AIMS Commentary
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Traffic congestion: The Stockholm Solution

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One sunny Wednesday afternoon last September, I drove from outside Hamilton, Ontario to Toronto: a short 40 kilometre trip that took over three hours. Mind you, it was in the teeth of rush hour, then again I was going into Toronto, not leaving it when traffic is heaviest. Multiply that by 30 or 40,000 cars making the same trip and you get a sense of time wasted. Multiply that by every weekday, every month, every year, and every major city in the country and the economic waste becomes enormous. One estimate is that the Greater Toronto Area alone loses $2 billion a year in lost time and productivity.

There has always been a solution to this problem, but both politicians and the public simply refuse to accept that tolls are the answer. Politicians are afraid to impose another cost on voters, while most drivers assume that roads should be costless. Yet there is no other viable solution. Forget about new road construction - which is too costly - and car-pooling - which is too marginal - the only real answers are incentives that change driving behaviour. Canadians, who in the past have always looked to Scandinavian countries for guidance in social policies, now have another reason to gain from their experience. (Of course there has been less attention to the Swedes since they started relying more on free market strategies.)

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On September 17th, Stockholm residents voted to approve a traffic control system that will see car drivers pay tolls to enter the city. Unlike the City of London that charges a flat fee of around £6 to enter the city, or Rome which simple bans cars from certain parts of the city, Stockholm has conducted one of the most sophisticated traffic-management systems as part of a plan to reduce traffic congestion, pollution and improve quality of life.

The system, first theorized by Nobel-prize winning economist William Vickery in the 1950s, is known as congestion pricing in which drivers are charged different amounts depending on the time of day. In other words, the project was a giant behaviour-control experiment to see if driving habits can be changed thereby distributing traffic more efficiently throughout the day. And in the process encourage people to use public transit. What opponents of tolling need to understand is that even small declines in the volume of cars on the road can have a huge impact on the flow of traffic. Take 10 percent of the cars off the road during rush hour, and rush hour gridlock almost vanishes.

Through the national government of Sweden and a contract with IBM, 23 tolling points, with cameras and laser detectors, were set up monitoring traffic throughout the city. Drivers were charged the appropriate fee depending on the time of day and location. A driver traveling at the busiest time of the

day from 4 to 5:30 would be charged about $3; after 6:30, the ride home would be free. Fees were then deducted automatically from their bank accounts. Part of the experiment also monitored air quality, parking, traffic accidents and bus ridership.

So how did the experiment do? Traffic passing over the city's cordon dropped 22%, traffic accidents causing injuries fell 5% to 10%, and carbon dioxide levels fell 14% in the inner city. Since Stockholm is a city made up of many small islands and bridges, it was prone to traffic snarls and gridlock. Despite this, by the end of the trial period, which went from January to July, the time it took to drive home during peak hours decreased by a third. In the process, all forms of public transit rose 6%, even bike ridership increased. In short, drivers modified their driving and transportation patterns and routines. None of this would have surprised Vickery; what would have is the amount of time it took for city managers, traffic analysts, politicians and the general public to adopt a system that so easily changes driving habits. The real surprise is how little incentive it took to change these patterns. Enough drivers waited until they could drive home free and save $3.00.

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Of course a good part of the success of the program is that we now have the technology to implement the system. Drivers no longer have to wait in long lines to throw coins into baskets as they once did, and still do in some places in North America. Virtual tollbooths could theoretically be implemented to monitor and charge different rates on all roads throughout any city.

Although other cities, such as Oslo, Rome, Edinburgh, London, have introduced some form of toll roads, all of Europe is poised to begin tolling on a large scale encouraged under EU-wide directives. Milan is looking at a similar system to Stockholm's while San Francisco examines the London model of setting a fixed tax for cars entering the city.

Despite the obvious benefits, it's surprising that the residents of Stockholm didn't give the program the support one would expect. A slim majority of 53% voted to approve the project. Opponents to the taxes say they would hit low-and-middle income workers commuting from the suburbs and could hurt Sweden's economy. The other hurdle is that many members of the new central government were opposed to the program and it has the authority to approve or dismantle the whole system.

There are ways to compensate those who may be affected by the higher costs; one way is to provide tax relief to low income earners who must use their vehicles for work. But experience shows that resistance to tolling falls as drivers, and the general public, see tangible benefits as the system delivers the goods. If finally approved, the system - sometimes called a congestion tax - will go into effect early in 2007. Regardless of what happens, the die is cast, and in the long run tolling can't, and won't be denied as momentum builds.

Aside from the environmental benefits, lower accidents and less congestion, another trend that will push the greater use of tolls is the privatization of roads in North America. With the growing demands on municipal budgets and shrinking funds for infrastructure programs, the most viable solution is the involvement of the private sector in any transportation strategy.

Lessons for Canada's biggest cities

In Canada we have our own toll road success story. Highway 407 in Ontario is one example of a government highway managed by a private company with a sophisticated toll system paid for by the private sector. Critics have been proven wrong that drivers wouldn't pay to drive on a tolled road. As of February 2006, over 750,000 transponders have been issued, and the highway serves or is used by 330,000 drivers on any weekday. The 108-kilometre highway has been effective in lowering traffic congestion on the major highways in sur-

rounding areas especially the 401, Canada's busiest highway north of Toronto. And because it can control traffic flow by charging higher rates during peak hours, the highway has an excellent safety record. In the United States, 32 of 50 states either use toll roads or are considering them for non-interstate highways with many making the transition from the traditional manned toll booths to the electronic toll system.

Despite the trends to greater toll use, there is a stubborn resistance to their use. The problem is essentially political. The issue simply hasn't become a campaign issue in Toronto's upcoming municipal election even though the city's population is expected to rise by 500,000 people over the next 15 years. The problem will only get worse in the short run as 10,000 new housing units come on line this year with a further 122,000 waiting for approval in the next few years. Building more roads isn't the answer. Without a user pay system, they will quickly clog up as with any product that is offered at no cost.

And gone are the days when the province of Ontario covered 75% of the transit bill. The Toronto Transit Commission currently needs $9 billion over the next 10 years for maintenance, expansion, subway cars and buses and no one has a good idea where it will come from.

These problems aren't unique to Canada's largest city. Vancouver, Winnipeg, Montreal, Halifax all face similar problems - albeit at different scales. But if any of them want to control traffic congestion, avoid costly road construction spending, help the environment, encourage more use of public transit, and lower traffic accidents - tolls are the answer.

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