



Known for excellence.
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WATER

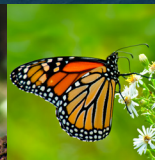
GEOTECHNICAL

ENVIRONMENTAL

ECOLOGICAL

WATER

CONSTRUCTION
MANAGEMENT



RISK AND RESILIENCY ASSESSMENT EMERGENCY RESPONSE PLAN UPDATE



ASSESS. PLAN. PREPARE. RESPOND. RECOVER. America's Water Infrastructure Act of 2018 requires that community (drinking) water systems serving more than 3,300 people to develop or update risk assessments and emergency response plans (ERPs). Deadlines for certifying completion range from March 2020 to December 2021, depending on system size. Assessment include risk and resilience of water system components, monitoring practices, financial capabilities, operational and maintenance practices. Comprehensive evaluation of threat categories and probabilities is required to assess risk of and resilience to malevolent acts. GZA utilizes its own GIS tools and those provided by USEPA, National Weather Service, AWWA and others to assure that your risk and resilience assessments and emergency response plans that meet the specific requirements outlined under AWIA Section 2013.

SERVICES:

- All Hazards Risk Assessment (eg. drought, earthquake, flood, malevolent acts)
- Cybersecurity
- Risk Hazard Management Plan Development
- Drought Management Plan
- Community Workshops
- Risk Communication
- ERP Plan Review and Updating
- ERP & Warn Tabletop Training Exercises
- Damage Assessment & Recovery

SERVICES SPOTLIGHT

TOOLS

GZA utilizes several tools and references to assess vulnerability risk and resiliency, including:

- RAM-W (EPA Risk Assessment Methodology for Water)
- VSAT (EPA Vulnerability Self-Assessment Tool for Drinking Water and Wastewater)
- EPA's *Baseline Information on Malevolent Acts for Community Water Systems*
- *AWWA M19 Emergency Planning for Water and Wastewater Utilities*
- *AWWA G430 Security Practices for Operation and Management*
- *AWWA G440 Emergency Preparedness Practices*
- *AWWA J100 Risk and Resilience Management of Water and Wastewater Systems*
- AWWA "Water Sector Cybersecurity Risk Management Guidance"
- EPA "Water Resiliency Action Plan Kit"
- EPA Route to Resilience (RtoR) Tool
- *ASCE/AWWA Guidelines for the Physical Security of Water Utilities*
- EPA "Tabletop Exercise Tool for Water Systems: Emergency Preparedness, Response and Climate Resiliency"
- EPA "Climate Resiliency Evaluation and Awareness Tool"
- EPA "Response Protocol Toolbox"



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WATER



Water Sources

- Test Well Exploration
- Production Well Development Evaluation/Rehabilitation
- Aquifer and Surface Source Watershed Protection
- Zone II and III Analyses
- Sanitary Surveys
- Groundwater Modeling
- Nitrogen Loading Analysis
- Groundwater Monitoring Program
- Contamination Investigation
- Site Design
- Pump Station Evaluation/Design/Renovation
- Instrumentation and Controls
- SCADA Design/Integration
- Facility Rehabilitation, Upgrades
- Pumping Unit Performance Tests
- Approvable Yield Analysis
- Facility Operation and Maintenance
- WMA Permitting

Distribution System

- Pipe Condition Tests
- Hydrant Flow Tests
- System Hydraulic Modeling
- Water Quality Evaluation
- Rehabilitation & Replacement Alternatives Analysis
- Watermain Design
- Cleaning and Cement-Lining Design
- Phased Construction Programs
- Contract Documents
- Construction Services
- Leak Repair Programs
- Unidirectional Flushing Program Design and Mapping
- GIS, AutoCAD Mapping
- Maintenance Programs
- Cost Estimates

Planning & Studies

- Master Planning
- Facilities Inspection and Testing
- Regulatory Planning
- Water Quality Investigations
- Utility Mapping Systems
- GIS Mapping
- Environmental Assessments
- Cost-Benefit Analysis
- Rate Studies
- Water Audits
- Vulnerability Assessment & Emergency Response Plans
- Feasibility Studies
- Water Demand Projections
- Phased Construction Programs

Treatment

- Treatment Pilot Studies
- Water Quality Evaluation
- Treatment Alternatives/Adequacy/Efficiency Evaluations
- Planning for Future Regulations/Quality
- Regulatory/Environmental Permits
- Grant Applications
- Facility Design/Rehabilitation/Upgrade
- Contract Documents
- Construction and Start-Up

Water Facilities

- Evaluation of Storage Volume Adequacy
- Safety & Security Checks
- Coating System Inspections & Evaluation
- Design, Repair, Rehabilitation, Retrofit
- Mixing System Design
- Siting of Storage Facilities

Operational Services

- O&M Manual Preparation
- Troubleshooting Assistance
- Utility Cloud Asset Management

Waterworks Administration/ Maintenance

- Management, Organization Evaluations
- Energy Conservation Programs
- Cost Estimates
- Permitting
- Funding Applications
- Water Quality Review
- GIS Mapping and Database Building
- Rules & Regulations Development
- Maintenance & Record Keeping Programs
- Community Relations
- Regulatory Permits
- Grant Applications
- Cross-connection Control, Water Conservation, Wellhead Protection Bylaws
- Water Department Rules, Regulations and Standards

Construction Management

- Construction Administration
- Cost Estimates
- Bidding Assistance
- Contract Award Recommendations
- Shop Drawing Review
- Work Schedule Review
- Payment Estimates
- Resident Project Representation
- Performance Tests
- Work Acceptance Recommendations
- Grant Administration
- Record Drawing Preparation