

**FREIGHT CORRIDORS AND GATEWAYS:  
DEVELOPMENT APPROACH AND EVALUATION  
CRITERIA COMPARISON IN NORTH AMERICA  
AND THE EUROPEAN UNION**

Juan Carlos Villa  
Texas A&M Transportation Institute

**Introduction**

International trade continues to grow and shifting as Asian economies expand impacting the North American transportation system. Freight corridors and gateways are key elements of the transportation network that influence regional economic development and require proper planning and investment to foster and maintain economic competitiveness. Canada, Mexico and the European Union (EU) identified the need for freight transport strategies to be aligned with national freight transport objectives, and have developed a process to analyze and identify freight corridors and Gateways. In the United States (US), the complexity of funding freight projects presents a significant impediment to moving freight infrastructure projects forward. However, the US is currently developing a framework to identify where new infrastructure should be built to handle changes in trade patterns, demographics and freight flows with a focus on the role of transportation infrastructure in facilitating exports.

The purpose of this paper is to analyze the overall approach that various countries and regions are developing or have implemented to assess freight corridors and projects within corridors. The paper is divided in four sections, each of them describing the freight corridor and gateway planning in the EU, US, Mexico and Canada.

Subsequently, the country or region specific approaches are compared and discussed.

### **Experience in the European Union**

The EU recognized that for the common European market to function smoothly an integrated transportation system that allows the free movement of goods within EU territory was needed. The concept of the Trans-European Transport Network (TEN-T), included in the 1993 Maastricht Treaty, made it possible to develop a plan for transportation infrastructure at the European level with the help of EU funding. In 1994, the European Commission (EC) agreed on a first list of 11 transportation priority projects. In 1996, the EC initiated the Transport Infrastructure Needs Assessment (TINA) project with the aim of stimulating development of a multimodal transport network in EU accession candidate countries and defining the future Trans-European transport infrastructure network in the expanded EU. At the end of 1999, the TINA project was completed, and the final document estimated the necessary investments from 1998 to 2006 at about €87 billion.

In 2003 with the expansion of the EU, the TEN-T policy was reviewed to cover the new member states. The result of the new policy was a set of 30 priority axes and projects, covering high-speed and conventional railways, road motorways, the “Motorways of the Sea,” multimodal corridors, airports, inland waterways, and the Galileo navigation system.<sup>1</sup>

In 2009, the EC began a new review of the TEN-T policy with network planning as a key issue. Because the TEN-T policies will affect all member states as well as those surrounding the member states, the process for shaping the policies is through extensive public feedback. Key messages from stakeholders on the general policy framework included:

- Low carbon transport,
- Territorial cohesion, and
- Need for a planning tool and not just a funding instrument.

The latest proposal for a new TEN-T guideline by EU was developed in 2011,<sup>2</sup> and stakeholders supported a dual-layer approach that consists of a comprehensive network and a core network. The comprehensive network constitutes the basic layer of the TEN-T and is to be in place by end of 2050 at the latest, and its responsibility largely rests on the member states. The core network overlays the comprehensive network and consists of its strategically most important parts, and is thus smaller and more focused. It concentrates on TEN-T components with the highest added values: cross border missing links, key bottlenecks and multi-modal nodes. The core network has a shorter timeline, all to be completed by 2030.

Because of the complexity involved in identifying the core network across national boundaries, a rigorous analytical methodology backs the identification of the core network projects. The methodology is based on three primary steps: a) selection of major nodes meeting certain statistical criteria, b) linking up these nodes with land transport modes – rail inland waterway and road, and c) incorporating a detailed analysis of major traffic flows – passenger and freight. This is essential to define priority sections for the core network and to see clearly where infrastructure needs upgrading, building, or where bottlenecks need to be removed.<sup>3</sup>

Some member countries argue that the priority project approach fails to capture additional network benefits. Therefore, one proposal is to evolve toward a priority network approach that would allow more systematic incorporation of the nodes, ports, and airports as the network's entry points and the main intermodal connection points that underpin strong network integration. Other recent developments in the TEN-T area focus on plans for linking TEN-T to neighboring countries outside the EU.

### **Experience in the United States**

In the US, freight investment decisions are linked to funding availability at the federal, state, and local levels. The US freight transportation system that included ports, railroads, and intermodal terminals are primarily owned and operated by the private sectors,

while the highway system are owned by the public sector. The different ownerships of freight infrastructure create additional challenges to help fund projects that are intermodal or multimodal in nature cutting across several modes of transport.

Funding for highway-related projects is done through a federal surface transportation bill that is passed once every several years. The most recent one is “Moving Ahead for Progress in the 21st Century Act (MAP-21)” that was signed into law in July 2012. MAP-21 creates a streamlined, performance-based, and multimodal program to address the many challenges facing the U.S. transportation system. One of the major programs contained in MAP-21 is the establishment of a National Freight program.

Federal program can be described either as funding program that are project specific, or financing tools that include loans and credit that can help with overall capital investments in transportation infrastructure. For each of the funding programs, the federal share of projects is usually 80% or more. While there are numerous different funding sources for freight projects, issues related to project eligibility, competition from other priorities, multi-jurisdictional nature of investments and project complexity affect the ability of states or metropolitan planning organizations (MPOs) to use these programs.

The recently published MAP-21 includes a number of provisions to improve the condition and performance of the national freight network and support investment in freight-related surface transportation projects.<sup>4</sup>

The National freight policy provision establishes a policy to improve the condition and performance of the national freight network to provide the foundation for the United States to compete in the global economy and achieve goals related to economic competitiveness and efficiency; congestion; productivity; safety, security, and resilience of freight movement; infrastructure condition; use of advanced technology; performance, innovation, competition, and accountability in the operation and maintenance of the network; and environmental impacts.

The national freight network provision requires the Department of Transportation (DOT) to establish a national freight network to assist States in strategically directing resources toward improved movement of freight on highways. The national freight network will consist of three components:

- 1) a primary freight network (PFN), as designated by the Secretary,
- 2) any portions of the Interstate System not designated as part of the PFN, and
- 3) critical rural freight corridors.

The national freight strategic plan provision, directs the DOT to, within three years of enactment of MAP-21, develop a national freight strategic plan in consultation with States and other stakeholders, and to update the plan every five years. The plan must

- assess the condition and performance of the national freight network;
- identify highway bottlenecks that cause significant freight congestion;
- forecast freight volumes;
- identify major trade gateways and national freight corridors;
- assess barriers to improved freight transportation performance;
- identify routes providing access to energy areas;
- identify best practices for improving the performance of the national freight network and mitigating the impacts of freight movement on communities; and
- provide a process for addressing multistate projects and strategies to improve freight intermodal connectivity.

### **Experience in Mexico**

The Mexican Ministry of Communications and Transport (SCT) realized the need to tackle the multimodal transportation issue to increase the country's competitiveness in the world marketplace. Results of the 2009-2010 Global Competitiveness Index of the World Economic Forum showed that Mexico was ranked low in 60<sup>th</sup> place

among 133 countries.<sup>5</sup> The problem is evident after analyzing the results and finding that the only reason why Mexico's ranking is not below 60 is due to positive performance indicators of macroeconomic stability and market size. For the rest of the indicators the country is ranked below 60.

Mexico developed a Multimodal Corridor Master Plan as a tool to plan and promote the development of infrastructure systems, coordination agreements, and logistics to meet the needs of domestic trade, and international trade with NAFTA partners and other countries. The Master Plan details the actions and strategies required for the use, operation, and development of a multimodal system in Mexico. The plan also details the commitments required from stakeholders.

The Multimodal Corridor Master Plan was developed with the idea that isolated improvements are not enough and that a set of coordinated actions between the public and private sectors is needed to improve the performance of the Mexican Multimodal Transportation System.

The Plan objectives were developed by analyzing information from transportation modes including statistics, historical background, and public and private partnerships currently in place in Mexico. An important element for the development of the objectives is the 2007-2012 National Infrastructure Program. The main goals of the Plan were:

- Incorporate the characteristics of world-class systems.
- Achieve seamless integration between and within modes of transport
- Enhance Mexico's competitiveness in the world's markets

The approach that was developed to identify multimodal corridors and then analyze them to prioritize them using criteria that were identified by stakeholders, which led to the generation of six measurable factors, including:

- future demand,
- rail diversion potential,

- containerization potential,
- regional economic development,
- connectivity, and
- potential to reach world class standards.

These factors were used with a multi-attribute utility theory, conducted by members of the project committee, for which specific weights were given to each criterion. The evaluation resulted in three groups of corridors, where the short and medium term projects were evaluated in more detail.

The results of the evaluation resulted in the corridor prioritization, as well as a detailed needs assessment for each corridor, prioritizing investments by aligning the development of infrastructure to the specific needs of each corridor, and general requirements of the entire multimodal transportation network of the country.

### **Experience in Canada**

Canada has a fully developed framework for gateways and corridors assessment. The experience with the Asia-Pacific Gateway and Corridor Initiative (Pacific Strategy) in 2006, led to the creation of the National Policy Framework for Strategic Gateways and Trade Corridors (National Gateway Framework), which acts as an overarching policy framework. This framework is also a major part of Building Canada, Canada's strategic infrastructure plan for 2007 to 2014. Out of the National Gateway Framework, two regional strategies were born, The Ontario-Quebec Continental Gateway and Trade Corridor Strategy, and The Atlantic Gateway and Trade Corridor Strategy.<sup>6</sup>

The Framework involves analysis through five policy lenses which interact together.<sup>7</sup> All gateway and corridor strategies must be based on compelling analysis through these five lenses:

1. *International Commerce Strategy*: strategies must help align Canada's major transportation systems with our most important opportunities and challenges in global commerce.

2. *Volumes and Values of National Significance*: strategies should be targeted where volumes and values are most significant for Canada's economy overall.
3. *Future Patterns in Global Trade and Transportation*: strategies must be forward looking and focus on the long term. More importantly, to understand the future empirical evidence and analysis must be used.
4. *Potential Scope of Capacity and Policy Measures*: strategies should go beyond infrastructure systems and address integration on several levels – across modes of transportation, between investment and policy, public and private sectors and among levels of government.
5. *Federal Role and Effective Partnerships*: strategies must ground federal action in concrete responsibilities and effective partnerships with other government and private sector.

The National Gateway Framework regards federal role as especially important for developing successful strategies, however it acknowledges that no single jurisdiction or firm can unilaterally address all issues that determine success of a gateway/corridor. A central objective of federal involvement will be to foster a “systems” approach in investment, planning and policy developed. Gateway councils and other stakeholders are also key to advancing regional strategies with national benefits. While this National Framework did not specifically identify all stakeholders, it did provide an example of how municipalities, private companies (railways) and other agencies (port authorities) worked towards a successful rail corridor project, with a cost-sharing structure. It is expected that good strategies should involve all stakeholders, and pull resources from all of them since the projects will benefit all.

The funding for all of the gateways and corridors strategies that are identified from the National Gateway Framework comes from the Building Canada Infrastructure Plan, which devotes \$2.1 billion over seven years to borders and corridors.

In short, the National Gateway Framework calls for an integrated strategy that aligns with the nation's commerce interests, targets



economically significant areas, and relies on data and empirical analysis to understand the future, which requires collaboration and support with various levels of government, and more so, the private sector.

*Asia-Pacific Gateway and Corridor Initiative (Pacific Initiative)*

The Pacific Initiative was first application of the gateway approach, launched in 2006. The rapid growth of China and the subsequently dramatic increase in both import and export activities along Canada's Pacific coast provides the motivation for this initiative. The overall purpose of the initiative is aligned with that of the National Gateway Framework.

The approach to the Pacific Strategy is to create projects based on five core elements. These elements include:

- Strategic infrastructure – address emerging bottlenecks and multi-modal transfer points to allow for reliable, efficient and secure goods movement;
- Private investment and innovation – attract private investment and create policies that can do so, especially investment in innovation and technology;
- Security and border efficiency – create measures that will improve security and border efficiency;
- 21<sup>st</sup> century governance – Set up partnerships in governance to reflect outward looking perspective of global commerce. Commit to integration within the federal government, all governments and the private sector; and
- Policy renewal – work with various government organizations to integrate and renew policies that impact transportation infrastructure, such as land use policies, labor market issues etc.

Between 2006 and 2010, \$389 million federal funding were spent on completed projects, \$738 million federal funding are dedicated to projects underway, and in total over \$1.4 billion in federal funding was announced.<sup>8</sup>

*The Atlantic Gateway and Trade Corridor Strategy (Atlantic Strategy)*

The development of the Atlantic Strategy began in 2007 and was completed in 2010. The strategy addresses ways to enhance the region's economic competitiveness through the following objectives:

- Strengthen Canada's competitiveness in attracting a larger share of global commerce to and from traditional markets and with emerging international economies;
- Advance a safe, secure, efficient and sustainable multimodal transportation system that contributes to the economic prosperity of the Atlantic provinces and Canada; and
- Promote the Atlantic Gateway and Trade Corridor's transportation system assets, specialized services and niche opportunities to exporters and importers, at home and internationally.

The Atlantic Strategy includes immediate measures (projects), and also longer-term directions to guide ongoing collaboration and future actions defined by a framework of nine core strategic elements. These elements are similar but expand upon the Pacific Strategy. It includes the following:

- Strategic Infrastructure;
- International Trade Promotion and Marketing;
- Economic Growth Opportunities;
- Border Efficiency and Security;
- Policy and Regulatory Issues;
- Technology and Innovation ;
- Knowledge and Skills ;
- Environment; and
- Governance.

*The Ontario-Quebec Continental Gateway and Trade Corridor (Continental Initiative)*

While the official Continental Initiative strategy has yet to be released, its purpose is to develop a sustainable, secure and efficient multimodal transportation system that keeps Canada's economic

heartland competitive, attractive for investment and essential for trade.

The Continental Gateway is a key component of Canada's multimodal transportation system. The central location of the Continental Gateway facilitates international trade with the United States and other key trading partners. The Continental Gateway includes strategic ports, airports, intermodal facilities and border crossings as well as essential road, rail and marine infrastructure that ensures this transportation system's connection to, and seamless integration with, Canada's other gateways: Asia-Pacific and Atlantic.

A comprehensive work plan has been developed to guide the Continental Gateway's research and consultation activities. The research program provides the analytical basis for developing a multimodal Continental Gateway strategy, very similar to the Atlantic Gateway. Three separate plans will be combined to form the final Gateway Strategy, which include an Infrastructure Plan, Non-Infrastructure plan and a Communications Plan.

### **Discussion**

The approach and methodologies used for the development of freight corridors and gateways plans, and the evaluation and prioritization of corridors and projects within corridors vary widely between countries and regions. The EU started early as it recognized the need for a strong freight transportation network to support its expansion. In 2009, the corridor general policy framework included low carbon transport, territorial cohesion and the need for a planning tool and not just a funding instrument. The latest guidelines published in 2011 supported a dual-layer approach that consists of a comprehensive network and a core network. The methodology used to identify core network projects three basic steps: a) selection of major nodes meeting certain statistical criteria, b) linking up these nodes with land transport modes – rail inland waterway and road, and c) incorporating a detailed analysis of major traffic flows – passenger and freight.

In the US, a MAP-21 provision calls for the definition of the national freight network, with three components, compared to two in the EU. The components in the US will include:

- 1) a primary freight network (PFN), as designated by the Secretary,
- 2) any portions of the Interstate System not designated as part of the PFN, and
- 3) critical rural freight corridors.

As far as the planning process, it varies among regions Canada's National Policy Framework for Strategic Gateways and Trade Corridors (National Gateway Framework) involves analysis through five policy lenses that interact together. All gateway and corridor strategies must be based on compelling analysis through these five lenses:

- 1) International Commerce Strategy
- 2) Volumes and Values of National Significance
- 3) Future Patterns in Global Trade and Transportation
- 4) Potential Scope of Capacity and Policy Measure
- 5) Federal Role and Effective Partnerships

In the US, a national freight strategic plan should be developed three years of enactment of MAP-21, be updated every five years with the following considerations:

- assess the condition and performance of the national freight network
- identify highway bottlenecks that cause significant freight congestion
- forecast freight volumes
- identify major trade gateways and national freight corridors;
- assess barriers to improved freight transportation performance
- identify routes providing access to energy areas;
- identify best practices for improving the performance of the national freight network and mitigating the impacts of freight movement on communities; and
- provide a process for addressing multistate projects and strategies to improve freight intermodal connectivity.

The approach for the Mexican Multimodal Master Plan was to identify and prioritize multimodal corridors using criteria that were identified by stakeholders:

- future demand
- rail diversion potential
- containerization potential
- regional economic development
- connectivity
- potential to reach world class standards.

All three approaches in Mexico, the US and Canada are similar, some of them emphasizing particular aspects of the region. One common element is that corridors should be developed based on freight demand.

All approaches and planning methodologies are developed responding to local and regional conditions. Even within countries, the approach may vary responding to particular needs like in the Continental Initiative and the Atlantic Gateways in Canada. One important element to consider is that the North American Free Trade Agreement partners – Canada, US and Mexico – have not developed a regional freight transportation plan. This could be a way to improve competitiveness with other trading blocks that have developed a plan and are implementing it, such as the one in the EU. There are efforts to establish a North American Freight Corridor and Gateway Plan, but these are not well coordinated and need a champion to take the initiative to the next level.

## Endnotes

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<sup>1</sup> The Galileo program is Europe's initiative for a state-of-the art global satellite navigation system.

<sup>2</sup> <http://ec.europa.eu/transport/infrastructure/connecting/doc/revision/legislative-act-ten-t-revision.pdf>

<sup>3</sup> EUROPA, Connecting Europe: The new EU core transport network.  
<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/706&format=HTML&aged=0&language=en>

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<sup>4</sup> US Department of Transportation, Federal Highway Administration, MAP 21 Significant Freight Provisions <http://www.fhwa.dot.gov/map21/freight.cfm>

<sup>5</sup> The Global Competitiveness Report 2009-2010 © 2009 World Economic Forum.

<sup>6</sup> Transport Canada, Gateways and Corridors <http://www.tc.gc.ca/eng/innovation-gateways-and-corridors.htm>

<sup>7</sup> Canada's National Policy Framework for Strategic Gateways and Trade Corridors <http://www.canadagateways.gc.ca/nationalpolicy.html>

<sup>8</sup> Asia Pacific Gateway Initiative <http://www.pacificgateway.gc.ca/reaches-a-milestone.html>