

# Sarah R. Towle, P.E.

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## Professional Profile

District Engineer for various capital improvement projects for water district with extensive experience in all aspects of engineering and management duties with history of finishing projects ahead of schedule and ensuring completion in a safe and cost effective manner

## Career Achievements

- Secondary WTP Discharge – Currently completing the final design of a 2.6 mile 36-inch water main and negotiating easements. Design includes two bores under Int. 57 and HW 37. (2016)
- Water Main Design & Installations- Completed the design, negotiated easements, administered contracts, and managed construction for various water main projects ranging from 6-in to 20-in diameter totaling 12 miles in length. Design was completed utilizing AutoCAD Civil 3D and survey work using Topcon Tesla RTK mapping equipment. (2011-2016)
- Booster Pump Station (BPS) Upgrades – Successfully managed design and construction of five BPS upgrades consisting the following types of equipment: switchgear, pumps/motors, VFDs, soft starts, check valves, piping changes and SCADA programming (2011 – 2016)
- Steel Water Storage Tank Painting – Completed the design and construction inspection for painting two elevated pedestal tanks (0.125 and 0.25 MG) and four 2 MG ground storage tanks (2011-2015)
- Sand Filter Upgrade – Designed and managed construction to upgrade two sand filters with new underdrains including air scouring, piping changes and instrumentation (2013)
- Watershed Facility Planner - performed several preliminary studies of sewer systems for the Metropolitan St. Louis Sewer District (MSD) and recommended rehabilitation actions (2007 – 2011)
- International Rotation to Glasgow, Scotland - selected for 6 month international assignment to acquire overseas technical experience in water resources (2009)
- Project Engineer - development of a Combined Sewer Overflow Long Term Control Plan (CSO LTCP) in St. Louis and St. Louis County service areas (2007 – 2011)

## Professional Experience

**Rend Lake Conservancy District, Benton, IL** **July 2011 – Present**  
**District Engineer**

Engineering and Management duties for Water District consisting of a 27 MGD drinking water treatment plant and over 200 miles of transmission mains spanning 7 counties in Southern Illinois. Responsible for:

- Engineering design
- Cost estimation
- Surveying/mapping
- Land acquisition and easement negotiation
- Drafting, AutoCAD Civil 3D
- Obtaining environmental and construction permits
- Consultant and contractor management
- Shop drawing review
- Construction inspection

**Jacobs Engineering, St. Louis, MO** **July 2007 – Jun 2011**  
**Project Engineer**

Specific duties included:

- Interpreting flow monitor and hydraulic computer modeling data
- Hydraulic modeling utilizing XPSWMM software
- Performing hydraulic calculations
- Utilizing ArcGIS for exhibit development
- Writing technical memos
- Conducting field site investigations and sewer inspections
- Reviewing inflow and infiltration (I/I) reports and CCTV data to make recommendations for public/private I/I reductions

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- Selecting sewer alignments including recommendations for specific construction techniques and utilities coordination
- Recommending action to rehabilitate sewers
- Evaluation of alternatives and preliminary project design

## Education & University/Internship Experience

### Southern Illinois University Carbondale

August 2005 – December 2007

- Master's of Science, Civil and Environmental Engineering
  - GPA: 4.0/4.0
  - Thesis: Researched the impact of ethanol fuels on soil and groundwater utilizing a batch reactor study and gas chromatography analysis
  - Publication: Thesis abstract published in the Conference Proceeding for the 37<sup>th</sup> Mid-Atlantic Industrial and Hazardous Waste Conference (MAIHC) at the University of Cincinnati (March 21-23, 2007)
  - Graduate Assistant: Laboratory instructor for the undergraduate course CE310, 'Introduction to Environmental Engineering'

### Caterpillar, Inc.

May 2006 – August 2006

- Engineering Internship:
  - Modeled open channel flow, utilizing HEC-RAS software
  - Green belt on Land Waste Management Six Sigma Team
  - Developed ISO 14001 compliant process for documenting Environmental Aspects
  - Projects involving Solid Waste Management Unit (SWMU) closures, and Tiered Approach to Corrective Action Objectives (TACO) regulations

### Illinois Environmental Protection Agency

May 2005 – August 2005

- Engineering Internship:
  - Researched and implemented pollution prevention and energy efficiency projects at Caterpillar Track-Type Tractors Division in East Peoria, IL.
  - Updated and implemented the East Peoria Facility's Spill Prevention Control and Countermeasures Plan (SPCC).

### Southern Illinois University Carbondale

August 2001 – May 2005

- Bachelor's of Science, Civil and Environmental Engineering
  - Cum Laude
  - Civil Engineering Student Advisory Board – President 2 years

### Center for Environmental Health & Safety SIUC

August 2004 – May 2005

- Engineering Internship:
  - Trained as a professional member of the SIUC environmental compliance program.
  - Aided in the development of the SPCC plan for SIUC.

### SIUC College of Engineering

August 2002 – May 2004

- Student Mentor: Mentored incoming freshman and transfer students during Engineering Success Week and performed hands on experiments for open houses and summer camps
- Undergraduate Researcher: Assisted in the development of a website entitled, *Digital Images for Environmental and Water Resources Engineering*, funded by the National Science Foundation

### University of Colorado- Boulder

May 2003 – August 2003

- Undergraduate Researcher: Designed a research experiment for granular activated carbon using the rapid small scale column test and presented results.

## Professional Organizations

- American Water Works Association
- American Society of Civil Engineers
- Society of Women Engineers
- Tau Beta Pi National Engineering Society