

Water Quality Data Management and Exchange among Tribes through a Tribal Consortium

By

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Overview

- Introduction – NWIFC and its member tribes
- Tribal Water Quality Data Needs
- Objectives of the NWIFC Data Exchange Project
- NWIFC Data Management and Exchange Solution
- Benefits of the NWIFC solution
- Lessons Learned
- Next Steps



The Northwest Indian Fisheries Commission (NWIFC)



- Consortium of 20 treaty tribes in western Washington State
- Provides direct services to member tribes to assist them in natural resource management



Tribal Water Quality Data Needs

- Tribes monitor watersheds and collect water quality data
- Data are collected and stored in various formats

Needs:

- Effective storage, management and analysis of data
- Data exchange with each other, the NWIFC and others
- Data submission to EPA's Water Quality Exchange (WQX)
- Regional analysis using data from multiple partners



NWIFC Exchange Network Project

- In 2007, NWIFC received a National Information Exchange Network grant from EPA

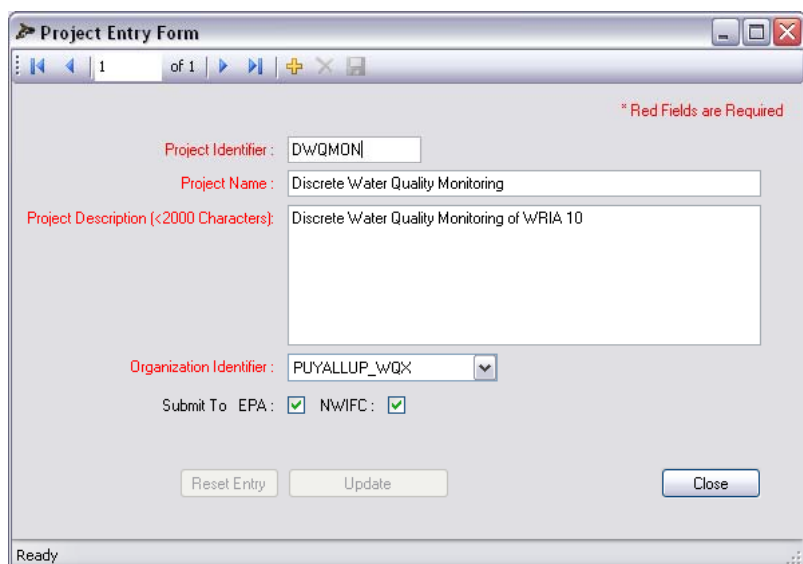
Objectives:

- Facilitate the exchange of information by and between the NWIFC and its member tribes, as well as other interested partners.
- Provide the ability of member tribes to provide ambient water quality data to the NWIFC and EPA.
- Develop a WQX-complaint Tribal Water Quality Database (TWQD) to help member tribes manage and exchange data.
- Train and mentor member tribes to use TWQD and the Exchange Network tools.



Components of NWIFC Data Exchange Solution

1. Tribal Water Quality Database (TWQD)



The screenshot shows a web-based form titled "Project Entry Form". The form contains the following fields and controls:

- Project Identifier:** A text input field containing "DWQMON".
- Project Name:** A text input field containing "Discrete Water Quality Monitoring".
- Project Description (<2000 Characters):** A large text area containing "Discrete Water Quality Monitoring of WRIA 10".
- Organization Identifier:** A dropdown menu with "PUYALLUP_WQX" selected.
- Submit To:** Two checkboxes, "EPA" and "NWIFC", both of which are checked.
- Buttons:** "Reset Entry", "Update", and "Close".
- Footer:** "Ready".

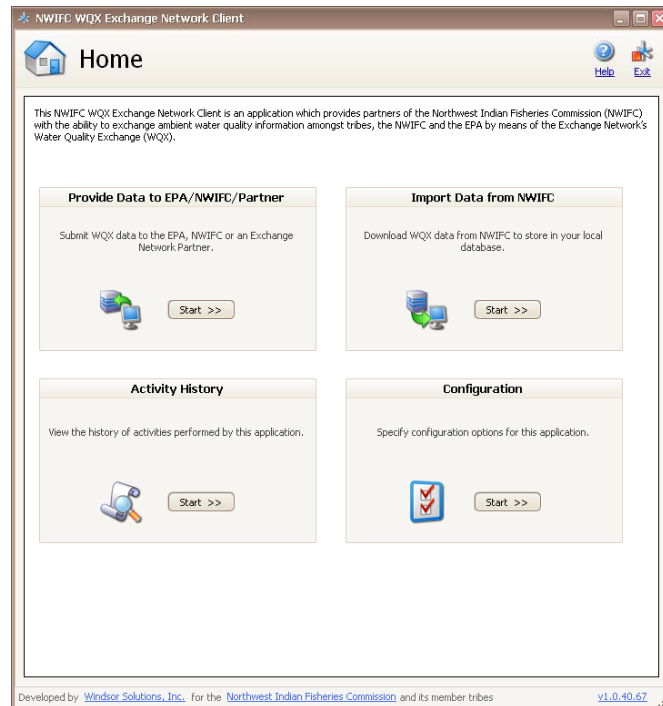
A red asterisk and the text "* Red Fields are Required" are visible in the top right corner of the form area.

- Microsoft SQL Express database
- Uses WQX schema
- Validates key fields against WQX domains
- Tribes may use to store and manage data locally



Components of NWIFC Data Exchange Solution

1. Tribal Water Quality Database (TWQD)
2. Exchange Network Node Client

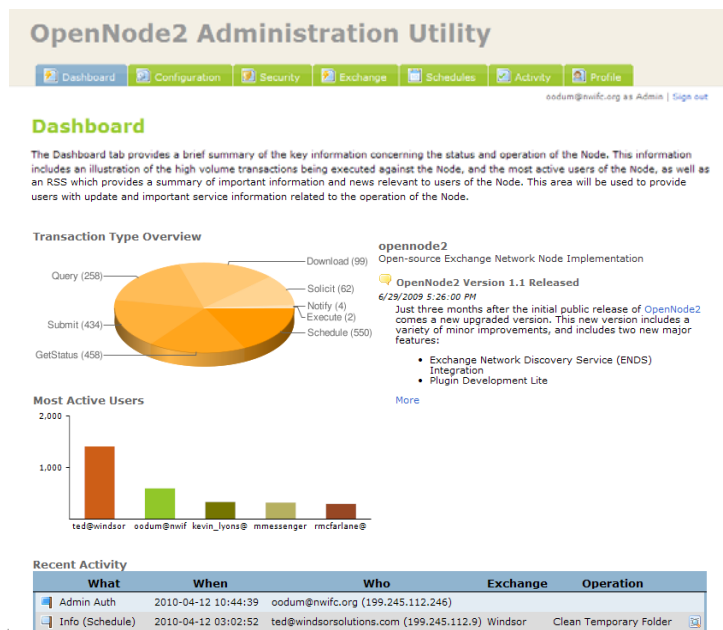


- Custom built application for installed at each tribes
- Easy to use with a browser
- Tribes may use to submit and receive data



Components of NWIFC Data Exchange Solution

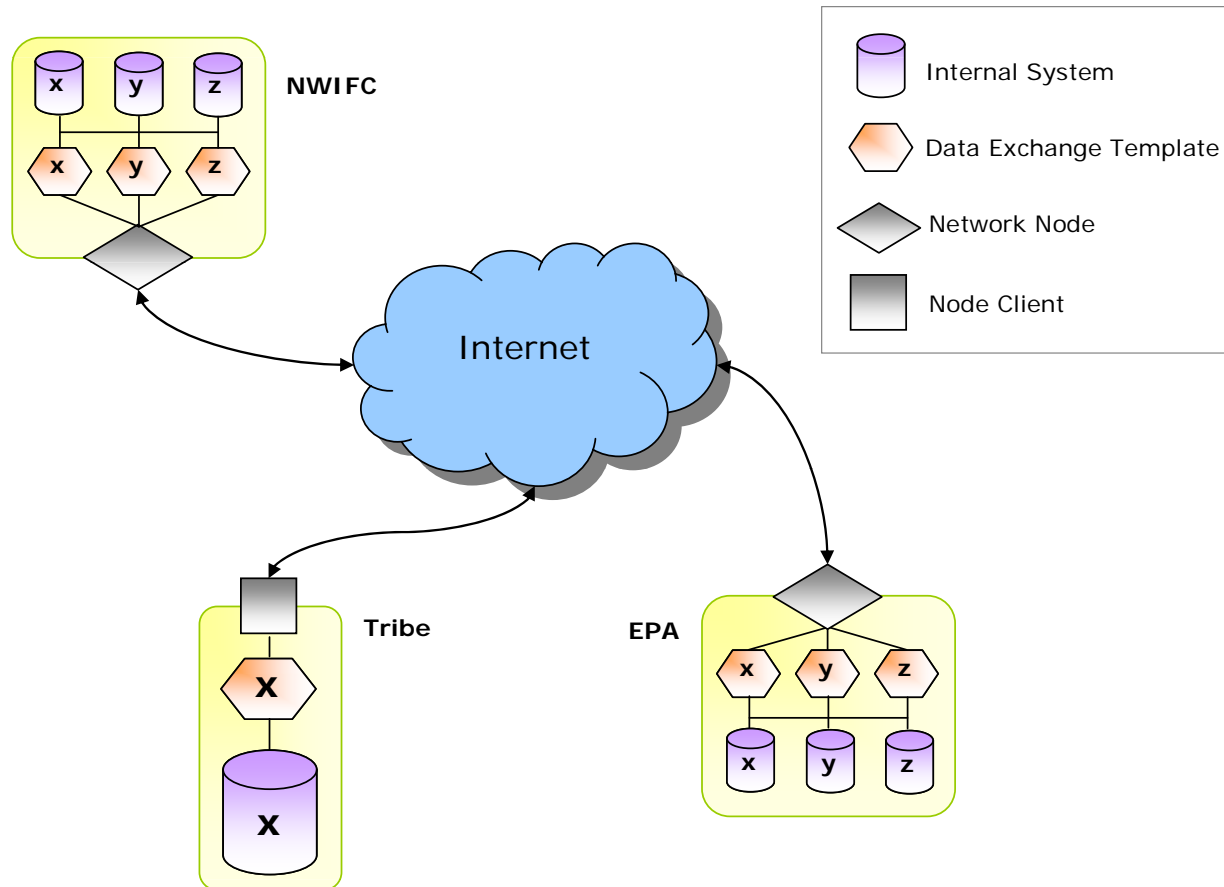
1. Tribal Water Quality Database (TWQD)
2. Exchange Network Node Client
3. Exchange Network Node



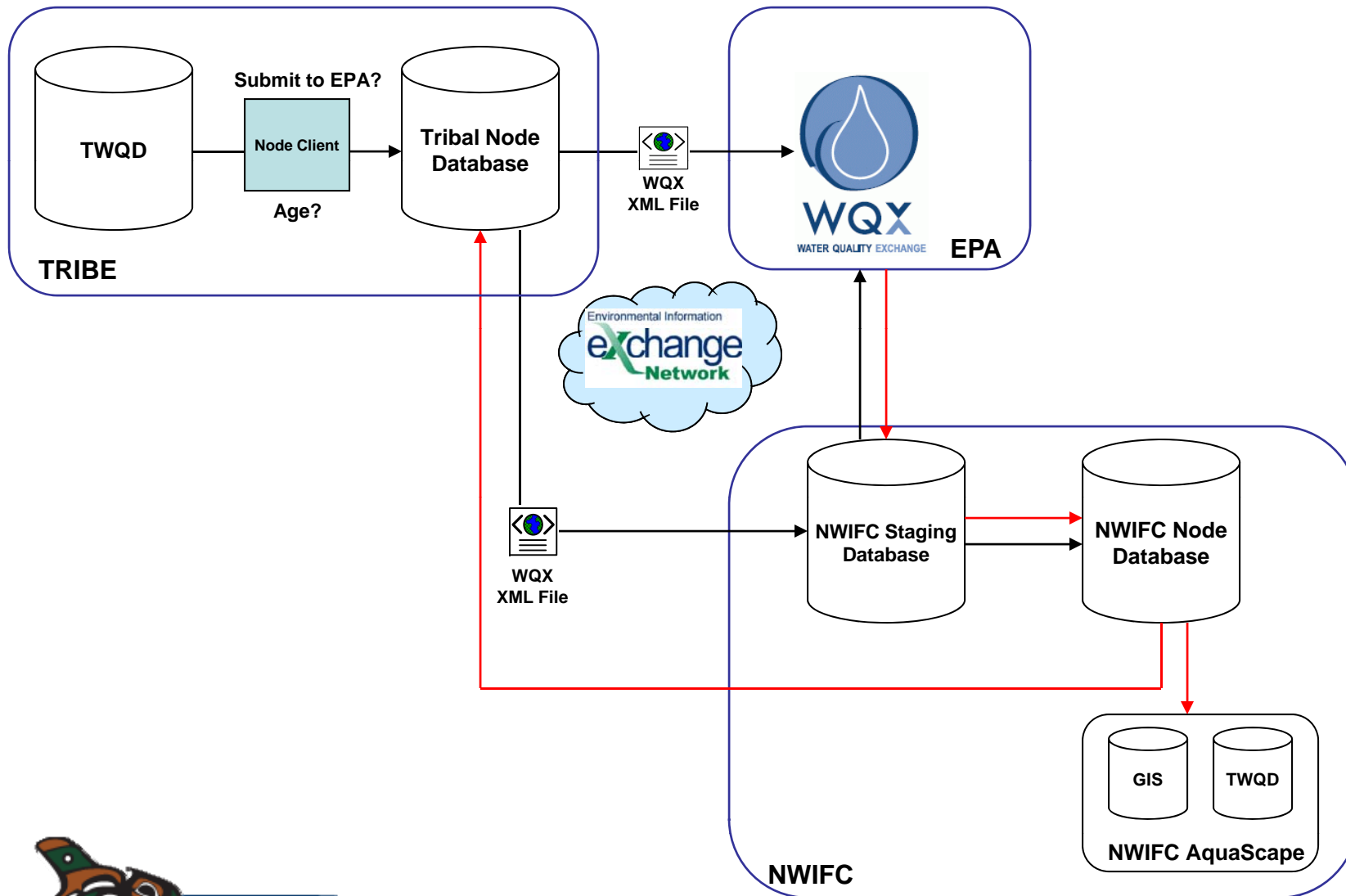
- OpenNode 2 at the NWIFC communicates with tribal node clients and EPA node
- May be used to send or receive data – allows both inbound and outbound flows
- Responds to requests for data from partners



NWIFC Exchange Network Node Overview



Data Exchange using the NWIFC Solution



NWIFC Data Exchange Solution – Current Status

- 14 tribes with the TWQD installed
- 12 tribes with the Node Client installed
- 4 tribes sending data to EPA WQX
- Most tribes currently mapping data to TWQD to facilitate the transfer to EPA



Benefits of the NWIFC Solution

- **Efficient data exchange technology**
 - Twenty tribes are able to exchange data with each other, EPA, NWIFC and others
- **Cost effective – “Build Once, Use by Many”**
 - Nodes clients and TWQD are available at little or no cost
- **Common database structure**
 - Allows for more cost-effective tools development and support
- **Flexible implementation**
 - Accommodates differences in data resources, systems and technology among tribes



NWIFC Data Exchange Solution - Lessons Learned

- **Tribes have varied technical environments and capabilities**
 - Hardware/software/personnel
 - Not all tribes can support leading edge software
- **Involve tribes early in project scoping**
 - Ensures that all key requirements are identified early
 - Reduces chances of scope adjustments during implementation
- **Involve more tribes in the implementation and testing phase**
 - Ensures double coverage if a tribe was unavailable



NWIFC Data Exchange Solution – Next Steps

Make improvements to:

- TWQD
 - Add query capability
- Node Client
 - Tabular and spatial data viewers
 - Ability to generate reports

Continue training and mentoring tribes



NWIFC Data Exchange Solution

?Questions?

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Data Exchange using the NWIFC Solution

