

# Watershed Planning Guidance

## Alaska Department of Environmental Conservation



### Introduction

Watershed planning uses a holistic planning process to determine steps to take for water quality protection or improvement. Some watershed plans are focused on restoring water quality and others may be keying in on ways to protect water quality. Often, a watershed plan will contain elements for both water quality protection and restoration as well as other elements important to the community such as surface water protection for a public water system.

Watershed planning occurs at the community level and often includes many participating partners. The watershed plan should document and evaluate options for reducing pollution including innovative approaches such as green infrastructure and other similar measures. The watershed plan is a living document that can be modified as the community implements actions and evaluates outcomes.

All watershed plans (and planning process) should consider the following:

- Partnership development
  - Identification of key stakeholders
  - Public involvement
- Watershed characterization
  - Inventory existing information and identify data gaps
  - Identify sources of pollution
- Discussion of goals and solutions
  - Include work needed to implement each option (e.g., field assessments, new ordinances)
  - Other environmental and public health benefits associated with each option, including aesthetic appeal and community support
- Implementation plan and timeline
  - Rough cost estimates and potential funding sources
  - Potential partners for implementation and long-term maintenance needs

Below are descriptions of two types of watershed-based plans based on U.S. Environmental Protection Agency (EPA) guidelines. The plans differ in the degree of pollutant information that is currently known within the watershed and if the watershed has water quality impairments.

### Protection Watershed Plan

Protection based watershed plans work best in watersheds where the waters are largely or fully attaining water quality standards. A protection plan may also cover waters at risk of impairment but not on [Alaska's list of impaired waters](#) (Categories 4 and 5). Protection based watershed plans include measures to improve current water quality and to prevent future degradation. A watershed protection plan includes documentation of steps to be taken and activities to be implemented that

# Watershed Planning Guidance

## Alaska Department of Environmental Conservation



are reasonably expected to result in a specified level of protection of one or more waterbodies within a watershed for a specified amount of time. According to EPA guidelines<sup>1</sup>, protection plans have five minimum components but could include additional information to make the plan easier to implement. The five minimum components are:

1. Identification of specific waters to be protected and risks to their condition including the causes or sources of nonpoint source pollution. What are the water quality problems or threats to water quality?
2. Watershed project goal(s) and explanation of how the proposed project(s) will achieve or make advancements towards achieving water quality goals.
3. Schedule and milestones to guide implementation including timeframes over which a protection target condition is expected to be attained, maintained, or improved.
4. How the project will measure progress, success, and adjust implementation if needed. Proposed management measures (including a description of operation and maintenance requirements) and explanation of how these measures will effectively address the nonpoint source pollution threat(s) identified above.
5. Water quality monitoring post -implementation, including a description of the process and measures to gauge project success.

### Plan Approval

If a protection watershed plan was developed using DEC Alaska Clean Water Action grant funds, the draft plan will be submitted to DEC as part of the grant deliverables. DEC will share the draft plan with our EPA Region 10 nonpoint source coordinator for their review and approval. The grant project manager will consider all comments received as they prepare the final watershed plan.

### Watershed Protection Plan Checklist (required and optional elements)

- Watershed background information
- Description of watershed
- Overview of past watershed work (if any)
- Watershed map
- Identification of the causes or sources of water quality threat (known and suspected)
- Water quality summary (if known)
- Watershed status ([NPS Priority Watersheds](#), [Integrated Report Categories](#), etc.)
- Summary of nonpoint source pollution sources and water quality threats
- Watershed project goal(s) and explanation of how the proposed project(s) will achieve or make advancements towards achieving water quality goals
- Overall plan goal

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<sup>1</sup> U.S. E Environmental Protection Agency. (2014). *Nonpoint Source Program and Grants Guidelines for State and Territories*. <https://www.epa.gov/nps/319-grant-current-guidance>

# Watershed Planning Guidance

## Alaska Department of Environmental Conservation



- Plan objectives to achieve goal
- Action plan, milestones, and schedule to guide project implementation
- Plan ownership and partner roles
- Name of entity that will lead efforts to implement the watershed plan
- Description of other key partners and their anticipated roles
- Proposed management measures including structural and non-structural (clean-up efforts, outreach, etc.) best management practices (BMPs) and an explanation of how the measures will effectively address the nonpoint source pollution threat(s). Structural BMPs must include a description of operation/maintenance requirements.
- Water quality monitoring component, including description of process and measures (e.g., water quality parameters) to gauge project success
- Plan update schedule and/or process based on evaluation of implementation success

## 9-Element Watershed Based Plan

Watershed plans consistent with EPA's nine key elements<sup>2</sup> provide a framework for improving water quality in a holistic manner within a geographic watershed. The 9 elements help assess the contributing causes and sources of nonpoint source (runoff) pollution, involve key stakeholders, and prioritize restoration and protection strategies to address water quality problems. A 9-element watershed-based plan can include impaired waters, waters at risk of impairment, and waters currently meeting water quality standards.

### Understanding the Nine Key Elements

The first three elements characterize and set goals to address pollution sources. The remaining six elements determine specific resources and criteria to implement and evaluate the plan. The watershed-based plan may contain additional information<sup>3</sup> but to the extent practicable, should, at a minimum, address these nine key elements.

### Plan Approval

If a 9-element watershed plan was developed using DEC Alaska Clean Water Action grant funds, the draft plan will be submitted to DEC as part of the grant deliverables. DEC will share the draft plan with our EPA Region 10 nonpoint source coordinator for their review and feedback. The grant project manager will consider all comments received as they prepare the final watershed plan.

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<sup>2</sup> EPA's 9-element watershed planning handbook: [EPA 9 Element Handbook](#)

<sup>3</sup> See example of EPA's review checklist starting on page 4.

# Watershed Planning Guidance

## Alaska Department of Environmental Conservation



### EPA 9-Element Watershed Based Plan (WBP) Review Checklist

Watershed Name

*Reviewed by Name, EPA Region, (Date)*

This checklist may be used by EPA in their review of 9-element watershed-based plans. The checklist indicates what is a required element versus what is optional. Including all or some of the optional elements will make the WBP more complete and likely improve implementation.

#### **Element a. Identify the causes and sources (to the extent practicable without collecting additional data)**

##### **Required:**

- Identification of causes of impairment
- Identification of pollutant sources
- Identification of any other goals in the watershed plan

##### **Optional:**

- List of impaired waterbodies
- Map that locates the major cause(s) and source(s) of impairment
- Goals to meet (or exceed) the appropriate WQS for pollutant(s)
- Natural background levels that make up the pollutant loads causing problems

**Element b. Estimate pollutant loading into the watershed and the expected load reductions (to the extent practicable without collecting additional data). For waters with an [approved TMDL](#), refer to the TMDL loading calculations. For waters or pollutants without a TMDL, a rough estimate is acceptable.**

##### **Required:**

- Estimate of load reductions expected from management measures

##### **Optional:**

If a TMDL exists,

- Identifies and incorporate the TMDLs
- Provides the applicable load reductions needed to achieve the TMDL
- Applicable loads for downstream waters, so that downstream does not exceed WQS

# Watershed Planning Guidance

## Alaska Department of Environmental Conservation



### Element c. Describe management measures that will achieve load reductions and targeted critical areas

#### Required:

- Description of nonpoint source management measures
- Description of critical areas in which those measures will be needed for implementation
- Additional measures to achieve any other pollution prevention goals in the watershed plan

#### Optional:

- Map with priority areas and practices
- Possible use of measures to protect important habitats (e.g. wetlands, vegetated buffers, forest corridors, etc.) and other non-polluting areas of the watershed

### Element d. Estimate the amounts of technical and financial assistance and the relevant authorities needed to implement the plan

#### Required:

- Estimate of the amounts of technical and financial assistance needed and associated costs
- Sources and authorities that will be relied upon to implement this plan

#### Optional:

Breakdown of the following costs:

- Implementation
- Long-term operation
- Maintenance of management measures
- Information/education (I/E) activities
- Monitoring
- Evaluation activities
- Identifies the possible federal, state, local, and private funds or resources that might be available for implementation
- Identifies and addresses shortfalls between needs and available resources

# Watershed Planning Guidance

## Alaska Department of Environmental Conservation



### Element e. Develop an information/education component

#### Required:

- Identifies the education and outreach activities or actions (I/E) that will be used to implement the plan

#### Optional:

Identifies how the I/E component may

- Support the adoption and long-term operation and maintenance of management practices
- Support stakeholder involvement efforts

### Element f. Develop a project schedule

#### Required:

- Schedule for implementing the NPS management measures identified in *Element g*.
- Schedule is reasonably expeditious

#### Optional:

- Identifies steps towards obtaining needed funds as feasible in order to avoid “shelving” schedules for lack of funds or program authorities

### Element g. Develop the interim measurable milestones

#### Required:

- Description of measurable milestones for determining whether nonpoint source management measures or other control actions are being implemented

#### Optional:

- Milestones are tied directly to the schedule outlined in *Element f*

### Element h. Identify indicators to measure progress and make adjustments to the plan as needed

#### Required:

- A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining WQS:

Direct measurements (i.e. fecal coliform concentrations, nutrient loads) and/or

Indirect indicators of load reduction (number of beach closings)

# Watershed Planning Guidance

## Alaska Department of Environmental Conservation



### Optional:

Criteria should reflect:

- Time it takes to implement pollution control measures
- Time needed for water quality indicators to respond, including lag times (groundwater speed, time for pollutants to degrade, etc.)

Indicates determination process for deciding whether WBP needs to be revised if interim targets are not met, such as:

- Changing management practices
- Updating the loading analyses
- Reassessing the time it takes for pollution concentrations to respond to treatment

### Element i. Develop a monitoring component

#### Required:

- Monitoring component to determine if progress is being made toward attaining or maintain the applicable water quality standards

#### Optional:

- Monitoring program is integrated with the schedule
- Monitoring program is integrated with the milestone criteria
- Includes watershed-scale monitoring to measure the effects of multiple programs, projects, and trends over time
- Instream monitoring for individual or several BMPs