

Benefits of Twinning Highway 3

Issue

Twinning construction of the remaining (approximately) 220 kilometers of Alberta Highway 3 known as Crowsnest Pass Highway, has been a concern for nearly two decades due to not only safety and efficiency concerns, but also concerns related to stagnating the economic benefits and market access along this corridor. The main benefits that accrue from twinning Highway 3 include safety improvements, time savings for commercial and recreational travel, increased social and economic activities, tourism and agricultural needs.

Background

Alberta Provincial Highway 3 was designated as a core of the National Highway System in 1988, an interprovincial route connecting large population centers. Its entire length of 324 kilometers (201 miles) is a highway that transverses southern Alberta, connecting the Crowsnest Pass to the Trans-Canada Highway in Medicine Hat, and it serves as an alternative route to the Trans-Canada from Lower Mainland to the Canadian Prairies. It is also the last highway in Alberta recognized as a part of the national highway system that is not twinned.

Highway 3 in Alberta begins in the Canadian Rockies at Crowsnest Pass, parallel to the Canadian Pacific Railway and is part of Alberta's "Export Highway" - a name given to the southern portion of Alberta's north-south trade corridor, which is a segment of the CANMEX Corridor that stretches from Alaska to Mexico.

From Fort Macleod to Taber, it is a divided highway (approximately 104 kilometers) with a speed limit of 100-110 km/h through the rural area with the remaining route as an undivided two-lane highway (approximately 220 kilometers) with a speed limit of 100 km/h.

The idea of twinning Highway 3 has been previously discussed and the costs and benefits study have been conducted by the Van Horne Institute, at the University of Calgary under the direction of Dr. Frank J. Atkins in 2002 and 2004 (revised report). In an updated 2017 report, results of the cost-benefit analysis demonstrate that the net present value of Highway 3 twinning project over twenty years, using Alberta Transportation recommended real discount rate of 4%, exceed \$2.3 billion dollars. However, equivalently in terms of benefit-cost ratio, the analysis shows that for each dollar spent on this project, there is \$2.97 in benefits, which translates into the internal rate of return of 12.3%. Consequently, for a public infrastructure investment, these results, with a return of 3 to 1 are highly significant and demonstrate the worthiness of the twinning investment project.

It should be noted that the areas for construction are not all equal as there are approximately 25 kilometers from the B.C. border to the Crowsnest Pass area that are considered to be 'difficult' due to the mountainous terrain. Consequently, the costs of twinning (direct and maintenance) this part of the highway will be higher.

Summary of Analysis (In Millions of 2016 Dollars) Discount Rate: 4% over 20 years¹

| | |
|---|-------------|
| Project Benefits | |
| Travel Time Cost Savings | \$1,292.72 |
| Accident and Injury Cost Savings | \$804.64 |
| Vehicle Operating and Emission Cost Savings | \$1,358.62 |
| Tourism and Others | \$94.41 |
| Total Benefits | \$3550.39 |
| Projected Costs | |
| Direct Construction Costs | -\$1,183.38 |
| Maintenance and Repair costs | -\$13.75 |
| Total Cost | -\$1,197.13 |
| Net Present Value | \$2,353.26 |
| Benefit-Cost Ratio | 2.97 |
| Internal Rate of Return | 12.3% |

The Piikani Nation is the only remaining area of highway still in need of a Functional Planning Study and a request to initiate consultation has not yet been received by the Piikani Nation Council. A study will need to be completed to ensure that all sections of Highway 3 have been accounted for. The last section in the Piikani Nation is particularly important as economic development is a call to action of the Truth and Reconciliation Commission.

In 2017, the Functional Planning Study of the Twinning of Highway 3 was completed. The study was focused on creating a more expensive freeway system which has caused some delay in municipal agreements regarding by-passes and a more expensive projected cost. To remediate this issue, beginning the project with twinning Highway 3 between municipalities as a simple highway system would allow the project to move forward, particularly during stop-gap funding and allow businesses long-range planning for the possibility of a by-pass in the future. The long-range benefit of Highway 3 maintenance cost schedule can be reduced when actual paving is completed, reducing maintenance budget for a significant period.

Twinning Highway 3 is becoming increasingly important as Southern Alberta is expanding their economic contribution. Highway 3 is a critical pipeline for moving commodities from processors to markets of which traffic is only set to increase over the next few years. There are new businesses expected to open in the 2019/2020 year including: Lethbridge Cavendish Expansion, Purple Springs Fertilizer Plant, Lundbreck Mining, and Foremost Wind Turbine, among others, which will not only greatly increase the

¹ Source: based on author's calculations. The data was obtained from Alberta Transportation, Alberta Culture and Tourism, AMA, Alberta Treasury Board and Finance (Southern Alberta Region) and Environics Research/Economic Development Lethbridge

Tran, Kien C., Ph.D. Professor, Department of Economics University of Lethbridge (2017, April 22) '*Highway 3 Twinning Feasibility: A Cost Benefit Analysis*'

amount of trucking on Highway 3 but also depend on reliable transportation for the success of their business.²

The increase in traffic will also impact import and export through Southern Alberta and South-Eastern BC US border crossings which are already the 2nd and 3rd busiest in Canada. In 2018, export in the Lethbridge Region totaled over \$1 billion dollars, \$700 million of which were from the manufacturing sector that grew 15% in the last year³ Also, the area between Lethbridge and Bow Island has 7 ready to move home and 4 Large Storage Container businesses that travel Highway 3. These businesses require special permits to transport within a specific time frame and speed restrictions which impact the already slower travel speed of 90 km/hour for traditional commercial trucks. Deliveries can be dangerous to both vehicles and transport truck teams and delays are costly to business owners

Additionally, Highway 1 will be undergoing renovations in late 2020-2021 with detours to Highway 3 expected to reach 20-25% of Highway 1 travel. Because of these factors, the Alberta Motor Transport Association has placed the twinning of Highway 3 as a top 5 priority.⁴ Accordingly, the twinning of Highway 3 underscores the need for improvement of Southern Alberta Infrastructure to support a growing economy.

The current cost of the next stage of the project—engineering—is an estimated \$800,000 per 10km of a total 220 km left to twin. However, cost of Southern Alberta farmland has increased 60% since the Highway 3 Twinning Feasibility studies were started in 2002 and continues to increase, stressing the importance of moving forward with the project sooner rather than later. Thus, a dedicated program for twinning Highway 3 allows the project to be placed in a carry-forward position with both flexibility for annual funding and forward momentum for the project to be undertaken in manageable and economically responsible sections.

The economic contribution of Southern Alberta is significant. Moving products to market is a provincial and national benefit, as is the importance of ensuring tourists and commuters can travel safely across the province. As such, a dedicated program to plan for funding to twin Highway 3 is becoming increasingly crucial. The style of program suggested will provide annual, fiscally flexible, planned funding to complete the steps needed to eventually twin Highway 3 and as a result will champion jobs and support the expanding economy of Southern Alberta and the province.

The Alberta Chambers of Commerce recommends the Government of Alberta:

1. Create a dedicated program for twinning Highway 3 with an annual sustainable contribution;
2. Conduct a functional planning study to assess the viability and affordability of twinning Highway 3 in the Piikani Nation; and
3. Begin the twinning of Highway 3 between municipalities as a highway rather than a freeway to allow for more cost flexibility.

² Economic Insights into Select Canadian Cities - Lethbridge

³ Lethbridge Export Highlights 2018.

⁴ AMTA Press Release - <https://amta.ca/8455-2/>