

THE GUELPH JUNCTION RAILWAY COMPANY



The Guelph Junction Railway (GJR) Company operates between Guelph and Campbellville, Ontario. Its history began in 1884. In 1886, the line was expanded to the shores of Lake Huron to service the lake bound traffic. The new junction point created with the former Credit Valley Railway tracks became known as Guelph Junction. Presently, GJR is owned by the city of Guelph and is operated by the Ontario Southland Railway. The GJR line starts at Guelph Junction, where it connects to the Canadian Pacific Railway network and runs north to Guelph.

The Guelph Economic Development Department is supported by Guelph's diverse economic base, well known universities and a large number of industry experts. The Department has made a strong commitment to establishing Guelph as a leading centre for life science research, development and commercialization.

Scope of Engagement

The Guelph Junction Railway and Guelph Economic Development Department required a preliminary economic impact study of a proposed Guelph Junction Intermodal Facility (GJIF). One of the aims of the GJIF was to develop a leading Ontario example of how intermodal logic can be applied to food-grade transportation logistics around the existing rail road infrastructure of the Guelph Junction Railway. The GJIF represented an intermodal activity that involved the conversion of food grade truck transportation to an equivalent rail transportation mode that centered around the Guelph Junction Railway and related infrastructure. RiskAnalytica was retained to ascertain the financial and economic impacts of such an activity.

GJIF Challenges

Ascertaining the potential economic impact of the Guelph intermodal initiative was a unique enterprise, as neither the Ontario nor Canadian economies have well documented intermodal experiences. The primary challenges of estimating the economic and financial impacts of the intermodal GJIF such as GJIF were associated with:

- correctly forecasting the financial outcomes of the intermodal GJIF over a long-term period; and
- identifying and quantifying the sources of change that the intermodal GJIF engenders across both its home economy (in this case Guelph) and its host economy (in this case Ontario).

RiskAnalytica Solutions

RiskAnalytica developed a scenario simulation model using its “observer-based assessment” (OBA), the analytical framework for economic and risk management analysis. The OBA approach combines the result of interdisciplinary research into the mathematical methods of financial institutions, physics and cognitive methodologies, with the use of Monte Carlo techniques. The model incorporated 832 different cause and effect functions and 860,000 different scenario simulations.

The results of the analyses indicated that overall, the truck-to-rail transportation conversion will have a substantial positive economic and financial impact on Guelph and Ontario. The main factors driving the positive value of this project are:

- the underutilization of the existing rail infrastructure;
- the expected truck to rail conversion volumes identified; and
- the lower prices of rail freight charges, as compared to the truck freight charges.

The unique approach behind the RiskAnalytica’s OBA framework and the framework’s robustness allowed estimating the potential **benefits** and **risks** for Guelph and Ontario associated with implementing this project outlined in the following table.

Benefits	Risks
<p>Ontario</p> <ul style="list-style-type: none"> • Substantial increase of utilization of the transportation infrastructure • Growth of the province’s real gross domestic product • Total employment growth • Substitution of United States resident truck drivers with Ontario-based businesses 	<ul style="list-style-type: none"> • Diminishing financial success (and associated economic benefits) of the GJIF if the expected operating volumes do not realise • Potential for reduction of GJIF transportation and revenue volume along the Chicago-to-Toronto-to-Chicago route due to market or regulatory factors that are impossible to model
<p>Guelph</p> <ul style="list-style-type: none"> • Substantial increase in the GJIF net operating profits • Increase of Guelph’s Municipality revenues • Growth of Guelph’s real gross domestic product • Growth of Guelph’s employment 	<ul style="list-style-type: none"> • The foreign exchange rate volatility, which primarily is reflected in truck haulage costs and consequently might affect traffic volume • Non-linear timing in the development of this facility: a delay in executing the project might translate into a different economic environment, relative to which the results of analysis might vary