

# How's My Waterway

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The screenshot shows a web browser window with the URL `mywaterway-stage.app.cloud.gov`. The page title is "Community Details" and the location is "Chattanooga, Tennessee" with the watershed "Tennessee River-Nickajack Lake Upper (060200011202)".

**Overview**  
Overview of your water.

**Monitoring**  
Who monitors your water?

**Drinking Water**  
How is my community's drinking water?

**Fish Consumption**  
Can I eat the fish or shellfish?

**Recreation**  
Is it safe to fish or swim in your water?

**Ecological Life**  
Does your water support healthy aquatic life?

**Potential Issues**  
What threatens your clean water?

**Protect**  
How can you help?

**Restore**  
What is being done to restore your water?

## Overview

Water connects communities. Your local water resources may include rivers, lakes, streams, and groundwater. The Clean Water Act enables federal, state, tribal, and local partners to work together to monitor water quality and use this information to protect your water resources.

## Your Waters: What We Know

Waters in your community are connected within a 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 state [water quality standards](#) approved by EPA.

Water can be impaired, meaning it is not fulfilling its [designated use](#). This can be caused by man-made pollutants or alterations, such as changing how water flows.

<b>22</b> Waterbodies <input checked="" type="checkbox"/> Show on map	<b>80</b> Monitoring Locations	<b>103</b> Permitted Dischargers
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# Acknowledgements

- Kiki Schneider, US EPA – Project Lead
- Brad Cooper, ERG – Lead Developer
- Many data providers that provide access to relevant information:
  - ATTAINS, SDWIS, ICIS, WQP, GRTS, River Network, NARS, and Watershed Index Online

# How's My Waterway

- Outline

- Big Picture: Telling a story about water
- Open Water Data: Concepts / Design Principles
- How's My Waterway



# What can you tell me about my water?

Is it safe to drink?

Can I swim in it?

Can I fish?

Is it polluted?

If it is polluted, what are you doing about it?

If it isn't polluted, what are you doing to protect it?

What can I do to help?

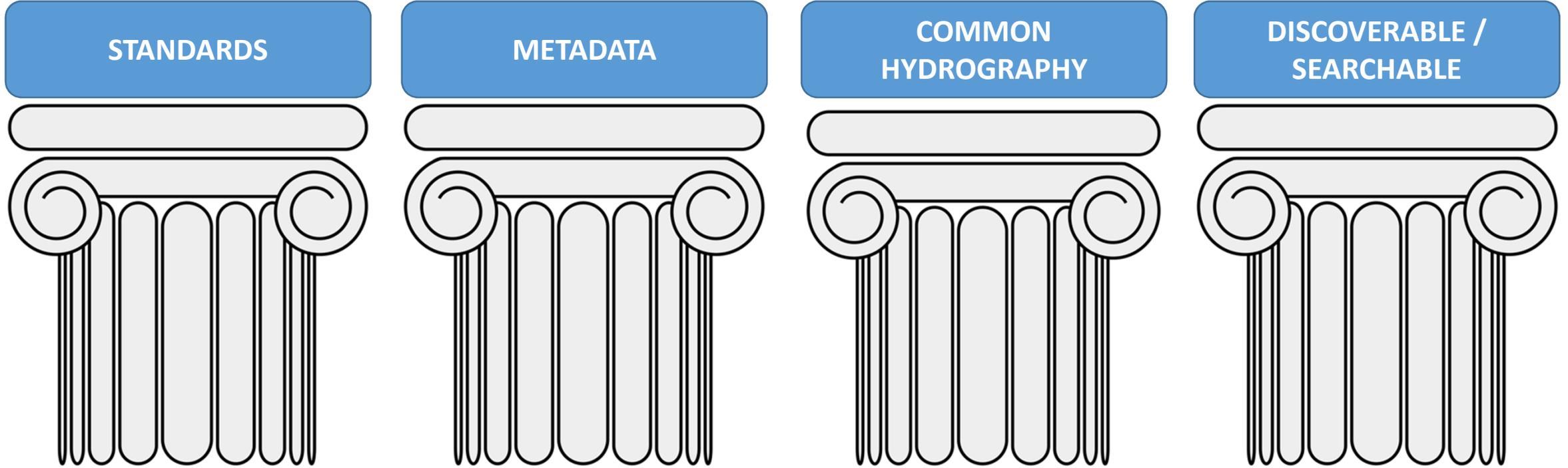
# Pulling the Pieces Together: Telling the Water Story

Provide the public with usable, meaningful information

Communicate progress states, tribes, and EPA are making towards restoring or protecting water quality

Engage the public in understanding impacts on water and issues related to water





# FOUR PILLARS OF OPEN WATER DATA

# How Do We Get There: Building Blocks

## Sampling Data

STANDARDS	✓
METADATA	✓
TIED TO HYDROGRAPHY	✓
DISCOVERABLE	✓

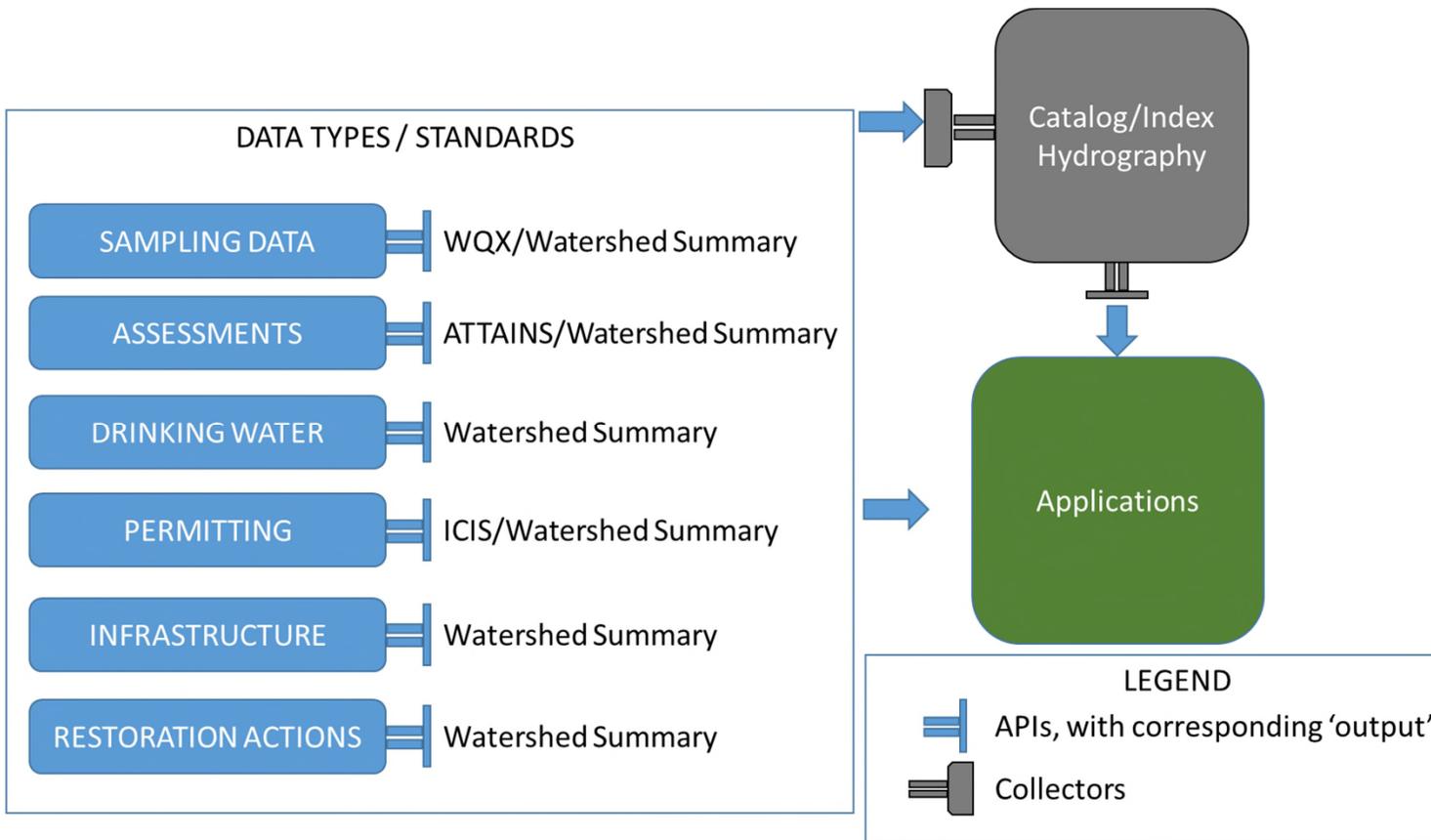
## Real Time Data

STANDARDS	✓
METADATA	GAP
TIED TO HYDROGRAPHY	SOME
DISCOVERABLE	SOME

## Other Attributes

STANDARDS	VARIES
METADATA	VARIES
TIED TO HYDROGRAPHY	VARIES
DISCOVERABLE	VARIES

COMMON HYDROGRAPHY



- Each system supports an API with a defined output
- Where common, generic outputs can be defined, those outputs are used
- Points of integration are also defined between systems
- All data are indexed for quick discovery as well as referenced to a common hydrography to enable advanced searches/discovery

# Using Standards to Integrate

# Principles of Integration

- No direct database access. All interaction is through an API (this is true for the system owners as well)
- Identify points of integration between systems to enable easy discovery and entry points across systems
- Data indexes (catalogs) allow quick discovery of data
- Data indexes can also facilitate common search functionality across systems
- Data are all connected to a common Hydrography

## Points of Integration:

- Assessed Water ↔ Monitoring Locations
- Assessed Water ↔ Permitted Facility
- Assessed Water ↔ Restoration Actions
- Pollution Budgets ↔ Permitted Facilities



# Design Concepts

- All information is based on a service
- Tell the story at multiple levels (National, State, County, Local)
- Integrate data across systems
- Allow for in-depth stories in addition to interactive content

-  **Community Overview**
-  **Drinking Water**  
How is my community's drinking water?
-  **Recreation**  
How can I stay healthy fishing & swimming?
-  **Ecological Life**  
How does our water impact ecological life?
-  **Potential Issues**  
What puts clean water at risk?
-  **Detect**  
Is the water being tested?
-  **Restore**  
What is being done to restore our water?
-  **Protect**  
How can I help?

## Community

Water Connects us. Thanks to the Clean Water Act, the EPA, states, tribes, volunteer groups, and organizations work together to monitor water quality. This information is shared with the states and the EPA to help protect and restore our Nations Waters.

## Your Waters: What We Know

The outline on the map shows your local sub-watershed or HUC 12.

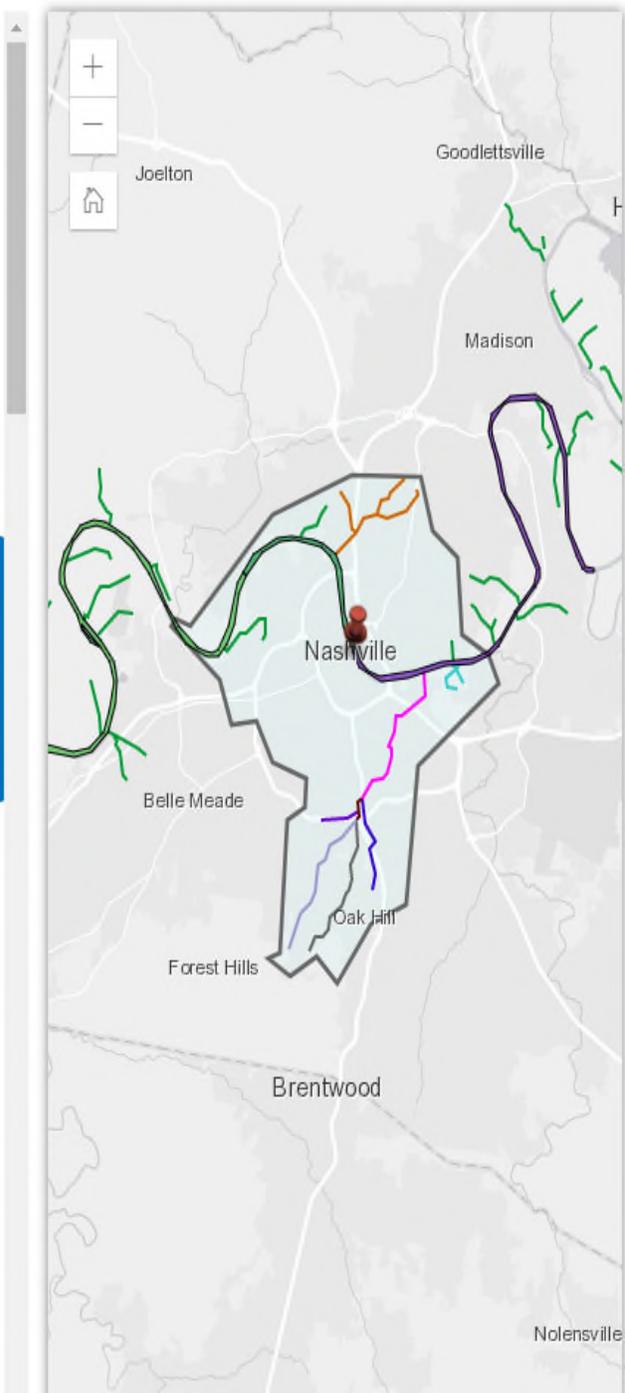
- 1**  
Drinking Water Provider
- 26**  
Monitoring Stations  
 Show on map
- 174**  
Permitted Dischargers  
 Show on map

### Water Quality Assessments were conducted for:

- ✓ fish, shellfish and wildlife protection
- ✓ agricultural use
- ✓ industrial use
- ✓ fishing, swimming and boating
- ✓ drinking water

**Show waterbodies on map** [Hide Full Legend](#)

Waterbody Name	Color in Map	Condition	Cause of Impairment(s)
<i>Click to view on map</i>			



# National Level Information: NARS

coastal systems. EPA, states and tribes survey a representative sample of our nation's waters to provide an accurate snapshot of water condition and track changes over time.

## Less than Half of Our Waters Support Healthy Ecosystems

Rivers and Streams	Lakes	Coasts	Wetlands
Rivers and streams supply drinking water, support fish and other wildlife, and provide opportunities for recreation and energy production.			
<b>44% of our rivers and streams are not healthy</b> <span>▼</span>			
<b>58% of our rivers and streams have nutrient pollution</b> <span>▲</span>			
Nutrients like nitrogen and phosphorus are important, but too much of a good thing can become a bad thing. Nutrient pollution can come from farm fertilizer, wastewater treatment, atmospheric deposition, animal manure, and urban runoff.			
Nutrient pollution can lead to algal blooms and fish kills, leading to a loss of fishing and recreational opportunities. Nutrient pollution threatens drinking water.			
Phosphorus pollution is getting worse across the country.			
<b>24% of our rivers and streams have unhealthy riverside vegetation</b> <span>▼</span>			

Learn what you can do to help protect local waterbodies: visit the Community Tab and click "Protect."

## Take Note: Nutrient Pollution is Widespread and Worsening

Nutrient pollution is one of America's most widespread, costly and challenging environmental problems. While nutrients are important, too much of a good thing can become a bad thing.



# State Level

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- Ecological Life**  
How does our water impact ecological life?
- Fish Consumption**  
Can I eat the fish or shellfish?
- Drinking Water**  
Are waters suitable as a drinking water source after treatment?
- Other**  
What other uses are being evaluated or protected?

Use: Recreation

**Rivers and Streams**

Lakes and Reservoirs

Wetlands

**RIVER** (60,434.29 miles)

12.22%	13.62%	74.16%
Fully Supporting: 7,386.7 miles (12.22%)	Not Supporting: 8,232.37 miles (13.62%)	
Insufficient Info: 0 miles (0.00%)	Not Assessed: 44,815.22 miles (74.16%)	

Top Pollutants

**Bacteria and Other Microbes (Pathogens)**  
7,784.41 miles (94.56%)

94.56%

**BACTERIA AND OTHER MICROBES (pathogens)** are potentially disease-causing organisms from

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- Recreation**  
How can I stay healthy swimming & boating?
- Ecological Life**  
How does our water impact ecological life?
- Fish Consumption**  
Can I eat the fish or shellfish?
- Drinking Water**  
Are waters suitable as a drinking water source after treatment?
- Other**  
What other uses are being evaluated or protected?

Use: Fish and Aquatic Life

**Rivers and Streams**

Lakes and Reservoirs

Wetlands

**RIVER** (60,434.29 miles)

23.82%	18.10%	57.84%
Fully Supporting: 14,392.67 miles (23.82%)	Not Supporting: 10,938.22 miles (18.10%)	
Insufficient Info: 150.5 miles (0.25%)	Not Assessed: 34,952.9 miles (57.84%)	

Top Pollutants

**Degraded Habitat (Habitat Alterations)**  
8,286.94 miles (75.76%)

# Community Level – Monitoring (Water Quality Portal)

The screenshot displays the 'Water Monitoring' section of the Water Quality Portal. On the left, a navigation menu includes categories like 'drinking water?', 'Fish Consumption', 'Recreation', 'Ecological Life', 'Potential Issues', 'Protect', and 'Restore'. The main content area features a summary of 80 monitoring locations and 5 organizations, with a button to 'Show all monitoring locations on map'. Below this, five blue boxes provide counts and 'Show on map' options for: Nutrients Monitoring Locations (45), Pesticides Monitoring Locations (6), Metals Monitoring Locations (14), Sediments Monitoring Locations (25), and Microbiological Monitoring Locations (42). To the right, a map shows the watershed boundary with colored squares representing monitoring locations. A scale bar indicates 6 km and 4 mi. The map is powered by Esri.

## Water Monitoring

In this area, 80 water monitoring locations and 5 organizations help the EPA collect water samples to help monitor pollutants and assess your community's water.

Show all monitoring locations on map

Monitoring Category	Count	Show on map
Nutrients Monitoring Locations	45	<input checked="" type="checkbox"/>
Pesticides Monitoring Locations	6	<input type="checkbox"/>
Metals Monitoring Locations	14	<input type="checkbox"/>
Sediments Monitoring Locations	25	<input type="checkbox"/>
Microbiological Monitoring Locations	42	<input type="checkbox"/>

## Water Evaluations

Waters in this watershed were evaluated for (click on an evaluated use to

# Community Level - Can I Swim? (ATTAINS)

The screenshot shows a web application interface for water quality assessment. On the left is a navigation menu with categories: Overview, Monitoring, Drinking Water, Fish Consumption, Recreation (highlighted), Ecological Life, Potential Issues, Protect, and Restore. The main content area is titled "Recreation" and includes a descriptive paragraph. Below this, it states "Your water has been assessed for:" followed by a teal button for "Fishing, Swimming and Boating". A summary text indicates that 15 waterbodies have been assessed. A legend defines three categories: Assessed Good (blue line), Assessed Impaired (orange line), and Unassessed or Condition Unknown (dashed grey line). A donut chart shows the distribution: 8% Assessed Good, 20% Unassessed or Condition Unknown, and 72% Assessed Impaired. On the right, a map displays the Chattahoochee River basin with colored lines representing the assessment status of various waterbodies. A scale bar at the bottom right of the map shows 6 km and 4 mi.

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## Recreation

Recreational water activities can include fishing, swimming, boating, and surfing. EPA, states, and tribes monitor and assess water quality to keep you safe and healthy while recreating.

### Your water has been assessed for:

Fishing, Swimming and Boating

15 waterbodies have been assessed for fishing, swimming and boating.

**Displayed on the map:**

- Assessed Good
- Assessed Impaired
- Unassessed or Condition Unknown

● Assessed Good (8%)  
● Unassessed or Condition Unknown (20%)  
● Assessed Impaired (72%)

Fishing, Swimming and Boating

6 km  
4 mi

# Potential Issues (ATTAINS)

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monitor and assess your local waters and protect and restore them.

Your water has:

**74%**

Of Assessed Waters are impaired

Show on map

**5**

Permitted Dischargers with Current Significant Violation

Show on map

**Pollution Categories**

Pollutants can impair water in your watershed. Click on the impairments below to view them on the map.

Pollution Category <i>Click to view on map</i>	% of Assessed Watershed Area
All	73.70
Nutrients	35.77
Pathogens	50.83
Sediments	1.21

**Drinking Water**  
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**Potential Issues**  
What threatens your clean water?

**Protect**  
How can you help?

**Restore**  
What is being done to restore your water?

Esri, HERE, Garmin, NGA, USGS, NPS | Esri, HERE, NPS Powered by Esri

# Protection – Watershed Groups (River Network)

The screenshot shows a web application interface for watershed protection. The browser address bar displays `mywaterway-stage.app.cloud.gov`. On the left, a vertical navigation menu contains the following items:

- Overview**: Overview of your water.
- Monitoring**: Who monitors your water?
- Drinking Water**: How is my community's drinking water?
- Fish Consumption**: Can I eat the fish or shellfish?
- Recreation**: Is it safe to fish or swim in your water? (This item is highlighted with a right-pointing arrow.)
- Ecological Life**: Does your water support healthy aquatic life?
- Potential Issues**: What threatens your clean water?
- Protect**: How can you help? (This item is highlighted with a green shield icon.)
- Restore**: What is being done to restore your water?

The main content area is titled **Protect** and includes the text: "You can help keep your water clean. Together, we can protect your community's water for future generations." Below this text is a blue box that reads: "Nonprofits active in your watershed" with the number **4** and "Nonprofit Locations:" with a small green square icon.

The **Nonprofit Information** section lists two groups:

- Chickamauga-Hiwassee Watershed Team**  
Address: 1101 Market Street, Psc 1E  
Zip Code: 37402  
Website: N/A  
Facebook: N/A  
Twitter: N/A
- Tennessee River Gorge Trust**  
Address: 535 Chestnut St., Suite 214  
Zip Code: 37402  
Website: N/A  
Facebook: N/A

On the right, a map shows a street grid with a red pin. A popup window titled "Nonprofit Location" provides details for the selected location:

- Name**: TVA Volunteer Monitoring
- Address**: 1101 Market St
- Zip Code**: 37402
- Website**: <http://www.mtsu.edu/waterworks/groups.ph>

The map includes a scale bar showing 0.4 km and 0.3 mi, and a footer that reads "Esri, HERE, Garmin, INCREMENT P, NGA, USGS | Esri, HERE Powered by Esri".

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QUESTIONS?