EPA Waterways

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- About How's My Waterway
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- Fish Advisories
- Polluted Runoff Control Projects
- National Fish Habitat Partnership
- Other Water Apps

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- Search
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Downloads
EPA Web: Data Downloads

Description
State and Watershed Geospatial Data
National Geospatial Datasets

ATTAINS Program Data
- 303(d) Listed Impaired Waters NHD Indexed Dataset with Program Attributes
- 305(b) Waters As Assessed NHD Indexed Dataset with Program Attributes
- 2002 Impaired Waters Baseline NHD Indexed Dataset
- Watershed Boundaries for the 2002 Impaired Waters Baseline
- Impaired Waters with TMDLs NHD Indexed Dataset with Program Attributes

BEACH Program Data
- 2009 Beaches NHD Indexed Dataset
- 2009 Beaches KML Files for Viewing in, e.g. Google Earth

Water Quality Standards Program Data
- 303(c) Water Quality Standards NHD Indexed Dataset

Voyager Search
- Format Category
- Format Type
- Format
- Format Keyword
- Feature type
- Geometry type
- Keywords
- Properties
- Author
- Spatial Reference
- Version
- FGDC Theme
- File Extension
- Location

Williams Company
- Site Map
- Our History
- Operations and Assets

Geographic Information Services, Inc.
- Site Map
- Federal Government
Data Science for Business: Specific Example

My Data Science for Business: Book Review Tutorial ended with the Summary:

"If you are a data scientist, take this as our challenge: think deeply about exactly why your work is relevant to helping the business and be able to present it as such." Data Science for Business, pages 333

Remember: If you can’t explain it simply, you don’t understand it well enough.—Albert Einstein

GIS Inc. (an innovative company and web site) asked me to do that to help them understand my Data Science for NGA Demo work and how it might help their client, Wiliams and Co., use Data Science. My briefing covered the following topics:

• Brief Introduction to My Semantic Community and Prior EPA Career
• Brief Mention of the Federal Big Data Working Group Meetup
• Voyager in NGA Demo
• Location Analytics in Spotfire 6
• EPA Waterways Data-Voyager Search-Data Science Example

Questions and Answers:

◦ How was the data collected?
  • So need a Williams Data Ecosystem
◦ Where do you store the data?
  • Spreadsheets, Shape Files, etc. imported into Spotfire and saved as MindTouch attachments
◦ What are the data results?
  • I use Voyager like a Geographic Clearinghouse to find GIS data and then Spotfire 6.0 to analyze it.

I followed The Data Mining Process in Data Science for Business page 27:

• Business Understanding (pages 27-28)
• Data Understanding (pages 28-29)
• Data Preparation (pages 29-30)
• Modeling (page 31)
• Evaluation (pages 31-32)
• Deployment (pages 32-34)

Business Understanding

So a good business understanding question is: What is the spatial relationship between Williams Co. current and planned activities and EPA Waterways data?

Data Understanding

I first tried the Voyager Search on EPA Waterways data. It gave 282,026 hits of which 278,816 are GIS, 10,029 are SHP, etc. I thought the EPA Geospatial Data seemed much easier to use, it was..

I inventoried the EPA Waterways National GIS Datasets in spreadsheet tabs (both file structure and content) so I would have a good comprehension of the data ecosystem to work with for business question.

Preparation

The data format for the EPA Waterways National GIS Datasets were Excel and Shape which were directly importable into Spotfire so very little data preparation was needed.

Modeling

The initial model I tried was 4 rectangular visualizations in Spotfire: Text for navigation and metadata, Table for Excel and Shape, and Map for Shape Points and Boundaries. Sometimes there were more that 4 because of Change Logs, and sometimes fewer because there were no Excel Attributes files associated with the Shape Boundary files.

Evaluation

The initial evaluation criteria were to import all 48 files consisting of 4,163,494 rows and 651 columns into Spotfire and organize them according to the model described above. So about 2.5 GB of raw files became about 2.5 GB of Spotfire file.
Deployment

Deployment was publishing the 2.5 GB Spotfire file to the Web Player which took several hours because of the large file size.

The Spotfire Knowledge Base* contains 8 tabs:

- 303(d) Listed Impaired Waters
- 305(b) Waters
- 2002 Impaired Waters
- Watershed Boundaries 2002
- Impaired Waters with TMDL
- 2009 Beaches
- Water Quality Standards Program
- Data Ecosystem

* Structured Mashup

The next step is to include the Williams and Company spatial data.

**TO DO LIST:**


Do 8. [EPA Web: Data Downloads](http://semanticommunity.info/Data_Science/EPA_Waterways) Download and Try in Spotfire **DONE**

**Slides**

[Slides](http://semanticommunity.info/Data_Science/EPA_Waterways)
Data Science for Business: EPA Waterways

Data Science for Business

Data Science for Business, pages 347 & 333

Dispatching Our Code Ninjas to Find Some Tasty Tidbits in Your Area...

http://gisinc.com/TakeAPeek.html
Data Science for NGA Demo

Web Link

Spotfire Desktop: NGA Demo Federation of Data

Web Player
Briefing to GISInc.com

• Brief Introduction to My Semantic Community and Prior EPA Career
• Brief Mention of the Federal Big Data Working Group Meetup
• Voyager in NGA Demo
• Location Analytics in Spotfire 6
• EPA Waterways Data-Voyager Search-Data Science Example
• Questions and Answers:
  – How was the data collected?
  • So need a Williams Data Ecosystem
  – Where do you store the data?
  – What are the data results?

The Data Mining Process

Data Science for Business, pages 27
The Data Mining Process

- Business Understanding
- Data Understanding
- Data Preparation
- Modeling
- Evaluation
- Deployment

Business Understanding 1

Data Science for Business, pages 27-28

- Business projects seldom come pre-packaged as clear and unambiguous data mining problems. Often recasting the problem and designing a solution is an iterative process of discovery.
- The initial formulation may not be complete or optimal so multiple iterations may be necessary for an acceptable solution formulation to appear.
- Often the key to a great success is a creative problem formulation by some analyst regarding how to cast the business problem as one or more data science problems.

Business Understanding 2

http://williamscom.files.wordpress.com/2013/05/wmb_map_all1.pdf
Data Understanding 1

Data Science for Business, pages 28-29

- If solving the business problem is the goal, the data comprise the available raw material from which the solution will be built. It is important to understand the strengths and limitations of the data because rarely is there an exact match with the problem. Historical data often are collected for purposes unrelated to the current business problem, or for no explicit purpose at all. A customer database, a transaction database, and a marketing response database contain different information, may cover different intersecting populations, and may have varying degrees of reliability.

Data Understanding 2

http://voyagerdemo.com/1.9/voyager/#...erways%20Data/
Data Understanding 3


Data Understanding 3

- GCN Awards: EPA Site Taps Well of Water Data
  - The Environmental Protection Agency has maintained public databases on the condition of rivers, lakes, and streams for decades, but until about a year ago, anyone who wanted to get at that data had to wade through esoteric query languages like SQL or type in complex branch queries to try to navigate the databases or resort to a freedom of Information Act request.

- Project at a glance:
  - Name of project: How's My Waterway?
  - Office: EPA Office of Wetlands, Oceans, and Watersheds/Office of Water
  - Technology: Query, jQuery Mobile, AngularJS, Leaflet, Object Relations, AJAX, Cascading Style Sheets, Ext JS, ArcGIS API, Bing Maps, Google Analytics, Microsoft Bing Maps, Location API, Oracle, Oracle Spatial
  - Time to implementation: Less than a year
  - Goal: Hard-to-read technical reports on the condition of the nation’s waterways, buried inside hard-to-navigate databases, sometimes only retrievable via FOIA requests.
  - After: Main-language reports available in seconds via PC and mobile platforms, searchable by ZIP code, place name and, in the case of mobile devices, geolocation.

- The team includes:
  - Margarita Naber and Patty Scott of EPA’s Public Communications and Resource Management Staff
  - Alice Mayes of the agency’s Monitoring Branch
  - Laura Johnson of the Coastal Regulatory Branch
  - Tracy Ketland of the Project Management Office
  - Julie Nenett and Tatiana Vittero, working with the Watershed Branch, and
  - Brad Cooper and Steve Andrews, contractors with software development company INDUS.


How’s My Waterway

http://watersgeo.epa.gov/mywaterway/
Data Preparation 1

The analytic technologies that we can bring to bear are powerful but they impose certain requirements on the data they use. They often require data to be in a form different from how the data are provided naturally, and some conversion will be necessary.

Therefore a data preparation phase often proceeds along with data understanding, in which the data are manipulated and converted into forms that yield better results.

Typical examples of data preparation are converting data to tabular format, removing or inferring missing values, and converting data to different types.

Data Preparation 2

http://www.epa.gov/waters/data/downloads.html
http://epamap32.epa.gov/radims/
Data Preparation 2

- EPA-Web: Data Downloads
  - Technical users may want to obtain the national or state-wide mapped data, upon which How's My Waterway is based.
  - [http://www.epa.gov/water/howmywaterway](http://www.epa.gov/water/howmywaterway)
- Geospatial data for EPA Office of Water Programs, including 303(d): Impaired Waters, 305(b) Assessed Waters and Total Maximum Daily Loads (TMXs) are available for download by state or watershed, as well as at a national extent. Generally, state-level geospatial data represents the most recent data submitted to EPA by states. EPA provides TMXs by partial data in a variety of formats including Shapefile, Microsoft Excel, and ArcGIS database. This data is also accessible through the internet via the THREA Total Maximum Load (TML) and WHOI-Map. [http://www.epa.gov/officeofwater/](http://www.epa.gov/officeofwater/)
- Note: Online geospatial tools
  - [http://example.com/geoapps.html](http://example.com/geoapps.html)
- National Geospatial-Intelligence Agency
  - [http://www.gawatch.com/](http://www.gawatch.com/)
  - THREA (Total Maximum Load) Database
  - [http://www.epa.gov/officeofwater/](http://www.epa.gov/officeofwater/)

My Note: Most have Word and/or PDF for Documentation & Metadata

Modeling

**Data Science for Business**, pages 31

Modeling

- The output of modeling is some sort of model or pattern capturing regularities in the data.
- The modeling stage is the primary place where data mining techniques are applied to the data. It is important to have some understanding of the fundamental ideas of data mining, including the sorts of techniques and algorithms that exist, because this is the part of the craft where the most science and technology can be brought to bear.
- Model (from Glossary):
  - A structure and corresponding interpretation that summarizes or partially summarizes a set of data, for description or prediction.
  - Most inductive algorithms generate models that can then be used as classifiers, as regressors, as patterns for human consumption, and/or as input to subsequent stages of the data mining process.
Evaluation

- The purpose of the evaluation stage is to assess the data mining results rigorously and to gain confidence that they are valid and reliable before moving on.
- Equally important, the evaluation stage also serves to help ensure that the model satisfies the original business goals.
- Evaluating the results of data mining includes both quantitative and qualitative assessments.

Deployment

Data Science for Business, pages 32-34

Deployment

- In deployment the results of data mining—and increasingly the data mining techniques themselves—are put into real use in order to realize some return on investment. The clearest cases of deployment involve implementing a predictive model in some information system or business process.
- Model deployment (from Glossary):
  - The use of a learned model to solve a real-world problem. Deployment often is used specifically to contrast with the "use" of a model in the Evaluation stage of the data mining process. In the latter, deployment usually is simulated on data where the true answer is known.
EPA Waterways MindTouch Knowledge Base

Web Player

EPA Waterways Spotfire Knowledge Base

Spotfire Dashboard

For Internet Explorer Users and Those Wanting Full Screen Display Use: Web Player Get Spotfire for iPad App

Media, iframe, embed and object tags are not supported inside of a PDF.
Research Notes

I’ve been following your work with the Voyager implementation at NGA. I’m doing some work for the Williams Company (Oil and Gas) and we have just launched Voyager at 5 of their office locations. My team was wondering if you might have any time to relay any lessons’ learned with your implementation at NGA? http://co.williams.com/

http://williamscom.files.wordpress.c...b_map_all1.pdf

Very much looking forward to your response! Thanks again!

I use Voyager like a Geographic Clearinghouse to find GIS data and then Spotfire 6.0 to analyze it:

Geographic Information Services, Inc.
http://www.gisinc.com/
http://blog.gisinc.com/
http://showcase.gisinc.com/
Certified Information Sytems Auditor (CISA)

Brief Introduction to My Semantic Community and Prior EPA Career:

http://semanticommunity.info
http://semanticommunity.info/1i._Past_EPA_Activities

Brief Mention of the Federal Big Data Working Group Meetup (Tuesday, February 4th, 6:30-9 p.m. Tysons Corner, Virginia-Remote Attendance Offered):
Join: http://www.meetup.com/Federal-Big-Data-Working-Group/
Background and Agendas: http://semanticommunity.info/Data_Science/Federal_Big_Data_Working_Group_Meetup

Voyager in NGA Demo:
http://semanticommunity.info/Network_Centricity/NGA_Demo

Location Analytics in Spotfire 6:
http://explore.tibco.com/20140130Glo...JanuaryAM.html
http://www.screencast.com/t/HZBsDE1ooyMz

EPA Waterways Data-Voyager Search-Data Science Example:
http://gcn.com/articles/2013/10/22/g...waterways.aspx
http://watersgeo.epa.gov/mywaterway/
http://www.epa.gov/waters/data/downloads.html
http://blog.epa.gov/blog/2012/10/get...cal-waterways/

http://voyagerdemo.com/1.9/voyager/#...erways%20Data/

Questions and Answers:
Me (to All - Entire Audience):
How was the data collected?

Me (to All - Entire Audience):
Where do you store the data?

Me (to All - Entire Audience):
What are the data results?

Me (to All - Entire Audience):
So need a Williams Data Ecosystem

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**GCN Awards: EPA Site Taps Well of Water Data**

*Source: [http://gcn.com/articles/2013/10/22/g...waterways.aspx](http://gcn.com/articles/2013/10/22/g...waterways.aspx)*

*By Kevin McCaney*

*Oct 22, 2013*

The Environmental Protection Agency has maintained public databases on the condition of rivers, lakes and streams for decades. But until about a year ago, anyone who wanted to get at that data faced a labyrinthine process, either devising search queries to try to navigate the databases or resorting to a Freedom of Information Act request.
Project at a glance

Name of project: How’s My Waterway?

Office: EPA Office of Wetlands, Oceans and Watersheds/Office of Water

Technology: jQuery, jQuery Mobile, JavaScript, JavaScript Object Notation, AJAX, Cascading Style Sheets, HTML5, Esri ArcGIS and ArcGIS Server, Google Analytics, Microsoft Bing Maps Location API, Oracle, Oracle Spatial

Time to implementation: Less than a year

Before: Hard-to-read technical reports on the condition of the nation’s waterways, buried inside hard-to-navigate databases, sometimes only retrievable via FOIA requests.

After: Plain-language reports available in seconds via PC and mobile platforms, searchable by ZIP code, place name and, in the case of mobile devices, geolocation.

Story

Even if people got to the reports they were looking for, they might have trouble deciphering them, since the reports were highly technical, written by scientists for scientists.

EPA changed the equation in October 2012 with the launch of How’s My Waterway? (My Note: See Below), a platform-independent website and mobile application that works with PCs, tablets and smartphones, offering plain-English reports on whether a body of water has been assessed, if it’s polluted, and if it is, what’s causing the pollution and what’s being done to clean it up.

Concerned about a local stream where the dog likes to swim? Enter the ZIP code into the site’s Choose a Location search window and it will return a list of rivers, streams and lakes in the area. Click on the stream’s name for the report. Want to know about a lake that’s right in front of you? Type the lake’s name into the app on a smartphone, or use the site’s Use My Location option, and, if the phone’s HTML 5 geolocation feature is authorized, the site will find the device, identify the lake and return the results.

For those who want to take a deeper dive into the scientific breakdown, each result also includes links to the technical reports, as well as links to related sites concerning topics such as beaches, drinking water and fishing.

Project leader Doug Norton, a watershed scientist in EPA’s national Office of Water, noted in a blog post (My Note: See Below) that he regularly uses the agency’s technical databases, but that, “even I had trouble answering the simple question: ‘How’s My Waterway?’” because the data in those systems wasn’t intended to
provide quick answers. “Chances are, most people would be baffled by EPA’s complex databases and scientific information,” he wrote.

Norton and a multidisciplinary team created the site in less than a year as part of the agency’s Water Data Project public outreach effort. Among the tasks they faced were making sure of the regulatory accuracy of their information, translating it into plain language and building a single site that would work across PC and mobile platforms and browsers.

They used a variety of software tools, from the jQuery Mobile framework and ArcGIS Server to JavaScript and Cascading Style Sheets to build the site. And because they wanted to avoid new hosting costs, they repurposed EPA Web servers to host and deliver the interface, a GIS mapping server to support the geolocation widget and relational database software to host the data and Web services.

The site launched officially on Oct. 18, 2012, as part of EPA’s celebration of the 40th anniversary of the Clean Water Act. Within a month, it was often getting 1,000 users a day, EPA said, among them public safety crews, travel agencies, educators and environmental groups, along with everyday people.

The team includes Margarete Heber and Patty Scott of EPA’s Police Communications and Resource Management Staff, Alice Mayio of the agency’s Monitoring Branch, Laura Johnson of the Coastal Regulatory Branch, Tracy Kerchkof of the Project Management Office, Julie Reichert and Tatyana DiMascio working with the Watershed Branch, and Brad Cooper and Steve Andrews, contractors with software development company INDUS.

EPA Blog: Getting to Know Your Local Waterways

Source: http://blog.epa.gov/blog/2012/10/get...cal-waterways/

By Doug Norton, October 19, 2012

“How’s My Waterway?” Can you answer this question about your favorite vacation lake, or the river where you walk with your dog? Are streams in your community polluted, and what’s being done about it if they are?
Most people don’t know – and are surprised to learn that the answers have been publicly available for years. But publicly available doesn’t always mean easily accessible, and understandable.

For decades, the Clean Water Act has required tracking of water pollution problems and restoration progress across the nation. EPA public databases include detailed information about the condition of local streams and lakes, pollutants, where they come from, and progress on fixing the problems.

As an Office of Water scientist, I regularly use these databases in national and state studies of water pollution trends and restoration strategies. But even I had trouble answering the simple question: “How’s My Waterway?” These data systems weren’t designed to provide a quick look at local waters or to provide a simple explanation of what the data really mean. Chances are most people would be baffled by EPA’s complex databases and scientific information. They might say, “But all I really want to know is: how’s MY waterway? And please tell me in words I can understand.”

My project team created an exciting solution to this dilemma as part of EPA’s Water Data Project, which makes important water information more widely known and available to the general public. We developed How’s My Waterway as a simpler pathway through the same EPA database. You can instantly get localized information about waterways in map and list format by simply entering a zip code or place name. Anyone can check on local waters anywhere in the nation in seconds—even at the water’s edge, for those using smart phones.

Users can pan across a color-coded map that shows how common are the polluted, unpolluted, and unassessed waters. Waterway-specific details include the local pollutants and progress on clean-up plans. Plain-language descriptions about each pollutant explain where it comes from, whether it harms the environment and human health, and what people can do to help. Related links go to the technical database if needed or to other popular sites about beaches, drinking water, fish advisories and other water topics.

What’s the health of your waterway? Now you can find out

About the author: Doug Norton is a watershed scientist with EPA’s national Office of Water who studies national pollution patterns, helps states restore polluted waters, and designs tools to help improve public understanding of water pollution issues.

Editor’s Note: The opinions expressed in Greenversations are those of the author. They do not reflect EPA policy, endorsement, or action, and EPA does not verify the accuracy or science of the contents of the blog.

Responses

Sean Sheldrake  PERMALINK
October 19, 2012

Great article Doug! This is not only a great tool for recreational users, but first responders can benefit from this data immensely too. Fire and police divers need data on their local dive sites in addition to commercial divers and others. This is a great tool for improving worker safety as it makes existing information more accessible to a wider variety of groups, including a broad spectrum of divers — from FBI divers at Quantico to volunteer fire fighters in Texas. For more information on EPA’s contaminated water diving, see: http://www.facebook.com/EPADivers
Jeffery Robichaud  PERMALINK  
October 22, 2012

Good work Doug and company. Here at EPA Region 7 in Kansas City, we have worked really hard over the past year and a couple of projects, one which provides hourly real-time estimates of bacteria concentrations in 10 area streams, using satellite telemetry and in stream probes. We call it KCWaterBug and it is available for free both Iphone

https://itunes.apple.com/us/app/kcwaterbug-1.0/id520633857?mt=8

and Droid


It would be great if Hows My Waterway could provide links or interconnectedness to KCWaterBug for those streams where we have information.

Casey McLaughlin  PERMALINK  
October 22, 2012

EPA’s Kansas City Regional Office has established an Urban Stream Monitoring Network (KCWaters.org) in the Kansas City Metropolitan area that provides data and information about water quality in area streams. The network currently consists of 36 monitoring sites located in 12 different streams. Users select a station using a simple mapping interface and can view/download biological, sediment, water, or bacteria sampling information from the KCWaters.org database. The map includes locations for monitoring stations maintained by USGS (NWIS) and USEPA (STORET) and links directly to station data.

One of the key elements behind KCWaters.org is the power of providing data regarding water quality in a single location in a transparent and easily accessible format. For more information about the growing monitoring network, near-real time water quality information, or to contribute to the project, see KCWaters.org.

Eric Thomas  PERMALINK  
October 23, 2012

This is a great start. Like the quick mapping piece. Looks like the app will be useful as part of outreach presentations on related watershed projects and plans. Any idea of a timetable when the next assessment round (2012) of data would be incorporated into the application? As State/tribal assessments are approved by EPA, or as a nationwide update?
great post...
interesting.

G. B Ingram PERMALINK January 24, 2013

I’m glad to hear of your success and ways to attain information of EPA. I live in Jackson Tn. by way of Denmark Tn. The area is filled with landfills and another one is in place. We have followed the process thru our local and state representatives with little assistance. No environmental justice. You think maybe you could assist us in setting up an organization or getting with the right people to assist us?

EPA Web: How's My Waterway

Source: http://watersgeo.epa.gov/mywaterway/

Find information about local waters

Use My Location

http://watersgeo.epa.gov/mywaterway/rlist.html

Water Nearest My Location
Choose a Location

http://watersgeo.epa.gov/mywaterway/search.html

Learn the condition of local streams, lakes and other waters anywhere in the US... quickly and in plain language. See if your local waterway was checked for pollution, what was found, and what is being done. The source of this information is a US Environmental Protection Agency (EPA) database of State water quality monitoring reports provided under the Clean Water Act.

Waters Nearest 22030 VA
Popes Head Creek

Reported Condition

This following terms are used to describe each waterway's assessment status and condition. A waterway may also be called "Partially Assessed" when between 1% and 60% of its length or area has been assessed.

No assessment available/No pollution status or unknown: Water quality was not known in any assessment year, and current condition is unknown.

Assessed (data): Water quality was checked, reported as meeting water quality standards in the most recent assessment year available.

Assessed (data): Not assessed (Data): Water quality was checked, reported as not meeting water quality standards in the most recent assessment year available. (Data) Not assessed in previous assessment.

Assessed (data): Water quality was checked, but not meeting water quality standards. A chemical or physical test or technical report used as evidence to report pollution. This pollutant name also do not appear that can be viewed in the waterbody technical report.

Assessed (data): Pollution status: pollution: Water quality was checked on the most recent assessment year available, results incomplete.

Assessed before: Pollution status: pollution: Water quality was checked at the particular site or section most recent assessment year available. Current condition is unknown. This pollutant may not included in this report.

Data collection: pollution status: pollution: Water quality was checked, reported as not meeting water quality standards in the most recent assessment year available. (Data) Not assessed in previous assessment.

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Data collection: pollution status: pollution: Water quality was checked, reported as not meeting water quality standards in the most recent assessment year available. (Data) Not assessed in previous assessment.
Report for Popes Head Creek

About How’s My Waterway

[link]

My Note: See Below Under Related Links

Related Links

[link]

The following links to other websites provide more detailed information about the condition of your local waters and some of the actions taken to restore or protect them.

Notice: Some links on this page contain content that has not been formatted for mobile devices.

About How’s My Waterway

*How’s My Waterway* was designed to provide useful public information based on data that States have provided to EPA on a two-year cycle. More recent or more detailed water information may exist that is not yet available through EPA databases or other sources. Information presented on this site cannot be relied upon to create any legal rights, substantive or procedural, enforceable by any party in litigation with the United States or third parties. *How’s My Waterway* does not change or substitute for any statute, regulation, EPA decision or position. This site may be revised periodically without public notice.

About pollution reporting
The Clean Water Act requires states, territories and authorized tribes (states for brevity) to monitor water pollution and report to EPA every two years on the waters they have evaluated. This process is called assessment. Part of this process is deciding which waters do not meet water quality standards because they are too polluted. These degraded waters are called impaired (polluted enough to require action) and are placed on a State list for future actions to reduce pollution. How’s My Waterway local information includes whether and when a waterway was assessed, what pollution may exist, and what has been done to improve conditions.

About water quality information
EPA’s water databases are the largest single, national source of information about reported water quality problems and efforts to fix them. Other information not directly accessible with this search tool exists in federal, state, local, and private sources. Many of these sources appear among the Related Links. However, water quality monitoring is limited. Older assessment information may no longer be accurate. Many waters in the US have not been assessed and there is no information reported about their condition. A waterway that has not been assessed may or may not be polluted, and a polluted waterway may have more pollutants than those that were measured and reported.

About pollution categories
A single waterway can have one or more types of pollution. When States report polluted waters, they put them in different categories. EPA uses 34 major categories of water pollution in its national summary. There are more detailed subcategories within each of these. For example, the category "Metals" may include lead, cadmium, zinc, or copper as water pollutants. How’s My Waterway provides simple descriptions of each major category, where the pollution comes from, its effect on the environment and on beneficial waterway uses, what citizens can do to help, and where to find more information.

Pollution categories summary document (PDF) (20 pp, 557K, About PDF).

About what’s being done
Reporting water pollution leads to action for improvement. Two major types of action taken under the Clean Water Act are TMDL cleanup plans and nonpoint pollution control projects. Tens of thousands of polluted waters now have a Total Maximum Daily Load (TMDL) cleanup plan, which is a 'reduced pollution diet' designed to help waters become healthy again. The TMDL serves as a basic game plan for a variety of different restoration activities, including polluted runoff control projects. EPA provides funds to States to help control nonpoint pollution, which comes generally from landscape runoff rather than a single discharge pipe. Due to progress in cleaning up wastewater discharges, most remaining water pollution now comes from nonpoint sources. How's
My Waterway identifies whether a polluted waterway has TMDL cleanup plans or polluted runoff control;

What the Pollutants Mean

A single waterway can have one or more types of pollution. When States report polluted waters, they put them in different categories. EPA uses 34 major categories of water pollution in its national summary. There are more detailed subcategories within each of these. For example, the category " Metals" includes the subcategories lead, cadmium, zinc, or copper as water pollutants. How's My Waterway provides simple descriptions of each major category, where the pollution comes from, its effect on the environment and on beneficial waterway uses, what citizens can do to help, and where to find more information. You can view a description of one pollution category by selecting the pollutant name on your search results, or view all by downloading the pollution categories summary document (PDF) (20 pp, 557K, About PDF). Note: The pollutants listed for this waterway were detected during a past assessment. Because of limited monitoring and reporting, it is unknown whether they have been partially or completely cleaned up.

Assessed and Polluted Waters Database

EPA's public database on assessed and polluted surface waters and TMDL development. Most of the information in How's My Waterway comes from ATTAINS but is reformatted to report on very localized areas with simplicity and clarity. ATTAINS information comes from State reports provided to EPA in even-numbered years, and includes assessed waters, polluted waters, and TMDLs, in a tabular and map format. This link is a good place to view national or statewide summaries of assessed and polluted waters by State, waterbody type, or pollutant.

ATTAINS - Assessed and polluted surface waters information

Pollutant Discharges With Permits

The Discharge Monitoring Report (DMR) Pollutant Loading Tool can help you determine who is discharging, what pollutants they are discharging and how much, and where they are discharging in US waterways. The tool calculates pollutant discharges to surface waters based on facility compliance monitoring data, submitted on forms called DMRs, from 2007 through 2010. Totals appear as pounds per year and as toxic-weighted pounds per year to account for variations in toxicity among pollutants. The tool ranks dischargers, industries, and watersheds, and presents "top ten" lists to help you determine which discharges are important, which facilities and industries are producing these discharges, and which watersheds are impacted. The tool also includes wastewater
pollutant discharge data from EPA's Toxics Release Inventory (TRI), also for 2007 through 2010. Finally, users can easily create trend charts and other searches to better identify facilities with the most pollutant loading discharges and any pollutant loading discharges over their permit limits.

DMR Pollutant Loading Tool

Beach Closings

The **Beaches Environmental Assessment and Coastal Health (BEACH) Program** focuses on improving public health and environmental protection for beach goers and providing the public with information about the quality of their beach water.

**Find a beach website** - Information on beach closures

**BEACH program website** - Strengthening beach standards and testing, predicting pollution, informing the public

Drinking Water

**EPA's Drinking Water Information Website** provides a wide range of information on drinking water regulations, drinking water sources and contaminants, and efforts to protect public health and water supplies.

**Groundwater and drinking water program website** - Contaminants, regulations, and efforts to protect the public

**Local drinking water website** - Closer to home information on drinking water issues

National Water Monitoring

**National Aquatic Resource Surveys**: EPA, states, tribes and others collaborate to conduct National Aquatic Resource Surveys (NARS) that assess the condition of the nation's vast water resources. These cost effective surveys use standardized field and lab methods and a randomized site selection design to produce nationally consistent updates on the condition of waters across the country and to look at changes over time.

**NARS rivers and stream surveys**
NARS lakes surveys

NARS wetlands surveys

NARS coastal waters surveys

**Water Quality Monitoring Database:** EPA's STORET database contains technical data from water quality field monitoring that was used to make decisions on the pollution status of waters across the U.S.

**STORET data warehouse**

**Healthy Waters and Watersheds**

The objective of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Whereas other EPA programs focus on restoring impaired waters, the Healthy Watersheds Initiative augments the watershed approach with protection of healthy waters. The Initiative's website includes both assessment and management approaches that encourage states, local governments, watershed organizations, and others to take a strategic, systems approach to protect healthy elements of watersheds and avoid additional water quality problems in the future.

**Healthy Watersheds Initiative website**

**Fish Advisories**

Governments protect people from possible risks of eating contaminated fish by monitoring their waters and issuing fish advisories when contaminant levels are unsafe. A variety of pollutants may lead to warnings about eating fish. All warnings are meant to avoid risks to human health. The 2010 total of 4,598 fish advisories covers 42% of the Nation's total lake acreage and 36% of the nation's total river miles. Please see below for general information or for details about specific States and their waters.

**EPA's website on fish advisories** - General information

**EPA's national listing of fish advisories** - Advisories where you live - waterway-specific information
Polluted Runoff Control Projects

Under Section 319 of the Clean Water Act, grant money supports a wide variety of activities pertaining to nonpoint source (polluted runoff) control. These activities include: pollution control projects, effectiveness monitoring, technical assistance and training, education and outreach. The GRTS database tracks these projects nationally, by project and by subwatershed, with a focus on achievements in reducing phosphorus, nitrogen, and sediment pollution.

**GRTS database** - Project-specific information on controlling polluted runoff

National Fish Habitat Partnership

The National Fish Habitat Partnership (NFHP) is a coalition of government and nongovernment groups working to reverse declines in fish habitat across the US. NFHP’s supporters are the estimated 40 million Americans who go fishing each year - natural allies of Americans working to reduce water pollution. NFHP has developed partnerships across the country and has mapped local waterways' risk of degraded fish habitat.

**NFHP home page**

- national assessment of fish habitats

**NFHP Fish Habitat Partnerships** NWI website houses publicly available wetlands maps and a wide variety of other technical and general wetlands information sources.

National Wetlands Inventory (NWI) Website

Other Water Apps

Want to find out more about water? The below links will take you to other water-related apps. Check them out!

**SwimGuide**

- Lets you view and share pictures of your favorite river.

**Creek Watch**
- Allows you to help monitor the health of your local watershed by snapping a picture and reporting how much water and trash you see.

**My Green Apps** - Collection of even more water and other environment apps.

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**Help**

[http://watersgeo.epa.gov/mywaterway/help.html](http://watersgeo.epa.gov/mywaterway/help.html)

**Getting Started (mobile devices)**

**LOCAL SEARCH**: Tap "Use My Location." Tap "OK" if asked whether to allow your location to be used, and you will receive a list of the waterways and their condition within a 10 by 10 mile search area around your current location. Mobile devices can also search waterways by zip code or city, state by using "Choose a Location" (see Search below).

**HOW TO GET THE APP**: No app downloading is necessary -- this is a ready-to-use mobile web app that retrieves all information from websites and doesn't take up space on your device. You may want to add *How's My Waterway* to your home screen as an icon with our QR code or by following the bookmarking steps below:

*For iPhone and iPad*: open the Safari browser and type in [www.epa.gov/mywaterway](http://www.epa.gov/mywaterway). Tap on the "Add Bookmark" icon in the middle of the bottom bar (usually appears as a rectangular box with an arrow or a plus sign), select "Add to Home Screen," and touch "Add" in the upper right corner. The same steps will work in the iPad, except the "Add Bookmark" icon usually appears in the upper left corner.
For Android: Open internet browser and type in [http://www.epa.gov/mywaterway](http://www.epa.gov/mywaterway). Press the settings/options button at bottom of phone, tap on "Add bookmark" (for some models you may have to tap on "more" first), then select "ok." Now tap on the bookmark button within the browser (usually appears in the upper right corner) and touch and hold for 2 seconds the bookmark of *How's My Waterway*. Tap on the "Add shortcut to home" option in the menu that pops up. The *How's My Waterway* icon will now appear on your home screen.

**Getting Started (desktop)**

**SEARCH ANYWHERE IN U.S.:** Click on "Choose a Location" and follow the instructions under Search, below.

**LOCAL SEARCH:** Use My Location is mainly for mobile devices and uses the GPS feature of your phone to locate waterways near you. This search option may work on some desktop computers by using the computer's IP address if the browser supports it. Beware that the IP address may not be where the computer is at the time.

**Search**

Selecting "Choose a Location" on the home page opens the search page. Enter any location in the U.S., including both states and territories, in the window and hit return or click the button at right to retrieve a list of the waterways within a 10 by 10 mile search box based on the center point of the location you chose. You can use a zip code, place name and state (even for very small places), or a road name, but not a waterway name. If there are multiple locations by the same name, you will get a list of options so you can select the one you meant. Note: Alaskan waterway information is not yet available in How's My Waterway but can be viewed in ATTAINS on a desktop computer.

**Results List**

The same types of list results are retrieved for either the "Use My Location" or the "Choose a Location" starting point, as well as for mobile or desktop devices.

**LIST CONTENTS:** The summary results include a list of local waterways and their condition, local drinking water supplies, watershed names, and fish habitat partnerships from the search area, as below:

**LOCAL WATERWAYS:** Search results come back as a list of waterway names from within
the search box, with each waterway's assessment and pollution status (color coded as green = unpolluted, red = polluted, and blue = unassessed) and date. Waterways closest to the search area center appear first. Some large waterways are only partially within the search area, so their listed results represent only the part within the search box. It is possible for the same waterway name to appear several times within the list of results. This situation happens when multiple segments of the same water body are located within the search area. Some waterways are called unnamed. Even though they may have a local name their names have not yet been placed on maps. Unnamed waters with the same assessment and condition status are combined in the list. Select "Show Map" for a map view of the same waters in the list results, or select any waterway name for more waterway-specific details (see Waterway Detailed Results Page below).

**DRINKING WATER SUPPLIES:** These are shown when part or all of a search area is near the public water supplies listed. The surrounding lands may have special restrictions to avoid polluting the water supply. Public water supplies include water from lakes, rivers or streams that communities depend on for their tap water. Groundwater wells, which also supply public water, are not currently listed. Exact locations of water intakes and wells are not disclosed on the map or list for security reasons.

**WATERSHED NAMES:** Everywhere is part of a watershed - the land area surrounding and draining into a specific waterway. Activities in a watershed determine whether or how badly its waterway is polluted. How's My Waterway provides the name (or names) of the medium-scale watershed within which a search took place.

**FISH HABITAT PARTNERSHIPS:** The National Fish Habitat Partnership (NFHP) is a coalition of government and nongovernment groups working to reverse declines in fish habitat across the US. NFHP has developed Fish Habitat Partnerships across the country; the ones listed here are active in the search area.

**NEW SEARCH:** This button will return you to the home page where you can search again by selecting the "Choose a Location" button or the "Use My Location" button.

**Results Map**

**VISIBLE AREA:** Selecting "Show Map" brings up a map view of the same waters in the list results. The waterways are shown on a map with roads and other features. On mobile phones'
small screens, just a portion of the search box (black rectangle) area is visible but the user can move around within and beyond the search box. On desktop computers the whole search box and some area beyond it is visible. Plus and minus buttons change the size of the area in view. Zooming out too far may make the waters disappear and leave only the view of the background map; select the plus button to zoom in and see the waters again. The icon below the minus button expands the view to full-screen.

**COLOR-CODED WATERS:** The "Map Options" screen explains color coding of the mapped waterways and offers options for changing the types of waters being displayed. In the default setting, the polluted waters are red, unpolluted are green, and unassessed waters are blue.

**SHOWING SPECIAL FEATURES:** See the list of additional map features you can turn on and off: includes the location of discharge permits, TMDL cleanup plans, runoff control projects, and other features.

**BASE MAP DISPLAY OPTIONS:** Also under "Map Options" you will have the opportunity to choose among different free, commercially available map backgrounds. Options include three types of street maps, an aerial image background, and a hybrid of aerial image and streets.

**BROWSING THE MAP:** You can drag your view across the map beyond the black search box and explore as far as you want, allowing some time for the waters in the new area to reload.

**SELECTING A WATERWAY:** User may select a mapped waterway within the search box by clicking (tapping on mobile devices) once on it. If you select a waterway, you will leave the map and go to the detailed results page about that waterway (see Waterway Detailed Results Page below).

**SELECTING A NEW SEARCH AREA:** If you have browsed outside the search box and want to see results for a new area you have found, you may click (or tap on mobile devices) anywhere on the map to redefine search area. After clicking on a new area, answer "OK" when asked if you want a refined search on that location. You will leave the map and go to a new list of search results for that area. The waterway nearest to where you clicked will appear at the top of the list.

**SWITCHING BETWEEN LIST VIEW AND MAP VIEW:** Both the map results and the list results have buttons to get you back to the other results format whenever you want.
This page is reached by selecting one waterway from the Results List or Results Map. The page offers three types of information: reported condition, pollution categories, and what's being done.

**REPORTED CONDITION:** This section repeats the status and dates of assessment and pollution reporting for the single waterway selected. Clicking on the section title or the status statement provides an explanation of all the possible reported condition categories and what they mean. The "Technical reports" button connects to a technical EPA website (not formatted for mobile devices) that contains a scientific waterbody report summary.

**POLLUTION CATEGORIES:** This section lists the pollution category types for waterways where these have been reported. There are 34 types. Clicking on the section title provides an explanation of what the categories generally mean, as well as offering a downloadable document that describes all 34 categories in non-technical language. Clicking on one pollutant category name in this section brings up a brief plain language description, which says what it is, where it comes from and what harm it can do to people or the environment, and how people can help. The "Technical reports' button connects to a technical EPA website (not formatted for mobile devices) that contains a scientific waterway report summary.

**WHAT'S BEING DONE:** This section describes types of cleanup activities that occur under the Clean Water Act in response to pollution reported to EPA: TMDL cleanup plans, discharges regulated by permits, and polluted runoff control projects. TMDL cleanup plans are listed by the pollutant category they address. Select “technical reports” under the discharges to see individual names and technical information about each permit. Do likewise under runoff control projects to view details about each project. Clicking on technical reports in all these cases will lead to a technical EPA website (not formatted for mobile devices) that includes more scientific details and documents. The state water quality program contact (a website) for the search area is also provided here in case users wish to ask questions or report new information.
Waterway Detailed Results Map

Selecting "Show map" from a waterway's detailed results page will display the map of the search area as described above, with the only difference being that the specific waterway from the detailed results list is shown highlighted in gray.

Related Links

These are website links to many other types of popular water-related information. They were provided separately from the waterway information retrieved from the search because the information source is differently organized and can't yet be combined with other How's My Waterway information. Note that these links are to websites that may not be formatted to display well on mobile devices' small screens, and are best viewed on desktop computers.

About How's My Waterway Button

This button contains a general description of How's My Waterway, the information it provides, and the Clean Water Act reporting process that generates this information, as well as links to relevant websites and downloadable documents.

Downloads

Technical users may want to obtain the national or statewide mapped data, upon which How’s My Waterway is based, at the following website:
Water Program Geospatial Data Downloads.

How’s My Waterway was developed mainly as a quick-reference non-technical service. The following downloadable documents may also be educational and informative:
How’s My Waterway Fact Sheet (PDF) (1 pp, 550K, About PDF).
Pollution Categories Summary Document (PDF) (20 pp, 557K, About PDF).

EPA Web: Data Downloads

Source: http://www.epa.gov/waters/data/downloads.html

Technical users may want to obtain the national or statewide mapped data, upon which How's My Waterway is based, at the following website: Last updated on Tuesday, January 07, 2014
My Note: I downloaded, inventoried and imported these to Spotfire which resulted in a 2.5 GB Spotfire file which I then reduced three times to 1.7 GB, 0.7 GB, and finally publish a 0.3 GB Spotfire files to the Web Player.

Description

Geospatial data for EPA’s Office of Water Programs, including 303(d) Impaired Waters, 305(b) Assessed Waters and Total Maximum Daily Loads (TMDLs) are available for download by state or watershed, as well as at a national extent. Generally, state-level geospatial data represents the most recent data submitted to EPA by states. EPA provides WATERS geospatial data in a variety of formats including Geographical Information Systems (GIS) compatible shapefiles and geodatabases, as well as both vector and raster keyhole markup language (KML) and KMZ files for viewing WATERS data in Google Earth.

State and Watershed Geospatial Data

You may download the spatial files representing the most up-to-date publicly available Water program data by State or Watershed from the Reach Address Database (RAD) download page.

National Geospatial Datasets

National geospatial datasets provided on this page are produced and periodically updated by EPA using state-submitted data. These datasets are created based on information in the Reach Address Database (RAD) on the date of extract. To be included in this dataset states and other jurisdictions must have submitted information to the program database and indexed to the RAD. Due to the nature and complexity of providing a national snapshot of program data, EPA has provided a fact sheet to accompany and clarify the contents of each dataset.

ATTAINS Program Data

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<tr>
<th>303(d) Listed Impaired Waters NHD Indexed Dataset with Program Attributes</th>
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http://semanticommunity.info/Data_Science/EPA_Waterways
Updated: Sat, 19 Sep 2015 10:59:45 GMT
Powered by mindtouch
### 303(d) Listed Impaired Waters by Causes of Impairment and Probable Sources Field Descriptions

- **Pollution Category** summary document (21 pp, 604K, About PDF)

| Geospatial and Attribute Linkage Information | Use the provided ESRI_KEY for joining tables. Note that there is a many-to-many relationship between attributes and geospatial records. |

### 305(b) Waters As Assessed NHD Indexed Dataset with Program Attributes

- **Download**
  - **Shapefiles** (338 MB)
  - **ESRI 9.3.1 File Geodatabase** (229 MB)
  - **Attributes Only** (Excel, 49.3 MB)

| Metadata | Spatial and attribute metadata is located at the EPA Environmental Dataset Gateway. |
| Additional Information | Fact Sheet Coming Soon |
| **305(b) Assessed Waters by Water Type Field Descriptions** (Word)(1 pp, 20K) |

| Geospatial and Attribute Linkage Information | Use the provided ESRI_KEY for joining tables. Note that there is a many-to-many relationship between attributes and geospatial records. |

### 2002 Impaired Waters Baseline NHD Indexed Dataset

- **Download**
  - **Shapefiles** (138 MB)
  - **ESRI 9.3.1 File Geodatabase** (93 MB)

| Metadata | Metadata is located within the downloads. |
| Additional Information | Fact Sheet (2 pp, 132K, About PDF) |
| **Pollution Category** summary document (21 pp, 604K, About PDF) |
### Watershed Boundaries for the 2002 Impaired Waters Baseline

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### Impaired Waters with TMDLs NHD Indexed Dataset with Program Attributes

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| Geospatial and Attribute Linkage Information | Use the provided ESRI_KEY for joining tables. Note that there is a many-to-many relationship between attributes and geospatial records. |

### BEACH Program Data

http://semanticommunity.info/Data_Science/EPA_Waterways

Updated: Sat, 19 Sep 2015 10:59:45 GMT

Powered by mindtouch™
### 2009 Beaches NHD Indexed Dataset

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### 2009 Beaches KML Files for Viewing in, e.g. Google Earth

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### Water Quality Standards Program Data

#### 303(c) Water Quality Standards NHD Indexed Dataset

This is the final release of WQS as of December 2007. See WQS Factsheet - Release 9 for more information.

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My Note: The + MORE gives many more! 282,026 of which 278,816 are GIS, 10,029 are SHP, etc. The EPA Geospatial Data Seems Much Easier to Use, But Let's See.

### Format Category
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- **Other** (1214)
- **Source Code** (968)
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### Format
- [+ MORE](http://semanticommunity.info/Data_Science/EPA_Waterways)
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- **MapService** (25531)
- **FeatureService Layer** (17653)
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- **SHP** (10029)
- **ArcGIS Online** (4227)
- **Feature Layer** (4052)
- **DTED Level 0** (3772)
- **FileGDB Data** (3467)
- **SDC** (1960)

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- [+ MORE](http://semanticommunity.info/Data_Science/EPA_Waterways)

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Vector (10038)
Elevation Data (3772)
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Document (2155)
Raster (1456)
Task (1220)
Tool (974)
Web (834)
Text (184)

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- SimpleEdge (22)
- ComplexEdge (10)
- Dimension (8)

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- MultiPatch (2)

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  - demographics (382)
  - census (315)
  - counties (291)
  - county (234)
  - multiscale (230)
  - Federal (199)
  - tract (199)
  - United States (197)
  - National (196)

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  - Has Metadata (9417)
  - ArcGIS Fused Cache (5595)
  - aga_has_data (3328)
Contains Missing Data (902)
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is_missing (245)
has_M (133)
has_Z (109)
has_pyramids (24)

Author
[+] MORE

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ESRI (230)
Administrator (202)
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Julie Fogde (83)
chri1713 (74)

Spatial Reference
[+] MORE

EPSG:WGS 84 / Pseudo-Mercator (83970)
EPSG:WGS 84 (20176)
WGS84 Web Mercator (14851)
WGS84 (13733)
EPSG:NAD83 (10898)
EPSG:NAD83 / Alberta 10-TM (Forest) (5513)
EPSG:NAD83 / Maryland (4417)
EPSG:NAD83 / UTM zone 15N (3799)
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EPSG:NZGD2000 / New Zealand Transverse Mercator 2000 (3359)

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10.01 (2025)
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DemoData (11160)
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www.arcgis.com (4921)
ESRI Reference Map Templates (551)
ESRI Reference Map Templates (18)
todd_sdc (1)

Williams Company

Source: http://co.williams.com/

Site Map

Source: http://co.williams.com/site-map/
Our History

Williams traces its roots to 1908 with two brothers’ construction projects in Fort Smith, Ark. Within a few years Miller and David Williams were building cross-country natural gas and petroleum pipelines. By the time the brothers relocated to Tulsa in 1919, they had a reputation for doing a job on time and on budget.

For more than 60 years, the company did business as Williams Brothers. We adopted The Williams Companies, Inc. name in the 1970s, reflecting our diverse businesses. That remains our legal name today, even though we began going by the simplified name “Williams” in 1997.

In 1966, Williams paid $287 million for the country’s largest petroleum products pipeline (known as Great Lakes Pipe Line Company). The new company laid the cornerstone for the modern-era Williams.

The company began assembling its nationwide system of interstate natural gas pipelines in 1982 with the purchase of Northwest Energy Company.

Williams purchased Transco Energy Company in 1995, expanding our natural gas transportation system to the East Coast. This acquisition established Williams as one of the largest-volume transporters of natural gas in the United States.

Williams’ ingenuity provided the foundation for modern-day telecom networks when it ran fiber-optic cable through decommissioned pipelines. In fact, the company built two coast-to-coast telecom networks. The first one became the fourth-largest U.S. long distance network and was sold to LDDS in 1995. The second, a 33,000-mile network, was spun off as a separate company in 2001.

In 2001, the acquisition of Barrett Resources added significant natural gas reserves and increased Williams’ exploration and production profile.

More recent additions to our energy profile include expanding our presence in the Marcellus Shale basin in the northeast. Williams has had a pipeline presence in the area for more than 50 years, making the area a perfect example of both our deeply-rooted history and opportunity-rich future.


Operations and Assets

Source: http://williamscom.files.wordpress.com/b_map_all1.pdf
At GISi we believe location technology should be a functional and useful part of an organization’s capabilities, not simply a stand-alone GIS Enterprise System. To accomplish this, we have developed integrated location-enabled solutions for facilities management tools that provide real-time spatial awareness of the systems, which was not previously available. We also offer GIS solutions for board-level decision making, leveraging existing Business Intelligence systems like IBM Cognos, SAP Business Objects, and Microstrategy. By adding spatial insight into corporate-level Key Performance Indicators, we are providing a whole new level of insight towards data and transforming the way decisions are made.

Our Federal Civilian GIS Work

We have a proven record of supporting federal civilian agencies and we have taken experiences that we’ve gained working with the Department of Defense, local governments, and private sectors. We have applied what we’ve learned to the work we do for federal civilian agencies such as the Environmental Protection Agency, Center for Disease Control, Veterans Health Administration, and Fish and Wildlife Service.

We support EPA Region 3 in downtown Philadelphia with on-site staff GIS specialists. Our staff supports EPA Project work throughout the region by developing maps for reports and public meetings, performing spatial analysis, and preparing data for environmental data management and visualization systems used by the region. In addition, our staff is actively involved with the building and maintaining of the region’s GIS data repository.
Our development team has worked with the VHA GIS development team to support and augment the GIS Portal for the VHA Assistant Deputy Under Secretary of Health (ADUSH). We provided a web application that performs site analytics to identify the best locations for additional VHA facilities.

To support the Division for Heart Disease and Stroke Prevention (DHDSP) within the Center for Disease Control (CDC), we developed the Interactive Atlas for Stroke and Heart Disease. This is a publicly available interactive web application that allows for easy comparison between heart disease and stroke to causative factors.

**Environmental**


At GISi we have broad experience in the environmental GIS realm, both in terms of people and projects. With bachelor’s, master’s, and doctoral degrees from over 100 schools in the United States, our employees have strong experience in applying GIS to solve problems in a wide variety of environmental fields. The environmental backgrounds of our employees include agriculture, biology, chemistry, earth and environmental science, ecology, geology, soil science, natural resource management, environmental management, forestry, wetlands, watershed analysis, and marine science.

The combination of environmental education with GIS expertise has translated into client success with environmental projects, analytical and cartographic products, and web map interfaces. For example, under contract to the U.S. Army, we completed projects to conduct disaster analysis for both natural and manmade hazards surrounding U.S. Army Reserve installations, as well as quantifying unencumbered Army installation land for renewable energy resource applications. Other environmental projects include creating public maps for wildfire risk and damage, assessing damage from Hurricane Sandy on the U.S. east coast, conducting habitat analysis for Ducks Unlimited, assessing noise impact for Naval Range and Air Installations Compatible Use Zones, providing analytical and cartographic support for EPA: Region 3 Air, Land and Water scientists, and conducting manatee research off the coast Cuba alongside the U.S. Geological Survey.


**Supporting the EPA**

In July of 2012, the U.S. Environmental Protection Agency (EPA) brought GISi onboard to provide geospatial expertise to four EPA divisions and to manage and maintain the spatial data library at their Region 3 office in Philadelphia, PA. This regional office works with the states of PA, DE, MD, WV, VA, and Washington D.C. to protect environmental resources and regulate the impact of businesses and industry on land, air, and water media. The EPA mandates and enforces environmental policy at the federal level and works with these states, and companies within these states, to ensure compliance with environmental regulations.

We work with scientists, project managers, and permitting specialists in the Water Protection, Land and Chemical, Hazardous Site Clean-up, and Environmental Assessment and Innovation Divisions. As part of an onsite support team, we assess the needs of environmental projects from a geospatial perspective and provide technical support in the form of data acquisition, maintenance, and management, as well as analytical expertise needed to tease apart complex spatial problems and bring clarity to environmental issues at both the project and the program level.

**Support Highlights within EPA Divisions**

The Water Protection Division (WPD) contains programs that focus on numerous water-related topics, including the protection of public water supplies, monitoring and tracking of contaminants that impact our waterways, calculating Total Maximum Daily Loads (TMDLs) for these contaminants, and regulating the discharge of wastewater from industries and municipalities. GISi works with WPD scientists to query state-submitted data pertaining to the Clean Water Act and identify severely impaired watersheds that should be targeted for the assessment of Best Management Practices for entities such as Confined Animal Feeding Operations. We work with storm water permit managers to define appropriate data structures and attribution requirements for permit data and also synthesize new data layers based on population expansion, allowing these managers to target areas that will require additional permits in the near future. Additionally, as EPA field personnel visit sites to document pollution-control measures employed by facilities, we provide post-processing support by updating all site photos with user-specified metadata, geotagging these photos, and generating KML files that show the path of the photographer as they documented their visit. These photographs are then incorporated into reports and submitted as evidence in legal investigations.
The Land and Chemical Division tracks the storage, utilization, and release of chemicals that are hazardous to humans and the environment. This division also manages permitting procedures associated with the Residential Lead-Based Paint Hazard Reduction Act, Resource Conservation and Recovery Act, and Pollution Prevention Act, among others. After assessing the needs of LCD permitting specialists, GISi integrated multiple parameters related to potential lead exposure and created a model that predicts the level of risk with regards to potential exposure of young children to harmful lead compounds across the entire region. This has enabled inspectors to be more methodical and efficient as they identify target areas for lead-related inspections. We also played a significant role in assessing the presence and activity of LCD programs that are in place within the Chesapeake Bay watershed, thus allowing program management to better assess the progress that they are making in this critical area and highlight any gaps that may exist in program distribution.

Lastly, the Hazardous Site Cleanup Division manages the clean-up of sites that are listed on the National Priority List, also known as superfund sites. The EPA works to clean up these abandoned hazardous waste sites and compels responsible parties to take appropriate action. Superfund sites are a concern at a national level and are a priority for remediation due to the severity of the contamination and the environmental and health risks that they pose to surrounding communities. Because these sites are of national stature, the EPA must keep leaders of Congress apprised to the presence and status of Superfund sites in their districts. GISi is responsible for creating documents that show the location of these sites and the status of the clean-up for each site. As a result, Congress members are able to stay informed about the major sites undergoing clean-up in their region and understand the impact on the communities that they represent.

**Overall impact of GISi on the EPA**

As exemplified above, GISi provides numerous forms of support to many branches of the EPA at a regional level. The EPA relies on us for technical and organizational support when it comes to managing the large volume of spatial data that are generated at its Region 3 office and they also rely on us for analytical support at the project level. In addition to providing these types of support, we also offer suggestions for spatial workflows and ideas that highlight how particular tools can be used to augment a project or produce accurate results in an efficient manner. We meet with project managers to fully understand the background and goals of their projects; we then assist them in defining the scope, laying out their primary objectives, and selecting the optimal analytical processes to meet their goals. GISi benefits the EPA, as a whole, by allowing scientists to make better and more educated decisions, by enabling project managers to better coordinate staff assignments, and by expanding the opportunity for spatial insight and creative growth at the program level.

**Certified Information Systems Auditor (CISA)**

Source:

My Note: Cannot find in Site Map

See: [http://www.isaca.org/Certification/C…s/default.aspx](http://www.isaca.org/Certification/C...s/default.aspx)

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