



WATER FLOW TOOL KIT

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Key Points

Twin Cities Water Supplies

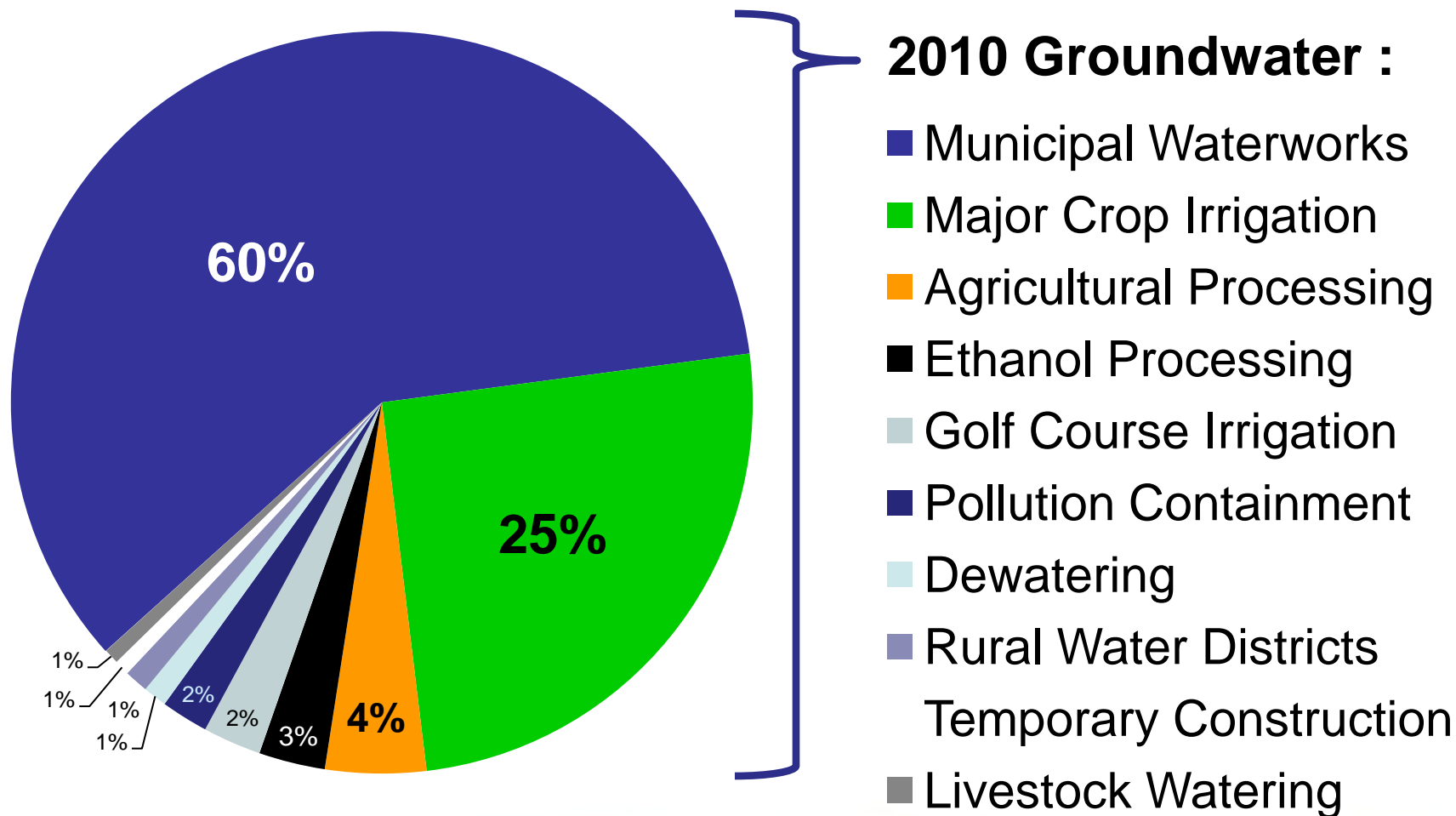
Met Council's Role in Water Supply Planning

Benefits of Groundwater Demand Reduction

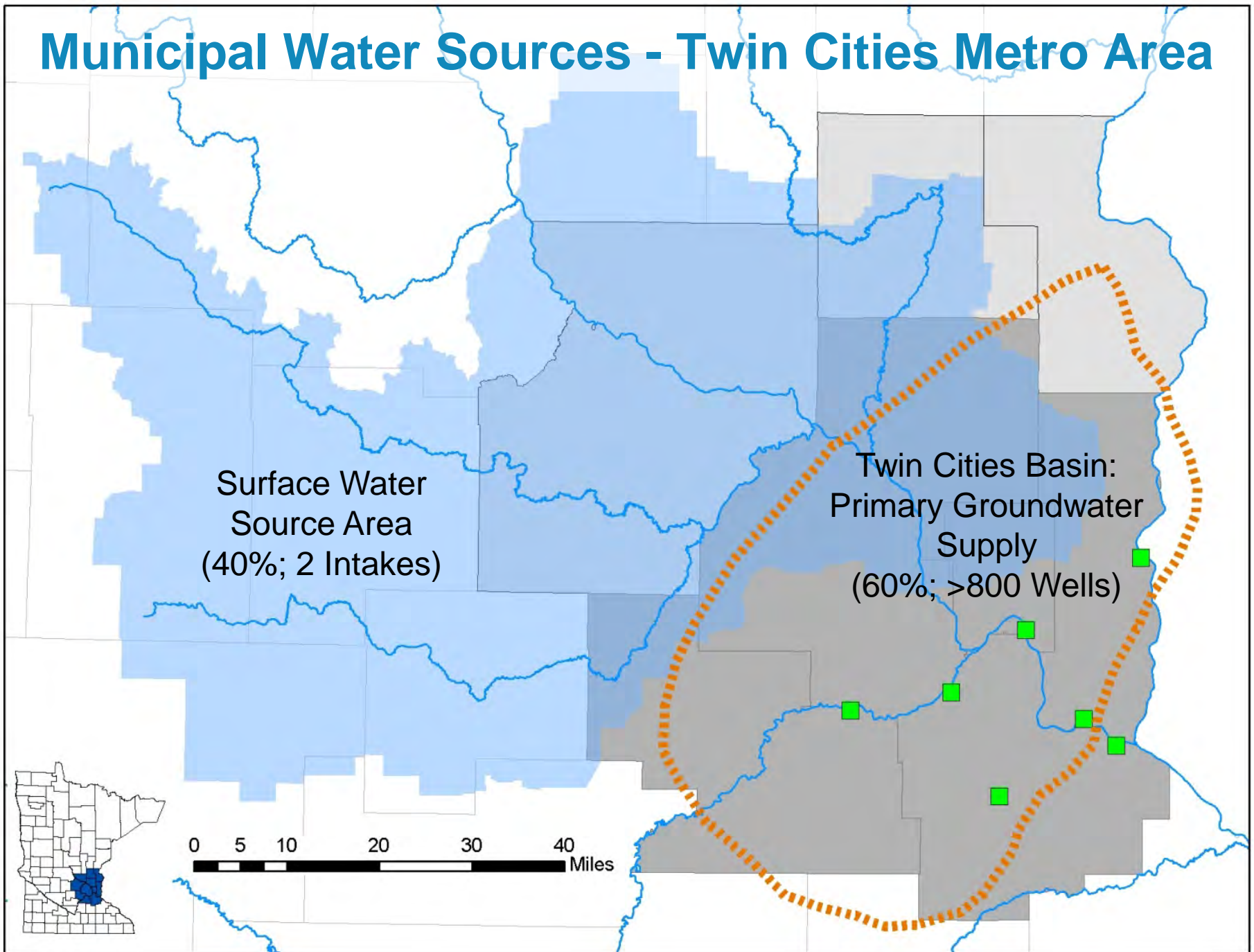


How Water is Used in Minnesota

#1: Once-Through Cooling at Power Plants (Surface Water)



Municipal Water Sources - Twin Cities Metro Area





Source Issues for Municipal Water Supplies

Groundwater: 230 million gallons per day

- Limited aquifer extent
- Dropping aquifer levels
- Contamination, health & treatment costs

Surface Water: 100 million gallons per day

- Drought
- Contamination, health & treatment costs

Recycled Water: Unknown

- Regulatory limitations, liability issues
- Treatment costs

Why is White Bear Lake so dry? It's not just drought.

By John Brewer

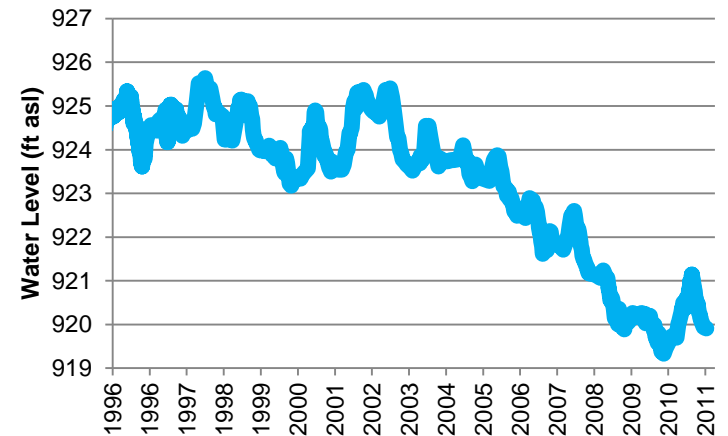
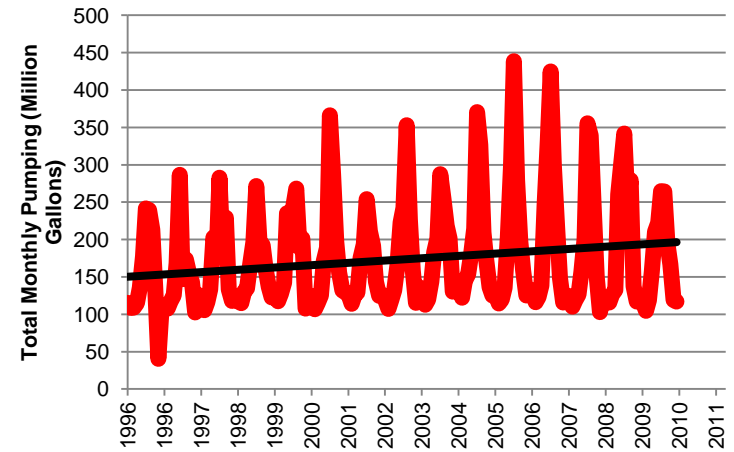
jbrewer@pioneerpress.com

Posted: 02/18/2012 10:23:15 PM CST

Updated: 02/20/2012 09:54:43 AM CST



In November 2011, a resident removes a boat from the extended beachfront along White Bear Lake. Water levels are near historic lows. (Pioneer Press: Chris Polydoroff) (Chris Polydoroff)





Metropolitan Council Water Supply Planning

Master Water Supply Plan - External

- Goal & Principles
- Information
- **Tools, like the Conservation Toolbox!**

Sustainability Plan - Internal

- Energy & Greenhouse
- Water
- Solid & Hazardous Waste
- Fleet



Master Water Supply Plan Goal

Ensure a sustainable water supply for current and future generations.

“...water use is sustainable when the use does not harm ecosystems, degrade water quality, or compromise the ability of future generations to meet their own needs.”

-- 2009 Minnesota State Legislature



Master Water Supply Plan Principles

1. Water supply planning is an integral component of long-term regional and local comprehensive planning.
2. An understanding of the region's long-term water supply availability and demand is necessary to identifying a specific community's or sub-region's water sources.
3. All hydrologic system components, naturally occurring and man-made, must be carefully evaluated when making water infrastructure plans.
4. The quality of the region's water is a critical component of water supply planning.
5. Interjurisdictional cooperation is a viable option for managing short-term water supply disruptions and sustainably meeting long-term water supply needs.
6. Regional and local cost-effectiveness and equity are considered when identifying water supply options.
7. Wise use of water supplies is critical to ensuring adequate supplies for future generations.





Met Council Sustainability Plan: Water Tasks

1. Identify all water sources and amount used
2. Identify and recommend water conservation opportunities
3. Purchase Water Sense labeled fixtures and appliances
4. Modify construction specifications to promote conservation
5. Perform case study evaluations to assess reuse potential
6. Create inventory of stormwater BMPs
7. Consider pollutant reduction requirements in procurement

Conservation Toolbox

www.metrocouncil.org/environment/WaterSupply/conservationtoolbox.htm

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> Wastewater+Water > Water Supply Planning

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Water Conservation Toolbox


Water suppliers in Minnesota are required to have a water conservation plan as part of their [water supply plan](#). To assist in the development of these plans and to help water suppliers select programs appropriate for their communities, the Metropolitan Council developed this water conservation toolbox. The toolbox contains program information and resources water suppliers can use to promote the efficient use of water.

If you have comments or questions please let us know. We will continually update and improve the toolbox based your input.


E-mail watersupply@metc.state.mn.us

Phone 651-602-1000

Programs for Water Suppliers



Tips and Resources for Water Customers



Conservation from Technology/Process

Examples: Arctic Cat Inc., Home appliances, Ag irrigators

Benefits:

- § Reduced per capita water use
- § Reduced energy use & waste
- § Increased municipal capacity

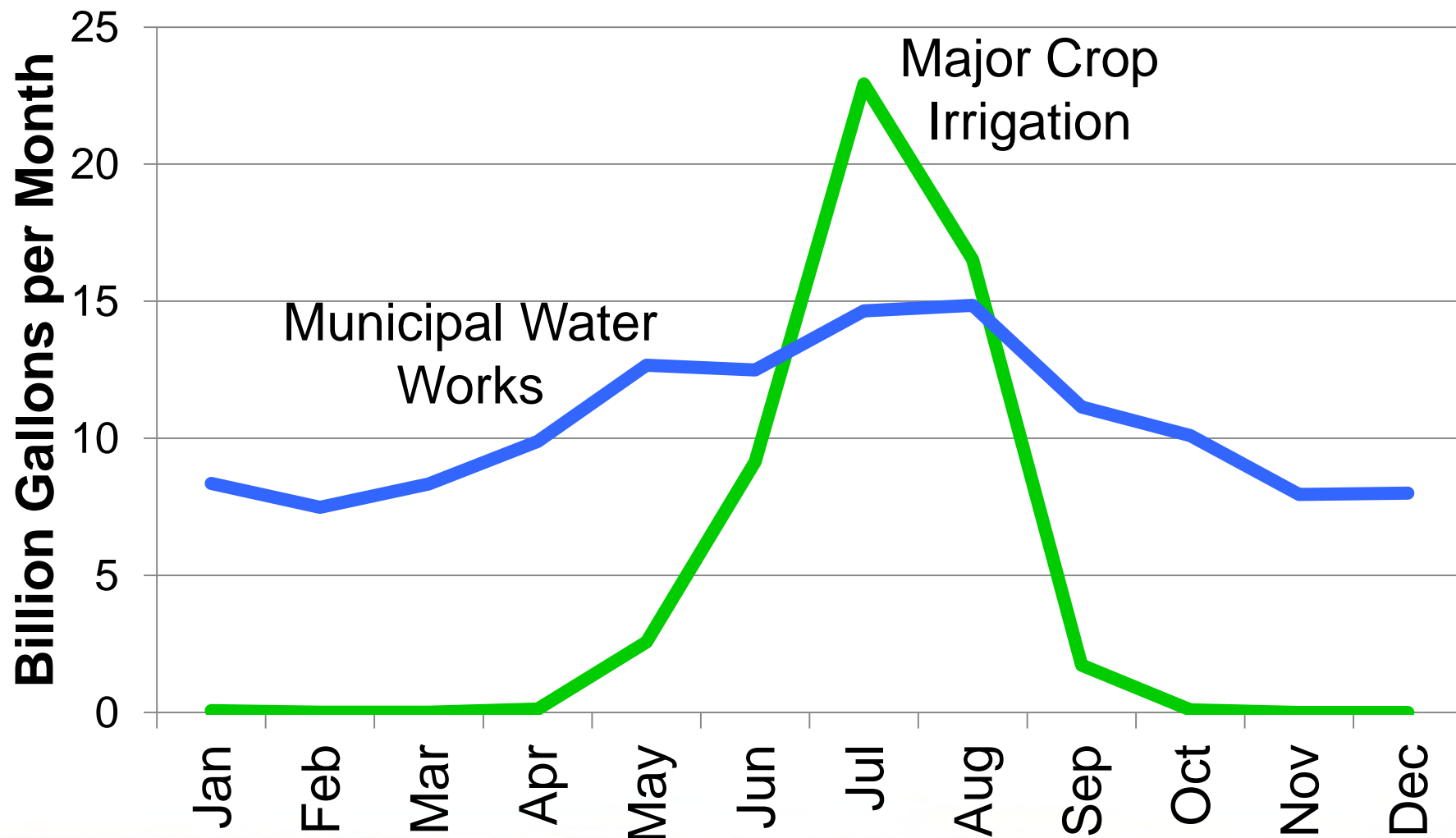
Implications:

- § Reduced use can reduce water utility revenue

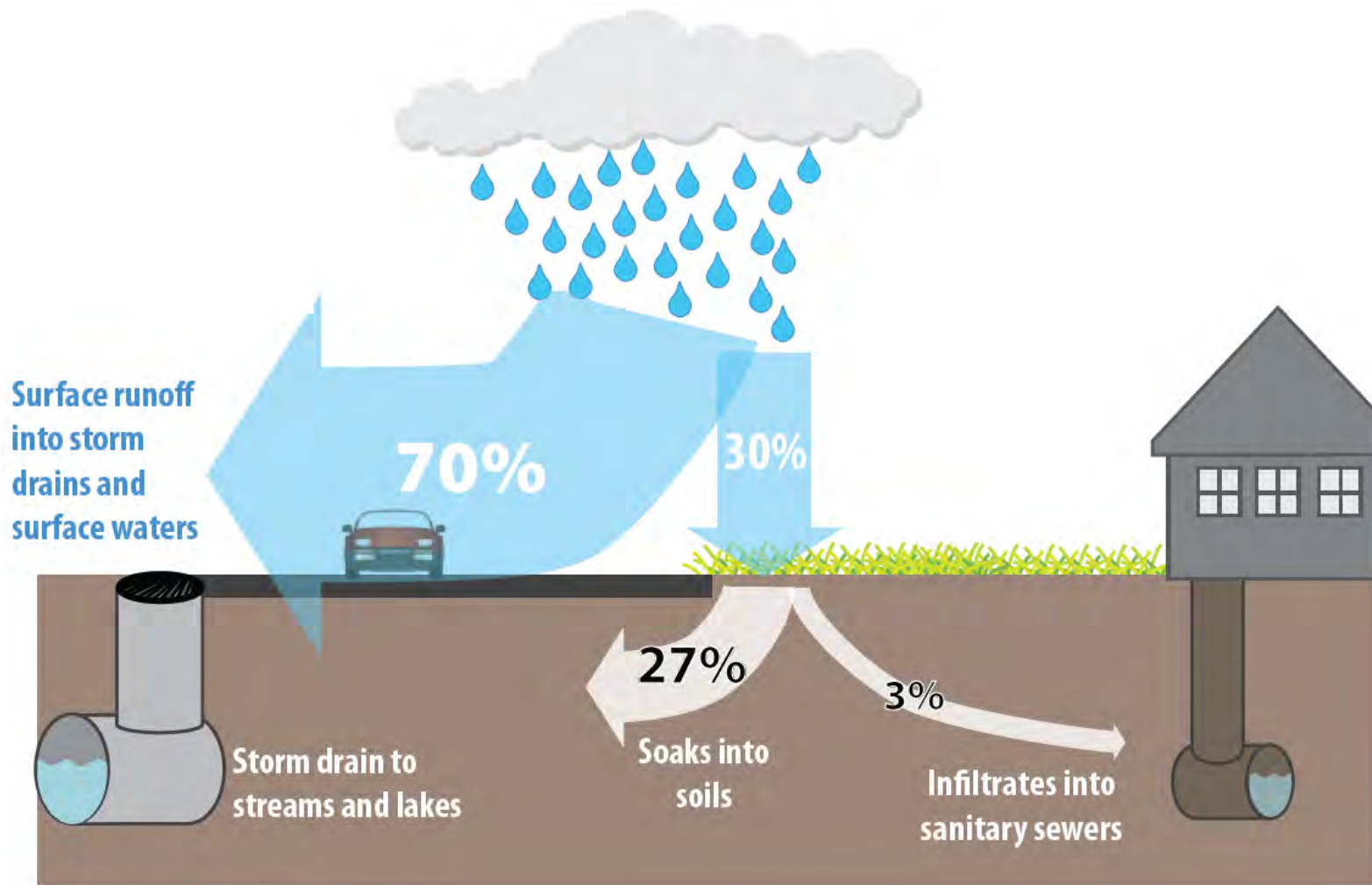




Water Demand Shapes Supply Systems



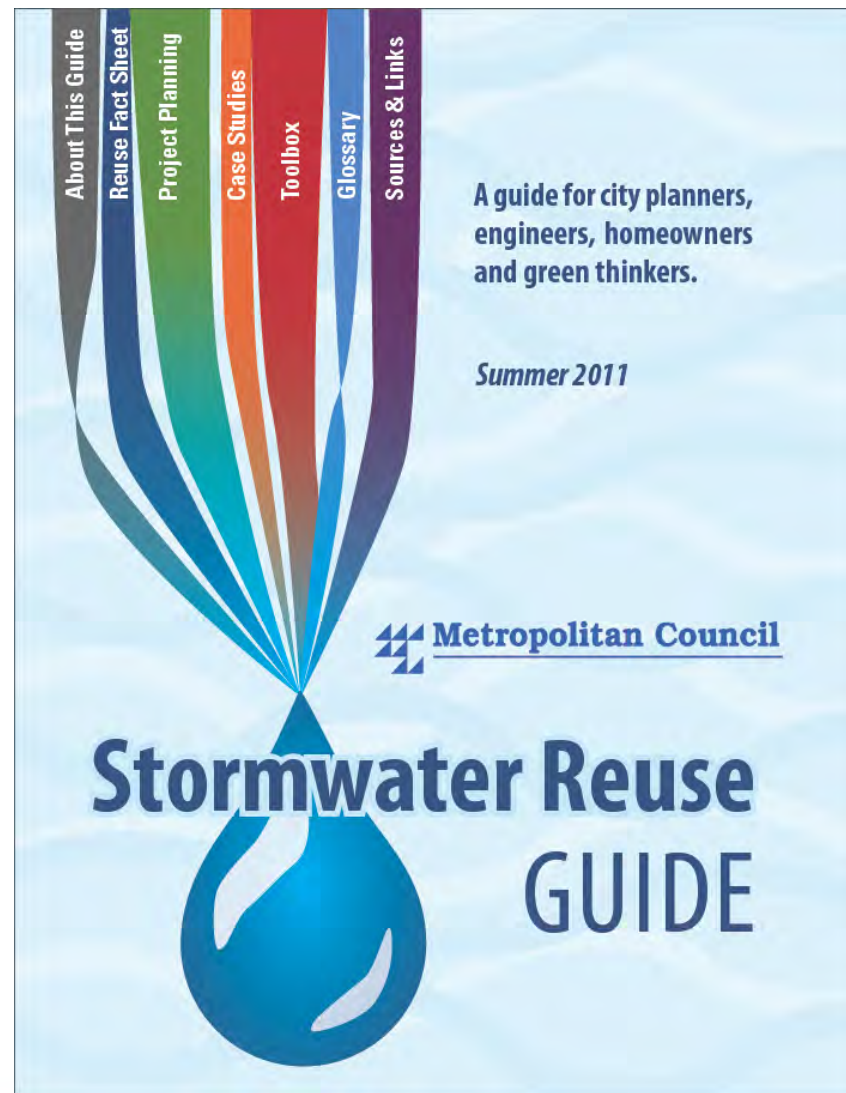
Stormwater Reuse



Source: CDM and HKGi

Stormwater Reuse Guide

- § Reduce demand on potable infrastructure
- § Diversify water sources to reduce risk
- § Reduce mass loading of pollutants to surface waters





Recharge

Precipitation that infiltrates to replenish groundwater



Benefits:

- § Increased quantity of groundwater
- § Reduced impact to surface waters
- § Lower stormwater utility fee

Implications:

- § Impacts to quality of groundwater, including drinking water sources

Conclusions

Wise water use strategies:

1. Reduce the risk of impacts to natural resources and existing water supply infrastructure
2. Free up water supplies for future needs
3. Provide potential for energy savings



Water-Energy Nexus

Few studies of the quantitative relationships between energy and water

MN Water Sustainability Framework recommends further work:

http://wrc.umn.edu/prod/groups/cfans/@pub/@cfans/@wrc/documents/asset/cfans_asset_292471.pdf