Groundwater Source Water Services

Mission Statement: To help Water systems and their communities, identify potential threats to their drinking and recreational waters, and establish implementable protection steps for the entire community. To protect and effectively utilize source waters, along with source planning and locating sources for the future.

Source Water

"Source water protection was founded on the concept that informed citizens, equipped with fundamental knowledge about their drinking water source and the threats to it, will be the most effective advocates for protecting this valuable resource."

Florida Rural Water Association's Source Water Protection Technical Assistance Program provides technical assistance to rural and small communities with the development and implementation of local source water protection plans. Source water is water from streams, rivers, lakes or underground aquifers that is used to provide public drinking water, as well to supply private wells used for human consumption. A source water protection plan is a local initiative designed to prevent the deterioration of water resources used for drinking water. A source water protection plan involves the following steps: defining the water supply resources to be protected; forming a steering committee; identifying potential threats to the quality and quantity of drinking water resources; recommending and implementing measures to reduce threats to drinking water resources; and planning for the

future, including water supply emergency events. In order to get the most scientifically accurate data, FRWA's Source Water Protection Specialist gathers lists of a variety of potential contaminant sources and hydrogeologic data from the Department of Environmental Protection and Florida's Water Management Districts. They then seek the guidance and input of local stake holders during the planning process to ensure that the completed source water protection plan reflects the needs of the local community. Individuals on the planning team commonly include local government officials, water suppliers, representatives from various county and regional agencies, and individuals from interested non-governmental organizations.

Ground Water

Recognizing that the best way to maintain high quality drinking water is to prevent contaminants from reaching drinking water sources, in 1986 the federal Safe Drinking Water Act was amended to require states to develop Wellhead Protection Programs. Florida's Wellhead Protection Program coordinates and builds on existing programs and rules that protect Florida's ground water resources.
Florida Rural Water Association's Groundwater Protection Services include assistance in developing Wellhead Protection Plans for member systems. A Wellhead Protection Area is defined as the surface and subsurface area surrounding a public water supply well or well-field, through which contaminants are reasonably likely to move toward and reach the well. Conceptual groundwater flow modeling is used to help determine the direction of subsurface and aquifer flows. An inventory of all potential sources of drinking water contaminants is conducted, typically compiled from existing state regulatory databases and on-the-ground observations. Common potential contaminants can include agricultural, commercial, industry, and human activities. The potential contaminant sources identified during the inventory should be managed in a way to prevent any groundwater contamination. Local communities have many options, including ordinances, zoning restrictions, land purchases, conservation easements, voluntary actions, encouragement of best management practices, and local government cooperative efforts.

Wellhead Protection helps prevent groundwater from becoming polluted by managing potential sources of contamination in the area which supplies water to a public well. Public health is protected and the added expense of treating polluted water or drilling new wells is avoided though wellhead protection efforts.

Creation of Source Water (SWPP) and Wellhead Protection Plans (WHP)

- **Delineate** the Source Water Protection Area (SWPA).
  Delineating the SWPA shows the area to be protected and prescribes the boundaries of the area from which drinking water supplies are drawn. This could be a zone around the drinking water well (known as the wellhead protection area or WHP) and can also consist of a complete Watershed or Water Basin where many wells draw water.
- **Inventory of Threats** known and potential sources of contamination.
  The threat inventory lists all documented and potential contaminant sources or activities of concern that may be potential threats to drinking water supplies. The threat inventory indicates the level of concern assigned to each potential risk by ranking, rating, or prioritizing management measures to reduce or eliminate them.
- **Determine the Susceptibility** of the PWS to contaminant sources or activities within the SWPA or WHP.
  Determining susceptibility of the PWS to inventoried threats relates the nature and severity of the threat to the likelihood of source waters serving that system being contaminated. Mitigating factors taken into account when determining susceptibility include potency or toxicity of the contaminant, volume of discharge or release, distance from wells or intakes, and the likelihood of entry of the contaminant into

the source waters. We will show the containments direction of movement and at which speed it is moving toward your PWS. Always better to protect a water supply from contamination over treating/removing contamination once it occurs.

- **Implement Management Measures** to prevent, reduce, or eliminate risks to your drinking water supply.
  Using the information gathered from the assessments allows specific management measures to be formulated and put in place. By examining the results of the contaminant source inventory and the susceptibility determination for each PWS, these measures can be tailored to address each threat or array of risks specific to each PWS. Ensure that the public has information necessary to control and modify their own actions to prevent contamination and to participate effectively in community activities to protect drinking water.
- **Develop Contingency Planning Strategies** to deal with water supply contamination or service interruption emergencies.
  In the event of short- or long-term water drinking water supply disruption as a result of natural causes (e.g., chemical contamination, biological contamination or floods) or intentional destruction (e.g., vandalism or terrorism), water supply replacement strategies that coordinate all available efforts to restore service to single or multiple PWSs are an indispensable part of any drinking water protection program

These plans are developed for your system with the help of the Florida Rural Water Association, to be adopted and implemented by your water system to protect your water Supply.

Critical Well Assessments and Recommendations

Address water quality and potential water quality concerns, issues and bacteriological issues.

- Inventorying the condition, age, and performance of the well.
- Identify issues with the well such as well seal, venting, well cover, drainage, issues with concrete pad, packing gland, Electric conduit and A&V Valve
- Plan for maintaining, repairing, and, as necessary, replacing well(s).
- Well problem troubleshooting (i.e. shock chlorine/reagents, Bacteriological concerns)

GIS Mapping System Assistance

- Mapping Water and Wastewater Systems using GPS by collecting features (i.e.manholes, water valves, wells, flush stands, hydrants, etc.).
- Line and feature locates using Ground Penetrating Radar (GPR) and/or locating equipment.

- Process collected data, update attributes for each feature, create collection and distribution lines, generate maps of collected/created data, and valve exercising forms.
- FRWA will train someone from your system on how to use the GPS unit and how to collect your assets
- **FRWA Provides**
  - GIS Agreement
  - GPS Equipment
  - Metal Detectors
  - Valve locators
  - Ground Penetrating Radar (GPR)
  - Training for all system staff on use of equipment listed above
  - Draw Water and Collection lines
  - Electronic Data (which can be submitted to GIS Department, Planning Department or Engineers for future expansions or growth)
  - Electronic and Printed Wall Map and Mapbook
- **System Provides**
  - Signed GIS Agreement
  - Staff to do locates and collection
  - Staff to draw water and/or collection lines on draft map (after collection is completed) or System will provide Existing Line Maps.
  - Payment to FRWA once final maps have been approved, but before final maps have been printed.
- **New Well Locations**
  - Assist systems with identifying the groundwater flow and potential threats in the area to help in finding better locations and drilling depths for future wells.
- **Assist FRWA Circuit Riders when needed with Regulatory Concerns**
  - Consumer Confidence Reports (CCR)
  - Monthly Operating Reports (MOR)
  - Disinfection By-Product Evaluation
  - Other Areas as Requested.
- **Pharmaceutical Education**
  - Assist in keeping pharmaceuticals from entering the environment, drinking water and any new regulations and cost to customer.
  - Provide Education Materials for proper disposal of Pharmaceuticals
  - Provide information on locations for disposing of Pharmaceuticals
  - Assist and provide information for holding a proper collection event.

- **VOC and SOC Waivers**
  Assist in completing required documentation for submittal to Primacy Agency
  - By contacting FRWA and requesting assistance our staff will work to help you complete the required waiver. We will obtain the required sampling results (from system, laboratory and/or Primacy Agency), we will take an inventory of all threats in a 500meter radius of wells and help create a map identifying these threats, and we will complete the required forms to submit to Primacy Agency.
  - If granted a waiver by FLDEP, it will allow the system to obtain reduced monitoring of Volatile Organic Contaminants (VOC) and Synthetic Organic Contaminants (SOC). Obtaining a waiver could prevent the routine sampling of 51 or more chemicals and could save the system considerably in laboratory fees and man hours.
  - FDEP may ask FRWA to verify wavier submittals which we will do on your behalf to help your system qualify for any waivers.
- **Under the Direct Influence of Surface Water (UDI)**
  - Assist in Microscopic Particulate Analysis results
  - Assist in determining if Public Supply is UDI.
    - If a system is continually failing Total Coliform results DEP or you may ask FRWA to assist in determining why. FRWA will do an assessment to identify if the well structure might be allowing bacteria into the well. We will give our recommendations for correcting any issues (seal any cracks/holes, properly screened vents, removing dead animals in open holes with access to the water in well and preventing further access, well needing to be shocked, identifying if system needs to have casing inspected for cracks/holes, or determining if well needs to be abandoned and a deeper well drilled).
    - If all efforts made do not correct the issue then the well will have to be tested for a direct influence of surface water. This may result in the determination that your system must meet the Surface Water Treatment Rule, which is expensive and burdensome. We hope to assist in avoiding that determination for your system.

Equipment Available to FRWA Members: This equipment is purchased with membership dues and is available to the members through the FRWA Staff. This effort saves systems thousands of dollars.

3" Trash Pump	Advanced Drinking	Calibrated Thermometer
4” Trash Pump	Water Laboratory	Centrifuges
6" By-pass Pump	Backflow Test Kits	Chemical Feed Pumps
Activity Chart Recorders	Basic Drinking Water Laboratory	Chlorine Meters
		Chlorine Repair Kits

Chlorine Tracer Studies
Colorimeters
Conductivity/UV 254 Meter
Corrosion Control Test Kit
D O Meters
Electric Meters (volt)
Electric Motors
Fire Hydrant Flow Gauges
Flowmeters
Four Leg Bridle
Fuel Pumps and Tanks
Generator Load Bank
Generators (10-150 kw)
GIS Software and Mapping Equipment
Global Positioning System (locates)
GPS Mapping Systems
Ground Penetrating Radar (GPR)
Groundwater Model
Hach DR-5000 Spectrophotometer
Handheld Infrared Device
Hydrant Flowmeters
Hydrant Pressure & Flow Kits
Hydrant Pressure Relief Valve
Hydrogen Peroxide Test Kit
Hydrogen Sulfide Test Kit
Jar Tester
Large Meter Testers
Lead Test Kits
Leak Correlators
Leak Detectors
Lift Station Panel (Central)
Line Tracers
Long Handled PE Dipper
Lufkin Measuring Wheel
Magnetic Locators
Magnetic Stirrer
Manhole Inspection Mirror w/Light
Meter Testers
Microscopes
Multi-Meters
Optical Range Finders
ORP Meters
pH Meters
Portable Flow Meter
Portable Jar Mixer
Portable Sewer Line Inspection System
Portable Ultrasonic Flowmeter
Power Distribution Box
Pressure Recorders
Pressure Relief Valves
Rain Gauges
Rapid Deployment Repeater System
Regal Gas Chlorinator
Rotation Meters
Satellite Phone
SCBA
Semi-Trailer
Sewer Line Video
Sludge Judge
Small Meter Tester
Smoke Blower
Soil Extraction Kit
Solar Charging Kit
Sulfide Test Kit
Suspended Solids
Interface Level Analyzer
Tensette Pipet
Test Kits/Lab
Test Kits/Water Quality
Thickness Gauges
Total Dissolved Solids tester
Trash Pump
TTHM/TOC Test Kits
Turbidimeters
Ultrasonic Flowmeter
V Notch Weir (8' Tel-Mar)
Valve Exercisers
Valve Locators
VFDs
Video Camera (Push)
Voltage Converter
Water Level Indicators
Water Quality Parameter Test Kit
Weather Proof Recorders
Weighted Stand & Sample Cup for Tracer
Well Sounders
YSI Dissolved Oxygen Meter

FLORIDA RURAL WATER ASSOCIATON
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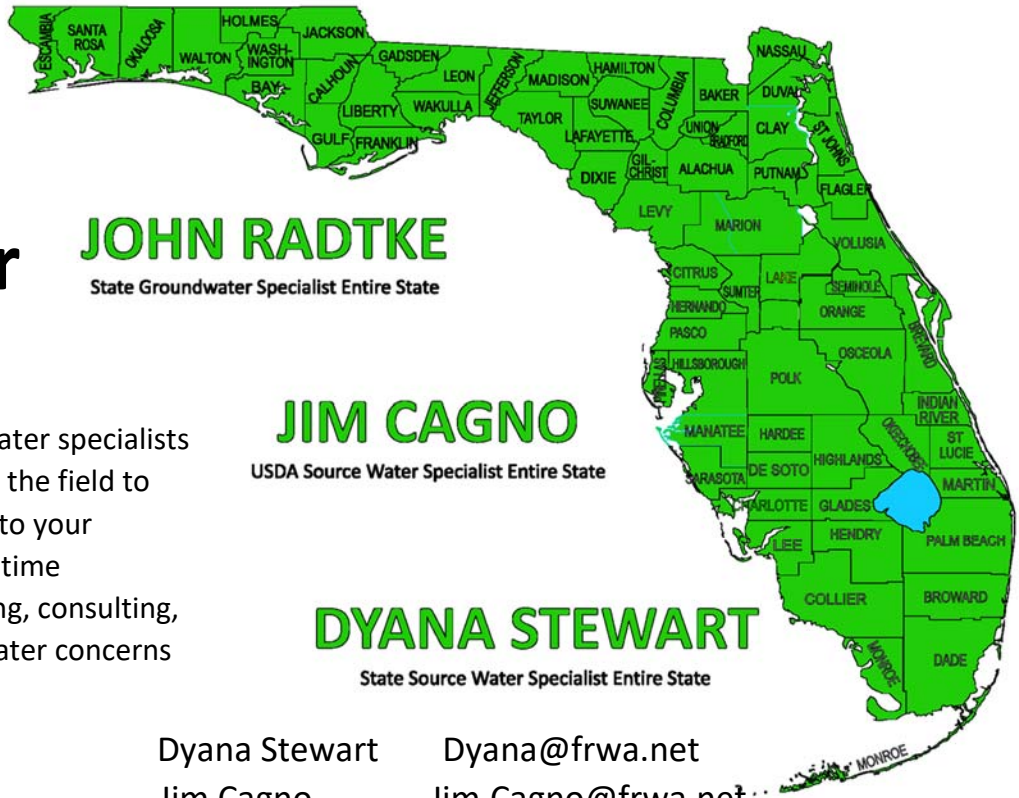
Source Water and Ground Water Specialists



The Association has two (2) source water specialists and one (1) groundwater specialist in the field to provide technical assistance services to your systems and communities. These full time technicians assist with troubleshooting, consulting, and correcting surface and ground water concerns throughout the State of Florida.

DEP Source Water Specialist	Dyana Stewart	Dyana@frwa.net
USDA Source Water Specialist	Jim Cagno	Jim.Cagno@frwa.net
DEP Ground Water Specialist	John Radtke	John.Radke@frwa.net
Source Water/Groundwater Supervisor	Ben Lewis	Ben.Lewis@frwa.net