CWA §106 Reporting Requirements and EPA's Water Quality Performance Measures
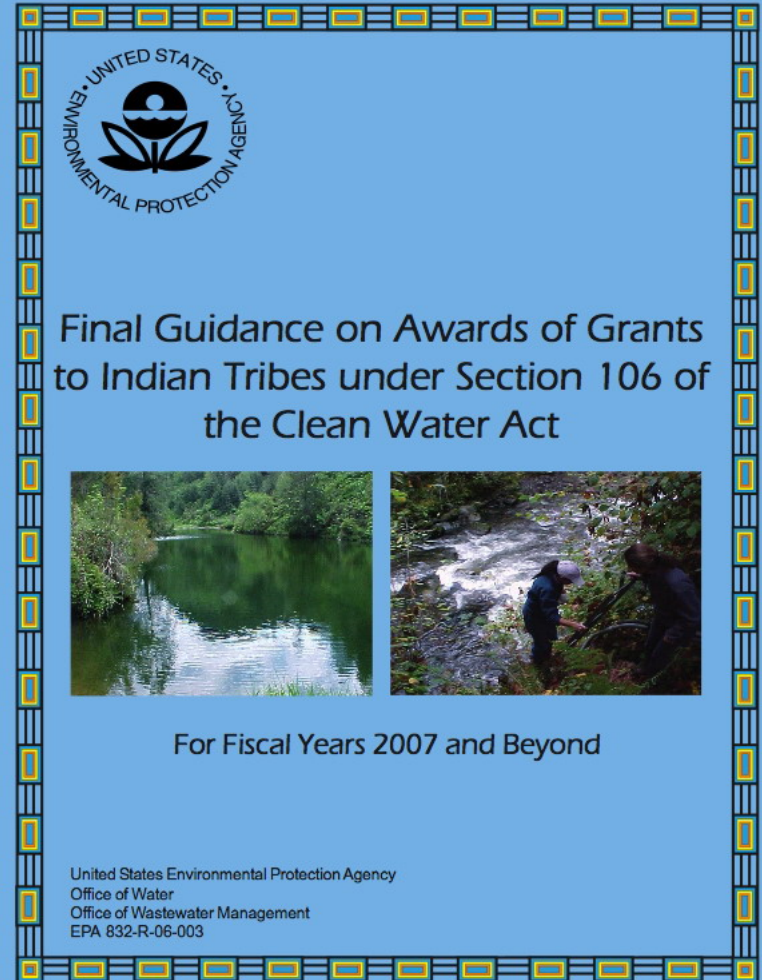
CWA §106 Guidance

Released in FY2007

Outlines Tribal Environmental Programs by Maturity Level
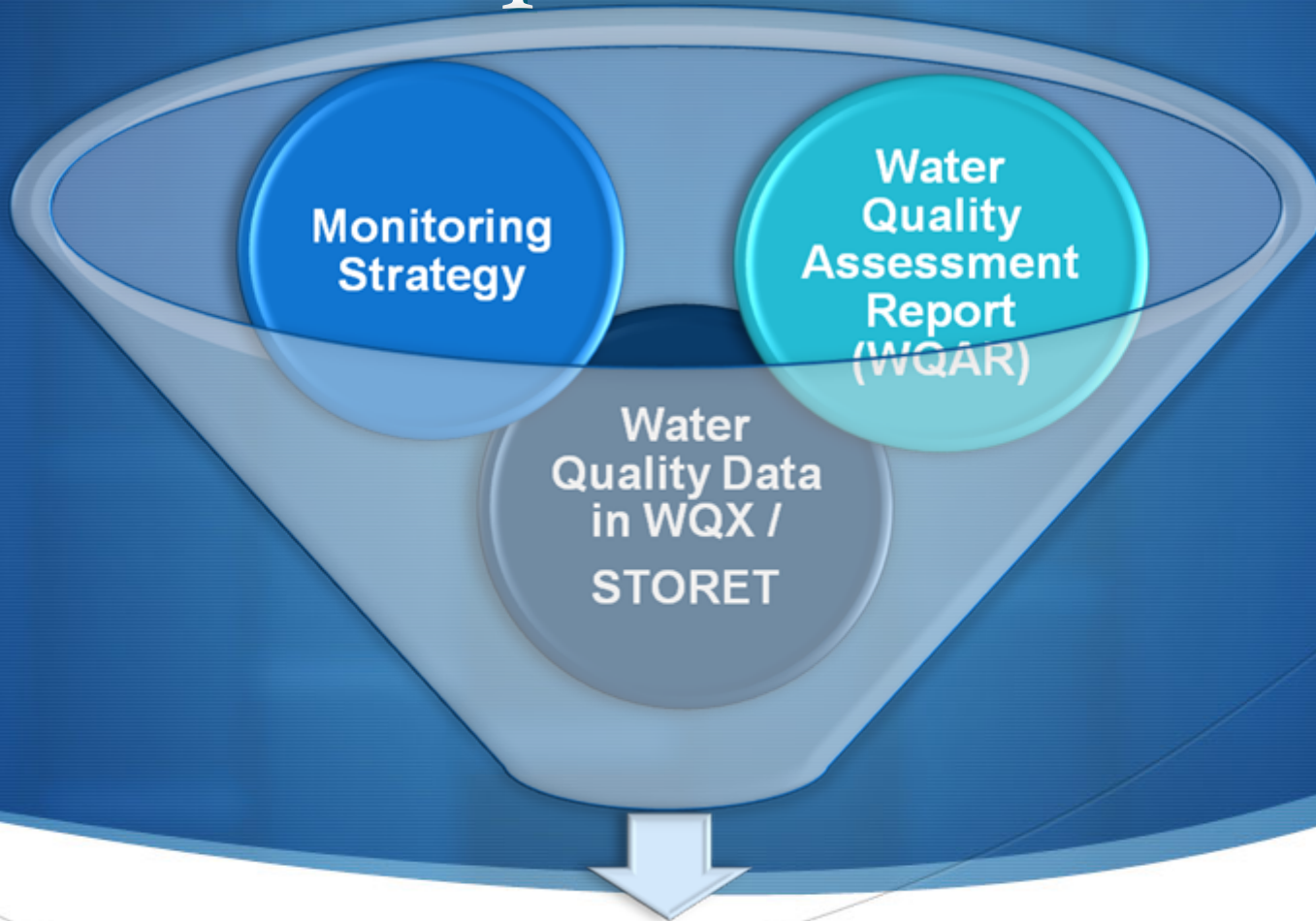
Introduces Three Approaches to Implementing Tribal Water Quality Programs

- Non-Regulatory
- Tribal Law Water Quality Protection
- EPA-Approved Water Quality Protection
- Reporting Requirements

Final Guidance on Awards of Grants to Indian Tribes under Section 106 of the Clean Water Act

For Fiscal Years 2007 and Beyond

United States Environmental Protection Agency
Office of Water
Office of Wastewater Management
EPA 832-R-06-003

CWA § 106 Reporting Requirements

Monitoring Strategy

Water Quality Assessment Report (WQAR)

Water Quality Data in WQX / STORET

Document Environmental Results in Indian Country

Water Quality Assessment Report (WQAR)

The assessment report is an annual submittal that evaluates the health of tribal water bodies.

Includes information about tribal water quality programs, status of water bodies monitored and water quality concerns.

Components of a WQAR

- Atlas of Tribal Water Resources

- Narrative Description of the Tribal Water Quality Monitoring Program and Assessment Methods

- Tables describing which water bodies are meeting designated uses

- Tables describing causes and sources of impairment

Components of a WQAR

- Narrative Description of the Results of Water Quality Monitoring on your Reservation

- Narrative Description of Issues of Tribal Concern

- Monitoring Data, submitted electronically, in STORET-compatible format

Why is the WQAR Important?

For Tribal Water Quality Programs

- Provides a mechanism to describe water quality data collected over the course of a monitoring season

- Can assist a water quality program determine priority areas and plan for future monitoring and water quality improvement activities

- Showcases tribal water quality needs

For EPA

- Provides a consistent reporting mechanism to help EPA gather information about the conditions of water quality in Indian Country

- Assists Project Officers in providing feedback to help tribal water quality programs increase capacity

- Presents success stories and tribal water quality needs

Data Management by Maturity Level

- **Fundamental Tribes**
  - EPA encourages the use of electronic spreadsheets allow for easily managed data
    - Data can be organized, summarized and manipulated
    - Various tools can be used to analyze the data for Water Quality Assessment Report

- **Intermediate and Mature Tribes**
  - Are needs met with spreadsheets, or if it would be better to upgrade to a more dynamic database?
  - Incorporate additional monitoring parameters, evaluating monitoring frequency

Developing Data Storage Capacity

- Managing electronic data:
  - Check field and lab forms for accuracy
  - Find out if your lab can report data in a STORET/WQX-compatible format (template)
  - Enter data using electronic software (e.g. Excel)
  - Conduct quality control on data after entry
  - Analyze data for use in reports for your environmental program
  - Maintain backups of electronic data

WQX
WATER QUALITY EXCHANGE

Developing Data Storage Capacity

- **WQX Web Template**
    - Excel spreadsheet that is STORET/WQX compatible
    - Uses metadata to provide context for all data, whether collected in the field or analyzed in a lab
    - Allows for export of data to a text file for use with WQX Web, in order to upload data to the National STORET Warehouse
    - Separate dictionary file
    - *Can be downloaded at*:

        www.epa.gov/storet/wqx/index.html

WQX Web Data Template—Physical and Chemical Results

This document is intended to serve as a guide to assist water quality data providers in the process of formatting their data in a WQX-compatible format. The various tabs in this document provide template sheets and allowable values lists for the types of information which a data owner must include in order for the data to be successfully stored in WQX/STORET. For more information about STORET, see the EPA's STORET website: About STORET. Information regarding how WQX/STORET organizes data into Projects, Monitoring Locations, Results, etc. can be found in the STORET Concepts page.

There are three types of tabs present in this document. The first tab (highlighted in pink) provides a mechanism for producing text files in a tab delimited format. These text files are prepared automatically to be compatible with the WQX Web tool, which you may use to upload data to the STORET Data Warehouse via EPA's Central Data Exchange (CDX). The export process, contained in this tab, also converts the county name that you refer to in the County field found in the Monitoring Locations tab to the appropriate county code needed by WQX Web.

The tabs in the second group (shaded in light yellow) are intended serve as data formatting templates. That is, these tabs could be shown to a laboratory or other data provider as an example of an Electronic Data Deliverable (EDD). If the lab could format their electronically reported data in a manner similar to the format shown on these tabs then it would be highly likely that the data could be migrated to WQX/STORET with very little intervening data manipulation. Alternatively, these tabs can also be used to enter and format data that is not being provided electronically, such as field data.

The third group of tabs (light green), displays what the appropriate allowable-values are for various fields in WQX/STORET. The listing of acceptable values that WQXSTORET requires for a particular element is highlighted in light green.

All information in this document is accurate as of November 5, 2008.

Please note:
- This template is a guide and may be modified by individual users to include additional information.
- Users should consult the Template Data Dictionary (Template_dictionary_WQX_Web_[Date].xls) for explanations about each data element.
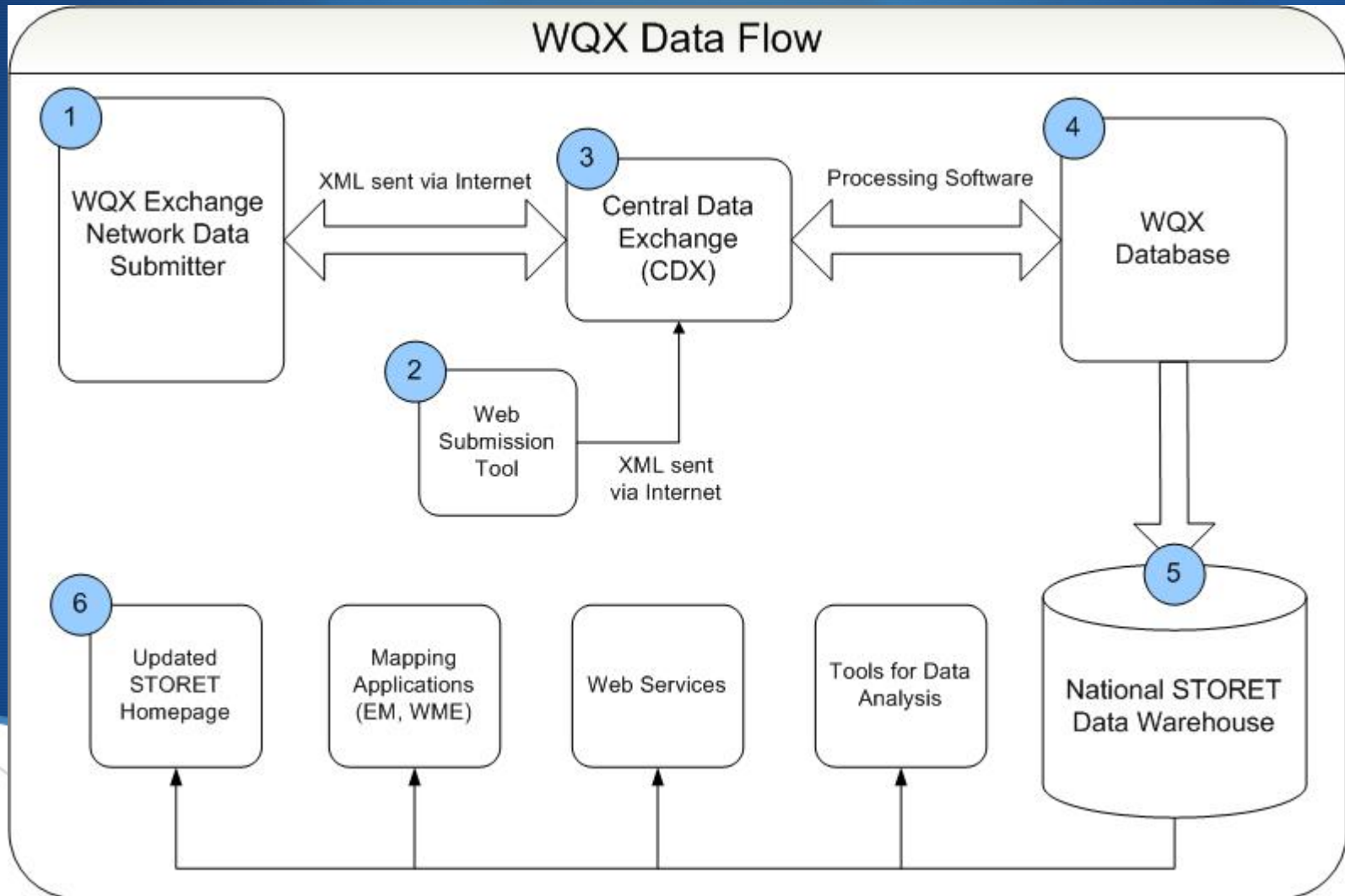
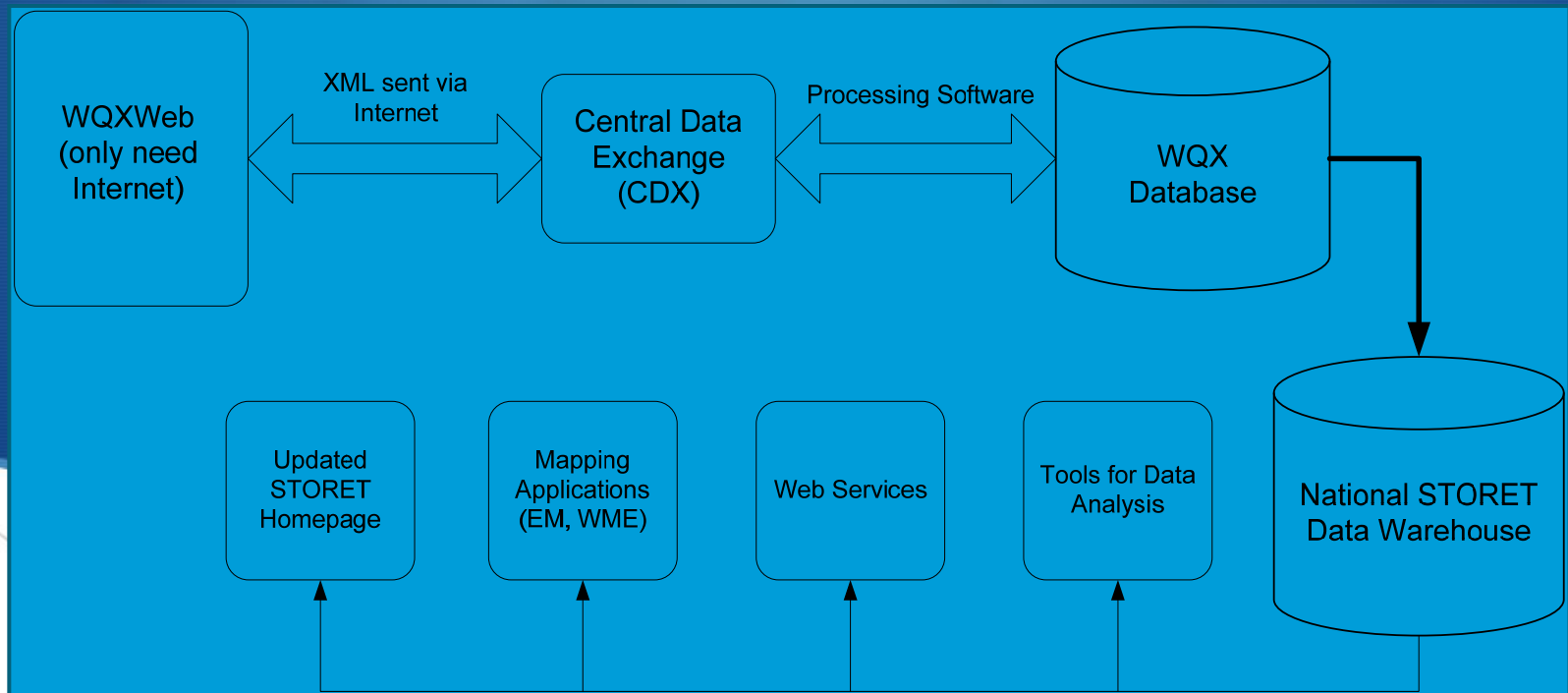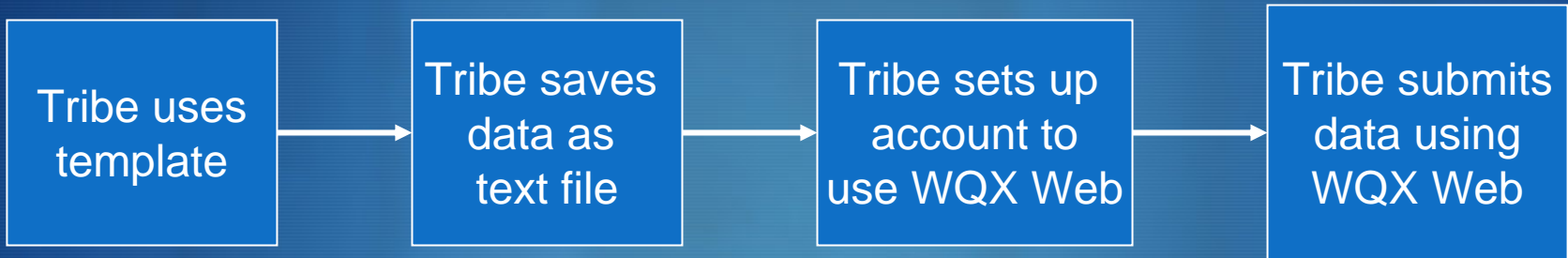| Tab Name	Description
Export	Provides a mechanism to easily export WQX Web compatible tab dleimited text files
Projects	A template which can be used to store Project data
Monitoring Locations	A template which can be used to store Monitoring Location data
Results	A template which can be used to store Results data
Allowed Values - Results	Shows what the Allowable Values are for various Result-related data elements

How EPA Describes Monitoring Data

Three Categories of Data

- **Projects** *(Why data were collected)*

  - Brief summary of monitoring plan

- **Monitoring Locations** *(Where data were collected)*

  - Describe where monitoring takes place

- **Results** *(When, How and What were collected)*

  - Measurements of what were monitored

WQX in the Big Picture

WQX Web Flow

Tribe uses template → Tribe saves data as text file → Tribe sets up account to use WQX Web → Tribe submits data using WQX Web

WQXWeb (only need Internet) ←— XML sent via Internet —→ Central Data Exchange (CDX) ←— Processing Software —→ WQX Database

WQX Database → National STORET Data Warehouse

Updated STORET Homepage

Mapping Applications (EM, WME)

Web Services

Tools for Data Analysis

STORET Resources Available

- The STORET/WQX team has several resources available to help you:
  - Available at the STORET web site: **www.epa.gov/storet**
    - Visit the WQX section: **http://www.epa.gov/storet/wqx.html**
    - Diagrams and presentations about how WQX works
    - Presentations from others on how they've implemented WQX (including tribes)
    - Lists of allowable values for WQX
  - Read the Flow Configuration Document
    - See example XML Files
    - Examine the Data Exchange Template

Contacting STORET

- The STORET Team: **storet@epa.gov**

- 1-800-424-9067

- **www.epa.gov/storet**

- **www.epa.gov/storet/wqx.html**

- **http://www.exchangenetwork.net**

Reporting Data to EPA

- CWA §106 Guidance requires Tribes to submit data in STORET/WQX-compatible, electronic format to EPA

- Tribes are not yet **required** to upload data to the National STORET Warehouse, but it is highly encouraged (especially with the availability of WQX Web)

- If data is not submitted directly to the warehouse, tribes must send data electronically with the Assessment Report each year to EPA Project Officer via email or CD

- Data should include at least the parameters required by program maturity level (4, 6, or 9)

EPA Performance Measures

- **WQ 6a:**
  - Tribal Water Quality Program completion of a <u>Monitoring Strategy</u>

- **WQ 6b:**
  - Tribal Water Quality Program submittal of surface water quality <u>data in STORET-compatible format</u>

- **SP-14:**
  - Documentation of <u>Water Quality "Improvement"</u> in Indian Country

Water Quality Performance Measure: SP-14

- EPA 2006-2011 Strategic Plan Goal 2.2.1
  - Goal 2: Clean and Safe Water
    - 2.2: Protect Water Quality
      - 2.2.1: Improve Water Quality on a Watershed Basis

SP-14 Goal

- *By 2012, improve water quality in Indian country at not fewer than 50 baseline monitoring stations in tribal waters*
  - Show improvement in one or more of the seven key parameters
  - 2006 Baseline: 185 monitoring stations on tribal waters out of an estimated 1,661 stations operated by tribes
    - Where water quality has been depressed
    - With activities to improve water quality

How is "Improvement" defined?

- A water body assessment must demonstrate a positive trend/change in at least one of the parameters or parameter subcomponent over at least *two years* within the reporting period (2007-2012).

- There is *no evidence* of deteriorating trends in other related parameters.

Monitoring Timeframe

- The baseline for the trend or change may be derived from monitoring conducted as far back as 1987

- Monitoring stations planned for sampling (for one or more of the seven key parameters) during the FY 2006 – 2012 period

How to Show Improvement

- *Three paths – "A", "B" or "C"*
- **"Path A"**
  - Use statistical procedures to demonstrate that significant improvement has occurred with a *90 percent or greater level of confidence*
    - Requires a lot of data to demonstrate

How to Show Improvement

"Path B"

- Provide at least *three lines* of evidence to demonstrate improvement
  - Evidence of an improving trend in one or more of the water quality parameters.

  AND

  - At least one of the following four lines of evidence:
    1. Evidence of an improving trend in a related biological, physical, or chemical indicator/index that is not one of the seven key parameters.
    2. Evidence of an improving trend in water quality based on predictive/ modeled data, with field level ground truthing.
    3. Evidence of relevant load reductions.
    4. Evidence of *relevant nonpoint source or point source implementation*, or other evidence of watershed implementation actions involving the monitored waters.

How to Show Improvement

"Path C"

◆ Report that a water body on which the station is located has been restored to attainment with water quality standards (WQS) associated with one of the seven key parameters.

  ◆ EPA-approved WQS

  or

  ◆ Tribal Standards adopted under Tribal law

  ◆ Draft Tribal standards

  ◆ Adjacent State Standards

Commitment

- EPA committed to 50 national monitoring stations to show an improvement in one parameter

- Region 9 committed to 15 stations to show an improvement in one parameter

- Region 9 is working with tribes that were identified as having monitoring programs at the intermediate or mature levels to help meet our commitment

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