



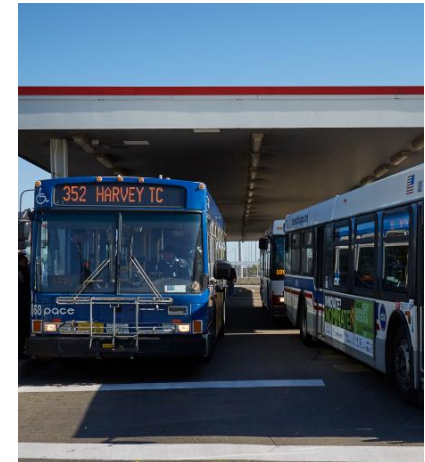
Chicago Metropolitan
Agency for Planning



NWPA Water Supply Sustainability Plan

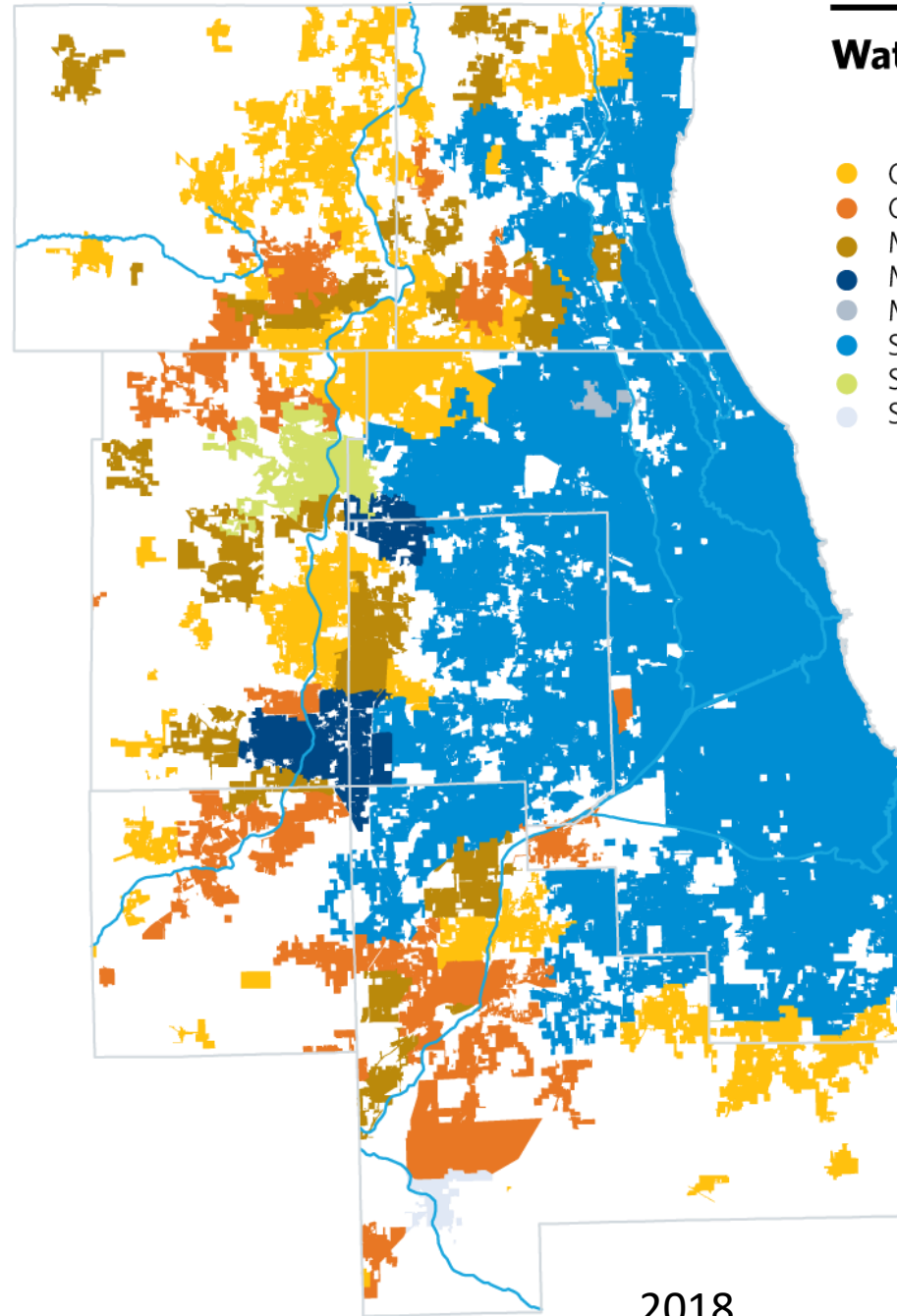
January 26, 2023

NWPA Executive Committee Meeting





Finite supply and growing demands



Water source by locale

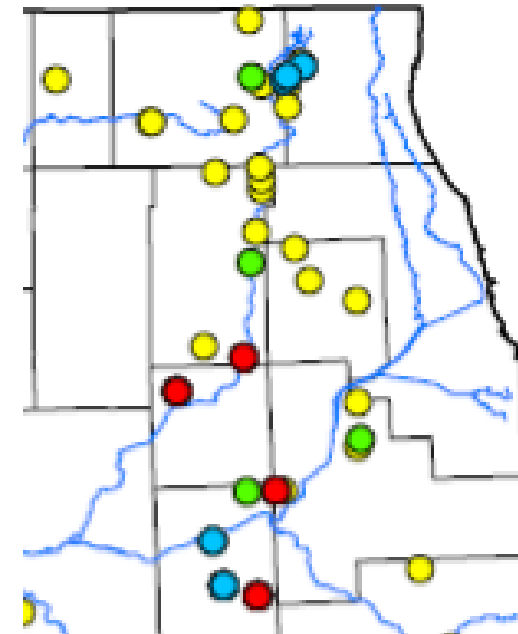
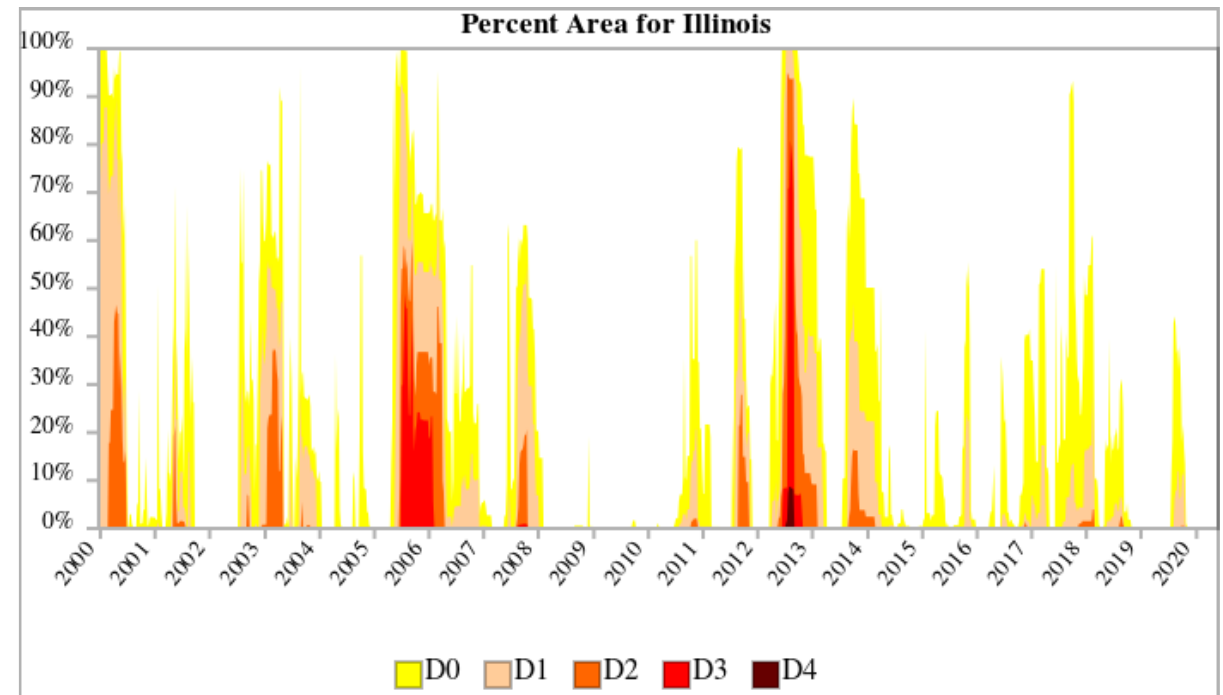
- Groundwater, shallow bedrock/glacial
- Groundwater, sandstone
- Mixed groundwater sources, shallow/sandstone
- Mixed sources, Fox River/groundwater
- Mixed sources, Lake Michigan/groundwater
- Surface water, Lake Michigan
- Surface water, Fox river
- Surface water, Kankakee River

2018



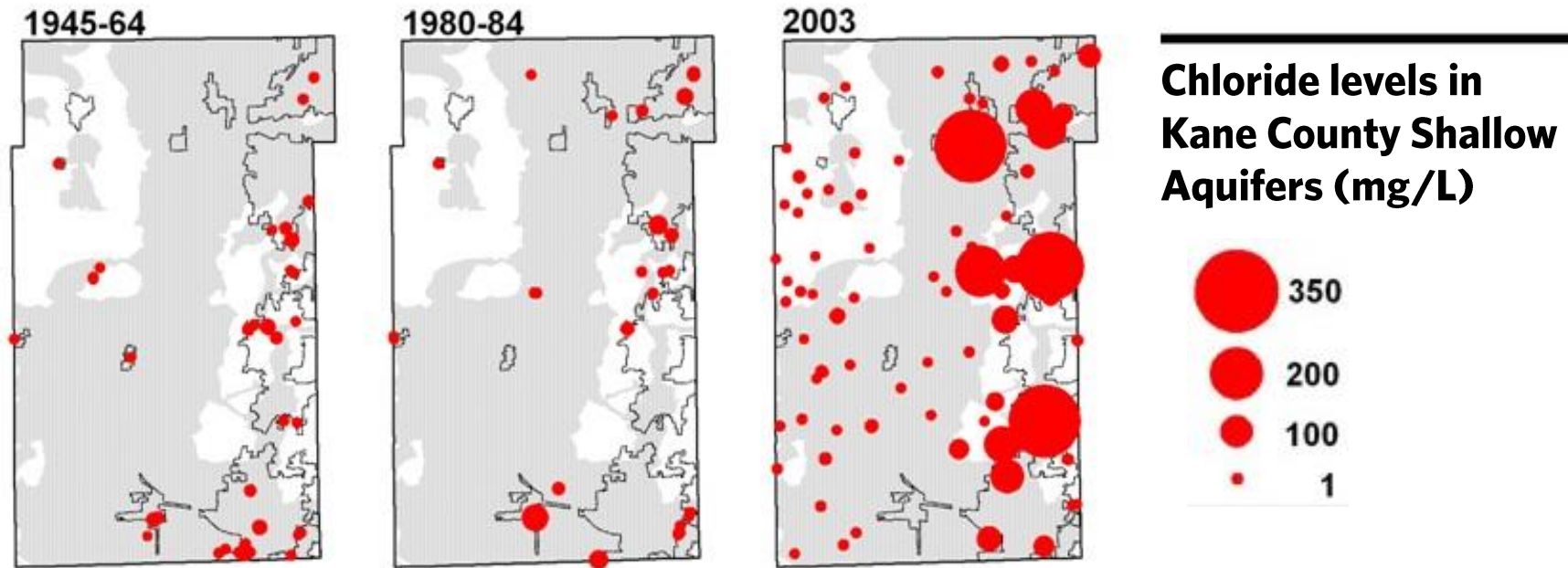
Shallow aquifers: Drought

- Climate change anticipated to increase the severity of droughts, and with lengthier dry spells, increase the risk of flash droughts.
- State's 2011 Drought Plan identifies shallow groundwater wells vulnerable to drought





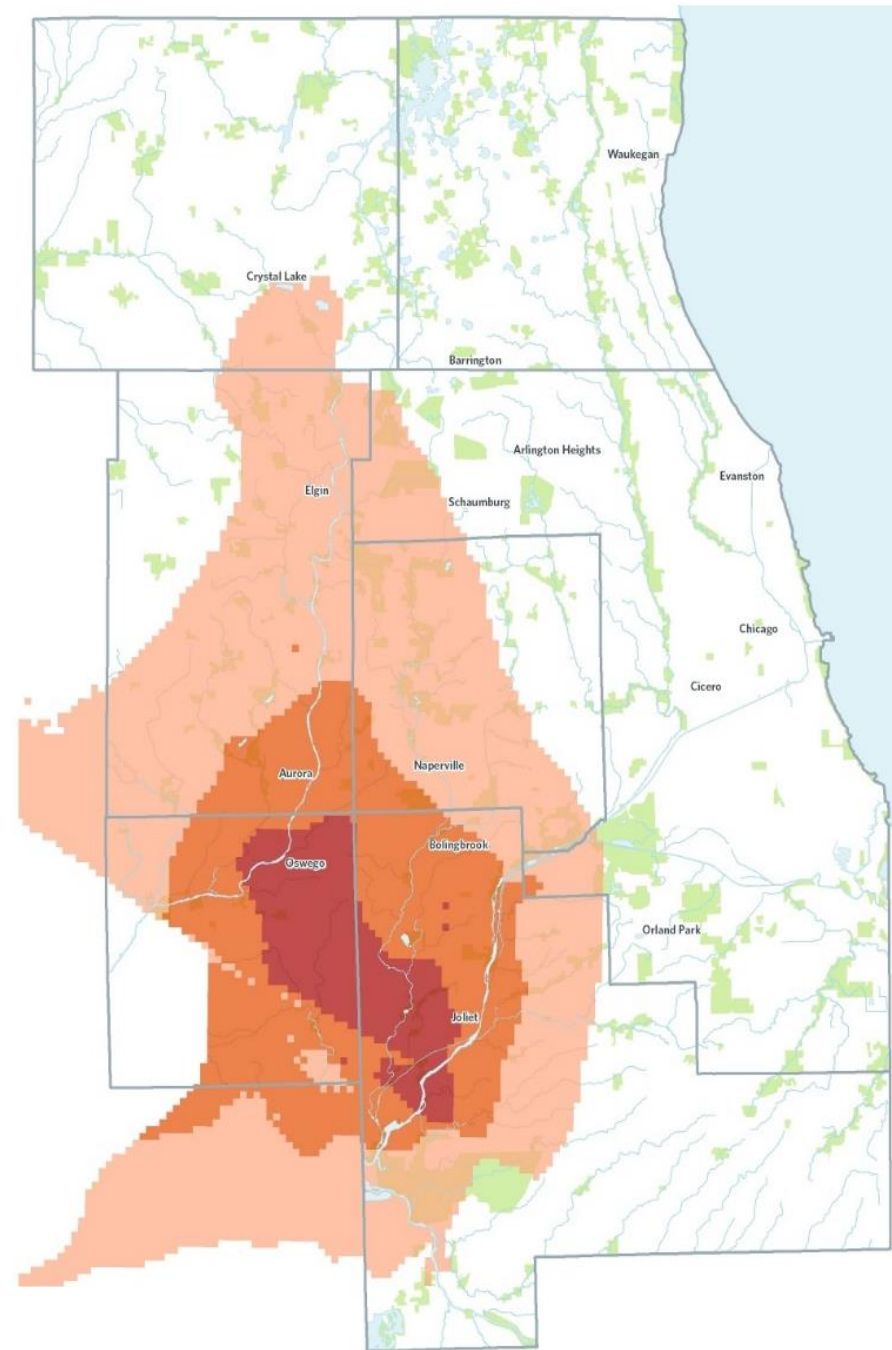
Shallow aquifers: contamination





Sandstone aquifers

Excessive drawdowns causing
loss of supply, desaturation of
aquifers



Risk of desaturation of the St. Peter Sandstone aquifer, 2050

- Complete desaturation
- Partial desaturation (non-pumping)
- Partial desaturation (pumping)



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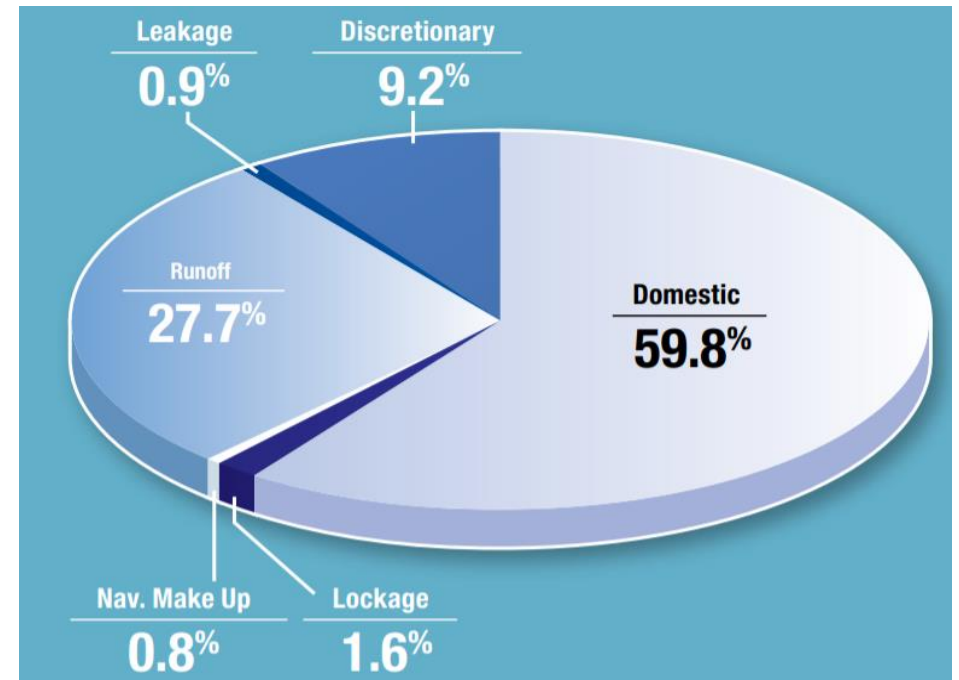
Fox River: water quality challenges





Lake Michigan: Allocation, costs of extension

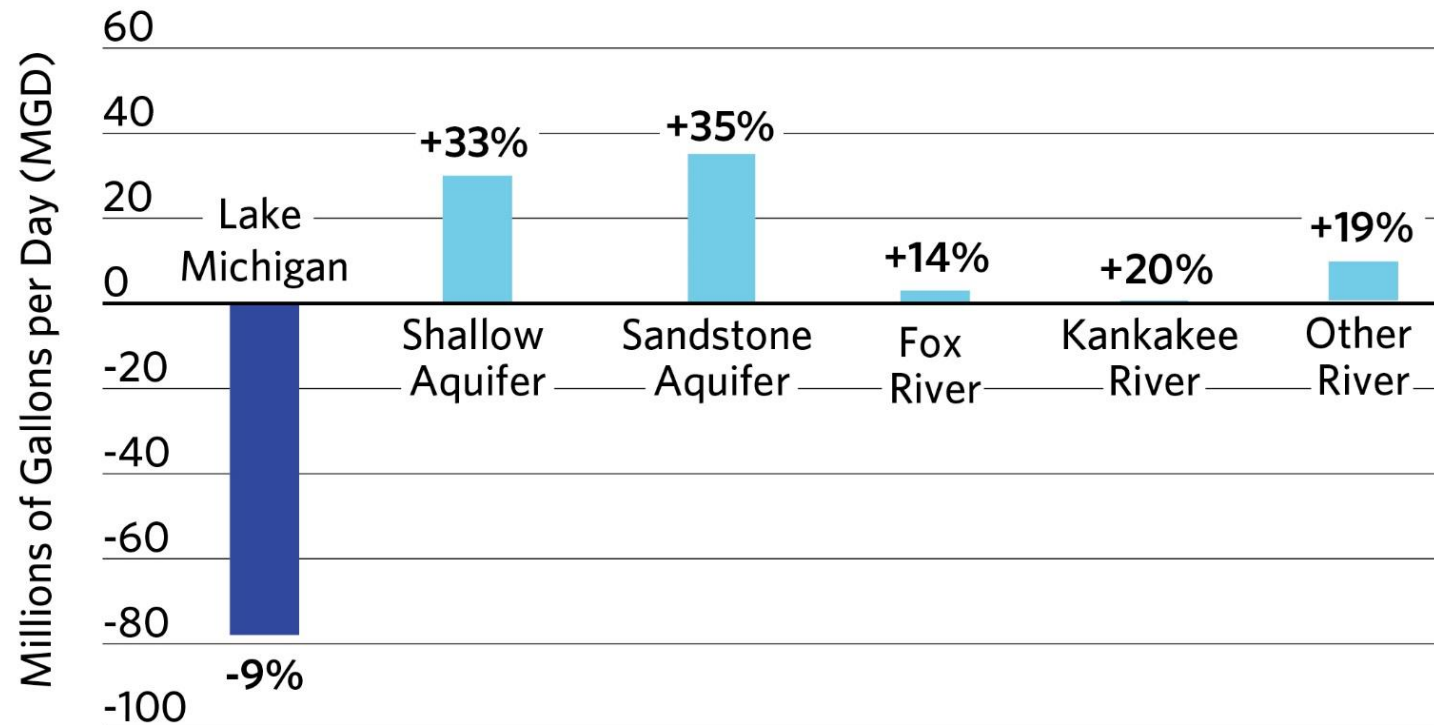
U.S. Supreme Court Decision
limited the amount of water
Illinois could withdraw



Forecasted demand exceeds groundwater supplies

Projected changes
in water demand by
water source,
2011-50

Source: CMAP ON TO 2050
Regional Water Demand
Forecast.



NWPA Water Supply Sustainability Plan

- Establish vision and expectations
- Outline strategies to get there
- Estimate performance of strategies for reaching goal
- Work to build consensus around needed strategies and voluntary reduction targets
- Provide a template to guide local planning efforts

NWPA Mission Statement:

The NWPA, formed by intergovernmental agreement, seeks to collaboratively plan for and steward our shared river and groundwater resources to ensure a sustainable water supply for the people, economy, environment, and future generations.

NWPA Vision Statement:

The NWPA area will have dependable supplies of water for generations to come.

NWPA Water Supply Sustainability Plan

Planning process would provide NWPA members with the answers to the following questions:

- How much less water do we need to use?
- How far will specific conservation strategies get us?
- What strategies are the most effective?

NWPA Water Supply Sustainability Plan

What it is

- Voluntary
- Broad water use reduction targets for the NWPA region, not focused on any one municipality
- Raises awareness of the need for action and provides steps

What it is not

- Does not establish any new or broader regulatory authority
- Does not address unique conditions and issues facing individual municipalities
- Some locations may need to conserve more water
- Local governments, particularly in risk areas, will still need to develop their own local plans

NWPA Water Supply Sustainability Plan

**January – June 2023
(FY23)**

Develop vision and establish regional reduction goals

Draft existing conditions summary (NWPA Profile)

Select strategies for investigation

Design strategy investigation process

**June 2023 – Sept 2024
(FY24 – FY25)**

Strategy investigation and assessment

Build awareness of regional reduction goals

**October – December 2024
(FY 25)**

Combined impacts assessment

Develop NWPA Water Supply Sustainability

Encourage implementation through education & outreach

Encourage local water supply plans

NWPA Roles and Expectations

Executive Committee (EC)

- Participate in EC meetings
- Review and confirm deliverables
- Assist with outreach and education

Technical Advisory Committee (TAC)

- Participate in TAC meetings
- Provide technical expertise and experience
 - Confirm priority water-saving strategies
- Assist with TAC recruitment

Upcoming TAC meetings

February 28

WSSP: Vision and goals development

March 28

Canceled due to WaterCon

April 25

WSSP: NWPA Profile

May 23

WSSP: Strategy selection

June 27

WSSP: Strategy assessment (strategy #1)

July 25

WSSP: Strategy assessment (strategy #2)
Regional water demand forecast update (TBD)

August 22

WSSP: Strategy assessment (strategy #3)

September 26

WSSP: Strategy assessment (strategy #3,4)

October 24

WSSP: Strategy assessment (strategy #3,4)

November 28

WSSP: Strategy assessment (strategy #5)

Upcoming EC meetings

January

WSSP: Project introduction/overview

March

Canceled due to WaterCon

May 25

WSSP: Vision and goals development

July 27

WSSP: Strategy selection

September 28

WSSP: Strategy assessments (1 and 2)

November 30

WSSP: Strategy assessments (3 and 4)

Water2050 demand management strategies

- 1) *Conservation Coordinator*
- 2) *Residential Customers Water Surveys*
- 3) *Residential Plumbing Retrofit*
- 4) *Residential High Efficiency Toilet Program*
- 5) *High Efficiency Clothes Washer Program*
- 6) *System Water Audits, Leak Detection, and Repair*
- 7) *Metering*
- 8) *Water Waste Prohibition*
- 9) *Large Landscape Conservation Programs and Incentives*
- 10) *Conservation Programs for CII Accounts*
- 11) *Wholesale Agency Assistance Programs*
- 12) *Public Information*
- 13) *School Education*

Table 12: Potential water savings associated with conservation measures at two tiers of implementation

Conservation Measures	Low Conservation (mgd)	High Conservation (mgd)
High Efficiency Toilets ²	15.0	74.8
Water Waste Prohibition ²	12.1	60.3
Metering ¹	30.3	31.5
Leaks and Audit Repair ¹	5.9	29.7
Residential Plumbing Retrofits ²	5.2	26.0
Commercial/Industrial ³	5.0	25.2
High-Efficiency Clothes Washers ²	3.2	16.1
Large Landscape ¹	1.0	5.1
Residential Water Survey ²	0.1	0.7
All Measures - Total	77.8	269.4

1. Low conservation applies to 10% of demand; high conservation applies to 50% of demand.

Assess potential of strategies to meet sustainability goal

Could include the following:

Quantity

- Non-revenue water reduction
- Outdoor lawn watering
- Conservation water rates
- Plumbing retrofits and appliance upgrades

Quality

- Sensible salting
- Contaminants of emerging concern

strategy assessments

Objective

Explore feasible and effective strategies NWPA members can take to establish a path toward long-term sustainable water resource use.

strategy selection & investigation design

- Strategy selection for investigation - May 2023, up to 8 strategies
- Design the strategy investigation process
- Strategy investigation process memo - – June 2023
 - outlining process to determine 1) existing levels of implementation for each potential strategy and 2) potential water savings

strategy assessment & investigation

- Strategy assessment and investigation sessions – June 2023
- Current implementation and feasibility
- Assess savings potential of individual strategies
- Education and selection facilitation support
- Strategy confirmation
- Strategy assessments – chapter in plan for each strategy (up to 8) – September 2024

strategy assessment plan chapters

- Individual summaries of each strategy that
 - explain the strategy
 - current implementation levels (if applicable)
 - potential/feasibility for implementation
 - potential water savings if implemented
 - implementation resources
 - potential barriers to implementation, and
 - applicable case studies

Combined Impacts assessment

Objective

Estimate combined water savings from all the selected strategies, and, if available, compare with ISWS estimates of sustainable yield for the NWPA area.

Plan deliverable

- Executive summary
- Plan vision and goals
- Summary of existing conditions
 - Water sources, access to alternative water sources, number of communities, service populations, current and projected withdrawals, sustainable yield values
- Recommended strategies
 - Description, current and proposed implementation, potential savings, and resources and techniques for implementation
- Potential savings of the recommended package of strategies compared to ISWS sustainable yield values and performance metrics

Questions?

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