



June 11, 2019

Environmental Commission  
Meeting

# Joliet Alternative Water Source Study – Phase II





# Status and Schedule Update

Alternative Water Source Study

# Study Schedule



## Phase I: August 2018 – January 2019 – Complete!

- Stakeholder Engagement and Strategic Planning
- Water Demand Projections, Groundwater Model Updates, Water Conservation Efforts and Short Term Emergency Planning
- Evaluation of 14 alternative water source options
- Identification of viable alternatives primarily based on quantity and quality

## Phase II: February – December 2019

- Detailed analysis of 5 selected options identified in Phase I
- Identification of improvements for each viable alternative and their associated cost
- Refinement and prioritization of Phase II criteria (control, governance, maintenance, redundancy and risk to schedule)
- Selection of alternative water source at completion

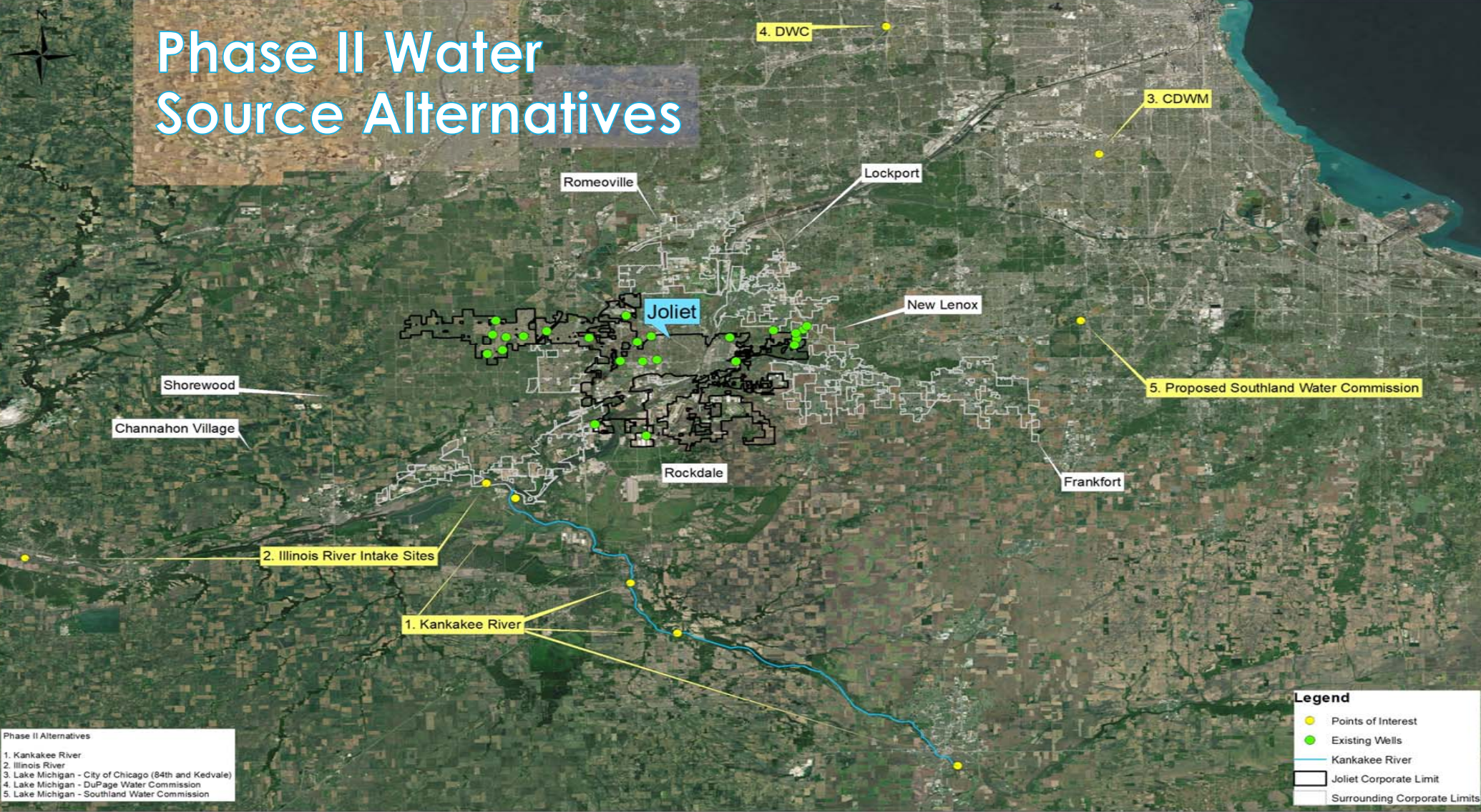
# Phase II Study



The following alternatives were **advanced to Phase II** for further analysis:

- **Kankakee River**
- **Illinois River**
- **Lake Michigan Water – Chicago Department of Water Management**
- **Lake Michigan Water – DuPage Water Commission**
- **Lake Michigan Water – Southland Water Commission**

# Phase II Water Source Alternatives



- Phase II Alternatives
- 1. Kankakee River
  - 2. Illinois River
  - 3. Lake Michigan - City of Chicago (84th and Kedvale)
  - 4. Lake Michigan - DuPage Water Commission
  - 5. Lake Michigan - Southland Water Commission

**Legend**

- Points of Interest
- Existing Wells
- Kankakee River
- ▭ Joliet Corporate Limit
- ▭ Surrounding Corporate Limits



# Phase II Study



Items completed since the last Environmental Commission meeting:

- **River Water Sampling planned for April/May delayed due to rain/flooding (last sampling was March 26, 2019)**
- **River Water Sampling completed last week (June 3, 2019)**
- **Prepared Request for Qualifications for Independent Cost Review**
- **Prepared Request for Statement of Interest for Potential Water Suppliers**
- **Preparing the Conceptual Design Parameter Technical Memorandum**

# Public Relations Activities in Past Month



1. Greentown (October 26, 2018)
2. Will County Water Forum (November 8, 2018)
3. Joliet Rotary (February 5, 2019)
4. Will County Advisory Council (February 20, 2019)
5. Joliet Kiwanis Club (February 25, 2019)
6. Spanish Community Center (March 13, 2019)
7. ISAWWA WaterCon (March 19, 2019)
8. Cunningham Neighborhood Association (April 3, 2019)
9. National Hook-up of Black Women – Joliet Chapter (April 6, 2019)
10. St. Pat's Neighborhood Association (April 10, 2019)
11. Metropolitan Planning Council Water 1-2-3 (April 17, 2019)
12. City Center Partnership (April 25, 2019)
13. ISAWWA Source Water Summit (May 1, 2019)
14. Cathedral Area Preservation Association (May 13, 2019)
15. Eastside Neighborhood Meeting (May 14, 2019)
16. Bicentennial Bluffs Neighborhood Meeting (May 16, 2019)
17. Bluestem Festival (May 18, 2019)
18. Forest Park Neighborhood Meeting (May 20, 2019)
19. Collins Street Neighborhood Meeting (May 22, 2019)
20. New Orleans North (June 8, 2019)
21. Paws on 66 (June 9, 2019)

# Upcoming Public Relations Activities



1. Taste of Joliet (June 21-23, 2019)
2. Race Fan Rally (June 26, 2019)
3. Downtown Joliet Farmer's Market (second Wednesday of June, July, August, September, October)
4. In the Making (July 20, 2019)
5. Slammers Water Conservation Day (July 21, 2019)
6. Kidzfest (August 3, 2019)
7. Blues and Brews (August 17, 2019)
8. Joliet Prison Break-in (August 24, 2019)
9. Alianza Fiesta Street Festival En La Calle (September 14, 2019)





# Public Relations Progress

- *Billboards – toilet rebate & survey*
- *Social media – 18 posts*
- *Eblasts – Newsletter, EC meeting*

**June**

# Community Survey



Please share the link and encourage participation.

Responses to date:

English - 160

Spanish - 11

# Upcoming Events



June 12 – Farmers Market

June 21-23 – Taste of Joliet

June 26 - Race Fan Rally



# Next Month:



- ✓ Month Six (July 2019)
- ✓ **Educational Topic** – What is the true cost of water?
- ✓ **End-of-month Deliverable (June)**  
- Draft Technical Memorandum (Conceptual Design Parameters)




# Phase II Deliverables:

- ✓ RFQ for Independent Cost Review (May) 
- ✓ RFI for Potential Water Suppliers (June)
- ✓ Technical Memorandums:
  - Conceptual Design Parameters (June)
  - Short-Term Groundwater Strategies (July)
  - Conceptual Water Loss Reduction Plan (August)
  - Funding Strategies (September)
- ✓ Draft Report (November)
- ✓ Final Report (December)



# Next Steps:

- 
- ✓ Complete Phase II evaluation by December 31, 2019 and select new alternative water source
  - ✓ Discuss regional solution with neighboring communities
  - ✓ Proceed with preliminary design of selected alternative water source
  - ✓ New Alternative Water Source online by 2030



# Educational Topic #9

Everyday Ways to Conserve Water

## Everyday Ways to Conserve Water



- Emailed to City Council and Environmental Commission members on 6/5/19
- Gave suggestions on easy ways that Joliet residents could conserve water (and save \$\$ in the process)
- Any questions?

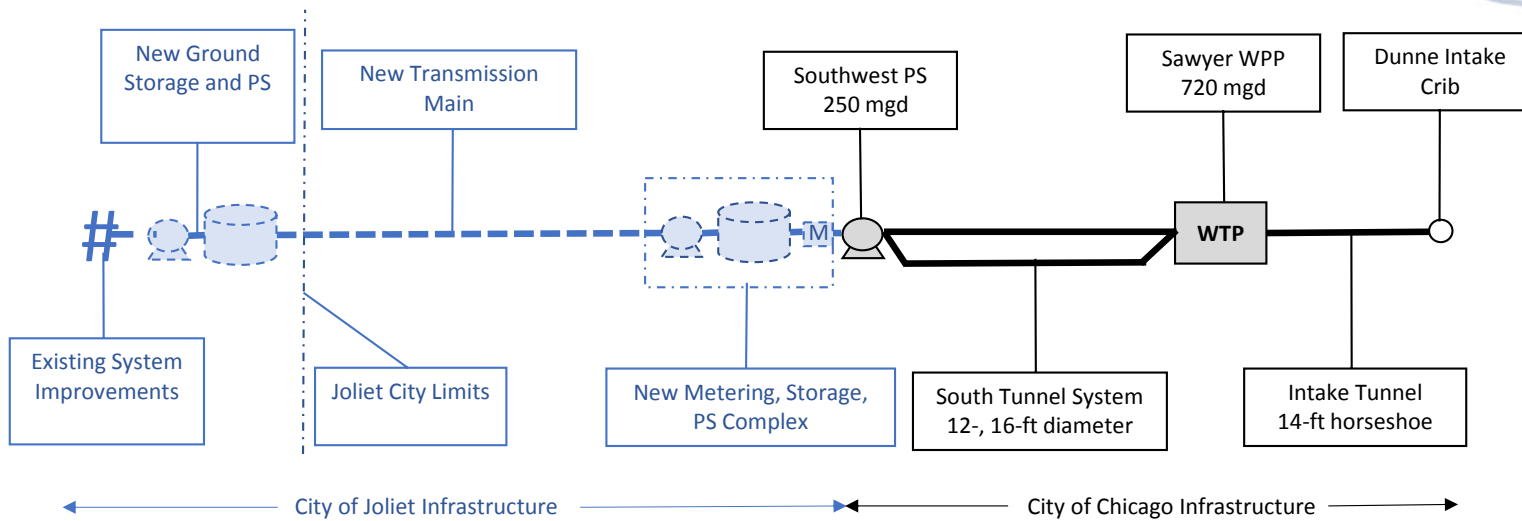




# Alternative Water Source

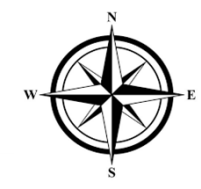
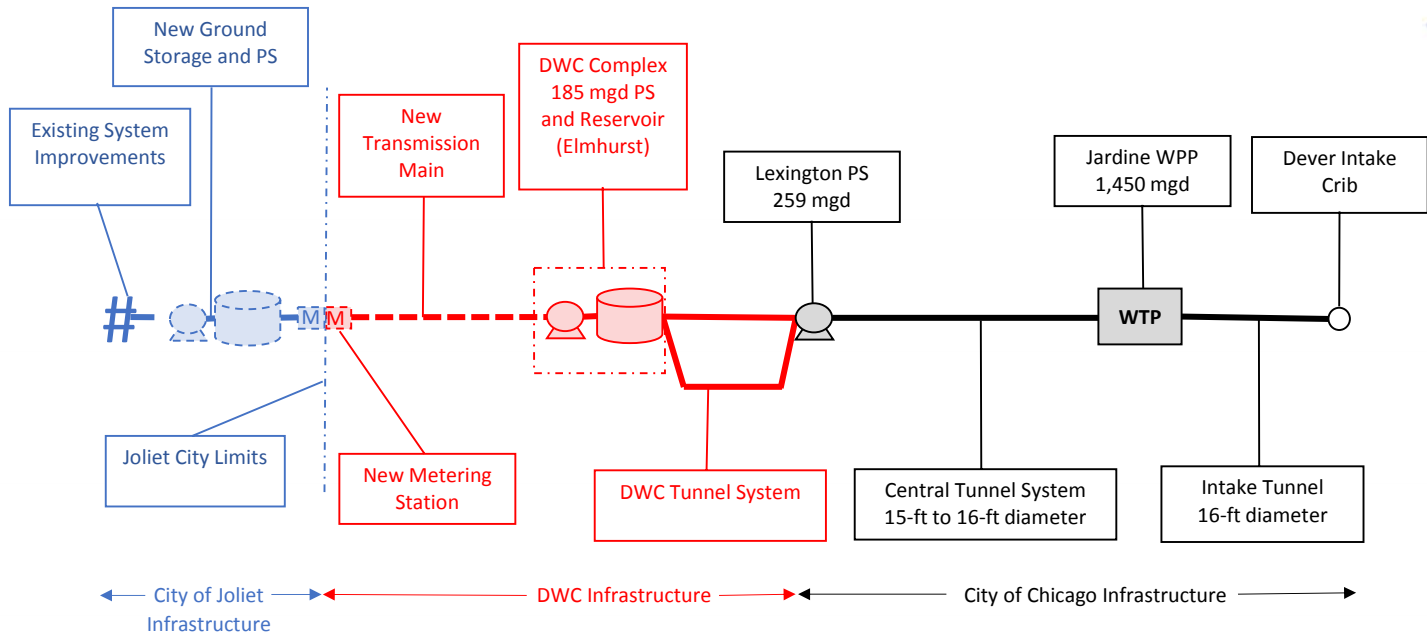
## Infrastructure Improvements

# Chicago Department of Water Management Supply Option



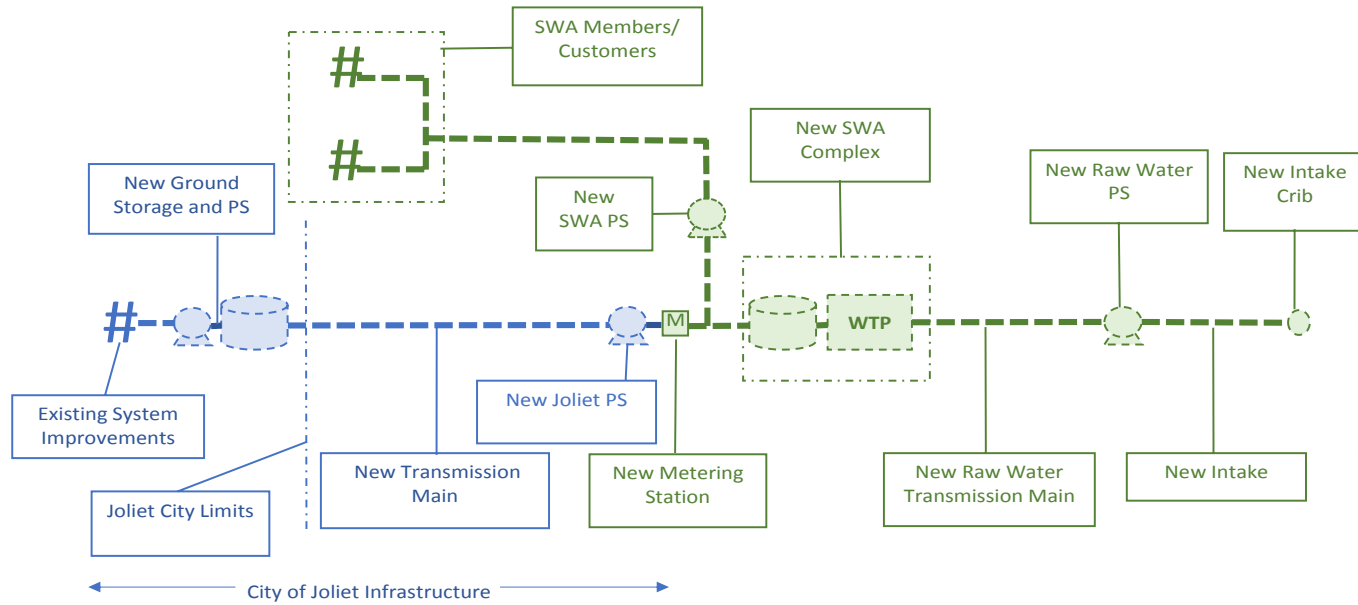
	Water Treatment Plant	Water Storage Facility	Water Pumping Station	Water Pipeline	Water Metering Station
Existing Infrastructure					
Proposed Infrastructure					

# DuPage Water Commission Supply Option



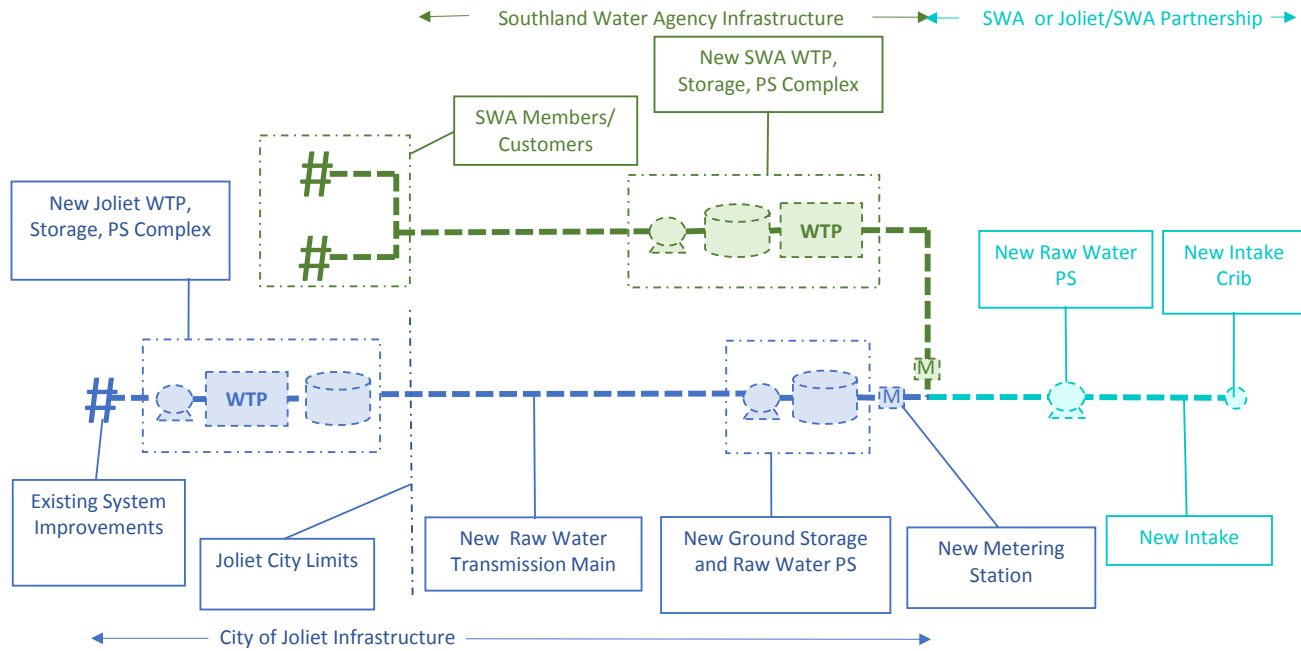
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Existing Infrastructure					
Proposed Infrastructure					

# Southland Water Agency Supply - Option A



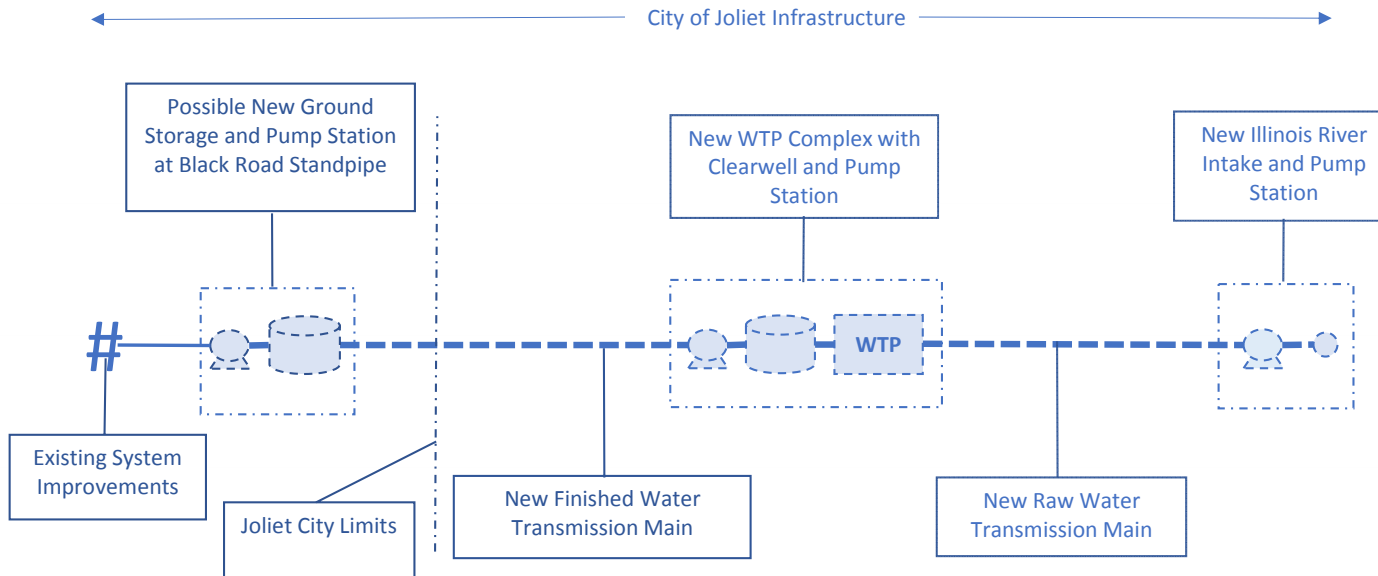
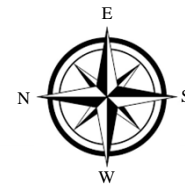
	Water Treatment Plant	Water Storage Facility	Water Pumping Station	Water Pipeline	Water Metering Station
Existing Infrastructure					
Proposed Infrastructure					

# Southland Water Agency Supply - Option B



	Water Treatment Plant	Water Storage Facility	Water Pumping Station	Water Pipeline	Water Metering Station
Existing Infrastructure					
Proposed Infrastructure					

# Illinois River Supply Option

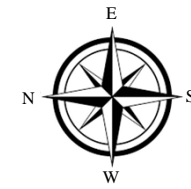
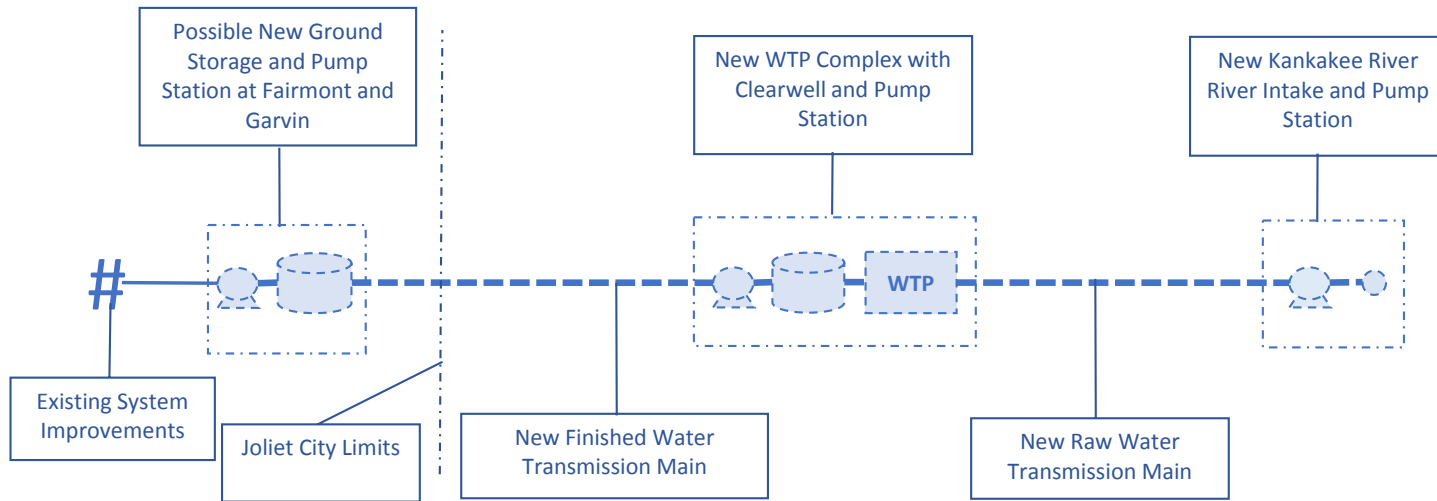


	Water Treatment Plant	Water Storage Facility	Water Pumping Station	Water Pipeline	Water Metering Station
Existing Infrastructure	WTP			—	M
Proposed Infrastructure	WTP			- - -	M

# Kankakee River Supply - Option A

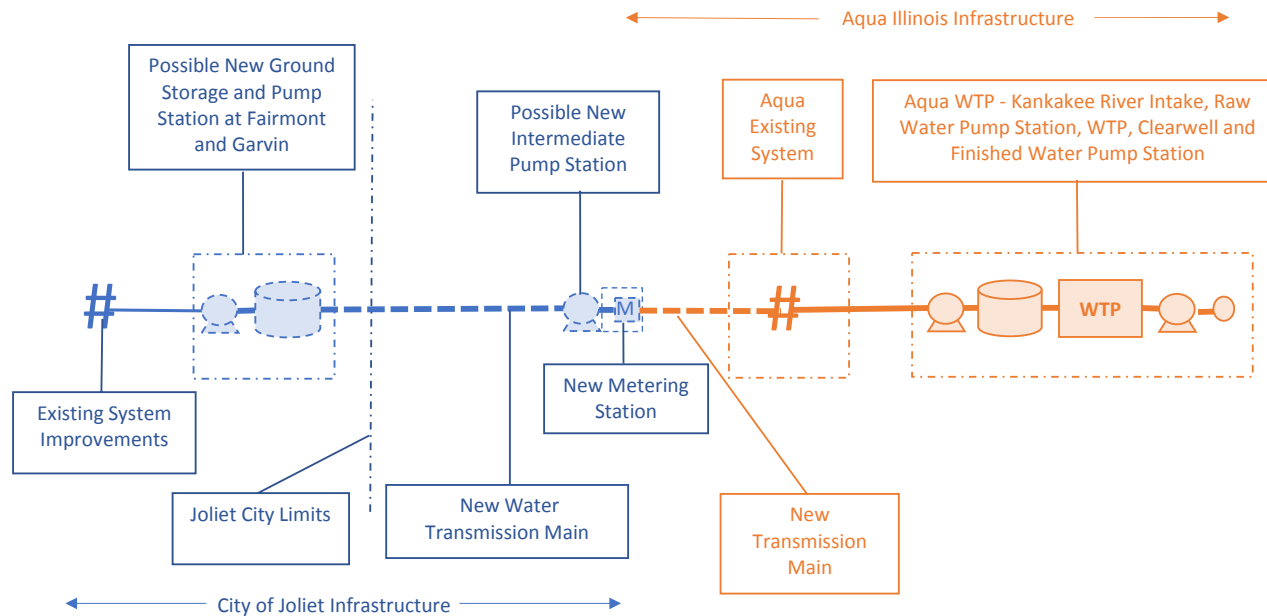
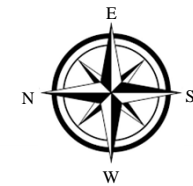


← City of Joliet Infrastructure →



	Water Treatment Plant	Water Storage Facility	Water Pumping Station	Water Pipeline	Water Metering Station
Existing Infrastructure					
Proposed Infrastructure					

# Kankakee River Supply - Option B



	Water Treatment Plant	Water Storage Facility	Water Pumping Station	Water Pipeline	Water Metering Station
Existing Infrastructure	WTP				M
Proposed Infrastructure	WTP				M





# Draft Request for Qualifications (RFQ)

For Independent Cost Review

## Draft RFQ for Independent Cost Review



- Emailed to Environmental Commission members on 6/7/19
- Possible Tasks identified in RFQ
- Proposed Advertisement and Selection Schedule
- Selection process and involvement of Environmental Commission
- Any questions/comments?



# Aqua Illinois

June 11, 2019



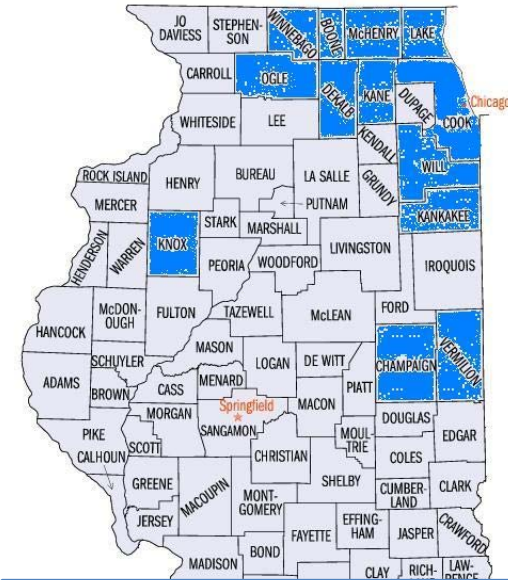
## City of Joliet Environmental Commission

AQUA<sup>SM</sup>



# Aqua Overview

- Aqua America family serving 3 million residents in 8 states
- “WTR” on NYSE
  - \$8.75B Market Cap
  - \$300 - \$500M annual investment in infrastructure
- Operating in Illinois for 133 years (since 1886). Service in 13 counties to 225,000 Illinois residents
- Regulated by the **Illinois Commerce Commission (ICC)**, the **Illinois Environmental Protection Agency**, and the **City of Joliet** through agreement
- ICC regulates all aspects including rates, investment, and customer service
- Aqua employs 1,600 experts nationally,
  - 105 in Illinois, Illinois headquarters and national call center located in Kankakee



# Kankakee River Water

- Kankakee River is known as one of the cleanest river in Illinois
- Award winning quality – *Illinois AWWA in 2018 “Best Tasting Water”*
- Approximately 4 Billion gallons per day (nearly doubled since 1915)
- Aqua withdrawal from “6 mile pool” – currently less than 3/10ths of 1% of river flow volume used by Aqua customers
- **NO LOW FLOW RESTRICTIONS** (80 MGD Intake capacity)



# Kankakee River Water

- Aqua has been using Kankakee River water since 1886

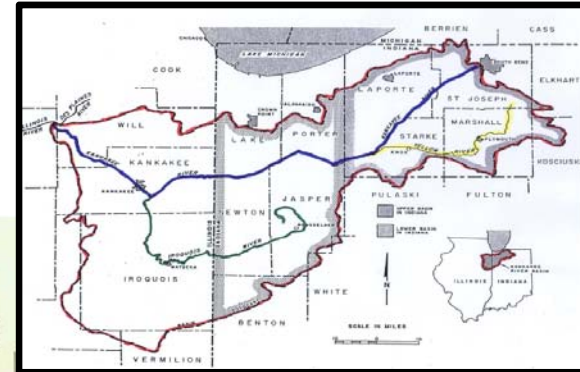
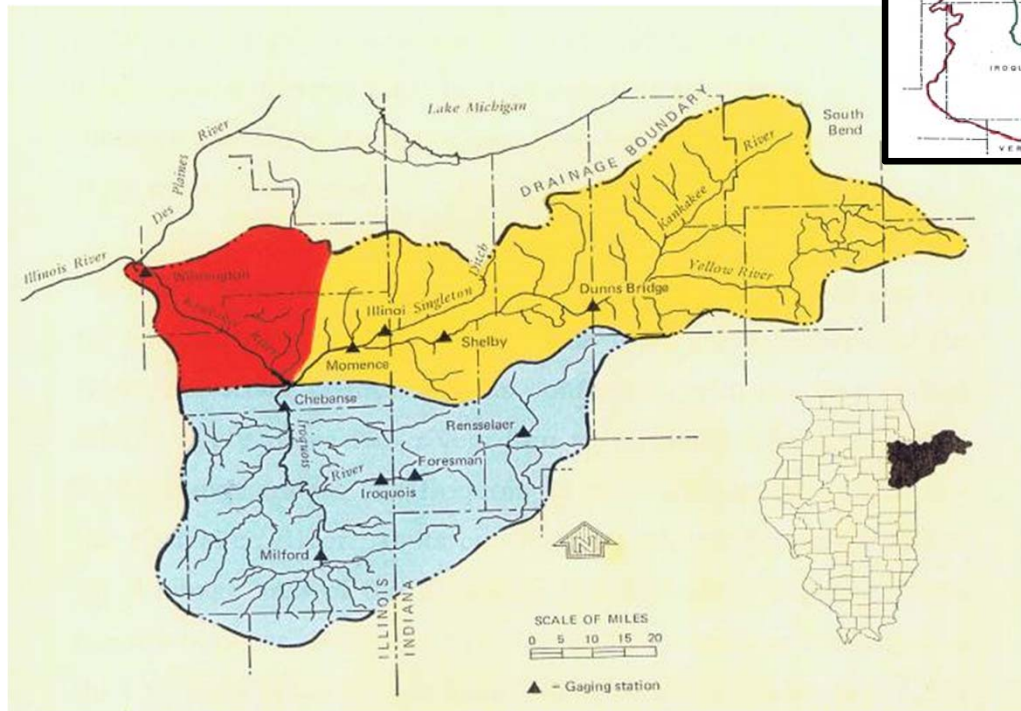
## Communities Served with Kankakee River Water

- City of Kankakee and Kankakee County
- Village of Bourbonnais
- Village of Bradley
- Village of Manteno
- Village of University Park (2017)
- Limestone, Grant Park, Aroma Park
- Green Garden and Monee Townships
- Village of Peotone (Dec. 2019)



- Aqua currently uses an average of 14 MGD
- Current treatment capacity is 30 MGD
- Ready to accommodate another 13 MGD expansion as needed
- Further expansion will only require EPA approval

# Kankakee River Watershed





# Kankakee River Watershed

## Overview

- 5,280 square miles (3,380,000 acres) mostly in Illinois & Indiana
- 2,600 miles of rivers, streams, creeks
- Kankakee merges with Des Plaines to become the Illinois River
- In Illinois – Kankakee River is 200-800 feet wide and up to 15' deep
- In Illinois – 75% agriculture, 16% grassland, 3.1% forest, 3.1% urban



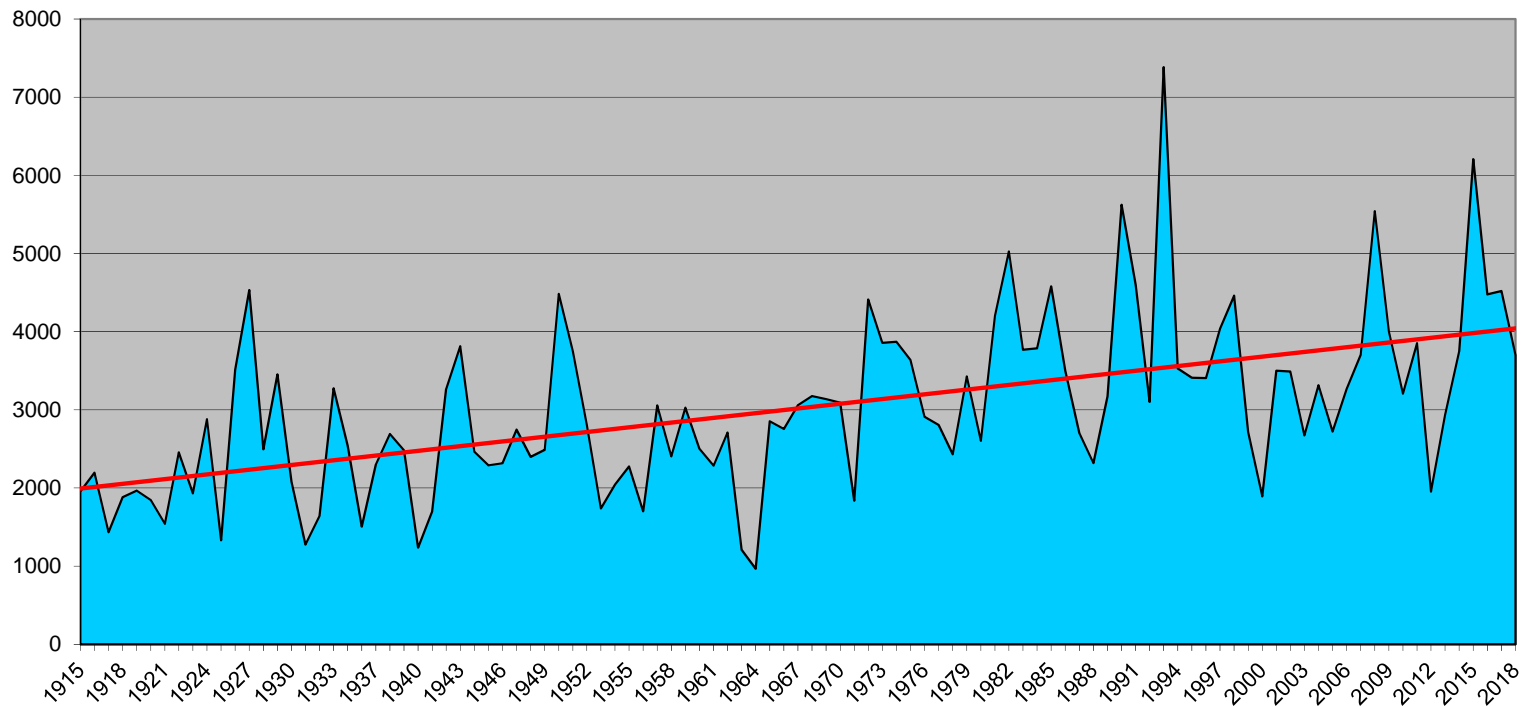
## Aquatic and Plant Life

- 84 species of fish
- 37 species of mussels,
- 14 species of crustaceans
- Very diverse macro-invertebrate
- 74.7 miles of Biologically Significant Streams (BSS)
- 64 species of threatened or endangered plants or animals



# Kankakee River Flows

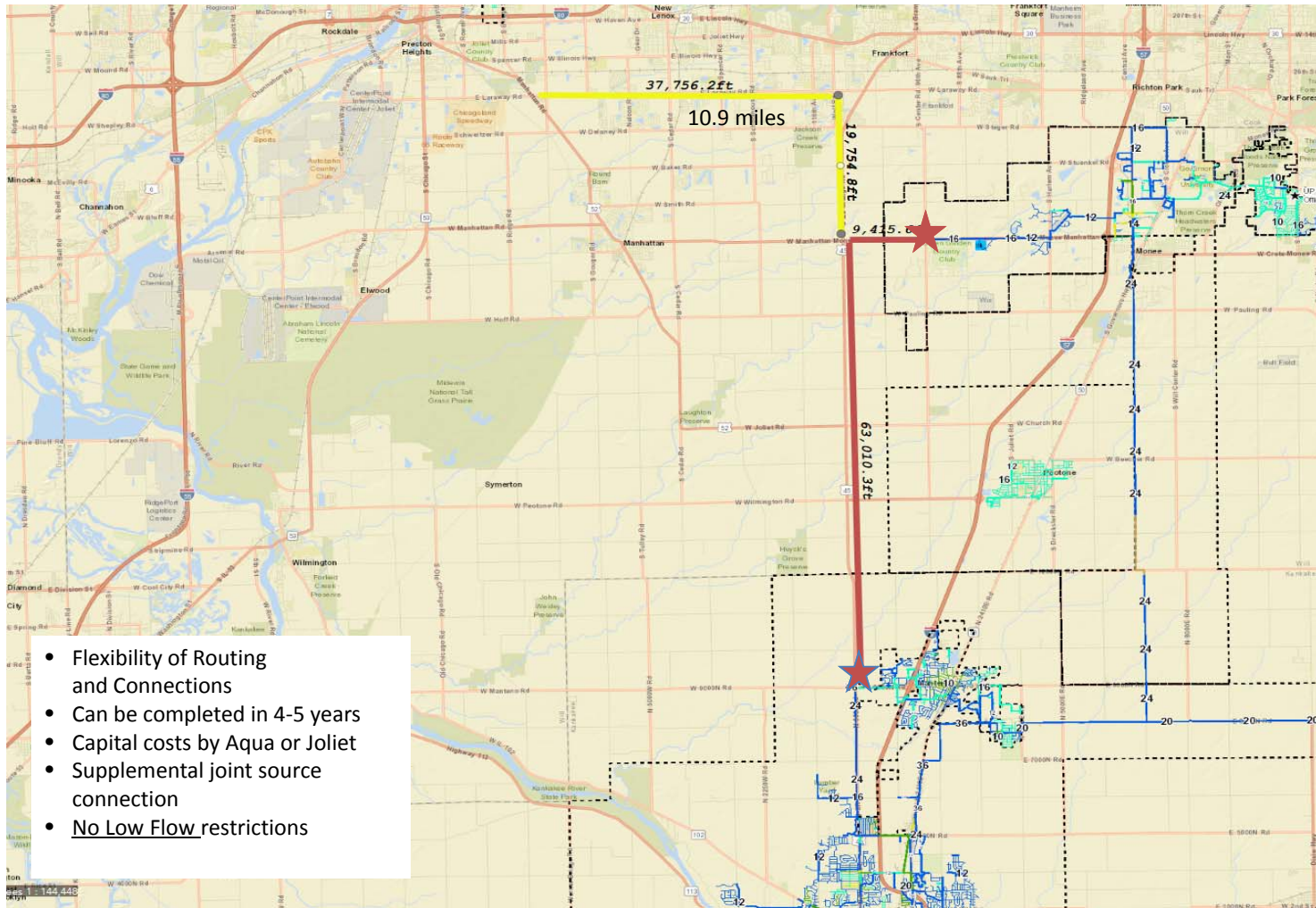
**KANKAKEE RIVER**  
**YEARLY AVERAGED FLOWS**  
in millions of gallons per day(MGD)



Through 2018

# Aqua Source Water Protection Partners

- Kankakee Economic Alliance – River Roundtable group
- Kankakee River Basin Commission (KRBC)
- Northern Illinois Anglers Association (Adopt-A-River Program)
- AWWA Source Water Protection Committee
- North Eastern Illinois Regional Groundwater Protection Committee
- IEPA- Groundwater Section & other sections
- Illinois Rural Water Association
- Illinois State Water Survey & USGS
- Illinois Rivers' Biennial Governors Conference
- River Watch- National Great Rivers Research and Education Center
- IDNR- Kankakee State Park, BSA Troop 315
- Earth Stewards, KVPD, Envirothon, SWCD
- Statewide Nutrient Loss Reduction Strategy - Workgroup (NLRS)



- Flexibility of Routing and Connections
- Can be completed in 4-5 years
- Capital costs by Aqua or Joliet
- Supplemental joint source connection
- No Low Flow restrictions

# Why the Partnership Makes Sense

- Aqua has owned and operated Kankakee River Water System for over 133 years. Operational expertise
- Achieve cost efficiencies via economies of scale - lower operation costs for plant operations, lower material cost for construction
- Aqua invests needed capital for sustainability and reliability
- Shift liabilities and responsibilities to Aqua (compliance, plant operations, capital, construction)
- Joliet continues to own and operate its water distribution
- Rate certainty through ICC approval process
- Aqua has managerial and financial resources to make the project a reality
- More immediate solution
- Additional capacity available
- Aqua partnership can provide more time for City to make its internal investment and future long term plans
- Connection can be a supplemental and will help with low flow provisions

# Summary

- For over 133 years, Aqua produce high quality Kankakee River Water
- Low flow provisions are not an issue
- Regardless of the source, Aqua is interested in being a partner with Joliet
- This can be a short term or long term partnership
- Aqua can build and finance a new plant or pipe with terms to be negotiated
- Take advantage of our expertise, economies of scale, efficiencies, and access to capital



A woman with dark hair, wearing a blue and white striped shirt, is smiling and washing a young child's hands at a kitchen sink. The child, with dark curly hair and wearing a dark blue vest over a light-colored shirt, is laughing joyfully. The background shows a kitchen with wooden cabinets and a stainless steel sink. The word "AQUA" is written in white, stylized font in the upper left corner.

AQUA<sup>SM</sup>

Questions?



# Water Conservation Subcommittee



# Water Conservation Subcommittee



2018-19 Annual Report Update

# 2018-19 goals:



- **Incentivize** Programs and Policies
- **Empower** Citizens and Business Owners
- **Educate** through Public Interaction
- **Motivate** people to take action



# incentivize:

## Rebate/Subsidy Programs Initiated:

- **WaterSense Low Flow Toilet Replacement Rebate**
  - A \$100 rebate will be offered to water customers who replace a high volume toilet (>1.6 gallon/flush) with a WaterSense Certified high efficiency toilet (1.28 gallon/flush).
- **City of Joliet Rain Barrel Subsidy Program**
  - Offered in conjunction with the Conservation Foundation and Upcycle Products, is offering a rain barrel subsidy program to qualified water customers. The City will provide a \$30 subsidy per rain barrel. The cost of the subsidized rain barrel is \$35 plus tax, including the cost of delivery.



# empower:



- Stakeholder List was created to keep residents and business owners informed of the Rethink Water Campaign, the progress of the Alternative Water Study and to provide information and ideas about water conservation.
- *The List was reviewed by the committee and 70 plus entries were added for special groups and underrepresented communities.*
- Helped compile a list of community events and activities for the city to attend to promote awareness.

# educate:



A collage of five images representing community events. Top left: "LIVE MARKET ON CHICAGO ST." with dates 20 and 19, presented by Joliet City Center Partnership. Top right: Cathedral Area Preservation Assoc. logo featuring a building illustration. Middle: Joliet Race Fan Rally logo with a checkered flag and "Rally" in script. Bottom left: "PAWS ON 66" logo with two paw prints and "Pet Rescue Day" on a bone-shaped banner. Bottom right: "New Orleans North" text on a yellow background with a purple wave at the bottom and a Mardi Gras mask and beads on the right.

Scheduled school, church, community and neighborhood association events to educate stakeholders on the alternative water source study and water conservation.

# motivate:



Implemented recommendations from the Illinois Sustainable Technology Center (ISTC) Water Audit to demonstrate water conservation opportunities that can be implemented by homeowners and business owners.

Water efficient sinks, toilets and urinals were installed in the public restrooms by the boardroom at City Hall and Information posters created to motivate the public.

## This public restroom



was recently improved

for water efficiency

RethinkWaterJoliet.org

**Sinks** were fitted with high-efficiency 1.0 gpm (gallon per minute) aerators. A faucet flowing at 1.0 gpm can reduce water usage by 45% over a traditional faucet with a maximum flow rate of 2.2 gpm.

**Urinals** in the Men's restroom were replaced with a 0.5 gpf (gallon per flush) model. This will reduce water usage by 50% over the standard 1.0 gpf model.

**Toilets** were replaced with a 1.28 gpf (gallon per flush) WaterSense certified model. The new higher efficiency 1.28 gpf toilets can reduce water usage 20% from the relatively efficient 1.6 gpf models they replaced, and up to 49% over an older model 3.5 gpf toilet.

### Rethink water...

by replacing older model toilets with **WaterSense** certified toilets to conserve water. The City of Joliet is offering a low flow toilet rebate program to qualified water customers, along with other ideas and incentives for water conservation.

### Why is the City Conserving Water?

The deep well aquifer, which supplies water to Joliet water customers, is being depleted and estimates are that it will no longer be able to keep up with the maximum demand by the year 2030. Water conservation will help extend the life of the aquifer. The City of Joliet is currently conducting a study of alternative water sources, including surface water sources (rivers & lakes). Visit [RethinkWaterJoliet.org](http://RethinkWaterJoliet.org) for more information.

### What is a low flow toilet?

High efficiency toilets are the latest generation of toilets. **WaterSense** certified toilets use 1.28 gallons per flush which is 20% less than the current federal standard of 1.6 gallons and significantly less than older model toilets which can use up to 6 gallons per flush. **WaterSense** labeled products are backed by independent, third-party certification and meet EPA's specifications for water efficiency and performance. These products can be found at local hardware stores as well as home improvement stores like Home Depot, Menards and Lowes.

### Why should I replace my toilet?

Replacing 3.5 gpf toilets with **WaterSense** labeled toilets can save a household 12,000 gallons of water each year. An average family of four uses 881 gallons of water per week just by flushing the toilet. Saving water not only saves homeowners money, it decreases demands on the City's groundwater source.

More information about the rebate program and other ideas for water conservation can be found on the City of Joliet website at:

<https://www.joliet.gov/departments/public-utilities>



RethinkWaterJoliet.org

For more information about the City's Alternative Water Source Study



Sunday, July 21 @ 1:05 pm  
at DuPage Medical Group Field



# Incentivize empower educate motivate

## Water Conservation is a GRAND SLAM!

**Come see the Joliet Slammers play and receive an eco-giveaway upon entrance!**

**PLUS take a pledge for a chance to win other prizes!**

**Use code "water" for an \$8 ticket!**



A close-up photograph of a person's hands holding several stalks of fresh green asparagus under a running faucet. The water is clear and splashing. In the background, there are blurred red and yellow items, likely other vegetables. The entire scene is framed by a white border.

**Questions?**