

The Necessity of Montreal's Untreated Sewage Discharge

(Paul Chiasson/The Canadian Press)

Executive Summary

On November 11, 2015, the city of Montreal began pumping around 8 billion litres of untreated sewage into the St. Lawrence River for a week under the approval of Environment Canada¹. This sparked massive outrage among the media, First Nations leaders and communities across the world^{7,8}. This act is sure to contaminate the river with waste and toxins but may have been necessary to prevent future disaster^{1,3,7}.

The St. Lawrence River

The St. Lawrence river runs from drains the Great Lakes and empties into the Atlantic Ocean⁷. Between this, it runs for around 1200km where it is important habitat for many marine organisms such as fish and passes through many cities that rely upon it as a water supply including the second largest city in Canada, Montreal^{5,7}.



Crumbling Infrastructure

Due to aging infrastructure, the city of Montreal needed to repair and improve on a sewage collection pipe called the southeast interceptor^{1,3}. This included replacing retention basins and rusted rusted pipes as well as relocating a snow chute^{1,3,7}. The work could not be completed without shutting down the interceptor for a week which would leave the system unable to treat the sewage in the interceptor^{1,2,3,4,5,6,7}.

A Questionable Solution

The city of Montreal closed the interceptor and diverted untreated waste water into the St. Lawrence river to allow for completion of the project. During the work 24 outfalls submerged deep underwater and 25-35m offshore released 12000 litres per second into the river for a total of 8 billion litres^{2,3}. Untreated waste has the possibility to distribute waterborne illness and toxins to people, kill fish and other marine organisms and harm their ability to reproduce. This drew the ire of the media, conservationists, first nations councils and the general public who believe this was a short-sighted and harmful decision^{1,7,8}. The mayor and city officials have stated that it was the best option they had and the integrity of the infrastructure and the protection of the river from environmental disaster depended on this work¹. As a result, Environment Canada studied the impact of this solution to determine its impacts, any alternatives and present a decision on whether this solution should be allowed to proceed.

The sewer system



Adapted from Minister of Environment and Climate Change⁶.

Alternatives?

- 1) No work – This would leave a high risk of a failure which would cause a discharge of sewage much greater than a planned diversion into the St. Lawrence⁶.
- 2) Leave the Interceptor Running – Workers would be subjected to many health and safety risks⁶.
- 3) Construct a New Interceptor – Completion and would implausibly rely on the aging interceptor running without failure for 5 years⁶.
- 4) Temporary Retention Systems in the Interceptor – All options were deemed unsafe to workers or not practical for the scale of the project⁶.
- 5) Draining to Alternat Interceptor – Another interceptor could not handle the increase and demand and would be at risk of failure and discharge into the smaller and more vulnerable Rivière des Prairies⁶.
- 6) Mobile Collection Systems (Eg. Tankers) – Practically infeasible and prohibitively expensive due to the number of tankers required⁶.

Conclusion

Environment Canada concluded that the city of Montreal had the best solution as long as certain conditions were met to prevent impacts on health or the environment⁶. Experts believe that there will be significant pollution but there is no effect on drinking water or on soluble chemicals and microorganisms^{2,3,4}. The main problem arose in solid wastes^{2,3,4}. The discharge is also timed to have the least likely impact on fish². With dilution and a proper cleanup plan, they expected the effects of this to only last a few days^{3,4}. The city had to prevent recreation in the river during the project to protect public health⁶. They also had to work around the clock with an integrated plan to complete the work in the shortest possible time⁶. There was also video surveillance and before, during and after testing to detect emergencies and long-term effects⁶.

Implications and Recommendations

This highly public issue has brought to light the need for municipalities all over Canada to reduce their sewage spills^{1,3}. Experts suggest that increases in infrastructure spending are needed going forward to prevent planned sewage discharges³. The city will be giving a detailed report to the federal government outlining all events that led to the necessity of this planned discharge to learn from what happened³.

Based on the excessive damage that could result from not proceeding with the work and the lack of alternative options, I recommend that planned sewage discharge was the proper decision by the city of Montreal. Despite some unfavourable results, the process was planned to cause the least amount of environmental impact and was necessary to prevent the disaster of an unplanned failure of the sewage system.

References

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