORT)
- Electronic Data Interchange (EDI)
- HUB- Central Office (HUB)
- Inland Customs Office (INLAND)

However, no Free and Secure Trade (FAST) office exists in Prince George which provides Free and Secure Trade (FAST) clearance processes. The FAST Service in Surrey includes:

- Courier Low Value Shipments Program (CLVS)
- Designated Commercial Office (DCO)
- Designated Export Office (EXPORT)
- Duty-Free Shop (SHOP)
- Electronic Data Interchange (EDI)
- Free and Secure Trade (FAST)
- Highway - Land Border Office (HWY/B)
- Immigration (IMM)
- NEXUS Highway (NEXUS/HWY)

Full CBSA services within an **Export Distribution Centre** (EDC) would be the most ideal range of government partnership to provide users of an inland port facility. With the recent changes to Canada's tax laws, firms now have the opportunity to operate EDCs in Canada and to be a part of the world-wide growth in such activities. This new opportunity allows Canada to provide a flexible tax and duty-free environment for serving as a distribution centre to the US and world markets. Firms operating within an EDC can purchase Canadian goods on a tax-free basis and import foreign goods on a tax and duty-free basis if the goods are primarily intended for export/re-export. Value-added opportunities are provided for, as long as the goods are not manufactured or substantially changed in the EDC environment.

Customs brokers also play a key role between border officials and exporters at an inland port. Presently, there is one broker serving Prince George and two serving from Prince Rupert:

- **Summit International Trade Services Inc.** - Kelowna, Osoyoos, Pacific Highway, Penticton, Prince George, Vancouver
- **E.T.S Moore Customs Brokers** - Prince Rupert
- **G.W. Nickerson Co. Ltd.** - Prince Rupert

Best Practices Partnerships

Linking an inland port with other inland ports and sea ports which define a transportation corridor allows for greater opportunities to surface. By sharing "best practices," freight forwarders can better sell the corridor to their customers knowing that services and operating methods will be the same no matter where packing and unpacking occurs. Prince George might want to create strategic alliances that include the Port of Prince Rupert, and primary landing locations on the Pacific Rim to the west, then to the east – Edmonton, Winnipeg, Kansas City, Memphis, and Chicago.

It has yet to be determined what level of Best-Practices partnerships exists in the Prince George region and within the larger Prince Rupert-to-Winnipeg-and-beyond transportation network.

3.4. CORPORATE CULTURE AND RELATIONSHIPS – IMPLICATIONS

Understanding the overlapping relationships that presently exist between the forest industry and the transportation industry is important. While many companies have informal relationships some relationships are more formal. Seaboard Shipping, a major international shipping company, is owned by a consortium of British Columbia forest products companies, which includes Canfor.

As an example of the intermodal use of Seaboard Shipping, Canfor uses various modes of surface transportation to distribute the pulp and paper products it sells. Rail and truck carriers serve North American markets. Export markets are served by rail or truck to modern forest products terminals at Vancouver and Squamish, where the products are transferred to Seaboard vessels including dedicated forest products vessels, multi-cargo vessels, or container carriers. Products then make their way to major markets in Europe, Japan and Asia. When examining Canfor's product lines, their partnership agreements and marketing strategies, it is possible to track where transportation opportunities exist.

Canfor Pulp and Paper Marketing Profile

Canfor is the largest spruce-pine-fir ("SPF") lumber producer in the world, with production facilities in British Columbia, Alberta, Québec, and the United States. Canfor had an annual production capacity at December 31, 2005 of 4.7 billion board feet of lumber, 450 million square feet of plywood (3/8 inch basis), 1.5 billion square feet of OSB (3/8 inch basis), 1.2 million tonnes of pulp, and 135,000 tonnes of kraft paper. On March 6, 2006, Canfor completed the acquisition of New South, which adds three sawmills, one remanufacturing facility, and two lumber treating facilities to its operations, with an annual capacity for 425 million board feet of lumber, primarily southern yellow pine. Canfor's products also include remanufactured and finger-jointed lumber, hardboard, refined fibre, and logs.

Canfor, through its pulp and paper marketing operation, sells the pulp production of its northern British Columbia mills and, under an agency agreement, sells the pulp production of Howe Sound Partnership, in world markets. Sales offices are presently maintained in Vancouver, Brussels, and Tokyo. It's anticipated that sales will steadily grow as a result of Canfor building further joint ventures in marketing that includes Koch Cellulose and Fibreco. In addition, Canfor is represented by sales agents serving various other offshore markets.

In 2005, the approximate geographic distribution of kraft pulp sales was 30% to the European market, 27% to Asia, and 43% to the Americas. The distribution of CTMP (Chemico-Thermomechanical Pulping) pulp sales was 2% to Europe, 88% to Asia, and 10% to the Americas. During 2005, Canfor began selling its specialty kraft paper through a new joint-venture

partnership sales group called Premium 1 Papers. This partnership was formed with Tolko Industries Inc. to market both companies' kraft paper production. The approximate distribution of specialty kraft paper sales in 2005 was 68% to North America, 3% to the Far East, and 29% to Europe.

Canfor Board of Directors Profile

Within the Canfor Board of Directors there exists a history of corporate relationships that can nurture working partnerships. Paul Tellier, a former director of Canfor, was also a former Clerk of the Privy Council, and has served as president and chief executive of both Bombardier Inc. and Canadian National Railway Co.

The current Directors include:

- Jimmy Pattison, CEO of the Great Pacific Group, which includes Overwaitea and Save-On Foods (massive distributors of food products in Canada) and Westshore Terminals Limited Partnership located in Vancouver (Canada's leading coal export facility and the largest dry bulk terminal on the West Coast of the America's).
- Benjamin Duster IV, Algoma Steel chairman. Algoma is a primary steel producer but is also surfacing as a leader in manufacturing and managing co-generation plants and wind turbines.
- John Lapey, Third Avenue Investment manager
- James Shepard, former chief executive of Caterpillar heavy equipment dealer Finning (TSX:FTT).

West Fraser Timber Company Ltd. Profile

West Fraser Timber Company Ltd. is the second largest lumber producer in North America and is a large producer of pulp, paper, and forest products.West Fraser has a significant presence in central BC including two pulp and paper operations in Quesnel, as well as in Kitimat, Hinton, Whitecourt, and Slave Lake. It also has plywood operations in Quesnel, Williams Lake, Slave Lake, and Edmonton as well as medium-density fibreboard (MDF) in Quesnel. It has nine lumber operations in central BC, including three in Quesnel.

West Fraser's recent acquisition of major sawmills in Louisiana and Arkansas could provide them with a volume opportunity for east/west freight rates via CN's Intermodal Gateway Memphis Terminal. CN could then link West Fraser to the Asian market out of the Port of Prince Rupert. West Fraser could dovetail these forest product shipments with it's Prince George pulp shipments to Asia.

West Fraser retains very secure strategic intelligence, making transport logistics, and specific sales information difficult to obtain. Within its corporate philosophy West Fraser places an important core value on the "active engagement of its employees in its business," so community support for a central BC export strategy may gain support from West Fraser.

From its central BC operations, West Fraser's primary overseas market is Japan, with secondary markets consisting of other parts of Asia and the Middle East. Products are shipped by containers or break-bulk. A significant amount of the company's transportation infrastructure is located in the Lower Mainland. Much of its product is shipped via truck to its Reload Centre in Surrey, or is shipped by barge or rail where pulp is stuffed in containers or shipped break-bulk overseas.

3.5. UNKNOWNS IN THE GLOBAL LOGISTICS NETWORK

Once the Fairview Container Terminal is open, the Port of Prince Rupert will have a capacity to handle 500,000 TEUs annually. The terminal will be able to manage two services (ships) per week each carrying an average capacity of 5,500 TEUs. While there remains a proven argument that the terminal will relieve some pressure from existing west coast ports there is no assurance that steamship companies will actually utilize the port for its container terminal. As well, even if the terminal does attract container ships it is unknown as to what their service profile or string of service might be. The industry believes that this "unknown" will become "known" within six months of the arrival of the first steamship companies in the Port of Prince Rupert. In the meantime, it remains impossible to forecast accurately the types of export markets Northern BC could have access to.

If ships regularly arrive at Prince Rupert with a Japanese service profile, then there are many export items from Northern BC that could be exported back to Japan such as pulp and dimensional lumber. However, if the service profile is China, then there may be fewer opportunities for export. Once there is a consistent pattern of service profiles established, an asset profile of Northern BC can be established that would better determine exporting links to the service profile marketplace.

4. CONTAINER FILLING AND MOVEMENT

4.1 CONTAINER FILLING

Container transport and filling remain interconnected within a complex web of transportation relationships that begins with a customer's contractual agreement with the primary international shipper, the steamship company. Usually, it will be the steamship company that will decide whether a rail line can stop, load, and unload its containers at a particular location, like an inland port. Ultimately, it will be whether or not steamship companies decide to call on the Port of Prince Rupert as to whether both that port and an inland port in Prince George will be successful.

The strongest argument that can be made to attract a steamship line to a port or region is a steady in-flow and out-flow of goods that meets with that company's string of service (the port network and customers it serves). Often, delays can occur at a sea port as container traffic backs up because of high shipping volumes. An inland port reduces pressure on a sea port by filling containers and providing unpacking and packing of cargo services combined with holding the containers until they are needed for a specific ship. These services, as well as freight forwarding, remain key within the infrastructure and layout of an inland port facility.

Receiving inbound shipments in Prince George from the Port of Prince Rupert could not only reduce congestion on the Port of Prince Rupert but allow for sorting and consolidating cargos into linehaul or rail containers destined for the Pacific Northwest (Vancouver, Seattle) or the east (Winnipeg, Chicago). This could relieve port congestion and allow shippers and steamship lines on an Asian string of service fast delivery times and the ability to target smaller shipments for metropolitan areas to the south. Prince George would have to offer unpacking and packing services along with a healthy supply of empty containers.

Getting the Train to Stop, Westbound. Most trains would be dedicated to run westbound, non-stop from Winnipeg or other larger centres in the east where the train is packed then destined to the Port of Prince Rupert. If pulp were stuffed in Prince George and shipped through the Port of Prince Rupert, trains would either stop in Prince George to sort cars to match ships and their Ports of Call, or new trains would be built in Prince George for the run to Prince Rupert as the volumes are large enough. Also, filling empty containers in Prince George, as discussed earlier, would encourage trains to stop and drop empties, and pick up full containers. The fact that CN has committed to the Prince George Terminal indicates that there may be movement by one or both of the main exporters to utilize Prince Rupert.

Getting the Train to Stop, Eastbound. Most of the goods entering the Port of Prince Rupert would be packed and destined non-stop to eastern Canadian and US markets. There would be little reason for a train to stop in Prince George unless there were a regular volume of goods destined for eastern markets that could round out train sizes and efficiencies. If pulp were stuffed in Prince George, destined for eastern markets, this might represent the type of volume that would require trains to be available on a regular basis. Adding a lumber reload centre and other container packing efforts in Prince George destined for eastern markets would allow a greater reason for the train to stop for eastbound trips, but accessing empty containers for eastern trips is a whole other issue.

Building opportunities for east and westbound freight will provide more potential for the inland port to realize both export and import opportunities, which would attract more tenants and services into the inland port initiative. However, many inland ports serve as export or import ports exclusively with success.

An analysis should be compiled of what the impacts would be if break-bulk moved from existing intermodal facilities to Prince George. Existing partnerships and community relationships would be impacted including those in Prince George. Presently, companies are shipping pulp and forest products by truck to intermodal centres in Edmonton, Prince Rupert, and the Lower Mainland for container stuffing. If that stuffing happened in Prince George, losses would occur for existing contractors including trucking companies (in Prince George, Quesnel, Vanderhoof and other interior communities), barge contractors (in Prince Rupert), handlers (in intermodal facilities which might be long-term contractors of CN or CP), and forest companies. This could be considered by companies as no more than a shell game, having little benefit over the long term. Building new or "niche" freight opportunities, which still retained existing intermodal relationships, should be considered.

4.2 CONTAINER TRANSPORT

Shipping companies, also known as steamship companies, are generally the primary managers of shipping containers. If a shipping company is hired by a firm from China wanting to ship a product to Canada, the shipping company will ensure that a container is made available and will own or manage that container for that customer. The shipping company will also plan to have that container returned to China as quickly as possible. The shipping company considers both the container and its cargo within a corresponding transport strategy. Containers are often manufactured in China at a very low cost and may be expendable and sold in North America. Sometimes they are placed within a dispatching system and used domestically until they are returned to their origin. When a container port is created, shipping companies decide whether or not shipping containers through that port is an advantage to them or not.

The Port of Prince Rupert has a number of shipping lines that utilize the port. Many of these shipping lines call on the port for grain shipments and coal which arrive by CN in railcars. Included in the list of companies are Saga and Star Shipping, which call on the port for forest products. However, since the closure of Skeena Cellulose the shipping of forest products has been a minor part of the port's overall volume. Pulp presently being shipped from the Prince George area primarily reaches Asia through the Port of Vancouver. The relationship between steamship companies and major shippers can be a complex one.

Profile: Seaboard Shipping Company Limited

The Seaboard General Partnership ("Seaboard"), formerly known as Seaboard Shipping Company Limited, is a major international shipping company registered in Barbados. Seaboard carries on the shipping business originated by its parent company. From Vancouver, Seaboard provides service to world ports with contractual commitments for lumber and plywood volumes, as well as other general cargo. Modern *gantry equipped vessels* (vessels equipped with their own deck crane), under contract to Seaboard, provide service to the United Kingdom and European countries including France, Germany, and Belgium. Service to additional markets such as Australia, North Africa, Italy, United States, Puerto Rico, China, Taiwan, and the Middle East is provided by Seaboard as required.

Strategic alliances, which exist between Seaboard and other shipping lines, significantly enhance the Seaboard service with other gantry and open hatch vessels, including Totally Enclosed Forest Carriers (TEFCs). The name "Ro/Ro" is short for roll-on/roll-off, a phrase describing the method of cargo loading for this class of vessel. Instead of lifting cargo onboard via cranes, spreader bars, and slings, the cargo is driven directly on to the vessel on purpose-built trucks and trailers from the rear ramp and discharged on one of the internal levels by forklift. Operating exclusively in the Pacific, the Ro/Ro vessels provide fully under-deck carriage of outbound forest products and return with other cargoes, such as automobiles, to the US West Coast and British Columbia.

As an example of the intermodal use of Seaboard, Canfor uses various modes of surface transportation to distribute the pulp and paper products it sells. Rail and truck carriers serve North American markets. Export markets are served by rail or truck to modern forest products terminals at Vancouver and Squamish, where the products are transferred to Seaboard vessels including dedicated forest products vessels, multi-cargo vessels or container carriers. Products then make there way to major markets in Europe, Japan and Asia.

5. OPPORTUNITIES – BUSINESS & EMPLOYMENT

Container movements would primarily support the shipment of forest products initially. The primary region from which Prince George would receive shipments would be within a half-day's trucking drive of Prince George (5 hours), and the secondary region would be within a full day's drive (13 hours). CN and the shipping companies want greater freight volumes. CN plans to building additional terminal facilities in Prince George.

5.1. FIRST STAGE OPPORTUNITIES

Regardless of the export demand that may exist within Northern BC, Prince Rupert will benefit from **full containers bound for Asia and elsewhere filled with grain**. This grain will be stuffed in Edmonton but these containers will simply flow through Prince George. Both shipping companies and port authorities would like to discover what "other" export opportunities exist from Northern BC.

With the increased activity predicted for CN's Prince George terminal the first opportunity will be work for CN in the loading, unloading, storage and stuffing facilities. The jobs are most likely operating equipment, e.g. forklifts for handling products like wood construction material plus increased clerical staff to track the freight and customs activities. There is also expected to be increased regional short trucking as some of the wood products formerly shipped long haul will be short hauled to Prince George for stuffing into containers for longer hauls by rail.

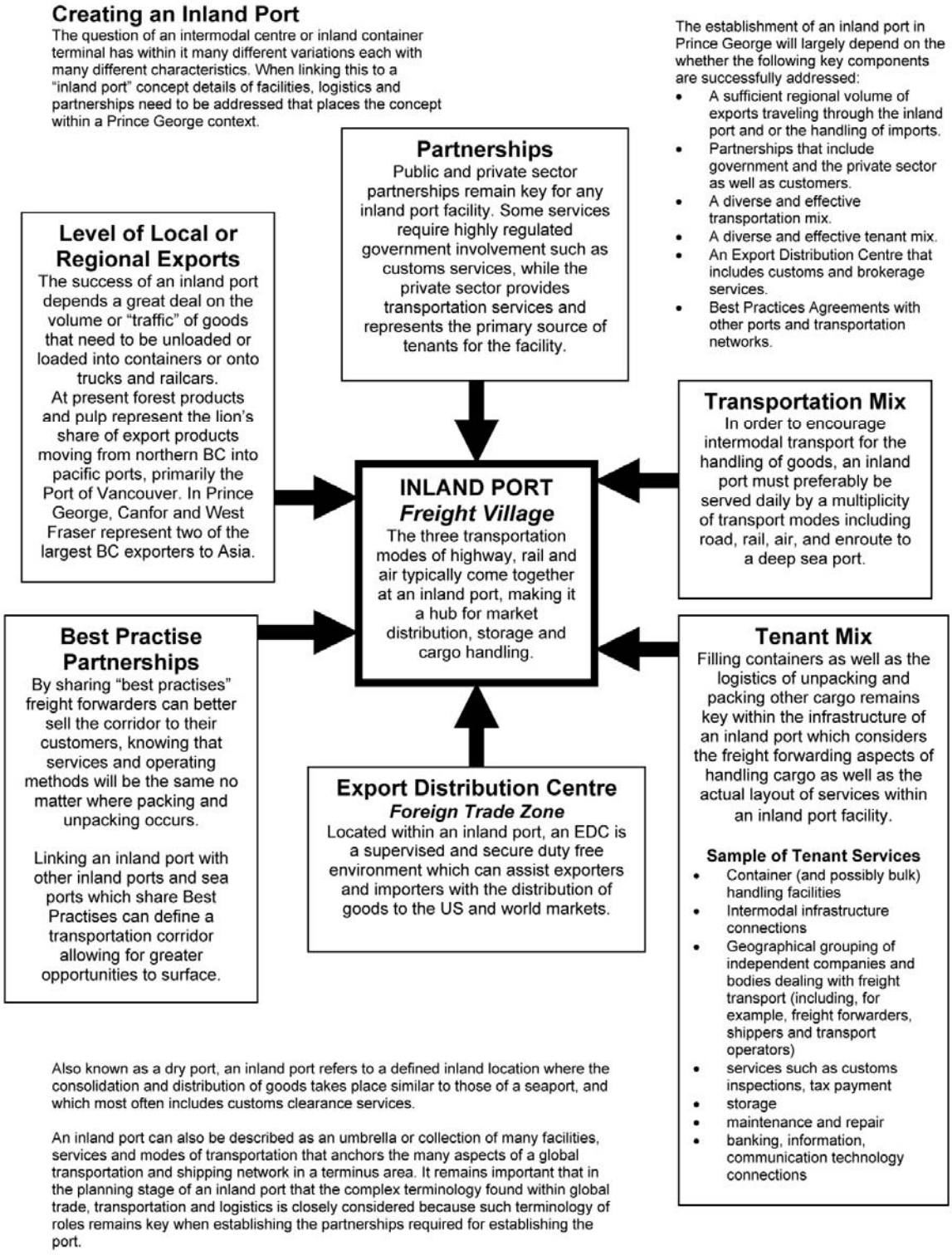
While "import" and "distribution" opportunities from inbound transport are considered negligible for Prince George because there is not the population base, this might be underestimated. There may in fact be opportunities to attract warehousing distribution that utilizes Prince George as a terminus south and east. The time that it takes to confirm the string of service in Prince Rupert provides an opportunity to further refine opportunities since it has been confirmed that CN is building a container terminal in Prince George.

A potential service for the region would be an export incubator that would encourage long-term export development in Northern BC in conjunction with an Export Asset Map and the supply of handling, freight forwarding, and transport services. However, it is important to note that there are areas where competition would occur with CN and other cargo handling companies. At present, new export potential is largely unknown and requires "asset mapping" so that further freight volumes can be nurtured and matched to an export destination once the ports of call are known.

5.2. AN INLAND PORT WITHIN A PRINCE GEORGE CONTEXT

There are a vast number of opportunities to participate within an inland port, however, being a partner within such an initiative requires a company or agency to bring with them an asset in order to enhance an efficient tenant and transportation mix within the port so that it may be successful as a collective unit. Assets might include value-added services, such as loading and unloading, packaging, labelling, and storage facilities. Further assets could include logistics services and import/export processing. Once strong assets have been assembled for an inland port, further partnerships can be assembled that bring about a larger collective. These partners may bring with them access to an industrial park or special economic zone for goods assembly, manufacturing and agricultural processing. See Diagram 2.

Diagram 2: Creating an Inland Port



An Inland Clearance Depot is a Container Freight Station (CFS) with Customs Clearance Facilities that might be located at an Interchange Point, e.g. Prince George, a terminal at which freight in the course of transportation is delivered by one transportation line to another. At an Interchange Point a container may be transferred from one party to another. The placement and management of such a depot would represent an anchor within an inland port facility.

Both the port itself and its terminals generate revenues from handling goods. A terminal is an assigned area in which containers are prepared for loading onto a vessel or are stacked immediately after discharge from the vessel. Often the terminal for cargo being delivered for export assesses a Terminal Handling Charge or Terminal Receiving Charge. This is similar to *warfage*, which is charged at a seaport by a pier or dock owner against freight, handled over the pier or dock or against a steamship company using the pier or dock.

The **development of the warehousing and distribution capacity** in Northern BC will also create new opportunities for other types of warehousing and consolidating including transportation activities such as a building materials distribution centre for Western Canada.

5.3. SOLAR AND ENERGY TECHNOLOGY DISTRIBUTION CENTRE

While there are a number of opportunities whereby niche industries may be attracted to develop warehousing and distribution services in Prince George, one possible example is the energy production sector. If the necessary transport and storage specialization occurred, Prince George could be ideally situated to facilitate the transport and storage of energy-related equipment and merchandise into Asian and North American markets.

Canada is already a world leader in areas of hydro-electric and remote technology. China is seeking to become a world leader as both an exporter and importer of solar energy technology. In June 2005, China's Ministry of Construction issued a directive to expand the use of solar energy in residential and commercial buildings and encourage the use of solar energy at the township level. In January 1, 2006, China's Renewable Energy Law became effective, setting new policies to support the development of solar and other non-fossil fuel energy sources. The National Development and Reform Commission (NDRC) in China projects that 400 MW of solar energy capacity will be installed by 2010, and up to 1,000 MW by 2020. The new law authorizes the setting of favourable feed-in tariffs for electricity generated by renewable power generation systems, including solar, and also provides financial incentives, such as national funding, preferential loans and tax preferences to support renewable energy projects.

Until 2004, Japan was the world's largest solar power market before it was displaced by Germany. The Japanese government has run a decade-long program to subsidize residential solar power installations. Motivated by strategic factors like energy diversification and reduction of carbon dioxide emissions, the Japanese government is expected to boost renewable energy to 3% of the generation mix in 2010. Both China and Japan will be well positioned to feed solar equipment into the North American marketplace as demand for alternative energy programs begin to increase.

The solar power industry has had stellar growth in the last 15 years. According to Renewable Energy Access, demand for solar energy has grown by at least 25% every year for the last 15 years. Clean Edge of Oakland estimates the solar industry at $11.2 billion in 2005, which they claim comes from 55% growth over the previous year, while a DuPont/SEIA report claims that solar sector had sales of $15 billion in 2005. According to statistics released by Solarbuzz, a solar

research group, the amount of megawatts of photovoltaics rose by about 50% from 2003 to 2004, and they estimate that over 300,000 solar systems have been installed worldwide since 1997.

Home Power Magazine claims that 156,000 American homes run entirely on solar. The number-one solar manufacturer, Sharp of Japan, sold over $1 billion in solar equipment worldwide in 2004, and the other leading solar companies have also taken advantage of the growing market. What may be most significant is the recent growth. MarketWatch of Dow Jones has reported that the solar power industry grew 30% every year from 2000 to 2005, indicating that solar power growth is accelerating, and that solar power is able to compete in modern energy markets.

Not only has there historically been large annual growth in solar for the last 15 years, but it is forecasted that solar growth will also continue in the next 15 years. Photon Magazine, a solar industry publication, believes the total solar production will reach at least 10GW by 2010, representing a 530% growth when compared to 2005. Clean Edge (the Clean-Tech Market Authority)[12] predicts that the solar industry will climb to $51 billion in 2015. BP has said that they expect solar manufacturing revenue to double from $500 million in 2005 to $1 billion in 2008. BP also predicted that the solar industry in Asia may achieve 50% annual growth in 2016, up from 30% in 2006. Solar power is predicted to become 10% of total worldwide energy in 2030, according to a Time article. Suffice to say, the industry is trending up and the combination of aggressive government support of many of the leading markets and strong end-customer demand that exceeds production capacity will lead to stronger volume growth.

Solar is not just growing; it is becoming more competitive in terms of price as well. Solar panel prices fell 60% from 1995 to 2005, according to *Time* magazine and another 50% price drop would make solar more competitive with oil and gas. The price at which solar will be better able to compete with conventional energy may be even higher, just as factors such as the war in Iraq and other geopolitical issues may cause the prices of oil and natural gas to rise as the price of solar drops. A German government report claimed that solar thermal power plants in high sunlight areas can be competitive with oil-based power plants when oil costs $50/barrel or higher. The price of oil today, despite the recent retreat in prices, is still over that threshold.

A North American Solar and Energy Technology Distribution Centre would provide the following:

- Warehousing, yard storage and freight forwarding services for both importers and exporters of solar energy and remote technology products
- Container storage
- Packing and unpacking services
- Shipping services to wholesalers and directly to customers and installers
- Consolidating and repacking equipment from multiple suppliers to a multiple of dealers for more cost effective shipping
- Provide a Best Practices host framework for incoming shipments

[12] http://www.cleanedge.com/

5.4. SPECIALITY WOOD PRODUCTS MANUFACTURING

Building on the success of Prince George companies that make value-added wood products, e.g. Winton Global[13] pre-cut cabin and home packages with associated products (doors, windows and a framing package for interior walls), the cost competitive shipping may allow access to markets that formerly were economically out of reach because of transport and logistics costs. Examples include the south east US and emerging markets in Asia. Another potential opportunity is profiled log buildings primarily for the large second home market in the US which has a strong preference for profiled log cabins and cottages.

5.5. SUMMARY

The export capabilities of communities along the Northern BC corridor will be enhanced by the availability of shipping by container. This may aid the long-term development and diversification of the region. The availability of significant capacity of price competitive containerized transportation (potentially going east as well as west), with improved shipping access to the Port of Prince Rupert, could lead to increased value added export-oriented diversification in the region. The increased diversification would support the development of business and industry in all Northern BC.

In the short run the establishment of the Terminal in Prince George is expected to create additional long term jobs in container handling, warehousing, container stuffing and managing a full storage facility.

[13] http://www.wintonglobal.com/wg/1/home

6. OPPORTUNITIES – FIRST NATIONS

There are three general areas of opportunities for First Nations as a result of an inland port in Prince George. The first opportunity is employment with CN in their expanded terminal and associated facilities in Prince George.

The second opportunity area is as an exporter of products. Being within close proximity of a container terminal allows for cost effective access to Asian and potentially US markets (if east bound access is obtained) for value-added wood and other manufactured products. However, understanding export opportunities as well as global shipping logistics is a key hurdle that would have to be overcome in order to capitalize on manufacturing opportunities.

The third opportunity is as a partner that can provide an asset within the transportation or services mix for the inland port. The port provides a vast number of opportunities that can include value-added freight services, such as loading and unloading, packaging, labelling, and storage facilities, as well as logistics services. These are all important assets required within the inland port infrastructure.

Within these general opportunities are a vast number of niche opportunities as well as opportunities that can grow as a result of the port attracting and developing more partnerships. Full import/export processing with special economic zones for goods assembly, manufacturing and agricultural processing for export, remain future opportunities that would probably bring about a larger industrial park complex as an adjunct to the inland port.

A further layer of First Nations opportunity may surface if an Inland Customs Clearance Facility could be secured. Such a facility would be located within the immediate location of the new CN Intermodal Terminal at which freight in the course of transportation is delivered by one transportation line to another. This interchange point acts as a protected area supervised by customs officials and is where a container may be transferred from one party to another without customs delay. Such a facility can also be described as a Foreign Trade Zone. The placement and management of such a zone would represent another key anchor service within an inland port facility.

If there was a First Nations Export Zone within a Foreign Trade Zone this would allow for streamline handling and brokerage services specific to First Nations export products, which can have unique customs criteria. Specializing in this service, then creating a Best Practices Module, First Nations Export Zones could be established at various inland ports along the transportation corridor, which would then provide an attractive shipping mechanism using Prince George as the core storage and repacking facility before goods are outbound through Prince Rupert.

Another opportunity is franchising, which might be described as an investment whereby a local company or agency attracts a larger transport company to an inland port initiative as a partner. One example might be an Aboriginal development corporation offering investment, and a workforce to a company, which already operates a series of successful container depots or a logistics service. Within a partnership, the new container depot or service would be part of a larger national or international network.

There remain a number of general opportunities and many targeted or niche opportunities that require pre-feasibility examinations in order to consider more detailed options. The following opportunities represent the primary options for pre-feasibility analysis based on the most current opportunities.

6.1. SPECIALTY LOGISTICS FORWARDER FOR PRODUCTS AND INTRO SYSTEMS

A targeted or "niche" Aboriginal export service for high-valued export and shipping opportunities that would seek to link global "fair trade" products with warehousing within a Warehouse and Fair Trade Export Zone which would provide the following:

- Expertise in the form of mentoring and education to First Nations and others with regards to export logistics
- Links niche export opportunities for products created and managed by Aboriginal people such as fine art and crafts
- Logistics and Freight forwarding services
- Specialized state-of-the-art packing and unpacking services for container shipping that considers sensitive and fragile historical material
- Warehousing and container storage
- Networks small volumes into larger more cost effective shipping
- Best Practices framework
- Establishes fair-trade networks and alliances with Aboriginal people worldwide

6.2. REAL ESTATE DEVELOPMENT AND MANAGEMENT SERVICES

Now that CN is establishing an intermodal container terminal in Prince George, a strategic opportunity exists for the development of a larger inland port development. If a First Nations consortium would purchase a sizable block of land within the immediate proximity of the CN Terminal, opportunities for attracting "buyers" or tenants" to the industrial park could occur. After an accurate assessment, a warehouse could be established by the consortium along with attracting anchor tenants that would establish their own facilities. Partnership agreements could be customized with investors that might include utilizing First Nations labour and/or services.

6.3. TRANSPORTATION COMPANY

With CN's establishment of an Intermodal Container Terminal more opportunities will surface for regional transportation companies within the 200-mile radius of Prince George. An examination of regional transport companies in conjunction with "Asset Mapping" could forecast how export opportunities would grow and predict the need for warehousing and further transportation services. Purchasing an existing transportation company that is well-positioned to grow and with established contracts with both CN and regional export companies, may be a good investment. Adding additional services like freight forwarding and specialty warehousing may allow for steady growth as the Prince George Inland Port grows.

6.4. PROFILED LOG MANUFACTURING AND EXPORT

If trains actually do stop in Prince George east bound, as part of the inland port, with the capacity to haul locally filled containers east and south, it will provide lower cost rail rates for shipping container loads quickly into the US mid-west and southern states. As indicated earlier, one of the key opportunity areas for the region around Prince George is in manufacturing and exporting speciality value-added wood products. One of the niche market wood products that is in high and

growing demand is profiled log buildings. The US is by far the largest market for log buildings worldwide with strong growth in the mid-west (Great Lakes), south and eastern regions. The US market for log buildings is dominated by profiled log home suppliers (at least 75% by sales). Many of these profiled log building companies focus their efforts on design, marketing, and sales, preferring to purchase the raw product—double or single tongue and groove profiled logs usually 6" by 8" 'D' logs in two foot increments from 8 feet to 36 feet long. The profiled logs are matched to the design/order and shipped to the erection site as part of a complete building package.

The North and Central Interior have ample supply of standing dead pine from the mountain pine beetle epidemic. To produce profiled logs requires a steady supply of low-cost standing dead (not rotten) smaller diameter logs (8" top), a canting operation followed by a profiling operation. Once the logs are profiled then they are usually sprayed lightly with preservative to prevent colouring and shipped. The logs would ship easily in 20' and 40' containers depending on customers' desired lengths. Using mobile conveyor technology, loading the containers could be done relatively quickly directly into containers already placed on trucks.

This high demand is expected to continue for a least a decade and a half as it is fuelled by "baby boomers" that have already earned much of their retirement incomes and are keen to establish second homes from themselves and their families to enjoy.