



# WATER RESILIENCE IN GOOD TIMES & BAD

An event series exploring water resilience, now and post-COVID-19



## ESSENTIAL INVESTMENT

Why water infrastructure should be part  
of stimulus and economic recovery

**MAY 5, 2020**  
**TUESDAY @ 3:30 PM CST**





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## WATER AFFORDABILITY IN NORTHEASTERN ILLINOIS

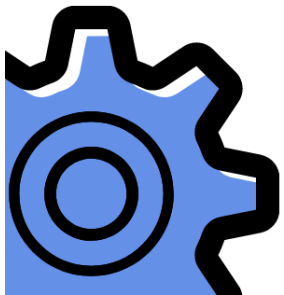
Trends, policies, and a path forward

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Solutions for stormwater and water quality

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# COVID-19 and Water Systems

What has COVID-19 revealed about our water systems?



# Water Shutoffs and Restoration



Photo Source: Associated Press/ Paul Sancya

- Millions have water shutoff each year
- Access to water is critical, especially during COVID-19
- Utilities struggling to identify who needs to be reconnected
- Restoring water arduous process

# Water Utility Operations



Photo Source: Baywork

- Many small utilities with limited staff and resources
- Staffing shortages major concern
- Reduced revenue
- Supply chain disruptions
- Short supply of PPEs

# Challenges highlighted by COVID-19

Challenges	Addressing these challenges
<b>Water affordability</b>	<ul style="list-style-type: none"><li>• Explore and implement affordability programs and rates</li></ul>
<b>Data management</b>	<ul style="list-style-type: none"><li>• Fund and upgrade data management systems and meters</li></ul>
<b>Emergency preparedness</b>	<ul style="list-style-type: none"><li>• Fund and require emergency planning</li><li>• Communicate with neighboring communities for mutual aid</li></ul>
<b>Workforce shortages</b>	<ul style="list-style-type: none"><li>• Network of volunteer/retired utility staff</li><li>• Explore remote monitoring/work</li><li>• Develop water workforce development programs</li></ul>

# Contact information

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# Essential Investment:

WHY WATER INFRASTRUCTURE SHOULD BE PART  
OF STIMULUS AND ECONOMIC RECOVERY

**Jeremy Orr, Attorney**

**Natural Resources Defense Council**

**Safe Water Initiative**



# AMERICA'S AGING WATER INFRASTRUCTURE



- ❖ 300 million on water systems
- ❖ 1 million pipes & 1.3 million miles of sewers
- ❖ 6 billion gallons lost per day (drown Manhattan!)
- ❖ Mid-20<sup>th</sup> Century pipes (lifespan at/near end)
- ❖ Grade: D/D+

# ILLINOIS WEAKNESSES

- ❖ Old Infrastructure
- ❖ System Capacity Limited & Overburdened
- ❖ Main Breaks
- ❖ Water Loss & Water Waste
- ❖ Lead Service Lines (est. most in U.S.)
- ❖ Lack of Asset Management Plans
- ❖ Insufficient Funding
- ❖ Grade: C-



# ILLINOIS OPPORTUNITIES



- ❖ Proximity to fresh water
- ❖ Heightened public awareness
- ❖ Potential to be example for rest of the U.S.
- ❖ Expansion of Low-Income Assistance Program
- ❖ Setting Income-base Rate Structure
- ❖ Political Will/Climate

# FEDERAL & STATE INVESTMENTS

- ❖ Clean Water Revolving Fund
- ❖ Drinking Water Revolving Fund
- ❖ IL Low-Interest Revolving Loan Fund
- ❖ Create Water Innovation Fund
- ❖ Overall Federal Investment in Infrastructure (down 70% to 13%)



**Jeremy Orr, Attorney**  
**Natural Resources Defense Council**  
**Safe Water Initiative**

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Metropolitan**Planning**Council

# **Water investment's role in economic recovery**

May 5, 2020

Justin Williams  
Associate

# Why invest in water infrastructure

- Deliver immediate relief
- Resilience to future shocks
- Economic recovery

# Economic Benefits: Review

For every \$1 million in water sector spending:

Study	Jobs	Economic Activity
Manzo and Bruno (2016)	11	.008% GDP growth
Gordon et al (2011)	10	\$1.44 million
Quinn et al (2014)	16	\$1.64 million



# Job Creation in Perspective

Investment	Jobs per \$1 million	Expenditure type	Source
Water, Wastewater, & Stormwater	16	Capital and operating	AECOM 2014
Transportation	13 – 20	Capital	Heintz et al. 2009 & 2011, USDOT 2013
Clean Energy	13 – 16	Capital	Heintz et al. 2009 and 2011
Healthcare	16	Operating	Heintz et al. 2011
Personal income tax cuts	14	Personal spending	Heintz et al. 2011
Retail spending on general merchandise	13	Personal spending	AECOM 2014
Military spending	11	Capital and operating	Heintz et al. 2011

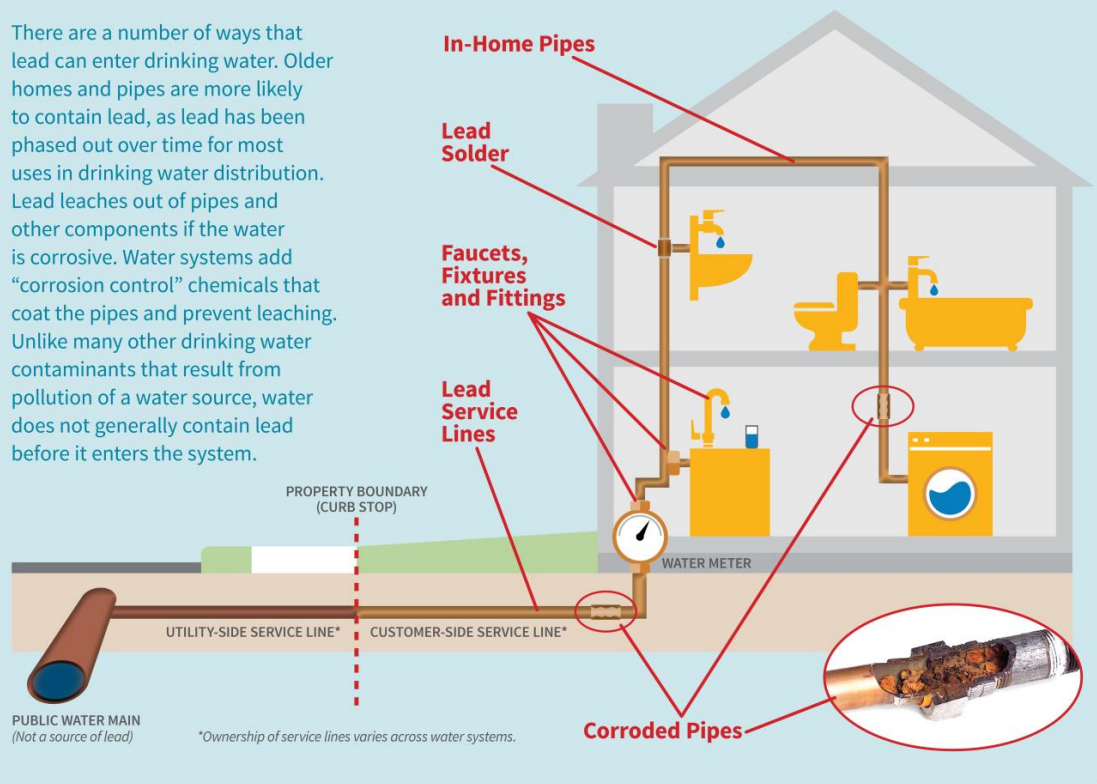
Jobs per \$1 million of investment in the Water Sector compared to other sectors (Quinn et al 2014,17)

# Long-term investment example: Lead Service Line Replacement in Illinois

## How Lead Gets Into Drinking Water

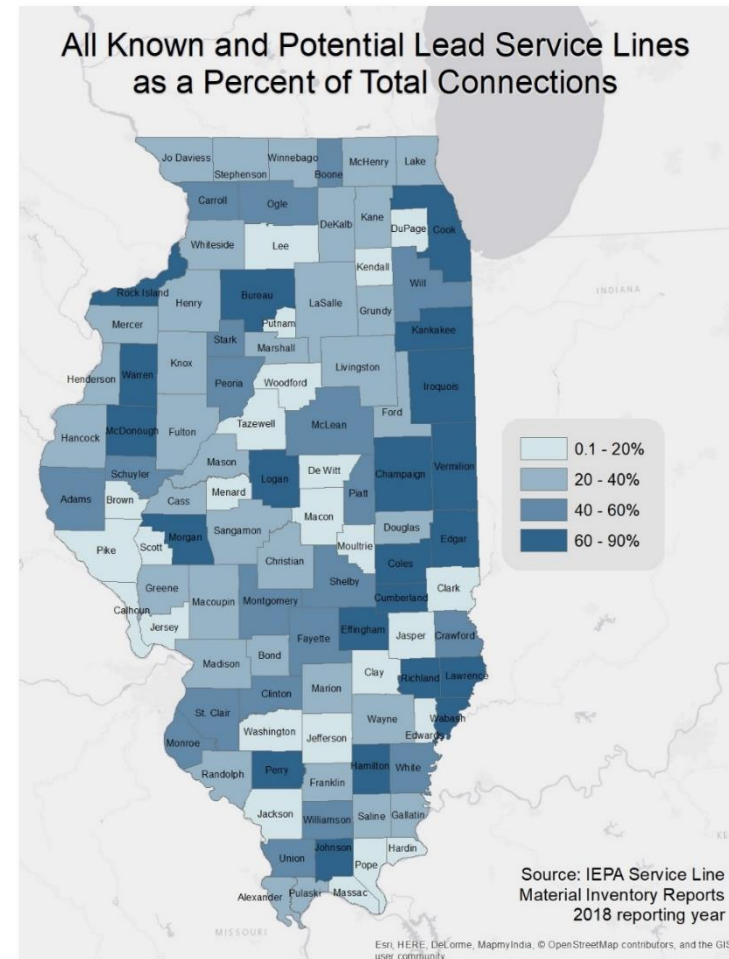


There are a number of ways that lead can enter drinking water. Older homes and pipes are more likely to contain lead, as lead has been phased out over time for most uses in drinking water distribution. Lead leaches out of pipes and other components if the water is corrosive. Water systems add “corrosion control” chemicals that coat the pipes and prevent leaching. Unlike many other drinking water contaminants that result from pollution of a water source, water does not generally contain lead before it enters the system.



# The Scope of the Problem in Illinois

- **Over 686,000 known lead service lines**
- **Over 1 million potential additional lead service lines**



# Economic benefits

For an \$8 billion investment over 20 years

- 140,000 jobs (7,000 jobs/year)
- \$13 billion in additional economic output (\$650 million/year)

# Additional benefits of Lead Service Line Replacement

- Health benefits
  - **Save \$22,000 per line** in reduced cardiovascular disease deaths
- Prevent lead crisis
  - Bottled water - \$650,000/month
  - Legal fees - \$30 million



# Workforce Development

- Illinois Clean Water Workforce Pipeline Program

# Additional projects

- Green stormwater infrastructure maintenance
- Drinking water infrastructure upgrades to reduce water loss
- Upgrade wastewater infrastructure to reduce basement backups
- ...and more



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