OKI GROUNDWATER COMMITTEE
June 20, 2018 - 10:00 AM
OKI Board Room
720 East Pete Rose Way (at the corner of Eggleston Avenue)
Cincinnati, Ohio 45202

AGENDA

1. Welcome/Introductions (3 minutes)

2. Announcements

3. Update on Local Groundwater Management Efforts (30 minutes)
   Jack Thornsberry, Darren Owens, Steve Inman, Mike Ekberg

4. OKI Staff Update (5 minutes)

5. Overview of Ohio Water Development Funding Programs (30 minutes)
   Scott Campbell, Ohio Water Development Authority

6. National Groundwater Issues (30 minutes)
   Terry Morse and Lauren Schapker, National Groundwater Association

7. Against All Odds: how to control treatment chemical costs (30 minutes)
   Jim Springer, Cincinnati Water Works

8. Other Business

ADJOURNMENT

Next Meeting Wednesday September 19, 2018
Groundwater and the 115th Congress

Perspectives from the National Ground Water Association

Presented to the OKI Groundwater Committee
June 20, 2018
PFAS Contamination

• Per- and poly-fluoroalkyl substances detected in over 165 sites across the United States
• Chemicals used for water/oil repellency, fire suppression, surface protection
• Long-chain chemicals phased out of manufacturing in U.S. in 2000s
• Today’s PFAS chemicals manufactured have different properties
PFAS Contamination

• “We are the only people finding PFAS contamination because we are the only people looking for it.”
  • Maureen Sullivan, Deputy Assistant Secretary of Defense

• Sources of contamination include:
  • Military installations (current and now closed)
  • Landfills
  • Chromium plating operations
  • Former manufacturing facilities
  • Municipal airports
PFAS Contamination

• Federal response to PFAS is diffuse:
PFAS Contamination

• EPA established a Health Advisory Level of 70 ppt for PFOS and PFOA
• Congress funded CDC study of the health impacts of exposure to PFOA and PFOS near military sites
• Health and Human Services is currently finalizing its own study on the health impacts
• Working on establishing a database of veterans who may be exposed
PFAS Contamination

• EPA convened PFAS National Leadership Summit in May
  • Summit provided an opportunity for state and local governments to engage with EPA on what resources are needed
  • Framed the challenge over two days and set stage for summer of field visits
  • Targeted deadline of fall 2018 for “PFAS Management Plan” to be released
PFAS Contamination

• EPA used Leadership Summit to announce 4-part Action Plan:
  1) EPA will initiate steps to evaluate the need for a maximum contaminant level (MCL) for PFOA and PFOS. EPA will convene our federal partners and examine everything we know about PFOA and PFOS in drinking water.
  2) EPA is beginning the necessary steps to propose designating PFOA and PFOS as “hazardous substances” through one of the available statutory mechanisms, including potentially CERCLA Section 102.
  3) EPA is currently developing groundwater cleanup recommendations for PFOA and PFOS at contaminated sites and will complete this task by fall of this year.
  4) EPA is taking action in close collaboration with our federal and state partners to develop toxicity values for GenX and PFBS.
PFAS Contamination

- NGWA volunteers prepared a comprehensive guide to PFAS, including information on
- Plan to participate in public meetings throughout the summer
- Continue to engage with Congress and agencies about ways to chip away at this challenge
- Volunteers serve as resources and advisors to federal, state and local governments
- August PFAS Workshop in St. Paul, Minnesota focused on “Professional Challenges”
Groundwater/Surface Water Interaction

- February request for comment asked whether EPA’s NPDES program needed clarification on whether surface water could be polluted by “hydrologically connected sources”
- NPDES program regulates permits for discharges of pollutants to surface water bodies
Groundwater/Surface Water Interaction

- Request for comment stemmed from conflicting court rulings
  - Maui Wastewater Treatment Case
  - Kentucky Coal Ash Disposal Case
Groundwater/Surface Water Interaction

• Comments closed on May 21.
• NGWA’s argument:
  • Narrowly focused comments on NPDES
  • Highlighted groundwater protections in other non-CWA permitting programs
  • Regulating groundwater quality should be the responsibility of the states
  • Federal government better suited to provide technical assistance and research
  • EPA should issue clarifying memoranda on the issue, but any clarification should be confined to the NPDES program
Groundwater/Surface Water Interaction

• What comes next?
  • 60,000 comments filed
  • WOTUS implications
  • Senate plants stake in ground at hearing
  • Timing and mood at EPA: what’s a win?
Drinking Water Infrastructure

• Comprehensive infrastructure investment: a distant memory
• President’s budget proposals consistently cut rural water programs
Drinking Water Infrastructure

- Small system drinking water needs estimated at $59 billion in most recent survey
  - Rural systems face unique challenges
  - Connecting to larger systems is not always cost-effective or feasible, which is where wells and well systems come in
  - Only 26% of small system needs are being met by current EPA and USDA programs
Drinking Water Infrastructure

• Annual Appropriations process moving forward
• House and Senate rejected funding cuts proposed in budget
  • CWSRF Funding: House-- $1.55 billion  Senate-- $1.7 billion
  • DWSRF Funding: House-- $1.01 billion  Senate--$1.16 billion
  • WIFIA Funding: House--$75 million Senate--$63 million
Drinking Water Infrastructure

• 2018 Farm bill effort underway
• House effort faltered out of the gate
• Senate effort contains expansion of Household Water Well Loan Program
  • NGWA-supported effort to boost program to $40 million
  • Also expands eligibility beyond wells and well systems to septic systems
National Ground-Water Monitoring Network
National Ground-Water Monitoring Network

• Current funding picture:
  • Fewer than 30 states contributing data
  • Funding maintained at $3.6 million
    • President’s budget suggested cutting funding for the program
  • Next round of project awards to be announced any day
  • Program announcement for next round in late summer/early fall
    • Activities funded include: site selection, well drilling, well maintenance, data support services
    • Encourage your state agencies to consider an application
Thanks! Questions?

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@NGWA_GovtAffs
Created in 1968 by the State of Ohio to provide loans to local government agencies for the construction of water and sewer infrastructure
How OWDA’s Revolving Fund Works

1. Bond Proceeds
2. Bonds Structured and Marketed
3. Bonds
4. Loans Pledged to Bond Issue
5. Loans to Communities
6. OWDA Loan Fund

This diagram illustrates the cycle of how OWDA’s Revolving Fund operates.
3 Loan Programs

• Fresh Water Loan Program
• WPCLF - Water Pollution Control Loan Program (Ohio EPA)
• WSRLA - Water Supply Revolving Loan Account (Ohio EPA)
Why Borrow from OWDA and EPA?

• Easy access to money
  • No offering documents
  • Minimal borrowing covenants

• Inexpensive to borrow
  • No cost of issuance
    • Bond counsel, underwriter, printing, rating, OMAC, etc
    • Discounts up to 100 basis points

• Good terms
  • Delay first payments until estimated completion
  • Finance over 30 years
  • Only pay interest on money as it is drawn
  • Can borrow more or give back excess at conclusion of construction
  • No debt service coverage

• Excellent service
  • OWDA and EPA staff is responsive
Total Dollars Financed

- 2013: $611,838,988
- 2014: $627,252,376
- 2015: $1,031,110,369
- 2016: $1,034,467,210
- 2017: $1,153,566,751
# Interest Rates

<table>
<thead>
<tr>
<th>Program</th>
<th>Up to 20 years</th>
<th>20 to 30 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh Water - Market Rate</td>
<td>3.40%</td>
<td>3.52%</td>
</tr>
<tr>
<td>Fresh Water - Community Assistance Rate</td>
<td>0.90%</td>
<td>1.02%</td>
</tr>
<tr>
<td>WPCLF and WSRLA (Ohio EPA)</td>
<td>2.15%</td>
<td>2.22%</td>
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</tbody>
</table>

**Market Rate Discounts (0.5% each, max 1.0%)**
- Previous borrower
- Documented health risk
- Connect to an existing system
- Purchasing an existing system
- Balanced Growth Plan

**Fresh Water Community Assistance Eligibility**
- Population less than 5,000
- Annual cost per residential user is greater than:
  - 1.1% of MHI for Water
  - 1.5% of MHI for Sewer
  - 2.6% of MHI for Combined - water and sewer

Interest rates change monthly, rates shown above are thru 6/30/2018.
# 1 Grant Program

## Unsewered Area Assistance Program

<table>
<thead>
<tr>
<th>Customers</th>
<th>Median Household Income (MHI)</th>
<th>Less than $20,000</th>
<th>$20,001 to $35,000</th>
<th>$35,001 to State MHI</th>
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</thead>
<tbody>
<tr>
<td>Less than 100</td>
<td></td>
<td>$1,000,000</td>
<td>$750,000</td>
<td>$500,000</td>
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<tr>
<td>100 to 200</td>
<td></td>
<td>$750,000</td>
<td>$500,000</td>
<td>$250,000</td>
</tr>
<tr>
<td>More than 200</td>
<td></td>
<td>$500,000</td>
<td>$250,000</td>
<td>$250,000</td>
</tr>
</tbody>
</table>
Application Process

Fresh Water Program and
Unsewered Area Assistance Program

1. Obtain bids and/or engineering services agreement
2. Submit OWDA application by the 1st of the month
3. Show OWDA that you will be able to repay the loan
4. OWDA Staff will present your loan to the OWDA Board for approval on the last Thursday of the month
Other Programs

- Loan Advance Loan Program
- Brownfield Loan Program
- Alternative Stormwater Loan Program
- Local Economic Development Loan Program
- Solid Waste Loan Program
- Research and Development Grant Program
Contact Information

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Jerry Rouch  
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Ohio EPA  
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614-644-3660
Against All Odds: How to Control Treatment Chemical Prices

Jim Springer, P.E.
Maria Meyer, P.E.
Greater Cincinnati Water Works
The majority of water and wastewater plants utilize treatment chemicals.

Parameters affecting overall cost:

- **Treatment**
  - Water quality
  - Water quantity

- **Market conditions**
  - Chemical availability
  - Vendor competition

- **Purchasing**
  - Specifications
  - Bid conditions process
Cost Control Program

Price control strategies
- **Before bid:** Start @ lowest possible market price
- **After Bid:** Control price fluctuations

Purchasing Optimization

Monitor the markets

Monitor the Cost Control Program
Price Control Strategies Before Bid

- **Goal:** Start at the lowest possible market price
- Focus efforts on chemicals that represent major portion of budget
- Increase competition for the bid
- Provide renewal periods to extend total contract duration
  - Usually 2-3 years total
- Include price adjustments tied to indices
- Manage timing
  - Look for seasonal lows and highs
  - Work around budget planning periods
  - Know when the vendors will have prices to avoid speculation
Competition and Vendor Communication

• Compile list of vendors
• Contact potential vendors before bid
  • Explain the terms and specifications – get feedback
• Evaluate bid requirements
• Use the competitive bid process; frequently when there is good competition
Chemical indices

- GCWW: 10 chemical prices tied to indices
- Producer price indices (PPI)
  - Monthly
  - Bureau of Labor Statistics
  - Publicly available (free of charge)
- Special indices
  - IHS Chlor-alkali – subscription fee
  - Usually worth the cost for high value chemicals
- Select the right index
  - Should represent costs of manufacturing the chemical
  - Ask vendors if they have suggestions
Price Adjustment Periods

- May be quarterly, semi-annual, annual
  - Specify when the request is due
- Depends on volatility of historic trends
- Check with vendor
- Include terms to be able to get out of the contract
Price Adjustment Formulas

- Simple
- Combined
- Complex
Lime Price Adjustment (Simple)

Index: PCU-327410-327410

2010 PPI 210.2
2011 PPI 217.3

• \(\% \text{ Change} = \left(\frac{2011\ PPI}{2010\ PPI} - 1\right) \times 100\)

• \(\% \text{ Change} = \left(\frac{217.3}{210.2} - 1\right) \times 100 = 3.38\%\)

• Change in price: $140/ton * 0.038 = $5.32
GAC Price Adjustment (Combined)

• Uses average of two indices

<table>
<thead>
<tr>
<th>Index</th>
<th>PCU32419-32419</th>
<th>WPU0614</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014 PPI</td>
<td>385.9</td>
<td>262.6</td>
</tr>
<tr>
<td>2015 PPI</td>
<td>372.7</td>
<td>224.1</td>
</tr>
</tbody>
</table>

% change  
-3.42%     -14.66%

Average Change:  -9.04%
Alum Price Adjustment (Complex)

Current Contract Alum Price (dry) = $300/dry ton

% Change in PPI = -35.61% (as explained above)

Submitted (or current) price of Sulfuric Acid = $120/ton

Sulfuric acid cost change = $120/ton \times \frac{-35.61}{100} = - $42.73/ton

New sulfuric acid price for future adjustment = $120/ton - $42.73/ton = $77.27/ton

New contract alum price = $300.00/dry ton - (0.48 \times $42.73) = $279.49/dry ton
Price Control Strategies After Bid

- **Goal:** Control price fluctuations
- **Included in contracts:** Price adjustment periods tied to chemical market indices
- **Vendor requests increases, buyer requests decreases**
- **Don’t forget to request price decreases!**
  - Make calendar reminders and a schedule
- **Negotiate when necessary**
Negotiations

• Sometimes the index won’t adjust the price enough
  • Still can give you better ground for negotiating a price
  • Alternative might be taking a standard price increase or going out to bid
  • Consider the markets
Purchasing Optimization

- Inventory control
  - Fill up when price is low
  - Minimize stock when price is expected to drop
  - For high cost chemicals – useful to have a lot of storage

- Determine best periods to introduce a bid
  - Fluoride – winter (less speculation)
  - Chlorine – winter (prices typically at lowest)
Monitor the Markets

- Regularly download indices – store them locally
- Know what to expect for a price adjustment
- Beware of allowing procurement staff to approve price adjustments without checking with you
Budget planning

- Use the contracts and expected price adjustments as a budgeting tool
- Project the trend of an index into the future
- Provides justification
- Talk to vendors for budget planning
Monitor the Cost Control Program

| 2016 | Starting Price | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ALGAEocide | $7.99 | | | | | | | | | | | | |
| Alum | $348.85 | | | | | | | | | | | | |
| Bleach / Chlorine | $237.38 | $1.24 | $1.30 | $1.60 | | | | | | | | | |
| Caustic Soda | $126.30 | | | | | | | | | | | | |
| Fluoride | $181.91 | | | | | | | | | | | | |
| GAC | $2,011.00 | | | | | | | | | | | | |
| Iron | $248.38 | | | | | | | | | | | | |
| Lime | $156.76 | $166.08 | | | | | | | | | | | |
| Polymer | $889.06 | | | | | | | | | | | | |
| PAC | $1,359.99 | | | | | | | | | | | | |
| Pot. Permang. | $4,660.00 | | | | | | | | | | | | |
| Sodium Hex Liq. / Dry | $542 | | | | | | | | | | | | |

Contract Expires 4/30/16

Optional Renewal 5/1/16

New Contract 6/1/16 $388.67

Optional Renewal 9/1/16 $357.85

CMAI

Optional Renewal 3/1/2016

Optional Renewal 5/1/2016

Optional Renewal 2/1/16

Optional Renewal 4/1/16 $2496.57

Optional Renewal 7/1/16

Optional Renewal 7/1/16 $141.89 $144.25

Optional Renewal 3/1/2016 $120.95

Optional Renewal 8/1/2016

Optional Renewal 9/1/2016

Optional Renewal 11/1/2016

Optional Renewal 1/1/2016

Optional Renewal 11/1/2016

Optional Renewal 11/1/2016

Optional Renewal 11/1/2016

Optional Renewal 11/1/2016

Optional Renewal 11/1/2016

Optional Renewal 11/1/2016
Caustic Soda Price vs. Index

- Price dropped, but maybe not as quickly as it should have
- Bid competition helps lower the price in most cases (shown by arrows)
CAUSTIC SODA - Price (step) vs Index
With and without price adjustment

Start of index-based price adjustments
Examples of Cost Savings

- **Competition**
  - GAC: 2017 - Worked with new vendor to increase competition in bid
  - Contract price was 15% lower – roughly $144,000 per year

- **Negotiation**
  - Price increase letters were issued for phosphate salts indicating approximately 20% increases starting 1/15/2018.
  - Our price adjustments prevented those increases from being passed on to us.

- **Price adjustment periods**
  - $70,596 of price decreases in past three years
Summary

Price control strategies
- **Before bid:** Start @ lowest possible market price
- **After Bid:** Control price fluctuations

Purchasing Optimization
- Stock up when the price is low

Monitor the markets
- Regularly download index data

Monitor the Cost Control Program
- Request and track price adjustments
- Quantify your savings!
Questions?
Welcome/Introductions:
Groundwater Committee Chair Bruce Whitteberry opened the meeting, reminded attendees that certificates for contact hour credits were available on the table in the back of the room.

Announcements:
A reminder that the remaining meeting dates for this year are:
- September 19th
- December 12th
Update on Local Groundwater Management Efforts:

Jack Thornberry – Butler County Water and Sewer Department
Currently, Butler County Water and Sewer Department is treating their water with sodium hypochlorite. They are continuously working to replace 15,000 service lines that failed and have successfully replaces 11,000 of them. There are no lead or copper pipes in their system anymore. Their major projects include replacement of cast iron pipes in late 1960s neighborhoods, water line removal and replacement in the Cincinnati-Dayton road realignment project and switching over to a more universal operating system. Overall, they are transitioning from implementing new systems to managing what they already have in place.

Daren Owens – City of Lebanon
The City of Lebanon began purchasing water from Cincinnati Water Works in 2012 and the city staff is very active in maintaining a high water quality and performing regular maintenance. For convenience purposes, they are replacing water mains, as needed, when a road replacement occurs. They use Advanced Metering Infrastructure (AMI) to manage cost more effectively and improve customer service. Finally, there are no more active wells in the city.

Steve Inman – City of Franklin
Currently, the City of Franklin serves 12,000 people and maintains and operates a water treatment plant. They have four wells that produce seven and a half million gallons of water a day and two towers that hold five million gallons of water. They have updated the Source Water Assessment and Protection Program (SWAPP). They continue to work on the replacement of cast iron pipes with 3,000 feet complete and a 6,000 foot project coming up. They have discontinued one well because of VOCs. They plan to host a river clean up sometime in late July.

Mike Ekberg – Miami Conservancy District
Currently, the Miami Conservancy District has two major projects. First, The Tate Station Dam is scheduled to be removed because it is no longer needed and creates a hazard. After removal, the stream will be rehabilitated. The $1.7 million project will span from July to October and will include a biological pre and post assessment of the stream. They might also slightly relocate a large water main line that goes across the Great Miami during this project. Second, they are partnering with University of Dayton to study isotopes of nitrate in ground water. They are attempting to determine the source of contamination and then educate the public on management strategies. Their deadline for this project is September.

OKI Staff Update:
David Rutter – OKI Senior Planner
David introduced the two new interns hired into OKI’s Regional Planning Department; Aaryn Gray, Water Quality Intern and Sam Squillante, Environmental Planning Intern.
Presentations: (For more information on each presentation check out the Groundwater Committee website at http://www.oki.org/about-oki/committees/groundwater-committee/)

Scott Campbell, Ohio Water Development Authority
Overview of Ohio Water Development Funding Program
OWDA was created in 1968 to distribute loans to local government agencies for the construction of water and sewer infrastructure. Originally, it was to be based on grants but after consideration they moved towards a process called revolving loans. This revolving funds process focuses on taking money out of the OWDA Loan Fund and giving it to communities to complete a proposed project. Communities may choose to pay back throughout the project or not until the completion of the project. The loan is paid back through a bond system where the bonds are structured and marketed and finally returned back into the initial loan fund. There are three programs Fresh Water Loan Program, Water Pollution Control Loan Program (WPCLP) and Water Supply Revolving Loan Account (WSRLA). In order to qualify for a loan you must apply to OWDA, obtain bids and prove that your community can repay the loan.

Terry Morse and Lauren Schapker, National Groundwater Association
National Groundwater Issues: Groundwater and the 115th Congress
The National Groundwater Association reported on the progress of projects at the national level. First, PFAS contamination is a combination of 1000+ chemicals that do not break down. Sources of contamination include military installations, landfills, chromium plating operations, former manufacturing facilities and municipal airports. Individual agencies are dealing with the contamination according to their stakeholders. The EPA is taking steps to evaluate the need for maximum containment level, proposing to call PFAS “hazardous substances” and collaborating with federal and state partners to develop toxicity values for GenX and PFBS as well. Second they are looking at the role of government in groundwater and surface water interaction. After two controversial cases, the Maui Wastewater Treatment Case and the Kentucky Coal Ash Disposal Case, they have decided that regulating groundwater is a state level responsibility. Third, comprehensive infrastructure investment in drinking water is no longer on the table due to a lack of funding but the 2018 Farm Bill effort is still underway. Last they established a national groundwater monitoring network that currently has less than 30 states contributing data.

Jim Springer, Cincinnati Water Works
Against All Odds: how to control treatment chemical costs
Jim Springer presented on how to use bidding and other methods to control and manage the prices of chemicals used to treat water. Greater Cincinnati Water Works uses this method to save money. During the bidding process the goal is the start at the lowest market price, bring in many vendors to bid it out and competition will do the rest. They use Bureau of Labor Statistics Data to help track their prices and support their bids. Price adjustment is established in one of three ways, simple, combined and complex. Each way uniquely changes the prices established based on various factors ultimately give them a final pay price. Springer also notes that buying in the
off season saves money, negotiation periods are crucial and using a calendar is very helpful so bid times are not missed.

Other Business:
Bruce Whitteberry asks anyone who has exciting ideas or suggestions for presentation topics for future meetings to contact him.