

Collapse of Concorde Boulevard Bridge

On Saturday September 30th, 2006, at 12:30PM EDT, three lanes of the Concorde Boulevard overpass suddenly collapsed onto Highway 19 in Laval, a suburb of Montreal, in the province of Quebec, Canada. Two vehicles were crushed underneath, while three others and a motorcycle fell from the top. Five people were killed and six others were injured. The management of this crisis was studied by Marie-Claude Francoeur [in 2008].

Québec has approximately 12,000 bridges. In 2005 the Ministry of Transportation assumed full responsibility for 9,321 of those structures. As in all of the other Canadian provinces and the US, Quebec uses two major indicators to classify bridges. Based on these criteria, at the end of 2005, 53.3% of the Primary Road Network structures were considered in good condition. The Concorde Boulevard overpass, built in 1970, had been approved for 35 more years of service and had had a maintenance check one year earlier, in 2005.



Rescue workers survey the site of an overpass that collapsed onto autoroute 19 in Laval, Quebec Saturday, Sept.30, 2006. Five people were taken to hospital and police say there may be more trapped under the rubble.(AP PHOTO/CP,Ryan Remiorz)

Not only did this event deeply distress the persons close to the victims; it also touched a great number of other people. It added to the growing sentiment of distrust that Canadian citizens had towards their government. It was a huge blow to the government's credibility in keeping its people safe on the roads. This was the first time in the history of the province that a structure—a young one in terms of engineering—which was not either under repair or construction, collapsed for apparently no reason. This incident was framed as an exceptional event, that is, as an exception. Decisive governmental action was needed rapidly in order to prevent mass hysteria. There was a small window and timing was crucial.

Decisions: Taking Responsibility

The minister of transportation, Michel Després, managed the crisis and prevented it from escalating even though

this was an unexpected and tragic event. He took the lead rapidly with the department's employees and with his ministerial colleagues. He ordered a review of all infrastructures' building plans; all structures were inspected with priority given to those with similar design; the remainder of the structure was demolished and a nearby overpass was also taken down due to structural concerns. A communication strategy

was planned according to the Minister of Transportation guidelines. Department of Transportation experts and engineers held press conferences every day to keep the population informed. Because future similar events had to be prevented and citizens reassured that such a lethal and rare chain of circumstances would not recur, the Quebec government announced a public investigation headed by former premier Pierre-Marc Johnson. It was an exceptional event which called for an exceptional answer.

Lessons Learned

Aging infrastructures pose various challenges to the authorities responsible for their management, particularly in a context of budgetary constraints. The need for a broad-based urgent bridge rehabilitation programme gradually became apparent. Like the rest of North America, Québec faces the challenge of rehabilitating bridges, and in some cases that means rebuilding outright. The province of Ontario, where 68% of bridges are in good condition, wants to see this figure reach 85% by 2021. In the U.S., where 75%

of bridges are in good condition, the improvement initiatives undertaken in the mid-1990s continue.

The tragedy of the de la Concorde overpass served as a reminder of the need to exercise the utmost rigour and discipline when designing, building, and monitoring bridges. It highlights the importance of having a proper framework with standards, manuals, and strictly implemented programmes to help inspectors and maintenance workers; it stresses the importance of encouraging inspectors to always be vigilant and inquisitive when they encounter problems on bridges under their responsibility.

Aftermath

The commission of inquiry was intensively followed by civil engineers. The main cause of the collapse was the misplaced reinforcements; poor construction supervision, maintenance and inspection practices only magnified the physical deficiencies in the structure. This crisis led to a review of design, building, and supervision practices.

This tragic episode has had repercussions all over North America. Administrations realized that they could no longer believe that this would not happen to them. For most, such infrastructures were all built around the same time, during the fifties and the sixties. Inspections and plan reviews of infrastructures were ordered at all levels of governments in Canada. Maintenance—which was never a popular issue as opposed to building new roads—became the number one



Rescue crews work to remove one of the two flattened cars after an overpass collapsed in the Laval suburb of Montreal, Canada Saturday, Sept. 30, 2006. Quebec provincial police said Sunday that at least five people were crushed to death in their cars after the collapse of an overpass near Montreal. (AP Photo/Montreal le Devoir via CP/Jacques Nadeau)

priority for most governments.

This crisis has also had an impact on how transportation departments assess the closing of a road. Economic reasons have always been at the forefront, and, traffic mitigation measures being unpopular, less than three years ago, closing a road was basically unheard of. Today [2008], less than a year after a bridge collapsed into the Mississippi river in Minneapolis, Minnesota in the US, departments are much more willing and rapid with the closing processes. No one wants to be the next administration to deal with such tragedies.



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