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**From:** [Enviroinfo \(ECCC\)](#)  
**Sent:** July 8, 2022 12:23:58 PM  
**To:** [Ministre / Minister \(ECCC\)](#)  
**Subject:** FW: PIC-20220708-121828 MINO-ON-JB Twinning the Trans-Canada: Reconsider  
**Response requested:** No  
**Sensitivity:** Normal  
**Attachments:**  
[AgainstCurrent-TCtwinning July 05--22.pdf](#);

**Original mail:** PIC-20220708-121828 MINO-ON-JB Twinning the Trans-Canada\_ Reconsider.msg 

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Good day,

The ECCC Inquiry Centre has received the email below with attachment addressed to the Minister, which I am forwarding for information/consideration.

Thank you, and have a great day,  
Jeronim

Jeronim Bosna

Agent d'information | Information Officer  
Centre de renseignements du public | Public Inquiries Center  
Environnement et changement climatique Canada | Environment and Climate Change Canada  
Tel: 1-800-668-6767  
[Enviroinfo@ec.gc.ca](mailto:Enviroinfo@ec.gc.ca)

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**From:** <Email address removed>  
**Sent:** July 8, 2022 11:21 AM  
**To:** Enviroinfo (ECCC) <Enviroinfo@ec.gc.ca>; questions@tc.gc.ca  
**Subject:** PIC-20220708-121828 MINO-ON-JB Twinning the Trans-Canada: Reconsider

You don't often get email from <Email address removed>

July 09, 2022

Ministers Guilbeault, and Alghabra:

Attached is our brief asking that you use your powers to pause and, persuade Ontario to pause, the twinning of the Trans-Canada highway between Kenora and the Manitoba border.

The original will follow by ordinary mail.

Sincerely,

Peter Kirby

Doug Orchard, Peter Kirby  
Henry Rasmussen  
<personal information removed>

July 05, 2022

Ogichidaa Frances Kavanaugh  
Grand Council Treaty # 3

The Honourable Stephen Guilbeault MP  
Minister of Environment and Climate Change

The Honourable Caroline Mulroney MPP  
Minister of Transportation

The Honourable Joyce Murray MP  
Minister of Fisheries, Oceans and the  
Canadian Coast Guard

The Honourable David Piccini MPP  
Minister of the Environment, Conservation and  
Parks

The Honourable Omar Alghabra MP  
Minister of Transport

The Honourable Graydon Smith MPP  
Minister of Natural Resources and Forestry

His Worship Dan Reynard,  
Mayor of Kenora and  
Members of Council

The Honourable Greg Rickford MPP  
Minister of Northern Development  
Minister of Indigenous Affairs

## **TWINNING THE TRANS-CANADA — Time to Reconsider**

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Ogichidaa Frances Kavanaugh, the Honourable Caroline Mulroney, , the Honourable David Piccini, the Honourable Graydon Smith, the Honourable Greg Rickford MPP, the Honourable Stephen Guilbeault, the Honourable Joyce Murray, the Honourable Omar Alghabra and His Worship Dan Reynard and City of Kenora Members of Council:

Please find attached our brief *Against the Current*, a brief on the environmental costs of twinning the Trans-Canada Highway between Kenora and the Manitoba border.

We ask that you reconsider and reimagine the project.

Our central point is that the environmental assessments prepared for the project fail to address significant issues, not least of which, is an assessment about whether the highway section under discussion could be improved by measures less intrusive to the environment than twinning.

We also make the point that the government of Ontario has done nothing to assess the carbon cost of twinning in relation to its stated goal of reducing GHG emissions by 30% by 2030.

We make practical suggestions for improving the highway and preserving the natural world, including under- and over-passes to allow the free movement of animals, insects and birds.

We look forward to your response.

Sincerely,

<Original signed by>

  
Doug Orchard

<Original signed by>

  
Henry Rasmussen

<Original signed by>

  
Peter Kirby

cc Niiwin Wendaanimok, Niisaachewan Anishinaabe Nation, Wauzhushk Onigum Nation, Washagamis Bay First Nation, Shoal Lake 40 First Nation, Iskatewizaagegan 39 Independent, First Nation, WSP, Narratives Inc., MPPs Mike Schreiner, Sandy Shaw, Peter Tabuns, Lucille Collard, Tyler Schulz (Environmental Commissioner (Ontario)), Jerry de Marco (Commissioner of the Environment and Sustainable Development (Canada)), Eric Melillo MP

## **AGAINST THE CURRENT — An Environmental Perspective on Twinning the Trans-Canada Highway (Kenora to the Manitoba border)**

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TO: Ogichidaa Frances Kavanaugh Grand Council Treaty # 3, Ministers (Ontario), The Honourable Caroline Mulroney Minister of Transportation, , The Honourable David Piccini, Minister of the Environment, Conservation and Parks, The Honourable Graydon Smith, Minister of Natural Resources and Forestry, The Honourable Greg Rickford Minister of Northern Development and Minister of Indigenous Affairs; Ministers (Canada), The Honourable Stephen Guilbeault, Minister of Environment and Climate Change, The Honourable Joyce Murray, Minister of Fisheries, Oceans and the Canadian Coast Guard, The Honourable Omar Alghabra, Minister of Transport and to His Worship Dan Reynard, Mayor of Kenora, and Council Members

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*THE PROJECT OF CONCERN* A 6.5-kilometre part of the Trans-Canada Highway (TC) corridor is undergoing initial preparation for twinning; the work is part of a project to create a four-lane highway over the 39.5-kilometre stretch from the Manitoba border to the junction of the west entrance to the City of Kenora and a bypass around the City, Highway 17A.

### **Our Calls for Action**

That all governments, including First Nations within Treaty No. 3 Territory, and the City of Kenora, work together to re-evaluate the need for, and the environmental impact of, twinning of the Trans-and Highway (TC) between Kenora and the Manitoba border (the project) and reconsider any commitments governments have given to support the project

That Canada’s Minister of the Environment and Climate Change designate this project for a federal Environmental Assessment pursuant to subsection 9(1) of the *Impact Assessment Act* (IAA)<sup>1</sup>

That Ontario’s Minister of the Environment, Conservation and Parks reconsider the approval of the first and subsequent stages of the project pursuant to section 15.1.3 (1) based on the “new information” presented in this brief, and<sup>2</sup>

That the Minister make an order on the Minister’s own initiative pursuant to section 16 of the *Environmental Assessment Act* for an environmental assessment, for the first and subsequent stages of the project, to consider the issues we raise for the first and subsequent stages of the project<sup>3</sup>

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<sup>1</sup> S.C. 2019, c. 28, s. 1, <https://laws.justice.gc.ca/eng/acts/I-2.75/index.html>.

<sup>2</sup> R.S.O. 1990, c. E 18, <https://www.ontario.ca/laws/statute/90e18>.

<sup>3</sup> *Ibid.*

## The Issues We Raise

*That* neither the *Transportation Environmental Study Report* (TESR) prepared by WSP for the project proponent, the government of Ontario (Ministry of Transportation (MTO)) nor the *Harmonized Impact Assessment* (HIA) prepared by Niiwin Wendaanimok (Four Winds) Partnership nor the federal Ministries of Environment and Climate Change and Fisheries, Oceans and Coast Guard, and the Ontario Ministry of Natural Resources and Forestry, considered, or fully considered, the following environmental impacts of the project:<sup>4</sup>

- the impact on carbon emissions
- the impact of the projected increase in tourists, attracted to the Lake of the Woods and surrounding land and waters, because of twinning, including cottagers and campers, fishers, snowmobilers, and other recreational users on the Lake of the Woods area
- the impact of such increases on the habitat and survival of insects, animals, birds, fish, and aquatic life
- the impact of an increase in recreational vehicles, including boats and snow machines, on noise levels and congestion on the land and on the water, and on safety

*That* the MTO has failed to commit to mitigation measures to control for animal, bird and insect death and injury and specifically the Ministry has not:

- committed to constructing large culverts for passage of animals, insects, and birds—despite a request to do so (contained in the HIA)—and failed to give any compelling reason for failure to provide such culverts in the first stage of the project, and
- has failed to consider the highway 69 and Banff model of providing overpass/bridge type corridors for the passage of animals, birds, and insects

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<sup>4</sup>Ministry of Transportation (Ontario), *MINISTRY OF TRANSPORTATION - NORTHWESTERN REGION, HIGHWAY 17 Section 1: Four-Laning from the Manitoba/Ontario Border to Highway 673 (6.5 km), CLASS ENVIRONMENTAL ASSESSMENT FOR PROVINCIAL TRANSPORTATION FACILITIES GROUP 'B' PROJECT TRANSPORTATION ENVIRONMENTAL STUDY REPORT (FINAL)*, July 2021, p. 9, [https://4lanehighway17kenora.ca/wp-content/uploads/2021/07/Hwy-17-Section-1-TESR-Report-Final\\_July-20.pdf](https://4lanehighway17kenora.ca/wp-content/uploads/2021/07/Hwy-17-Section-1-TESR-Report-Final_July-20.pdf). (prepared by WSP, a global firm providing engineering, transportation planning and environmental due diligence reports prepared the Report (<https://www.wsp.com/en-CA/what-we-do>); Niiwin Wendaanimok (Four Winds) Partnership, *Harmonized Impact Assessment: Twinning of the TransCanada Highway - Phase 1*, [https://niiwinwendaanimok.com/wp-content/uploads/2021/05/02-RPT\\_20210420\\_NW1001\\_Harmonized-Impact-Assessment\\_PUBLIC\\_FN\\_Cns\\_Reduced.pdf](https://niiwinwendaanimok.com/wp-content/uploads/2021/05/02-RPT_20210420_NW1001_Harmonized-Impact-Assessment_PUBLIC_FN_Cns_Reduced.pdf), April 2021 at p. 320 ( prepared by Narratives Inc., Winnipeg, Manitoba, <https://narrativesinc.com/our-projects/harmonized-impact-assessment-phase-1/>).

We also draw attention to the fact that neither of the environmental assessments fully considered whether twinning is necessary and whether more cost-effective solutions—factoring in environmental degradation—were better options.<sup>5</sup> Below are some of the *options not considered*:

- widening the roadway and inserting a median to prevent traffic crossing over from one lane to the other
- increasing the number of two-lane passing lanes in each direction
- putting in rest stops—with washrooms—to allow drivers to slow down and relax
- increasing the presence of police to ensure obedience to the speed limit and other highway traffic regulations
- ensuring that highway maintenance, especially during the winter, is fully adequate to protect motorists, and
- adopting the Swedish model of constructing roads with continuous and alternating passing lanes every two to five kilometres

## **Introduction**

We ask that all levels of government reconsider the project because the environmental issues were never, or barely, considered during project planning. We offer practical and proven alternatives to twinning which would meet the safety and travel efficiency concerns of proponents without causing as large a disturbance to, and destruction of, the natural habitat of creatures big and small, including habitat in and around the Lake of the Woods.

We recognize that such disturbance and destruction, and the need to account for, and mitigate for, the release of greenhouse gas emissions (GHG) pertains to any alternative, including making no improvements to the highway. Whatever option for improving the TC project route is chosen, there will be an increase in traffic—adding yet more emissions to the atmosphere, creating more concern for the survival and well being of animals, birds, insects, and aquatic life.

We know that to “do nothing,” (one of the options examined in the TESR), that is leaving the section as it is, without upgrades, will not stop the number of tourists coming to the northwest from increasing and will not address the issues we raise—issues which pertain even if there were to be no increase.<sup>6</sup>

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<sup>5</sup> *Ibid.*

<sup>6</sup> *Supra* note 4 at p. 37.

We are also aware that our “opposition” to twinning will strike those who have been supporting the project for decades as heresy. Suggesting that the project be paused, that a full environmental assessment be completed and that options to twinning be considered flies in the face of a “lets get it done” mantra.<sup>7</sup> However, as the Honourable Greg Rickford, Ontario’s Minister of Northern Development and Indigenous Affairs, and Kenora-Rainy River riding’s MPP, reminds us “getting it done” must be reconciled with doing “the right thing.”<sup>8</sup>

This is especially true given the history of development which has adversely affected the life, culture, and livelihood and territories of the Anishinaabe and Indigenous peoples of northwestern Ontario and given the climate change crisis the world is grappling with.<sup>9</sup>

As we elaborate below, relying on two recent Auditor-General reviews, the current Ontario government’s commitment to addressing climate change is both shallow and sketchy.<sup>10</sup>

Though we forgive Premier Ford’s election rhetoric, when he said at the start of the 2022 provincial election, “we’ll cut through all the excuses, all the obstacles and delays and it’s time to start pouring the concrete,” a proper environmental assessment, addressing greenhouse gas emissions (GHG), the protection of animal, bird, insect and aquatic life, though it might delay twinning or whatever improvements are made along the 39.5-kilometre TC section under discussion, is not an “excuse”; it is the only sane path forward.<sup>11</sup>

## Twining — Not Too Late to Reconsider

The first stage of the twinning project is a 6.5-kilometre stretch of the TC from the Manitoba border to highway 673 (a highway which gives access to Iskatewizaagegan #39 (Shoal Lake #39) First Nation), the second stage covers an 8.5-kilometre section and the third, a 24-kilometre section which ends at a junction with the Highway 17A bypass and an exit ramp leading to the City of Kenora (a total of 39.5-kilometres).<sup>12</sup>

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<sup>7</sup> The Ontario Progressive Conservative Party’s campaign slogan for the 2022 Ontario Election was, “LETS GET IT DONE”, <https://ontariopc.ca/>.

<sup>8</sup> In speaking to those celebrating his election victory on June 02, Minister Rickford described his government’s goals as “to do the right thing, to get it done, to build our province.” (Bronson Carver, “Rickford re-elected, wins second term as Kenora-Rainy River MPP,” *Kenora Miner and News*, Thursday June 09, 2022, <https://www.kenora.minerandnews.com/news/local-news/rickford-re-elected-wins-second-term-as-kenora-rainy-river-mpp/wcm/442974a1-dbb8-41b8-b2cf-c79b36cc2bab>).

<sup>9</sup> The HIA, *supra* note 4, elaborates upon this history.

<sup>10</sup> Auditor General, “Follow-up on Value-for-Money Audit: Climate Change: Ontario’s Plan to Reduce Greenhouse Gas Emissions (Follow-Up on VFM,” *Annual Report*, Vol. 2, c. 3 2019) 2021, at p. 14, [https://www.auditor.on.ca/en/content/annualreports/arreports/en21/ENV\\_FU\\_ClimateChange\\_en21.pdf](https://www.auditor.on.ca/en/content/annualreports/arreports/en21/ENV_FU_ClimateChange_en21.pdf); “Climate Change: Ontario’s Plan to Reduce Greenhouse Gas Emissions, *Annual Report 2019* Vol. 2 c. 3, at p. 12. [https://www.auditor.on.ca/en/content/annualreports/arreports/en19/v2\\_300en19.pdf](https://www.auditor.on.ca/en/content/annualreports/arreports/en19/v2_300en19.pdf).

<sup>11</sup> CTV News, “Ontario leaders kick off election campaign by debating proposed Highway 413”, May 04, 2022, <https://toronto.ctvnews.ca/ontario-leaders-kick-off-election-campaign-by-debating-proposed-highway-413-1.5887693>.

<sup>12</sup> TESR, *supra* note 4 at p. 9.

WSP, an engineering firm, prepared an environmental assessment (TESR) for the MTO which is focused on the first stage of the project.<sup>13</sup> According to WSP, “initial improvements for Sections 2 and 3 and ultimate improvements for all three sections will be reviewed in subsequent TESRs.”<sup>14</sup>

The prospect of further assessments, along with the fact that, up to the third week in June, forest clearing has been the only site preparation done, gives us hope that governments will not respond to our pleas that stage one *is too far advanced* to consider the issues we are raising.

## Project Justification

The TESR notes that “Highway 17 is the only east-west highway link between Kenora and the Manitoba border.”<sup>15</sup> Though the TESR does not provide data on commercial and tourist use, the highway is a busy long-distance truck route and, in the summer months, a busy route for passenger vehicles carrying tourists and cottagers (largely from Manitoba) to the northwest and points beyond.

The TESR, citing several reports produced by northerners which speak to the need for highway improvement in the northwest for reasons of economic growth and safety, notes that highways in the northwest are “mostly two-lanes and have infrequent passing lanes and rest areas” and that “accidents or natural disasters may lead to highway closures, which in many cases result in lost time and money.”<sup>16</sup>

*Safety* It is remarkable that the TESR seems to accept at face value an *improving safety rationale* for twinning without citing any data which would allow for a comparison between the existing two-lane highway and other two-lane and four-lane highways, when accident rates are freely available through the MTO.<sup>17</sup>

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<sup>13</sup> *Supra* note 4 at p. 9.

<sup>14</sup> *Ibid*; “Ontario commits to finish first phase of Trans Canada twinning by 2024” (*SteinbachOnline.com*, May 02, 2022) contains a picture of the clearing of the land for highway construction (<https://steinbachonline.com/articles/ontario-commits-to-finish-first-phase-of-trans-canada-twinning-by-2024>).

<sup>15</sup> *Supra* Note 4, “3.1 PROJECT JUSTIFICATION” at p. 14.

<sup>16</sup> *Ibid.*, Northern Ontario Municipal Association, *Enhancing the Economy of Northwestern Ontario* 2007, at pp. 38 to 39, <https://collections.ola.org/mon/21000/280520.pdf>; Robert G. Rosehart, *Northwestern Ontario: Preparing For Change* (Facilitator Report) 2008, at pp. 25 to 27, <https://collections.ola.org/mon/21000/280450.pdf>; Ministry of Transportation, *Connecting the North: A Draft Transportation Plan for Northern Ontario*, Dec 2020 at p. 3, <https://files.ontario.ca/mto-northern-ontario-transportation-plan-en-2020-12-10.pdf>.

<sup>17</sup> Ministry of Transportation, *Provincial Highways: Traffic Volumes 1988-2016*, <https://www.library.mto.gov.on.ca/SydneyPLUS/TechPubs/Theme.aspx?r=702797&f=files%2fProvincial+Highways+traffic+Volumes+1988-2016.pdf&m=resource>.



Knowing accident rates allows one to compare highways throughout the province, whatever the level of daily traffic. We note that the MTO data for the project route ends with the year 2016 and that there is no data for the period, 2011 to 2016. Surely, MTO could have, with the assistance of the Ontario Provincial Police, filled in the missing data and updated the statistics to the time of completion of the TESR, 2021.

Doing a cursory check of the rate for various sections of the 401—a four lane and in places an eight lane or more super-highway—and comparing those rates to the rate for the project route, nothing stands out as alarming.

In any event, examining the accident rate addresses only one part of road safety. We also need to know, of the accidents along the project route, how many resulted in fatalities or serious injuries, and what were the causes of the accidents. One would have to analyze to what extent twinning would eliminate or protect against causes of accidents such as speeding, poor road conditions (ice and snow), and animal-vehicle collisions.

We also need to know how many accidents involved collisions between pickup trucks and cars and SUVs and how many between semi-trailers and semi-trailers, and between semis and other vehicles. Other data which should be investigated are the frequency and effectiveness of Ontario Provincial Police (OPP) patrols, winter ploughing, sanding, and salting.

The *Harmonized Impact Assessment* (HIA) uses data from 2016 that there were over 500 collisions “near Kenora” which resulted in 111 injuries and 2 deaths, to conclude that “the two-lane highway is becoming increasingly more hazardous for road-users and local wildlife.”<sup>18</sup> As indicated above, if we do not have statistics allowing us to compare the project highway’s accident rate, and the severity of accidents, with the rates and severity for other highways, how can we say that the road is ‘becoming increasingly more hazardous’? And does ‘near Kenora’ include the highway 17A bypass north of the City or highway 17 east of the City? What are the boundaries for the stretch of road on which the 500 accidents occurred?

Anecdotally, the three authors can testify that while driving the project route, they have been pressured by semi-trailers coming up close to the rear bumpers of their vehicles, to move along more quickly. From our observation, many semis travel 5 to 10 kilometres above the posted 90-kilometre speed limit. The authors can also tell you that OPP vehicles do not seem to be regularly patrolling the highway.

A Northern Ontario Municipal Association report from 2007, *Enhancing the Economy of Northwestern Ontario*, referred to in the TESR, lamented “infrequent passing lanes” and “poorly developed rest stops which mean that drivers are not afforded safe places to rest when they become tired.”<sup>19</sup> This view is also supported in *Northwestern Ontario: Preparing For Change* and by the MTO report, *Connecting the North: A Draft Transportation Plan for Northern Ontario* (2020).<sup>20</sup>

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<sup>18</sup> HIA, *supra* note 4 at p. 4.

<sup>19</sup> Northern Ontario Municipal Association, *supra* note 15 at pp. 38 to 39.

<sup>20</sup> Rosehart, *supra* note 16 at p. 25. Ministry of Transportation, *supra* note 15, “Goal 3: Keeping People Safe and Providing Reliable Transportation Options,” at pp. 29 to 32.

There is one rest stop with washrooms at the border's Visitor Information site, one at a Clearwater Bay gas stop (14 kilometres west of the project's end, the start of the 17A bypass) and possibly two others at food stops open during the summer only (22 kilometres east of the border); there are no other washroom equipped stops along the way. Calls of nature cause stress and the resort by some long-distance truck drivers to urinating into a bottle—something which surely distracts from full attention to the road.<sup>21</sup>

Adding rest areas at the points listed above, and at the Truck Inspection Station (located 15 km east of the border) with clearly marked *public* washrooms (no purchases required) and *open year-round, twenty-four hours per day*, are easy fixes to make, will, promote traveller comfort and safety, will provide—if thoughtfully located—beautiful views, and will say “welcome” to travellers in a very tangible way.<sup>22</sup>

The TESR refers to an Environmental Assessment on improving the highway, done in 2006; as a result, passing lanes were built. There are two passing lanes in either direction between the border and Kenora.<sup>23</sup>

*Economy* Because the current project route consists of a two-lane highway with no median separating one lane from another and no alternative roadways running parallel to it, road closures do present a real issue for the timely delivery of goods and people.

As noted, semi-trailers carrying goods across the country form a significant percentage of all road traffic over the project route (it would be useful to know the percentage). These trucks need to meet deadlines. In addition, people from the northwest need assurance that they can make medical and other appointments in Manitoba (Winnipeg is an important health, recreation, and shopping hub for the people of the northwest) on time and tourists and cottagers want to get to their destinations, in the Kenora area or further along the TC, without interruption.

*Cost and Efficiency: Traffic Volume* The TESR indicates that “daily traffic is expected to grow by approximately 12-18% from 2016 levels” by 2029, increasing the “annual average daily traffic to 5,480 vehicles, and the summer average daily traffic to 7,810 vehicles.”<sup>24</sup> In his Report *Northwestern Ontario: Preparing For Change Northwestern Ontario* (2008), Dr. Rosehart notes that “it may be difficult to justify a crossregion four-laning initiative from the standpoint of current and projected traffic levels.”<sup>25</sup> However, if there is a vehicle per day standard on which government can build a case that it is cost efficient, that standard is not given in either the TESR or the HIA studies.<sup>26</sup>

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<sup>21</sup> Signatories to this Brief, Doug Orchard, and Henry Rasmussen, have years of experience driving long-haul and short-haul trucks.

<sup>22</sup> Rosehart, *supra* note 16 at p. 38.

<sup>23</sup> TESR *supra* note 4 at p. 13.

<sup>24</sup> *Ibid.* at p. 14

<sup>25</sup> *supra* note 16 at p. 25.

<sup>26</sup> *Supra* note 4.

*Tourism* Dr. Rosehart reports that the TC twinning project under discussion would “significantly enhance the attractiveness of Kenora and adjacent municipalities to Manitoba residents (particularly those in Winnipeg)” and would “provide a significant boost to regional tourism, as well as to local economic development initiatives.”<sup>27</sup>

Tourism is a main driver of twinning.<sup>28</sup> The words of a Washagamis Bay First Nation’s Elder, referring to the effect of man-made water level fluctuations on Lake of the Woods on the Indigenous fishery, are apt. He said that it is “all because of the tourism because tourism bringing them millions of dollars into the economy of Kenora. Like fishing tournaments, fish cottagers, tourists, and all that goes with it.”<sup>29</sup>

*Jobs* In MTO’s *Draft Transportation Plan for Northern Ontario*, we read that twinning “will create local jobs.”<sup>30</sup> The Minister of Transportation, Caroline Mulroney offered the same rationale for the project earlier this year.<sup>31</sup>

Surely, boasting that a highway build will create jobs, though true, distracts from the fact that road construction jobs are limited in duration and, more importantly, that twinning should not have the same priority meeting pressing needs in the northwest, like housing and the need for massive improvements to seniors’ care and to the health system generally.

Accounting for climate and environmental effects, we ask, what is the net economic benefit of twinning compared to dealing with these priorities? At the very least, we should ask the question whether the economic benefit projected for the project could be obtained by pursuing less intrusive options like adding passing lanes, rest stops with washrooms, or implementing the Swedish model.

## Options to Twinning

Our list of options to improve the project route—some of which are complete answers to twinning and others of which are simply improvements—is set out below. It includes three discussed above and adds two more: the Swedish “2 +1” model of road building and the option of greater use of rail and bus transportation:

1. increase the number of passing lanes to four in each direction (currently there are two in each direction)

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<sup>27</sup> *Ibid.*

<sup>28</sup> *Supra* note 4, TESR, APPENDIX A: CORRESPONDENCE, first page (unpaginated), in which we read that the TESR team received correspondence from Jim Antler, former Minister of Tourism, Culture and Sport, inquiring “how the project can facilitate additional tourism-related travel into Northwestern Ontario.”

<sup>29</sup> HIA, *supra* note 4 at p. 320

<sup>30</sup> *Supra* note 16 at p. 23, #3.

<sup>31</sup> Sidney McInnis, “Twinning of Highway 17 expected to begin this spring,” *KenoraOnline*, March 30, 2022, <https://www.kenoraonline.com/articles/twinning-of-highway-17-expected-to-begin-this-spring>.

2. increase the width of the roadway and install a painted median with rumble strips, raised markers or a median barrier or fence to prevent vehicles crossing over into oncoming traffic
3. add rest stops with washrooms and make other improvements suggested in *Connecting the North: A Draft Transportation Plan*.<sup>32</sup>
4. consider the *Swedish model* and make the project highway a three-lane road with alternating passing lanes every two to five kilometres
5. add more buses on the project route and add passenger rail and add more cargo by rail services

The TESR refers to options 1 and 3 without much discussion, does not mention or consider option 4 and rejects option 5.<sup>33</sup>

*The Swedish Model* The MTO is planning a test run on highway 11 in Timiskaming. Why did the TESR not consider the idea?<sup>34</sup> Such a model, in our view, would be a complete answer to concerns about safety, economy and efficiency.<sup>35</sup>

*Bus and Rail* The TESR concludes that such options “do not support area tourism focus.”<sup>36</sup> The study also claims that these options will do nothing to relieve highway congestion and will not meet future needs as “highways are the major means of transportation.”<sup>37</sup> The study does not elaborate upon the authors’ reasoning.

We note that there was a time when Manitobans thronged to Kenora by train; the CPR line connects directly from Winnipeg to Kenora parallel to the TC. We note that seniors—the fastest growing demographic in Canada—would appreciate opportunities to leave the driving to someone else. We think that frequent bus and rail service would be a draw not only for tourists but for people in the Kenora area who have appointments or business in Winnipeg. Especially during the long winter months, most people want to avoid road travel.

The economics of transporting goods by rail is a mystery to us; we wonder why government does not provide incentives for industry to switch from road to rail. It would result in fewer semis on the project route, reduce congestion and make those in passenger vehicles more comfortable.

In summary, we believe that the TESR has ignored history and public sentiment and made a big assumption about there being no political will to improve public transportation by bus and rail and to improve shipment of goods by rail.

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<sup>32</sup> *Supra* note 16, “Goal 3: Keeping People Safe and Providing Reliable Transportation Options” at pp. 29 to 32.

<sup>33</sup> TESR and HIA, *supra* note 4.

<sup>34</sup> TESR, *ibid.*, “Alternatives to the Undertaking”, Exhibit 5-1 at p. 49.

<sup>35</sup> Ian Ross, “Province does about-face on 2+1 road trial”, *TimminsToday*, <https://www.timminstoday.com/local-business/province-does-about-face-on-2-1-road-trial-3282379>.

<sup>36</sup> TESR, *supra* note 4 at p. 49.

<sup>37</sup> *Ibid.*

## What Are the Environmental Costs of Twinning?

*What the TESR and HIA Fail to Consider* The reports do not consider, do not consider in any depth, or make no, or weak, commitments to, resolving or mitigating the following effects of twinning:

- the extra carbon which will be introduced into the atmosphere by an increased volume of vehicles on the land and on the water (boats, snow machines and vehicles)
- the extra carbon which will be introduced into the atmosphere by a projected increase in the speed limit on the project highway from 90 to 100 kilometres per hour<sup>38</sup>
- the extra carbon which will be introduced into the atmosphere over Lake of the Woods and surrounding water bodies and land because of an increase in the volume of vehicles which will be attracted to northwestern Ontario by an improved roadway
- the effects of extra carbon being absorbed into and acidifying the Lake of the Woods and surrounding water bodies
- the effects of an increased volume of traffic on insect, bird, and animal populations, particularly within the areas close to the project
- the effects of the increased pollution of the Lake and other waters from vehicles, including gas and oil, tire tread particles, sewage, and litter (including plastic), and the effect of such pollution on fish and other aquatic life, birds, animals, and insects
- the effects of an increase in noise from vehicle traffic (of all types) noise on fish and other aquatic life, birds, animals, and insects, and
- the increased pressure which more fishers on Lake of the Woods and other waters will put on the fishery and a potential increase in competition with the Indigenous fishery

We discuss some of these issues below, but first we want to discuss our view of how government should look at the boundaries of the area which will suffer “fallout” from the project: the land, lakes, and atmosphere.

*Adjacent Effects* Both the TESR and the HIA focus on *adjacent* effects, that is the effects of road construction on the project beyond its paved shoulders including the effects on animals, birds and aquatic life making their homes near the project highway or crossing it to access habitat.<sup>39</sup>

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<sup>38</sup> It is hard to imagine that the speed limit along the route would not be raised to match the speed limit on the TC in Manitoba. MTO responded to a concern about the need to increase the speed limit saying that “future planning may incorporate improvements to increase the posted speed limit to 100 km/h.” (TESR, “Exhibit 6-1: Summary of Key Public Comments and Concerns” at p. 62.

<sup>39</sup> *Supra* note 4.

However, we think that this understanding of “adjacent” is too narrow. We would include lands and waters which will most certainly be affected by the construction and use of the highway, including the Lake of the Woods, and surrounding, air, lands, and waters.

We also say that Ontarians must look even further and consider the *downstream* environmental effects of the project. For example, twinning will increase the global GHG atmospheric, ocean and freshwater carbon stores, and water molecules move from streams to lakes and on to other water bodies. Carbon effects will certainly be dispersed over a vast territory.

## What Is the Carbon Cost? — There Is No Budget

*Investing in new fossil fuels infrastructure is moral and economic madness*

UN Secretary-General, António Guterres <sup>40</sup>

We are dismayed that there is no carbon budget for the twinning project to determine how twinning fits into Ontario’s plan to cut (GHG) emissions 30% by 2020—part of *Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan* (2018) (Plan).<sup>41</sup>

The Plan contains, says Ontario’s Auditor General (AG), no “clear responsibilities and requirements for ministries to track and report on climate change measures” and, nothing embedding addressing climate change “into all government decision making to ensure progress in reducing provincial emissions.”<sup>42</sup>

In addition, though the AG recommended that spending proposals submitted by Ministers to the Treasury Board outline the effect on, *inter alia*, the environment and climate change, by the fall of 2021, the Board had only gotten as far as making “plans” to create business case templates which would identify GHG and environmental impacts.<sup>43</sup>

We are very sure that if an impact assessment had been completed for the twinning project, it would have been made available, or the data made available, in some form, to both WSP and the Niiwin Wendaanimok Partnership so that their studies could have been fully informed.<sup>44</sup>

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<sup>40</sup> United Nations, “Secretary-General Warns of Climate Emergency”, Press Release with remarks from Secretary-General, António Guterres, April 04, 2022, <https://www.un.org/press/en/2022/sgsm21228.doc.htm>.

<sup>41</sup> Ministry of the Environment, Conservation and Parks, *A Made-in-Ontario Environment Plan*, <https://www.ontario.ca/page/made-in-ontario-environment-plan>. Ontario appears to have dropped “Preserving and Protecting our Environment for Future Generations”, language contained in the title of the original 2018 Plan, (<https://prod-environmental-registry.s3.amazonaws.com/2018-11/EnvironmentPlan.pdf>).

<sup>42</sup> Auditor General, *Value-for-Money Audit: Climate Change*, *supra* note 10 at p. 14.

<sup>43</sup> *Ibid.*, at pp. 14 to 15.

<sup>44</sup> *Supra* note 4.

The AG’s trenchant critique of the Plan, and of progress in implementing the Plan is worth stating:

**2019** — Our audit found that the Ministry’s projected emissions forecast, and the estimated emissions reductions for all eight areas, are not yet supported by sound evidence. As a result, our analysis found that the initiatives in the Plan have the potential to achieve between 6.3 Mt and 13.0 Mt of the 17.6 Mt emission-reduction target.<sup>45</sup>

**2021** — As of October 2021, the Ministry’s internal estimates indicate that “committed policies,” which are discussed in our follow-up on Recommendation 13, could reduce emissions from the business-as-usual forecast by 3.4 Mt in 2030 based on a \$50/tonne carbon price. This results in a 13.5 Mt-gap in meeting the updated 2030 target.<sup>46</sup>

We also refer to the AG’s reminder that Ontario’s plan—though published in 2018—*remains in draft form*, and appears to be continually “updated”, including Ontario’s recent abandonment of emissions reduction through the uptake of Electric Vehicles—an uptake which accounted for 15 per cent of the reductions forecast in the Plan.<sup>47</sup>

### **Tiny Tragedies — Treating Insects as if They Mattered**

Though both the HIA and TESR discuss effects of twinning on plant, animal, bird, and aquatic life, neither alludes to the effect of twinning on insect life.<sup>48</sup>

Lest anyone think the concern for insects is fanciful or that their destruction can be ignored, we remind readers of the decimation of bee colonies over the winter.<sup>49</sup> The die-off tells us that we cannot take nature for granted.<sup>50</sup>

We make three additional points. First, we are at a juncture in the evolution of our planet when we are risking the extinction of species, as a result, *inter alia*, of the reduction of natural habitat and climate change. We are reaching the limits of growth and are ethically duty-bound to elevate a “due diligence” standard of care for the earth to one of “utmost care”—including the care for the smallest of creatures.

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<sup>45</sup> Auditor General, *Annual Report*, “Ontario’s Plan to Reduce Greenhouse Gas Emissions”, *supra* note 10 at p. 122.

<sup>46</sup> Auditor General, *Value-for-Money*, *supra* note 10 at p 7.

<sup>47</sup> Mike Crawley, “Ontario quietly revises its plan for hitting climate change targets”, *CBC*, April 17, 2022, (referencing *Ontario Emissions Scenario as of March 25, 2022*, [https://prod-environmental-registry.s3.amazonaws.com/2022-04/Ontario%20Emissions%20Scenario%20as%20of%20March%2025\\_1.pdf](https://prod-environmental-registry.s3.amazonaws.com/2022-04/Ontario%20Emissions%20Scenario%20as%20of%20March%2025_1.pdf)); <https://www.cbc.ca/news/canada/toronto/ontario-climate-change-carbon-emissions-2030-targets-1.6419671> *A Made-in-Ontario Environment Plan*, *supra* note 38.

<sup>48</sup> *Supra* note 4.

<sup>49</sup> Desmond Brown, “Bee industry losses could surpass \$1B this year due to massive die-off, Niagara beekeeper says,” *CBC News*, May 04, 2022, <https://www.cbc.ca/news/canada/hamilton/hamilton-niagara-bee-colony-losses-1.6440038>.

<sup>50</sup> Signatories to this Brief, Doug Orchard, and Henry Rasmussen, are both active beekeepers.

Second, a holistic approach to road building would take into consideration the effects not just on animals, birds, and fish, but the tiniest of creatures, insects, which comprise 80% of species, and without which, the food chain is broken and predators and plants which depend on pollinators are put at risk.<sup>51</sup> Third, we believe that if we want to take care of big things, like climate change and water, we must start by taking care of small things—which are often the only things we have the immediate power to protect in our day to day lives.

A Canadian study, done with the participation of the Magnetawan First Nation, Laurentian University and the MTO, looked at the destruction caused to all forms of pollinators, including moths, flies, and butterflies, by collisions with vehicles on a two-lane section of highway 69—a northern part of the TC connecting Sudbury to points south.<sup>52</sup>

During the period from the first of May until the end of August, during the years 2012 and 2013, along a 2 kilometre stretch of highway 69, a research team found the following road-kill rates: for Lepidopterans (butterflies and moths), a rate of 10.1 individuals/km/day (a total of 2725 over the four month study period), for Hymenopterans (bees and wasps) a rate of 26.8/km/day (a total of 8486 over the four month study period), and for Dipterans (horseflies and blowflies) a rate of 202.3/km/day (a total of 93456 over the four month study period).<sup>53</sup>

Over the full length of highway 69 (388 km), the team estimated that over 11 million insects were killed in the study period.<sup>54</sup> It is worth noting that the study team collected insects that they found on the road surface and shoulders; they did not count insects which bounced off vehicles to points beyond the shoulders and did not account for insects flattened against windshields and vehicle bodies or whose carcasses were harvested by other creatures.<sup>55</sup>

If we extrapolate the study's findings to the project's 39.5-kilometres, and round up, we can estimate that the insect death total for this section from the beginning of May until the end of August in any given year, would be in the neighbourhood of 1.1 million insects. However, if we account for a doubling of the road surface which twinning will bring, we can double the total to 2.2 million.

The researchers remind us that roadkill is only one of many threats to insect populations.<sup>56</sup> However, given the dramatic numbers killed on our highways, we must take roadkill seriously.

We believe that building corridors—under- and over-pass will help reduce the killing of insects.

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<sup>51</sup> Baxter-Gilbert et al., “Road mortality potentially responsible for billions of pollinating insect deaths annually,” *Journal of Insect Conservation* (2015) 19:1029–1035, p. 1029 and 1033, <https://link.springer.com/article/10.1007/s10841-015-9808-z>; and Muñoz et al., “Effects of roads on insects: a review”, *Biodiversity and Conservation* (2015) 24:659–682, p. 660, <https://link.springer.com/article/10.1007/s10531-014-0831-2>.

<sup>52</sup> Baxter-Gilbert et al., *ibid.* at p. 1030.

<sup>53</sup> *Ibid.* Table 1 at p. 1031.

<sup>54</sup> *Ibid.* Table 2 at pp. 1032 to 1033.

<sup>55</sup> *Ibid.* at pp. 1030 and 1033.

<sup>56</sup> *Ibid.* at p. 1029.



## Corridors for Insects, Birds, Animals

The *MTO has proven the worth of a corridor system*, including an overpass, along the now twinned highway 69, which along with underpasses and fencing, has reduced animal-vehicle collisions by a reported 74 per cent.<sup>57</sup> There are other models: Banff which has 6 overpasses in addition to 38 underpasses on the TC (which have reportedly reduced wildlife collisions by 80 per cent), California, which is building a huge bridge over a ten-lane freeway, and France, where 9 overpasses are being added to the existing 100.

Niiwin Wendaanimok’s HIA recommends the use of animal corridors to reduce vehicle-animal collisions but records that MTO is only prepared to commit to “supporting additional investigations to identify areas of wildlife crossing and determine if wildlife corridors can be a viable option for subsequent phases of the project.”<sup>58</sup>

Neither the HIA nor MTO, in its response to the HIA, mention overpasses and make a weak commitment to culverts. In the section, 7.4.4 Site-Specific Mitigation Measures, of the TESR, we read that “specific measures to reduce on-going wildlife highway mortality are not feasible in this section (e.g., there are no low draws or valleys that might support larger structures for an underpass)” and “opportunities to design larger highway culverts with overbank areas that may facilitate movement of small animals will be reviewed and incorporated if appropriate.”<sup>59</sup>

In other words, given the refusal to consider an underpass corridor for the first stage of the project and to incorporate such underpasses in the next two stages only if “viable” and “appropriate”, and only, so the TESR states, to protect “small animals”, it is clear that *the MTO is not committed to do anything to protect animals, birds, and insects*.

As in relation to insects, doubling the road surface that animals must cross doubles the potential of them being killed.

## Plastics, Tire Tread Wear, Noise, Acidification and Pressure on the Fishery

We will not elaborate on the issues highlighted but simply note that some of the evidence is staring us in the face. We start with the Lake of the Woods fishery about which we read last year:

The once plentiful *walleye population in Ontario’s Lake of the Woods is in trouble*, with the current fishery now unsustainable, according to Ontario’s Ministry of Natural Resources and Forestry.<sup>60</sup>

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<sup>57</sup> Grace Hunter, “Sneak a peek at animals using wildlife overpass”, *Cottage Life*, November 09, 2020, <https://cottage.life.com/outdoors/sneak-a-peek-at-animals-using-wildlife-overpass/>.

<sup>58</sup> HIA, *supra* note 4 at 364 (with respect to discussion on protecting deer; the HIA request and the MTO response was the same for all animal species discussed in the HIA).

<sup>59</sup> TESR, *supra* note four at p. 71.

<sup>60</sup> “Lake of the Woods’ walleye fishery in jeopardy, say Ontario conservation officials,” *Outdoor Canada*, August, 2021, <https://www.outdoorcanada.ca/lake-of-the-woods-walleye-fishery-in-jeopardy-say-ontario->

Though we note that fishers are now reporting no problems catching walleye, obviously, the Ministry of Natural Resources and Forestry had, just a year ago cause for real concern. Because the Ministry has released no study on the issue, we simply flag the need to protect the fishery and note the obvious: increased tourism will bring more recreational fishers to the Lake of the Woods and other water bodies in the northwest.

We ask why neither the TESR nor the HIA explore this and other issues affecting the environment<sup>61</sup>. For example, what is the effect of an increase in motorboat noise on fish populations, an issue about which there is scientific literature demonstrating the potential for deleterious effects? what harm does the breakdown of plastics and vehicle tires and this detritus finding its way into lakes and rivers, pose to creatures which ingest them? and should we be concerned about the lowering PH levels of freshwater lakes as a result of absorbing carbon (acidification)?<sup>62</sup>

Along with forests no longer serving as carbon sinks, melting glaciers, thawing permafrost, rising sea levels and warming oceans, droughts and massive, uncontrollable, forest fires throughout North America, acidification is the most real, most incontrovertible evidence of our climate crisis.<sup>63</sup>

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[conservation-officials/](#); and see “Walleye fishing at levels above sustainable levels in Lake of the Woods: MNR,” *CBC News*, May 03, 2021, <https://www.cbc.ca/news/canada/thunder-bay/lake-of-the-woods-walleye-population-1.6007794>.

<sup>61</sup> Supra note 4.

<sup>62</sup> de Jong et al., “Predicting the effects of anthropogenic noise on fish reproduction,” *Reviews in Fish Biology and Fisheries* (2020) 30:245-268, <https://link.springer.com/content/pdf/10.1007/s11160-020-09598-9.pdf> (Creative Commons Licence at <https://creativecommons.org/licenses/by/4.0/legalcode>); “A ubiquitous tire rubber-derived chemical induces acute mortality in coho salmon,” *Science*, December 03, 2020, <https://www.science.org/doi/10.1126/science.abd6951>; Thiele et al., “Microplastics in fish and fishmeal: an emerging environmental challenge,” *Scientific Reports* (2021) 11:2045, <https://www.nature.com/articles/s41598-021-81499-8.pdf>; Cody V. Veneruzzo et al., “Effects of microplastics on Yellow Perch (*Perca flavescens*) metabolic rates,” *Proceedings of the 19th Annual International Rainy-Lake of the Woods Watershed Forum 2022*, p. 20 (Abstract only), <https://lowwsf.com/forum-proceedings/122-2022-forum-proceedings/file>. With respect to ocean acidification—the lowering of the PH level in salt water so that it becomes relatively more acidic and less alkaline because of the absorption of carbon ,it is “occurring at a rate 30 to 100 times faster than at any time during the last several million years driven by the rapid growth rate atmospheric CO<sub>2</sub> that is almost unprecedented over geologic history” (Woods Hole Oceanographic Institution, <https://www.whoi.edu/know-your-ocean/ocean-topics/how-the-ocean-works/ocean-chemistry/ocean-acidification/>) Though the effects are still being researched, no one can safely predict that ocean life can adapt to the change to water chemistry occurring now, and predicted to increase as the planet continues to warm. The effect of CO<sub>2</sub> being absorbed into freshwater systems is less well researched—but is concerning (see study cited in note 49).

<sup>63</sup> Scott C. Doney et al., “The Impacts of Ocean Acidification on Marine Ecosystems and Reliant Human Communities,” *Annual Review of Environment and Resources*, 2020, <https://www.annualreviews.org/doi/epdf/10.1146/annurev-environ-012320-083019>; Caleb T. Hasler et al., “Biological consequences of weak acidification caused by elevated carbon dioxide in freshwater ecosystems,” *Hydrobiologia* (2018) 806:1–12 at pp. 2 and 8, <https://link.springer.com/article/10.1007/s10750-017-3332-y>; <https://aslopubs.onlinelibrary.wiley.com/doi/epdf/10.1002/lno.11298> (author manuscript: <https://aslopubs.onlinelibrary.wiley.com/doi/am-pdf/10.1002/lno.11298>). In *Forest Carbon* (Natural Resources Canada) we read:

For the past century, Canada's managed forests have been a significant carbon sink, steadily adding carbon to that already stored. In recent decades, however, the situation has reversed in some years: Canada's forests have become carbon sources, releasing more carbon into the atmosphere than they are accumulating in any given year. (<https://www.nrcan.gc.ca/climate-change-adapting-impacts-and-reducing-emissions/climate-change-impacts-forests/forest-carbon/13085>)

## Local Commitments to Stewardship

The City of Kenora sits on the Lake of the Woods, a centre piece of the natural beauty of the northwest and an attraction for visitors throughout the year.

As residents and taxpayers in the City of Kenora, we remind our mayor, His Worship, Dan Reynard, and members of Council, that in collaboration with other levels of government, First Nations, and Indigenous people, the City has an important role to play in protecting the lake and in addressing the issues we raise.

In its pre-2022 *Strategic Plan*, the City of Kenora committed itself to “continue to advance our leadership position as ‘Stewards of the Lake’ and ‘Stewards of the Land’; in September 2017, it declared a climate emergency and created a Task Force to examine, *inter alia*, pathways to net-zero by 2050 and, in 2022, adopted a *Sustainability Plan* which lists as the first of 14 priorities, to “build on the existing Community Energy Plan (CEP) to create an emissions reduction plan for Kenora, including targets and accountability mechanisms.”<sup>64</sup>

However, it does not appear that the City has considered the carbon consequences of twinning or even the more practical environmental concerns within its jurisdiction or at least within the scope of its plan for economic development which involves promoting marinas and docks and building parking spaces for boaters’ cars and trucks.

In our issue list, at the beginning of our brief, we raise a concern about the effect of increased motorboat and other vehicular traffic on the Lake of the Woods. Has the City considered the noise, pollution, congestion, and safety effects of such an increase? Or considered whether there should be limits to the growth of boating on the lake?

## Conclusion

The earth has no twin; doing “the right thing” demands sacrifice.

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<sup>64</sup> City of Kenora, *Goals and Corporate Actions: Foundations, 2-14, Strategic Plan 2016 to 2020*, <https://www.kenora.ca/en/build-invest/resources/Documents/kenora-vision-2020-strategic-plan-2016-update.pdf> (this Plan has been replaced by *CHARTING OUR COURSE 2027: 2022-2027 STRATEGIC PLAN*, no date (adopted by City Council on April 05, 2022), <file:///C:/Users/Veriton/Documents/AA--MyFiles/AA--ENVIRONMENT/AA--KenOffStratSustPlan%202020-22/SUSTAINABILITY%20PLAN/Strategic%20Plan%20Charting%202022.pdf>); *Climate Emergency (Notice of Motion from August 13, 2019 Council)*, passed at a meeting on September 17, 2017, [https://listview.kenora.ca/Files/Meeting%20Documents/2019/Council%20\(including%20special\)/September%2017%20Council%20Minutes.pdf](https://listview.kenora.ca/Files/Meeting%20Documents/2019/Council%20(including%20special)/September%2017%20Council%20Minutes.pdf); *Sustainability Plan: The First Sustainability Action Plan for the City of Kenora (2022 – 2031)*, February 2022 (adopted by City Council April 05, 2022), [https://listview.kenora.ca/Files/Meeting%20Documents/2022/Committee%20of%20the%20Whole%20\(including%20Special\)/April%202022%20Committee%20of%20the%20Whole%20Agenda.pdf#navpanes=0&view=FitH](https://listview.kenora.ca/Files/Meeting%20Documents/2022/Committee%20of%20the%20Whole%20(including%20Special)/April%202022%20Committee%20of%20the%20Whole%20Agenda.pdf#navpanes=0&view=FitH).

The assessment of environmental impacts is deficient and should be redone including an assessment of the project's carbon impact. *Best in class* measures should be put in place to measure and mitigate the environmental damage and deficits which twinning will cause. This includes the creation of over- and under-passes.

<Original signed by>	<Original signed by>	<Original signed by>
Doug Orchard	Henry Rasmussen	Peter Kirby

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