

WINNIPEG'S PERIMETER HIGHWAY: "DISASTER BY DESIGN"

Executive Summary

- Winnipeg is the only major urban area in the developed world without freeways.
- Although they are unpopular with some urban planners, freeways not only reduce congestion and pollution, they make cities more efficient in economic terms.
- In its current state, Winnipeg's Perimeter Highway is dangerously designed at about 70 points.
- Bringing it up to freeway standards would entail installing overpasses, underpasses or cloverleaves at several key intersections.
- The cost of such work would amount to approximately \$440 million, a bargain when the benefits are considered.



Introduction

In many ways Winnipeg is a delightful, unique community with much to offer its residents. In one important respect, however, it falls far short of its potential. Within the New World countries of Canada, the United States, Australia and New Zealand, Winnipeg is probably the largest urban area without a freeway.¹ Indeed, with respect to its lack of freeways, Winnipeg trails even some second and third world cities, such as Monterrey, Mexico, another urban area on the NAFTA highway.

This circumstance may be a source of pride to the many urban planners whose contempt for the automobile and suburban living leads them to consider freeways as destructive to urban areas as bubonic plague. They could not be more wrong.

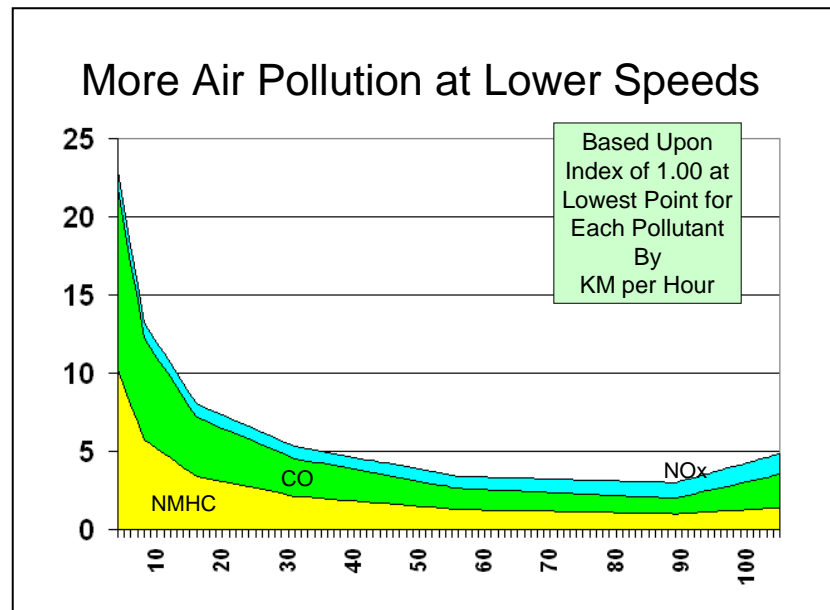
¹ That statement contradicts a common myth, that Vancouver has no freeways; its suburban areas are indeed well-served by high-speed, limited access roadways.

Throughout Canada, the United States, Western Europe and Japan, low-density suburban development has been pervasive in recent decades. The existence or extent of freeways is not the determining factor. It is rather that the automobile empowers people by bringing more jobs and lower-priced shopping within easy access. This, of course, means more economic growth and higher income for virtually all households, especially low-income households. Freeways are also an important means of reducing traffic congestion and the loss of human capital associated with commuters stuck in gridlock while breathing unhealthy air.

The closest that Winnipeg comes to replicating this important element of urban efficiency is its still uncompleted outer ring road, known as the Perimeter Highway. But that effort is complicated by the fact, often noted with derision by tourists, that the Perimeter Highway is not really a freeway at all, if one defines that term as a roadway with only high-speed access and egress. Instead it contains at least 70 points where direct access for vehicles (and crossings for railways) occurs by means of ordinary, ground-level intersections, a fact that makes the Perimeter not only a much less efficient roadway, but a very dangerous one.

Congestion and Pollution

Urban areas with little freeway capacity suffer from more traffic congestion because arterial streets are simply not able to handle the amount of traffic that can be accommodated on a freeway. The Texas Transportation Institute,² the authoritative source on urban traffic congestion in the United States, estimates urban freeway capacity per lane at nearly three times that of an arterial street. Because more traffic is on the under-capacity local streets, speeds are slower.



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Moreover, the stop signs and traffic signals mean that traffic speeds are less consistent. All of this increases air pollution, because higher levels of air pollution are associated with the slower, less consistent driving speeds that occur on urban area arterial streets (see Figure, More Air Pollution at Lower Speeds).³ For example, automobile travel on arterial streets produces between 25 percent and 50 percent more air pollution per kilometre than on a freeway. Moreover, fuel economy is considerably worse in "stop and go" arterial street travel than on freeways. Thus, freeways reduce greenhouse gas emissions.

² Available at <http://tti.tamu.edu>

³ Calculated from United States Environmental Protection Agency Mobile5 data.

Safety

Freeways are also far safer than other roadways. This means that Winnipeg's aversion to freeways is needlessly killing and maiming people. Residents of the city are familiar with the all-too-frequent news reports of traffic accidents on the Perimeter Highway.

The data demonstrating the superior safety of freeways is compelling. Based upon research conducted by Demographia,⁴ the Infrastructure Council of Manitoba⁵ notes that the U.S. freeway system saves more than 6,000 lives and 440,000 injuries annually compared to other highways. Freeways were found to reduce injuries by 70 percent (see Figure, Injury Rate by Roadway Type) and fatalities by 70 percent (see Figure, Fatality Rate by Roadway Type). At these rates, the injuries and fatalities avoided in the United States every year are more than 440,000, two-thirds the population of Winnipeg. Over the first 40 years of the American interstate highway, a freeway system, the number of injuries and fatalities avoided is estimated at 12,000,000 – more than the population of Manitoba, Saskatchewan, Alberta, British Columbia and Atlantic Canada combined.

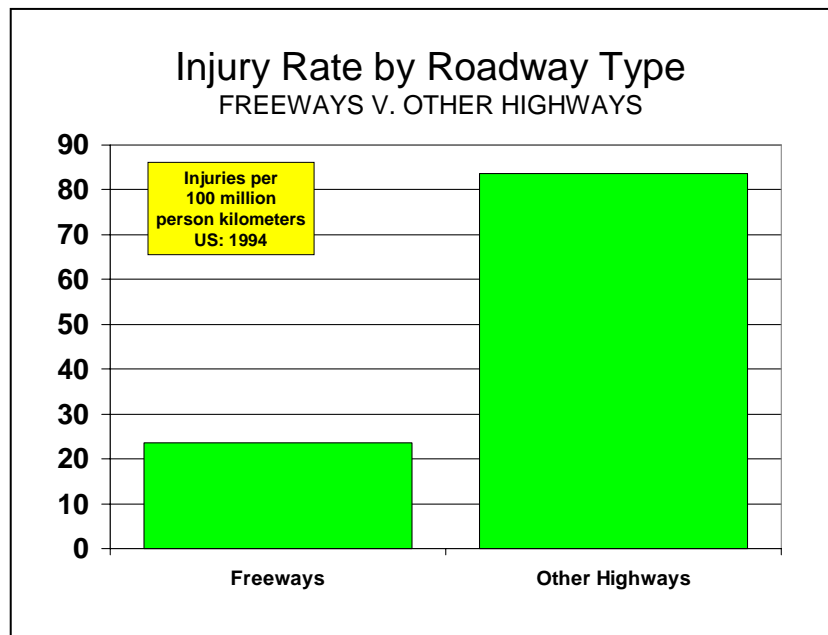
The reason for this superior safety record is that the most destructive accidents are rendered nearly impossible by freeway designs.

Everyone knows that traffic accidents happen because two vehicles attempt to occupy the same space at the same time. The worst such accidents are head-on collisions of the variety that have so frequently occurred on the two-lane section of the Perimeter Highway. In addition, many fatal accidents occur when cars driven at

highway speed crash into other cars attempting to cross the highway. These kinds

of accidents can occur everywhere – on local two-lane streets or on a roadway like the Perimeter Highway. However, there is an important difference. When two vehicles collide on local streets, the impact speed is usually much slower and the chances of death or serious injury are much less.

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⁴ <http://www.publicpurpose.com/freeway.htm>.

⁵ An umbrella group composed of industry associations, government agencies and educational institutions that promotes the development of road infrastructure.

however, that they are far safer than any other type of roadway. There are two reasons for this. The first is that there is an exclusive roadway in each direction that, properly designed, renders head-on collisions virtually impossible. The second reason is that all crossings are separated. There are no traffic signals and there are no unprotected crossings. This means that cars crossing the highway are not in the way of traffic, they rather cross under or over the roadway, which virtually eliminates road crossing accidents.

The Perimeter Highway is a treacherous, substandard roadway that has taken far too many lives in the past and inflicted far too many injuries. Moreover, it will continue doing so until critically needed improvements are made.

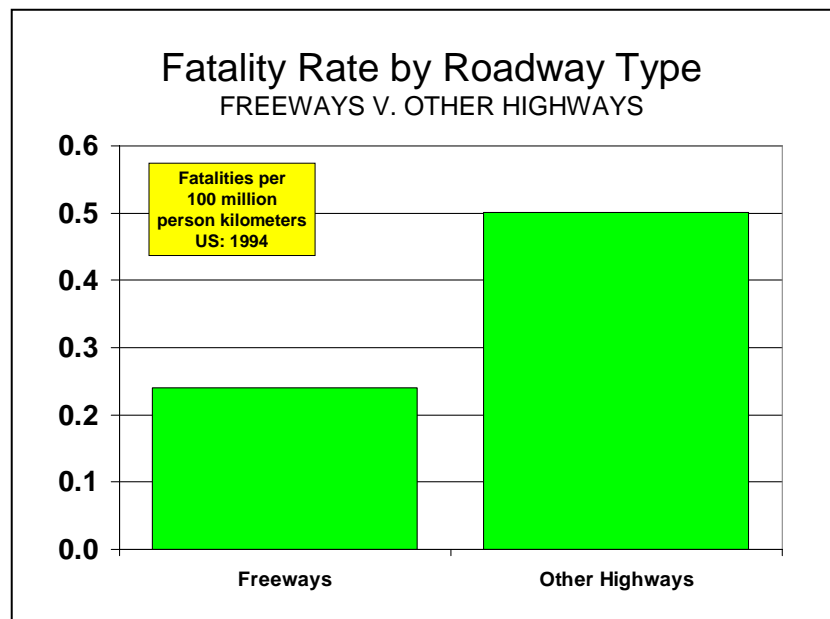
A *Winnipeg Free Press* editorial recently quoted a resident who called the Perimeter "The Disaster Highway." However, it is worse than that. It is the Disaster by Design Highway. Along its 90-kilometre length, there are approximately 70 opportunities for cross traffic to be hit by trucks and cars traveling at highway speeds. The crossings may be signalized intersections or gravel roads. But the simple fact is that many of the deaths and fatalities simply would not have occurred if the road had been designed to the highway standards that seem to apply everywhere in the high-income world except Winnipeg.

Improvements

The Perimeter Highway needs to be upgraded to modern freeway standards. It should no longer be possible to cross the highway, whether by car or train. This would require replacement of major grade crossings with overpasses and cloverleaf access roads. The highway should also be elevated over railroad crossings. Finally, the median crossings at the many local, sometimes gravel roads should be closed. Any remaining local roads should be configured at the new freeway so that they angle onto the roadway as a freeway on-ramp, rather than the current perpendicular design.

Costs

All of this is likely to cost approximately \$440 million. The following chart breaks down the elements of that total by the type of improvements required to make the Perimeter Highway a freeway:



WINNIPEG PERIMETER INTERSECTIONS ESTIMATED COST OF CONVERSION TO DIVIDED AND CONTROLLED UNDERPASSES

Current Level Intersections	Number	Estimated Cost (\$ Millions)	Total (\$Millions)
4 or 6 lane controlled	9	20 *	180
4 or 6 lane uncontrolled	4	5	20
4 lane crossings	35	5	175
Railway crossings	10	4	40
T crossings	12	2	24
Total	70		439

***Urban Standard**

Note: Unless otherwise indicated, the cost estimates are provided on a rural standard. Cost estimates have been based on the New Construction and Rehabilitation Cost Guide For Highways, published by the BC Ministry of Transportation in 2004.

This is a lot of money, but the safety improvements alone, not to mention the benefits of more efficient traffic flows in Winnipeg, should make such a project a high priority for the metropolitan area.

There is no excuse for killing people by design.



About the Author:

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Appendix

Within the New World countries of Canada, the United States, Australia and New Zealand, Winnipeg is probably the largest urban area without a freeway.⁶ Indeed, with respect to its lack of freeways, Winnipeg trails even some second and third world cities, such as Monterrey, Mexico, another urban area on the NAFTA highway.

Placing traffic signals on a divided highway forces vehicles to frequently brake from high speeds. This doubles the incidence of fatalities while increasing pollution and gasoline consumption. On average, a vehicle must pass through a traffic signal every 7.8 km on the round trip journey around Winnipeg's Perimeter Highway.

McGillivray Boulevard & Perimeter Highway



⁶ That statement contradicts a common myth, that Vancouver has no freeways; its suburban areas are indeed well-served by high-speed, limited access roadways.

Waverly Street & Perimeter Highway



St. Mary's Rd. & Perimeter Highway



St. Anne's Rd. & Perimeter Highway



Dugald Road Highway 115 & Perimeter Highway



Lagimodiere Boulevard & Perimeter Highway



Pipeline Road & Perimeter Highway



Patterson Road Hwy 6 & Perimeter Highway



Saskatchewan Avenue & Perimeter Highway



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