

Section 05

Water + Wastewater

Currently in Edina:



1.3%

Of City-Wide GHG emissions
in 2019



1.97 billion

gallons of water consumed
in 2019



1.99 billion

gallons of wastewater
generated in 2019



48

Community flooding events
reported by NOAA for
Hennepin County since 2000



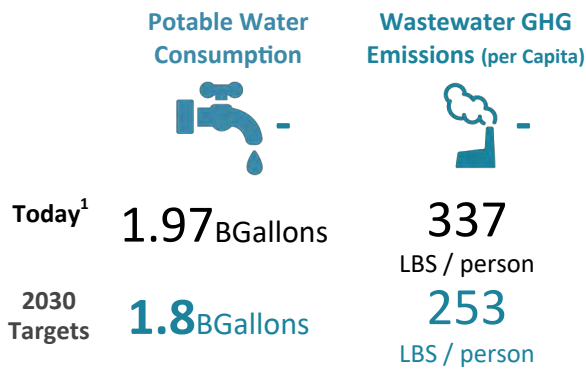
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Water and Wastewater

Water is at the core of climate change and sustainable development. Quality water is vitally important for socio-economic development, maintaining healthy ecosystems, and for human survival. Water is central to the production and preservation of a wide range of services benefiting people. How we process water is also linked to our greenhouse gas emissions. Water and wastewater related GHG emissions total 9,353 metric tons in Edina annually¹.

Water is also at the heart of adaptation to climate change. Over 2,000 households, nearly 1 in 10 homes, in Edina are at risk for flooding today². Climate change will increase the likelihood of drought combined with additional heavy rain events, flooding, and flash flooding³. Climate change will also increase stress on our water systems, increase water pollution potential, and place more risk on maintaining safe water resources. Water is an irreplaceable, critically important resource fundamental to the well-being of our communities. Water can only be considered renewable with high quality best water management practices in place.

Sector Goals



Strategies

The strategies on the following pages guide our path in meeting our climate goals for the Water and Wastewater sector. Each strategy is supported by a series of detailed actions to be explored and undertaken in order to carry out the vision and goals. [See Section 10 Implementation for all supporting actions.](#)

Equity Considerations

- Low-income neighborhoods frequently suffer more damage from flooding, according to studies by the National Academies of Sciences, Engineering and Medicine (*Framing the Challenge of Urban Flooding in the United States*, 2019). The frequency and magnitude of heavy rain events is expected to increase as a result of a changing climate, making the future flooding impacts for at-risk neighborhoods potentially more acute.
- Disadvantaged communities within cities often have denser populations, more impervious surfaces, and less open/green spaces. These areas can also be prone to flooding and sewer overflows. Stormwater management through the creation of open, green spaces serve to revitalize and promote health within these disadvantaged communities.



Water and Wastewater

Strategy W 1

Promote increased water conservation citywide with a targeted reduction of 7.5% by 2030.

Based on Edina Public Works data, water consumption citywide decreased 18.9% from 2013 to 2019. Wastewater generation, however remained essentially constant showing a modest 1.1% reduction over the same period. Though the reported water reduction is significant, there is likely additional water conservation potential. According to studies, on average, 12% of municipal water distribution is lost through leaks in water mains and water pipes on private property⁴. For Edina, this could represent up to 236 million gallons of water annually.

See Section 10 Implementation for supporting actions.

Strategy W 2

Reduce GHG emissions associated with wastewater City Wide by 25% per capita by 2030.

Wastewater GHG emissions were 8,079 metric tons for processing 1.986 billion gallons of water in 2019. This is equal to 337 pounds per person in 2019¹. Wastewater emissions can be reduced through use of renewable energy for collection and processing needs as well as through strategies addressing biogenic emissions—release of methane through biological processes.

See Section 10 Implementation for supporting actions.

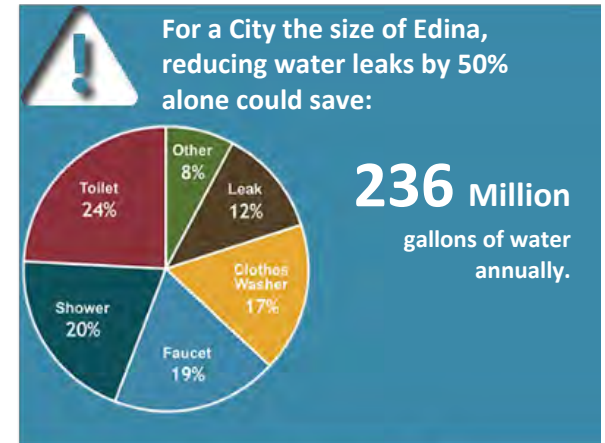
Strategy W 3

Mitigate and adapt to the projected increased flood hazards and impacts due to climate change.

According to the US National Climate Assessment, the ten rainiest days can contribute up to 40% of the annual precipitation in the Minnesota region⁵. By 2070, the Edina area can anticipate an increase of up to 15% in the total annual precipitation. In addition, the timeframe between rains is expected to continue to increase. Under this scenario, it is likely that certain periods of the year, like spring, may be significantly wetter with storms producing heavier rains. In anticipation of that, it is appropriate to review the areas of the city with flood risk and to review current storm water management capacity against future extreme rainfall event projections. Increases in impervious cover can dramatically increase the impact of so-called 100-year flood events. Neighborhoods in Edina have impervious surface coverage as high as 65%, illustrating that actions reducing impervious surface coverage as one of the important adaptation avenues.

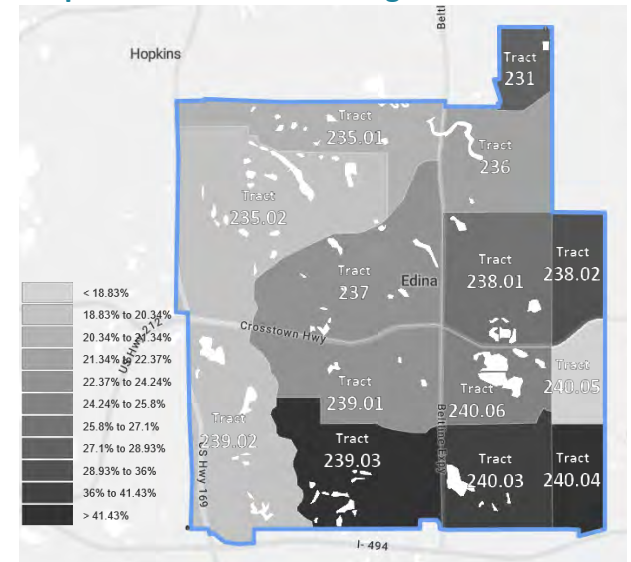
See Section 10 Implementation for supporting actions.

Estimated Water Consumption Breakdown



Source: Water Research Foundation, Residential End Uses of Water, Version 2. 2016

Impervious Surface Coverage in Edina



Water and Wastewater



Update design standards and municipal plans to meet projected climate change flood mitigation requirements.

Transportation infrastructure in the metropolitan area has typically been designed based on the national standard using Atlas-14 precipitation estimates which analyze the historical frequency of heavy rainfall events through 2011. Preparing for climate change impacts will require use of projections reflecting anticipated increased precipitation and heavier rainfall events.

The City has begun this important work through the development of the Flood Risk Reduction Strategy outlining a framework for approaching improved structural flood risk throughout the community.

See Section 10 Implementation for supporting actions.

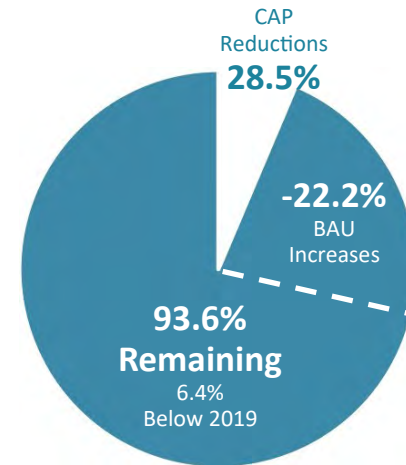
Planned Sector Emission Reductions Through 2030

The strategies and actions included in this section of the Climate Action Plan are projected to reduce the city’s annual GHG emissions by 2,688 metric tons (MT) annually by 2030 - a 28.5% reduction over 2019 levels. Changes in business-as-usual impacts driven by projected population growth, however, are anticipated to *increase* 2,072 metric tons. The result is a total community wide Water and Wastewater sector reduction of 6.4% when compared to 2019 levels.

When compared to 2019 emissions, this is equivalent to eliminating 585 cars from the road, or **53 million** cubic feet of man-made greenhouse gas atmosphere annually by 2030.

Sector Emissions Reduction below 2019 by 2030

The total change to sector emissions include CAP Plan reductions and business-as-usual (BAU) emission changes as follows:



Water and Wastewater Carbon Reduction Pathway

