

# EXISTING AND PENDING INFRASTRUCTURE PROJECTS: POTENTIAL COMPATIBILITY WITH THE CANADIAN NORTHERN CORRIDOR

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## SUMMARY

Rigorous planning of a multi-modal corridor at a national scale involves identifying current and future infrastructure needs and determining opportunities for co-location of linear infrastructure. Ensuring compatibility of such a major and complex infrastructure expansion with existing and planned projects is necessary to avoid potential redundancies, minimize environmental impact, optimize resource allocation and enable long-term, sustainable economic growth.

For this purpose, this paper reviews linear infrastructure projects in Canada's North and near-North that could potentially constitute a segment of the Canadian Northern Corridor (CNC). The CNC concept connects Canada's Atlantic, Pacific and Arctic coasts and Hudson Bay through a linear infrastructure corridor. In accordance with the aims and scope of the CNC, this assessment covers linear infrastructure modes such as rail, road, pipeline, electrical transmission and communications infrastructure and ports and airports as supporting inter-modal infrastructure hubs and gateways to the rest of the world. The assessment reviews infrastructure projects in two categories: existing and pending.

Corridor development is a lengthy, costly and complex process. Planning stages often involve a risky assessment of possible changes in economic activity, regional priorities, land use and environmental conditions (such as changing needs for climate adaptation strategies). However, there is no universal methodology for the design and development phases of corridors. On the basic requirements of planning a corridor route, Srivastava (2011) states that, "Corridor development does not create economic strength so much as it channels, focuses, and amplifies the potential for economic growth. Thus, a corridor from nowhere to nowhere through nowhere would not be very meaningful. Similarly, a corridor linking two substantive nodes but with no potential for growth in between (because of adverse geography) is also of limited interest." Therefore, determining the regions to be served by the CNC requires a comprehensive investigation of the stakeholders' needs and priorities and the economic potential of the areas to be served.

However, there is no single rule for determining the level of compatibility of an existing piece of infrastructure with a planned corridor project. Although integrating previously independent sets of infrastructure potentially eliminates redundancies, saves time and resources and reduces habitat fragmentation, aiming for achieving full integration can also result in inefficient outcomes by creating bottlenecks and delays in the movement of goods and services.

The assessment in this paper serves as a step towards determining a compatibility of the CNC with Canada's existing and pending infrastructure network. The assessment suggests developing a compatibility index as a multi-criteria appraisal framework for Canada as an avenue for further research. The compatibility index would be simple, including only quantifiable factors as decision criteria, which can be measured using the dataset developed accompanying this assessment and the outcomes of other CNC research. This would represent a concrete step toward developing the multi-modal route for Canada with a northern focus that efficiently and purposefully integrates Canada's existing and pending infrastructure network.