

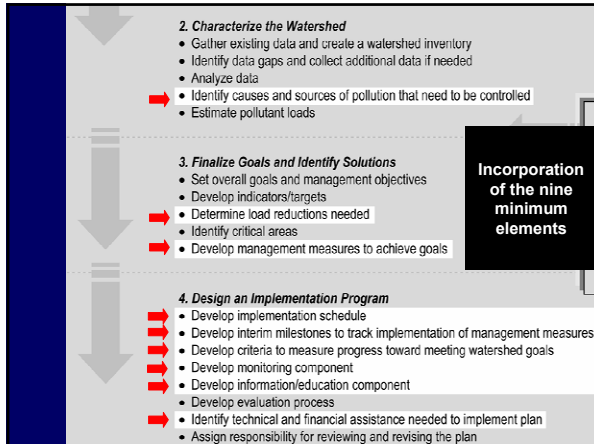
Watershed-Based Planning Handbook

http://www.epa.gov/owow/nps/watershed_handbook/

Watershed-Based NPS Plans

- a. Identify stressors & sources to be controlled
- b. Estimate load reductions expected from BMPs
- c. Describe mgmt measures & targeted critical areas
- d. Estimate TA, \$\$, & source required for implementation
- e. Describe info & education needed to promote BMPs
- f. Develop schedule for implementation of BMPs, assign tasks
- g. Describe interim, measurable milestones
- h. Identify criteria to measure progress
- i. Develop monitoring component

Source: US EPA 2004 319 Supplemental Guidelines



a. Identify causes and sources of pollution that need to be controlled

- Identify practices that are causing impairment
- Estimate the extent to which they are causing the problem. For instance, list the number of farms, their irrigated acreage and the type of irrigation being used.

Chapters 5, 6, & 7

Characterizing causes & sources

- By "loads"
 - Kilograms per day
 - Pounds per week
 - Tons per month
- Or by other means . . .
 - Concentration-based expression of the "load" (e.g., milligrams per liter)
 - $mg/L \times L/day = mg/day$ [$C = m/v$]
 - # of miles of streambank needing stabilization or vegetation
 - # of AFOs requiring nutrient plans

b. Estimate the load reductions expected from management measures.

- First you will determine what the loads are in this watershed – remember, you must collect a discharge measurement with every sample in order to do this!
- Various models can be used to estimate how much of a reduction can be expected from various changes in practices, for example, leaving a filter strip between irrigated fields and a stream.

Chapters 8 & 9

c. A description of the measures needed to achieve the estimated reductions, and the areas in the watershed to target these changes.

- List the measures that are most likely to help achieve the reduction (buffer strips, changing irrigation practices)
- Identify the areas in the watershed where these practices will provide the “biggest bang for the buck”. This can be shown on a map.

Chapters 7, 8, 9, 10 & 11

d. Estimate the technical and financial assistance needed and identify the parties you'll have to work with.

- Estimate how much it will cost to change practices in this watershed. This includes education and long term monitoring as well as the actual construction and restoration.
- List the kinds of technical help you will need, vs. what you can do in-house.
- List other parties you will need help from (Water Resources, BIA Irrigation District, Conservation District)

Chapter 12

e. Information and education component to help the public understand the project.

- Identify specific groups you need to work with.
- Develop materials that are appropriate for these groups.

Chapters 3 & 12

f. Develop a schedule for implementing the plan

- Again, EPA would like this to be about 5 years.
- The schedule should be detailed enough to truly guide your program.

Chapter 12

g. Interim milestones to determine if the plan is being implemented on schedule.

- These milestones are the tasks that will lead to achieving the goals you have identified. For example, if you have decided to reduce bank erosion by 30%, interim milestones might be
- Installation of 12 miles of riparian fencing
- Conversion of 4 acres of cropland to buffer strips
- Give site tours to agricultural producers once/year.

Chapter 12

h. Establish criteria that will determine if load reductions are occurring and progress is being made to meet standards

- This is where you establish what your water quality goals are. These may be standards or other measurable indicators of water quality.

- If you do not have standards, you will need to establish some other criteria: state, national, or other tribe's criteria, for instance.

- *Chapters 12 & 13*

Watershed Planning Steps



STEP 1 BUILD PARTNERSHIPS

- ID stakeholders
- ID issues of concern
- Set preliminary goals
- Develop indicators
- Conduct outreach

Watershed Planning Steps



STEP 2 CHARACTERIZE WATERSHED

- Gather existing data
- Create data inventory
- ID data gaps
- Collect additional data, if needed
- Analyze data
- ID causes and sources
- Estimate pollutant loads

Watershed Planning Steps

**STEP 1
BUILD PARTNERSHIP**

- Gather expertise
- ID stakeholders
- ID issues
- Set preliminary goals
- Develop initial plan
- Conduct outreach

**STEP 2
CHARACTERIZE WATERSHED**

- Create data collection plan
- ID data gaps
- Collect additional data
- Analyze data
- ID causes
- Estimate potential

**STEP 3
FINALIZE GOALS AND IDENTIFY SOLUTIONS**

- Set goals and management objectives
- Develop indicators/targets
- ID critical areas
- ID critical areas
- ID management measures needed

Watershed Planning Steps

**STEP 3
FINALIZE GOALS AND IDENTIFY SOLUTIONS**

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- ID management measures needed

**STEP 4
DESIGN IMPLEMENTATION PROGRAM**

- Develop implementation schedule
- Set interim milestones
- Determine how you will measure success
- Develop monitoring component
- Develop institutional/cultural component
- ID technical and financial resources needed
- Assign responsibility

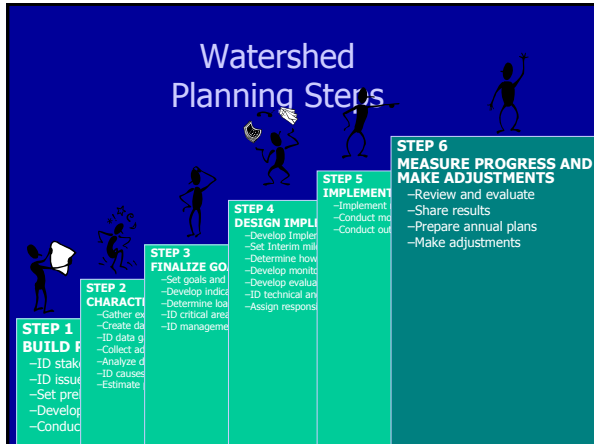
Watershed Planning Steps

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**STEP 5
IMPLEMENT WATERSHED PLAN**

- Implement management strategies
- Conduct monitoring
- Conduct outreach activities



What should the plan look like?

- **Introduction**
 - Plan area & description, partners, background
- **Water quality information & analysis**
 - WQ goals, monitoring/assessment results
 - Key pollutants / stressors, sources, current loads
- **Proposed management measures**
 - Load reductions needed, BMP types proposed
 - Reductions expected from BMPs, installation sites
- **Implementation plan**
 - Public info/education & outreach/involvement plan
 - BMP/\$\$/TA support sources, project schedule & costs
- **Monitoring and adaptive management approach**
 - Interim measurable milestones, load reduction criteria
 - Evaluation framework, monitoring plan & partners

Why are we doing these again?

- Without a plan, emergencies and complaints direct your work.
- If you don't know what you're trying to accomplish, you won't know when you've succeeded.
- If your efforts are spread over too large an area, it will be hard to see results.

How does this relate to my grants?

CWA 106 grants

- The new CWA 106 guidance states that all tribes receiving these funds should be developing watershed plans. Progress towards their development is likely to be a factor in funding decisions in the future.

CWA 319 grants

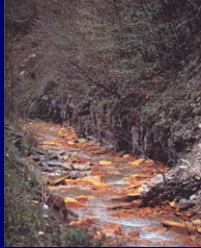
- The CWA 319 guidance for 2006 states "Tribes are strongly encouraged to submit proposals that develop and/or implement watershed-based plans designed to protect unimpaired waters and restore NPS-impaired waters." "...beginning in 2008, competitive grants will only be awarded for the implementation of workplans that are designed to develop and/or implement a watershed-based plan."

Tying programs together with a watershed plan

- You should focus on impaired waters
- A watershed plan should be developed before projects are selected
- 319 and 106 work plans should be based on the overall watershed plan
- Thinking beyond 319 and 106
 - Wetlands protection
 - Working with the tribal utility department
 - Brownfields sites
 - Open dump cleanup

The Bottom Line from US EPA:

- Reasonable efforts needed to ID stressors/sources
- Assessment & other data don't have to be exhaustive, but should be indicative
- Preliminary info & estimates can be modified & corrected over time, if necessary



Watersheds

