

Building North America

NORTH AMERICAN TRANSPORTATION COMPETITIVENESS RESEARCH COUNCIL



WORKING PAPERS

Review of Recent Reports on North American Transportation Infrastructure
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Executive Summary

This report analyses a dozen reports from knowledgeable groups on the infrastructure of NAFTA countries from 2003 onwards. Admittedly, the selection range of the last four years is too recent to capture the full amplitude of a discussion that has been going on for at least two decades with respect to the infrastructure capacity and under-funding issues. The current TEA arrangements in the US emerged from those discussions. The point of this review is to see how much if anything has changed since the TEA funding. The selection of groups also deserves some explanation, for the sample is neither random nor representative of all stakeholders. Instead, the referenced reports are those of a number of think tanks and industry advocates who are relatively frequent contributors to public policy debates from an evidence-based rather than ideological standpoint—organizations such as RAND, Brookings and so forth, along with government departments and industry advocates..

These reports sound an alarm about the deterioration of national freight transportation systems in each of the NAFTA countries and underline the potential growth and competitiveness limiting impact of that deterioration. The occurrence of two infrastructure collapse events (in Montreal and Minneapolis) after the work on this report was completed suggest that the world “alarm” is no exaggeration. The purpose of this report is to review and compare these reports as a basis for further research and comprehensive policy response. (The 12 reports are listed at the end of this report, and will be referred to throughout this review by a short title and list number) Taken together, they show a striking unanimity on a central point:

The North American freight transportation system (FTS) has failed to cover its maintenance and improvement costs and therefore faces imminent risk of being overwhelmed by global supply chains. Upgrading and adapting the system will add one way or another to the NAFTA transportation bill.

The outstanding question is how the costs will be met— spread across increased freight flows or, less desirably, through increased delays, system breakdowns and ultimately lower productivity and living standards. Additionally, the failure to cover maintenance and improvement costs ensures that the system will fail to adapt dynamically to a changing marketplace while the lack of any integrated management system will guarantee lack of system coordination.

Immediate bottom line: The JIT –lean inventory advanced manufacturing system developed since the 1970s that enables North America to compete successfully with Asian and European manufacturers is now reaching its capacity limits. The supporting transportation infrastructure is now inadequate to handle the projected volume growth of North American supply chains freight flows. Longer term: the system is incapable of improving without substantial changes in governance. The studies are almost unanimous in calling for a management approach that is far better at dealing with the system’s interdependencies, far more attentive to covering costs, and far more flexible and open to innovation. But whether taken together or separately, the studies fail to specify a clear course for going forward. There remain many gaps in our understanding of the problem and only a limited understanding of the array of possible solutions.

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The Review

Reports from knowledgeable watchdog groups from 2003 onwards have sounded the alarm about the deterioration of national freight transportation systems in each of the NAFTA countries and underlined its potential growth and competitiveness limiting impact. The purpose of this report is to review and compare a number of these reports as a basis for further research and comprehensive policy response. The reports included in this review (see List of Reports at the end of this document) were drawn from the websites of typical interveners in public policy debates. Sources include business organizations, government departments, and independent think tanks of high reputation, for a total of 12 reports. Admittedly, the selection range of the last four years is too recent to capture the full amplitude of a discussion that has been going on for at least two decades with respect to the infrastructure capacity and under-funding issues. The current TEA arrangements in the US emerged from those discussions. The point of this review is to see how much if anything has changed since the TEA funding.

Four Years of Warnings about NAFTA Freight Transportation Networks

“The US is now in a situation where its ports and inter modal terminals can no longer build their way out of capacity problems”. (US Chamber of Commerce, Ref 8)

“Capacity is overwhelmed by supply chains, disruptions are increasing, the system is “brittle” with growing risk of continent wide economic damage.” (Rand Corporation, Ref 11)

The warning light is flashing...there is no slack in the system” (ITI White Paper, Ref 7)

The US needs a systems-based and multi-modal agenda for the nation’s freight needs...” (The Brookings Institution, Ref 3)

“Mexico is at the crossroads between stagnation and advancement. Its future in advanced manufacturing depends on its addressing such issues as privatization, regulatory frameworks, inter-modal transport and security (American Chamber of Commerce (Mexico Ref 1))

Canada’s transportation network in all provinces and territories needs upgrading, modernization and improved regulation, including \$97Billion in new construction (Council of the Federation (representing Canada’s 10 provinces and 3 territories, Ref 4.)

System Management: The Key

While all reports focus on the demands global trade puts on capacity and the “disconnect” between global gateways and national distribution systems, only three emphasize new capacity construction. For the great majority of observers, the problem to overcome is the failure of each of the NAFTA countries to work out a system of governance and management that meets the

requirements of a sophisticated inter-modal transportation system. (Chart: High Level Thematic Analysis)

Chart: High Level Thematic Analysis of the Reports Under Review

-----Thematic Emphasis-----

Report	Date	System Funding	System Management	New Capacity construction	NAFTA (i.e. Integrated Continental Approach)
US DOT Policy Architecture(ref 12)	Nov 2000		X	X	
US Chamber NTS Strategic Overview (ref 8)	March 03	X	X		
American Chamber, Mexico, (ref 1)	June 04	X	X	X	X (from standpoint of Mexico's location)
ITI White Paper (ref 7)	Sep 04		X		
CSIS-Fraser (Ref 5)	May 05		X (Security)		
Council of Federation(Canada) Transport Policy (Ref 4)	Dec 05	X	X		X (from Standpoint of a NAFTA trading partner)
Elgar: Rodriguez et al Book Chapter Global Production (Ref 6)	"forthcoming"		X (description)		
Brookings (Ref 3)	Jan 06		X		
BNSF (ref 2)	Oct 06	X		X	
National Chamber Foundation & National Academy Highway & Transit Financing (Ref s 9,10)	Nov-05-Dec 06	X			
RAND (Ref 11)	2007		X	X	
Total	12	5	9	4	2

Indeed, warnings that a new approach to transportation management was needed began to emerge in the US three years before reports of imminent freight system failure began to roll in. In 2000, the US Department of Transportation (DOT) reported on a "Policy Architecture for the 21st Century" (ref 12). In that study, the agency set out to define "a new decision-making framework for meeting the challenges of the 21st century". These challenges included (a) dealing with a mandate expansion from movement of goods and people to improvement of quality of life, (b) the shifting burden of regulatory responsibility downwards from federal to state and local and private jurisdictions and (c) an expansion of input from an enlarged range of stakeholders and issues. The calendar of issues had moved from transportation safety and security to dealing with congestion and just-in-time challenges to such environmental concerns

as air quality, energy use, urban sprawl and universal access issues especially concerning the elderly and the handicapped.

Meeting the challenges, concluded the DOT, would require a decision architecture that respected down five core principles: taking a “holistic” approach, promoting collaboration and consensus, flexibility and adaptability (especially in relation to funding), informed and transparent decision-making, and innovation, including the promotion of “intelligent transportation systems” and “congestion pricing” mechanisms. Outcomes would have to attain “super-optimality” reconciling environmental sustainability and economic development and regional and sub-regional consensus. Organizational structures and decision-making processes would have to become more responsive and transparent.

Over the intervening seven years, study after study of the US national freight system zeroed in on the same question of system management, a subject that has become if anything more intense after the events of 9-11 2001. As the second theme analysis box shows, of the nine studies that emphasized system management, seven specifically addressed decision-making, and five included points about system governance.

The US Chamber of Commerce

The US Chamber of Commerce, through its National Chamber Foundation, forecast in its March 2003 study (Ref 8) that US trade would double between 2003 and 2007 and that only an aggressive program of improvement would enable US ports to keep up with demand, a problem that could only be solved by doing “more, faster, cheaper with fewer resources than ever before.” Ports, the study points out, “are gate keepers for the entire supply chain”. It warned: “allowing one part of the system to break down would cripple more than one quarter of the national economy”. Currently, the report warned,

“The inter-modal system is merely an aggregation of multiple private and public modes, each of which is stovepiped within its own individual areas of activity. That is, each mode has a vertically integrated information system; vertically integrated information system; vertically integrated planning, development and management programs; and vertically integrated funding mechanisms with minimal cross-talk between modes.”

Meeting the challenge posed by the increased US opening to global trade requires a national freight program, comprising a national inter-modal planning and development initiative, led by the US DOT and advised by a Federal Freight Advisory Committee, a coherent environmental regulatory process, and the integration of labor into a national policy.

Inter-Modal Transportation Institute

The report by the Denver-based Inter-modal Transportation Institute (September 2004, Ref 7) stated that in the language of the report on 9-11 (ref) the national freight system was suffering from a “failure of imagination” traceable to “governance problems” and “system dysfunction”, one indication of which was that energy policy and transportation policy were “formed in separate vacuums”. Will the transportation crisis, it asked, be a surprise or just “a failure to monitor, capture and analyze the relevant information”?.

Brooking Institution

The Brookings Institution, in a report released in January 2006 (Ref 3), found that the US needs “a systems-based multi-modal agenda for the nation’s freight needs involving regional coordination, public private partnerships and federal funding “ that recognized the importance of the FTS in maintaining US competitiveness and well-being. In a chart (reproduced below), Brookings found that FTS regulation and policy involved more than xx federal agencies as well hundreds more at the level of states and major port cities. Federal agencies, it found, still regulated in single mode silos, although some funding instruments (TIFEA and SAFETEA-LU) created inter-modal project facilitation teams. Tackling the freight transportation system effectively would require a systems approach to organization and funding, meaningful cooperation among public agencies on a freight agenda, and among public agencies and freight operators. Echoing the earlier DOT study, the Institution urged the adoption of a systems approach, innovative funding, the building and rewarding of effective multi-agency relationships, the encouragement and rewarding of private sector involvement and enhanced outreach and public education.

Figure 2. The Roles of Public Agencies in the U.S. Freight System

* = Role X = Role at some organizations

Agency	Infrastructure Development, Operation or Maintenance					Regulatory and Oversight					System Planning					Funding				
	R	T	A	O	W	R	T	A	O	W	R	T	A	O	W	R	T	A	O	W
Federal						*	*	*	*	*										
U.S. Treasury/ U.S. Customs						*	*	*	*	*										
Federal Highway Administration	*	*				*					*					*	*			
Federal Aviation Administration			*			*						*						*		
Maritime Administration											*	*	*	*						
Federal Railroad Administration	*					*					*					*				
Motor Carrier Safety Administration						*														
Economic Development Administration		*			*											*				*
Transportation Security Administration						*	*	*	*											
Army Corps of Engineers				*					*					*						*
Surface Transportation Board						*														
State																				
State Departments of Transportation	*	*	X	X		*	*	X	X		*	*	X	X		*	*	X	X	
State Economic Development Agencies																				*
Regional and Multi																				
Port and Airport Authorities	*	*	*	*	X	*	*	*	*	X	*	*	*	*	*	*	*	*	*	*
Metropolitan Planning Organizations											*	*	*	*	*	*	*	*	*	*
Local																				
Local and Municipal Governments	X	*	X	X		*	*	X	X	*	X	X	X	X	X	*	X	X	X	*

R – Railroads
T – Trucking
A – Air Cargo
O – Ocean/Waterborne Cargo
W – Warehousing

The RAND Corporation

The RAND Corporation, in a report on an experts workshop that included Canadian participation (Ref 11), echoed the findings of the Brookings study, from both US and Canadian perspectives. It drew attention to the physical, contractual and regulatory constraints of free movement of freight in North America. Classifying constraints by duration, frequency and effect, it listed these impediments: *intermittent physical constraints* arising from local weather and accidents, *intermittent non-physical constraints* arising from increased security inspections, supply chain management errors, and short-term labor shortages, *chronic constraints* that imposed costs on the system as a whole, for example the physical capacity of inter-modal transport, and *catastrophic constraints* that could shut the system down such as natural disasters or a terrorist attack.

In the face of risks posed by these constraints to the degradation of the economy and its competitiveness, an agenda for change was urgently needed: phase one would focus on increasing the efficient use of current assets; phase 2 would require a unified vision, a consistent framework for evaluating alternatives, greater use of public-private partnerships (PPP). This in turn would require “policymakers... understand the source of the current market’s apparent failure to provide adequate private investment in freight transportation.” Short term measures that generated increasing success would “demonstrate the importance of collective action and build support for common interests in freight system planning.”

Report Insight: How Uncertainty Impedes Private Investment

RAND workshop participants named an expanding list of chronic constraints on NFS performance. These included: lack of integration in the rail system, mainline carriers rate structures that maximized company revenues rather than system-wide value, contractual arrangements between shippers and carriers that impeded flexible adjustment to port delays, shortages of inter-modal transfer capacity in ports, and significant congestion at border crossing points. New railroad capacity building at Pacific ports was being achieved by degrading rail system performance elsewhere. Uncertainties caused by the still low carrier profit margins and lack of clarity about future regulation, environmental and security requirements inhibited new investment. The system would not be improved as new, higher volume cargo vessels now coming into use lower shipping costs and --because of their larger volume -- could use only a subset of ports, i.e. those with sufficient draft. As vulnerabilities increased, so too did risk of a catastrophic shutdown of the whole system or some significant parts. This was doubly dangerous as there has been no new policy development for re-starting the system after such an event.

Canadian Views

In addition to including some Canadians participants in the workshop, The RAND study included an expression of views by the Canadian CG in Los Angeles. His remarks followed the same general lines of reasoning as the report itself, with an overall emphasis on taking a comprehensive approach to freight transportation issues. His remarks also emphasized some well-worked Canadian themes, such as drawing attention to the close trading relationship and the high volume of two-way trade under NAFTA , much of it supporting collaborative cross-border manufacture based on just-in-time production and lean inventories. He also underlined the growing importance of trans-Pacific trade and pointed out that Canadian ports on both coasts

received significant spill-over of US-destined cargoes from congested ports in the US. Mentioning some of the geographic advantages offered by British Columbia, especially Vancouver and the new Pacific Gateway at Prince Rupert, over ports to the south, he indicated that new Canadian port capacity would add considerably to the North American ports system and held out the prospect of short sea shipping as a means of relieving stress on the roads and reducing congestion. He stressed the need to develop transportation policies that took account of the needs of all stakeholders, including municipalities, and the need to coordinate and streamline security measures under the Smart Border Initiative. He concluded by stating that the Harper government was particularly keen to maintain good economic relations with the US.

Canadian Council of the Federation

The Canadian Transportation Policy set out by the Council of the Federation (made up of Canada's provinces and territories) in December 2005 (Ref 4) departed from the "impending crisis" tone of US reports and proposed a national transportation strategy along broad lines that urged (unsurprisingly) "a new federal-provincial funding partnership" as part of a modernized policy framework. (Roads and transportation infrastructure are primarily provincial responsibilities under the Canadian constitution). Recommendations covered all modes and all regions and included proposals for air and ports as well as rail and highway networks. Total funding requirement for upgrading the system was estimated at C\$97 Billion of which \$32.8 billion was covered by fuel taxes, leaving a C\$64.2 Billion shortfall. The report also called for improved capital access for ports, a reduction in the tax and fee out-take on air services, increased access to foreign capital for airlines and increased rights of cabotage for foreign carriers, more attention to necessary services for polar air and northwest passage maritime operations. To be sure, the provinces are simply calling for more federal funding without attention to the changing economic balance in the country as a whole. But federal funding exists because of these issues as well as the unwillingness of the provinces to invest in long term infrastructure where benefits accrue outside of provinces. These are fundamental issues for resolution.

American Chamber of Commerce: Monterrey Mexico

This study (Ref 1), the only report in the selection that discussed Mexico at length, was based on interviews with transportation industry and government officials in selected northern cities and the federal district. Acknowledging advances made since NAFTA, the report nevertheless sounded some serious warnings about the Mexican freight system which, it concluded, was still below the performance standard required to support advanced manufacturing. Particular problems were identified at the level of system design, i.e. the regulatory framework, concession design and oversight, and lack of coherent strategy for defining public and private sector roles. Operational issues included the low level of cargo containerization, excessive bureaucracy and documentation requirements, failure to participate in US security programs such as C-TPAT and CSI and legal issues. LTL trucking was plagued by low efficiency and high costs, poor infrastructure and high rates of theft. Mexico was at the crossroads between stagnation and advancement and needed to take the measures necessary to put in place a more competitive transportation system.

Specific Topics—Security

Although all reports mentioned the heightened terrorist threat to security since 9-11-2001 and the procedural responses to them, these generally paled in comparison to threats posed by system overload. One report, however, by Joel Webber, and published in May, 2005, by the Fraser Institute and the Center for Strategic and International Studies (Ref 5), took on the challenge of providing a system-level approach to improving security of the North American FTS. To deal with the threat posed by containerization—“the Trojan horse of the 21st Century”—Webber set out a “network centric” FTS security design that urged three important changes in place of current approaches: (1) to move to promoting freight flow rather than focusing on “stop and search” (“freight at rest is freight at risk”), (2) pooling supply chain and security expertise in a private/public sector consortium to oversee system operations and (3) to using commercial security incentives rather than compulsion to promote compliance. Key to establishing and maintaining secure freight flow is the construction of an integrated data network that corresponds to the scattered and constantly moving physical network that comprises the North American supply chain. Shared protocols and network standards implemented by the consortium would enable businesses who now follow their cargoes through every stage of the supply chain to create and/or participate in a global supply chain network —“just as a small local bank can become part of the worldwide interactive banking system by buying the appropriate technology and implementing standardized security measures to protect the valuable information that flows over the system.” The “thick” information required by the system would integrate many of the items already monitored by scattered and separate systems, such as

- Perimeter and related physical security;
- IT integrity and cyber risks;
- Employee and visitor access controls;
- Potential compromise of raw materials, packaging, and products;
- Background checks on drivers and all other employees with access; and
- Organizational connections to police, fire, and other first responders, as well as to all pertinent national security and border agencies.

This network centric security system would complement, not replace, other programs such as VACIS (Vehicle and Cargo Inspection System) already operating at border points. Rather, it would complement them and free up resources for reinforcing weak points and inspecting more thoroughly freight flows that were outside the system. Despite the many advantages of such a system, however, its implementation without coherent government leadership at the Canada-US level is unlikely and even with the necessary leadership would be a “non-trivial” task. But the current state of business practice and technology is adequate, argues Webber, concluding “Whether we opt for the stop-and-search model or the network-centric one has important implications for both our physical safety and economic stability. The sooner we decide on one over the other, the greater our ability to protect ourselves against possible asymmetric threats hidden within our freight system will be.” As one reviewer of an earlier version of this paper notes, the preoccupation with security has almost totally diverted attention away from the transport infrastructure capacity issues and probably put back border efficiency by at least ten years. A serious question is how great an effort will be required to return the deficiencies in border infrastructure onto the policy agenda..

Specific Topics—Innovative Finance

The US Chamber, National Chamber Foundation, also prepared a report on short term financing solutions to improve the revenue flow for highway system upgrading (Ref 9). For the decades between 2005 and 2015, even with the reauthorization of the Transport Equity Act for the 21st Century (TEA-21) the report forecast revenues necessary for highway maintenance under current rules would exceed availability by \$20 Billion a year. The shortfall for innovations over the same period would amount to \$43 Billion annually for a grand total highway funding shortfall of \$1.0 Trillion. The report recommended indexing the federal motor fuel tax, eliminating current Highway Trust Fund (HTF) user fee exemptions and recapturing interest earnings on HTF balances to bring in \$22B annually. It further recommended additional tolling (\$12B), specified tax-exempt federal bonds for highway improvement under TIFIA (Transportation Infrastructure Finance and Improvement Act), dedicating a portion of customs duties (5-10%) and investment tax credits for equity investors in freight-related capital improvements. The full table of instruments and rationales is reproduced below.

Options to Close Funding Gap	Potential to Close Federal Share of Funding Gap 2005-2015	Potential to Close Non-Federal Share of Funding Gap 2005-2015	Comments
Federal Revenue Options to Increase Highway Trust Fund Revenues			
Index Federal fuel taxes starting in 2005	\$62 billion		Index fuel tax rates to CPI starting in 2005
Index Federal fuel taxes retroactive to 1993	\$21 billion		Would result in 6.2 cent gas tax increase in 2005 with indexing to CPI thereafter
Eliminate HTF exemptions	\$13 billion		As proposed in President's 2006 budget
Recapture interest on HTF balances	\$9 billion		Declining source as HTF balances are reduced
Other Federal Revenue Options			
Utilize 5 to 10 percent of current Customs duties for port and intermodal improvements	\$17 billion at 5 percent* \$34 billion at 10 percent*		These funds would be set aside for port and intermodal purposes and mostly distributed back to Customs districts of attribution
Federal Policy Options to Enable and Stimulate Greater Investment by States, Local Governments, and the Private Sector			
Authorize flexible tolling provisions		\$12 billion	Rough estimate based on extensive and increasing use of tolling and pricing
Enhance TIFIA credit instruments		\$3 billion	Estimated additional private investment induced
Authorize private activity bonds (assume \$15 billion nominal authorization as proposed by Administration and Senate)		\$2 billion	Estimated additional private investment induced
Authorize tax credit bonds (assume \$30 billion net bond proceeds authorization as in Senate-proposed "Build America Bonds")		\$30 billion available for surface transportation grants through 2010; General Fund supported	Debt-oriented financing technique that leverages a Federal tax subsidy to generate new transportation funding
Authorize freight/intermodal ITCs (assume \$500 million annual limit on 20-year tax credits that are monetized over a 5-year period)		\$8 billion available for freight/intermodal projects through 2009**	Equity-oriented financing technique that leverages a Federal tax subsidy to generate new transportation funding

Notes: * Only 30 percent of these amounts are estimated to fund highway-related needs such as intermodal connectors.
 ** These funds would not address the surface transportation needs normally included in the FHWA and AASHTO Needs Reports; however, they would address needs identified in the AASHTO Freight-Rail Bottom Line Report (American Association of State Highway and Transportation Officials, Freight-Rail Bottom Line Report, Washington, D.C., 2003. Available at <http://freight.transportation.org/doc/FreightRailReport.pdf>).

Canada too is searching for new ways to deal with infrastructure financing. Initiatives raised in recent policy debates and election campaigns include rebating GST to the cities for infrastructure, the Pacific Coast investment decisions and the policy statements to address the infrastructure deficit that developed over many years of the previous federal administration. In addition, we have seen increasing interest in Public Private Partnerships over the past decade as an approach towards infrastructure financing. Mexico also is exploring alternatives but this is definitely an area where more research is required.

Implications

The reports selected for this review are not scientific studies. Rather they are cries of alarm from freight system operators and users within NAFTA, vocalized through industry organizations and independent think tanks. Taken together, they show a striking unanimity on a central point:

The North American FTS is not covering its maintenance or improvement costs and therefore upgrading the system will add one way or another to the NAFTA transportation bill.

The outstanding question is how the costs will be met—spread across increased freight flows or less desirably through increased delays, system breakdowns and ultimately lower productivity and living standards.

Although virtually unanimous in urging a “systems approach” to transportation policy, the studies supply no information about where capacity gains will emerge from more efficient or systematic administration: e.g.

- Maintaining or increasing cross-border freight flows will add to congestion at major hubs without additional measures.
- Improving throughputs at ports and inter-modal transfer will only increase the “disconnect” between gateways and distributions systems.

Scarcely spoken is the need for a systemic NAFTA perspective, i.e. an EU sharing of cabotage rights among trading partners and the gains to system capacity that might generate. (Only the Canadian Council of the Federation (Ref 5) urged greater cabotage sharing in air services.)

Only one study (ITI, Ref 7) urged considering energy policy and transportation policy together and it shed no light on the potential cross-impacts of such an approach.

Only one study (RAND, Ref 11) probed shortfalls in private investment while drawing attention to the private/public nature of much of the US FTS. But it shed no light on how much investment would be forthcoming if current impediments were lifted.

Specific funding recommendations (Refs 9 and 10) considered highway transportation only.

Bottom line: The JIT advanced manufacturing system developed since the 1970s that enabled North America to compete successfully with Asian and European manufacturers is now reaching

its capacity limits. The supporting transportation infrastructure is now inadequate to handle the projected growth of North American supply chains. The studies are unanimous in calling for a management approach that is far better at dealing with the system's interdependencies, far more careful about covering costs, and far more flexible and open to innovation. But whether taken together or separately, they fail to provide a clear course for going forward. There remain many gaps in our understanding of the problem and only a limited understanding of the array of possible solutions.

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List of Reports (alphabetical by organization)

1. American Chamber Mexico: Monterrey Division, International Trade Committee, *Transportation and Logistics in Mexico*, Jan. 2004, by David Eaton, Nathan Smith, Luciano Escobedo, Robert Cavazos, and Sara Moreno
2. BNSF Railway, *Rail Capacity & Infrastructure: Constraints and New Options*, power point presentation to the Inland Ports across North America Conference, by Peter Rickerhauser, Vice President, Network Development, October 11, 2006
3. Brookings Institution, Metropolitan Policy Program, *Principles for a US Public Freight Agenda in a Global Economy*, By Martin E. Robins and Anne Strauss-Wieder
4. Council of the Federation (Canada), *Looking to the Future: A Plan for Investing in Canada's Transportation System*, December, 2005.
5. CSIS (Washington D.C.) and Fraser Institute (Vancouver), *Network-Centric Security for Canada-US Supply Chains*, By Joel Webber, May, 2005
6. Intermodal Transportation Institute, University of Denver, *Investing in America's Future: The Need for an Enlightened Transportation Policy*, White Paper by Theodore Prince, September 2004
7. National Chamber Foundation, U.S. Chamber of Commerce, *Trade and Transportation: A Study of North American Port and Intermodal Systems*, March 2003
8. National Chamber Foundation, U.S. Chamber of Commerce, *Future Highway and Public Transportation Finance Study, Phase 1: Current Outlook and Short Term Solutions*, by Cambridge Systematics Inc., Mercator Advisors LL.C., Alan E. Pisarski, Martin Wachs, 2005
9. National Cooperative Highway Research Program, Transportation Research Board of the National Academies, Web-Only Document 102, *Future Financing Options to Meet Highway and Transit Needs*, by Cambridge Systematics Inc., Mercator Advisors LL.C., Alan E. Pisarski, Martin Wachs, December, 2006
10. RAND Corporation, Infrastructure, Safety and Environment, *Increasing the Capacity of Freight Transportation—U.S. and Canadian Perspectives*, Conference Proceedings, By David S. Ortiz, Brian Weatherford, Henry H. Willis, Myles Collins, Naveen Mandava, Chris Ordwich, 2007
11. Rodrigue, J-P and M. Hesse (2007) “North American Perspectives on Globalized Trade and Logistics”, in Th. Leinbach and C. Capineri (eds) *Globalized Freight Transport: Intermodality, E-Commerce, Logistics and Sustainability*, Transport Economic, Management and Policy series, Cheltenham, UK: Edward Elgar Publishing, pp. 103-134
12. U.S. Department of Transportation (DOT) *Transportation Decision-Making: Policy Architecture for the 21st Century*, November 2000.

Comments by Members of the Research Council:

Jean-Paul Rodrigue

In the current economic setting that characterizes North America, the freight transport system cannot be considered as a tool of industrial competition with the global economy. It has been a tool of freight distribution, logistics, industrial reorganization and market penetration for foreign goods. The reorganization of freight distribution went in three major phases. The first concerned a relocation of manufacturing activities to lower costs locations within the United States in an initial attempt to cope with increasing global competition, particularly in the car industry. The second stage took shape around the setting of NAFTA and permitted a further rationalization of manufacturing with Canadian and Mexican comparative advantages in numerous sectors of activity. It created a set of logistical relationships around border regions and new latitudinal corridors of freight distribution. The third stage is now in full motion and involves entirely new commodity chains using global comparative advantages to a much fuller extent. The logistical relationships involve a maritime / land interface involving containerized maritime shipping and long distance intermodal rail operations. All these stages have been linked with a growing quantity of freight being moved as well as its average distance.

As paradoxical as sounds, the more efficient North American freight distribution becomes, the less American manufacturers, particularly those with high legacy costs, can compete effectively on global markets. There are many reasons why several studies fail to identify specific answers to the freight capacity problem. Since many agencies are jurisdictionally defined, cross-jurisdictional issues are more challenging to include in the analytical and decision making process. One enduring issue is related to the lack of understanding of modern freight distribution, particularly in light of global commodity chains and international trade. Intermodal and transmodal operations, which are fundamental elements in productivity and efficiency gains, are also not given full consideration as they tend to “fall outside the box”. This is in part due to a system wide and intermodal perspective that does not match well with approaches and jurisdictions that are limited to one mode. However, substantial strides have been made in this direction since the 1990s. The emergence of global freight forwarders and global terminal operators create an additional transnational and transmodal dimension that is difficult to grasp due to its flexibility and “footlooseness”. This is another macroeconomic dimension that is not well acknowledged as a significant vector of freight distribution. Monetary policy in the last several years has resulted in massive asset inflation, particularly in real estate, which has been collateralized into consumption. This unsustainable process is now coming to an end and the accumulated debt, some of which is being defaulted on, has been done at the expense of future consumption, implying that future freight flows could be substantially less than expected.

The planning process in which freight transportation takes place has also become increasingly entangled in social engineering. The reports underlines how rhetorical many planning agencies have become, embracing hollow objectives such as “transparency”, “sustainability”, “national security”, “equity” and “regional development”. This politically correct approach mainly leads to confusion, indecision and litigation as neither can it state specific goals nor the multiple objectives can lead to any tangible strategy. In addition to suffer from “system dysfunction” (as stated by the Denver Intermodal Transportation Institute), the national freight system is in a state of “cognitive dissonance” between the reality and the perception by multiple planning agencies

at the local, state and federal levels. Under such circumstances it is not surprising that capacity, efficiency and reliability problems in North American freight distribution have difficulties to be acknowledged as such.

Barry Rempel

Dr Stanley has provided a great overview of the recent reports.

First let me apologize that in order to comment in a timely fashion, ... I'm not certain what you were looking for and this is really nothing for him to include in the paper but I'm going to offer a, perhaps somewhat contrarian view, for consideration.

Unfortunately, the existing reports have tended to look at the current state through current filters. Having been involved in the supply chain for many years, the one thing that is never dealt with in these papers is the ingenuity of the players and the under use of alternative access to markets when considering the movement of goods.

Some issues are clearly more difficult to deal with than others. Congested ports and increasingly, environmental issues will be a source of frustration for some time to come but fixing existing ports may not be the way to address this. Having "big heads" dream up ways of putting more through current pipes is unlikely to be the answer. That will be part of the solution but having governments choose "winning" communities through funding their latest vision of how to fix the problem only exacerbates the longer term issues.

I would agree with some of the reports that suggest the various modes are "stove piped". When there is an economic basis to change that thinking, it will happen. We're seeing some of that between modes today.

On the air side, and I will go back to my earlier comment on ingenuity of the supply chain participants and add a change of technology to the mix.

These two are combining in the same way they did when Gander or Anchorage suddenly blossomed as players in the supply chain. That happy collision of events is now moving to address a number of the supply chain congestion issues facing shippers in having to deal with the matter in places like Chicago. Aircraft are now able to efficiently access places like Winnipeg (without having to stop in ANC) to meet the market needs of the entire Midwest and to do so more cheaply, in equal or shorter time frames. The constraint is no longer the airport or road infrastructure in major centres but security regulations. Government's role then ought to be solving the things they are charged with (regulation and border issues) rather than forcing the market through their exclusive investment in existing supply chain points. That's back to doing the same things, the same way and expecting a substantially different result.

In short, the system may not be at its limits. The existing models may be but additional capacity can be accessed, more efficiently than by pumping ever more funds into the current pipe. The intermodal exchange centres of the future will include more airports and truck facilities than they do today. As air continues to take a great share of the value chain, and other capacity

alternatives (ie Prince Rupert) come on line at lower cost, additional capacity will be available in existing centres to meet the demand (which is unlikely to meet the straight line projections upon which most assumptions have been made). If not, more manufacturing centres may spring up in our own back yards to address what the market requires. How about a KIA plant in Winnipeg? Those are dark clouds up there but the sky's not necessarily falling.

For the North American Transportation Competitiveness Research Council

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The North American Transportation Competitiveness Research Council

Who are we?

In response to mounting concerns about carrying capacity throughout the United States, Mexico, and Canada, we have come together to form the North American Transportation Competitiveness Research Council. The Council is composed of researchers in transportation, logistics, and supply chain management from universities, transportation research institutions, and companies in Canada, Mexico and the United States.

Our initial meetings were organized with the support of authorities in Kansas City and Winnipeg – well-established freight and distribution hubs in their respective regions. However, it has become clear to all of us that the issues must be addressed on a continent-wide basis. Mexico, the U. S., and Canada each have unique needs and capabilities which complement each other. But realizing these synergies requires a continent-wide approach to moving freight within and between these three countries. Many companies have organized trinational production systems whose continued efficiency is threatened by deterioration in infrastructure capacity and network capabilities

What does the Research Council do?

North American companies have spent the last thirty years finding ways to leverage the unique capabilities of the three countries that share the continent. This progress is now threatened by rising congestion at borders, in major cities, and at critical hubs. The Council intends to investigate how to transform the overstressed, disjointed network into an efficient and secure continental freight transportation system that will enhance North American competitiveness in the 21st century.

Trustworthy information, innovative alternatives, and political insights are all critical to enabling the necessary changes to the North American network. The Council will deliver objective information, policy assessments, and options to key stakeholders in industry and government. It will organize projects to educate and train professionals in North American transportation, bringing together planners, civil engineers, users, and operators of the North American transportation systems. Thus we will facilitate collaboration between North American transportation research institutions, transportation industry executives and their customers, and urban region leaders to seek both short term and long term solutions to congestion issues that are facing every freight transport mode serving the North American business community.

Developing an agenda for addressing transportation shortcomings to North American Competitiveness

The members of the Research Council welcome the opportunity to work with transportation industry and government agencies to cooperatively develop an agenda for this purpose and to undertake the necessary research, consultation and evaluation to ensure that North America remains the global leader in transportation productivity and efficiency. We hope to:

Evaluate technological, organizational, and political solutions to port, infrastructure, and modal bottlenecks throughout North America

Determine specific requirements and priorities for infrastructure improvement and expansion to improve North American freight and data connectivity

Lay out options for creating a more efficient and secure North American transportation infrastructure for the 21st century.

The Council's initial output will be briefs on transportation infrastructure competitiveness, relevant policy options, and alternative future scenarios. These briefs will be designed to address the needs of decision makers who have been identified in cooperation with transportation industry and government leaders. The Council believes that it can initially contribute by:

- identifying existing research assets and completed studies that support specific initiatives
- building links among research projects already underway in research centers, industry, and government agencies throughout North America
- locating gaps where new work should be undertaken to address near term choke points in the continental network.

The Council will have an equally important mission to show policy makers the need to configure transportation systems to support the reality of a deeply integrated continental economy. The Council, in cooperation with industry and government leaders, will strive to open points of access into the national policy making processes – through the SPP-North American Competitiveness Council, through elected representatives and through other governmental agencies. The overarching goal is to create a dialogue among transportation industry leaders and experts representing different regional, modal and industry perspectives, a dialogue that will produce recommendations for action and also build a broad constituency to support the implementation of these recommendations.

North American firms have long since understood the need to be globally competitive, and they have made many adjustments to face that reality. However, competitiveness is a moving target, and what served in the past will not assure a bright future. Safeguarding and improving living standards in North America requires the best use of the talents, knowledge, and resources of three major countries working together. These synergies can only be realized if the physical connections throughout the continent are capable of handling an increasing level of commerce. The North American Transportation Competitiveness Research Council is committed to finding and synthesizing the best information available to give policy makers alternatives which address current congestion, capacity, and security issues while showing the best ways to employ North America's formidable resources to enable three major economies to work together and improve opportunities for citizens of all three nations.

Website: <http://natcrc.org/index.html>



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