

Demand management emergency measures and their impact after the Highway 19 overpass collapse

Organizations

Agence métropolitaine de transport (AMT)
 CIT Laurentides
 GO Transit
 Les Moulins RCM
 Ministère du Transport du Québec (MTQ)
 Réseau de transport de Longueuil (RTL)
 Société de Transport de Laval (STL)
 Société de Transport de Montréal (STM)
 City of Laval
 City of Montreal

Status

Overview

Contact

Resources

Background

On September 30, 2006, at 12:38 p.m., a 20 m section of the southern portion of the Concorde overpass collapsed on Highway 19 in Laval, a suburb north of Montreal. As a result of this incident, 5 motorists who were driving on the highway at the time died and 6 other people on the overpass were injured.

Issue

Every day, nearly 57,000 motorists use Highway 19 to get to Montreal. The highway connects the Duvernay neighbourhood in Laval with the Ahuntsic-Cartierville borough in Montreal. After a section of the Concorde overpass collapsed, Highway 19 had to be closed for several weeks for the investigation, and for the planning, designing and construction of the replacement overpass. No doubt, many commuters had to use alternate routes for a few weeks while the highway was closed. That said, this was not the first incident to disrupt traffic to the Island of Montreal. Another example is the collapse of a section of an overpass under construction on Boulevard du Souvenir on June 18, 2000. To manage this situation, emergency measures were implemented, but on a much smaller scale for a shorter time period.

Goals and objectives

To offset the closure of this major highway linking Montreal, Laval and the North Shore of Montreal, various measures were announced the day after the incident (Sunday, October 1, 2006) by experts from the Quebec department of Transport (MTQ), the City of Laval, the City of Montreal and the Agence métropolitaine de transport (AMT). The purpose of the highway plan that was unveiled was to improve traffic flow when work began on Monday, October 2, 2006, while encouraging the use of alternatives to the car.

Actions

Impact on the highway system

Closure of a section of Highway 19

The first major measure was the closure of Highway 19, between the Papineau-Leblanc bridge and Highway 440. The Papineau-Leblanc bridge remained open to traffic in the southerly direction and was accessible from the Boulevard Lévesque exit, the last exit before getting to Montreal (See map below).

Figure 1: Gridlock reduction plan



Source: <http://www.radio-canada.ca> (in French only)

Authorities recommended that motorists use the Pie-IX bridge or Highway 15, but only if their jobs required the use of a vehicle. The message given by authorities was that the only real solution for the upcoming weeks would be public transit.

Stopgap measures by public transit

A sixth departure was added to the commuter train line between Blainville and Montreal. In order to increase ridership during this transportation crisis, the Government of Ontario lent AMT a GO train (8 cars and 1 locomotive) that could accommodate up to 1,400 additional users.

Another measure implemented by local and regional transportation authorities (STL, RTL, STM and AMT) was to create a park-and-ride that could accommodate up to 600 cars and was located at the corner of Boulevard des Laurentides and Rue Gianchetti, in the Guzzo movie theatre parking lot.

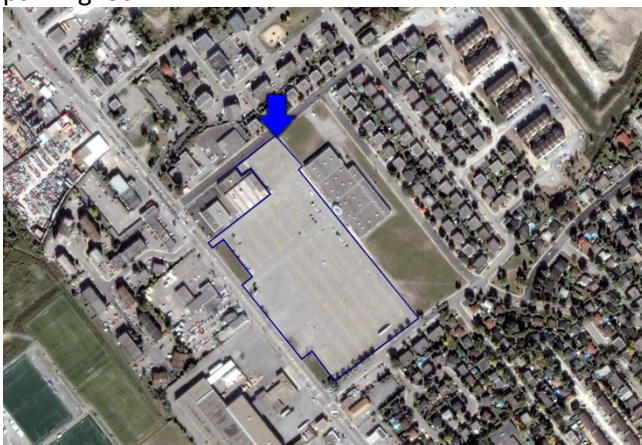
Shuttle service was also provided to Henri-Bourassa subway station, from 6 a.m. to 10 a.m. during the morning rush, and from 3 p.m. to 7 p.m. during the evening rush. In order to optimize the shuttle service, the existing bus lane on Boulevard des Laurentides was doubled in length. The shuttle service took passengers from the park-and-ride to Henri-Bourassa subway station (a 10-minute ride, compared to 1 hour by car).

AMT also added a new commuter train station to alleviate car traffic and reduce overcrowding at other stations. AMT had already been planning to build this station as part of its three-year capital plan; however, its construction was moved up considerably.

Details and costs of measures taken by AMT

The Guzzo movie theatre parking lot was converted into park-and-ride that could accommodate 600 cars, so users could go directly to Henri-Bourassa station using the shuttle service, which was established from October 2, 2006, to November 3, 2006. AMT estimates that an average of 550 cars parked there every day. AMT estimates that the total cost of this service was \$5000, which includes the salary of the personnel in charge of directing traffic (\$387 a day) and other related costs (AMT, 2008). Following the success of this measure, the park-and-ride was made available until Laval station started operations on April 28, 2007. The images in figures 1 and 2 are of the Guzzo movie theatre park-and-ride.

Figure 2: Aerial view of the Guzzo movie theatre parking lot



Source: Google Earth 2008, modified by Anwar K. Mohamed

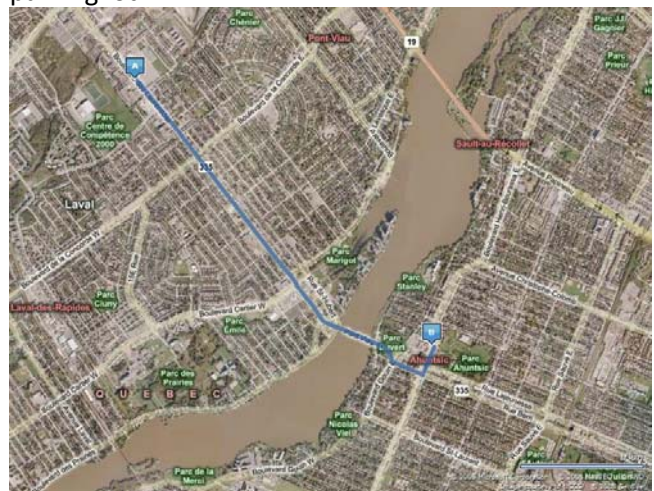
Figure 3: Guzzo movie theatre parking lot



Source: Microsoft Virtual Earth 2008

The shuttle service, from the Guzzo movie theatre parking lot (see figure 4) to Henri-Bourassa subway station, was in operation during the same period, from October 2, 2006, to November 3, 2006. Before Highway 19 reopened, there were 1200 users per day, and 600 users per day after it reopened. The expenses incurred by STL included renting 6 buses and staff salaries, such as drivers' salaries. The service was free for users between October 2 and 31, and after that users had to pay the regular STL fee. STL's expenses, such as the rental of 6 buses and staff salaries, were covered by the MTQ (AMT, 2008).

Figure 4: Shuttle route from the Guzzo movie theatre parking lot



Source: Microsoft Virtual Earth 2008, modified by Anwar K. Mohamed

Another measure used by AMT was to extend the reserved lane on Boulevard des Laurentides (Highway 335) up to Rue Gianchetti between October 2, 2006, and October 26, 2006. STL, CIT Laurentides and Les Moulins RCM benefited from this initiative. The total cost of the extension was \$10,000. This measure was no longer necessary after Highway 19 was reopened (AMT, 2008).

After the incident, AMT added an additional commuter train trip leaving from Sainte-Rose station for 4 days after one train was added. This trip carried approximately 100 users and departed at 8:30 a.m. From October 6 to November 10, 2006, Go Transit

loaned out a train leaving from Sainte-Thérèse station. This enabled AMT to offer two additional trips leaving from Sainte-Thérèse during the morning rush hour and from Lucien-l'Allier in the afternoon. With an average of an extra 450 users during the morning rush hour, the traffic on the Blainville line increased by 8.7%. The total costs were approximately \$200,000, which included the train rental, staff, fuel and train maintenance (AMT, 2008).

AMT's most costly measure was the construction of Vimont station. Although the station was already planned, it has turned out to be a good addition to the Montreal/Blainville line. In operation as of October 18, 2006, the station had served an average of 150 extra passengers a day. The cost was approximately \$622,000, excluding the cost of acquiring land (AMT, 2008).

From October 10 to 26, 2006, two other shuttle services (private transportation carrier hired by CIT Laurentides) were also used. The first service provided a link between the free parking (300 spots) at Place Rosemère and Sainte-Thérèse station. According to AMT, the total cost for this measure was \$7,400. The second service linked the free parking at Parc Équestre de Blainville (400 spots) to Blainville station, for a total cost of \$7,500. This measure, although effective prior to the reopening of Highway 19, attracted only approximately 10 additional users a day (AMT, 2008).

Between October 2 and November 3, 2006, the existing Carrefour parking lot accommodated on average 25 additional cars a day, without incurring additional costs. The purpose of this measure was to promote the existing bus route that links the Carrefour parking lot to the terminus of the 2-Orange (Côte-Vertu) line (AMT, 2008).

During this period of disruption to transportation heading towards Montreal Island, STM had to increase its services on the 2-Orange subway line

from Henri-Bourassa station to absorb this increase in traffic, as well as on its school bus system. Thus, STL, Les Moulins RCM and CIT Laurentides also had to increase their service to absorb the increased traffic on their bus systems. MTQ would cover all incurred expenses (AMT, 2008).

All these measures incurred additional costs, such as costs related to additional security, reports, traffic counts, additional personnel, temporary signage (including set up), licence plate report analysis, as well as AMT personnel (AMT, 2008).

The total cost of measures implemented by AMT is \$295,849, of which \$229,410 was for costs related to public transit emergency and mitigation measures, and \$66,439 for other costs (AMT, 2008).

Results

The emergency measures for transportation management as a result of the Concorde overpass collapse have produced a number of good results, from both a transportation logistics and a governance level perspective. These measures have also helped promote public transit among motorists. After the transportation crisis in Laval, a key result of the action plan developed by public and parapublic authorities is a solid structure that was implemented in preparation for potential crises, in terms of transportation management or intergovernmental partnerships. This situation showed all of us that it is possible to act quickly and effectively to manage significant traffic coming from the northern section of the Island to the City of Montreal. Strengthening the accessibility of the system outside of Montreal, such as the shuttle service and the new Vimont station, as well as other actions, was an excellent way to promote public transit. Increased traffic on the Blainville/Montréal line is a very good example of the positive outcomes that resulted from the measures taken by authorities. Park-and-rides increased the accessibility and attractiveness of other modes of

transportation such as buses and the subway. All these measures helped transportation companies to reduce traffic by directing it to a number of access points. The extension of the reserved lane on Boulevard des Laurentides encouraged motorists to travel by bus because it offered a faster mode of transport than by car, especially during rush hour, but also during other times of the day, because access to several routes was compromised. Other benefits of such measures include reduced greenhouse gas emissions, reduced traffic, and others. Some projects that might have had difficulty in progressing, such as the Vimont commuter train station, moved ahead quickly, with considerable support from the private and public sectors. The actions taken also depicted the effective coordination between the different parapublic companies (AMT, CIT Laurentides, Les Moulins RCM, GO Transit, etc.), and the various levels of government in Quebec, as well as the Government of Ontario. With Timing being a crucial factor for these types of projects, this transportation management occurred in record time. The management of this transportation crisis also enabled local (STM, STL, RTL, City of Laval, City of Montreal), regional (AMT, CIT Laurentides, Les Moulins RCM), and provincial (MTQ) authorities to assess the public's reaction to the instructions that were provided to them and the resulting impact.

Participants

Agence métropolitaine de transport (AMT)

<http://www.amt.qc.ca/>

CIT Laurentides

<http://www.citl.amt.qc.ca/>

GO Transit

<http://www.gotransit.com/>

Les Moulins RCM

<http://www.mrclm.amt.qc.ca/>

Ministère du Transport du Québec (MTQ)

<http://www.mtq.gouv.qc.ca>

Réseaux de transport de Longueuil (RTL)

<http://www.rtl-longueuil.qc.ca/>

Société de Transport de Laval (STL)

<http://www.stl.laval.qc.ca/>

Société de Transport de Montréal (STM)

<http://www.stm.info/>

City of Laval

<http://www.ville.laval.qc.ca/>

City of Montreal

<http://ville.montreal.qc.ca/>

These 10 key actors were able to work together to create an efficient crisis cell able to implement a detailed road plan, from day after the Concorde overpass collapse.

Lessons learned

A number of good lessons can be learned from the demand management after the collapse of the Concorde overpass on Highway 19. From a communications perspective, it is interesting to see how receptive the population who commute between the suburbs and the City of Montreal were to the recommendations of AMT, MTQ and other stakeholders. The day after the tragedy, Sunday, October 1, 2006, authorities encouraged the public to use public transit as a more efficient way to reduce traffic and/or traffic jams on axial highways leading to Montreal. This transportation crisis resulted in increased demand in the commuter train system leading to Montreal. It was therefore an appropriate and logical stop for AMT to start building Vimont station to meet this increased ridership and at the same time offer better service to commuters in Laval. Another lesson that can be learned from the emergency measures that were implemented would be that it is beneficial and relatively easy to create

partnerships with other provincial transportation companies (such as *GO Transit*) to quickly address a lack of rolling stock. This would also be an excellent way to move forward future large-scale projects. The collaborative work that was initiated during the management of the disruption of the access routes leading to the Island of Montreal was carried out quickly and effectively. This also shows that sharing information and the support that the different public and parapublic agencies can provide to commuters is beneficial to everyone. When there is reduced highway capacity, people are willing to take public transit, and, as mentioned above, the park- and-ride initiative was a great success. AMT, MTQ, STL as well as STM, and many other participants now have real experience and an effective approach that will serve as a reference during future transportation crises in Canadian cities. The action cell was set up quickly and it managed the increased demand for public transit in an efficient, exemplary manner. It is in times of crisis that transportation companies and agencies can draw on public transit to meet the needs of commuters and demonstrate the efficiency and increase the attractiveness of this mode of transportation to motorists.

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