

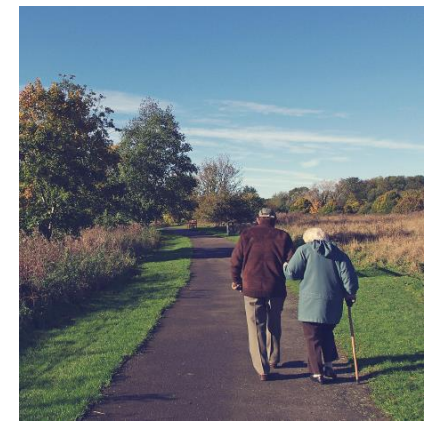
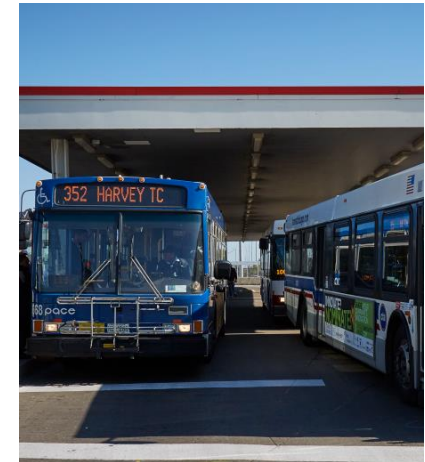


Chicago Metropolitan Agency for Planning



# NWPA Water Supply Sustainability Plan: Progress update

NWPA Executive Committee Meeting  
January 25, 2024



# Agenda

## Purpose of the NWPA Water Supply Sustainability Plan

- What's the need
- Plan objectives
- Plan vision and goals

## Planning process

- Timeline overview
- Anticipated 2024 schedule

## Water conservation strategies

- Overview of strategies and assessment process
- Strategy highlights

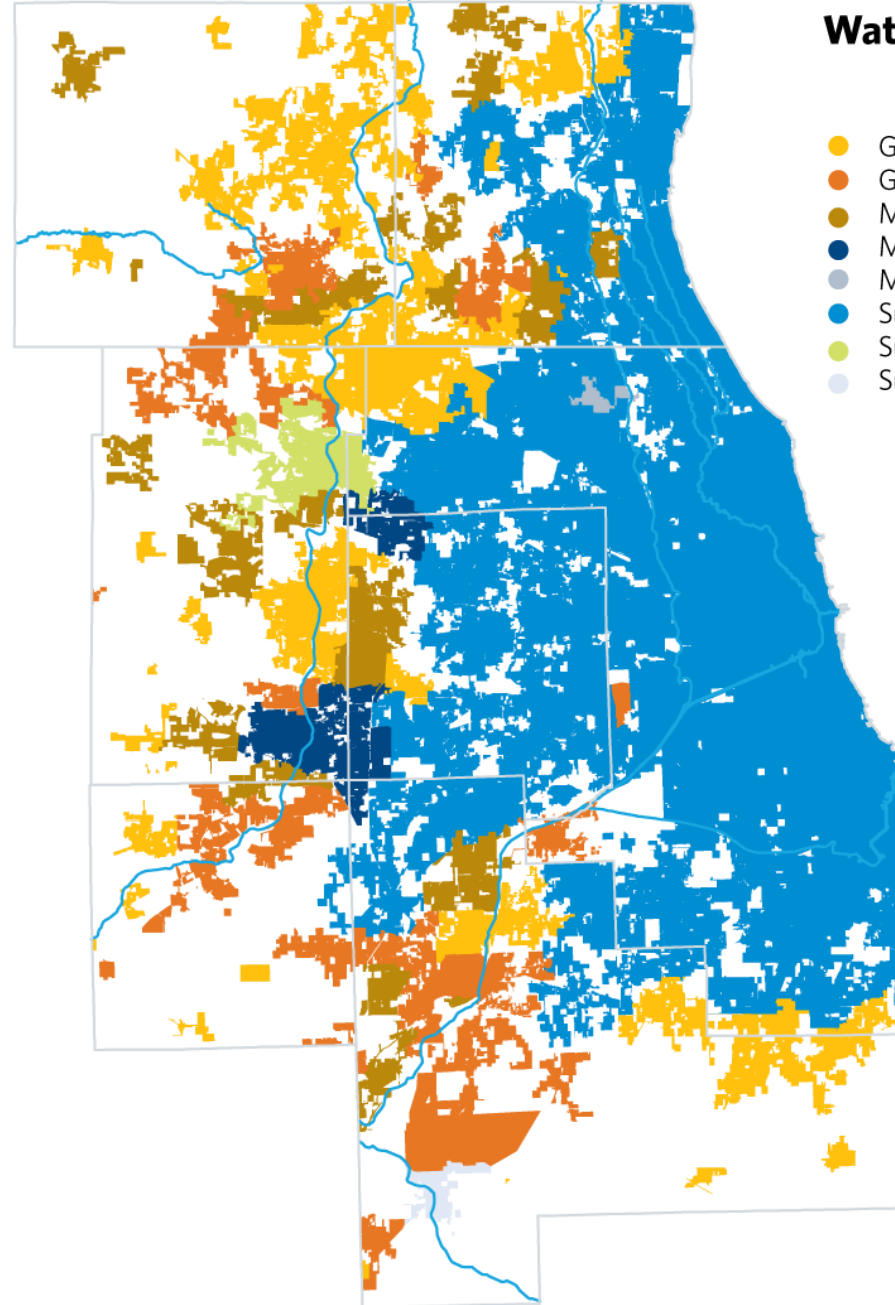
# Why develop an NWPA water supply sustainability plan?



Chicago Metropolitan  
Agency for Planning



# 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

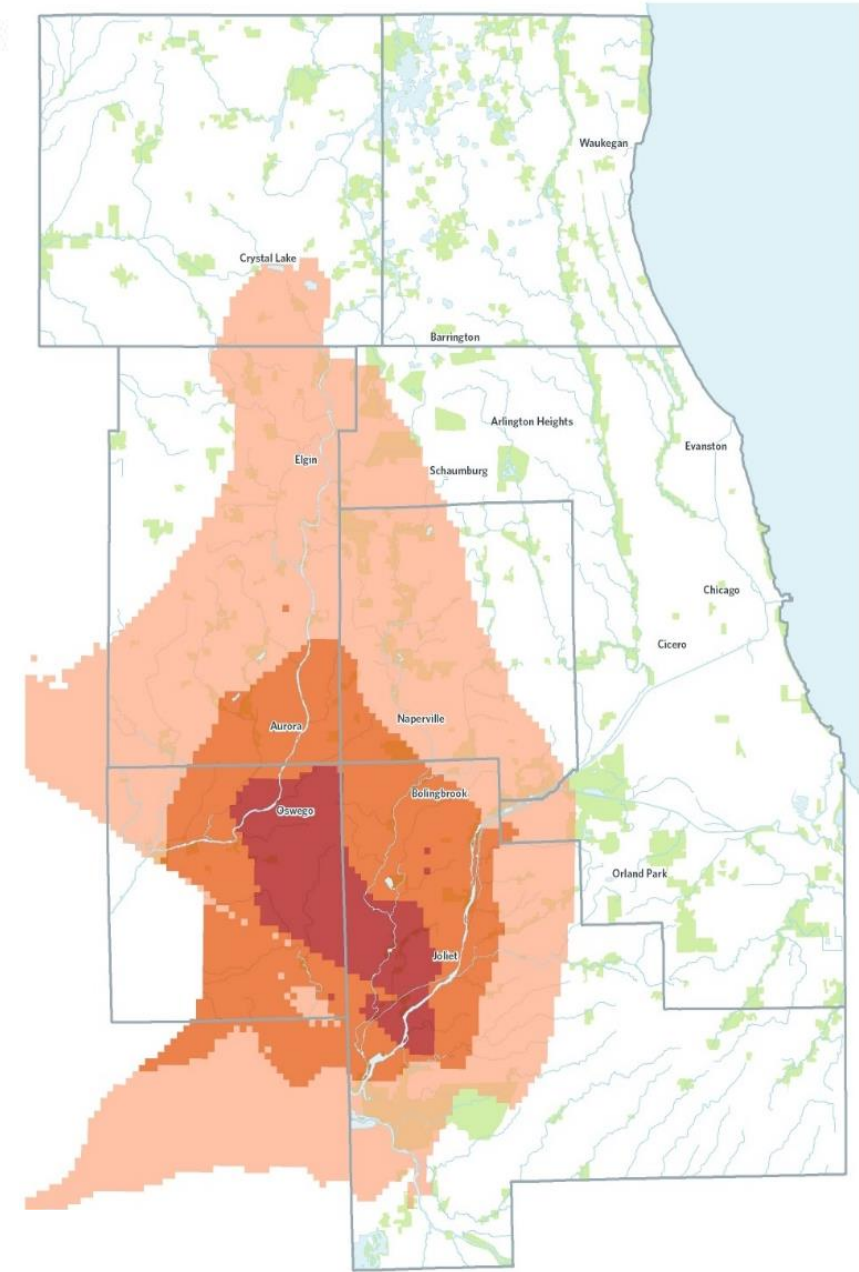


# Sandstone aquifers

Excessive drawdowns causing  
loss of supply, desaturation of  
deep aquifers

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

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





# Shallow aquifers and the Fox River

Contamination affecting quality and reliability of shallow aquifer and Fox River water supplies

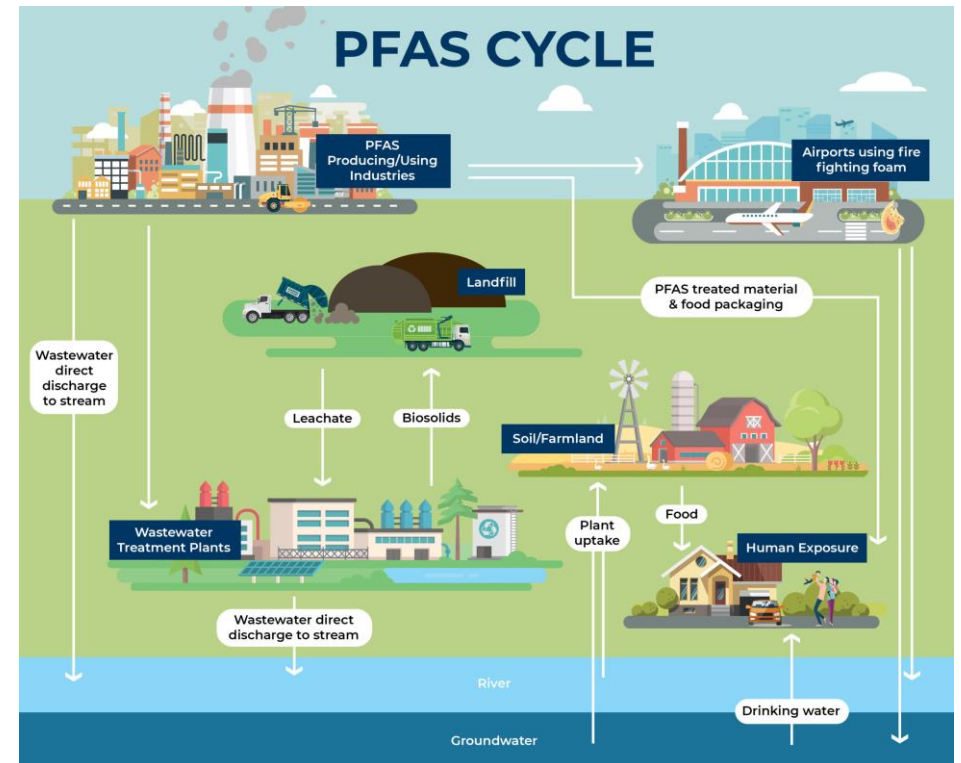
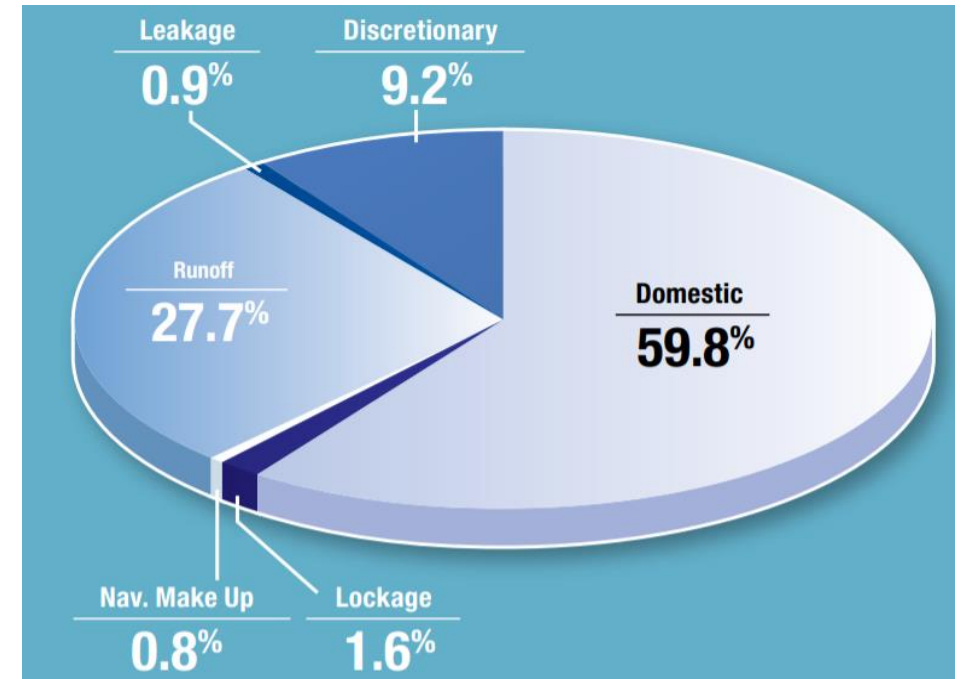


Image sources: National Science Foundation (top); Halff (bottom)

# Lake Michigan

Water allocation is limited,  
high costs associated with  
extension



# Plan objectives

- Establish water supply sustainability goals
- Provide a menu of water conservation strategies and best practices
- Increase awareness of priority strategies and resources
- Encourage communities to create their own water conservation plans





# Plan Vision

"The NWPA water supply sustainability plan will serve as a roadmap for members seeking to take voluntary steps toward feasible and effective long-term use of water supply resources."

## ***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.

*Source: Northwest Water Planning Alliance  
2020-2024 Strategic Plan*

# Water supply sustainability goals

**Fox River:** The Fox River will continue to sustain aquatic ecosystems and serve as an affordable, safe, and reliable water supply for NWPAs currently using it or seeking it as an alternative source with a dedicated backup supply.

**Lake Michigan:** NWPAs will help ensure that those needing an alternative water source can seek access to a sufficient and safe water supply within the legal limits of Illinois' Lake Michigan allocation.

**Sandstone aquifer:** Water withdrawals from the sandstone will be managed at a rate that extends and sustains the life of the deep aquifers and gives NWPAs experiencing adverse dewatering impacts adequate time to explore other options.

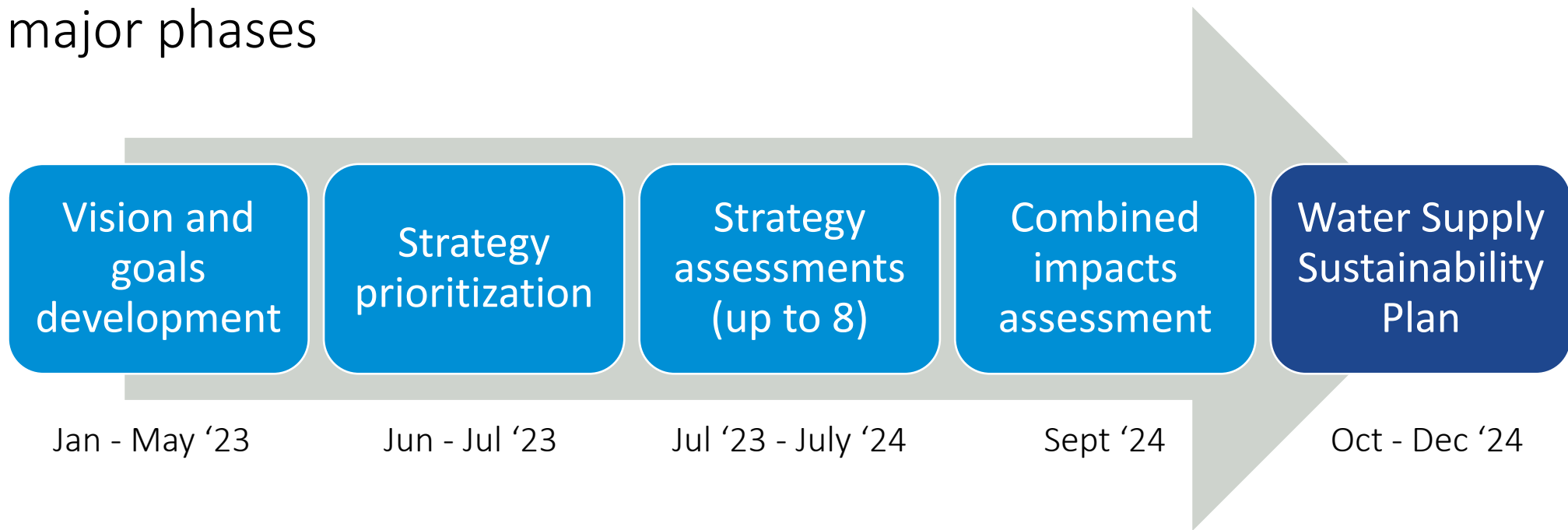
**Shallow aquifer:** NWPAs and households will withdraw from shallow aquifers at rates that help the source remain safe, affordable, and sufficient water supply while supporting healthy aquatic ecosystems.

# Planning process

# Project timeline

Multi-year planning process (January 2023 – December 2024)

Four major phases



# Timeline and expectations

## 2023

- Review and approve plan vision
- Review and approve plan goals

## 2024

- Review and provide feedback on draft plan
- Discuss plan implementation
- Consider plan for adoption – November 2024

# Water conservation strategies

# Water conservation strategies

## Residential sector *(in-progress)*



Residential retrofits



Landscape water efficiency



New development standards

## CII sector *(in-progress)*



Commercial, industrial, & institutional (CII) conservation programs

## Water system *(to be completed in 2024)*



Water loss control



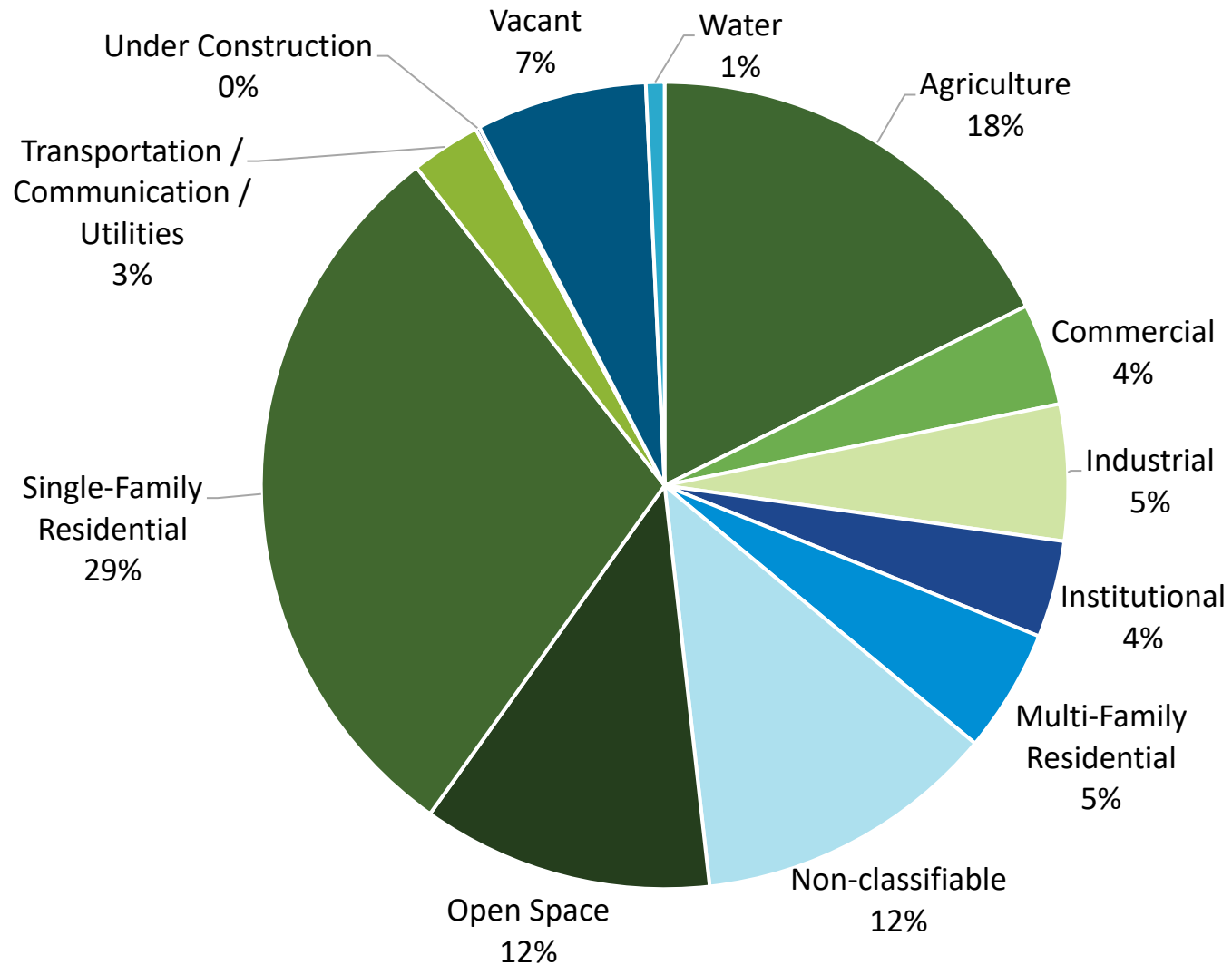
Costing and pricing

## Outreach *(to be completed in 2024)*



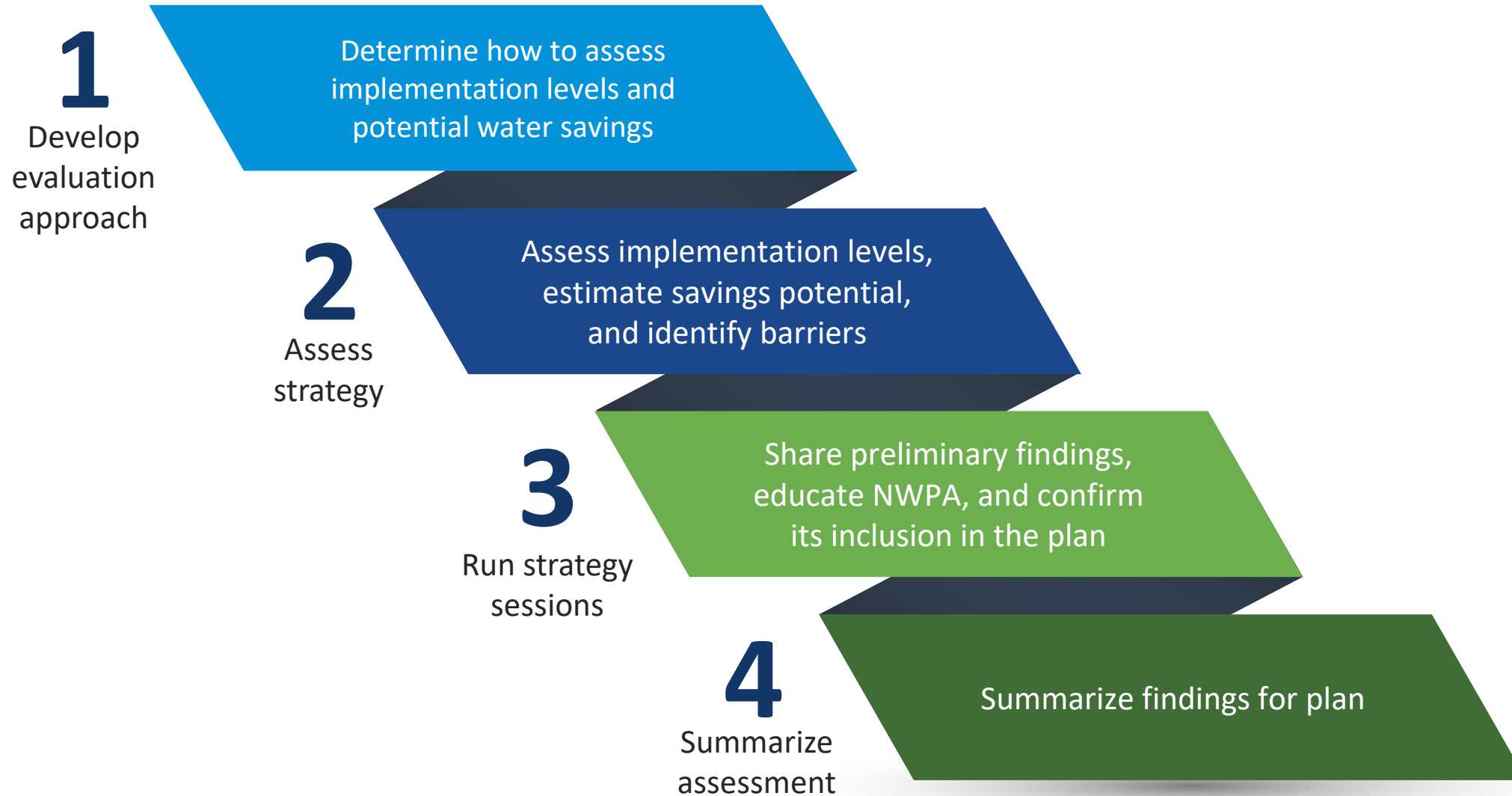
Information and education

# Land uses of NWPA communities





# Strategy assessment process



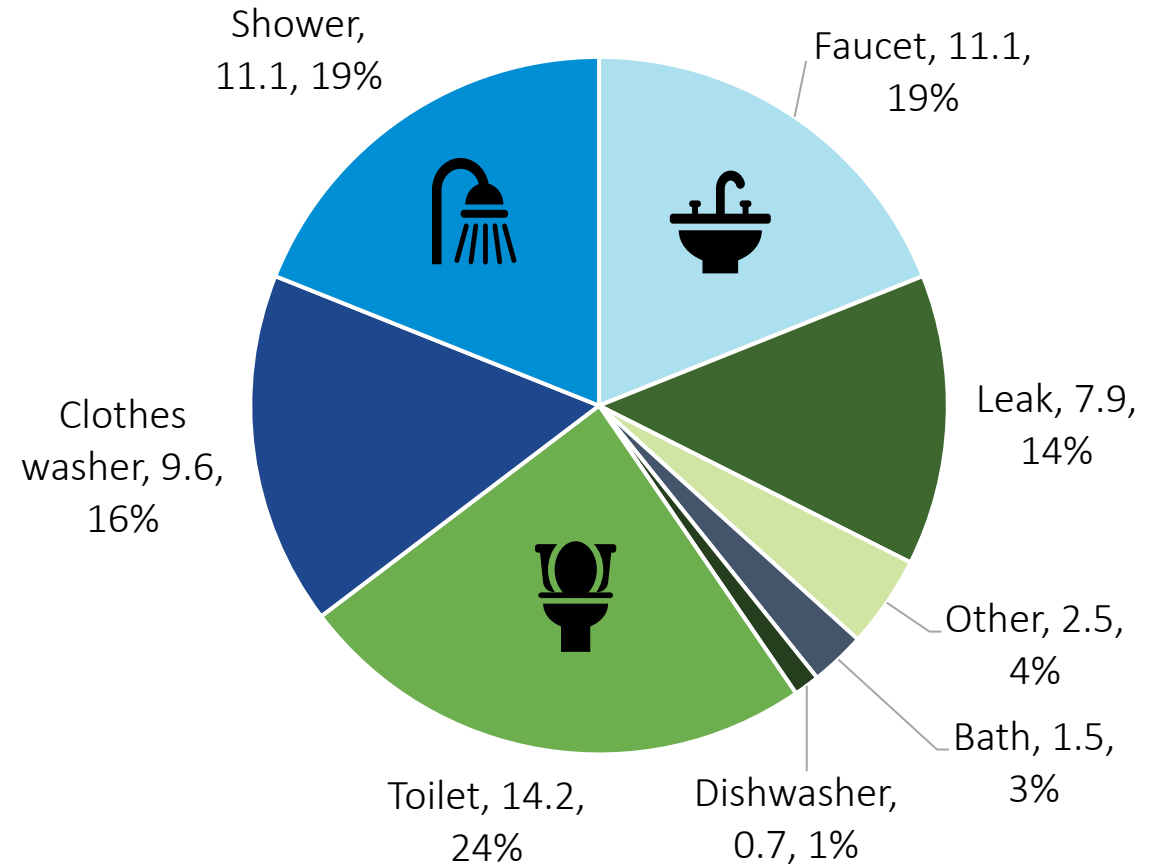
# Residential retrofits

**Residential water device replacement:**  
Replacing existing toilets, showerheads, and faucets with more water-efficient devices, like those with a WaterSense label

## What's the benefit?

If all household devices were high-efficiency devices, indoor household water use could drop by 35 percent or more.

## Average daily residential indoor per capita use in MGD (Total = 58.6 MGD) in North America



Source: Alliance for Water Efficiency, Water End Uses of Water, Version 2 (2016)

# Outdoor landscape efficiency

## Water-efficient landscaping:

Transforming a traditional turf-dominated (water-intensive) landscape into a more water-efficient one.

- Use of site design, landscape materials, and maintenance practices based on local climate and conditions

## What's the benefit?

Help curb water use and waste from water-intensive landscapes and inefficient maintenance and watering practices.

- Potential to save 20-50% of outdoor water use for residential properties



Images source: US EPA WaterSense

# Residential development standards


## Water-efficiency development standards:

Incorporate water conservation measures, like those in EPA's WaterSense Homes program, in residential development standards.

- Developers incorporate measures in the construction of new homes.

## What are the benefits?

- Help communities grow while limiting impacts on water and infrastructure resources.
- WaterSense Homes are 30% more water-efficient than typical new-construction homes
- Cost savings and improved performance



**WaterSense® labeled homes are designed to use less water!**

look for 

**FREE OF LEAKS**  
Homes are inspected to be free of visible leaks, reducing water waste and preventing costly damage.

**PEACE OF MIND**  
Trained professionals conduct independent verifications, so you can be sure homes deliver savings.

**SAVINGS THAT PERFORM**  
WaterSense labeled plumbing products ensure efficiency and performance.

[www.epa.gov/watersense/homes](http://www.epa.gov/watersense/homes)

The graphic shows a cross-section of a house with a red plumbing line tracing the path from the water meter to the water heater, then to the bathroom (shower, toilet, sink) and kitchen (sink, refrigerator, dishwasher). The house is surrounded by greenery and a blue sky.

## Why WaterSense Labeled Homes?

A WaterSense Labeled Home can Save Water and Energy:

**50K**

gallons of water a year or more for a family of four



enough water to wash 2,000 loads of laundry

**\$600**

in water and energy bills

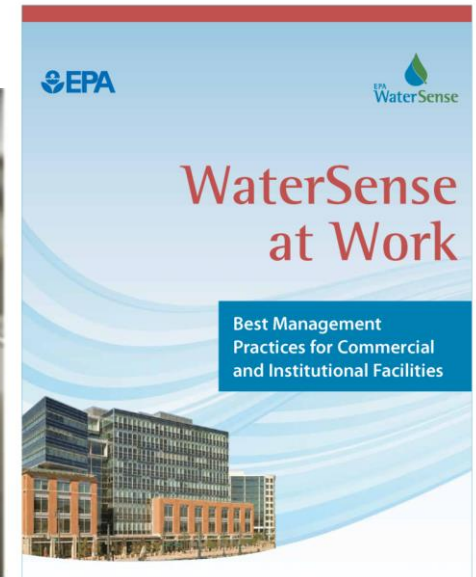
# Commercial, industrial, and institutional (CII) water conservation programs

## CII programming:

Can include audits to identify inefficient equipment, device retrofits, outdoor landscape efficiency, and/or setting retrofit and new development standards



*Pre-rinse spray valve*



# Top industry sectors in NWPA region

Educational services – 17%

Manufacturing – 15%

- Chemicals
- Plastics and rubber products
- Fabricated Metal products

Retail trade – 10%

- Health and personal care
- Motor vehicle and parts dealers
- Food and beverage stores

NWPA County	Top industry employers	Percentage of employees (%)
DeKalb	Educational services	24
Kane	Manufacturing	17
Kendall	Educational services	20
Lake	Manufacturing	18
McHenry	Manufacturing	18

# Thank you!

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