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Joliet’s
Future
Water
Supply
Joliet’s Water System

- 19 MGD average day demand
- 21 deep groundwater wells
- 5 shallow groundwater wells
- 11 water treatment plants for removal of radium
- 642 miles of water main
- Decentralized system
Joliet’s Water System

CITY OF JOLIET

2017
Water
Consumption
by Class

Population Served:
149,386

Residential 62%
Commercial 17%
Industrial 8%
Government 12%
Sprinkler 1%
Fireline 0%

149,386
Joliet’s Water History

The original Joliet Water Works was founded as a private company in 1884. The initial 20 drift wells which were approximately 40 feet deep were located along Hickory Creek and had a combined yield of 1.25 MGD.

The City of Joliet purchased Joliet Water Works in 1888 and began operations at the existing Water & Sewer Service Center at 921 Washington Street.

Source: ISWS
Joliet’s Water History

1907
First deep well constructed at Ottawa Street

1930s
Pumping equipment lowered due to decreased capacity

1950s
Major growth spurt resulted in construction of the Hadley Valley Well Field and construction of the 1 million gallon elevated tank on Larkin Avenue to prepare for continued growth to the west
Since the 1960’s, aquifer desaturation has been monitored and the City and region have studied alternate water sources.
Joliet’s Water History

- **1970s**: Public Water Commission of Frankfort, Joliet, Lockport, Mokena, New Lenox, Rockdale and Romeoville was formed.
- **1980s**: City of Joliet purchases property for future intake from Kankakee River.
- **2000s**: City decides to maintain groundwater as primary source and constructs water treatment plants to remove radium.
- **2015**: Illinois State Water Survey publishes results of groundwater modeling indicating that desaturation of aquifer could occur within 15-30 years.
- **2017**: Mayor O’Dekirk re-establishes the Environmental Commission.
- **2018**: City contracts with CMT/EEI/Stantec team to evaluate options and determine new water source.
Modeling completed in Fall 2018 found that at current usage rates, the City will not meet maximum day demands by 2030.
Alternative Water Source Study

- Environmental Commission recommended a study be completed to evaluate all alternative water sources.

- Crawford, Murphy & Tilly team selected to perform study in two phases. Team members include Stantec, and EEI with support from the Illinois State Water Survey, Images Inc., Showpiece Solutions and Holland & Knight.
Study Schedule

**Phase I: August 2018 – January 2019**
- 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 I Conclusions/Recommendation

The following alternatives were recommended to advance 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 Agency
Joliet switching water sources will not solve the problem for the region.
Regional Solution

Alternatives will be evaluated as a solution for Joliet and as a solution for the region.
Regional Planning Efforts

• Southwest Water Planning Group Technical Committee is meeting monthly.

• Committee includes Joliet, Industry, ISWS and surrounding communities

• Immediate goal is to work on regional groundwater modeling for both deep and shallow aquifers

• Long Term goals are to build consensus for conservation efforts and work together to educate the public
Water Use Projections range from **28 MGD to 123 MGD**

### Water Planning Scenarios

<table>
<thead>
<tr>
<th>Scenario 1 – Joliet only</th>
<th>Average Day Demand (ADD)</th>
<th>Maximum Day Demand (MDD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2050 CT</td>
<td>27.14 MGD</td>
<td>33.75 MGD</td>
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<tr>
<td>2050 LRI</td>
<td>21.17 MGD</td>
<td>26.25 MGD</td>
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<thead>
<tr>
<th>Scenario 2 – Joliet plus Deep Well Communities (Channahon, Elwood, Lemont, Manhattan, Minooka, Rockdale, Romeoville and Shorewood)</th>
<th>Average Day Demand (ADD)</th>
<th>Maximum Day Demand (MDD)</th>
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</thead>
<tbody>
<tr>
<td>2050 CT</td>
<td>47.18 MGD</td>
<td>69.50 MGD</td>
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<tr>
<td>2050 LRI</td>
<td>38.29 MGD</td>
<td>54.78 MGD</td>
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<tr>
<th>Scenario 3 – Joliet plus Public Water Commission Communities (Frankfort, Lockport, New Lenox, Rockdale and Romeoville)</th>
<th>Average Day Demand (ADD)</th>
<th>Maximum Day Demand (MDD)</th>
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<tbody>
<tr>
<td>2050 CT</td>
<td>45.84 MGD</td>
<td>67.51 MGD</td>
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<td>2050 LRI</td>
<td>36.27 MGD</td>
<td>50.34 MGD</td>
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<tr>
<th>Scenario 4 – Joliet plus ALL Communities (Bolingbrook, Channahon, Crest Hill, Elwood, Frankfort, Homer Glen, Lemont, Lockport, Manhattan, Minooka, New Lenox, Plainfield, Rockdale, Romeoville and Shorewood)</th>
<th>Average Day Demand (ADD)</th>
<th>Maximum Day Demand (MDD)</th>
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<tbody>
<tr>
<td>2050 CT</td>
<td>73.02 MGD</td>
<td>123.17 MGD</td>
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<tr>
<td>2050 LRI</td>
<td>58.202 MGD</td>
<td>88.92 MGD</td>
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• **Less Resource Intensive water demand projections** could extend the life of the aquifer and reduce capital improvement costs

• **Formation of water conservation subcommittee** to identify opportunities for reducing water demand (education, rebate programs, ordinances, tiered rate structure, WWTP effluent reuse)
• Low Flow Toilet Replacement Rebate Program
• Rain Barrel Subsidy Program
• ISTC Water Audit
• Even/Odd Lawn Watering Ordinance
Stakeholder Engagement

- **Identification of stakeholders**
  (Top water users, Industry, Business community, the Public, Schools, Environmental Advocacy Groups, Other municipalities)

- Environmental Commission Meetings
- Public Relations Campaign
Rethink the Source of Our Water
Rethink the Value of Water
Rethink How We Use Water

www.rethinkwaterjoliet.org
Questions?