

WATER CONSERVATION AND EFFICIENCY INITIATIVE



The City of Highland Park

Highland Park provides water to over 10,000 residences and businesses, as well as to several contracted municipalities. The city's water source is Lake Michigan with a capacity of 30 million gallons per day, about half of which is sold contractually. Peak residential water demand happens in late July through August due to outdoor water use, such as lawn watering.

In spring 2013, Highland Park established its Water Conservation and Efficiency (WCE) Initiative. City leaders recognized the importance of responsible water resource management and decided to take measures to make water distribution more efficient.

At a Glance

Population: 29,800

**Population served:
29,000 retail, 30,000 wholesale**

Service connections: 10,000

Sprinkling prohibited: 12pm-6pm

3rd tier water rate: \$2.258/100ft³

Program Start Date: 2013

Water Conservation and Efficiency Initiative

The core elements of the WCE are: establishing a 3-tiered conservation rate water pricing plan; implementing an odd-even sprinkling schedule; requiring smart sensors on new lawn sprinkler systems; and developing a public education plan.



Conservation-Rate Water Pricing Plan

The objective of conservation-oriented water pricing is to encourage efficient residential water use during peak demand periods, driven by non-essential lawn watering.



Odd-Even Sprinkling Schedule

Lawn irrigation not only drives summer peak water use, but as much as 50 percent of this water may be wasted due to inefficient practices. Limiting lawn sprinkling can significantly reduce peak demands and lead to water efficiency gains for communities.



Smart Sensors

Installing smart sensors that use current weather data to adjust irrigation schedules result in water savings and financial savings. They improve water use efficiency by assessing landscape needs and adjusting watering accordingly.



Public Education

The purpose of public education is to increase awareness of the value of water and promote using it efficiently. Public information programs complement pricing strategies, lawn watering restrictions, and smart sensors by creating broad-based awareness of the importance of conservation.

¹ See www.epa.gov/watersense

Approach

The main component of this initiative was the 3-tier conservation water pricing plan. The city's charge was to devise a revenue neutral pricing structure that would also result in a reduction in lawn irrigation. In researching conservation rate implementation, city officials found that consumer responses are widely variable and considerably influenced by regional and demographic factors. These facts introduced an element of uncertainty into the rate plan development. Highland Park decided on the 3-tier structure, but included annual reviews to assess the program's influence on conservation behavior and on revenue. And to make necessary adjustments to the rate structure. The city's schedule of quarterly meter reading was also seen as a drawback since residents receive their bill up to four months after water use. The city is converting to Automated Meter Reading technology that will permit more frequent meter readings to provide more timely price signals to residents, beginning in the spring of 2016.

The second component of the WCE was to create a sprinkler system ordinance that would reduce the amount of water wasted by irrigation. The ordinance contains sprinkling restrictions as well as standards for new lawn irrigation systems.

Key Findings

What is the impact of the water rate plan?

The city implemented the tiered rate plan in 2014. The majority of single-family customers in Highland Park use water at a rate that is unaffected by the new initiative. However, city officials found that residents using high volumes of water see increases in their water rates.

How is the city preventing outdoor water waste?

Sprinkling restrictions, which are effective May 15 until September 15, prohibit sprinkler use between the hours of 12:00 p.m. and 6:00 p.m. and limit lawn irrigation to odd-even days that correspond with the property address (odd-numbered properties are permitted to use sprinklers on odd-numbered days and likewise with even-numbered properties).

The installation of smart sensors will prevent sprinklers from running during precipitation. As of May 2013, all newly installed lawn irrigation systems will be equipped with weather-based sensors that meet EPA WaterSense standards.

2015 Water Rate (per 100 ft³)

Tier	Usage	Base Rate	Meter Rate	Total
1	6,000 ft ³ (or less)	\$1.588	\$0.367	\$1.955
2	6,001 to 8,000 ft ³	\$1.747	\$0.404	\$2.151
3	8,001 ft ³ (or more)	\$1.834	\$0.424	\$2.258

Resources

- [City of Highland Park Website](#)
- [U.S. Environmental Protection Agency \(EPA\) WaterSense](#)

