

Edmonton Watershed Contaminant Reduction Index

What is it?

A measure of the contaminants discharged to the North Saskatchewan River from the City of Edmonton, adjusted for population. This measure demonstrates the City of Edmonton’s commitment to track and reduce contaminant discharges.

The index is calculated using the measured amounts of sediments, nutrients, and bacteria discharged to the river. The sources of contaminants from the City of Edmonton include the EPCOR Gold Bar Wastewater Treatment Plant, combined sewer overflow sites, and stormwater outfalls. A 5-yr running average is used to smooth out fluctuations due to rain patterns. Other factors which influence the index include land development which increases the volume of contaminant discharges and unexpected system failures.

A low index score indicates a high level of contamination to the North Saskatchewan River while a score of 10 indicates no contaminant discharge.

What are Administration’s recommended targets?

2013 Recommended Target: 7.5

- This target will be achieved through operation of the new Enhanced Primary Treatment process at Gold Bar Wastewater Treatment Plant and construction of treatment for the Groat storm basin. The further implementation of Low Impact Development standards in more new developments will also be required to achieve this score.

2020 Recommended Target: 7.8

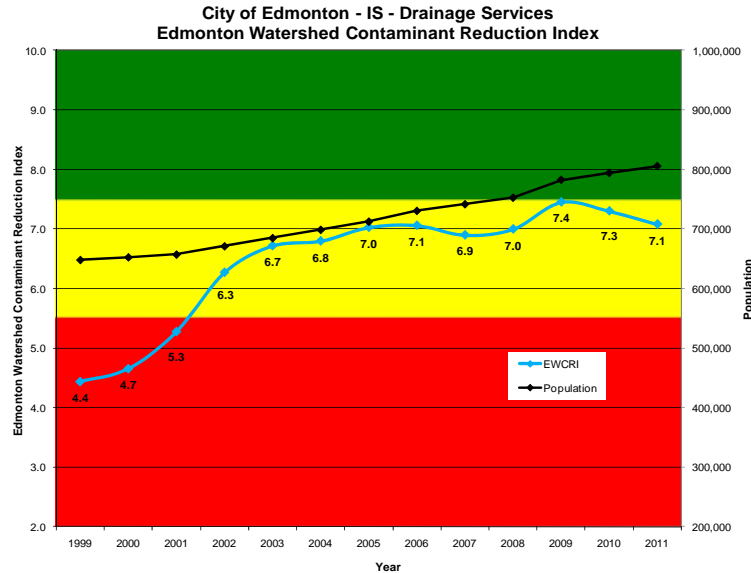
- The increase in the target will be achieved through a low flow diversion of the Quesnell storm trunk line to the Gold Bar Wastewater Treatment Plant, as well as increasing implementation of Low Impact Development standards.

Other Supporting Department Outcomes and Measures

Outcome	Measures
New Developments are built using Low Impact Development concepts	<ul style="list-style-type: none"> • Percentage of new developments built with Low Impact Development standards • Reductions in contaminants discharged will be reflected in the Edmonton Watershed Contaminant Reduction Index (Bacteria, Total Suspended Solids, Nutrients)
The Combined Sewer Overflow control program continues (Enhanced Primary Treatment at the plant, River crossing pipe, system separation projects)	<ul style="list-style-type: none"> • Reductions in contaminants discharged will be reflected in the Edmonton Watershed Contaminant Reduction Index (Bacteria, Total Suspended Solids, Nutrients) • City remains in compliance with the terms of our Approval to Operate
Stormwater Discharges are improved (End of pipe load reduction at Groat Basin and other locations)	<ul style="list-style-type: none"> • Reductions in contaminants discharged will be reflected in the Edmonton Watershed Contaminant Reduction Index (Bacteria, Total Suspended Solids, Nutrients) • City remains in compliance with the terms of our Approval to Operate

What are the City of Edmonton results?

The index has been calculated back to 1999 in order to demonstrate the great improvements that have occurred due to Tertiary wastewater treatment and UV disinfection at the Gold Bar Wastewater Treatment Plant. Future improvements include wastewater treatment upgrades, stormwater projects that improve water quality, and Combined Sewer Overflow reductions.



Additional Highlights

The Kennedale constructed wetland built in 2010 to improve water quality by treating runoff from the city's largest stormwater drainage basin. A similar treatment facility has also been constructed for the Groat stormwater basin and will be functional in 2012.

A tunnel to convey additional flows beneath the river and the Enhanced Primary Treatment process at Gold Bar are to be fully functional in 2013 treating flows that previously resulted in Combined Sewer Overflows to the North Saskatchewan River.

The contaminant load reduction benefits of all of this construction will be reflected in the index in future years.

Other Policies Supporting this Index

The policy implications related to the Edmonton Watershed Contaminant Reduction Index include:

- Combined Sewer Discharge Strategy as per approval to operate.
- Interconnection Control Strategy which is part of the Collection System Operations Plan as per approval to operate.
- The Stormwater Quality Control Strategy as per approval to operate.
- Total Loadings Plan as per approval to operate.
- Low Impact Development standards for new land development.

How does this compare to other jurisdictions?

The Edmonton Watershed Contaminant Reduction Index measure was developed for the City of Edmonton using data collected annually as part of the Environmental Monitoring Program.

Climate, topography, drainage system construction, receiving water sensitivity and land use differ greatly from city to city, and monitoring is adapted to these factors. Consequently, the comparison of contaminant discharge measures across municipalities is difficult.

The Government of Alberta calculates a Water Quality Index for the North Saskatchewan River. Their measure is related to river health and focuses on in-stream water quality resulting from all loads to the river, including agricultural and industrial, and is published annually. In comparison, the Edmonton Watershed Contaminant Reduction Index is narrower in scope and focuses on loads to the river from the City of Edmonton only. As a result, the Water Quality Index can be below average while the city's capture of contaminants could be very good.