If We Continue To Operate As We Do Now, We Will Continue To Get What We Are Getting!

Rail Freight Service Review Panel

Prepared by
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If We Continue To Operate As We Do Now, We Will Continue To Get What We Are Getting!

The Minister of Transport, Infrastructure and Communities of Canada is reviewing rail freight services to develop recommendations to improve the efficiency and effectiveness of the rail transportation system in Canada. This review is timely given the recent collapse in financial markets and the need to become more competitive in global markets.

Proposal: Cut the Gordian Knot

The NADC proposes that Transport Canada conduct a major overhaul of the entire transportation system in Canada to create a fully integrated system. An interventionist but likely necessary first step is to require railroads to separate into the separate components of operations and rail infrastructure management. Other key actions include large-scale investment into transportation infrastructure and commodity handling facilities and possibly facilitating more non-railroad ownership of rolling stock.

Rationale

Transportation is a vital component of the economic system. Efficient and cost effective rail services are critical for shippers to compete in global markets. This is particularly true for northern shippers as the bulk of northern production is exported from the region.

Ongoing issues of commodity transportation and handling are affecting shipper, regional, Albertan and Canadian reputations. Some producers and processors of our bulk commodities are in dire conditions. Action must be quickly taken by Canada, shippers and the transportation sector to make the system responsive to changing market conditions.

Debate over rail services is not new.[1] For 140 years governments in response to concerns regarding railroad operations have attempted to address public objectives by intervention or as some would term it, meddling in the operation and management of private rail companies. This intervention over time has created a host of regulations and an industry of numerous and various types of inquires and hearings on rail access and services.[2]

It is time to reconsider how we might better achieve our collective objectives. If we continue to operate as we do now, we will continue to get what we are getting!

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[1] Adams, C.F., Speech on behalf of the Massachusetts Board of Railroad Commissioners, made before the Joint Standing Legislative Committee on Railways, February 14, 1873.

[2] Ewins, A. Parties wrestle with transportation issues in court: Transport agency decisions appealed, Stakes are too high to not appeal, says Canadian Wheat Board, The Western Producer, April 15, 2010, p. 38.

Symptoms of an Ineffective Transportation System

Northern Alberta industries, shippers and municipalities have raised the following issues among others about our transportation system:

- The primary concern is the need and desire to be competitive in global markets.
- Transportation costs, the lack of access to cars and containers in a timely and economic manner, delivery schedules, and demurrage charges. Northern plants have experienced financial losses and even closed, partly due to the difficulty in moving product to markets to meet customer demands.
- Significant tonnage of bulk product is moved from the north via truck but in theory trucks should not be cost competitive with rail to move large volumes of bulk products from point to point. The increased truck usage causes concern over highway congestion, safety, maintenance issues and a possible future shortage of truck drivers. Trucking competes with rail but likely serves more as a cap on rail costs and assurance that products will be transported, than being competitive enough to reduce rail prices to shippers.
- An emerging issue is the increased greenhouse gas emissions by trucks compared to lower emissions by rail.
- Inadequate innovation in commodity transportation and handling.
- There is a lack of quality communication and cooperation between the stakeholders.
- Limited competition for rail services reduces the incentive to become efficient and provide good service.

A Key Point

Although the above issues are important, the necessity of upgrading the infrastructure and commodity handling systems is in the long-run more important to shippers and communities than shaving off a few dollars in current transportation costs. In a series of articles (see bibliography) Dieter Helm reviews infrastructure investment: the cost of capital, and regulations.[3] He points out short-sighted rail management practices in other jurisdictions has caused failure in maintaining strong balance sheets of rail operations and a collapse in new investment in rail infrastructure.

A review of various reports on transit times, loading and unloading delays shows that we have an issue regarding inadequate investment in infrastructure and commodity handling facilities not just rail operation concerns. For example northern rail lines have lower capacity limits and hence lower rail speeds and reduced efficiency. There is no point in attempting to attract investment in industry or in regions if you cannot ship your existing products to market in a timely and competitive manner.

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[3] Helm, Dieter, Infrastructure Investment, the cost of capital, and regulation: an assessment, Oxford Review of Economic Policy, Vol. 25, Number 3, 2009, pp 307-326..

Canada is placing a lot of faith in our current transportation structure and respective managers of different components of the system, that its long term interests will not be sacrificed to meet short term objectives. Canada needs to take note of what happened in the different financial sectors and consider potential implications on the transportation system. The last thing we need is an emphasis on increasing dividends to those who may not have any long-term interest regarding the well-being of the Canadian transportation and commodity handling system.

It should be noted that a review of the Annual Reports of CN and CP shows that dividends for 2008 and 2009 compared to those for 2000 ranged from 9.75% decline to a 218% increase. Revenue ranges for the same period increased from 18% to 56%. Gross tonne miles ranged from 1% decline to 18% increase. Increases in net income were reported as ranging from 22% to 102% increases. It was difficult to determine from the Annual Reports the level of reinvestment in rail infrastructure. Transport Canada reports that "In 2008, CNR and Canadian Pacific Railway (CPR) collectively spent $2.4 billion on capital programs for track, signals, sidings, locomotives and railcars."[4] This large amount is still not enough given the demand for improved infrastructure. How should this demand be resolved?

Why did Rail Reach this Level of Criticism?

Chauke and Maluleke identified the following four factors that contributed to the decline of rail internationally:[5]

- Other modes of traffic made changes that made them more competitive;
- Rigid rail and government policies, corporate culture, and structures that are unresponsive do not meet customer needs and opportunities;
- Rail has outdated technology and obsolete rolling stock; and
- A shift away from bulk commodities toward high value products increased the importance of quality, timely delivery and motivation to truck product.

[4] Transport Canada, Transportation in Canada, An Overview, 2008, p.13.

[5] Chauke, S. and Maluleke, J., Separation of Rail Infrastructure Ownership from Operation: Is it a feasible Model for the South Africa Rail Transport Industry?, Proceedings of 24th South African Transport Conference 2005 p. 1007.

The Unresolved Underlying Issue

Although the issues of cost, access, communication, etc. must be addressed, the primary source of these issues is that few policy makers want to grapple with the underlying issue of ownership versus that of management and accountability. Leadership from all sectors is required if we are going to have any semblance of a resolution of long-standing issues.

Basic Principles for Resolution

The following are several recommended principles for resolution of these issues and challenges.

- Market forces should be the primary solution in meeting supply and demand for rail services. Regulations are a poor substitute.
- The existing distortion of market forces is exacerbated by government regulations and initiatives including supporting rail roads' chief competitors - the trucking industry - by building high capacity highways and needs to be addressed.
- Focus on reducing costs to shippers is necessary but this has a limited perspective, as steps must also be taken to increase rail traffic and maintain railroad profitability.
- Splitting operations and rail infrastructure management will make it easier for additional investment. It is difficult for other stakeholders to agree to government grants or increased tariffs to invest in rail infrastructure when rail companies' net income ranges from $600 million to $1.9 billion.
- It would be prudent to monitor potential changes in the United States regarding rail services and develop contingency plans to mitigate any negative impacts.
- Collective strategic discussion and contingency planning and proactive initiatives need to be implemented by Canada and industry that would place Canada in an advantageous position in transportation. There is widespread optimism that the worst of the economic decline is behind us. Maybe not. The United States, our major trading partner still has major financial hurdles to overcome. Much of the optimism is based on the expansion of China and India's economies. If there is another financial meltdown, the Canadian transportation sector needs to be prepared.
- Address regional priorities. It is difficult to develop a single set of policies appropriate for a large country with diverse geography, products and amount of traffic.

Objectives for an Improved Transportation System

Key objectives that should be addressed to improve the system include:

- Increase Canada's competitiveness in global markets by fostering competition in transportation and handling of commodities.
- Implement a national policy on securing a much improved transportation infrastructure and commodity handling system;
- Reward innovative companies that reduce costs to shippers and provide quality service;
- Attract more traffic to rail to increase its productivity. This cannot be done until we address other issues. Increased rail productivity will reduce truck traffic profit but on the other hand, it will reduce highway maintenance costs and congestion, improve safety, address potential shortages in truck drivers and reduce greenhouse gas emissions;
- Reduce Government intervention in arbitrary pricing of transportation services that could be handled by market forces under a competitive environment;
- Address public objectives such as regional and economic development, assurance of safety, and protection of the environment;
- Ensure fair and transparent systems where marketing forces fail through regulation as a last resort not the first; and
- Implement change in a very structured and closely managed and monitored process.

What have Other Jurisdictions and Sectors Done?

Stakeholders should note that the United States also recently reviewed American rail services, rail antitrust legislation as well as changes in rail service regulations. Various attempts have been made in introducing shortline railways and competitive access with limited success. Improved technology in GPS and computer logistic systems have opened new opportunities in rail traffic management options.

A long-term solution can be found by looking at other jurisdictions and sectors. The appendix outlines what has been done in other jurisdictions, examples of experiences in other sectors and the expected outcomes for separation of infrastructure and operations.

There are a number of alternatives in how the division between ownership and management of rail infrastructure and operations can be structured. Experience from other jurisdictions shows that the private sector must play a significant role, while at the same time there are important roles that only government can provide.

Infrastructure separated from rail operations must be managed under regulated asset base legislation. Apart for regions that have existing rail lines in close proximity, there are few if any reasonable opportunities to build new lines to create competition. Putting all infrastructure entirely in the hands of the private sector as a competition inducement may be a mistake as there would be a reduced incentive for the owners to collaborate. On the other hand they should not be entirely owned by the public sector. Rail operators and shippers should be able to have access to all lines with a minimum of difficulty.

Depending on how the management of the rail infrastructure system is structured, there could be built-in incentive for municipalities and shippers due to self interest to work with the line owners and managers of regional rail lines to improve the economic competiveness of the region and attract industry. There would be greater incentive to form regional partnerships to invest in regional lines as well as promoting increased rail traffic.

Under this division, rail operations would be based on market forces with some regulation. For example new entrants should prove that they have the financial and management capability of running rail operations. Shippers would have access to alternative operators who could operate on all lines.

Litigation between shippers and carriers should decrease substantially. Operators with quality service will be rewarded with increased traffic. Any disputes that do occur will be more likely over line tariffs. Tariffs for access to lines would have to be approved to cover the cost of upgrading and maintaining these lines, but at least there would be a better knowledge base and consultation of what that tariff should be. Tariff decisions must be economically sound, fair and transparent. A model for this is the governance of electric power transmission lines as reviewed in the Appendix.

Conclusion

The transportation and commodity handling system must become an enabler and not be a challenge and a barrier. Examining the current system from just the perspective of transporting and handling commodities is too narrow. Canada needs to examine its transportation system from the overall viewpoint on how the existing system affects regions, provinces and the country as a whole. The system must do its part to meet other objectives such as: economic and regional development, improve access to the territories, contribute to the reduction of greenhouse gas emissions, etc. Considerable improvement is required to meet these objectives. Canada can benefit by looking at the experience of other jurisdictions, but Canada is unique and must develop its own solutions.

It might be possible to improve communication between stakeholders and under the threat of further regulation, persuasion or other means attempt to get shippers and carriers to resolve transportation issues. However, there is not a lot of satisfaction with the existing system. In reality, there appears to be no end in sight of ongoing disputes.

In conclusion, either stakeholders must immediately make progress in resolving these disputes with some modification to current regulations which is likely to have limited or no success or else we need to make significant changes including the division of rail infrastructure and operations and increase investment in infrastructure. How long will we continue to have the capacity to make these changes before we are in a crisis and cannot react?

Appendix

Ownership Alternatives

The ownership and management of railroads has alternated between nationalization and privatization of railroads. Both approaches have their advantages and faults. Only relatively recently have jurisdictions looked at alternatives such as splitting infrastructure management from operations.

Following is a brief literature review on the application of this concept. Other literature reviews on ownership alternatives state there is no consensus on the optimum structure for the railway industry. While open access is common, the separation of infrastructure and rail operations is limited to railways in Europe, long distance freight in Australia and some developing countries[6]. However there is some support for separation of infrastructure and operations for freight-based railways.[7]

It should be noted that there is constant change in how railroads are managed and changes may have occurred since referenced documents and related studies have been released. Secondly, there are wide differences between jurisdictions in the nature of traffic (freight, passenger and mixed) geography, amount of traffic, haul distances and weather. There are also other policy objectives such as increased unification of Europe that has an impact on transportation policies.

In spite of these concerns on the examples in other countries, a literature review helps to identify issues to be addressed to achieve success. In the end, Canada will have to develop its own solution given the size of the country, the diversity of its geography, products and traffic levels.

Examples from Other Jurisdictions

European Union

The European Union has directed increased competition by increasing open access. There are still many differences between countries including state owned monopolies and other combinations of ownership of infrastructure and operations. For example German infrastructure management is under a single holding company with different operators. Open access for example in Germany has grown slowly on the other hand there has not been any obvious costs of the restructuring[8].

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[6] Drew, Jeremy, Rail Freight: The Benefits and Costs of Vertical Separation and Open Access, p1.

[7] Drew, p 2

[8] Drew, p 13.

Applying European railroad operations to Canada has its limitations as Europe has a major emphasis on passenger traffic and the unification of Europe. Mixing passenger and freight complicates coordinating movement of trains (although for most regions in Canada this should not be a problem given the low levels of traffic on most lines). In much of Europe, haul distances are shorter and there is a higher density of trains per mile of track.

<u>Sweden and other countries</u>

Sweden's experience may be more relevant to Canada than Europe. Sweden has less complex rail traffic logistics and weaker truck competition.[9] Sweden separated infrastructure from operations in 1988 but maintained public ownership of infrastructure. Access was opened to operators on payment of an annual and a distance-based access charge. [10]

The problem with Sweden's approach is it neglected to involve private enterprise in infrastructure ownership and decision making. This led to political rather than economic based investment in priority infrastructure needs. There may be too many operators to achieve economies of scale.[11] However in a market driven system mergers and acquisitions should achieve levels of economies of scale as well as still having a competitive based system. Shippers will enjoy lower prices until mergers occur and prices rise,. Eventually there will be a balance where economies of scale can be achieved but prices will not be so high as to encourage new operators to enter the market. Sweden is an example where both public and private sectors need to be involved. Other countries with a similar structure to Sweden's are Norway, Spain and the Netherlands.

<u>Britain</u>

Britain has privatized both operations and infrastructure. Initially there was some consideration in not separating congested rail routes but full separation was approved. Over 100 separate organizations were created. Passenger service provided 80% of the revenue and was regarded more politically important than freight and did not receive subsidies. It was not considered necessary to involve the public to determine what freight services it required. Over twenty train operating companies have contracts to operate on certain routes for a predetermined time.

The primary lesson of Britain's experience is to properly consult and plan before implementation. There were a number of problems with their approach including: the failure to ensure adequate reinvestment into infrastructure, too many organizations fragmenting

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[9] Drew p. 4.

[10] The Scottish Government, International Comparisons of Rail Networks and Policy Lessons for Scotland, Chapter Five: Government, Funding, Procurement and Regulation p.6

[11] Drew, pp 5-7.

the industry, poor contacts setting up the structure, potential discrimination against freight in favour of passenger trains, and some freight operations were not sufficiently profitable. However in a 2004 review of rail services, the freight industry ended up opposing the idea of combining infrastructure and freight operations. In spite of the problems the volume of rail freight grew in comparison to truck traffic.[12]

New Zealand
The New Zealand privatised a fully integrated national railway. A takeover of the private line occurred when the line reached near bankruptcy with huge maintenance backlogs on the condition that the federal government took over infrastructure, Government has become more active in its current objectives of enhancing rail's contribution to economic development, maintaining and developing passenger services and optimizing the use of rail by encouraging reduced truck traffic.[13]

Examples from Other Sectors

Alberta Electric Power Generation and Competition

In Alberta, the generation of electric power is competitive and has been encouraged through deregulation. Electric power companies were required to divide infrastructure and operations. This has resulted in numerous proposals by companies to build wind-powered electric-power generation sites. In addition to wind power alternatives, Alberta now has solar, geothermal, biofuel, syngas, nuclear and hydro options. This abundance of potential electric power capacity is a result of allowing market forces do what they do best which is to develop ideas, raise funds and be creative in solving problems.

The transmission and distribution lines however are regulated as there are limited opportunities for competition and it would be inefficient to have redundant competing transmission power lines. Tariffs are identified to cover the cost of building and operating these lines. Consumer costs are still high but should drop with increased competition of power generation options and increased scrutiny of transmission costs.

Alberta Telecommunications

At one time Alberta was served by Alberta Government Telephones. This Crown Corporation was privatized and now a number of companies provide services and infrastructure. For a period of time there were concerns about the lack of access to reasonably-priced high-capacity internet access. The Alberta Government took proactive

[12] Drew, pp 8-14.

[13] The Scottish Government, International Comparisons of Rail Networks and Policy Lessons for Scotland, Chapter Five: Government, Funding, Procurement and Regulation p.1

leadership in building the Alberta SuperNet to foster access to the Internet. Now even many of the rural areas have access to competitive companies that provide high capacity internet systems at a reasonable price.

Best Practices and Results

- Separation of infrastructure and operations is possible but it is important to learn from the mistakes of others.
- Proper consultation and planning is a key to success..
- Under open access policy, it is problematic to allow an operator providing rail services to retain control of the infrastructure as there will be complaints of discrimination.
  - To offset this, regulation is needed to prevent abuse, but abuse needs to be proved which itself results in increased litigation.
  - It is difficult to award remedies that are fair and that would be equivalent to market forces. Negotiation of terms is more effective than litigation[14].
  - Furthermore it is difficult for litigation to determine what contribution the entering railway should pay the host for upkeep of the line. Access to an independent line with established and transparent tariffs would avoid the need for intrusive regulation and interference in rail operations and litigation will be reduced.
- Under separation policies, market forces will occur if there is competition. Some regulation will be required such as required service levels and prevention of cherry picking the most lucrative contracts[15]. The need for regulation and litigation will be reduced.
- Access to alternative routes would make better use of exiting infrastructure and increase efficiency.
- If private ownership of infrastructure is different from private operation of the line then contracts and regulations are required to ensure adequate investment[16].
- Implementation must be monitored including ensuring safe operations and sound economic/accounting practices for both operations and infrastructure.
- Public policy and initiatives would be able focus on strategic planning and developing needed infrastructure in collaboration with the other stakeholders.

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[14] Helm, Railway Reform 11-12

[15] The Scotland Government, p.6.

[16] Helm 14

Bibligraphy

Adams, C.F. Jr. (1873, February 14) The regulation of all railroads through the state-ownership of one, speech on behalf of Mass. Board of Railroad Commissioners made before the Joint Standing Legislative Committee on Railways, Boston, James R. Osgood and Company http://books.google.ca/books?id=QY0pAAAAYAAJ&printsec=frontcover&dq=%22The+Regulation+of+all+railroads+through+the+state-ownership+of+one%22&source=bl&ots=SbNxIsM9zB&sig=X36Om50YvmCf5AmB8dJMHK7t_Do#v=onepage&q=&f=false

Alexander, R. Rep. (2009, May 19) Testimony, Railroad Antitrust Enforcement Act of 2009 H.R. 233, Judiciary Committee, Subcommittee on Courts and Competition Policy, http://judiciary.house.gov/hearings/pdf/Alexander090519.pdf

American Chemistry Council. Freight railroad policy issue brief—Freight rail competition http://www.americanchemistry.com/s_acc/sec_article_acc.asp?CID=634&DID=10022

American Chemistry Council. Freight railroad policy: Senate Reform Bill takes important step toward fixing nation's freight rail system http://www.americanchemistry.com/s_acc/sec_news_article.asp?CID=206&DID=10545

American Chemistry Council. Freight railroad policy peform, http://www.americanchemistry.com/s_acc/sec_mediakits.asp?CID=634&DID=2463

Association of American Railroads. (2008, July) Railroad re-regulation is way off track: GH.R. 2125/ s. 953 would deny rrs billions of dollars each year, www.aar.org,

Association of American Railroads. (2009, May) Shipper leverage over freight railroads. www.aar.org News and Events

Association of American Railroads. (2009, June) Working together: public-private partnerships, www.aar.org, News and Events

Association of American Railroads. The Staggers Act: balanced regulation that works, www.aar.org News and Events June 2009

Association of American Railroads. (2009, September) The impact of The Staggers Rail Act of 1980, www.aar.org, News and Events

Boardman, A. E., Laurin, C., Moore, M. A.and Vining, A. R. (2009, March) A cost benefit analysis of the privatization of Canadian National Railway, *Project MUSE, The John Hopkins University Press, Vol. 35,* Number 1, http://muse.jhu.edu/journals/cadian+policy/v035/35.1boardman.html or http://muse.jhu.edu/journals/canadian_public_policy/v035/35.1.boardman.pdf

Carlson, J. L. (2004) The institutional aspects of competitive access in the Western Canadian Rail System, http://library2.usask.catheses/available/etd_01232005-130037/

Chauke, S. and Maluleke, J. Separation of rail infrastructure ownership from operation: is it a feasible model for the South Africa Rail transport industry? http://repository.up.ac.za/upspace/bitstream/2263/7791/1/121.pdf

Chong, M. D. MP, Chair, Report of the Standing Committee on Industry, Science and Technology. (2009, June) A study of the crisis faced by certain industrial sectors in Canada

City of Medicine Hat. (2000, November18) Submission to the Canada Transportation Act Review Panel, Challenges facing captive rail market communities http://www.reviewcta-examenltc.gc.ca/Submissions-Soumissions/Txt/Medicine%20Hat%20

Conference Board of Canada. (2009, June) The productivity performance of Canada's transportation sector: market forces and governance matter, energy, environment and transportation policy

Conference Board of Canada. (2003, May) curbed enthusiasm for electricity reform

Consumers United for Rail Equity (CURE). Key legislation http://www.railcure.org/legislation/key_bill.asp

Consumers United for Rail Equity (CURE). Small businesses, farmers bear burden of railroad's monopoly practices http://www.railcure.org/media/small_businesses_05_01_08.asp

Consumers United for Rail Equity (CURE). (2007, December 19) How legislation supported by cure would increase rail customer access to competition http://www.railcure.org/pdf/VanDoc_230449.pdf

Cowie, J. (1999,September) The Technical Efficiency of Public and Private Ownership in the Rail Industry: The Case of Swiss Private Railways, *Journal of Transport Economics and Policy, Vol. 33, Part 3,* 241-52 www.bath.ac.uk/e-journals/jtep/pdf/volume_33Part_3_241-251.pdf

Drew, J. (2001) Railway reform, regulation of freight transport markets, European Conference of Ministers of Transport, www.jeremydrew.net

Drew, J. (2006) Rail Freight: The benefits and costs of vertical separation and open access www.jeremydrew.net

English, G. (2007, October 23) National Rural Electric Cooperative Association, Testimony before the Senate Commerce, Science and Transportation Committee, Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety and Security: Railway Regulation http://nreca.org/Documents/PublicPolicy/EnglishTestimony10-23-07.pdf

Enns, A. NRG Research Group. Shippers survey http://www.nrgresearchgroup.com/reports/rail/Transport_Canada_Shipper_Report_Nov_30E.pdf

Enns, A., NRG Research Group. Other logistics operators survey http://www.nrgresearchgroup.com/newsroom/Transport_Canada_Other_Stakeholder_Report_English.pdf.pdf

Ewins, A. (2010, April 15) Parties wrestle with transportation issues in court: Transport agency decisions appealed/Stakes too high not to appeal, says Canadian Wheat Board, The Western Producer www.producer.com.

Farm West Holdings Inc., Submission http://www.tc.gc.ca/policy/acg/rfs-review-examen-sfm/submissions-soumissions/006-farrmwestholdings-eng.doc

Federal Network Agency. (2007, November26) Objection to conditions of use for freight terminals, www.bundesnetzagentur.de/enid press releases

Forage Exporters in Western Canada http://www.tc.gc.ca/policy/acg/rfs-review-examen-sfm/submissions-soumissions/014-greenprairieinternational-eng.pdf

Fulton, M., and Gray, R. S. (1998, October) The Provision of rail service: the impact of competition, *Policy Issues Paper* No. 7 http://ageconsearch.umn.edu/bitstream/29164/1/pip07.pdf

GTS Group International. (2008) Alberta regional transportation competitive analysis

Graw, D Submission to Rail Freight Panel

Helm, D., and Jenkinson, T. The assessment: introducing competition into regulated industries *Oxford Review of Economic Policy, Vol. 13*, No.1

Helm, D.(2009, November) Infrastructure investment, the cost of capital and regulation: an assessment, *Oxford Review of Economic Policy, Vol. 25,* No.3, pp 307-326 http://www.dieterhelm.co.uk/sites/default/files/Oxrep%20Infrastructure%20Dec09.pdf,

Helm, D. (2009, November) the evolution of infrastructure and utility ownership and its implications, Oxford Review of Economic Policy, Vol. 25, No.3, pp 411-434. http://www.dieterhelm.co.uk/sites/default/files/Oxrep%20evolution%20infra%20Dec09.pdf

Hemmer, J.M. Union Pacific Railroad Company. (2009, May) Testimony, Railroad Antitrust Enforcement Act of 2009 H.R. 233, Judiciary Committee, Subcommittee on Courts and Competition Policy http://judiciary.house.gov/hearings/pdf/Hemmer090519.pdf

Kinnaird, j. Railroad re-regulation won't work, National Grain Trade Council, www.tegma.org/documents/S.919%20Talking%20Points.pdf

Lemay Farms Inc. Submission to Rail Freight Panel

Lesser Slave Lake Economic Alliance, Submission to Rail Freight Panel

Mulvey, Commissioner F.,Surface Transportation Board. (2007,September 20) Testimony, Before the U.S. House of Representatives Committee on Transportation and Infrastructure Hearing

National Surface Transportation Policy and Revenue Study Commission. (2007, December) Report of the National Surface Transportation Policy and Revenue Study Commission Transportation For Tomorrow http://transportationfortomorrow.org/final_report/

Omineca Beetle Action Coalition, Submission to Rail Freight Panel.

Pittman, R., Antitrust Division, Washington, D.C., Vertical Restructuring of the Infrastructure Sectors of Transition Economies

Poirier, M., Moore, R. and Hemmes, M. - QGI Consulting *Analysis of Railway Transit Time and Fulfillment of Shipper Demand* -http://www.tc.gc.ca/policy/acg/rfs-review-examen-sfm/cnslt-eng.htm

Poirier, M. Moore, R., and Hemmes, M. - QGI Consulting
Description of Canada's Rail Based Freight Logistics System – http://www.qgiconsulting.com/pdf/RailBasedFreightLogisticsSystemDescription.pdf

Poirier, M., Moore, R. and Hemmes, M., - QGI Consulting *Analysis of Operating Practices* http://www.qgiconsulting.com/pdf/AnalysisofOperatingPractices.pdf

Producer Car Shippers of Canada, Letter to MP's and MLA's http://www.pcsofcan.ca/letter_to_mps_and_mlas.html

Producer Car Shippers of Canada, The truth about trucking incentives http://www.pcsofcan.ca/truth_about_trucking_incentives.html

RGL Forensics (2008, July) Competition in the UK water industry, *Infrastructure Journal* http://www.rgl.com/pubs/xprPubDetail.aspx?xpST=PubDetail&pub+9

Schulman, J. CPCS Transcom Ltd.*Service Issues in Regulated Industries other than Canadian Rail Industry* http://www.cpcstrans.com/projects/CPCS%20Rail%20Review%20ENG.pdf

Sexsmith Co-operative Seed Cleaning Plant, Submission to Rail Freight Panel

Spirit River No. 133, Municipal District, submission to Rail Freight Panel

Tellier, P. M. How many rail shippers are really captive?, http://findarticles.com/p/articles/mi_mi1215/is_5_201/ai_62744997/

The Scottish Government, International Comparisons of Rail Networks and Policy Lessons for Scotland, Chapter Five: Government, Funding, Procurement and Regulation, www.scotland.gov.uk/Publications/2007/07/06155639/6

Thompson Hine, Transportation update: STB to re-examine its rail competition policies http://www.thompsonhine.com/publications/publications1780.html

Till, T.A., Colledge, D.D., Whitney, P.D. (2008, July) Impacts and implications of U.S. trends in trade and transportation for Transport Canada, Prepared for Strategic Policy Directorate, Policy Group, Transport Canada

Town of High Level, Submission to Rail Freight Panel

Transport Canada. (2008) Transportation in Canada: An overview