

# “An Enterprise Investment in Web Services”

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*Thomas Dabolt*  
*EPA Office of Water*  
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# Overview

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- ❑ Why invest in web services
- ❑ Types of OW web services
- ❑ Who is using/reusing OW services
- ❑ Future OW web services
- ❑ Benefits to Date
- ❑ Lessons Learned
- ❑ E-Enterprise & EXN & Web Services
- ❑ Quick demo of services in action

# Why invest in web services?

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- White House
  - Open Government
  - Digital Government Strategy
- Broad technology market applicability and relevance
- Mobile market
- The public expects it

# Technology Benefits of Web Services?

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- ❑ Lower cost of data exchange
- ❑ Technology independent –standard formats maximize interoperability.
- ❑ Allows you to leverage existing investments in other technologies (i.e., mobile or responsive web design)

# Types of OW Web Services

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The hydro framework provided by NHDPlus allows OW to link location data with program databases using REST APIs

- NHDPlus v.2.1
  - Upstream/downstream navigation
  - Catchment and Watershed boundary services
- Water quality monitoring stations
- 305(b) Assessed Waters
- 303(d) Impaired waters
- NPDES discharge locations
- TMDL locations
- 319(h) Non-point source locations
- Fish advisories
- Numerous STORET Warehouse Web Services
- USGS/EPA Water Quality Portal

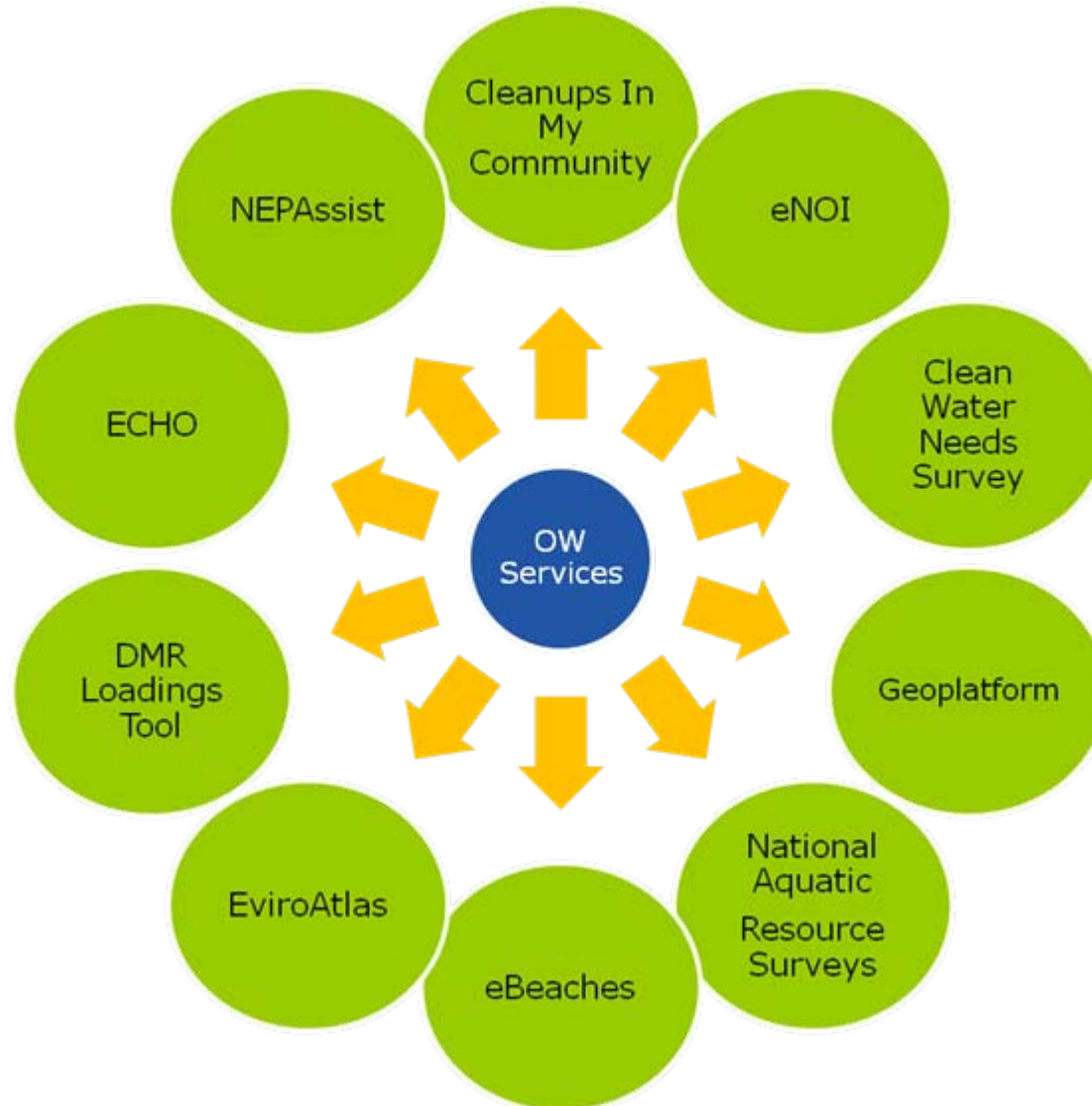
[http://water.epa.gov/scitech/datait/tools/waters/services/mapping\\_services.cfm](http://water.epa.gov/scitech/datait/tools/waters/services/mapping_services.cfm)

[http://www.epa.gov/storet/web\\_services.html](http://www.epa.gov/storet/web_services.html)

<http://www.waterqualitydata.us/portal.jsp>

# Build once and reuse

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# Enabling Mobile Application Development

- ❑ Leveraged investment in web services to develop How's My Waterway
- ❑ HMW is a platform-independent mobile website app
- ❑ Helps users find information on the condition of their local waters, using mobile devices
- ❑ Low cost point by using existing web services and hardware
- ❑ Winner of numerous Federal awards for innovative app development



<http://watersgeo.epa.gov/mywaterway/>

# OW Benefits

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- Limits duplication of work across programs
  - Drives down new development costs
  - Lower O&M costs for routine data exchange
- Efficiency in data exchange with Federal partners (i.e., USGS)
  - Ability to pilot Federal interoperability experiments
- Huge value having industry adoption of international standards (i.e., OGC).
- Innovation in mobile application market



# OW Lessons Learned

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- Strong partnerships must be in place and the right communities of experts
  - WQX schema leveraged USGS/EPA monitoring programs and the EXN state partnerships to be successful
  - Success of the schema effort led to the growth of STORET web services
- Take a customer-centric approach to identify potential web services
- Spend the time in reqs gathering to find the common thread; what type(s) of services make the most sense
- When services are not being consumed based on metrics, discontinue support and reinvest

# E-Enterprise & Web Services

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- The Exchange Network serves as a model for State/EPA collaboration
- Tremendous opportunity to leverage EXN framework and partnerships
  - Leverage investment in standard schemas to jump start web service development
  - Web services will increase EXN flexibility and provide better access to environmental information
  - Enable industry to develop applications that support our mission
  - Positions EXN to engage with the international standards community

# QUESTIONS ???

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Thomas Dabolt  
IM/IT Project Management Office  
Dabolt.thomas@epa.gov  
202-564-1450