

# Urban water cycle

[Literature](#), [Russian Literature](#)



Urban Water Cycle Summary of the Consent Decree In the last decade, the United s Environmental Protection Agency has brought over more than 40 cases nationally to eliminate the sanitary and combined sewer overflows (CSO). The latest enforcement of the matter in Ohio is between the State of Ohio and the City of Akron in a consent decree that addresses the sewer overflows that involves the Cuyahoga Valley National Park that is an ecologically sensitive area, thus the enforcement priority. The case is of great interest because it involves the only national park in the State of Ohio. Downing asserts that as of 2012, about 2 billion gallons of raw sewage was being discharged into the Cuyahoga and Little Cuyahoga rivers.

The Consent Decree does not contain a completed schedule both for upgrades and construction. In other words, the Decree is not by all means a full resolution of claimed violations. In the Decree, Akron is required to submit an updated long-term control plan detailing the construction of every project. Akron was required to upgrade its Water Pollution Control station so as attain a minimum secondary treatment capacity of 130 million daily by not later than October, 15, 2017. In the same way, Akron was also needed to separate the sewers for the combined sewer outflow outfalls at Racks 8, 13, 21, and 25, as well as 30 within eight years of lodging the decree. The city was imposed with fines amounting to more than \$1 billion for more than 4, 000 violations of the federal Clean Water Act over the years (Davidson, Howard and Jacobs 825). Therefore, the courts held that the decree as not fair, adequate, reasonable, and in the best interests of the public. The ruling implies that rates of more than 300, 000 Akron together with the suburban residents who make use of the city’s sewer system would be boosted on a

less expensive plan. The sewer clean-up was necessary since it was a threat to the ecosystem of the Cuyahoga Valley National Park. Cleveland area is also dealing with the same problem.

#### The Akron/Cleveland CSO area

The Akron/Cleveland CSO area covers about 167 square miles and includes majority of the Akron metropolitan area. The population is about 352, 000. When it rains heavily, the industrial and domestic wastewater exceeds the capacity of the Akron Waste Water Treatment overflowing into the Ohio Canal, Little Cuyahoga River, Cuyahoga River, and Camp Brook.

#### Green infrastructure

It may cost the City of Akron about \$1. 4 billion to implement its long-term control plan. In the plan, the green infrastructure would reduce the storm water from getting into the sewers. They would rely extensively on soils and plants to filter and store rain water. The green projects would remove 44 million gallons of water every year mainly in the areas of Sagamore Hills, Northfield, Hudson, and Richfield. Atassi and Tobias note that 2. 5 percent of the \$ 3 billion-25-year plan would be allocated to green projects.

#### Treatment

The federal Environmental Protection Agency argues that by 2027. Downing argues that a new plant is required to be built on the Ohio Canal Tunnel so as to treat and disinfect more than 400 million water gallons prior to discharge into the Cuyahoga rivers and Ohio Canal. The treating of the sewage would cost the city an estimated \$50 to \$100 million. Besides that, a biological plant that uses bioretention cells would be added to the city's sewage plant that currently bypasses the plant after heavy downpour spilling

into the Cuyahoga river in the process. Proceeding further, ten storage basins would be used to store the run-off before it flows to sewage plant used by the city along the Cuyahoga River in north Akron, specifically for treatment. This would cost around \$12 million.

#### Works Cited

Atassi, Leila and Andrew Tobias. Philadelphia leads green movement to address sewer overflows, Northeast Ohio sewer officials call plan impractical. [http://www.cleveland.com/drain/index.ssf/2014/02/philadelphia\\_leads\\_green\\_movem.html](http://www.cleveland.com/drain/index.ssf/2014/02/philadelphia_leads_green_movem.html). Web. February 25, 2014. Accessed May 1, 2015.

Davidson, Gregg, Alan Howard and Lonnie Jacobs. North American Tunneling: 2014 Proceedings. New York: Routledge, 2014. Print.

Downing, B. Akron wants to add green infrastructure to help reduce city \$1.4 billion bill for combined sewers. <http://www.ohio.com/news/local/akron-wants-to-add-green-infrastructure-to-help-reduce-city-s-1-4-billion-bill-for-combined-sewers-1.454515>. Web. December 22, 2013. Accessed May 1, 2015.

Downing, B. Federal judge studying proposed consent decree on new Akron sewers plan. 1 May 2015 . October 24, 2012. Accessed May 1, 2015.

Downing, B. Federal judge studying proposed consent decree on new Akron sewers plan. 1 May 2015 . October 24, 2012. Accessed May 1, 2015.