



Tank Tactics, Rehabilitation of the City of Aurora, Illinois Fox Valley East Ground Storage Tanks



Rick Munson
City of Aurora
Manager of Water
Systems Engineering



Michele Piotrowski,
PE, LEED AP
EEI
Senior Project Manager / Principal



Mike Schweisthal, PE
EEI
Senior Project Engineer II





Agenda

1. Background

2. Design Considerations

3. Construction Considerations

4. Lessons Learned

5. Questions



BACKGROUND

GENERAL INFORMATION

City of Aurora, Illinois

- Second Largest City in Illinois
- Located in NE Illinois (Kane, DuPage, Kendall and Will Counties)
- Area – 46 square miles
- Water Sources – Deep Wells, Shallow Wells, and Fox River
- 17.5 MG of water storage capacity



180,542

Population

16.4 MGD

**Average Day
Water Demand**

21.9 MGD

**Max Day
Water Demand**

764 miles

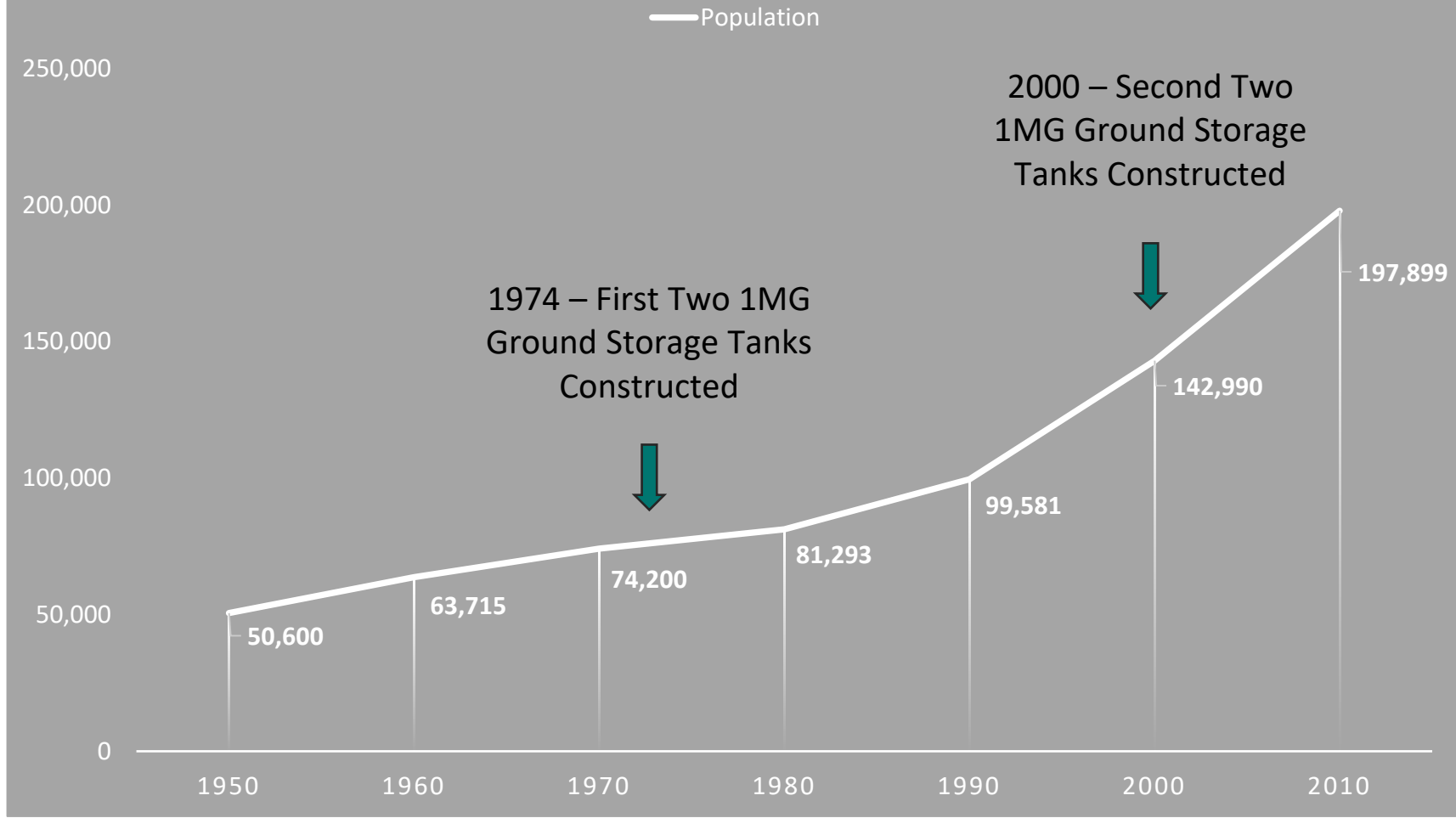
**Water Distribution
System**

SITE IMPORTANCE

- Two 1MG tanks satisfy fire flow requirements for the Fox Valley Mall and surrounding area
- Critical pumping station to connect two pressure zones and centralize operations
- Two additional 1MG tanks support increased population



POPULATION CITY OF AURORA, ILLINOIS



1956

Coming Soon!



US RTE 34

IL RTE 59

DuPage County
Information Technology Department / GIS Division
421 N County Farm Rd.
Wheaton, IL 60187

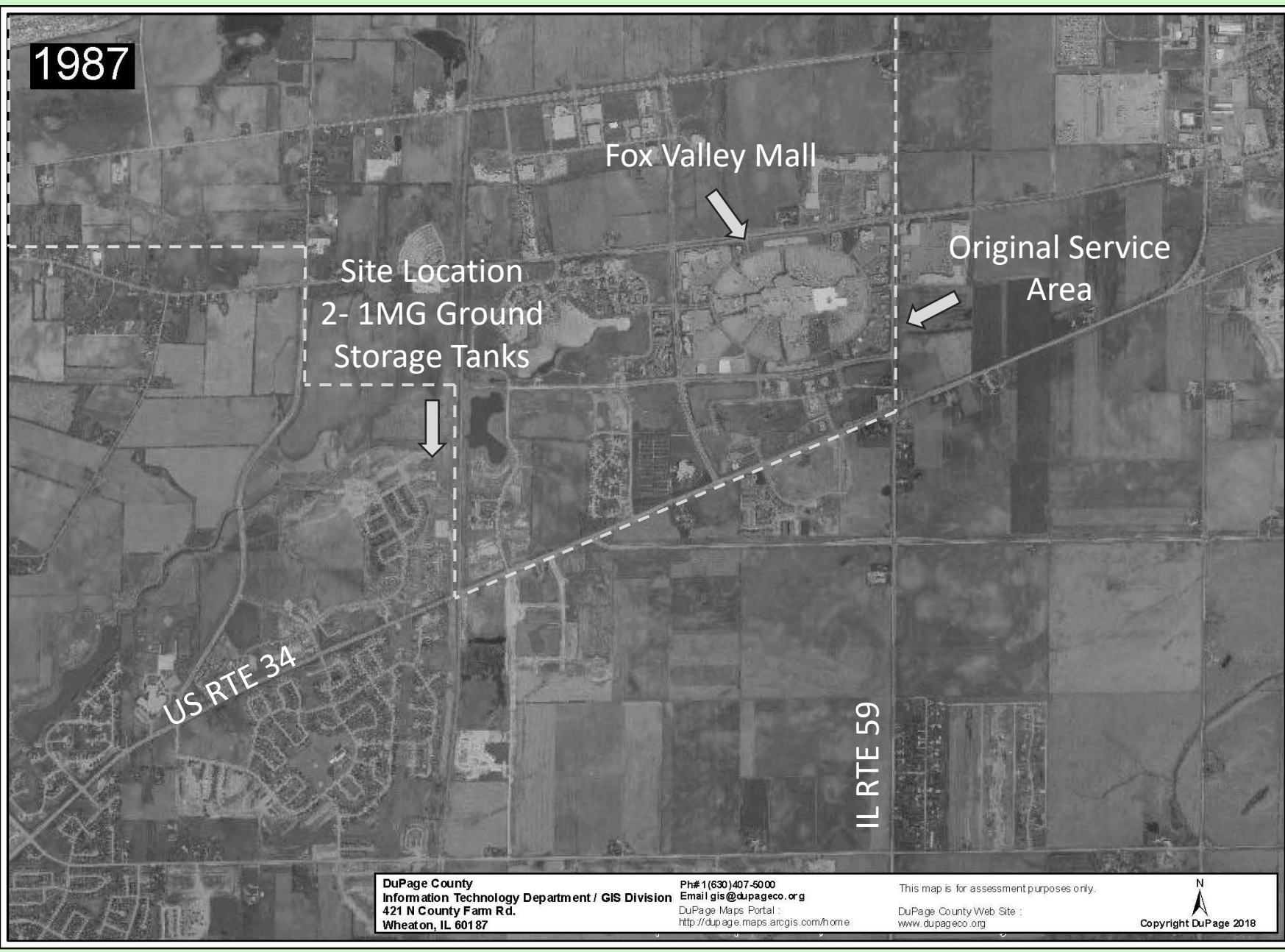
Ph# 1 (630) 407-5000
Email gis@dupageco.org
DuPage Maps Portal :
<http://dupage.maps.arcgis.com/home>

This map is for assessment purposes only.

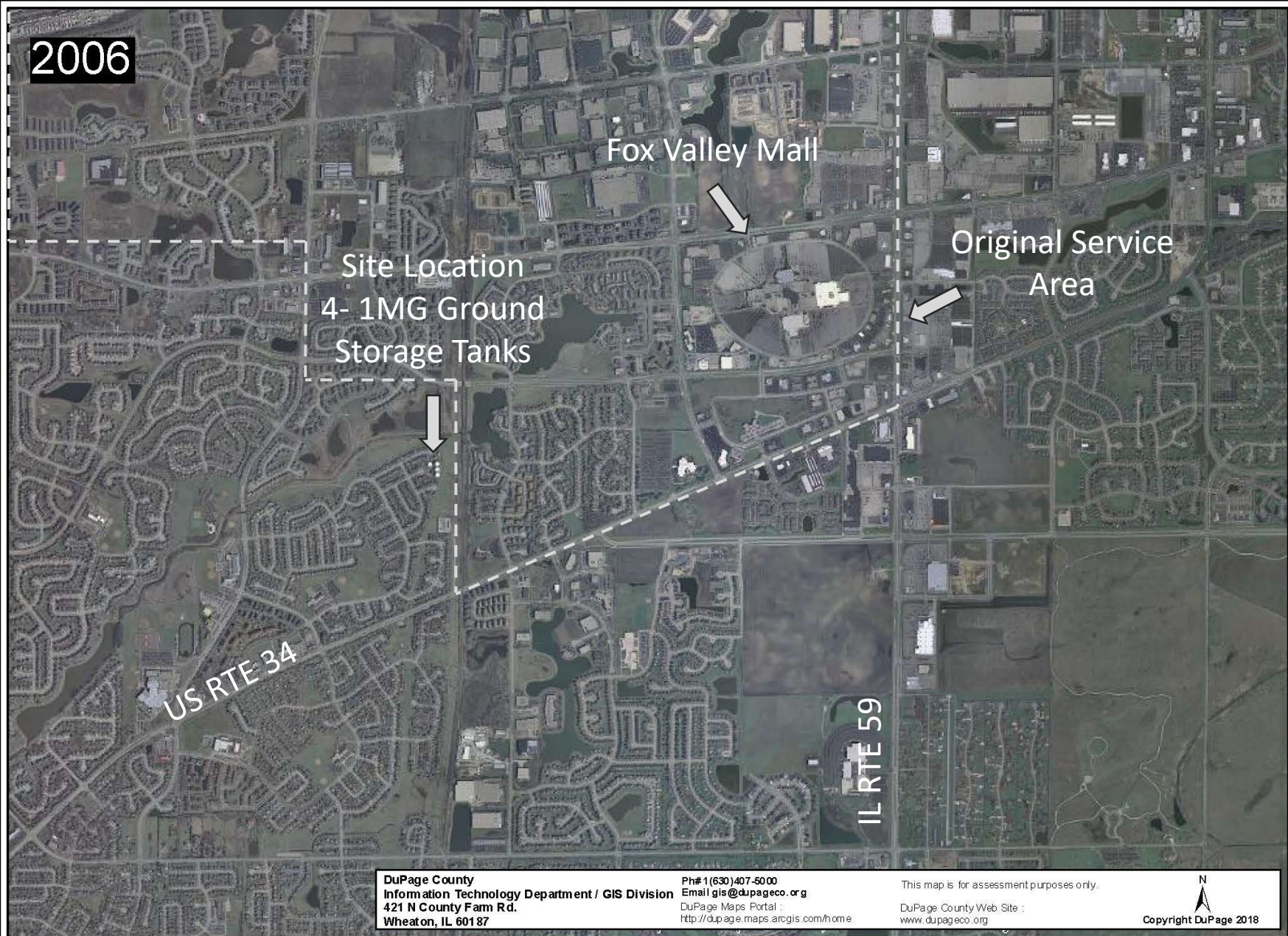
DuPage County Web Site :
www.dupageco.org

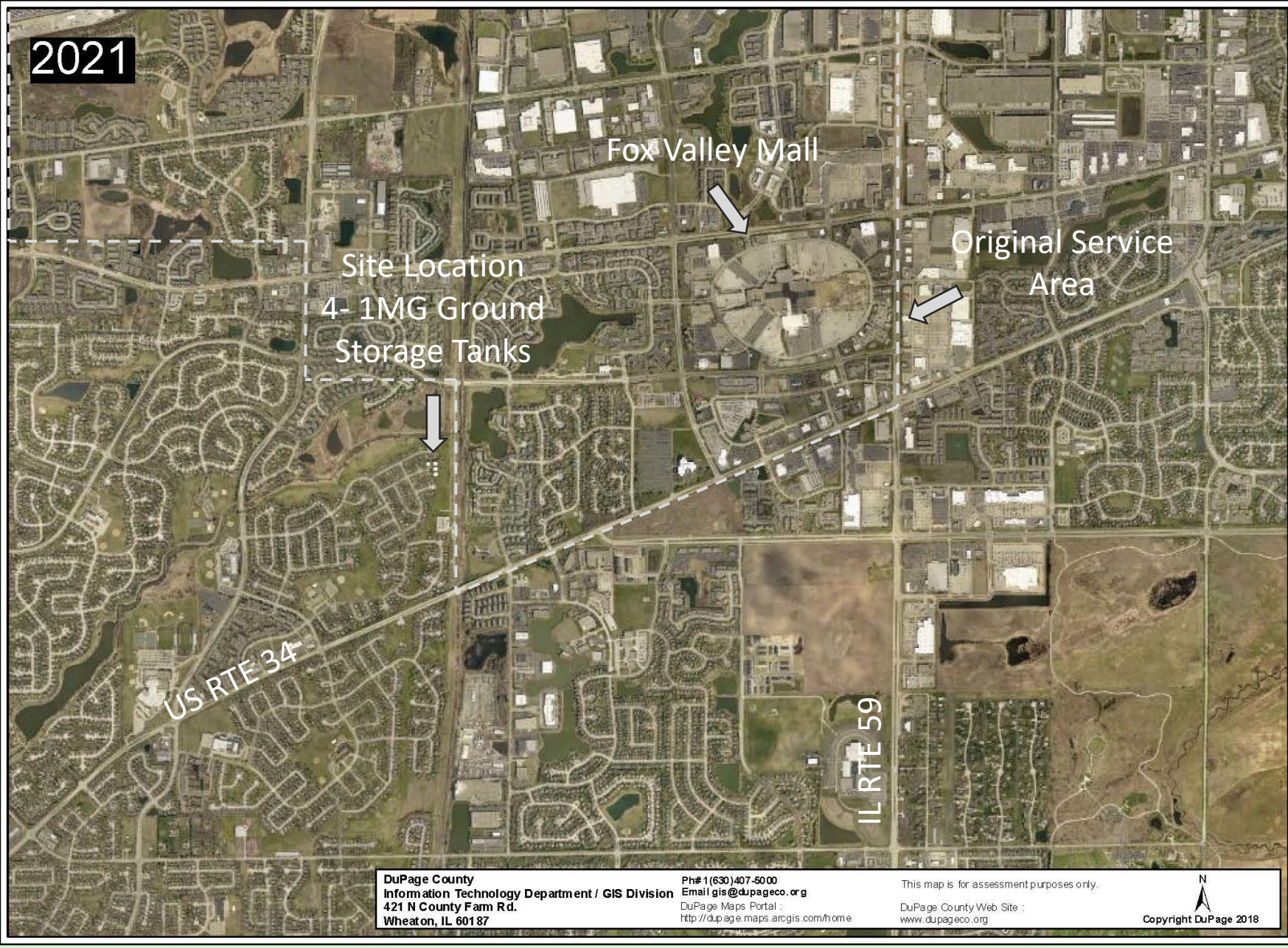

Copyright DuPage 2018



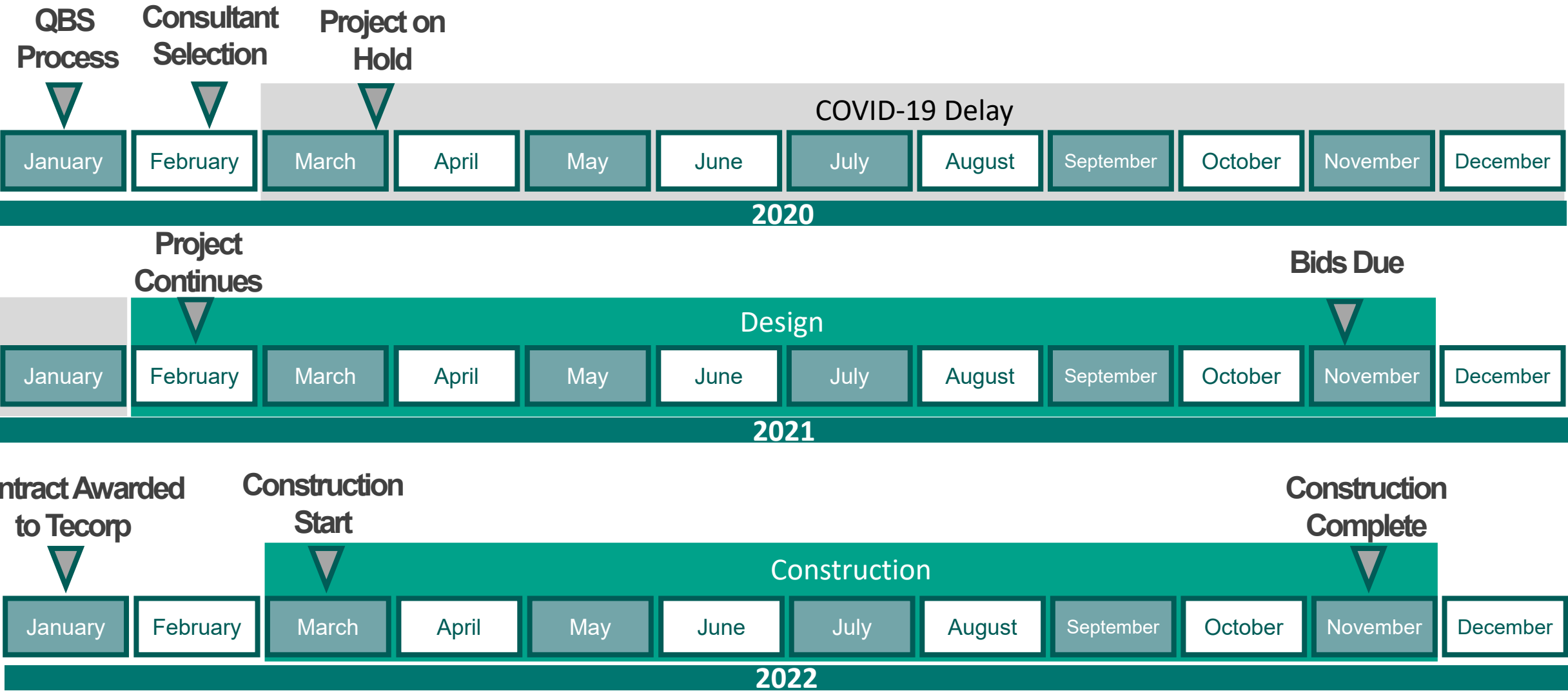








PROJECT SCHEDULE

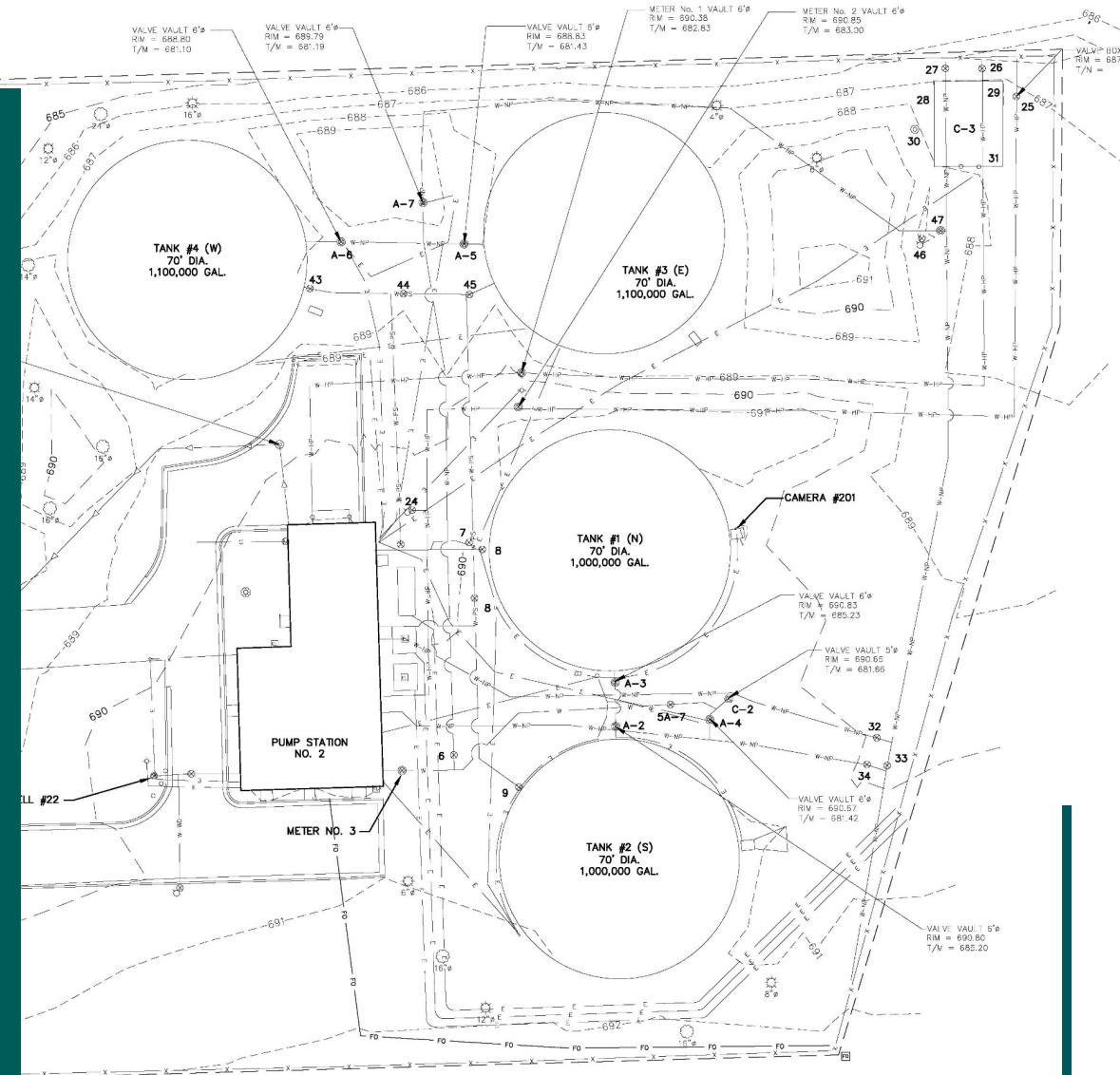




Design Considerations

PROJECT SCOPE

- Full blast and repaint
- Complete all four tanks in one construction season
- No more than two tanks offline at any time
- Tank improvements including structural components
- City staff to handle all electrical





EXTERIOR COATING

- Fluoropolymer 3 coat system
- Highest material cost, longest life
- Reduce the stress of taking the tank offline

INTERIOR COATING

- 100% solids epoxy 2 coat system
- NSF 61 changes
- Coating life to match exterior



STRUCTURAL REPAIRS

- Roof Rafters
- Purlins



HATCHES

- Increase size
- Add davit arm for safety



CONTINUITY

- Upgrade vents and level sensors to match all four tanks



REMOVAL

- Remove bubbler system
- Remove draw off valves

DESIGN CHALLENGES



Residential Location

Interior Access

Maintain City Access

Equipment Staging



CONSTRUCTION CONSIDERATIONS



EQUIPMENT STAGING

- City Staff daily site inspections
- Lawn maintenance staff
- Mosquito trap
- Portable toilet location



CONSTRUCTION SEQUENCE

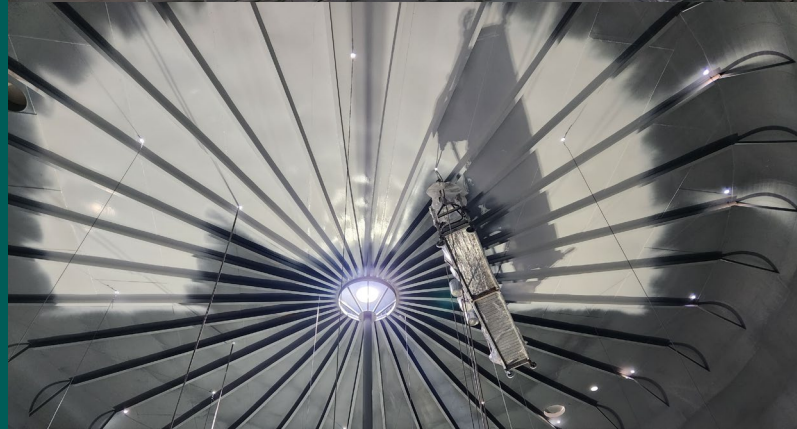
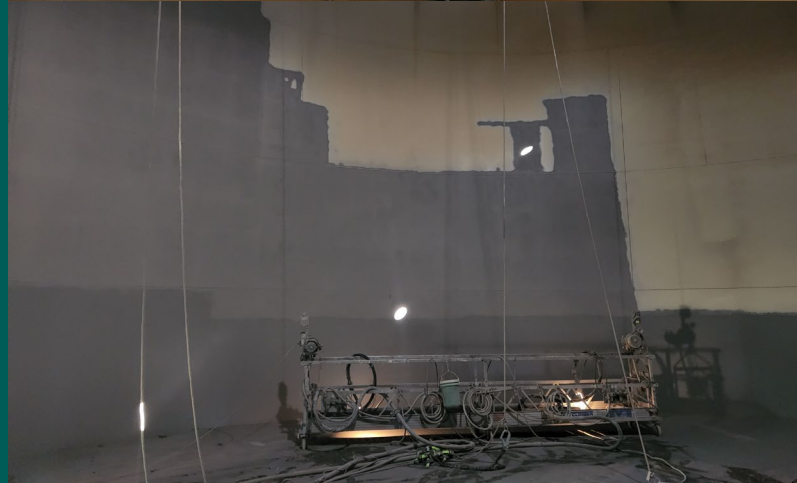
- Assess roof condition
 - Determined in good condition
- Take down second tank
- Prepare for disinfection process
- Tanks 3, 4 taken offline once Tanks 1, 2 were put back online

EXTERIOR



- Robotic blasting - walls and roof
- Vapor Blasting – with mobile containment
- Prime coat – airless spray
- Intermediate and finish coat – brushed and rolled

INTERIOR



- Robotic blasting - floor
- Traditional blasting – walls and roof
- Prime coat – spray application
- Finish coat – spray application with specialized pump

MISC.



- **Weekly status meetings**
- **Coordination with City staff for electrical work, tank disinfection, and tank draining**
- **Level sensor calibration**
- **Security camera mounting**

A large, white, cylindrical storage tank, likely for water or industrial liquids, stands in a grassy field. The tank is composed of several horizontal sections. A worker in a yellow safety vest and hard hat is visible on a ladder to the right of the tank. In the background, there are trees, a blue sky with white clouds, and a tall electrical transmission tower. The text "LESSONS LEARNED" is overlaid at the bottom in large white letters, with a teal horizontal bar above it.

LESSONS LEARNED

BID EARLY

- Better pricing
- Avoided coating shortage issues



CONTRACTOR FLEXIBILITY

- Lowest price
- Completion in one season



DRAW OFF PIPES

- Originally planned to be removed
- Added to newer tanks





**Questions or
Comments?**

THANK YOU

We value your time and appreciate the opportunity to present this afternoon.



Engineering
Enterprises, Inc.



MICHELE PIOTROWSKI, PE, LEED AP
Senior Project Manager / Principal, EEI
mpiotrowski@eeiweb.com
(630) 466-6724



MIKE SCHWEISTHAL, pe
Senior Project Engineer II, EEI
mschweisthal@eeiweb.com
(630) 466-6728



RICK MUNSON
Manager of Water Systems Engineering,
City of Aurora
MunsonR@aurora.il.us
(630) 256-3250

52 Wheeler Road
Sugar Grove, IL

www.eeiweb.com

44 E Downer Place
Aurora, IL

www.aurora-il.org