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WQX Ladders

Goals for Today

Identify ways to increase the amount of accessible, documented data available for assessments and analysis

Share examples of data management strategies being deployed across programs and nationally

Learn how these resources can generate more data for your program and make submitting to WQX easier

The screenshot displays a web application interface for water quality monitoring. The main map shows the Sioux Falls watershed boundary in a dashed black line, with several monitoring points marked by purple squares. Two points are highlighted with yellow circles and labeled with values: 2.59 and 1.35. The map includes a search bar at the top left with the text "sioux falls" and buttons for "Go" and "Use My Location". The right sidebar contains a navigation menu with tabs for "Overview", "Swimming", "Eating Fish", "Aquatic Life", and "Drinking". The "Overview" tab is selected, showing a title "Sioux Falls, South Dakota" and "WATERSHED: Falls of the Big Sioux River (101702031203)". Below the title is a section titled "Your Waters: What We Know" with a "Show Text" toggle. The text explains that waters in the community are connected within a local watershed and that water quality is monitored for physical, chemical, and biological factors. A "DISCLAIMER" section is also present. At the bottom of the sidebar, there are three statistics: "2 Waterbodies" (with a blue toggle), "46 Monitoring & Sensors" (with a blue toggle), and "5 Permitted Dischargers" (with a grey toggle). A legend for "Waterbody Conditions" shows a green circle for "Good", a red circle for "Impaired", and a purple triangle for "Condition Unknown".

Let's get started!

sioux falls

Go OR Use My Location

Buffalo Ridge

Webster Grove

Sioux Falls Regional Airport

Norton Acres

Sioux Falls

Shindler

Good Earth State Park

2 km
2 mi

City of Sioux Falls, South Dakota Game Fish and Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

Powered by Esri

Sioux Falls, South Dakota
WATERSHED: Falls of the Big Sioux River (101702031203)

Overview Swimming Eating Fish Aquatic Life Drinking

Overview Show Text

Your Waters: What We Know

Waters in your community are connected within a local watershed. The dashed outline on the map shows your watershed.

Water quality is monitored for physical, chemical and biological factors. The monitoring results are assessed against EPA approved water quality standards or thresholds. Water can be impaired, meaning it is not able to be used for certain purposes... [Show more](#)

DISCLAIMER

2 Waterbodies

46 Monitoring & Sensors

5 Permitted Dischargers

Waterbodies Monitoring & Sensors Permitted Dischargers

Waterbody Conditions:

Good Impaired Condition Unknown

Expand All

Agenda

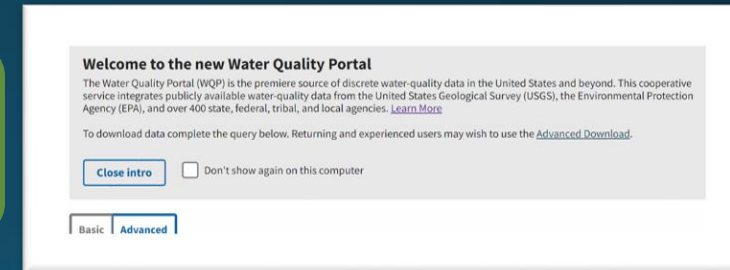
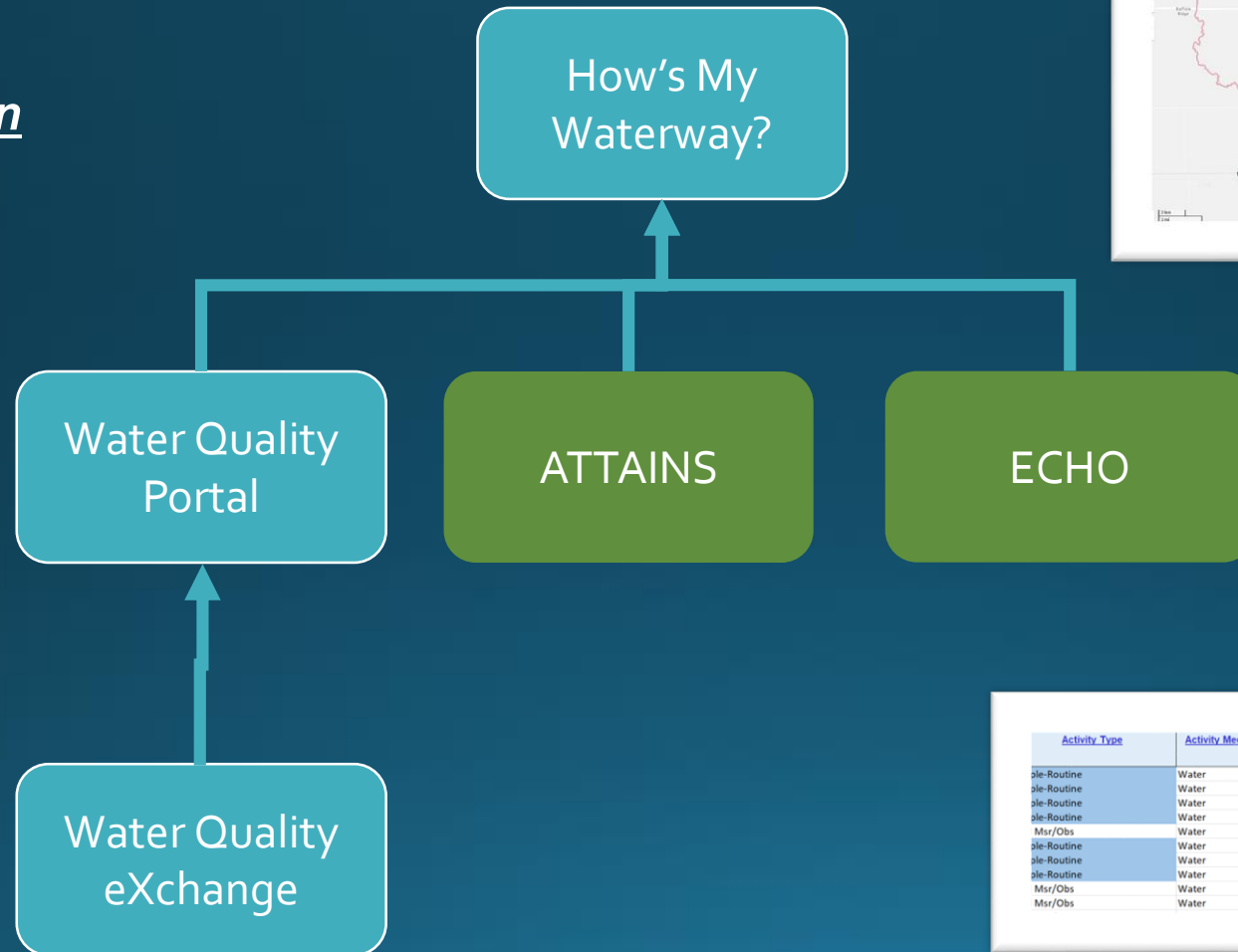
- What is WQX, the Water Quality Portal, How's My Waterway
- Pre-conference responses (discussion)
- Lifecycle of Data – Supporting DM at each step
- How does data roll up locally, regionally, nationally?
- Data Management (DM) strategies deployed across the country
- Example from Arizona (Assessment Dashboard, Arizona Water Watch)

Standards, Data, & Information

Public Information

Data Services

Data Standard



Activity Type	Activity Media Name	Activity Start Date	Activity Start Time	ACTIVITY_START Time Zone	Depth/Height Measure	DEPTH/HEIGHT Depth/Height Unit	SAMPLE COLLECTION Method ID	SAMP Met
ple-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
ple-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
ple-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
ple-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
Msr/Obs	Water	3/1/2017	10:01	MST			Field Sample Method	
ple-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
ple-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
ple-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
Msr/Obs	Water	3/3/2017	10:01	MST			Field Sample Method	
Msr/Obs	Water	3/3/2017	10:01	MST			Field Sample Method	

What Is WQX?



WQX is a 'standards' based approach for sharing water quality monitoring data



WQX defines a common data model for communicating water quality data (sample data)



Designed to be automated



The structure of partner data systems don't matter, so long as they can map to WQX



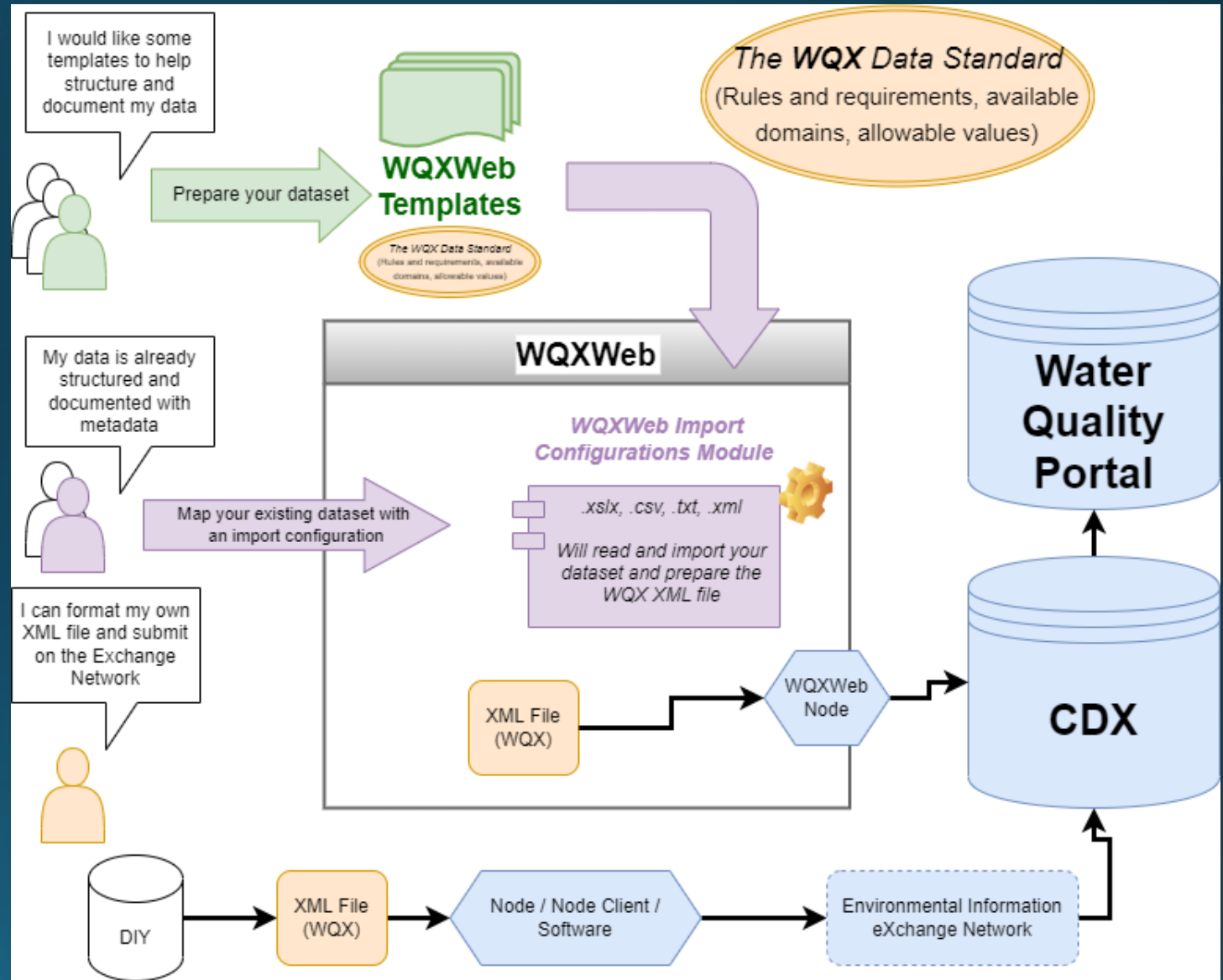
WQX also provides a standard format for publishing data

WQX Pathways

There are several ways to submit your data to WQX

In the end, you always send a 'WQX' XML file

How you get there is up to you



Pre-conference Responses

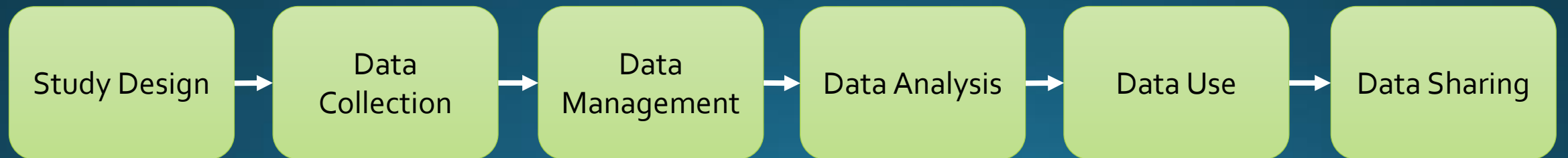


Lifecycle of water data

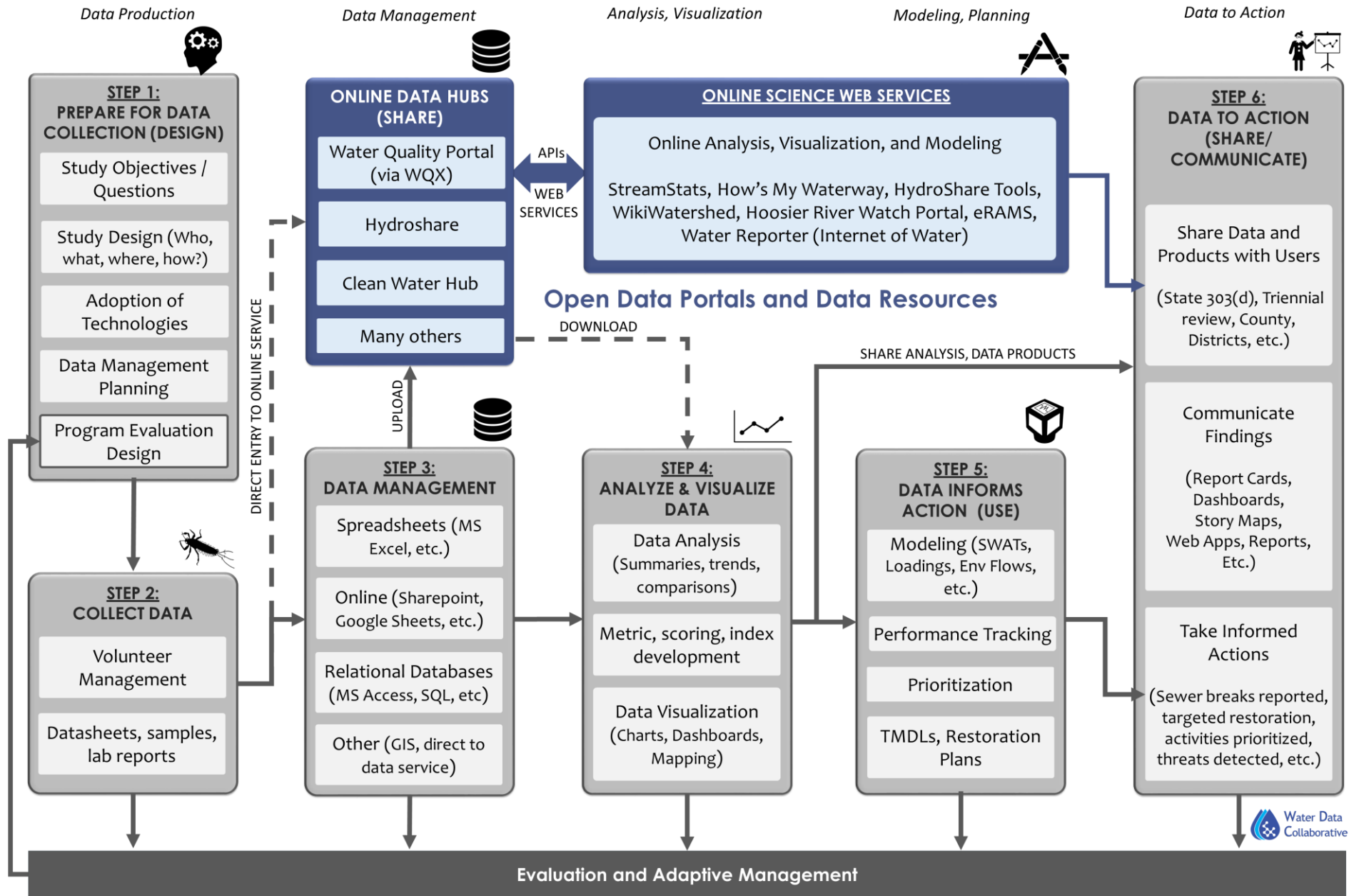


For external partners or even other programs in your agency:

The requirements and challenges of DM create barriers at each of these steps



A Community Water Science Framework: Powered with Open Data and Technologies



1. Study Design Elements

- State supported participatory monitoring program
- Site identification / coordination
- Model QAPPs
- SOP manual
- Grant funding
- Tiered programs

Data
doesn't just
accidentally
manage
itself



MISSOURI STREAM TEAM
VOLUNTEER WATER QUALITY MONITORING PROGRAM
Standard Operating Procedure

Related Topics: [Managing the Quality of Environmental Information](#)

CONTACT US

Quality Assurance Project Plan Development Tool

This tool contains information designed to assist in developing a Quality Assurance (QA) Project Plan that meets EPA requirements for projects that involve surface or groundwater monitoring and/or the collection and analysis of water samples. The structure of the tool is intended to step one through the thought process of planning a project, as well as to provide a framework for documenting the plan. The tool is divided into modules as follows:

Benefits:

- Data Quality / Elements established up-front
- Gets everyone on the same page
- Saves resources avoiding replication of efforts

2. Collection in the Field

- Data Sheets
- Monitoring Data Applications
- Sample processing
- Offer trainings in the methods you want deployed



Electronic Monitoring Forms Now Available!



Texas Stream Team has launched electronic monitoring forms which allows monitoring data to be inputted directly in the field when necessary! [Learn more >>](#)

Texas Stream Team

EXAMPLE FORM

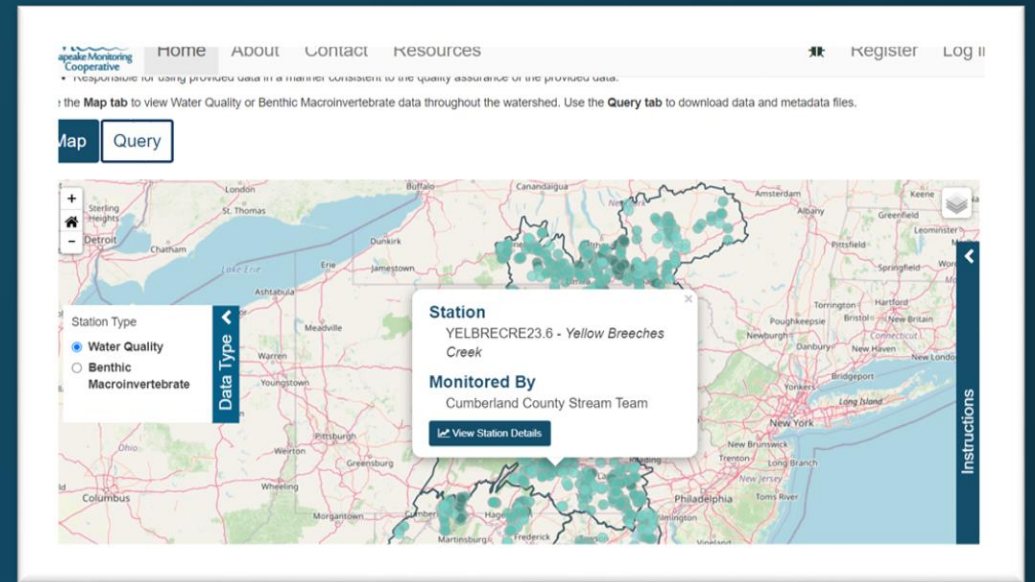
GEORGIA ADOPT-A-STREAM: Chemical Form

To be conducted every month

SITE INFORMATION	Group Name: <u>Chattahoochee Hills Creek Keepers</u>	Event Date: <u>05/11/2020</u> (MMDDYYYY)
	Group ID: <u>G-1214</u> Site ID: <u>S-1214</u>	Time Sample Collected: <u>02:30 pm</u> (HHMM am/pm)
	Stream Name: <u>Little Bear Creek</u>	Time Spent Sampling: <u>30</u> (Min)
	Monitor(s): <u>Mary and Matt Mayfly</u>	Total Time Spent Traveling (optional): <u>30</u> (Min)
	Number of Participants: <u>2</u>	Furthest Distance Traveled (optional): <u>12</u> (Miles)
WEATHER	Present conditions (check all that apply)	
	<input type="checkbox"/> Heavy Rain <input type="checkbox"/> Steady Rain <input type="checkbox"/> Intermittent Rain <input type="checkbox"/> Overcast <input type="checkbox"/> Partly Cloudy <input checked="" type="checkbox"/> Clear/Sunny	
	Amount of rain, if known?	
	Amount in Inches: <u>0.5</u>	
	In Last Hours/Days: <u>3</u>	
	*Refer to wunderground.com for rainfall data	
	Flow/Water Level: (check all that apply) <input type="checkbox"/> Dry <input type="checkbox"/> Stagnant/Still <input type="checkbox"/> Low <input checked="" type="checkbox"/> Normal <input type="checkbox"/> High <input type="checkbox"/> Flow (over banks)	

3. Data Management

- Data Management Templates
- Training/User Guides
- Distributed databases
- Online data hub / management service
- Carry the electronic submissions forward



Support for DM
upfront is a win:win
for data producers
and future users



Chesapeake Data Explorer Resources

- Chesapeake Data Explorer Flyer
- Chesapeake Data Explorer Manual
- Data Dictionary

Data conversion to the bulk upload tools:

- Data Conversion Macro Template
- Data Conversion Macro Guide



Tutorials

- Data Explorer Tutorial Video's

Bulk Upload Templates:

- Stations Template
- Users Template
- Water Quality Samples Template
- Benthic Samples Template

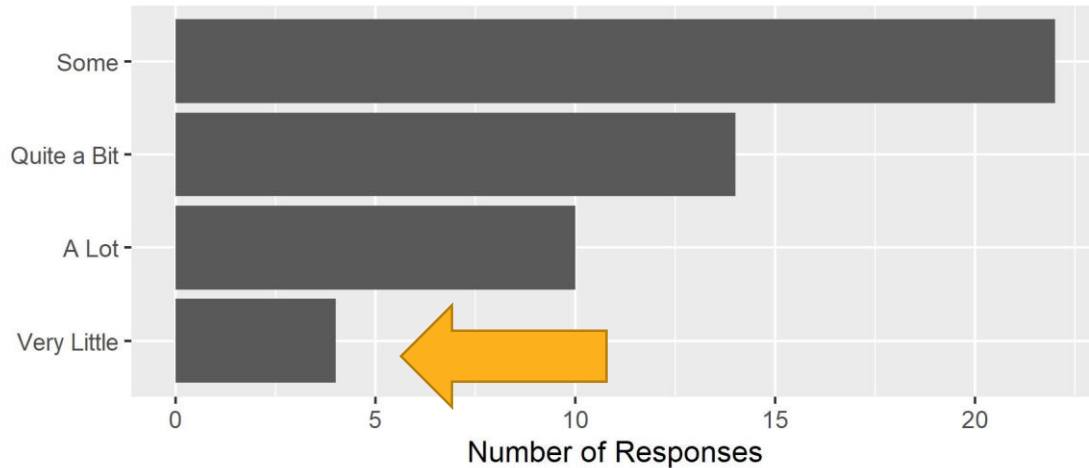
4/5. Data Use / Re-use

Re-Use of external data is a strong motivation for sharing

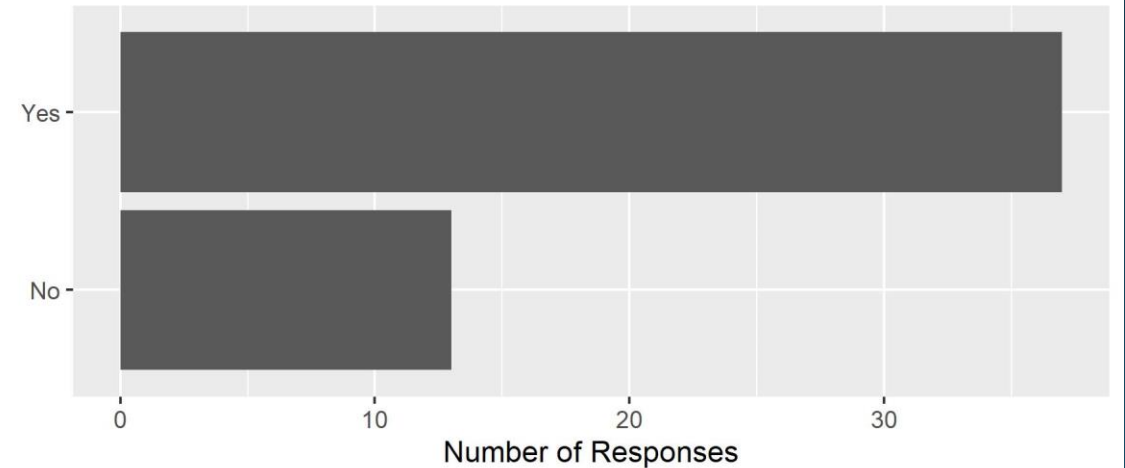
There's only so much you can do to manage external data when it reaches this step.

- Data visualization dashboards (HMW, WikiWatershed, etc.)
- Use of data from the WQP in CWA assessments / modeling
- *Data calls – Templates help, prior DM support inc. qual/quant of data

Q4 - Roughly how much time does your state/territory spend formatting/managing those data?



Q5 - Does your state/territory ask that those data be served in a specific format/source?



6. Data Sharing

- Publish to WQX on behalf of other programs
- Develop and release an import config to match DM templates or your data call template
- Support an online data hub
- Connect to training resources

Did you know
EPA offers 1-
on-1 assistance
and contractor
support?!

EPA
Home Page Setup Domain Values Import & Submit Review Administrator Help

Import Configuration
Return Save Save As Save To File Cancel Delete Change User Rights Options Show Columns as Numbers

Type: Monitoring Locations
Owner: Adam Griggs [Change Owner](#)
Name: Adam Locations test
Description: Stations / Site Information import
File Type: Microsoft Excel (xlsx)
Worksheet(s) to Import: 4th (note: the "1st" worksheet is the left-most tab of the Excel Workbook)
[View the template that this was based on](#)

Generated Values (not in your import file):

Entity	Organization ID
Organization	
Monitoring Location	Monitoring Location Country Code

Columns (in your import file):

Column	Entity	Element
A	Monitoring Location	Monitoring Location ID
B	Monitoring Location	Monitoring Location Name
C	Monitoring Location	Monitoring Location Type

Clean Water Hub
Share the water quality data from your local streams. Make an impact in communities across the nation.

[SIGN UP](#) [SIGN IN](#) [EXPLORE THE MAP](#)

United States

Examples from Arizona