

What caused Ottawa's giant sinkhole? Investigation and repairs underway



[Matthew Pearson, Ottawa Citizen](#)

Published on: June 9, 2016

An enormous sinkhole swallowed three lanes of Rideau Street and a parked van on Wednesday morning, forced the evacuation of the Rideau Centre and nearby businesses, and left the downtown core in a state of chaos that could last for days.

As the city moved “from response to recovery” mode late Wednesday afternoon, the Rideau Transit Group, builders of Ottawa’s light rail transit system, began pumping out water and filling the gaping hole with concrete to stabilize the area and protect building foundations exposed by the collapse. Building code inspectors were working with structural engineers to determine when affected buildings could reopen for business.



Pedestrians and news crews were clamouring into the early evening to catch glimpses of the sinkhole that opened up this morning just east of the intersection of Rideau Street and Sussex Drive, which caused a gas leak and building evacuations, on June 8, 2016. Cement trucks were just beginning to fill the hole around 6 p.m. David Kawai

An enormous sinkhole, spanning the width of Rideau Street, swallowed a van whole and forced the evacuation of the Rideau Centre, the Westin Hotel and other nearby buildings Wednesday morning.



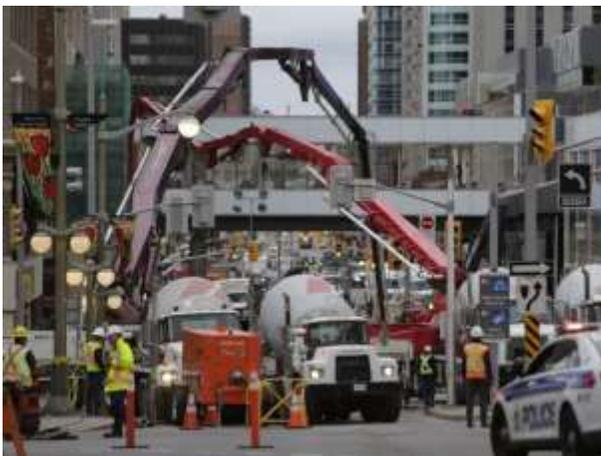
View from Chateau Laurier. Sinkhole on Rideau Street and gas leak in Ottawa, June 8, 2016. Jean Levac / Ottawa Citizen



Buildings were evacuated because of a sinkhole just east of the intersection of Rideau Street and Sussex Drive, which caused a gas leak on June 8, 2016. David Kawai / Ottawa Citizen



- Crews worked into the evening to fill in the sinkhole that opened up this morning just east of the intersection of Rideau Street and Sussex Drive, which caused a gas leak and building evacuations, on June 8, 2016. (David Kawai)



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Busy MacKenzie Street Bridge late in the afternoon after sink hole occurred on Rideau St., June 08, 2016. Photo by Jean Levac keyword: sinkhole Rideau Street



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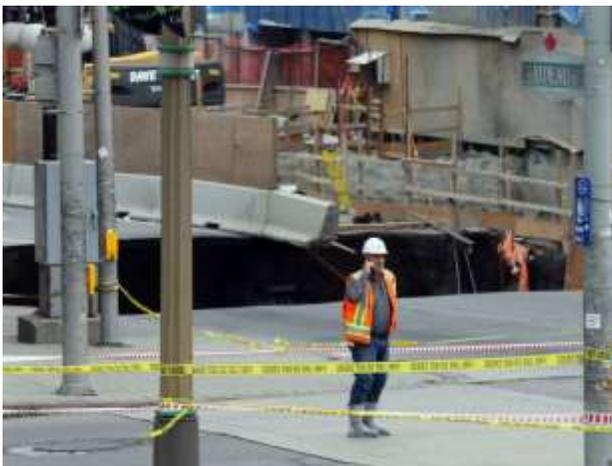
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- View from Chateau Laurier. Sinkhole on Rideau Street and gas leak in Ottawa, June 8, 2016. Jean Levac / Ottawa Citizen



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A man takes a photo of crews working into the evening to fill the sinkhole that opened up this morning just east of the intersection of Rideau Street and Sussex Drive, which caused a gas leak and building evacuations, on June 8, 2016. (David Kawai)



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A television news crew reports from the scene as workers behind them began to fill in the sinkhole that opened up this morning just east of the intersection of Rideau Street and Sussex Drive, which caused a gas leak and building evacuations, on June 8, 2016. (David Kawai)



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• Sinkhole at Rideau and Sussex.



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Busy Waller St late in the afternoon after sink hole occurred on Rideau St., June 08, 2016. Photo by Jean Levac keyword: sinkhole Rideau Street



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A police officer directs traffic on Elgin St late in the afternoon after sink hole occurred on Rideau St., June 08, 2016. Photo by Jean Levac keyword: sinkhole Rideau Street



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• A police officer directs traffic on Waller St. during the afternoon after a sink hole occurred on Rideau St., June 08, 2016. Photo by Jean Levac keyword: sinkhole Rideau Street



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City officials were reluctant to link the sinkhole to LRT construction happening two-dozen metres below, but whatever the cause, the effect has been the indefinite shuttering of a key downtown intersection and the rerouting of dozens of OC Transpo and Gatineau STO buses that pick up thousands of commuters on Rideau Street every day.

The Rideau sinkhole is just east of the intersection with Colonel By Drive, and has shut down a number of downtown streets in the vicinity.

- The intersection of Wellington and Rideau has been closed between southbound Elgin and Dalhousie, while Colonel By and Sussex Drive are closed between Daly Avenue and George Street. Northbound Elgin is also closed between Albert and Rideau.
- And the Mackenzie Bridge between Waller and Elgin streets is closed to general traffic during peak periods to accommodate extra buses rerouted off Rideau Street.
- Residents are being asked to avoid the area and motorists to find alternative routes, as disruptions are expected to continue through Thursday's morning commute. Transit riders have been told to prepare for delays.

“We just don't know how long it's going to take, it's a significant sinkhole in the downtown core. It has a major impact on our largest retail shopping centre, one of our major hotels, as well as one of the busiest intersections and bus routes for both STO and OC Transpo,” Mayor Jim Watson said during an media briefing at Ottawa City Hall.

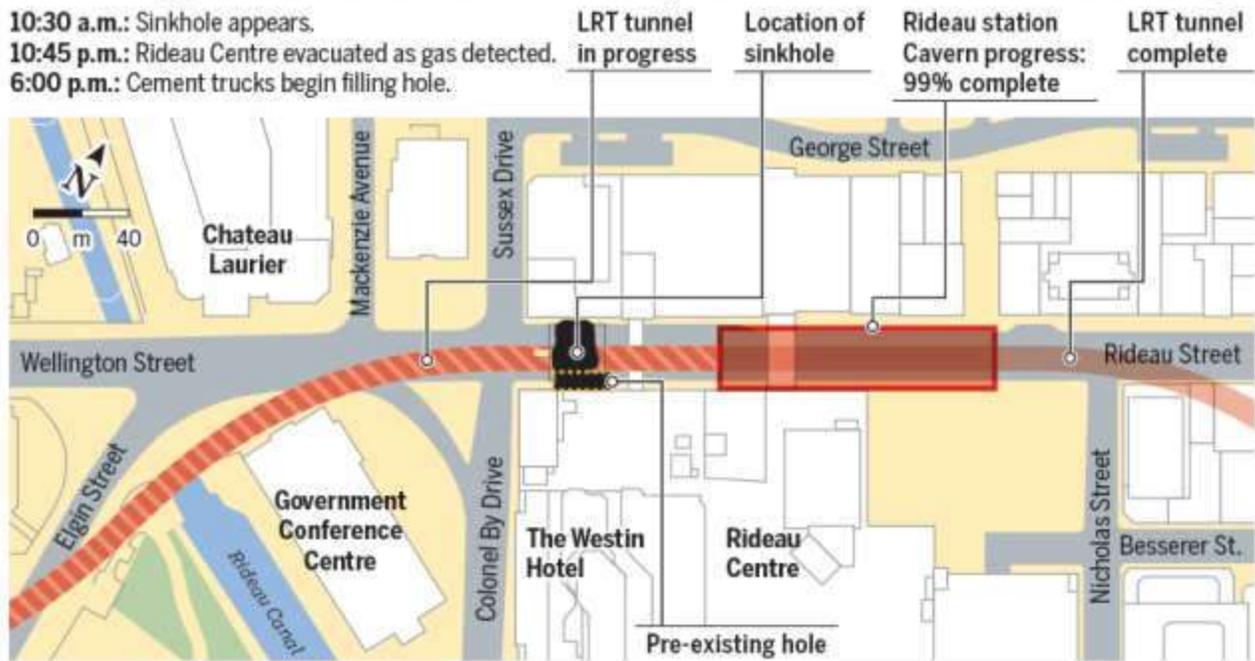
THAT SINKING FEELING

A sinkhole appeared on Rideau Street on Wednesday near the area where LRT work is underway.

10:30 a.m.: Sinkhole appears.

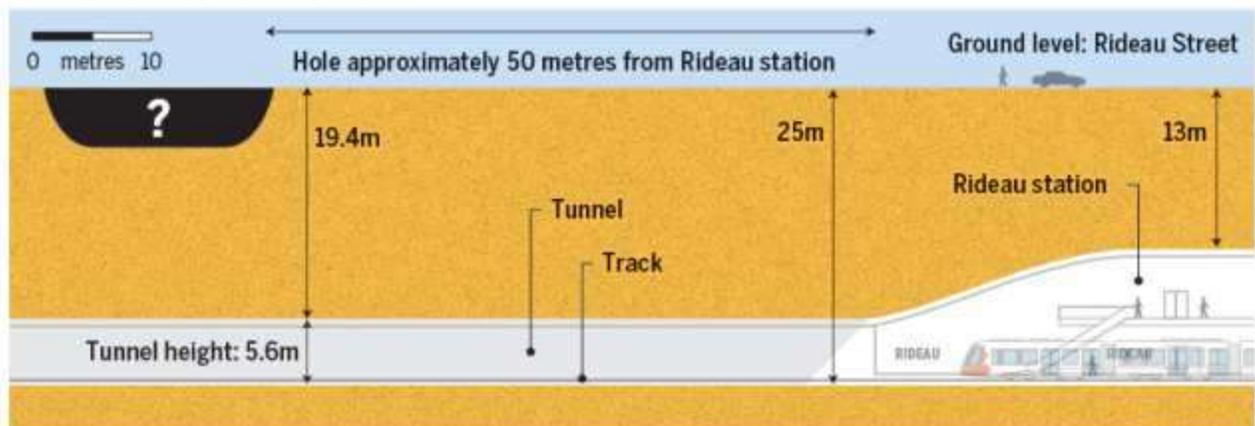
10:45 p.m.: Rideau Centre evacuated as gas detected.

6:00 p.m.: Cement trucks begin filling hole.



HOW CLOSE WAS THE SINKHOLE TO THE LRT TUNNEL?

Exact depth of the hole is not known.



SOURCE: CITY OF OTTAWA

DENNIS LEUNG

“Be prepared for delays, because this could take some time.”

No injuries were reported and everyone working in the LRT tunnel was accounted for, Watson said.

The mayor and Rideau-Vanier Coun. Mathieu Fleury toured the site later in the day.

The city’s Environmental Services Department is tackling the disruption to water and sanitary services, while Ottawa Public Health was monitoring water quality and other potential health

concerns related to the cave-in. Downtown residents were told to watch for discoloured water in cold water taps and toilets, which is not believed to pose any health risk.

Pictures of the sunken-in roadway began circulating on social media around 10:30 a.m., followed by reports to the city of a water main break and gas leak. A power outage in the area was also reported.

As of Wednesday evening, Hydro Ottawa reported seven buildings in the vicinity without power, and said crews working to restore power first had to wait for approval from safety inspectors.

The Rideau Centre and surrounding buildings were evacuated immediately and remained closed to employees and the public for much of the day. The primary reason for those evacuations was a gas leak that blanketed the downtown in a foul smell. The leak was soon repaired. The mall is expected to reopen Thursday morning.

The mayor said the city was putting all of its resources “towards determining the cause of the situation and to conduct the necessary repairs as quickly as possible.”

Many speculated about what role, if any, LRT tunnel construction may have played, but Watson said that wouldn’t be known for at least several days.

“We can’t confirm whether the tunnel had any impact on the sinkhole or whether it was a water main break or whether it was a leak of some type that destabilized the soil,” Watson said, noting the LRT tunnel is substantially below where the water main break occurred.

The tunnel was not affected by the sinkhole, though work was halted right away. There were no reports of water or debris falling into the tunnel.

After the initial collapse, a second collapse, caught on camera by some eyewitnesses, swallowed a minivan.

There was no one in the van, which the city says belonged to a private citizen who was parked there and tried unsuccessfully to convince firefighters to let him move it before it was swallowed by the sinkhole.

Crews have finished digging out the future Rideau station cavern and were working on the final 50 metres of tunnel between Colonel By Drive and the Rideau Canal, said Steve Cripps, director of the city’s rail implementation office.

Digging in that area’s soft ground has necessitated a different tunnel design, different temporary support structures and even the hiring of a special adviser.

In rock, crews use a 135-tonne roadheader, a 20-metre-long machine with a spiked fist at the front that punches away. But in clay and sand, crews must use a smaller excavator, which takes smaller bites than the roadheader, and use more reinforcements.

Long before the city even put the LRT project up for tender, it knew about the soft ground beneath Rideau and paid for geotechnical work to understand the challenges posed by the formation known as the Rideau Valley.

Cripps says it's too early to know if the soil conditions were a factor.

With Ottawa set to host the North American leaders summit in a few weeks, the intersection of Rideau and Sussex could conceivably be part of the motorcade route.

Ottawa police Chief Charles Bordeleau said it's "too early to tell" if that will have to change. "If we have to make adjustments to any motorcade routes, we will do so," Bordeleau said.

Although this latest closure of Rideau Street may be a pain to many transit users, most drivers should already be accustomed to avoiding the area.

Rideau between Sussex and Dalhousie was closed to most vehicle traffic last August as part of LRT construction, while one lane in each direction was restricted to OC Transpo and STO buses, taxis, delivery vehicles and LRT construction vehicles.