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The Impact of Higher Truck Weight Limits On Woodland Commercial Park

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The Impact of Higher Truck Weight Limits On Woodland Commercial Park

Summary and Conclusions

The following is a summary of the study of the economic development benefits from increasing the truck weight limits between Canada and the Woodland Commercial Park in Baileyville that was commissioned by the Town of Baileyville in response to a hearing on LD 521 in the Maine Legislature.

(1) Using differential truck weight limits as an economic development tool is a tried and tested technique. It is the principal reason Atlantic Canada has harmonized its maximum weights, the principal reason why 17 states obtained exemptions from the federal Interstate highway gross vehicle weight limit of 80,000 lbs. and the principal reason Maine has special regulations for shipping a wide variety of commodities within Maine.

(2) The Supplemental Report analyzed three case studies in Montana, Washington and Minnesota where state and local governments worked together to increase truck weight limits for cross-border traffic to support successful local economic development projects.

(3) Atlantic Canada has harmonized truck weight limits among the provinces to facilitate commerce. The maximum truck weight limits are approximately 9% higher than Maine for so-called tri-axle vehicles, one of the most common high-weight vehicles permitted in Canada and Maine (109,100 lbs. versus 100,000 lbs.), but nearly 38% higher for the relatively uncommon vehicle combination known as a B-Train Double (137,800 lbs. versus 100,000 lbs.). These higher weight limits have reportedly been based on substantial technical analysis and political processing of the trade-offs between increased road construction/maintenance costs and the benefits to commerce.

(4) Atlantic Canada exports more than $9.6 billion worth of goods to the United States per year and 20%-25% of those exports are transported by trucks that cross into Maine at St. Stephen/Calais or Woodstock/Houlton. The vast majority of these exports are natural resource based goods such as agricultural, forest, fisheries and mineral products.

(5) Many of the products shipped by trucks are so dense that they exceed the truck's legal weight limit before they exceed the truck's cubic carrying capacity. This means that in certain circumstances, higher weight limits could provide an opportunity for financial advantage by using more of the truck's cubic carrying capacity at little additional cost.

(6) This study identified two ways to capture value from increased truck weight limits for several product groups that currently cross the border:

(1) A warehouse/transload facility in which basic commodities, such as pulp, paper, processed agricultural/seafood products, etc. or general freight are transloaded from high-weight vehicles to lower weight vehicles.

(2) Manufacturing or processing products for which the unit-cost of transportation of raw materials or finished products, depending on the direction, is high. Wood products manufacturing presents the most significant opportunity of this type in Baileyville, but with a secondary potential in processing potatoes, other agricultural products, or in a variety of niche products.

Due to the small market size of Atlantic Canada, there may not be as much potential to manufacture high-weight products for export to Atlantic Canada markets, although there may be some potential for exporting containerized, high-weight manufactured products through Canadian ports.

(7) The study included a brief financial analysis of several products for which increased truck weight limits could be advantageous and for which there are already considerable cross-border shipments of product or raw material. This analysis included the following:

(1) Furniture Manufacturing
(2) Pallet Manufacturing
(3) Dimension Lumber Transload
(4) Wood Pulp Transload
(5) Fresh Vegetables and Vegetable Products
(6) Road Salt Transload

(8) All of the product categories evaluated in this study except for kiln-dried softwood dimension lumber and road salt present potential economic development opportunities for Baileyville that would be enhanced by higher truck weight limits. The wood products industry in particular presents many opportunities ranging from simple transloading operations to value-added manufacturing businesses.

(9) The number of jobs that might be created in the Woodland Commercial Park by businesses evaluated in this study is highly speculative at this point, but could range from a total of 200 or so for a build out of the park with low employment-intensive businesses such as transload facilities to several hundred jobs for certain manufacturing businesses.

(10) The number of high-weight vehicles for manufacturing businesses is likely to be very small with respect to the total number of vehicles crossing the boarder. Sample manufacturing business situations indicated that the number of high-weight vehicles could range from 50 per year for a small pallet mill to 100 trucks per year for a furniture factory. A total build out of the Woodland Commercial Park with small to medium-sized

manufacturing facilities might involve at most 1,000 truck trips per year for raw materials or fewer than 3 per day in comparison to the more than 400 trucks that currently cross the border per day.

(11) The number of high-weight vehicles serving public storage and transload facilities is very difficult to predict because there are so many unknowns. However, if the park were to develop a total of 200,000 square feet of warehousing with a combined capacity of 2.0 million to 3.0 million cubic feet of storage with products turning once per month, the park could generate 15-22 high-weight inbound trucks per day and a somewhat larger number of regular weight outbound trucks. A pure transload facility that was developed principally to transfer product from one size truck to another (e.g. dimension lumber) could conceivably generate higher rates of truck traffic.

(12) The number of products that are hauled with the137,800 lbs. capacity trucks is very small. This limit only applies to a very narrow class of tandem trailers known in Canada as B-Train Doubles. It is likely that these trucks would be used principally for transporting logs, dimension lumber and related wood products. It seems likely that the most common truck taking advantage of higher weight limits would be the Canadian tri-axle with a maximum weight of 109,100 lbs.

(13) The number of tractor-trailer combinations operating in Atlantic Canada that can haul in excess of 109,100 lbs. is very small as a percentage of the rolling stock. The most recent data (1995) indicate that only about 2.5% of Atlantic Canada trucks (the equivalent of approximately 1,500 out of 58,900 trucks registered in Atlantic Canada in 1998 if the ratio stayed the same) are eligible to haul the higher weight limits.

(14) If weight limits are to be increased, the Consultant recommends full harmonization with all categories of the applicable Canadian truck configuration regulations for this limited road area. Although one option would be to harmonize only with the maximum loads for Canadian tri-axles (109,100 lbs.), this would eliminate the use of high-weight B-Train Double trailers hauling forest products, which is the commodity that presents the greatest opportunity for capturing value for economic development in Maine.

(15) There are a number of impediments to developing businesses designed to capture the value of higher truck weight limits in the Woodland Commercial Park that would likely lead to a relatively slow build out of facilities designed around higher truck weight limits:

- Lack of rail siding access (most transload facilities involve rail/truck transfers),
- Cost structure of the Canadian trucking industry is much lower than the US,
- Cabotage rules present a problem for transload facilities for Canadian truck drivers, and
- Competition from the Port of St. John where products can be transloaded between trucks, rail and ships in one place presents serious competition.

(16) Although an analysis of the differential costs of doing business was beyond the scope of this study, anecdotal evidence observed indicates that there are differences in the cost of doing business between Canada and the U.S., including, but not limited to the overall costs of trucking, that might limit the development of several types of facilities.

(17) Despite the potential financial advantages of higher weight limit trucks, this factor alone may not be sufficient to stimulate investment because the savings can be overwhelmed by non-financial factors. One Canadian trade specialist indicated that many attempts to alter existing Canadian distribution patterns have been thwarted by inertia against changing existing practices and relationships despite substantial cost savings.

(18) It is a mystery why such facilities have not been previously developed on the Canadian side of the border or why there are few facilities on the U.S. side of the border designed to exploit the existing benefit of transloading from a 100,000 lbs. truck to an U.S. federal limit 80,000 lbs. truck. Since much of the product gets shipped through Maine rather than to Maine, it would seem that the 100,000 lbs. to 80,000 lbs. differential would have generated some development. The fact that neither side of the border had spawned the development of warehousing facilities until very recently could be an indirect indicator that other factors have heretofore overwhelmed the advantage of the truck weight differential, or it could just have been an overlooked opportunity.

(19) Cross-border truck between Atlantic Canada and Maine traffic appears growing at approximately 5% or so per year. Such increases will likely contribute to the demand for transportation-related facilities of various types near the border and special truck weight limits could help spur this development.

(20) Whatever the outcome of LD 521, higher truck weight limits should only be seen as one small element in the overall marketing strategy for the Woodland Commercial Park. Although there can be some financial advantage, it should be viewed as one factor in an overall investment package.

(21) There are many ways to mitigate the impact of higher weight limits on Maine roadways including the following:

- restrict them to border municipalities only,
- restrict them to a fixed length of travel way into Maine from the border crossing (e.g. 15 miles),
- restrict them to designated "border zone development parks" that would include specific industrial areas,
- restrict them to designated limited commodity/product groups (Maine already has special truck weight provisions for several commodity groups).

Of these options, the Consultant recommends applying the special weight standards to sites within 15 miles or some other fixed distance from full-service border crossings to fix the amount of roadway that might need special maintenance.

The Impact of Higher Truck Weight Limits On Woodland Commercial Park

Purpose of Study

The purpose of this study is to determine the potential economic development impact of relaxing the truck weight restrictions that currently apply to Maine roads between the Canadian border and Woodland Commercial Park, a new industrial park being developed at the intersection of Routes 1 and 9 in Baileyville, Maine. New Brunswick currently permits certain trucks to operate with gross vehicle weights of up to 137,800 lbs., which is 38% higher than Maine's highest limit of 100,000 lbs. The theory is that higher truck weight limits would eliminate one competitive advantage currently enjoyed by businesses across the border and thereby might help induce investment in Woodland Commercial Park.

The idea originated in earlier studies of the Woodland Industrial Park.. Proponents postulated that allowing trucks with higher weight limits could reduce the per-unit cost of transporting raw materials or finished goods in several ways, including the following:

- More product could be shipped into or out of a facility per truckload delivery thereby reducing the unit cost of transporting each unit of product (savings in mileage expenses, wages, and other incidental cost of trucking).

- The increment of customs brokerage and assorted processing fees allocated to each unit of product could be reduced since many fees are charged on a per shipment basis rather than on value or tonnage.

- The cost of delays at the border could be spread over a larger volume of product.

Since the lower limits would only apply to the roads between the park and Canada, products shipped into or out of the park from elsewhere would be subject to regular Maine/US weight limits. The competitiveness argument therefore hinges on finding situations in which there is an opportunity to gain financial advantage from the differential limits in either direction (depending on the weight of raw materials or finished products) from locating such a facility just over the border.

The Town of Baileyville made a proposal to the Maine Legislature during its last session (LD 521) to increase the weight limits between the park and the border to correspond to the weight limits in Canada. The Legislature held the bill over to the next session and asked for documentation of the economic development impact of the bill on the area.. Maine Department

of Transportation (MDOT) staff developed an extensive list of issues in a memorandum to town officials. Consultations with Legislators and public officials indicated that there were three major concerns with increasing weight limits:

(1) Increased cost of constructing and maintaining roads for higher weight limits,
(2) Safety issues related to having heavier trucks on the road,
(3) How to justify limiting higher weight limits to one section of road when there may be similar situations in economically distressed areas.

Despite these concerns, Legislators concluded that they needed additional information regarding the economic development impact so that they could make an informed judgment regarding the cost and benefits of this change. All concerned recognize the economic development needs of this part of the state and therefore wanted to provide an opportunity for the proponents to substantiate the need for this legislation. It should be noted that the issue of truck weight limits is a major issue in Maine with a long history of Legislative discussion and action.

Due to budget limitations, this study focuses principally on the truck weight issue and its potential to improve the financial competitiveness of the park. It is not a cost-benefit study of the issue and it does not include an analysis of other issues affecting the competitiveness of development in Baileyville versus development in neighboring New Brunswick.

The study identified three situations in which relaxed weight limits might present a competitive advantage:

(1) Transloading of materials from a higher weight class of vehicle to a lower weight class of vehicle or vice versa depending on the direction of product flow,

(2) Locating a manufacturing facility where it could benefit from the economic advantage of receiving raw materials (from Canada in this case) with a lower unit-cost for trucking expenses, and

(3) Locating a manufacturing facility where it could take advantage of the lower unit cost of shipping finished product (to Canada in this case).

Transloading - Transloading is a distribution industry term that describes the process of taking products from one transportation container and relocating them to another container at points along the distribution chain. There are many types of transloading facilities. The simplest form is a cross-dock facility where product comes in one door in one vehicle and goes out another door in another vehicle. Such facilities are frequently established for mode transfers such as from rail to truck. Other varieties of transload-type facilities provide a wide range of value-added services such as re-packing, warehousing, etc. Since the Woodland Commercial Park is not located on a rail line or at a port, it would have to rely on truck-to-truck transloading. Truck-to-truck transload facilities frequently provide some value-added service such as short/long-term storage, just-in-time delivery, etc.

Manufacturing - Manufacturing facilities would likely require less of an economic benefit from just the transportation-related costs alone since the profitability of the facility is dependent on many factors. Even though the economic benefits of differential weight limits might not justify a transload facility, they might be sufficient as an inducement for a manufacturing facility in situations where all other factors were approximately equal.

Study Approach

The approach to this study included four basic components:

(1) Identify and analyze examples in other U.S. jurisdictions where (a) weight limits have been relaxed or (b) there are industrial parks with substantial cross-border development activity,

(2) Analyze product flows between Atlantic Canada and the US to identify and study opportunities to capture value in Baileyville from relaxed truck weight limits and quantify the amount of captured value to the extent feasible in this reconnaissance-level study,

(3) Quantify the economic development impacts in terms of jobs and truck volumes,

(4) Analyze the potential for Baileyville to attract economic development opportunities from the truck weight reduction strategy after and considering these and other competitive factors.

The Eastern Maine Development Corporation conducted the initial stages of the first component by researching transportation and economic development professionals in each border state. This involved surveying economic development and transportation officials in other border states and analyzing comparable situations.

Enterprise Resources Corporation conducted the second component by identifying and analyzing product flows by truck between the two countries to try to find commodities/products that could benefit from a reduction in overall transportation costs created by the special weight limit road connection. The Consultant then analyzed the extent of the any financial advantage to determine if it was sufficient to induce investment.

Identifying commodities/products that might benefit requires a considerable amount of extrapolation and interpolation of available data in order to develop estimates for competitiveness. The ultimate question of financial competitiveness at the firm level is highly proprietary and such questions cannot usually be approached directly. Fortunately, there is a substantial amount of data available on product and transportation mode flows between Canada and the US that provides excellent macroeconomic data. Nearly all of the data used in this study

is from Canadian sources because Canada collects and publishes a huge amount of trade and transportation information at very detailed levels. Similar data at such detailed levels is often suppressed in the US because of the potential to violate confidentiality by exposing company-specific data.

The unique geographical position of Maine with respect to Atlantic Canada also helped greatly with data collection and analysis. This is because such a huge proportion of all truck-based trade from Atlantic Canada goes through Maine. This makes it feasible to estimate the flows of various trucked goods through Maine border crossings. By a systematic analysis of various sorts of data, it is possible to get a reasonable picture of the amount of various products that flow through the border at St. Stephen/Calais. This in turn makes it possible to analyze potential opportunities by commodity/product category.

In order to understand the potential for Baileyville to capitalize on special truck weight limits, it is necessary to understand the nature and extent of cross-border trade between Atlantic Canada and the United States and particularly trade in products shipped by truck, to determine if there are opportunities to extract additional value out of the trade flows. Understanding these trade flows involves looking at a wide variety of trade and transportation data. The Consultant extracted a significant amount of data from previous reports on trade and transportation and from original trade data published regularly by the Canadian government. Much of this data is included in Appendixes to this report to keep it from obscuring the basic analysis in the main report. This report also contains the information gleaned from interviews with persons knowledgeable about these issues. Considerable background data on major issues is included where the Consultant concluded that it might help explain the rationale behind current practices and opinions.

Truck Weight Limits in Atlantic Canada

The four Atlantic Canada provinces (New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland) have just agreed to harmonize truck weight and size restrictions among the four provinces. This harmonization has been under development for more than ten years as part of an overall strategy to facilitate inter-province commerce. New Brunswick is the first province to actually establish the new legal limits which went into effect on October 10, 2001. Due to certain grandfathering and transitional provisions, full harmonization will not become totally effective until the end of 2009; however the dimensional and weight limit regulations will become effective immediately upon final adoption by each province, which is expected by the end of this year. Each province will still maintain authority over seasonal road postings, specific bridge limits and special limits for local roadways; however, for the most part, inter-provincial truck movements will be seamless.

Additional discussions by the Atlantic Canada provinces with Quebec and Ontario to harmonize the weight and dimension standards among the six Eastern Provinces in 1998-1999 failed to

reach an agreement. However, Quebec and the Atlantic Canada provinces have re-opened discussions and there is an expectation that Quebec and Atlantic Canada will harmonize their systems along the lines of the new Atlantic Canada rules. Ontario is not expected to harmonize with the Eastern provinces because their standards are specifically tailored to facilitate North/South heavy-industry commerce with the U.S. and deal with a much wider range of special vehicles. Quebec's current standards are very close to the Atlantic Canada standards except that Quebec has a wider range of classes of trucks. Overall, the maximum weights for most comparable truck classes are nearly the same.

Canadian provinces have increased truck weight limits significantly over the past few years in response to an exhaustive study of the impact of vehicle weights and measures on road and bridge safety, construction costs and maintenance costs in the early 1990's by the Transportation Association of Canada. The idea behind the study was to develop a science and economics based system for regulating weights with an eye to maximizing economic productivity.

Canadian officials are quite clear that increased weight limits are designed to reduce the unit costs of transporting commercial products. The provinces have worked directly with industry to increase weight and size restrictions in order to maximize the use of transport assets and reduce costs in transporting goods. A review of the extensive literature and discussions with officials and business executives also makes it quite clear that Canada has designed its highway/bridge construction standards and its concomitant trucking industry standards to provide a comparative advantage to Canadian businesses.

One Canadian official involved in the development of the regulations indicated that much of the demand for the highest weight limits comes from the forest products industry and especially from log and lumber transporters. Because of the extraordinary weight of green wood fiber and the fact that this is a very low-margin commodity industry means that every penny of transportation cost is very important. This same official could not name another large industry for which the higher weight limits were so important, although there are many smaller industries which make use of the higher limits.

The Canadian dimension/weight regulatory system includes detailed weight limits for an extensive list of truck design configurations that is based on the amount and distribution of axle/tire footprint on the road/bridge surface. The system is based on the number of axles and the locations of the axles along the mass of the truck. The highest weight limits only apply to a very narrow category of tractor/trailer configurations. One national study of cross-border truck traffic in 1995 indicated that slightly less than 4% of all trucks crossing the border are of the configuration that permits weight limits in excess of 109,100 lbs. Of course, this might be expected since there is no economic incentive to operate a high weight limit truck if it cannot be filled. However, this same 1995 study found that only about 12% of trucks of all configurations crossing the border in both directions (7% southbound and 5% northbound) are weight-limited (i.e., the truck had additional capacity by cubic volume, but was at the maximum weight). This

suggests that the demand for extra weight limits may not be substantial since a large amount of freight is limited by the cube capacity of the container rather than the weight limit.

Following is a generalized summary of the Atlantic Canada weight restrictions that went into effect in New Brunswick on October 10, 2001. It must be noted that the actual weight restrictions are dependent on the distance between the various axle configurations and there are many configurations covering smaller trucks that are not included in the following table. The regulatory weight limits are for Gross Vehicle Weight (GVW) which includes the tractor, trailer, and cargo. The tare weight of the tractor and rigs vary substantially depending on size and configuration; however, this report will assume as a reasonable rule of thumb is that a large five or six axle rig will weigh 35,000-38,000 lbs. empty unless otherwise noted.

Harmonized Atlantic Canada Truck Weight Limits

# of Axles	Max. Weight Kg.	Max. Weight Lbs.	Overall Length
Tractor Semitrailer (traditional looking rig with tractor and one trailer)			
Four	32,600	71,900	23 m (75.5 ft.)
Five	41,500	91,500	
Six	44,500-49,500	98,100-109,100	
A Train Double (tractor and two trailers hooked in tandem - sometimes called double-bottom)			
Five	41,900	92,400	25 m (82 ft.)
Six	50,800	112,000	
Seven	53,500	117,900	
Eight	53,500	117,900	
B Train Double (same as A Train Double, but with special axle spacings)			
Six	50,600	111,500	25 m (82 ft.)
Seven	59,500	131,100	
Eight	62,500	137,800	
Nine	62,500	137,800	
C Train Double (Same as A Train Double, but with special axle spacings)			
Five	41,900	92,400	25 m (82 ft.)
Six	50,800	112,000	
Seven	55,600	122,500	
Eight	58,500	129,000	

Straight Body Truck (single or dual steering wheel with various trailer combinations)

Four	34,100-35,100	75,000-77,300	23 m (75.5)
Five	43,000-43,100	94,700-95,000	
Six	47,000-51,000	103,600-112,400	
Seven	53,500	118,000	
Eight	53,500	118,000	

Tolerances and Special Rules - New Brunswick currently allows a tolerance of up to 1,100 lbs. per axle for most configurations. This tolerance is automatic until January 1, 2006 after which time the tolerances will be reduced. With the tolerances, a standard tri-axle could weigh up to a maximum of 115,740 lbs. New Brunswick has one special rule for raw forest products which includes logs, bolts and chips (but not lumber, pulp, paper or any "processed" wood products). This rule allows, by special permit, tri-axle tractors with semi-trailers with four axle groups on the rear to weigh up to 113,538 lbs. before tolerances and 121,254 lbs. after adding in all tolerances. This special rule is designed specifically for the raw forest products industry.

Seasonal Weight Limits - New Brunswick establishes reduced weight limits during the spring thaw, which is generally between mid March and the end of May depending on the location within the province and the season. The general reduction is to 80% of normal weight on most roads except that some arterial highways permit 90% and a few arterial highways even permit 100%. Quebec publishes specific weights for each class during the "thaw period" and these vary from a 15% reduction to a 0% reduction.

High-Weight New Brunswick Highways - New Brunswick permits high-weight trucks, defined as those weighing between 43,500 kg and 62,500 kg (96,000 lbs. to 137,800 lbs.), only on certain designated roads. These roads include the major arterial highways (Routes 1, 2, 3, 4, 7 & 8) and a long list of short sections of smaller feeder roads. The latter are designed to service specific industrial sites or special truck routes. Routes 1 and 3 are the major feeder highways to St. Stephen. There are also three short sections of local roads in St. Stephen that permit the higher limits to service specific routes. Designating short access roads to industrial sites for high weight vehicles is one way in which Canadian governments directly support economic development.

Commercial trucks have three routes out of Atlantic Canada:

(1) Trans Canadian Highway to Quebec (Route 2),
(2) Trans Canadian Highway to Woodstock/Houlton and the connection to US Interstate 95,
(3) The combination Trans Canadian Highway (Route2) to Route 1 to St. Stephen/Calais and then US Route 9 to Interstate 95 in Bangor, Maine (or over back roads to Augusta to avoid the 80,000 lbs. limit on I-95 north of Augusta).

The Quebec route is principally used by trucks serving the rest of Canada. Nearly all truck traffic serving the eastern U.S. enters Maine at either Houlton or Calais. Border crossing data reported later indicate that a slightly larger number of trucks cross at St. Stephen. Surveys of Canadian truck drivers conducted by the MDOT in Bangor, Maine indicate a slight preference for the St. Stephen/Calais crossing because it is shorter and the improvements to Route 9 have made it more accommodating to through traffic. The Atlantic Provinces Trucking Association confirms a stronger current preference for this routing, but believes that this preference may be reduced when the new Moncton-Fredericton highway opens.

Truck Weight Limits in Maine

Maine's general law on truck weight limits is substantially simpler than that used in Atlantic Canada and consists of five weight categories with limits as follows:

2 axles	34,000 lbs.
3 axles	54,000 lbs.
4 axles	69,000 lbs.*
5 axles	80,000 lbs.
6 axles	100,000 lbs.**

* Limit also applies to all single-unit trucks with more than 4 axles.
** Applies only to state roads and only to a tri-axle tractor and tri-axle trailer combination. Interstate 95 between Houlton and Augusta is subject to the federal limit of 80,000 lbs. Although a part of I-95, the Maine Turnpike is allowed to have a 100,000 limit because it was a pre-existing toll highway that uses private funds.

There are additional regulations regarding axle spacing/weights and other size/configuration standards, but these are relatively modest in scope. The standards for meeting the 100,000 lbs. limit, however, are fairly specific and apply only to a narrow range of tractor-trailer configurations which are commonly referred to in Maine as "tri-axles". Maine provides for a tolerance of up to 10% over the maximum weight limit in each axle group for an extensive list of commodities except for the 100,000 lbs. limit which is an absolute maximum.

The tolerances are allowed to accommodate the variability in loading the various commodities. The special commodities subject to the tolerances include concrete, highway construction materials, ores, ash, gravel/rock, refrigerated foods, raw milk, farm produce and a wide variety of forest products from logs to dimension lumber.

Maine also permits the hauling of a wide variety of other commodities up to the 100,000 lbs. limit "by registration", which is a process for registering specific vehicles to haul specific commodities. It is possible for nearly all commodities to be eligible for truck weights of up to 100,000 lbs. as long as the vehicle meets Maine axle configuration standards.

Like nearly all jurisdictions, including those in Canada, Maine issues special permits for substantially overweight vehicles carrying special cargo for limited purposes, but these are by exception. Unlike Canada, Maine does not have any special regulations for double-bottom trailer configurations.

There are currently approximately 8,300 combination tractor-trailer truck vehicles registered in Maine. Of these approximately 3,000 or 36% conform to the state's six-axle, tri-axle standard. The number of rigs conforming to this standard has been growing steadily despite the fact that they can only operate at these limits on Maine and Canadian highways. A significant number of these rigs are bulk liquid carriers that haul petroleum and other liquid cargoes within the state.

The principal impediment to even higher utilization of 100,000 lbs. trucks in Maine is the 80,000 lbs. limit on the Interstate highway system. There are two proposals to the U.S. federal government to increase the weight limit on the Interstate in Maine up to 100,000 lbs. One is a special limit to serve Bangor and the other is a "pilot project" which would increase the limit on the Interstate for a period of time to study the impact of higher weight limits on the entire Interstate system.

According to Maine transportation officials, there are no current plans to increase the Maine maximum of 100,000 lbs. and there are no plans to harmonize the truck weight standards with Canadian provinces. Maine already has higher weight limits than many other states. Since most trucks loaded with more than 80,000 lbs. cannot travel from Maine into other states except New Hampshire (which has a maximum limit on state highways of 99,000 lbs.), Maine's limit of up to 100,000 lbs. limit already serves an economic development inducement of sorts for commerce transacted within Maine, New Hampshire or neighboring Canada. Massachusetts has a statewide limit of 80,000 lbs. plus a tolerance of 5% for a theoretical maximum limit of 84,000 lbs.

Federal Regulations on Truck Weights

There is a federal law establishing 80,000 lbs. as the maximum allowable gross vehicle weight on the Interstate Highway System; however, a series of exemptions and grandfatherings from the beginning of the development of the system up to 1991 when exemptions were curtailed has resulted in a system with widely varying maximum weight limits. The following table lists the states with legal maximums in excess of 80,000 lbs.:

State	Max. Weight (lbs.,)
Alaska	100,000
Arizona	95,000
Colorado	115,000
Idaho	95,000
Indiana	104,500
Iowa	100,000
Kansas	109,000
Missouri	109,000
Montana	100,000
Nebraska	95,000
Nevada	95,000
North Dakota	100,000
Ohio	95,000
Oklahoma	95,000
Oregon	96,000
South Dakota	100,000
Utah	95,000

The Transportation Research Board of the U.S. National Research Council has been analyzing the truck weight issue in the United States for a long time and has concluded that establishing national uniformity on truck weights will be very difficult and increasing the weight limits on the Interstate system will be equally difficult. The principal political issues seem to be the higher costs of road maintenance, the perception of safety on the part of the general public and the concerns of other modes of transportation (railroads and barge companies) losing market share to trucks.

The principal financial issue is finding a way to charge the trucking industry for the additional costs of wear and tear on the roadways caused by higher weight limits. A quick survey of the literature and brief discussions with transportation officials indicates that the issue is not likely to be resolved soon. There is, however, a general presumption that increasing truck weight limits for specially designed vehicles could provide a significant enhancement to the overall productivity of the economy. There is also the concern that lack of uniformity among states across the country is a drain on overall productivity of the transportation system.

This data shows that truck weights in the United States are hardly uniform and that the 80,000 lbs. limit on the Interstate is not sacrosanct. The reason for the evolution of this highly variable truck weight regime is that various political jurisdictions have made decisions to support economic development and commerce by permitting higher truck weight limits. There is reportedly a bill before the U.S. Congress to roll back all of these exemptions and establish an 80,000 lbs. limit for all federal highways with no exemptions. Similar bills have not succeeded in the past.

Competitive Issues that Transcend Truck Weights

It is important to consider the truck weight issue within the context of other issues that affect the potential competitiveness of the Woodland Commercial Park. These other issues include, but are not limited to, (1) differences in cost structure of the Canadian trucking industry, (2) the impact of cabotage rules, (3) the availability of similar advantages directly across the border, (4) the general cost of doing business across the border, and (5) overarching traditions and practices in the various industry groups and distribution chains handling cross-border products that might make it difficult to change existing practices.

Cost Structure of the Canadian Trucking Industry

Transport Canada conducts annual studies of truck operating costs in Canada and the US and publishes detailed cost data for in a time series going back to the 1950's. The report includes estimates of the average operating costs for trucking along three major US/Canada long haul corridors, east, central and west, in per mile unit costs for several configurations of trucks (vans, flats, tankers, etc.), at various distances from short hauls of 160 km to long hauls of 3,200 km and at three operating ratios (efficiency rates). In addition, Transport Canada calculates comparable data for a U.S.-based trucker for the same characteristics. Differential trucking costs is of considerable importance to the operations of a facility in Baileyville because it could affect the economic feasibility of facilities dependent on cross border trade.

The following data is 1999 average data for 5-axle semi-trailer vans carrying product from Canada to U.S. destinations. The cost data was converted to U.S. dollars at the current rate of approximately US$0.65 to C$1.00 rather than 1999 dollars (which were US$0.673 in 1999) to show the current relationship.

East Coast-based Canadian trucker hauling cross-border to East Coast US:	US$1.08/mile
East Coast-based US trucker hauling cross-border to East Coast US:	US$1.54/mile
West Coast-based Canadian trucker hauling cross-border to West Coast US:	US$1.42/mile
West Coast-based US trucker hauling cross-border to West Coast US:	US$1.50/mile

The Canadian-based trucker hauling to the East Coast US market has a 30% cost advantage to US truckers hauling over the same route. Interestingly, the cost advantage for Canadian truckers over U.S. truckers on the West Coast is only about 5%. Analyzing the component data shows that the principal reasons for the significantly lower costs to Atlantic Canada trucking companies include the lower cost of driver wages and benefits (up to 38% lower for NB and NS drivers than British Columbia drivers and from 29% to 49% lower than East Coast U.S. drivers) and a somewhat lower capital cost of equipment (8%-15% lower depending on type of equipment). Most other cost categories such as license costs, fuel, etc. were variable, but somewhat comparable.

The wages category included all fringe benefits, taxes and related direct labor burden costs. Transport Canada reports in another study that salaries and wages constitute approximately 31% of the total trucking company operating expenses. It should be pointed out that the Transport Canada study used labor rates for truckers from Massachusetts, New York and New Jersey combined with wage rates for Arkansas, Alabama and Georgia for its U.S. East Coast benchmarks. Following is a summary of the average trucking labor rates with benefits for several of the markets mentioned above:

New Brunswick/Nova Scotia	US$ 12.51/hr.
British Colombia	US$ 20.30/hr.
MA/NY/NJ	US$ 24.49/hr
AK/AL/GA	US$ 17.60/hr.

The Transport Canada study does not include wage data for Maine and does not provide sufficient detail on its methodology to calculate one. The Consultant suspects that the Maine rates are closer to the AK/AL/GA rates than the MA/NY/NJ rates, but that there is still likely to be a cost advantage to Canadian truckers hauling out of Atlantic Canada over Maine truckers hauling to the same East Coast routes. This could have a significant impact on the economic feasibility of a transloading facility in Baileyville if Canadian truckers could not haul transloaded cargoes to their ultimate U.S. destination, except in those few instances where the cargo was not being hauled very far into Maine. It would not take very much distance for truck operating costs to negate any financial advantage presented by truck weight differentials. This factor could also have a negative effect on a Canadian value-added processor with a high volume of U.S.-destined production which could preserve the trucking cost advantage by locating the value-added processing facility on the boarder in Canada.

Cabotage

The economics of a facility or business developed in Baileyville could be affected by the rules and regulations governing trucking cabotage in the U.S. Cabotage refers to the practice of a vehicle (ship, airplane, truck, bus, etc.) from one country picking up cargo or passengers in a foreign county and delivering the same passengers or cargo to another point in that foreign country. Cabotage is frequently prohibited by national governments to protect markets.

While the US air transport and maritime industries work hard to preserve cabotage laws in the United States, the US and Canadian trucking industries have worked together to allow some cabotage out of mutual self-interest. Generally, cabotage by U.S.-domiciled truckers is permitted in Canada. Without permissive cabotage rules, trucks would be restricted to transporting native-origin goods only to their destination point in the other country and then returning to their home country only with cargo destined for their home country. Foreign trucks are sometimes permitted to travel empty or deadhead to another location in the foreign country to pick up an international backhaul load, but until a few years ago, the U.S. Customs Service

interpreted the rules narrowly and only allowed foreign trucks to load up for a backhaul at the point of drop off.

The U.S. Customs Service issued new rules in 1999 that permit a considerable amount of cabotage by Canadian trucking companies in the US, but continues to restrict it to point-to-point trucking in the U.S. that is "incidental" to export-import moves. The language of the new provision is as follows:

> "...if such carriage is incidental to the immediately prior or subsequent engagement of that vehicle in international traffic. Any such carriage by the vehicle in the general direction of an export move or as part of the return of the vehicle to its base country shall be considered incidental to its engagement in international traffic. An alien driver will not be permitted to operate a vehicle under this paragraph, unless the driver is in compliance with the applicable regulations of the Immigration and Naturalization Service."

The restriction to "compliance" with the regulations of the INS is important, because the INS has reportedly not harmonized its regulations with the U.S. Customs Service and takes the position that truck drivers carrying cargo point-to-point in the U.S. must be eligible to work in the U.S. The lack of directive from the INS leaves the issue in limbo to be decided on a case-by-case basis. Industry experts report that Canadian drivers and trucking companies will not do point-to-point transport in the US even when it is clearly "incidental" to a direct cross-border move because of lack of certainty regarding its legality under the INS rules.

The cabotage rules could have a major impact on the operations of a business in Baileyville that was predicated on transporting products between the two countries. It would affect terminals and transloading facilities which would in effect be serving as drop off and pick up facilities for differentially loaded trailers. The question is whether a Canadian truck would be able to drop off and pick up a load of similar products for delivery further in the US with the Baileyville stop being "incidental" to the shipment from Canada to the US. It is not clear whether the same or a different Canadian truck could pick up the new load in Baileyville and continue the shipment to its ultimate U.S. destination. A strict INS interpretation of the laws would likely not permit this. A strict interpretation would mean that only US trucks could deliver transloaded product to the rest of the United States from a facility in Baileyville. This might prove to be a significant impediment to Canadian companies operating such a facility.

A full exploration of the potential problems with cabotage is beyond the scope of this study, but it would certainly need to be explored in great detail by anyone developing a facility in Baileyville. The U. S. Immigration and Naturalization Service of the U. S. Department of Justice was not responsive to requests for clarification or information on this issue and does not make employees available to the public to discuss such issues.

New Border Crossing, Bridge and the East West Highway

The U.S./Maine and Canada./New Brunswick governments are in the late stages of planning a new border crossing between New Brunswick and Maine in the Calais area. There has been an exhaustive study process to evaluate the long term needs and options for meeting those needs. This decision comes on the heels of another major infrastructure decision that affects the Woodland Industrial Park, the Maine East/West Highway.

The decision on a new border crossing could have a significant impact on this truck weight issue. At this point, the study is focusing on a new bridge and crossing at either the Calais Industrial Park or in Baileyville near the intersection of Routes 9 and 1. From the perspective of the Woodland Commercial Park, it does not make any technical difference where the new crossing is located as long as the weight limits are increased for whatever section of roadway connects the new crossing with the park. Trucks are going to have to traverse approximately the same amount of roadway whether it is in Canada or Maine. The principal difference is the amount that road that is located in Maine where the limits would have to be raised and for which Maine would have to pay any reconstruction costs and the long-range maintenance costs of a higher weight limit road. The distance varies from less than 10 miles from the Calais crossing to a mile or less from the Baileyville crossing.

From the political and functional perspective, however, there may be a very large difference between the two options. The Calais option requires considerable over-weight travel along Route 1 through the Moosehorn Wildlife Refuge. There is considerable speculation as to whether the highway could be upgraded through the refuge to the extent required to support heavy trucks. There is a similar concern regarding whether the crossing should be located where it could avoid most heavy truck traffic from traversing the refuge at all.

It is beyond the scope of this study to consider the impact of bridge location on the economic development potential of the Woodland Industrial Park other than to state the obvious that the closer the crossing is located to the park the better, because of the cost (in Maine) of maintaining the roadway to higher weight standards will therefore be lower. Whichever location is selected, it is clear that substantial additional mobilization area will be required for trucks to accommodate the increasing amounts of truck traffic and the border delays caused by increased security.

The State of Maine has affirmed its near-term policy of focusing attention on upgrading the Route 9 corridor as the eastern Maine anchor section of the East/West highway. This decision puts the Woodland Commercial Park in a good location for development to serve cross-border commerce since it will have good access to the area's highest standard highway no matter where the border crossing is located. Even if future alternative routes bypassed the Woodland Commercial Park a bit, it would not be difficult to maintain a high-quality road link.

Direct Competition from Transload Facilities in Canada

The proponents of increasing the truck weight limits have ostensibly identified a market opportunity to arbitrage differential truck weight limits between two jurisdictions. A logical question is why has the market not identified this before and located either transload or manufacturing facilities along the border in Canada? No one surveyed as part of this study seemed to have an answer; however, there is a small public warehouse facility under development in St. Stephen that may soon provide a partial answer. Several respondents have also pointed out that such facilities are relatively common along the border in Ontario and Quebec.

St. Stephen Industrial Park, operated by the municipality, provides an opportunity similar to that in Calais and Woodland, but until a few months ago, did not have any facilities that were specifically developed to support the transportation of goods. The park has reportedly experienced some development over the past few years and is now down to between 20-30 acres of land. The owners are considering adding to the park's acreage. The park has its first public storage facility under construction. This is a 24,000 sq. ft. warehouse that is the first of three planned phases to be developed as demand increases. The owner is reportedly planning a second phase of 30,000 sq. ft. nearly immediately due to demand for the first facility.

The local economic development director reports that this facility will be designed and operated as a multi-tenant public warehouse that provides a variety of customized services for several customers including long and short term storage and cross docking of freight. The first building will eventually be served by a new rail spur to be constructed, but will not be located directly on the rail spur. The economic development director indicated that the first phase of the facility will handle a wide variety of goods including forest products and general freight. It appears that much of the initial business will involve considerable long term storage which indicates that it is not a logistics service driven business.

A few Canadian respondents reported that a possible reason why such facilities have not been constructed before on the Canadian side of the border is that there is major competition from warehouse/transload facilities in St. John where there are opportunities to transload between all three major modes of transport - rail, highway and ship. Give the dominance of basic commodities in cross-border transport, it is not surprising that the transport service industry would locate at a major trans-mode thoroughfare. There is the somewhat related issue of the dominance of the transportation industry by a few large companies such as Irving and McCain's which likely benefit from concentrating such activity in a large commercial center. These factors, combined with the fact that St. John is only about 60 miles from St. Stephen, create a significant competitive factor to facilities in St. Stephen or Baileyville. In essence, a transload facility that depended on differential truck weight limits for feasibility would have to base that feasibility on the savings from trucking from Baileyville to St. John, which is about 70 miles.

St. John Industrial Parks, Ltd., that city's development entity, manages three industrial parks, one of which has considerable undeveloped land with rail access. In addition, the Port of St. John manages several terminals with rail, highway and maritime shipping access. Although the port is dominated by liquid and dry bulk cargo, it handles considerable containerized general freight and forest products. For containerized cargo, it principally serves as a feeder port to Halifax, which is becoming the major North American container port.

Competition from Maine Facilities

Bluebird Ranch, Inc., a trucking and warehousing company headquartered in Jonesboro, Maine, operates a 40,000 square foot public warehouse in Baring, Maine that stores a variety of mostly Canadian products for shipment throughout the U.S. Principal products handled include several prepared food items and rolled paper. All product is trucked in from Canada in conformity with U.S. weight limits and nearly all product is trucked out in maximum weight loads of 80,000 lbs. Business is fairly steady but products vary considerably over time. Company management believes that relaxing truck weight limits between its warehouse and the Canadian border would generate substantial additional business.

Bluebird Ranch is quite optimistic about the future of warehousing in the area and has preliminary plans to construct a new 100,000 sq. ft. public warehouse on the Guilford Industries Railroad line about two miles from its existing warehouse. For Eastern Maine, this is a fairly large warehouse with a price tag in excess of $2.5 million that represents a significant vote of confidence in the opportunity for transload distribution in the region. The company hopes to do a considerable amount of truck to rail and rail to truck cross docking as well as storage business. Management believes that there may be an opportunity to transload product from rail cars to the warehouse and then to the Port of Eastport and possibly in reverse depending on how the markets develop. Guilford Industries operates an eight mile short line that connects the Domtar paper mill in Baileyville with the New Brunswick Southern Railroad at the Calais/St. Stephen border. From there, products can travel to and from St. John to the Canadian National Railroad or back into Maine to either the Guilford in Mattawamkeag or the Bangor and Aroostook Railroad in Brownville, Maine and eventually to the Canadian Pacific system. This could provide much-desired rail access to the Port of Eastport and its operator, Federal Marine Terminals, Ltd. a large Canadian port operating company.

Bluebird Ranch operates a 33,000 sq. ft. refrigerated warehouse in Jonesboro, Maine and has considerable experience in storage and shipping refrigerated products. Management does not see much of an opportunity for refrigerated storage in the Baileyville area because such facilities are usually located either near the point of origin of products or in major urban market areas for local or regional distribution.

Distribution of Truck Traffic By Border Crossing

From 1986 to 1991, truck traffic at Canada/U.S. border crossings remained stable at roughly 20,000 vehicles per day. Beginning in 1991, a surge in Canada/U.S. trade spurred growth of nearly nine per cent a year to 30,000 vehicles daily by 1996. Several factors have contributed to stimulating transborder trucking growth. These include the decline of the Canadian dollar (which decreased from 87 to 64 cents U.S. from 1991 to 2001), the economic expansion in the U.S. and to a lesser extent in Canada, the signing of the Canada-U.S. Free Trade Agreement (1989) and the North American Free Trade Agreement (1992), and the deregulation of the transborder trucking industry. According to Transport Canada's 2000 Annual Report:

> "Canadian-based transborder trucking operations, in particular, have increased remarkably, with an output growth averaging 12 per cent a year. The sources of the growth are increased Canada-US trade, deeper penetration of the U.S. market by Canadian-based carriers, and gains by Canadian-based carriers' market share in transborder activities. The latter gains can be explained in part by the low value of the Canadian dollar. From 1994 to 1999, the growth of transborder output was about double the output growth from domestic markets."

Although the growth of truck traffic has been huge, it has been unbalanced along the border with the greatest growth occurring in Ontario. Following is a table showing the volume of trucks crossing at the top 20 border crossings in 1996 (the latest year for which comprehensive data was readily available).

Daily Truck Traffic at Busiest Canada/U.S. Border Crossings, 1996

Crossing	Province	Trucks/Day	Percentage
Windsor	Ont.	7,554	25.4%
Fort Erie	Ont.	3,292	11.1%
Sarina	Ont.	2,999	10.1%
Queenston Bridge	Ont.	2,297	7.7%
Pacific	B.C.	2,146	7.2%
Lacolle	Que.	1,717	5.8%
Lansdowne	Ont.	1,043	3.5%
Emerson	Man.	783	2.6%
Phillipsburg	Que.	626	2.1%
Rock Island	Que.	540	1.8%
Coutts	Alta.	493	1.7%
Milltown/St. Stephen	**N.B.**	**404**	**1.4%**
Huntingdon	B.C.	387	1.3%
Sault Ste. Marie	Ont.	370	1.2%
Woodstock	**N.B.**	**361**	**1.2%**
All Others		4,858	16.4%

(Source: Transportation and North America Trade, Transport Canada, 1996)

The original table listed only Milltown, but the Consultant combined the Milltown and St. Stephen data to reflect the fact that the two crossings are functionally the same. This table puts the volume of truck traffic into the national perspective. Although St. Stephen/Calais is the eleventh busiest crossing for trucks, it represents only about 1.4% of the average daily traffic between the U.S. and Canada. Auto industry-based crossing volume in Ontario dwarfs nearly all other traffic.

The New Brunswick Department of Transportation developed a subset of this same data to show the relative truck volumes at the nine Maine border crossings with New Brunswick as shown in the following table. Although there are nine border crossings listed, St. Stephen/Milltown (Calais/Route 9) and Woodstock (Houlton/I-95) are the only designated "international commercial border crossings" between Maine and new Brunswick. Designated international commercial border crossings are those with capability for agriculture and livestock inspections.

1996 Survey of NBDOT of Trucks Crossing the New Brunswick/Maine Border

St. Stephen	29%
Milltown	17%
St. Stephen/Milltown Comb.	**46%**
Woodstock	21%
St. Leonard	15%
Edmonston	9%
Andover	5%
Clair	3%
Centreville	1%
Total	100%

Of the trucks crossing the entire border in this survey, 28.7% had 5 axles and 57.9% had more than 5 axles. For the two Calais/St. Stephen crossings, 36.0% had 5 axles 57.6% had more than 5 axles. No data was available for the number of double bottom trucks included in the above data, but according to MDOT data reported in this NBDOT study, the number of multiple-trailer trucks on Route 9 had increased significantly in 1996 and 1997 to constitute about 10% of the truck traffic on that highway.

The total value of exports from Atlantic Canada to the United States shipped by trucks (both for-hire and private and both Canadian and US domiciled) in 1996 was C$3.3 billion. Following is a breakdown by Province of origin:

Value of Atlantic Canada Exports to US By Province of Origin in 1996

New Brunswick	C$ 1,491.2 million
Nova Scotia	C$ 1,441.4 million
Prince Edward Island	C$ 224.0 million
Newfoundland/Labrador	C$ 142.1 million
Total	C$ 3,298,7 million

(Source: Transport Canada, Transportation and North American Trade, November, 1998)

Value of Atlantic Canada Exports By Trucks To the US by Border Crossing in 1996

St. Stephen	C$ 1,208,100,00	36.6%
Woodstock	C$ 1,081,800,00	32.8%
Windsor, Ontario	C$ 346,100,00	10.5%
Sarnia, Ontario	C$ 175,800,00	5.3%
Fort Erie, Ontario	C$ 36,600,00	1.1%
Other	C$ 450,300,00	13.7%
Total	C$ 3,298,700,00	100%

(Source: Transport Canada, Transportation and North American Trade, Nov., 1998)

The distribution of U.S. bound trucks by province of origin through the two major Maine/Canadian border crossings is important for assessing product distribution (values are in Canadian dollars and percentages are of total U.S.- bound truck exports between the two crossings):

Value of Atlantic Canada Exports by Truck by Province By Border Crossing in 1996

	St. Stephen	Woodstock
New Brunswick	C$492.2 (48.1%)	C$530.8 (51.9%)
Nova Scotia	C$612.9 (66.1%)	C$314.9 (33.9%)
Nfld./P.E.I.	C$103.0 (30.4%)	C$236.1 (69.6%)

It is understandable that such a high percentage of Nova Scotia products go through St. Stephen because of the preferred routing, but Newfoundland/P.E.I. is less so because it has approximately the same routing at Nova Scotia. As is noted elsewhere, the new Moncton-Fredericton highway may alter these splits.

The Eastern Border Transportation Coalition prepared a study in 1996 called "Trade and Traffic Across the Eastern US-Canadian Border" that reported that truck traffic at the St. Stephen/Calais crossing had doubled between 1984 and 1998 which represented a compounded growth of about 5% per year for the period. Another study reported that between 1984 and 1997, truck traffic for the entire Maine border, which includes a number of slower-growing crossings was increasing at

a rate of 3.8% per year. This indicates that truck traffic was growing faster at St. Stephen/Calais than at other Maine crossings. Both rates were lower than the national average increase of 5.3% for the same period. The Eastern Border Transportation Study indicated that three-quarters of the trucks crossing the Maine-New Brunswick border are registered in Canada.

The NBDOT reports that southbound truck flows from New Brunswick into the US through Maine total about 3,200 vehicles per week, whereas northbound flows total approximately 2,000 vehicles per week. Other studies reported that southbound flows varied from 200% higher to 400% higher than northbound flows depending on the data analyzed. Part of this may be due to Canadian truck from the Atlantic Provinces "triangulating" back to Canada through Quebec or points west with back hauls into Canada.

The general conclusion from the above data is that truck transportation from Atlantic Canada is likely to continue growing steadily as the demand for Canadian natural resources and manufactures grows in the US. Regardless of the results of the proposal to increase truck weights, it is likely that there will be some growth in transportation-related business opportunities at the major border crossings with Maine.

Impact of Planned Canadian Highway Projects On Cross-Border Truck Traffic

There are two highway projects in New Brunswick that may affect truck traffic flows through St. Stephen/Calais. The first is a new a new four-lane highway between Moncton and Fredericton that is under construction. This could transfer some Nova Scotia/P.E.I. traffic from St. Stephen/Calais to Woodstock. It was originally proposed to be a toll road, but there was some talk in 2000 of making it toll free. The final status of that road is unknown at this time.

The APTA estimates that 80% of its members with an option prefer the St. Stephen/Calais crossing because it is shorter from Nova Scotia and the eastern portion of the provinces; however, the opening of the new Moncton-Fredericton highway could have a big impact on this routing. The new route would provide truckers with a four lane divided highway into the US for all but about 60 kilometers of road between Halifax and I-95. Although the Woodstock route will still be 20+ kilometers longer, factoring in the increased safety of traveling much further on a four-lane divided highway may help equalize the decision. There is the related concern among the trucking companies with congestion in St. Stephen and the lack of availability of open land around the border crossing. The new St. Stephen/Calais bridge and border crossing may relieve some of the congestion and open up land. Without the new crossing, Canadian truckers would likely shift en-masse to the more northerly crossing at Woodstock/Houlton.

New Brunswick DOT has a long-range plan to invest $230 million to build a four-lane divided highway connection between St. Stephen and the Trans Canadian Highway. This would not seem to have a major impact on most Maine-destined truck traffic since it would not likely divert any traffic destined for the US from southwestern New Brunswick, but rather provide a

better connection to western Canada and U.S. market further West via the Trans Canadian highway.

Cubic Capacity of Canadian Trailers

In order to analyze the financial advantage of higher truck weight limits, it is necessary to develop baseline information about the carrying capacity of various truck configurations. The following analysis uses maximum trailer dimensions in the Atlantic Canada standards combined with industry standards for non-regulated components, but with conversion of the dimensions into U.S. units:

Standard Semi-Trailer - One box with up to 6 axles on the entire rig:

Max. trailer length	53.0 ft.
Max. trailer width	8.5 ft.
Calc. max. floor area	450 sq. ft.
Cube @ 9.0 ft. height	4,050 cu. ft.
Maximum weight	109,100 lbs.
Rig Weights (with fuel)	33,000-35,000 lbs.

Maximum B-Train Double - Two boxes of 4-9 axles

Max. trailer length (combined spread)	65.6 ft.
Adj. for spacing between boxes	3.6 ft.
Max. usable trailer length	62.0 ft.
Max. trailer width	8.5 ft.
Calc. max. floor area	527 sq. ft.
Cube @ 9.0 ft. height	4,743 cu. ft.
Maximum weight	137,800 lbs.
Rig Weights (with fuel)	36,000-38,000 lbs.

The calculated cube capacity of the trailers is based on a theoretical maximum cube without regard to provisions for product spacing, wall thicknesses, loading/unloading spacing needs, etc. The actual practical space that can be used is considerably lower and varies by product. The maximum weights require optimum axle configuration and spacing.

The above analysis indicates that the maximum sized B-Train Double combination provides at most 17% of additional cube capacity over the largest single-bottom tri-axle. This is before any adjustment for the inefficiency lost by virtue of configuring product in two separate containers which would theoretically reduce the amount of additional cube slightly. This assumes also that the combined gross vehicle weights of the tractor/trailer combinations is approximately the same thereby providing relative net weights of products. Despite the fact that certain configurations of a B-Train Double truck can carry up to 26% more cargo by weight than a maximum-sized single bottom tri-axle, it can carry at most only 17% more cargo by volume.

According to a representative of the Atlantic Provinces Trucking Association, a large number of for-hire truckers are investing in large tri-axle semi-trailers rather than B-Train Double configurations because they have concluded that for most of the products they handle, it is a more cost-efficient system. This is principally due to only having to purchase, maintain and service one trailer box trailer instead of two. The train double configuration can be useful in many specialized situations such as where there is a need for two drops/pickups or perhaps some very high cube utilization products where the extra volume makes a huge difference. The train doubles are therefore more likely to be used by niche carriers or by companies with special needs doing their own trucking internally.

Measuring the Financial Benefits of Increasing Truck Weight Limits

The impact of transportation costs varies dramatically among products and distances. It is therefore not possible to develop a generalized analysis of the impact on truck weight limits on competitiveness. It is feasible, however, to analyze the impact on specific products by segmenting out the transportation cost element in sample business situations and measuring the impact of varying truck weight limits on the financial performance of the business.

The reason behind the potential savings is that some products "weigh out" before they "cube out". Weigh out" means that the truck achieves its maximum load by weight before it uses its maximum cubic volume carrying capacity. "Cube out" means the opposite. The juxtaposition of cubic-load maximum and weight-load maximum is fundamental to analyzing the impact of truck weight limits since neither capacity can be exceeded. For this reason, it is not feasible to work strictly with percentage increases in weight without considering the product and weather the cubic limits of the vehicle will support the weight.

The Consultant selected a few sample business situations to test the impact of relaxed truck weight limits on businesses that could realistically be expected to operate in Baileyville based on existing product flows between Canada and the US. The Consultant developed simple financial models to test the sensitivity to various business configurations. These models were designed to mimic actual businesses using rough industry standards combined with recent cost data for materials and transportation costs. They are not, however, based on actual business operating statements.

The models were designed with the following four truck weight limit configurations, although not all examples included all of the options because of practical limits:

80,000 lbs. - the current maximum on the Interstate System and many destination states
100,000 lbs. - the current max. Maine limit for a properly configured tri-axle semitrailer
109,100 lbs. - the current maximum Canadian limit for a standard tri-axle semitrailer
137,800 lbs. - the current maximum Canadian limit for the largest B-Train Double rig

The reason for including the Canadian tri-axle limit is that this configuration is the most common high-limit truck currently in use in Atlantic Canada. The B-Train Double rigs are somewhat specialized rigs that could be used for some of the products most likely to be shipped to Baileyville, but at this time at least, would not likely be as common. According to the Atlantic Provinces Trucking Association, for-hire truckers are focusing equipment upgrades on the high limit tri-axle rigs because they offer the most flexibility and entail considerably lower operating costs that the B-train double rigs. The Consultant has concluded from the overall analysis, that relaxing the weight limits would most likely generate the most increased traffic from this class of vehicle.

Because most trucks are going beyond Bangor, Maine and will likely take I-95, they will most likely be loaded to 80,000 lbs. instead of 100,000 lbs. This could provide a greater incentive for a transload facility on the border because shifting from 137,800 lbs. to 80,000 lbs. would allow for three high-weight trucks to fill five lower-weight trucks. Even at the 109,100 lbs. maximum tri-axle level, 5 Canadian origin trucks could fill 7 U.S. side trucks. The potential savings would be dependent on the length of the trip in Canada.

This financial analysis focuses exclusively on the savings from direct trucking cost alone. There would be some saving in brokerage fees and reduced crossing delays because of fewer truckloads, but this would be nominal in relationship to transportation savings in most cases except where volumes were high and the distance inside Canada was short.

The examples all use US$1.75 per mile as the cost of trucking. This number is on the high side, but was adopted to reflect the estimated costs of trucking before the recent drop in fuel prices and the anticipated cost of trucking during the next upturn in the economy. This is higher than the average trucking costs for the year 1999 developed by Transport Canada which estimated the cost per mile of US$ 1.08/mile for Canadian drivers and US$ 1.54/mile for US drivers on the East coast corridor.

The Consultant selected the following products for analysis:

(1) Furniture Manufacturing
(2) Pallet Manufacturing
(3) Dimension Lumber Transload
(4) Wood Pulp Transload
(5) Fresh Vegetables and Vegetable Products
(6) Road Salt Transload

These examples cover a variety of situations involving either transloading basic commodities or manufacturing value-added products. These examples were selected as being representative of products/commodities that are currently being shipped across the border by truck and as such are realistic prospects for exploitation.

The wood products industry is featured prominently in the examples because of the volume of cross-border traffic and the weight of the products. Whole logs, raw wood chips and sawn lumber are extremely heavy materials due to the density of raw wood fiber and its high moisture content. Transportation and economic development officials on both sides of the border agree that high weight limits are largely driven by the demands of the forest products industry. Maine transportation officials report that the biggest problem is with the limits for logging trucks delivering logs to the mills rather than for finished products.

(1) Furniture Manufacturing

Furniture manufacturing was selected as an example because Atlantic Canada exports a considerable amount of wood furniture to the United States and there is a long history of furniture manufacturing in Maine. This example is based on a hypothetical solid hardwood furniture manufacturing plant producing $5.0 million high-end finished product per year out of top grade hard maple lumber. Hard maple is a very expensive raw material for which the highest grades cost $2,000 or more per 1,000 board feet. The example was predicated on the factory having a raw material cost factor of 49% of revenues. This was purposefully estimated on the high side (it could range from 35% to 50%) in order to provide an analysis of an example with lower than average trucking costs for raw materials in relationship to revenues.

The example used a distance of 200 miles from the supplier to Baileyville which. Another iteration of the model was run with a distance of 500 miles from the supplier to show the impact of distance. The factory was assumed to have a net profit before taxes of 5% of revenues ($250,000), which would represent a reasonably-achievable level of profitability for this type of business. The example assumes that all sales are FOB at the factory in Baileyville and does not include any provision for outbound freight costs.

Following is a summary of the impact on the business from higher truck weight limits for raw material shipments from Canada. The savings drop directly to the bottom line as an addition to profit.

Trucking Costs for Hardwood Lumber for Furniture Plan By Truck Weight Limit

Weight Limit	Annual Cost	Additional Profit	% Incr.
Maine limit (100,000 lbs.)	$22,928		
Canada tri-axle limit (109,100 lbs.)	$20,129	$2,799	1.1%
Canada B-Train double limit (137,800 lbs.)	$15,880	$7,048	2.8%

The percentage increase is based on the increase to the projected net profit of $250,000. The increase in the net profit as a percentage of revenues was 0.06% for the Canada tri-axle and 0.14% for the Canada B-train double for final net profit figures of 5.06% and 5.14%

respectively. The same situation with a raw material supplier being located 500 miles from Baileyville resulted in transportation cost savings of $6,997 for the tri-axle and $17,620 for the B-train double. This produced net profits a percentage of revenues of 5.14% and 5.35% respectively.

In today's hyper-competitive business environment, this additional net savings could be quite important to a business. Although it is questionable whether this cost savings factor alone would be sufficient to make a difference in an investment decision, it represents a real savings and combined with other factors could make a difference. It is important to emphasize that this is a conservative estimate of the transportation cost savings to a furniture factory and some factories have significantly greater inbound transportation costs. Running this same model with various configurations of raw materials and trucking distances showed that the net profit increase due to transportation cost savings alone for the Canadian tri-axle limit ranged from 0.06% to 0.5% and for the Canadian B-Train Double limit ranged from 0.14% to 1.0%. The 80,000 lbs. Interstate limit for distribution to end markets would not be a weight-specific factor here because finished furniture is relatively light with respect to volume.

Economic Development/Impact of Furniture Factory - A $5.0 million factory would likely have 35-50 employees with a payroll of $1.3-$2.0 million depending on the level of automation and the type of products. Inbound truck traffic if fully loaded to Canadian maximum would require about 58 tri-axle trucks per year or a little over one per week or 46 truckloads of B-Train Double trucks per year. This is clearly a very modest level of high-weight traffic relative to the economic impact of the plant. Outbound traffic of finished product would be significantly higher, but this traffic would be well within weight limits. A factory might involve $2.0-$4.0 million in capital investment with a taxable assessed value of $1.5-$3.5 million.

(2) Pallet Manufacturing

Pallet manufacturing is a huge industry that consumes a large amount of low grade hardwood lumber and a modest amount of softwood lumber. This example is predicated on manufacturing pallets out of green lumber delivered from a Canadian sawmill to a factory in Baileyville. The pallet example has been chosen because it uses a very heavy raw material which is quite sensitive to transportation costs and lumber is a major export product from Atlantic Canada. This type of manufactured wood products business is one of the more extreme situations in terms of sensitivity to transportation costs. As one moves higher up the chain of value-added from basic raw material processing, the sensitivity to material input transportation costs generally goes down. Pulp, paper, wood chip and engineered construction panel businesses are even more sensitive to transportation costs. There is a strong trend for pallets to be made of kiln dried lumber because drying is mandatory for international markets (to kill bugs) but this example uses green lumber to demonstrate transportation cost sensitivity.

Assumptions for the pallet mill (all units in US dollars):

FOB sawmill price of hardwood pallet stock lumber	$200/1000 bf
Trucking cost per mile	$1.75
Miles from sawmill to Baileyville	200
Maximum load in BF, Maine limit (100,000 lbs.)	18,700 bf
Trucking cost per pallet per 200 miles	$0.40
Maximum load in BF, Canadian tri-axle semi limit	21,300 bf
Trucking cost per pallet per 200 miles	$.34.5
Maximum load in BF, Canadian limit	27,000 bf
Trucking cost per pallet per 200 miles	$.27
Pallet contents - raw material	21 bf per pallet
Pallet contents - finished material	16 bf per pallet
Selling price of pallet FOB factory	$7.00
Material cost per pallet (FOB sawmill of purchase)	$4.20
Transportation cost per pallet	$0.27, $0.345 or $0.40
Labor and operating expenses per pallet	$1.75

Increased Pallet Profit Due to Transportation Cost Reductions

	Cost/ Pallet	Net Profit per Pallet	Additional Profit/Pallet	% Increase
100,000 lb. weight limit	$6.35	$0.65		
109,100 lb. weight limit	$6.295	$0.705	$0.055	15.7%
137,800 lb. weight limit	$6.22	$0.78	$0.13	37.1%

These represent very significant theoretical savings and increases to net profit for a manufacturing business. In practice, these savings/profits are likely to get disbursed throughout the value chain. For example, the pallet manufacturer might offer lower selling price to offset the longer distance to market.

It should be noted that a pallet business is significantly dependent on the transportation cost of its finished product, which, completely assembled, is expensive to ship on a per-unit basis because of the cube limits of trucks. Pallet manufacturers are therefore usually located within 100-200 miles or so of their customers. It is not economic to ship whole pallets over long distances. This would mitigate against a large pallet factory locating in Baileyville to sell assembled pallets to U.S. markets, but a factory could still manufacture pallet parts to sell to manufacturers located closer to the markets. This is fairly common in the industry.

Pallet Stock - This example uses the same assumptions as above except that the operating costs are reduced to account for just cutting stock without assembling the pallets. Since most pallet stock is sold in Massachusetts and more southerly states, the 80,000 lbs. limit would be a factor

in this case. The only change in the assumptions is to reduce the labor and operating expense cost to $1.00/unit and reduce the selling price to $6.00

Increased Pallet Stock Profit Due to Transportation Cost Reductions

	Cost/ Pallet	Net Profit per Pallet	Additional Profit/Pallet	% Increase
100,000 lb. weight limit	$5.60	$0.40		
109,100 lb. weight limit	$5.545	$0.455	$0.055	13.8%
137,800 lb. weight limit	$5.47	$0.53	$0.13	32.5%

Economic Development Impact - Pallet mills come in all sizes, but a small one with medium productivity automation might employ 6-8 persons and generate revenues of $600,000-$750,000 per year on 91,000 pallets. Payroll would be $100,000 to $120,000/year A pallet mill of this size would require 71 truckloads per year of raw material at the B-Train Double limit or 90 truckloads per year at the Canadian tri-axle limit.

A small pallet stock mill might employ 7-8 persons and generate revenues of of $1,000,000-$1,100,000 per year selling 3.0 million bd. ft. of cut stock. Payroll would be $120,000 to $140,000/year. This size plant would require 142 truckloads per year of raw material at the B-Train Double limit or 180 truckloads per year at the Canadian tri-axle limit. Larger plants for manufacturing pallets or pallet stock would scale roughly up pro rata the relationship between employment and truckloads.

(3) Dimension Lumber

Green dimension lumber (lumber that has been cut to a specific width and thickness, but not dried in a kiln) is the heaviest wood product for a given dimension and is known to almost always weigh out rather than cube out on a truck. This analysis focuses on softwood (spruce, fir, and hemlock) because softwood dominates exports from Canada to the U.S. It should be noted that softwood exported to the U.S. from other provinces outside of Atlantic Canada are subject to a very controversial tariff of about 19%; however, the Atlantic Provinces are currently exempt from the tariff. Therefore tariffs do not figure into these calculations.

Impact of Differential Weight Limits on Volume - The following tables include some rough standards and assumptions regarding the transport of dimension lumber. The cube capacity used was estimated by calculating the cubic volume of lumber in board feet (1 board foot (bf) equals a 1" think board of 12 square inches) bundled for transport, banded, tight pack without stickers, and loaded onto skids on a flatbed trailer. "Dressed" lumber is lumber that has been planed to standard market dimensions (generally .25 inches thinner and .50 inches narrower for a 1" board than the nominal or full dimension). The "potential" volume is a calculated volume without regard to the actual volumetric capacity of the truck and is shown to indicate how much lumber

the truck could theoretically carry according to the weight limit only. This product category only includes the B-train double truck with a capacity of 137,800 lbs. because the difference between the 109,100 Canadian tri-axle and the Maine tri-axle is modest for this product category and the volume limits are the same as for the U.S. tri-axle.

Estimated, average maximum payload weights on various trucks:

• 80,000 lb. standard 5 axle trailer:	46,000 lbs.
• 100,000 lb. tri-axle	66,000 lbs.
• 137,800 lb. B-Train Double	100,000 lbs.

Equivalent potential volume in board feet (bf) on a standard 80,000 limit truck:

• undressed, green hemlock lumber (3.5 lbs./bf)	13,100 bf
• undressed green spruce/fir lumber (2.8 lbs./bf)	16,400 bf
• dressed kiln dried spruce/fir lumber (1.7 lbs./bf)	27,000 bf
• undressed kiln dried hardwood lumber (3.3 lbs./bf)	14,000 bf

Equivalent potential volume in board feet (bf) on a 100,000 lbs. limit truck:

• undressed, green hemlock lumber (3.5 lbs./bf)	18,800 bf
• undressed green spruce/fir lumber (2.8 lbs./bf)	23,600 bf
• dressed kiln dried spruce/fir lumber (1.7 lbs./bf)	38,800 bf
• undressed kiln dried hardwood lumber (3.3 lbs./bf)	20,000 bf

Equivalent potential volume in board feet (bf) on a 137,800 lbs. limit truck:

• undressed, green hemlock lumber (3.5 lbs./bf)	28,600 bf
• undressed green spruce/fir lumber (2.8 lbs./bf)	35,700 bf
• dressed kiln dried spruce/fir lumber (1.7 lbs./bf)	58,800 bf
• undressed kiln dried hardwood lumber (3.3 lbs./bf)	30,300 bf

Dimension lumber is usually transported on flatbed trailers in bundles that are chain-bound to the trailer. The actual volumetric carrying capacity varies somewhat, but most trailers are loaded with bundles approximately four feet wide and from two-three feet tall. Most bundles are cut to length, but some are not. Stacking heights vary with the type of bundle, but do not generally exceed three bundles of 30-32 inches in height. Many trucks are loaded with only one row of bundles down the middle on the third course for stability purposes. Because the width and height is roughly fixed by industry and regulatory standards, the final volumetric carrying capacity is determined by the length of the trailer. For purposes of this report, it is assumed that all trailers are the maximum sized trailers in general use, which are 53' for single tri-axle units and 62' for B-Train Double units. It should be noted that many trailers in use are less than 53' long.

Maximum carrying capacity of various sizes of truck:

	80,000	100,000	137,800
Cubic volume (8' X 8.5' X 53' or 62')	3,604 cf	3,604 cf	4,216 cf
Board feet (15% reduction)*	36,760 bf	36,760 bf	43,003 bf
Board feet (30% reduction for ½ 3rd course)*	30,273 bf	30,273 bf	35,414 bf
Board feet - dressed (20% overall reduction)	35,598 bf	35,598 bf	40,473 bf

*Carrying capacity estimates include a deduction of 15% for packing variation, skids, product spacing, etc. The 30% reduction variation is to account for the 15% packing variation and a deduction of 50% of the potential third course for stability. All of the examples shown in the following tables for undressed lumber include the 30% reduction. Dressed lumber capacity has also been adjusted for actual size of the lumber rather than its nominal size.

Comparison of weight limit versus volume limit on a standard 80,000 lbs. truck:

	Limit By Weight	Limit By Volume
• undressed, green hemlock lumber (3.5 lbs./bf)	13,100 bf	30,273 bf
• undressed green spruce/fir lumber (2.8 lbs./bf)	16,400 bf	30,273 bf
• dressed kiln dried spruce/fir lumber (1.7 lbs./bf)	27,000 bf	35,598 bf
• undressed kiln dried hardwood lumber (3.3 lbs./bf)	14,000 bf	30,273 bf

All types of lumber listed weigh out before they cube out on an 80,000 lbs. truck. With the exception of kiln dried spruce-fir, 80,000 lbs. limit trucks could theoretically hold twice as much product by volume.

Comparison of weight limit versus volume limit on a standard 100,000 lbs. truck:

	Limit By Weight	Limit By Volume
• undressed, green hemlock lumber (3.5 lbs./bf)	18,800 bf	30,273 bf
• undressed green spruce/fir lumber (2.8 lbs./bf)	23,600 bf	30,273 bf
• dressed kiln dried spruce/fir lumber (1.7 lbs./bf)	38,800 bf	35,598 bf
• undressed kiln dried hardwood lumber (3.3 lbs./bf)	20,000 bf	30,273 bf

At the 100,000 lbs. limit, all products listed except the kiln dried spruce-fir weigh out before filling the truck by volume. However, kiln dried spruce-fir dimension lumber, which is by far the largest product category shipped out of Atlantic Canada, cubes out on a 100,000 lbs. truck before it weighs out. Weight limits therefore have no effect on shipments of this product to Maine destinations.

Comparison of weight limit versus volume limit of a 137,800 lbs. truck:

	Limit By Weight	Limit By Volume
• undressed, green hemlock lumber (3.5 lbs./bf)	28,600 bf	40,473 bf
• undressed green spruce/fir lumber (2.8 lbs./bf)	35,700 bf	40,473 bf
• dressed kiln dried spruce/fir lumber (1.7 lbs./bf)	58,800 bf	40,473 bf
• undressed kiln dried hardwood lumber (3.3 lbs./bf)	30,300 bf	40,473 bf

As in the 100,000 lbs. truck, kiln dried spruce-fir lumber is limited by volume rather than weight. All other types of lumber, however, are still limited by weight even on this specialized vehicle with high weight and volume limits.

Conclusions Regarding Kiln-Dried Softwood - It would seem unlikely that an increase in truck weight limits by itself would justify a transload operation just to take advantage of differential weight limits since the differential between that capacity of an 80,000 lbs. truck and the heavier weight trucks is not large (about 14% higher for the B-train double). The fact that much of the kiln dried dimension lumber travels through Maine to Northeast construction markets would make a transload facility for KD softwood even less economic. It is likely that trucks transporting KD softwood would be loaded in Canada at the U.S. limit of 80,000 lbs. and shipped direct to wholesalers without an intervening transload. Such a transload facility might make sense for a facility on rail; however, most rail to truck transload facilities for lumber (there are several in the Northeast) are located closer to the end markets.

Conclusions Regarding Other Dimension Lumber - Increasing the weight limits would have a significant impact on the economics of shipping of green dimension softwood lumber and green or kiln-dried hardwood lumber. These materials weigh out on all trucks before they cube out and the difference in functional carrying capacity between the 100,000 lbs. tri-axle and the B-train double is significant. Unfortunately, the volumes of both green softwood and all types of hardwood are relatively small in relation to overall wood shipments from Atlantic Canada. A detailed analysis of the volumes of such products shipped across the border was beyond the scope of this study, but is believed to be quite low. Canadian processors dry nearly all of their wood and there is not much of a hardwood industry in Atlantic Canada.

Economic Development Impact - Dimension lumber is frequently warehoused under covered storage sheds with either partial side enclosures or no side enclosures. For very short-term transloading, dimension lumber is simply piled on skids on a dry, level surface. Therefore, the economic development impact in terms of property valuation is nominal in comparison to fully-developed buildings. A pure lumber transloading operation would also not generate much employment since one forklift operator can load and unload a substantial amount of product. It is difficult to even speculate on the amount of truck traffic that might be generated by such a facility because it would depend on so many variables.

(4) Pulp

Warehousing and transloading baled wood pulp is big business in Maine due to the large number of pulp and paper manufacturers. The manufacture of pulp is an intermediate step in the papermaking process. Pulp is manufactured in sheets, cut to measure and baled into rectangular bales weighing 500-550 lbs. each. Pulp is also shipped in rolls and loosely piled sheets, but bound bales are the most common. Maine manufacturers import and export pulp; however, imports from Canada exceed exports by a substantial margin. Pulp is transported by rail, ship and truck. A considerable amount of pulp is imported into Maine on rail cars, warehoused and then delivered to paper mills by truck as it is needed. Most trucked pulp is shipped in van trailers, but some pulp is shipped on flats for immediate transloading.

The dimensional size of pulp bales vary somewhat among manufacturers but average 30" wide by 36" long by 16" high for an average volume of about 10 cubic feet. Maine pulp shippers generally load 80 bales (800 cubic feet containing 40,000-44,000 lbs. of product) in an 80,000 lbs. trailer and 120 bales (1,200 cubic feet containing 60,000-66,000 lbs. of product) in a 100,000 lbs. tri-axle trailer.

Although the biggest movements of pulp are between truck and rail, a considerable amount of warehoused pulp is moved around by truck. Most truckers of pulp within Maine use 100,000 lbs. tri-axles for moves of any distance. Pulp weighs out before it cubes out in all legal trucks in Maine. It is not feasible to use all of the cube potentially available in a van trailer because of the lack of stability of the load. Most bales are shipped as individual units rather than being unitized into larger bundles with wire or wrap. Occasionally, bales are bundled into 8 bale units. Larger wrapped bundles of bales are not generally feasible for most applications because of the carrying limits of forklifts.

Pulp Carrying Capacity of Various Types of Trucks

Truck	# of Bales	% Increase Over Maine Limit
80,000 lbs.	80	
100,000 lbs.	120	
109,100 lbs.	136	13.3%
137,800 lbs.	182	51.6%

Because of the wide variability in types of warehouse and transload facilities and the lack of availability of public data, it difficult to estimate the financial impact of higher weight limits on this type of business. There is little question, however, that being able to truck pulp in or out at higher weight limits would have a significant positive impact on a warehouse or transload facility handling pulp. This is a very low-margin business in which every penny makes a significant difference. Following is a table showing the impact on the price of shipping pulp

from a Canadian facility located 200 miles from Baileyville and using $1.75/mile as the trucking cost:

Truck	# of Bales	Cost per bale
100,000 lbs.	120	$ 2.92
109,100 lbs.	136	$ 2.57
137,800 lbs.	182	$ 1.92

A 50,000 sq. ft. warehouse would hold approximately 56,200 bales if packed for routine inventory turns. If this inventory turned once per month, the total volume handled in a year would be 674,400 bales. The theoretical annual savings to the distribution chain would be $236,040 for the Canadian tri-axle and $674,400 for the B-train double.

Economic Development Impact - Pulp is usually handled in enclosed warehouses heated above freezing. Although the number of employees depends on the products handled, frequency of inventory turns, etc. a rule of thumb is that 50,000 square feet of warehouse space without any value-added services such as repackaging will employ 5-7 persons. The number of trucking and related support positions that might be created depends heavily on the rate of turns in the warehouse.

The above 50,000 sq. ft. warehouse filled with pulp turning once per month would represent 309 incoming B-Train Double trucks or 413 Canadian tri-axle trucks per month at the maximum Canadian weight limits for each vehicle. This compares to 468 trucks carrying the current maximum for Maine tri-axles, which would be the equivalent number of outbound vehicles per month. This would scale up relatively for greater turns and a larger warehouse.

The total number of high-weight vehicles that might serve Woodland Commercial Park for warehouse and transload facilities in the long run is difficult to predict because there are so many unknowns. However, if the park were to develop a total of 200,000 square feet of warehousing with a combined capacity of 2.0 million to 3.0 million cubic feet of storage with products with a similar volume to pulp turning once per month, the park could generate 15-22 high-weight inbound trucks per day and a somewhat larger number of regular weight outbound trucks. A pure transload facility that was developed principally to transfer product from one size truck to another could conceivably generate higher rates of truck traffic.

There is considerable interest by the manager of the Port of Eastport to develop additional warehouse capacity for storing and transloading pulp in the Calais area. The manager believes that there may be an opportunity to ship more baled wood pulp out of the port, but is constrained by the lack of rail access. It is possible that a truck transload and storage facility with higher weight limits on shipments bound for the transload facility from Canada could provide sufficient cost savings to make Eastport competitive with St. John for this type of shipping.

(5) Fresh Vegetables and Vegetable Products

The vast majority of fresh and processed vegetables traversing Maine are potatoes. Potatoes are dense with high water content and are weight limited in transportation in nearly all product modes except dried finished potato products like chips, sticks and powders. It is estimated that a standard 5-axle, semi-trailer load of fresh bulk potatoes weighing approximately 42,000-45,000 lbs. takes up less than 50% of the cube capacity of the trailer. Fresh bagged potatoes for the retail market take up an estimated 60%-75% of the cube capacity of the trailer depending on the packing. Because of the U.S. Interstate load limits, it makes no sense to ship fresh potatoes in larger trucks.

The largest potato processing plant in Maine is the McCain Foods, Inc. frozen French fry plant in Easton. Although the consultant was able to talk confidentially with McCain's representatives, the company has a policy of not disclosing company information. Other knowledgeable industry sources, however, indicate that truck weight limits affect the frozen French fry business on both the input and output sides of the plant. The biggest problem on the raw material input side, however, is the weight limits on small delivery trucks that deliver bulk potatoes to the plant from local storages.

On the output side, frozen French fries are also subject to truck weight limits rather than cube limits. It is believed that although the product is cut and re-packed, the density of the final product loaded for shipping is approximately the same as for fresh bagged potatoes. Freezer trucks have a lower net cube volume and lower net weight limit than regular trailers because of the size and weight of the refrigeration. Shippers with frozen French fry experience report that frozen French fries use up to 85%-90% of the cube of the standard 80,000 lbs. trailer.

Potato processing plants are generally very large businesses with complex financial structures. Due to the lack of readily-available information, it is not feasible to calculate the impact of variable transportation costs on a model plant. The simplest way to analyze the impact of transportation costs on a potato processing company is to look at the relative cost of shipping in fresh potatoes on various size trucks. In all configurations, fresh potatoes will weight out rather than cube out the trucks. The following table shows the cost per hundredweight (Cwt.) (100 lbs.) of trucking fresh potatoes over 200 miles at a cost of $1.75 per mile.

Truck	Cost per Cwt.	% Savings
100,000 lbs.	$ 0.350	
109,100 lbs.	$ 0.321	8.3 %
137,800 lbs.	$ 0.254	27.4 %

These savings in themselves are substantial; however, transportation costs are relatively minor in relation to the cost of the product. Prices paid to farmers for potatoes have averaged US$ 6.40 (Maine prices) over the past five years. Transportation cost to the processor in 100,000 lbs.

trucks is therefore about 5.2% of the total cost of product delivered to the factory. The following table shows the relative costs of trucking for each class of truck:

Truck	Trucking Cost as % Cost Product	% Savings
100,000 lbs.	5.2%	
109,100 lbs.	4.8%	0.4 %
137,800 lbs.	3.8%	1.4 %

The savings are modest in relation to the total cost, but could nonetheless be considerable for a large facility. For example, a plant that processed 200,000,000 lbs. of potatoes per year (which is actually a modest sized facility that might employ 40-80 persons depending on the product), would save about $186,000 per year in trucking cost if it could supply the plant with Canadian B-train doubles rather than the Maine 100,000 tri-axle limit. This would represent about 1% of sales and would be considered a significant addition in an industry that averages net profits of 3%-5% of revenues.

Economic Development Impact - Because most potato processing companies are large businesses with complex siting criteria, it would be pure speculation to discuss the impact of such a facility on Baileyville. McCain Foods, Inc. employees 600 person directly and Penobscot Frozen Foods, Inc. employs 250 persons. National Starch & Company Co. employs about 75 persons. There are smaller companies that produce special products such as Tater Meal, Inc., a division of McCain Foods that employs 12 persons. It would also be more likely that a potato processing business would locate in Aroostook County rather than Baileyville because of the proximity of Maine potatoes as well as Canadian potatoes. The latter would help diversify the vendors and reduce risk to the business.

(6) Road Salt

Because New Brunswick and Nova Scotia both have salt mines that export road salt to the U.S., the Town of Baileyville asked that salt be evaluated as a potential product for transloading in Baileyville. Road salt is a very transportation-cost dependent business in which transportation costs frequently exceed the cost of the product. Most road salt is sold in bulk to governments and private contractors for road and parking lot deicing. A small amount of salt is sold in bags directly to consumers, but this is insignificant in comparison to industrial sales.

The nearest salt mine to Baileyville is located in Sussex, New Brunswick. It is owned by Potash Corporation of Saskatchewan, Inc. (New Brunswick Division). The company mines approximately 700,000 metric tons per year and sells 100% of it to Akzo Salt, Ltd. for marketing. This mine has reserves for at least 25 more years of production and has a technical annual capacity of 1.2 million metric tons. All of the salt from this mine is used for de-icing.

The Canadian Salt Co., Ltd., the country's largest salt mining company, has a large mine in Pugwash, Nova Scotia.

The FOB price of salt export from Canada to the U.S. has been relatively stable for more than twenty-five years at a cost of approximately US$20 per metric ton. There are occasional variations, but the price is generally between US$19.00-US$21.00. The 2000 price was US$19.28, which was down from US$20.85 in 1999.

Rock salt weighs approximately 72 lbs/cu. ft. A metric ton (2,200 lbs.) occupies approximately 30.6 cu. ft. Because of the extreme weight, most rock salt is transported to coastal states and provinces by ship or barge and to interior states by rail. Maine is a heavy user of road salt, but much of Maine's salt is imported by ship through the ports of Portland, Searsport and Portsmouth. The road salt purchased by a large southern Maine municipal buying group for the 2001 season originated from a mine in Chile and was delivered to the port of Portland from a maritime transload facility in the Bahamas. The price to end users of salt to be picked up at the port in Portland was $29.50 per US ton. Nearly all salt transported from the port to purchasing communities is reportedly hauled by regular dump trucks in 32 ton loads. The southern Maine buying group purchased 50,000 tons in 2001.

A vehicle with a gross vehicle weight limit of 100,000 lbs. and tare weight of 35,000 lbs. can carry about 65,000 lbs. or 29.5 metric tons of cargo. A maximum 29.5 metric tons cargo of rock salt will take up about 900 cu. ft. in a container. Bulk products like grain, coal and salt are transported over the highway in hopper or dump trailers with cubic capacities of 1,400 cu. ft. to 2,500 cu. ft. for the largest tri-axle trailers. Because of weight limits, however, most trailers hauling coal, salt, gravel, crushed stone and similar bulk items over public roadways are 36'-42' long and contain between 1,400-1,700 cu. ft. A full load of rock salt by weight would therefore take up at most 50%-65% of the cubic carrying capacity of dump or hopper trailer.

Following are the assumptions for analyzing the transport of bulk salt:

FOB mine price of rock salt	$ 20.00/metric ton (2,200 lbs.)
	$ 18.18/ US ton (2,000 lbs.)
Trucking cost per mile	$ 1.75
Miles from mine to Baileyville (Sussex is 100 miles)	200
Maximum load metric tons, Maine limit (100,000 lbs.)	62,000 lbs. (31.0 tons)
Trucking cost per ton for 200 miles	$ 11.29/ton
Maximum load in lbs., Canadian tri-axle (109,100)	71,100 lbs. (35.55 tons)
Trucking cost per ton for 200 miles	$ 9.83/ton
Maximum load in tons, Canadian B-Train (137,800)	99,800 lbs. (49.9 tons)
Trucking cost per ton per 200 miles	$ 7.01/ton

"Cost value" per Ton of Various Loads of Salt Delivered to Baileyville

Truck Size	"Cost Value"/Ton	% Savings	"Cost Value" of Load	Differential
100,000	$ 29.47	-	$ 913.57	
109,100	$ 28.01	5.0%	$ 995.76	$ 82.19
137,800	$ 25.19	14.5%	$1,256.98	$343.00

The transloading process consists of unloading from one vehicle, reloading into another vehicle and storing the difference until another full load was available. The financial feasibility of a salt transload operation would depend on whether the entire transloading process, including the fixed and operating costs of the facility could be accomplished for the price differential due to the oversized incoming loads. The transload process itself would make a big difference in feasibility depending on whether it was done with forklifts refilling trucks from a pile down area or by partial or fully automated systems.

The feasibility of this type of transload business is highly dependent on the total volume of product handled because of the need to cover fixed costs and the proximity of the facility to markets. According to the best data available, Atlantic Canada exported US$2.3 million worth of salt to the US in 2000. Of this, only $139,000 was exported to Maine. The average amount exported to Maine over the period 1996-2000, however, was $332,000 and the highest amount was $624,000 in 1998. (The difference between the high and low reflect shifts in the Maine Department of Transportation contract which tends to drive the sale market in Maine because municipalities and buying co-ops sometimes piggyback the state bid.) No Atlantic Canada salt went to New Hampshire, Connecticut or Vermont in 2000 and only $3,000 went to Massachusetts, so it is unlikely that any other salt went through Maine by truck. The rest of the salt was likely shipped by rail or ship to other states.

At the FOB value of US$19.28 per metric ton in 2000 and using the average figure of $331,000 over the past five years, annual export to Maine averaged approximately 17,168 metric tons of salt. This would represent approximately 609 trucks at the Maine maximum of 28.18 metric tons per 100,000 lb. tri-axle load. Assuming that all of this salt was trucked through Baileyville, the theoretical "savings" to the salt shipment through a transload operation in Baileyville that accrued solely due to the truck weight differential (before any operating costs of the transload operation) would be as follows:

Truck Size	# Trucks In	Savings per Truck	Total Savings
109,000 lbs.	531	$ 82.19	$ 43,642
137,800 lbs.	379	$343.00	$129,997

Determining the operating costs of a salt transload operation was far beyond the scope of this study; however, the Consultant doubts that a savings of $43,642 would be sufficient to overcome

the fixed and operating costs of a stand-alone facility or even the costs of a multi-product warehouse/transload facility that handled salt as only one part of a larger business. The savings at the maximum B-Train Double weight limits; however, might be financially attractive if the markets were available since $343/truckload will cover a lot of operating costs. The size of the business and particularly the variability of the throughput handled annually, however, would not likely make it feasible to operate a facility just for salt.

The biggest impediment to handling imported salt in Baileyville; however, is that the town is too far from major markets for road salt. With an price an FOB price of salt at $30/ton or so at Searsport, it would not be competitive to truck salt from Baileyville outside of Washington or Southern Aroostook County. Even if the markets were there, if salt were to be handled in the Baileyville/Calais area, it would most likely be transported in by rail or through the Port of Eastport. Eastport could handle salt, but most of the markets that could be served by Eastport can be served directly from St. John or Searsport, each of which can justify a much larger volume of cargo because of larger market areas. It therefore does not appear that there is an opportunity to transload salt from truck to truck in Baileyville.

Economic Development Impact of Road Salt - From the public policy perspective, there is also the issue of whether the very meager value-added from a simple salt transload facility would justify the public investment. Handling salt alone would not likely create even the full-time equivalent of one job.

Logs and Wood Chips

Analyzing the transport of whole logs or wood chips was beyond the scope of this study. It is possible, however, that increasing the weight limits near the Maine border could facilitate the development of log yards or concentration yards for logs in the areas subject to higher weight limits. There is a substantial amount of cross-border transport of tree-length and cut-to-length logs in both directions. Logs are one of the principal products that use the high weight limit B-Train Doubles in Canada. Concentration yards themselves create a nominal level of employment and use up a large amount of land. Because of this, they are not normally a sought after tenant in serviced industrial parks.

Large industrial facilities that use logs or wood chips such as paper mills, wafer board plants, gypsum board plants, etc. were not included in this analysis because they are large facilities that could overwhelm the Woodland Commercial Park. There is no question, however, that higher truck weight limits would present some financial advantage to large industrial facilities such as these which use huge amounts of wood fiber. Because these types of facilities are so capital intensive and siting decisions depend on such a plethora of factors, it is doubtful that special truck weight limits would rank very high up on the decision tree for such an investment. The resource availability issue alone overwhelms virtually all other factors.

Appendix 1

Exports From Atlantic Canada to the United States

The tables on the following pages include a comprehensive list of all major products exported to the United States from Atlantic Canada in 2000. It includes all categories of products that totaled at least US$10,000,000 in value at the two-digit harmonized code level which are the large categories are in bold type with value data reported in the middle column. The $10.0 million limit was selected as the smallest sized industry group that would likely include a large enough business segment to be a candidate for satellite development in Baileyville. This list includes $9.1 billion or 95% of the $9.6 billion in total exports to the US in 2000. It includes products shipped by all transportation modes including truck, rail, maritime and air.

This same table also includes subcategories of major product groups at the 5-digit harmonized code level down to products with a minimum, in most cases, of about $1.0 million in export value. The Consultant believes that this list likely contains most of the universe of companies currently exporting from Atlantic Canada to the US that might be candidates for some value-added development relationship in the US.

The next step was to survey this comprehensive list of products for those that might satisfy the following criteria:

(1) Involved substantial raw material or finished product shipments by truck,

(2) Was not tied to a specific type of geographic location or attribute not available in Baileyville (e.g. port, rail head),

(3) Presented an opportunity for some sort of transloading or processing in the US,

(7) Might benefit from relaxed truck weight restrictions due to weight/configuration of raw materials or finished products, and

(8) Involved a scale that could conceivably fit into the Woodland Commercial Park.

It should be pointed out that this analysis is limited to identifying industry groups that might benefit from a relaxation of truck weight limits. Companies from some product categories that are not affected by truck weight limits, particularly those smaller value-added industries, might nonetheless be possible targets for development in Baileyville for other reasons.

Following is an assessment of the potential presented by the major product group (2-digit harmonized code level). Major product categories with some potential are then assessed at the finer product level.

Products Exported From Atlantic Canada to the US in 2000
Products By 2-Digit Harmonic Code With More Than US$10 Million In value
All Significant Products At the 5-Digit Code Level

Rank	Product	In 1,000s US$	%	In 1,000s US$
1	**Oil, Fuel, Gas, Bitumen**	$3,360,724	35.1%	
2	**Fish, Crustaceans, Mollusks (Fresh & Frozen)**	$1,194,236	12.5%	
3	**Paper, Paperboard**	$1,165,210	12.2%	
4	**Wood and Wood Articles**	$864,012	9.0%	
	Softwood Lumber			$638,800
	Waferboard, OSB			$53,600
	Wood Articles (Fencing, Pickets, Caskets, etc.)			$37,700
	Laminated Beams, Panels, Partitions			$36,400
	Medium Density Fiberboard			$22,500
	Particle Board			$15,300
	Shingles & Shakes			$12,100
	Hardwood Lumber (Maple, Birch, Aspen)			$10,900
	Pallets			$7,700
	Shaped Softwood Lumber			$3,600
	Windows, Doors & Frames			$2,400
	Wood in Rough, Logs for Pulping			$2,600
5	**Rubber and Rubber Articles**	$565,920	5.9%	
	Rubber Tires for Automobiles			$254,500
	Rubber Tires for Trucks			$235,100
	Unvulcanized Rubber			$48,200
	Other Pneumatic Tires			$19,800
	Rubber Articles, Other			$2,400
6	**Wood Pulp**	$359,573	3.8%	
7	**Fish, Seafood, Meat Preparations**	$244,044	2.5%	
	Lobsters, Prepared or Preserved			$109,800
	Crabs, Prepared or Preserved			$45,300
	Herring, Sardines, Prepared			$38,500
	Shrimp, Prepared or Preserved			$32,700
	Other Fish, Prepared or Preserved			$11,200
	Mollusks, Prepared or Preserved			$5,800
	Salmon, Prepared or Preserved			$400
8	**Fruit, Vegetable, Nut Products**	$197,112	2.1%	
	Potatoes, Frozen, Prepared, Preserved			$185,500
	Potatoes, Prepared, Preserved, Not Frozen			$10,200
9	**Railway Transportation Equipment**	$140,728	1.5%	
	Railway Cars, Covered, Closed			$78,800
	Railway Cars, Other			$56,900
	Parts of Railway Vehicles			$4,500
10	**Plastics and Plastic Articles**	$105,569	1.1%	
	Film, Plates, Sheets			$53,900
	Boxes, Cases, Crates of Plastic			$11,500
	Sacks & Bags of Plastic			$10,100
	Doors, Windows, Frames of Plastic			$5,800
	Miscellaneous Articles of Plastic			$4,200
	Tubes, Pipes, Hoses of Plastic			$2,900
	Stoppers, Lids, Caps of Plastic			$3,600
	Bottles, Flasks of Plastic			$3,500
	Tubes, Pipes, Hoses			$3,400
11	**Iron and Steel Articles**	$105,211	1.1%	
	Prefabricated Steel Structures & Parts			$62,000
	Stranded Wire			$14,100
	Pipes and Tubes			$5,200
	Pipe and Tube Fittings			$5,300
	Other Articles, Not Including Wire			$5,200
	Tanks & Vats			$3,500
	Bridges and Bridge Sections			$2,400
	Non-Electric Heaters			$2,400
	Other Articles of Wire			$1,600
12	**Ores, Slag, Ash**	$97,460	1.0%	
13	**Salt, Stone, Cement, Earths, etc.**	$82,873	0.9%	
	Gypsum			$65,200
	Gravel, Aggregate			$6,900
	Salt			$2,300

14	**Motor Vehicles, Trailers, etc.**	$56,499	0.6%	
	Other Motor Vehicle Parts			$25,400
	Vehicle Bodies Parts & Accessories			$7,600
	Brake System Parts			$2,100
15	**Fruniture, Bedding, etc.**	$49,622	0.5%	
	Wooden Furnirture, Bedroom			$16,800
	Wooden Furniture, Other			$11,000
	Wooden Furniture, Kitchen			$9,100
	Furniture Parts			$6,300
	Seats and Seat Parts, Wood			$2,650
	Metal Furniture			$1,000
16	**Lead, Lead Articles**	$38,020	0.4%	
	Unwrought Lead, Refined			$26,100
	Unwrought Lead, Unrefined			$11,200
17	**Fresh Vegetables, Roots**	$37,209	0.4%	
	Fresh potatoes, not seed			$29,575
18	**Reactors, Boilers, Engines, etc.**	$36,199	0.4%	
	Turbo-Propellers			$22,800
	Parts for Turbo-Propellers			$7,900
19	**Articles of Stone, Plaster, Cement, Etc.**	$31,624		
	Plaster Board, Sheets, Faced with Paper			$12,802
	Plaster Board, Sheets, Not Faced with Paper			$8,353
	Articles of Peat			$1,958
20	**Cereals, Flour, Bread, Starch, Milk**	$31,438	0.3%	
	Bakers Ware, Communion Wafers, Drugs			$12,841
	Sweet Biscuits, Waffles, and Wafers			$10,353
	Other Food of Flour, Meal, Starch, Milk & Malt			$7,980
21	**Lifting, Handling, etc. Machinery**	$30,836	0.3%	
	Self-Propelled Work Trucks			$13,907
	Parts of Mechanical Shovels			$2,984
	Parts of Jacks, Hoists			$2,407
	Parts of Boring or Sinking Machinery			$2,264
22	**Aircraft, Spacecraft**	$28,588	0.3%	
	Airplanes, less than 15,000 KG			$10,907
	Airplane, Helicopter Parts			$10,068
	Parts of Baloons, Dirigibles & Spacecraft			$6,809
23	**Residues from Food, Prepared Animal Fodder**	$26,608		
	Animal Feed Preparations			$24,881
24	**Telephone, Radar, Video, etc. Equipment**	$26,439	0.3%	
25	**Optical, Medical, Scientfic Instruments**	$22,491	0.2%	
26	**Chemicals, Precious Metal Compounds**	$22,479	0.2%	
	Inorganic Compounds, Liquid/Compressed Air			$18,549
	Sulphuric Acid			$1,355
	Caustic Soda			$1,207
27	**Electric Motors, Generators, etc.**	$20,754	0.2%	
28	**Aluminum, Articles of Aluminum**	$18,032		
	Aluminum Windows & Doors			$10,074
29	**Fertilizers**	$16,294	0.2%	
	Potassium Chloride			$5,133
	Fertalizers with Nitrogen, Phosph. & Potassium			$4,262
	Diammonium Phosphate			$3,479
30	**Mining, Manufacturing Machinery**	$16,003	0.2%	
31	**Beverages, Spirits, Vinegar**	$15,575	0.2%	
	Beer			$12,600
	Waters, Sweatened			$2,200
32	**Coated Fabrics, Industrial Textiles**	$14,485		
33	**Musical Instruments**	$13,783	0.1%	
	Percussion Musical Instruments			$10,044
	Parts & Accessories for Stringed Instruments			$3,630
34	**Pumps, Compressors, Ovens**	$13,155	0.1%	
35	**Lamps, Lighting, Prefabricated Buildings**	$11,399	0.1%	
	Prefabricated Industrial Buildings			$8,322
36	**Moulds, Valves, Gaskets, etc.**	$11,369	0.1%	
37	**Other Made Up Textiles, Worn Clothing**	$10,579		
38	**Capacitors, Electronic Equipment**	$10,070	0.1%	
	Total Included Above*	**$9,092,222**	**95.0%**	
	Total Exports to the United States of All Types	**$9,573,143**	**100.0%**	

(1) *Oil Fuel, Gas, Bitumen* - This product category is principally transported by ship or pipeline. Opportunities are limited to extremely large, well-capitalized businesses.

(2) *Fish, Crustaceans, Mollusks (Fresh & Frozen)* - Although there are a number of smaller companies in this industry, there is very little value-added and whatever processing is done, mostly cleaning and packing, is done very close to ports of landing to minimize handling costs and preserve freshness. As a high water-content fresh or frozen product, seafood is affected by truck weight limits. A significant volume of fresh and frozen seafood is exported to the United States by truck through Maine, but it is unlikely that there are any opportunities for Baileyville to capture any value in fresh seafood because of its distance from major ports of landing or markets.

(3) *Paper, Paperboard* and (6) *Wood Pulp* - These are high value-added industries restricted to very large installations operated by large national or multinational companies. Investments in northern climates are likely to be restricted to re-investments in existing facilities rather than the development of new facilities. Such developments also dwarf the Woodland Commercial Park. The finished paper industry could benefit from relaxed weight restrictions. There are situations in which this industry supports transloading facilities. Although transload facilities supporting this industry are usually associated with truck-rail transfers where the economies of scale are proven, a transload facility for truck to truck transfers of wood pulp will be analyzed.

(4) *Wood and Wood Articles* and (15) *Furniture, Bedding* - These are moderate to high value-added industries that are diversified among many product areas and sizes of businesses. These are also industries that benefit from relaxed truck weight restrictions and are considered to be a prime motivating force in setting the current high truck weight limits in Atlantic Canada. This is a potential target industry for Baileyville and will be analyzed in detail for the financial impact of relaxed truck weight limits.

(5) *Rubber and Rubber Articles* - This category represents essentially one company (Michelin Canada) with three large installations in Nova Scotia. This is a very capital-intensive industry dominated by a few multi-national companies and presents little opportunity for Baileyville. Detailed transportation cost data on this industry was not available, but it is unlikely that it could benefit from higher weight standards for shipping finished product.

(7) *Fish, Seafood, Meat Preparations* - This industry represents one additional step in the value-added production chain for seafood products. Although not all seafood product manufacturing companies are located near the raw resource, most are so located to minimize handling costs and preserve freshness. The rest of the processors tend to be located near the markets. Despite the fact that a significant amount of prepared seafood transits to the US by truck through Maine, there does not appear to be much of an opportunity for Baileyville due to its location with respect to the raw material source or markets.

(8) *Fruit, Vegetable, Nut Products* and (17) *Fresh Vegetables, Roots* - These categories consist principally of fresh, frozen and prepared potato products that originate in Prince Edward Island and New Brunswick. It is possible that potatoes could be processed in Baileyville. Both fresh and frozen potatoes are affected significantly by weight limits. Potatoes will be evaluated for the financial impact of truck weight limits.

(9) *Railway Transportation Equipment* - This category is principally the output of one company called Trentonworks, Ltd. which employs approximately 1,400 persons in Trenton, Nova Scotia. This business depends on access to rail. There do not appear to be any opportunities for Baileyville.

(10) *Plastics and Plastic Articles* - This is a somewhat diversified industry group, but is dominated by three sheet plastic manufacturers in Nova Scotia. There are a large number of small manufacturers of various plastic products that are not likely affected materially by transportation costs. Primary plastics manufacturers are usually located with rail access for raw material.

(11) *Iron and Steel Articles* and (35) *Lamps, Lighting, Prefabricated Buildings* - These are diversified product categories in which truck weight limits might be a factor depending on the product. The largest product category, prefabricated steel structures and parts, can be weight limited. Consumer product components are not likely to be truck weight dependent.

(12) *Ores, Slag, Ash* - This is principally mining related with a heavy reliance on rail for transportation feasibility. It is not likely a candidate for any development activity in Baileyville.

(13) *Salt, Stone, Cement, Earths, etc.* - This category consists principally of gypsum that is shipped by rail to processors of gypsum board, which are usually very large businesses much like paper companies. There is a gypsum board manufacturer in McAdam, New Brunswick which is near Baileyville. Other products in this category, which includes gravel and salt, are also heavily dependent on rail. This is not considered a likely candidate for Baileyville due to the need for rail, but salt will be considered for additional study at the request of Baileyville officials.

(14) *Motor Vehicles, Trailers, etc.* (21) *Lifting, Handling Machinery*, (27) *Electric Motors, Generators*, (34) *Pumps Compressors, Ovens,* (36) *Moulds, Valves, Gaskets, Etc.* - This category includes a large number of small to medium sized manufacturers that make various components for the vehicle industry. It includes machine shops, steel fabricators and a wide variety of metal working businesses. Many companies work with small numbers of units and smaller-sized parts with low shipping volumes where the transportation cost of materials or products are not significant; however, there may be situations where truck weight limits are a factor. Such companies tend to be located where the owners want to live. Businesses in these industries could be candidates for Baileyville regardless of their being affected by special truck weight limits.

Balance of Major Canadian Export Industries - Of the remaining product categories, all of which represent less than US$50 million in annual export value, the following categories represent those that are not believed to have much potential for Baileyville because of dependency on rail transport, dominance by a few large manufacturers, or little opportunity for impact by truck weight limits:

- Lead, Lead Articles - Small number of companies
- Reactors, Boilers, Engines - Small number of companies
- Articles of Stone, Plaster, Cement, Etc. - Significantly rail dependent
- Cereals, Flour, Bread, Starch, Milk - Significantly rail dependent
- Aircraft, Spacecraft - Small number of companies
- Residues from Food, Prepared Animal Fodder - Significantly rail dependent
- Telephone, Radar, Video, etc. - Not likely truck weight affected
- Optical, Medical, Scientific Instruments - Not likely truck weight affected
- Chemicals, Precious Metals - Small number of companies, significantly rail dependent
- Fertilizers - Significantly rail dependent
- Beverages, Spirits, Vinegar - Small number of companies
- Coated Fabrics, Industrial Textiles - Not likely truck weight affected
- Other Made Up Textiles, Worn Clothing - Not likely truck weight affected
- Capacitors, Electronic Equipment - Not likely truck weight affected
- Mining, Manufacturing Machinery - Small number of companies
- Musical Instruments - Not likely truck weight affected

Industries Affected By Truck Weight Limits Suited for Baileyville

Screening the list of major export product areas for industries affected by weight limits with some potential for development in Baileyville produces the following six major industry groups in three basic product areas:

Wood Products:
Wood and Wood Articles
Furniture, Bedding
Agricultural Products
Fruit, Vegetable, Nut Products
Fresh Vegetables, Roots
Metal Products
Iron and Steel Articles
Lamps, Lighting, Prefabricated Buildings

Of these three major industry groups, the Consultant believes that the first two categories, which are very large natural resource based industry groups, are the most likely categories to be able to exploit increased truck weight limits to achieve some financial advantage.

Appendix 2

Imports from the United States into Atlantic Canada

The Tables on the following two pages list the top 25 commodity groups imported from the United States into Atlantic Canada and into New Brunswick. These imports arrive by way of all modes of transportation and do not necessarily involve transit through Maine. Imports into Atlantic Canada are much more diverse than exports with the top 25 product groups accounting for only 40%-44% of all products.

Due to budget limitations, this study does not in focus as much attention on imports because there does not seem to be the same opportunities to capture value from this flow of traffic in Baileyville. A cursory review of the products listed shows that most products are either products not likely to be transloaded (fresh seafood, agricultural produce) raw materials that are usually shipped in bulk by rail or ship (petroleum, coal, clays, carbon caustic soda) or bulk finished or semi-finished goods. The few products that are most likely to be candidates for handling in Baileyville, such as wood products, pulp and paper are covered by the analysis of export opportunities.

Atlantic Canada is a small market for finished manufactured products. It is much less likely that a manufacturing company could find sufficient advantage in differential truck weight limits for shipping finished products in high weight limit trucks to Atlantic Canada as a primary or principal reason for locating in Baileyville. For certain high-density products; however, it could be a small positive influence, particularly if the business had a compelling reason to remain in the United States.

Top 25 Products Imported to Atlantic Canada from the United States in 2000

Product	U.S. Dollars	% Total
Preparations of Oils, Bituminous	$222,695,000	10.0%
Other Lobsters, Not Frozen	$120,525,000	5.4%
Road Tractors for Semitrailers	$67,225,000	3.0%
Crude Petroleum	$53,547,000	2.4%
Other Articles of Iron or Steel	$43,887,000	2.0%
Motor Vehicles	$40,857,000	1.8%
Acyclic Ethers and Derivitives	$39,998,000	1.8%
Unvulcanized Rubber	$36,386,000	1.6%
Telephone Poles, Wood in Rough	$32,658,000	1.5%
Bituminous Coal	$29,345,000	1.3%
Aircraft, heavy	$29,178,000	1.3%
Parts of Turbo Propellers	$29,158,000	1.3%
Salmon, Fresh, not filleted	$28,225,000	1.3%
Modems, Digital Apparatus	$24,417,000	1.1%
Synthetic Rubber, Butadiene	$24,648,000	1.1%
Taps, Cocks, Valves	$24,000,000	1.1%
Parts for Boring Machinery	$22,297,000	1.0%
Caustic Soda	$18,982,000	0.9%
Airplanes, light	$16,491,000	0.7%
Carbon, Carbon Black	$15,099,000	0.7%
Ammunition, Bombs, Grenades	$13,549,000	0.6%
Unvulcanized Compounded Rubber	$13,228,000	0.6%
Parts of Rail Vehicles	$13,146,000	0.6%
Kaolin Clays	$12,619,000	0.6%
Cranberries, Blueberries	$12,542,000	0.6%
Total of Top 25	$985,703,000	44.2%
Total All Products	$2,227,692,000	100.0%

(Source: Industry Canada, Trade Data Online)

Top 25 Products Imported to New Brunswick from the United States in 2000

Product	U.S. Dollars	% Total
Other Lobsters, Not Frozen	$120,525,000	7.8%
Road Tractors for Semitrailers	$67,255,000	4.4%
Other Articles of Iron or Steel	$41,056,000	2.7%
Preparations of Oils, Bituminous	$37,564,000	2.4%
Unvulcanized Rubber	$36,373,000	2.4%
Acyclic Ethers and Derivitives	$35,263,000	2.3%
Telephone Poles, Wood in Rough	$32,659,000	2.1%
Salmon, Fresh, not filleted	$28,225,000	1.8%
Synthetic Rubber, Styrene	$24,648,000	1.6%
Caustic Soda	$18,982,000	1.2%
Carbon, Carbon Black	$15,099,000	1.0%
Unvulcanized Compounded Rubber	$13,226,000	0.9%
Cranberries, Blueberries	$12,542,000	0.8%
Softwood Lumber	$12,289,000	0.8%
Cotton, Not Carded or Combed	$12,129,000	0.8%
Kaolin Clays	$12,106,000	0.8%
Parts of Rail Vehicles	$11,766,000	0.8%
Motor Vehicles	$10,429,000	0.7%
Parts for Boring Machinery	$10,241,000	0.7%
Synthetic Rubber, Butadiene	$9,895,000	0.6%
Waferboard, OSB	$9,545,000	0.6%
Front End Loaders	$9,489,000	0.6%
Orange Juice	$9,017,000	0.6%
Waste/Scrap Paper	$8,963,000	0.6%
Polypropylene	$8,867,000	0.6%
Total of Top 25	$608,214,000	39.6%
Total All Products	$1,535,624,000	100.0%

(Source: Industry Canada, Trade Data Online)

Appendix 3

Analysis of Cross-Border Trade By Products Shipped By Trucks

This section includes limited summary data on products transported across the border by truck. The purpose of this analysis is to identify product opportunities that are currently being transported by truck that could be exploited by a facility in Baileyville.

International For-Hire Trucking Traffic by Major Commodity Group Countrywide - 1999 (Import & Export for National Canada)

Commodity	Tonne-Kilometers (billions)	C$ (millions)	% Total by Weight
Forest Products	15.34	930.5	20.1%
Food Products	12.25	799.8	16.1%
Miscellaneous Prod.	13.84	995.2	18.2%
Other Manufactures	9.40	976.6	12.3%
Steel & Alloys	8.23	661.9	10.8%
Automotive Products	6.84	810.9	9.0%
Chemical products	3.77	299.7	4.9%
Petroleum Products*	0.61	48.8	1.0%
Machinery & Equip.	3.92	530.7	5.1%
Ores and Minerals	1.97	93.5	2.6%
Total	76.18	6,147.4	

The total tonnage hauled in 1999 both domestically and internationally was 158.66 billion tonnes of which the 76.18 billion tonnes of international shipments represented 48% of all Canadian truck traffic. (This data was from a special Transport Canada study titled "For-Hire Trucking Commodity Origin/Destination Survey".) * Only about 11% of all petroleum products shipped by truck are international.

For-Hire Truck Exports and Imports by Tonnage from Atlantic Canada to the United States by Major Product Category in 1997 (not inclusive - only includes categories with more than 30,000 tonnes/year) 30,000 tonnes is approximately 1,200 truck trips.

	Exports	Truck Trips	Imports	Truck Trips
Fabricated Materials	852,100	34,084	42,000	1,680
Crude Materials	372,400	14,896	39,000	1,560
End Products	64,200	2,568	NA	
Food, Feed, Beverage	36,600	1,464	NA	

The crude materials are reportedly to consist principally of unprocessed logs.

Total for-hire truck traffic originating in Atlantic Canada in 1997 was estimated at 16,369,000 tonnes, of which 85.4% was destined for Canada including within the Atlantic Provinces. The remaining tonnage of approximately 2,328,000 (14.2%) was destined to the U.S. Inbound flows from the U.S. totaled about 554,000 tons which means that outbound traffic exceeded inbound traffic by a factor of slightly over 4:1. A CCMTA survey of one-week's truck traffic in 1995, which includes both for-hire and private trucks, found that about 18% of the total tonnage on the Atlantic Canada highways was cross-border traffic. This percentage difference indicates that a higher percentage of private trucking must be cross-border trucking.

The following data was produced from a special tabulation of data provided for the 2000 Surface Freight Study by Statistics Canada. The report strongly qualified the resulting data as being of unknown reliability.

US Destination of For-Hire, Outbound, Canada-Domiciled Truck Traffic in 1997
(In 1,000 Tonnes)

	NB	NS	P.E.I.	NFL/LAB	Total
Maine	878.9	34.7	15.7	1.0	930.3
Northeast	612.2	176.6	129.3	47.7	965.8
South Atlantic	130.3	97.2	39.7	1.5	268.7
South Gulf	26.5	12.3	0.2	0.0	39.0
Central	85.7	21.6	8.1	8.5	123.9
West	3.5	2.3	0.2	0.1	6.1
Total - US	1,747.1	344.7	193.2	59.8	2,344.8
Rest of Canada	1,131.8	418.3	147.4	65.6	1,763.1

(Source: Statistics Canada, Special Tabulation for 2000 Surface Freight Study)

There is one data source that includes all trucks on the road in Atlantic Canada and includes for-hire, private, Canada-domiciled and US Domiciled.. The data was obtained by an on-highway survey in 1995 by the CCMTA. This data is useful for cross checking, but is considered only marginally reliable because it is based on two one-week surveys as a snap shot in time. It is very risky to extrapolate too far from the data. With that caveat considered, this data shows that approximately 40% by weight of Atlantic Canada exports by truck to the U.S. are destined for Maine.

Tonnes per Week Destined for the US by Province of Origination

	Tonnes Per/Week	Tonnes Annualized	Annualized Truckloads
New Brunswick	32,367	1,683,084	67,323
Nova Scotia	15,051	782,652	31,306
P.E.I.	8,071	419,692	16,788
Nfld./Lab	225	11,700	468
Total	55,714	2,897,128	115,885

(Source: 1995 CCMTA Roadside Survey as reported in 2000 Surface Freight Study)

Tonnes per Week from the US by Destination Province

	Tonnes Per/Week	Tonnes Annualized	Annualized Truckloads
New Brunswick	12,284	638,768	25,551
Nova Scotia	13,538	703,976	28,159
P.E.I.	896	46,592	1,864
Nfld./Lab	1,004	52,208	2,088
Total	27,722	1,441,544	57,662

(Source: 1995 CCMTA Roadside Survey as reported in 2000 Surface Freight Study)

The following table shows the distribution of inputs by percent of value in US dollars by major commodities. Unfortunately, data is not readily available to convert the dollar values to tonnes or truck loads. Because of extreme differences of values of certain products, there may be little relationship between the percentages and the number of trucks. The data is nonetheless useful in showing the concentrations of commodities shipped by truck.

Canadian Imports from the US By All Trucks (For-Hire & Private) in 1997 by Province
(% of Total US Dollar Value of All Imports)

	NB	NS	P.E.I.	NFL/LAB
Nuclear Reactors, Machinery	20.6%	22.8%	48.5%	29.8%
Fish and Seafood	11.9	2.6	-	-
Vehicles	6.8	1.5	6.4	-
Rubber Products	5.4	-	-	-
Iron, Steel Products	4.7	2.8	-	-
Wood & Products	4.5	-	2.9	-
Electrical Machinery/Equip.	4.1	13.9	-	12.1
Paper & Products	3.9	-	-	2.3
Plastics & Products	3.8	1.4	3.1	1.9
Edible Fruits, Nuts	3.2	-	-	1.5
Optical, Medical Equip.	-	6.9	-	2.7
Arms & Ammunition	-	28.4	-	-
Mineral Fuels, Oils	-	-	-	26.8
All Other Commodities	30.9	22.5	39.1	22.9
Total	100%	100%	100%	100%

(Source: BTS Transborder Surface Freight Database)

Data is not readily available to convert the percent of dollar values to tonnes or truck loads. Because of extreme differences of values of certain products, there may be little relationship between the percentages and the number of trucks. The data is nonetheless useful in showing the concentrations of commodities shipped by truck.

Atlantic Canada Exports to the US By For-Hire & Private Trucks in 1996 by Province

	NB %	C$ Mil.	NS %	C$ Mil	P.E.I. %	NFL/L %
Wood & Products	28.0	$417.5	7.6	$109.5	3.6	1.8
Paper & Products	17.6	$262.5	5.1	$ 73.5	-	2.5
Fish & Seafood (raw/frozen)	15.2	$226.7	35.8	$516.0	20.1	73.7
Wood Pulp	7.4	$110.3	2.3	$ 33.2	-	-
Preparations, Meat/Seafood	5.6	$ 83.5	-	-	9.5	17.7
Mineral Fuels, Oils	4.2	$ 62.6	-	-	-	-
Preparations, Fruit, Veg., Nuts	3.4	$ 50.7	-	-	31.5	-
Food Residue & Waste	1.8	$ 26.8	-	-	-	-
Nuclear Reactors, Machinery	1.6	$ 23.9	2.5	$ 5.5	5.3	0.4
Rubber & Products	-	-	22.6	$325.8	-	-
Plastics & Products	-	-	4.4	$ 63.4	-	-
Iron, Steel Products	-	-	2.4	$ 34.6	1.4	-
Edible Vegetables, Roots	-	-	-	-	5.2	-
Special Class. Provisions	-	-	-	-	14.9	-
All Other Commodities	13.3	$198.3	17.3	$249.4	8.5	3.9

(BTS Transborder Surface Freight Database)

According to the study, 51.4% of all outbound truck freight, by value, was destined for New England with Massachusetts representing almost 30% of the total. Including New York, New Jersey and Pennsylvania, this percentage increases to 68.5%. The total value of exports shipped to the U.S. by truck in 1996 was $3.298 billion.

Ferry Traffic - The St. John/Digby ferry is a major transportation link for truck traffic with Nova Scotia. This ferry handled approximately 20,000 trucks and tractor trailers in 1998, the most recent year for which data was readily available. This was down about 13% following the privatization of the ferry in 1997. The ferry itself holds 33 tractor trailers and the crossing time is 2.5 hours. The Newfoundland/Sidney ferry handled 71,000 trucks and tractor trailers in 1998. It is not known how much the new Moncton/Fredericton highway will affect this ferry traffic. Currently, the unloading of the ferry in St. John frequently creates a surge at the St. Stephen border crossing as the trucks tend to arrive in the same time frame.

According to the Maine East West Highway Study in 1999, outbound truck freight from Atlantic Canada will grow about 6.2% annually and inbound truck freight will grow by 4.9% annually.

Appendix 4

Profile of the Atlantic Canada Trucking Industry

The Consultant collected readily-available data on the Canadian trucking industry in order to help determine the nature and extent of the utilization of higher truck weight limits, to quantify the impact of truck weights on cross-border truck traffic and to outline major trends in the Canadian trucking industry that might affect thinking on this issue.

Number of High Weight Limit Trucks - The following table indicates that the number of trucks that qualify to operate with a gross vehicle weight of more than 109,100 is quite small and includes perhaps only 2.5% of trucks in Atlantic Canada as a proportion of the number of trucks on the road. Although this data is somewhat dated, Canadian trucking industry officials indicated in conversations with the Consultant that there has been very little interest in shifting to the 7 axle and up configurations. The only truck configurations permitting more than 109,100 lbs. are tandem trailers (double bottoms) of some type.

Distribution of Atlantic Canada Trucks by Number of Axles (% of total)

# of Axles	5 Axles	6 Axles	7 or more Axles
Maximum Weight (2001)	92,400 lbs.	109,100 lbs.	137,800 lbs.
New Brunswick	43.8%	38.7%	2.2%
Nova Scotia	40.8%	37.2%	2.6%
Prince Edward Island	35.0%	50.3%	0.8%
Newfoundland	34.4%	52.3%	0.6%

(Source: 1995 CCMTA Roadside Study)

This1995 survey showed that of all of the trucks entering the US from Canada, only 3.99% were train doubles and of those train doubles, 68% were crossing from Ontario. The number of train doubles crossing from Atlantic Canada to the U.S. currently is reportedly extremely small but no precise data was available.

Structure of Trucking Canadian Industry - Following is a breakdown of selected data on the structure of the Canadian trucking industry by revenues in 1999 (Transportation Canada, 2000 Annual Report):

Total Trucking Industry	C$ 42.7 Billion
For Hire Trucking	C$ 19.6 Billion
For Hire International	C$ 6.2 Billion
For Hire International Inbound	C$ 3.2 Billion
For Hire International Outbound	C$ 3.0 Billion
Private Trucking	C$ 18.8 billion
Private Trucking International	C$ 0.9 billion

This indicates that the vast majority of international truck traffic is carried by for-hire trucking companies (87.3% of all cross-border freight) rather than internal/private company trucks. It is interesting to note that inbound freight shipments generate more revenue than outbound which could indicate that backhaul rates are higher since not all trucks go back with cargo and those that do generate more revenue than the outbound shipments. The preponderance of for-hire trucking in cross-border trade is likely to be more favorable for opportunities for arbitraging the differential weight limits because of the increased diversity of carriers and products.

Allocation of For-Hire Trucking Companies by Commodity Group in 1999

General Freight	10,064	62.2%
Dry Bulk	1,190	7.4%
Liquid Bulk	1,013	6.3%
Forest Products	829	5.1%
Household Movers	467	2.9%
Other Specialty Freight	2,618	16.2%

The private trucking companies are principally (1) retail distributors, (2) chemical products producers, (3) pulp and paper companies, (4) beverage distributors, and (5) wholesale distributors of agricultural products)

There were 922 registered for-hire carriers in Atlantic Canada in 1998. These carriers operated 25,548 trucks of 15,000 kg gross weight or more and 33,335 vehicles of less than 15,000 kg gross weight. Following is the distribution of registered trucks of 15,000 kg gross weight or more by province:

New Brunswick	12,121
Nova Scotia	7,871
Newfoundland/Labrador	3,336
Prince Edward Island	2,220

The two largest for-hire truckers in Atlantic Canada are J.D. Irving Ltd. with its Midland Transport (1570 vehicles), RST Industries (470 vehicles) and Sunbury Transport (1030 vehicles) and the Day and Ross Transportation Group (owned by McCain's) with its Day & Ross (1959 vehicles) and Fastrax (420 vehicles).

For-Hire Motor Carriers Financial Performance - In 1998, there were approximately 9,133 for-hire trucking companies in Canada generating C$15,209 million in revenues offset by C$12,807 million in operating costs. Over the five prior years, operating expenses consisted of 29%-31% for salaries and wages, 10.1%-10.3% for fuel, 38%-40% for owner-operator and purchased services costs of up to 20% for miscellaneous costs (terminals, maintenance, brokerage fees, etc.). There has been a steady shift toward increasing use of owner operators. Fuel expenses

have been relatively constant as a percentage of revenues and operating costs which suggests that many agreements have built-in fuel adjustment clauses.

U.S. transportation industries have more favorable tax depreciation periods than do Canadian transportation companies. The depreciation period for trucks in Canada is eight years whereas in the US, light and heavy general purpose trucks have a depreciation period of five years. Locomotives are depreciated in Canada over twenty-five years, but only eight years in the US. Depreciation rules therefore provide a slight tax advantage to U.S. companies.

Appendix 5

Cross border Shipping by Rail and Maritime Vessels

The focus of this study is on transport by truck because the Woodland Commercial Park does not have direct access to either rail or deep water. There is access to rail nearby in Calais and access to a port at either Eastport, Maine or St. John, New Brunswick; however, using either alternative mode of transport from a Woodland Commercial Park site would involve another transload. It is possible that certain products could withstand an additional transload in the distribution chain, but this was not considered to be a prime opportunity because products could be transloaded directly to either rail or ship in St. John. It is important that Baileyville consider other transportation modes because of their potential to provide competition to the Woodland Commercial Park.

Cross-Border Transportation By Railroad

This study includes a cursory analysis of the railroad industry and cross-border traffic by rail because of the potential for mode transfers from rail to truck. The absolute volume of products shipped by rail between the U.S. and Atlantic Canada is dwarfed by truck volume, but rail nonetheless provides considerable competitive advantages for certain products. Both the U.S. and Canada have public policies of trying to promote rail shipments of goods because it reduces road congestion and hydrocarbon emissions. Although standards vary significantly by commodity and generalizing is risky, a general rule of thumb is that a rail car can ship the same volume as 3 to 4 truck trailers.

Railroads Serving the Area - The New Brunswick Southern Railway (NBSR) operates between St. John and McAdam. The NBSR connects with the Springfield Terminal Railway at the St. Stephen/Calais border and to the Canadian National Railroad in St. John. The Eastern Maine Railway (affiliate of NBSR) connects to Springfield Terminal Railway at Mattawamkeag, Maine via McAdam and to the Bangor & Aroostook Railroad at Brownville Junction, Maine, which connects to the CP eventually. There is a spur of the Springfield Terminal Railway that connects the Domtar mill in Baileyville to the NBSR in Calais.

Rail Freight Out of Atlantic Canada - According to the Atlantic Provinces Freight Transportation Study, rail freight tonnage out of Atlantic Canada gradually increased from 32.9 million metric tons in 1992 to 37.0 million metric tons in 1997. Using a very crude conversion factor of 45,000 lbs. per truckload means that rail handled approximately 1.8 million truckloads of export cargo in 1997. Incoming rail freight has been approximately stable at 15-16 million metric tons over the same period. The allocation by product category by metric tonnage delivered to the US is as follows:

Crude materials, inedible	61.4%,
Fabricated materials, inedible	21.0%
"Special", including intermodal	14.4%.

The following table shows the value of outbound rail freight by product category by value in US dollars. A comparable figure from Statistics Canada, without the detail, indicated a total rail freight value to the U.S./Mexico combined in 1996 was US$728 million so there is agreement on the data:

Rubber & Products	US$ 257.9 million
Paper & Products	US$ 228.5 million
Wood & Products	US$ 90.4 million
Pulp	US$ 54.4 million
Locomotive Parts	US$ 43.8 million
Lead & Lead Products	US$ 11.3 million
Iron & Steel	US$ 7.9 million
Stone, Plaster (Gypsum)	US$ 5.1 million
Oil & Fuels	US$ 4.1 million
Furniture	US$ 3.8 million
All Others	US$ 17.8 million
Total	US$ 725.0 million

(Source: Interpolation of U.S. DOT report, "Transborder Surface Freight Data", 1999)

Outbound rail freight growth from Atlantic Canada is projected to be an extremely modest .2% per year from 1997 to 2001. The "rubber and products" category is principally from Michelin Canada, which has three factories in Nova Scotia employing approximately 3,600 employees.

Imports to Canada transported by rail are much smaller in terms of revenue:

Rubber & Products	US$ 42.9 million
Vehicles	US$ 30.2 million
Salt, Earth, Stone, etc.	US$ 19.8 million
Plastics & Products	US$ 15.9 million
Nuclear Reactors, Machinery	US$ 13.9 million
Inorganic Chemicals	US$ 12.8 million
Locomotives & Parts	US$ 10.8 million
All Others	US$ 66.6 million
Total	US$212.9 million

(Source: Interpolation of U.S. DOT report, "Transborder Surface Freight Data", 1999)

Cross-Border Marine Transportation

This section includes summary data on marine shipments because it is an important mode of transport for limited number of commodities. The following commodity groups are sometimes shipped by water: petroleum (crude and refined), wood pulp, pulp wood, logs, bolts (short logs), lumber, stone (including sand, gravel, cement, gypsum, salt, limestone, etc.), grain, and iron ore. Overall, only 2% of national Canadian trade with the US is shipped by marine traffic; however, 46% of all marine exports by weight from Canada to the US are from Atlantic Canada. The latter is because of the huge volume of petroleum products shipped from Nova Scotia and New Brunswick. Conversely, only about 7% of the total marine traffic from the US to Canada is into the Atlantic Provinces.

The total marine cargo handled (loaded/unloaded) in Atlantic Canada in 1997 from all over the world was 64,965,000 metric tons. Of this, approximately 26.8 million metric tons (44%) was marine trade with the US.

International Marine Cargo Loaded/Unloaded To/From the US in 1997 by Province

Province	Metric Tons
New Brunswick	6,334,000
Nova Scotia	16,101,000
P.E.I.	47,000
Nfld./Lab	4,303,000
Total	26,785,000

International Marine Cargo Loaded in Atlantic Canada By Major Commodities in 1997 (1,000 Tonnes)

Crude Petroleum	7,756
Gypsum	6,160
Fuel Oil	5,365
Gasoline	3,868
Other Non-Metallic Mineral	1,532
Newsprint	1,412
Total	33,607

International Marine Cargo Unloaded in Atlantic Canada in 1997
By Major Commodities (1,000 Tonnes)

Crude Petroleum	24,067
Fuel Oil	2,114
Coal	1,249
Mach., Equip. Misc. Cargo	1,170
Gasoline	581
Misc. Chemicals	498
Total	31,358

Much of this is marine trade involves basic commodities for which marine transport presents financial advantages. It is unlikely that any of this business could be captured by truck even if Canadian/US truck weight limits were harmonized at the higher Canadian limits. The volume of marine cargo handled varies substantially year by year, but has grown an average of about 5% per year since 1984 when marine trade totaled 23,377 tonnes. From 1997 to 2010, marine cargo is projected to grow about 1.5% per year.

Appendix 6

Free Trade Zone

Prior studies have mentioned the potential for a Free Trade Zone (FTZ) designation as a marketing advantage for the Woodland Commercial Park and as a possible source of cross-border traffic under a new high weight limit regime. A Free Trade Zone permits the importing of goods into the zone for processing and re-exporting without being subject to duties. In certain circumstances it can be a very useful economic development tool. However, the situations in which it is useful, particularly with regard to U.S./Canadian trade under NAFTA, are very limited.

In the Consultant's experience, having a Free Trade Zone designation in place is of nominal or no marketing value to an industrial park. It is also somewhat expensive to apply for and maintain a designation as a primary FTZ. The FTZ program has provisions for creating "satellite" zones of established FTZs. There is a FTZ at the Bangor airport that could be piggybacked for a satellite zone designation in the event a company locating a business in Baileyville that could make use of the FTZ designation.

Supplemental Report - Three Case Studies

Differential Truck Weight Restrictions in Border States

Introduction

Differential truck weight restrictions are often used in states to provide a competitive advantage to certain sectors of the economy, particularly in areas with a heavy reliance on agriculture. The weight limit exemptions typically allow trucks to exceed standard weight limitations when collecting or transporting the approved commodities. For example, the state of North Dakota has weight limit exemptions to facilitate the movement of its major agricultural commodities during key harvest months. The statute allows trucks to exceed standard weight limitations by 10 percent above the gross vehicle weight limit from July 15 to December 1, provided they have the appropriate permits. The exemption is available to trucks transporting North Dakota's top agricultural products, sugar beets and potatoes, on a year-round basis so the growers can compete with Canadian farms.

Weight restriction variances in North Dakota have, as in many other states, the effect of supporting key sectors of the economy. However, when taken to the next level, and applied to issues of international trade, these differential weight restrictions can have the effect of acting as a catalyst for economic development. The following three cases outline the methods states have used to implement differential truck weight restrictions and the varying results they have achieved.

Canadian Truck Weight Allowances

Shelby, Montana

After struggling with a shrinking economy in the 1980s, Toole County in Northern Montana needed some new ideas. The tax base of the communities was dwindling and without a dramatic change of course, residents and local officials knew the area would be in trouble. Agriculture, oil, and gas production were the mainstays of the local economy. But what could a small town of less than 3,000 people near the Montana/Canada border do to diversify its economy?

The State of Montana was about to receive a multimillion-dollar settlement from a lawsuit in which the federal government accused oil companies of overcharging several states. Settlement money had one stipulation – it had to be used for energy

conservation. The State had earmarked $2.1 million for an "intermodal hub," which moves freight from truck to rail, therefore conserving energy. The town of Shelby, and Toole County as a whole, were at the same time looking for ideas to recharge the local economy, and had hopes that this money could help, while utilizing the resources Shelby had to offer. Shelby was one of two communities that were finalists for the facility. Although the money ended up going to the community of Butte (which constructed the Port of Montana), Shelby officials still felt that an intermodal facility would be a perfect economic development opportunity for their town.

Northern Express Transportation Authority (NETA) was formed and began the process of researching the concept and trying to procure funds. The vision was for a port authority facility that would handle storage and transloading (primarily truck-to-rail) for a wide range of commodities. Town and County officials allowed to begin raising money for the project by collecting property taxes and assessing two mils. This, along with money NETA secured from a subsequent federal lawsuit settlement, an Economic Development Administration grant, and a Community Development Block grant, provided the funds to get the Port of Northern Montana project off the ground.

Once the Port of Northern Montana had been constructed and was operational, NETA worked on ways to expand the services offered by the facility and the competitive advantages it could offer. Officials achieved a major victory when they successfully lobbied the Montana Department of Transportation in the early 1990s to win approval for Canadian truck weight limits of up to 136,000 pounds on the road that connects the town of Shelby with the Canadian border crossing at Sweetgrass. This is particularly noteworthy because of the fact that the road over which the trucks travel is an Interstate Highway (I-15). Federal regulations do not generally allow states to make exemptions to federal weight limits. States that violate this provision can lose their federal highway funding. However, the Sweetgrass-Shelby corridor was incorporated into the Intermodal Surface Transportation Efficiency Act of 1991 (H.R. 2950), which protected the state's federal highway funding. Section 1023 of the bill maintains that the federal government will not withhold funds from the state of Montana based on this weight limit exemption.

Trucks utilizing the Sweetgrass-Shelby corridor at Canadian weights must have a permit to do so. According to regulations outlined by the Motor Carrier Services division, permits may be issued for overweight reducible loads traveling between Sweetgrass and Shelby on I-15 and on a 2-mile radius around the interstate. Permit guidelines set forth the maximum axle weights for these vehicles, which must be met to ensure safety. The vehicle must also be pro-rated in Montana for the maximum weight for the configuration of the vehicle. Vehicles traveling under the Sweetgrass-Shelby agreement may travel within a single town along the route (from one facility to another) as well as back and forth between the towns. Once the trucks pass Shelby or are more than two miles off the Interstate, they must return to legal weights.

The Sweetgrass-Shelby agreement has opened many doors for the small town of Shelby and for Toole County as a whole. There has been a tremendous growth in jobs, both those directly attributable to the Port and those related to the community's subsequent development. The Port of Northern Montana serves as a strong business attraction and expansion incentive. Even in its efforts to grown the local economy, NETA has not forgotten the importance of supporting existing businesses. According to Larry Bonerud, "our real mission is to support local businesses, assist with transportation and added-value concepts." While this situation is very unique, possibly the only of its kind in the country, it serves as a valuable learning tool for other communities considering similar projects.

Sumas, Washington

Port of Bellingham is a municipal corporation that serves several important purposes in Northwestern Washington State. The Port oversees several major public transportation facilities, warehouse space, retail shops, entertainment venues, and parks in Whatcom County. In addition to managing these facilities, the Port works on issues that seek to improve the quality of life in Whatcom County, including environmental programs and waterfront stewardship. By providing such diverse services, the Port of Bellingham serves as a major catalyst for economic development in Whatcom County. The following map outlines the Port's properties.

The Port of Bellingham operates the Sumas International Cargo Terminal in Sumas, a tiny border town in Whatcom County. Businesses in Sumas have historically relied on either the abundant water resources from the area's lakes, rivers and streams or the rail line that passes through town. The Cargo Terminal brought new opportunity to the area. The Port of Bellingham used it as a way to bring goods from Canada into the United States and channel them toward the shipping ports in the western part of the state.

In the mid-1980s, seeking to improve access to the Cargo Terminal and increase efficiency in transporting goods, the Port constructed its own access road. Bob Mitchell Avenue aided in connecting the Canadian Customs station with the industrial area and Cargo Terminal. Because the Port owned, operated, and maintained the road privately, state regulations regarding vehicle weight limits did not apply on this road. Weight limits in British Columbia are higher than those in Washington, which created a tremendous competitive advantage for the Port's facility. Trucks were then allowed to cross the border at Canadian weight limits and bring their loads to the Sumas International Cargo Terminal, where the goods would then be shipped via rail or truck to their next destination.

This practice continued for 10 years, until in 1995 the Port turned ownership of the road over to the City of Sumas. As the road was no longer privately owned and maintained, the matter came before the State of Washington Department of Transportation (WSDOT).

Even though Canadian weight trucks had been crossing State Route 9 for years in traveling from Canadian Customs to the industrial area, WSDOT expressed reservations about continuing to allow this practice. According to Barry Diseth of WSDOT, the department was "very concerned about the negative impacts this will have on the infrastructure." Another issue raised by WSDOT was the already present "shortage of funds available to maintain our infrastructure at US weights." WSDOT was concerned about a need for additional maintenance on the roads, and without additional funding the department would not be able to budget for this expense.

To outline the guidelines for Canadian weight travel in Sumas and the roles and responsibilities of each party in the situation, the Port of Bellingham, City of Sumas and WSDOT entered into a Memorandum of Understanding in 1997 titled "Movement of Canadian Weights in and around Sumas, Washington" (Appendix). The agreement outlines a series of events that had to take place to secure the ability of trucks to enter and travel in Sumas at Canadian weights. As the industrial area straddled both sides of State Route 9 (SR 9), a perpendicular crossing had to be designed and constructed with independent funding. WSDOT agreed to permit Canadian weight trucks to travel on SR 9 during the construction of the crossing. In addition, WSDOT agreed that northbound vehicles traveling at Canadian weight limits could use portions of SR 9 from the Cargo Terminal area to the border. In exchange for this allowance, the City of Sumas and the Port of Bellingham would share financial responsibility for maintenance of this part of the road.

The memorandum also outlines the guidelines WSDOT was to follow when issuing permits for Canadian weight travel. Before this agreement, trucks with reducible loads entering at Canadian weight limits did not need a permit. The permitting requirement was effective April 1, 1997. Under the conditions established by the Memorandum of Understanding, trucks wishing to carry Canadian weight loads must:

- Obtain a permit from WSDOT, valid for 1 year.
- Be licensed in the State of Washington (either through a traditional Washington vehicle license, a pro-rated license through another state or province, or through a trip permit).
- Obtain a fuel use permit if the truck is diesel powered.
- Possess a Special Motor Vehicle Permit (SMVP) that signifies the truck meets legal length limits and is licensed to maximum Washington weight limits (105,500 lbs.)

Once these requirements are satisfied, the vehicle pays a modest $14 charge and may travel at Canadian weight limits. The 137,800-pound British Columbia weight limit allows trucks to haul up to an additional 30% by weight in each load.

The Memorandum of Understanding has had a major impact on business and industry in the community. The town now uses this weight variance as a business attraction incentive. Transportation service companies have built large transload facilities to take advantage

of this variance. These groups specialize in truck-to-truck and truck-to-rail transload activities. Desticon Transportation Services is one such company, and their business has been so strong in Sumas that they are in the process of expanding their existing facility. Manufacturers have also found Sumas to be an excellent location for their plants. IKO Roofing, a major Canadian roofing company, opened the doors of its new multi-million dollar manufacturing facility in September 1999. With examples like these, it is easy to see that the Canadian weight limit variance has been good for the community of Sumas.

International Falls, Minnesota

The pulp and paper industry has long been a staple of the Northern Minnesota economy. The City of International Falls is no exception - the largest employer in town is Boise Cascade's paper mill, which employs 1,150 people in this town of 7,751. While the economy of International Falls has grown to include such diverse sectors as information processing, tourism, and even cold weather testing.

Boise's International Falls mill is located less than a mile from the Canadian border. In 1912 the company built a bridge over the Rainy River, connecting the newly formed city of International Falls with the city of Fort Frances, Ontario. Boise's primary motivation for building the International Bridge was the fact that the company owned paper mills on both sides of the border, and the bridge facilitated the exchange of both raw and finished materials. Although the mill in Fort Frances has since been sold to Abitibi-Consolidated, a major Canadian paper company, the two mills still trade goods frequently and continue to utilize a cross-border strategy. Through use of the bridge and neighboring access roads, Boise has essentially created an infrastructure exempt from state control. This allows trucks to cross into International Falls from Canada and travel to the Boise mill at Canadian weight limits. Trucks may go between the Boise and Abitibi-Consolidated mills at Canadian weight limits, which are 139,700 pounds for the largest rigs. This represents a 75% increase over Minnesota weight limits (80,000 pounds), representing a considerable savings in time and transportation costs for Boise and Abitibi-Consolidated. As portions of the access roads fall on property belonging to the Minnesota, Dakota & Western Railway, trucks traveling to the industrial areas and the rail yard have also use Boise's bridge and the adjacent access roads at Canadian weights.

Permits are not necessary to travel on these roads at Canadian weight limits, and there is little if any oversight of this practice. The State has challenged this practice in the past, but because the roads are private property, they have not been successful in forcing commercial vehicles to adhere to Minnesota weight limits. The trucks cross onto City roads for approximately 150 feet, but the City of International Falls has not mounted any considerable challenge to this practice. According to local development official Geoff Gillon of Rainy River Future Development, this is likely due to the significant economic impact that Boise and this practice have on the community. State

officials even appear to have warmed up to the idea. According to Mark Berndt, Director of Freight Planning and Development, a few years ago MNDOT attempted a "limited demonstration of heavier trucks on a couple of state highway corridors." This could have far-reaching economic benefits for the state. However, the idea was opposed by the Coalition for Bigger Trucks, a citizen group that fights to stop heavier trucks from traveling highways, and MNDOT dropped the proposal.

Appendix A - Memorandum of Understanding - Movement of Canadian Weights in and around Sumas, Washington

Washington State Department of Transportation
Sid Morrison
Secretary of Transportation

Transportation Building
P.O. Box 47300
Olympia, WA 98504-7300

MEMORANDUM OF UNDERSTANDING

Movement of Canadian Weights in and around Sumas, Washington

Washington State Department of Transportation - City of Sumas - Port of Bellingham

THE STATE OF WASHINGTON DEPARTMENT OF TRANSPORTATION,

hereinafter referred to as WSDOT

AND

THE CITY OF SUMAS,

hereinafter referred to as the City

AND

THE PORT OF BELLINGHAM,

hereinafter referred to as the Port

CREATE this "Memorandum of Understanding", hereinafter referred to as the MOU, to identify the items that must be accomplished, who will accomplish them, and when they must be accomplished by, to allow for the legal movement of Canadian weight vehicles in and around the town of Sumas, Washington.

The WSDOT, CITY, and PORT:

RECOGNIZE that the movement of commercial vehicles using Canadian weight limits is essential for the economic health and development of the Sumas area, which is consistent with City plans, and is supported by the Community Economic Revitalization Board (CERB) through their financial assistance in the economic revitalization of the Sumas area;

WISH to preserve the highway infrastructure, contribute to the safety of the motoring public, comply with federal rules and regulations, and prevent the

proliferation of vehicles using Canadian weight limits beyond the area designated as hereinafter set forth;

RECOGNIZE that the methods utilized over the past several years to accomodate the movement of Canadian weights in and around the City of Sumas, Washington, are no longer acceptable;

AGREE that the following list of issue resolutions and actions must be implemented and/or accomplished by the identified lead party, within the specified timeframes, to facilitate the legal movement of Canadian weights in and around the City of Sumas, Washington:

1. Subject to WSDOT design review and approval, WSDOT agrees to allow the construction of a perpendicular crossing(s) of SR 9, connecting with a new frontage road north of SR 9, to facilitate the movement of vehicles with Canadian weights from properties west of the Bob Mitchell Road and north of SR 9 to properties south of SR 9. Funding for the crossing design and construction will be provided by others, and is not the responsibility of WSDOT. WSDOT agrees to develop and enter into a maintenance agreement with the City et al. for any extra-ordinary maintenance costs of said crossings.

2. WSDOT agrees to allow the northbound movement of freight by vehicles with Canadian weights along SR 9, moving east from the Bob Mitchell Road along Garfield Street to Sumas Avenue and north on Sumas Avenue to the US/Canadian Border (approximately 3 blocks), and to develop and enter into maintenance agreements with the City and the Port for financial contributions to help maintain this portion of SR 9.

3. WSDOT agrees, under the provisions of RCW 46.44.090, to issue special motor vehicle permits for vehicles to travel with Canadian weights on the current alignment of SR 9, west of the intersection with Bob Mitchell Road, traversing approximately 200 feet to the entrance of the Socco Forest Products facility, located south of SR 9, during the design and construction of the new frontage road. The permit will also be available to all companies, including Socco and other Port tenants, to move with Canadian weights along SR 9, moving east from the Bob Mitchell Road along Garfield Street to Sumas Avenue and north on Sumas Avenue to the US/Canadian Border (approximately 3 blocks). After completion of the new frontage road the permits will be valid only for the crossing of SR 9 at designated sites and for the aforementioned three blocks of northbound movement to the border. Following are the maximum axle weights that will be permitted:

Steering axle	12,100 pounds	(5,500 kg)
Tandem Drive axles	37,500 pounds	(17,000 kg)

Tridem axles

axle spread	pounds	kg
94"(2.4m) to < 118"(3.0m)	46,300	21,000
118"(3.0m) to < 141"(3.6m)	50,700	23,000
141"(3.6m) to 146"(3.7m)	52,900	24,000

Maximum gross weight

A-Train	118,000 pounds (53,500 kg)
B-Train 8 axle	137,800 pounds (62,500 kg)
B-Train 7 axle	124,600 pounds (56,500 kg)
Tractor/Semi	102,500 pounds (46,500 kg)

On tractor/semi with tridem axle trailer with at least 72" spread between each trailer axle

Steer axle	12,100 pounds (5,500 kg)
Tandem drive axles	37,500 pounds (17,000 kg)
Tridem trailer axles	52,900 pounds (24,000 kg)

4. WSDOT agrees to offer these permits for reducible loads, with each permit specifically stating where the vehicle may travel under Canadian weight limits. The permits will be valid for one year and have an initial cost of fourteen dollars ($14). Effective April 1, 1997 vehicles must be operating under permit in order to carry Canadian weights.

5. CITY agrees to assume responsibility for design, construction and financing a new frontage road of approximately 2000', north of and roughly parallel to SR 9, with access to Bob Mitchell Road at the east end. The frontage road is to be completed by the end of calendar year 1997.

6. CITY agrees to assume responsibility for the design and construction of a perpendicular crossing(s) of SR 9 to property south of SR 9. Design of the crossing is to occur concurrently with the design of the new frontage road. Construction of the crossing to the Socco Forest Products facility to be completed within eighteen months of the signing of this MOU.

7. WSDOT agrees to allow vehicles carrying Canadian weights to operate on a partially-completed perpendicular crossing (s) of SR 9 for a period of up to eighteen months after the signing of this MOU. Such partially completed crossing must provide for the safe movement of passengers and goods along SR 9, but may defer roadway structural improvements for the interim period defined in item 6.

8. CITY agrees that operations on unimproved sections, and interim perpendicular crossing (s), of SR 9 west of the intersection with Bob Mitchell

road will be subject to load restrictions placed on SR 9 due to freeze/thaw conditions.

9. CITY agrees to enter into a maintenance agreement with WSDOT to assume responsibility for all extraordinary maintenance costs of the newly constructed crossings of SR 9, and to assume a separate financial responsibility, not to exceed $5,000 per year, for a share of the maintenance cost along SR 9, moving east from the Bob Mitchell Road along Garfield Street to Sumas Avenue and north on Sumas Avenue to the US/Canadian Border (approximately 3 blocks).

10. CITY agrees to support the special motor vehicle permitting process for the movement of Canadian weights, by encouraging carrier compliance and the use of enforcement by both state and local authorities.

11. PORT agrees to enter into a maintenance agreement with WSDOT to assume a financial responsibility, not to exceed $5,000 per year, for a share of the maintenance cost along SR 9, moving east from the Bob Mitchell Road along Garfield Street to Sumas Avenue and north on Sumas Avenue to the US/Canadian Border (approximately 3 blocks).

12. PORT agrees to support the special motor vehicle permitting process for the movement of Canadian weights, by encouraging carrier compliance and the use of enforcement by both state and local authorities.

Further, the WSDOT, CITY, and PORT:

AGREE to complete all action items identified in items 1 - 12 (see above) by December 31. 1997, unless otherwise stated in this MOU;

AGREE that this MOU becomes null and void if all action items in items 1-12 (see above) are not completed within the timeframes allowed, and that the result of such failure to complete the required action items is that the movement of Canadian weights would not be allowed on any portion of SR 9;

AGREE to a joint, annual review of the effects of operations on the designated portions of SR 9. Such review may lead to subsequent modifications to any agreements entered into between the parties resulting from this MOU;

AGREE that nothing in this MOU waives applicable registration fees, fuel taxes, operating authority requirements, future legislative or regulatory changes for each of the entities signing;

AGREE that this MOU may be amended by written agreement of all signatories.

IN WITNESS WHEREOF, WSDOT by the Chief Maintenance Engineer of the Field Operations Support Service Center has hereunto set his hand this 24th day of April, 1997.

WSDOT:

David L. Dye
Chief Maintenance Engineer

IN WITNESS WHEREOF, City by the Mayor of the City of Sumas has hereunto set his hand this 31st day of March, 1997.

CITY:

Robert A. Mitchell
Mayor

IN WITNESS WHEREOF, Port by the Director of Properties and Planning has hereunto set his hand this 16th day of April, 1997.

PORT:

William E. Hagar
Director of Properties and Planning