ADEQ’s Technical Assistance Program and Predictive Analytics Project for Arsenic

Reshet Gebremariam
July 29, 2021
Number of Public Water Systems in AZ

- Community water system (e.g. City/Town water systems, serving residential areas,...)
- Non-transient non-community water system (e.g. schools, work places,..)
- Transient non-community water system (e.g. gas stations, restaurants,..)

1526 Public Water Systems in Arizona

- 1382 systems (90 percent) serve fewer than 3,300 people
- 1140 systems (75 percent) serve fewer than 500 people
Types of Public Water Systems

- **Fed/state/public school run PWSs** - regulated by ADEQ 12%
- **Political subdivisions** (cities, towns, DWIDs, CFDs, CID) - ADEQ regulated 14%
- **Active ACC regulated systems** 22%
- **Other (non-ACC regulated, non-political subdivision)** - regulated by ADEQ 52%
Common contaminants/violations

- Arsenic
- Nitrate
- Lead and Copper ALEs
- Fluoride
- TTHM
- Selenium
- Combined Uranium
- Turbidity
Common Areas of Noncompliance

- Water Quality Exceeding Maximum Contaminant Level (MCL)
- Water treatment failure – MCL violation;
- Use of unapproved water system materials, coatings,…
- Failure to obtain ATC and/or AOC
- Making adjustment to water system without the required review/approval
-Leaks in storage tanks; lack of storage – lack of preventative maintenance
- Lack of O&M plans and/or emergency operations plans (EOP)
Elements of Water System Capacity

Technical Capacity:
Adequacy of physical infrastructure, water source and operational knowledge

Managerial Capacity:
Ability to manage system operations effectively

Financial Capacity:
Stewardship of funds to sustain operations for the long term
Drinking Water Technical Assistance Program

Is My Water System Eligible?
- Community and non-profit, non-transient non-community Public Water Systems (PWSs) serving < 10,000 persons

How Does It Work?
- Provided through 3rd party contractors and/or ADEQ staff
- Every year, ADEQ develops the Master Priority List—a list of public water systems to contact for technical assistance. Or, water systems can request technical assistance by contacting ADEQ directly.

What Does It Cost?
- ADEQ's technical assistance services are free for participants.
- However, expenditures may result from implementation of program recommendations.
- ADEQ’s Technical Assistance Program can help you identify potential funding opportunities.
Examples of Technical Assistance Available

WATER SYSTEM IMPROVEMENTS
USDA-RD Preliminary Engineering Report

SCHOOL DISTRICT
PWS # 04-01-022
URANIUM TREATMENT EVALUATION
DECEMBER 2015

Probable Costs?

Rate Studies

Environmental Assessments

Asset Management: A Handbook for Small Water Systems
One of the Simple Tools for Effective Performance (STEP) Guide Series

ATG / AQC

SECURITY INSPECTION

TRAINING
Examples of Technical Assistance

- Engineering feasibility study/Preliminary Engineering Report
- Scoping studies to determine types of treatment
- Treatment design
- Environmental reviews
- ATC/AOC applications
- Prepare asset management plans
- Rate cases
- Project cost estimates
- System evaluations
- Pilot studies
- Security inspections & exercises
- Training – board, management, operator
Funding $$

Arizona Department of Housing

RCAC

ADEQ

U.S. Department of Housing and Urban Development

WIFA

North American Development Bank

FEMA

USDA

Rural Community Assistance Partnership

Bureau of Reclamation
### Funding Matrix

**Resource Matrix**

**Version 11.0**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Type of Support</th>
<th>Stage of Service</th>
<th>Resources Available</th>
<th>Eligible Entities</th>
<th>Uses/Purpose</th>
<th>Eligibility Requirements</th>
<th>Agency Website &amp; Contact Person Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Development Block Grants (CDBG) - Regional Allocation - Grants</td>
<td>X X</td>
<td>X X X</td>
<td>X X</td>
<td>X X</td>
<td>Funding that is distributed on a non-competitive basis through the four non-metro Councils of Governments. Funds available vary based on the region's approved rotational method of distribution which also contains a multi-year schedule for how distributions will be made to all eligible communities receiving funding and can plan projects.</td>
<td>&quot;All incorporated cities and towns in the 13 rural counties (excluding Casa Grande, Douglas, Flagstaff, Prescott, Sierra Vista &amp; Yuma), all rural counties. Private water companies may be eligible as sub-recipients to the city, town or county and would have to work closely with the public entity on proposed projects.&quot;</td>
<td>[ Arizona Department of Housing (ADOH) ]</td>
</tr>
<tr>
<td>Community Development Block Grants (CDBG) - State Special Projects - Grants</td>
<td>X</td>
<td>X X X</td>
<td>X X</td>
<td>X X</td>
<td>Competitive opportunity for projects that align with State’s Consolidated Plan and are ready to implement immediately meaning that environmental reviews are completed, land control secured, planning, design and permitting complete. 70% of funds must be spent on activities that benefit low &amp; moderate income populations. Application rounds are announced via a Notice of Funding Availability.</td>
<td>&quot;All incorporated cities and towns in the 12 rural counties (excluding Casa Grande, Douglas, Flagstaff, Prescott, Sierra Vista &amp; Yuma), all rural counties. Private water companies may be eligible as sub-recipients to the city, town or county and would have to work closely with the public entity on proposed projects.&quot;</td>
<td>[ Arizona Department of Housing (ADOH) ]</td>
</tr>
<tr>
<td>Community Development Block Grants (CDBG) - Colonias - Grants</td>
<td>X X</td>
<td>X X X</td>
<td>X X</td>
<td>X</td>
<td>Set aside of state’s award for colonies to address lack of basic infrastructure (potable water or sanitary sewer) or safe and sanitary housing. This funding is available every two years thru a competitive process.</td>
<td>[ ADOH certified colonies or applicant to submit Colonias Designation &amp; Certification packet 60 days prior to application deadline ]</td>
<td>[ Arizona Department of Housing (ADOH) ]</td>
</tr>
<tr>
<td>Section 108 Loan Program</td>
<td>X X</td>
<td>X X X</td>
<td>X</td>
<td>X</td>
<td>A portion of the CDBG funds can be turned into a federally guaranteed loan program and used to provide communities with public project financing for construction, reconstruction or installation of public facilities. Funds can be used for long term recovery or to prevent further damage if it doesn’t duplicate funding available from FEMA, SBA and USDA. Section 108 loans can be used for FEMA match for recovery projects.</td>
<td>[ Metro cities and urban counties; rural cities, towns and counties (non-entitlement communities); ]</td>
<td>[ <a href="http://www.azhousing.gov">www.azhousing.gov</a>; <a href="mailto:Kathy.Blodgett@azhousing.gov">Kathy.Blodgett@azhousing.gov</a> or 602.771.1021 ]</td>
</tr>
</tbody>
</table>

**Link available from the Technical Assistance page:**

Rural Water Infrastructure Committee (RWIC)

- Partnership of state, federal and private organizations that provide funding and technical assistance to small water & wastewater systems
- Meets quarterly – usually in Phoenix but can go on the road
- Goal is to function as a one-stop shop for communities and water/wastewater systems of less than 10,000 population
- Major RWIC partners focus collective resources on those PWS in greatest need – imminent threat to public health & safety
- Project Information Form

https://rwic.net
Management Track Training

- A series of trainings developed to help PWS owners/managers understand their responsibilities & provide tools for compliance & understanding
  - Basic PWS operations
  - Water audits
  - Budgets & finances
  - Rate setting
  - O&M/Emergency Operations Plans
  - Asset management
  - Security
Resources

Technical Assistance Program:
http://azdeq.gov/TechnicalAssistanceProgram

Capacity Development Program:
https://azdeq.gov/CapacityDevelopment

Funding Resources Matrix:

Rural Water Infrastructure Committee (RWIC)
http://www.rwic.net/
Upcoming Funding Workshop – August 26

Date: Thursday, Aug. 26, 2021
Time: 8 a.m. – 12:30 p.m.
Location: Online

Five Sessions:

- **Session 1:** Capital Planning
- **Session 2:** Financing for water and wastewater infrastructure projects through the Water Infrastructure Finance Authority of Arizona (WIFA)
- **Session 3:** Financing water and wastewater infrastructure needs of small, financially distressed rural communities through the U.S. Department of Agriculture (USDA)
- **Session 4:** WaterSMART Grants through U.S. Bureau of Reclamation (USBR)
- **Session 5:** Other funding options and resources

http://azdeq.gov/opcert-events
Capacity Development Stakeholder Meeting

- **Date:** Aug. 5, 2021  
  **Time:** 8 – 10 a.m.  
  **Location:** Online

- 5th Meeting - Present capacity development strategy framework
- Opportunity to Provide Feedback for ADEQ's Drinking Water Program and suggested improvements
- [http://azdeq.gov/events](http://azdeq.gov/events)
Predictive Analytics for Arsenic
Problem:

- Arsenic exceedances are 30-40% of total health based exceedances

Scope:

- Arsenic (for now!)

Goals:

- Healthy drinking water
- Prevent Arsenic exceedances / KOUIs
- Proactively address Arsenic MCL
- Budget planning / Funding needs
- Identifying TMF capacity gaps
ADEQ uses different factors to prioritize outreach efforts:

- Arsenic results
- Population served
- Sensitive population (schools, day cares, retirement facilities, etc.)
- Does system have arsenic treatment?
- Seasonality (when is system in operation?)
Basic Process

Outreach
- PWS buy in

Questionnaire
- Filling data gaps

Site Visit
- Gather additional data

Problem Solving
- Review data

Completed
- Solution Implemented

Solution In progress
- Solution Identified

Archived
- Results reliably below MCL
Benefits

- Voluntary Consultation Program
- No cost to the water system
- Provides insight into how water system can avoid an arsenic exceedance
- Help PWS identify next steps
  - Including referring water systems for technical assistance
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success</td>
<td>Prevented 5 water systems from exceeding arsenic MCL</td>
</tr>
<tr>
<td>Outreach</td>
<td>Contacted over 100 PWSs</td>
</tr>
<tr>
<td>Site Visits</td>
<td>23 Site Visits Conducted</td>
</tr>
<tr>
<td>Follow-up</td>
<td>16 Projects in progress</td>
</tr>
<tr>
<td></td>
<td>45 Completed projects/sites</td>
</tr>
<tr>
<td></td>
<td>12 Referred to Technical Assistance Program</td>
</tr>
</tbody>
</table>
Options for addressing elevated arsenic levels

- Holistic approach
- Long-term solution
- Non-treatment options considered first (consolidation, zonal sampling, blending, inactivation of source, etc.)
- Treatment selection
- Working with other agencies (ACC, SFB, PDEQ, MCESD)
Questions

- rg10@azdeq.gov
- 602-771-4220