

Instructions for preparation of water resource management plans

National Park Service
Department of the Interior
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INSTRUCTIONS FOR PREPARATION OF WATER RESOURCE
MANAGEMENT PLANS

I. BACKGROUND

The Memorandum of Understanding on water quality management planning between the Administrator of the Environmental Protection Agency and the Secretary of the Interior required the National Park Service to prepare a work plan for implementing the memorandum. Part I of that work plan provides for preparation of Park Water Plans addressing surface and ground water in parks. The title Park Water Plan was changed to Water Resource Management Plan to be more compatible with the nomenclature of other National Park Service planning documents.

Although water quality management planning provided the impetus for preparing Water Resources Management Plans, the plans address all aspects of park water resources.

II. RELATIONSHIP TO OTHER NATIONAL PARK SERVICE DOCUMENTS

Personnel preparing Water Resource Management Plans must be familiar with and must refer to NPS-2, Planning Process Guidelines.

The hierarchy of park management plans is briefly described below to show where Water Resource Management Plans fit into the overall NPS planning process.

A. General Management Plan

"The General Management Plan (GMP) is the parkwide plan for meeting the management objectives of the park. It contains both short-term and long-range strategies for resources management, visitor use, and development in compliance with National Park Service management policies and applicable legislative and executive requirements, in accordance with resource capabilities and limitations, and in recognition of public concerns. The plan considers the park as an integrated system and establishes the framework for major programs, facilities, and management actions, as well as legislative and administrative requirements for implementing them.

The level of detail of GMPs is variable, depending on the size and complexity of the park and the nature of the planning objectives. In small parks, the plans typically provide sufficient detail to facilitate design of facilities and implementation of a wide variety of management actions. In large complex parks, general management plans typically provide this level of detail only for management concerns that require immediate attention."¹

¹ NPS-2, Chapter 7, Page 1, Release No. 2, dated July 1978

B. Action Plans

Action plans are "prepared as sequels to the approved GMP of large, complex parks. In these parks, the level of detail in the GMP is typically inadequate to provide detailed guidance for all geographic areas and for all facets of park management. In small parks, action plans are less likely to be required because the GMP is more likely to provide this comprehensive management guidance.

Action plans represent refinements and elaborations of the park's GMP. They therefore should be in substantive agreement with the proposals in the GMP. If, during the action planning effort, new information or new perspectives are brought to light that require modification of the GMP, revisions to the parent document should be made to bring the two documents into agreement."²

1. Natural Resources Management Plan

The Natural Resources Management Plan is an action plan that "defines the course of action, based on Service policy and law, for the continuous protection, management, and maintenance to perpetuate the resources, to achieve park purpose and objectives, and to appropriately regulate the effect of park use on these resources.

The plan defines the operating program related to all the natural resources and the science program necessary to address crucial aspects or refinements of those operations. In the absence of adequate knowledge, operational programs will be aimed at maintaining the status quo and avoidance of long term or possible irreversible impacts until priority research can provide necessary information for management changes."³

2. Water Resource Management Plan

The Water Resource Management Plan is an action plan. Where detailed planning is needed for all or most aspects of natural resource management including water resources, a Natural Resources Management Plan will be prepared with a section entitled Water Resources Management Plan. However,

² Ibid., Pages 12 and 13

³ Management Policies, Page IV-3, dated February 1978

if it is determined that detailed planning is needed only for water resources, a Water Resource Management Plan will be prepared separately as an appendix to the Natural Resources Management Plan.

Where the GMP or the Natural Resources Management Plan adequately cover water resource management strategies, a Water Resources Management Plan will not be required.

III. PURPOSE OF THE WATER RESOURCE MANAGEMENT PLAN

The Water Resource Management Plan defines a course of action based upon law and National Park Service policy for the protection, conservation, use and management of park water resources. It also is a repository for information about park water resources.

IV. CONTENTS OF WATER RESOURCE MANAGEMENT PLAN

The Water Resource Management Plan addresses all water resources in a park - ground and surface; salt and fresh, lakes, ponds, rivers, streams, glaciers, springs, bogs, marshes, etc.

The scope and the complexity of a Water Resource Management Plan will vary depending upon such factors as park size; relative location within a watershed; land use practices upstream of the park; requirements for water downstream from the park; characteristics of park visitation, recreational use demands; and park use of water supply systems, sewer systems and waste treatment plants operated by local governmental units. Judgement must be used in each case for determining plan contents.

A. Information Base

This first section of the Park Water Resource Management Plan presents information about the current condition and status of park water resources. It sets the stage for the analytical and prescriptive processes that follow.

Not all basic data can be nor should be accommodated in this section of the planning document. Some data will be so detailed or voluminous that inclusion would disrupt or obfuscate the text. That kind of information will go into an appendix.

The content of the Information Base will be as follows:

1. Introductory Statement on Present Status of Park Water Resources

The statement will present an overview of the park's ground and surface water resources covering interrelationships with the surrounding region and magnitude, diversity, and importance in natural resources preservation and recreational use. It also will:

- a. Contain an historical account of water resource management in the park covering a period of time from establishment of the park, or earlier, to the present day.
- b. Identify the water quality management planning area in which the park is located and the agency administering the water quality management planning program.
- c. Identify legal jurisdictional authority for water resource management and discuss implications.
- d. Summarize interrelationship, if any, between the park and the State or areawide water quality management plan.
- e. Include notation of research and monitoring activities and summaries of important findings.

2. Map Showing Surface Waters

Locations and names of park surface waters, including springs will be displayed.

3. Classification of Park Surface Water by Existing Uses

Purpose of classification is to develop a basis for determining acceptable water quality standards. Use classifications represent the primary determinants in developing water quality management goals and park specific water quality standards where needed.

Section 303 of the Clean Water Act provides for State establishment of water quality standards "taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation." The National Park Service will use these classifications where suitable for application to park surface waters. However, additional classifications more tailored to park activities will be used.

Park surface waters will be classified in accordance with the following uses:

- Public water supply.
- . Non-Public water supply.
- . Maintenance of ecosystem, General.
- . Maintenance of ecosystem, Habitat of Plants and animals of special interest other than threatened or endangered.
- . Maintenance of ecosystem, Habitat of listed threatened or endangered species indigenous to park.
- . Aesthetics.
- . Maintenance of historic setting.
- . Recreational purposes, Body contact (swimming, wading by children, water skiing).
- . Recreational purposes, Non-contact (fishing, boating, nature study, etc.).
- . Agricultural, Source for irrigation supply.
- . Agricultural, Source for livestock water supply.
- . Disposal of sewage effluent.

Waters will be classified in accordance with their primary use. If other uses occur, they will be classified as secondary uses. For example, a segment of a fishing stream may have a primary classification "Maintenance of ecosystem, General" and a secondary classification "Recreational, Non-contact."

Water classification may be presented on maps, in tables, or lists or in whatever manner is deemed most appropriate for the park.

4. Floodplain Management

The 100 and 500 year floodplains will be identified to facilitate compliance with E.O. 11988 on floodplain management. Seasonal and flash flooding patterns and risks will be discussed, and the park's current floodplain management program will be described.

5. Water Quantity

- a. A statement will address present quantities of surface and ground water in the park.

Where data are available, the statement will indicate whether or not stream flows, water levels and water tables are maintaining historic patterns. If not, the causes of deviation and the resulting effects upon park resources and visitor uses will be discussed.

- b. Where available, precipitation and evapo-transpiration characteristics will be presented and a park water budget will be displayed.
- c. Existing data on stream flows and water tables will be measured using appropriate procedures outlined in The National Handbook of Recommended Methods for Water-Data Acquisition, developed by the Federal Interagency Work Group on Designation of Standards for Water Data Acquisition.

6. Water Quality

- a. The present quality of surface waters in the park will be related to the existing uses as classified in Section 3; the present quality of ground waters will be related to resource preservation and visitor use.
- b. State, interstate and local water quality standards applying to park waters will be identified. Where water quality within the park violates these standards, the violations will be identified and their nature and extent will be discussed.
- c. Existing data pertaining to quality of park waters will be presented - especially where main streams flow into and from the park.
- d. State designated Outstanding National Resource Waters will be identified. Such designation means that no degradation shall be allowed in these waters.

7. Park Ecosystem

This section will contain a description of the existing biota associated with the park's water resources, and, if the information is available, will discuss past biotic resources. Comparison of the present biota with the biota which had historically inhabited the area may give insight into water quality/quantity changes by natural or man-induced causes.

Threatened and endangered species known to inhabit the park will be identified and their dependency on park water resources for maintenance of their habitat will be noted. Also, if not covered elsewhere, the dependency of park ecosystems upon maintenance of quantity and quality of park waters will be addressed here.

8. Water Rights

Instructions will be issued after the President's Water Policy Implementation Task Force on Federal Reserved Water Rights completes its report. In the meantime, policy on water rights expressed in the National Park Service Management Policies is in effect.

9. Bibliography

Research projects, data collections, plans, and other types of pertinent documents will be listed.

If certain information is needed for development and analysis of alternative strategies for solving park water problems, but is unavailable, a listing of the needed information will be included in the Outline of Planning Requirements. The needed information will be obtained as early as possible in order to facilitate formulation of alternative strategies.

B. Park-Specific Objectives for Management of Water Resources: Problem Identification and Planning Goals.

The objectives will be refinements of the Management Objectives in the park's approved Statement for Management and will be compatible with the approved GMP. They will list the desired uses of and conditions for park ground and surface water resources.

Specific problems involving management of park waters for their protection and use will be identified. Problems may be revealed by:

1. Reviewing proposals for future land and water uses within the watershed or surrounding region and anticipating their effects on park waters.
2. Comparing existing water resource uses with management objectives.
3. Comparing water quantity and quality requirements for maintaining existing uses with existing and probable future water conditions.
4. Noting situations where State water quality standards offer inadequate protection to park resource.
5. Noting violations of State water quality standards in the park.

6. Noting changing physical conditions (i.e., lowering of ground water) revealed by monitoring.
7. Noting legal status of Federal claims to park waters.
8. Reviewing State water right applications (western states) made for areas outside the park, but within a hydrologic basin which encompasses all or a portion of the park.
9. Reviewing existing technical data to determine adequacy for management of park waters.

Finding solutions to these problems and ways to achieve management objectives will be the goal of the following water resource management planning activities.

C. Analysis of Alternatives

Alternate strategies for solving park water resources problems and meeting water resources management objectives will be developed and analyzed. All reasonable ways of achieving water resource management objectives and solving water resources management problems will be considered and the beneficial and adverse consequences of implementing each strategy will be identified.

Analysis of alternative strategies for meeting objectives and solving problems may include such activities as:

"Analyzing management objectives to ensure that they are not outdated, and are valid objectives--not solutions or approaches. New objectives are formulated, evaluated, and approved as necessary.

Developing alternative strategies for meeting the objectives.

Identifying and quantifying the effects of alternative strategies on the natural and cultural resources of the park and its region.

Analyzing social and economic implications for the park and its region.

Analyzing effects on visitors and on the kinds and amounts of public use of the park.

Analyzing the effects on park management.

Analyzing the effects on energy use.

Estimating costs, manpower requirements, and timeframes.

Analyzing the cost-effectiveness of alternative strategies in meeting park management objectives."⁴

D. Plan Formulation

The next step is to compare and assess environmental consequences, cost effectiveness, and other implications of the reasonable alternatives. Upon formulation of a reasonable set of alternatives, time should be taken to reflect upon the next course of action.

If none of the alternatives have potential for causing significant environmental impacts, a file memorandum may be prepared to support categorical exclusion of the Water Resource Management Plan from NEPA documentation. Any environmental information evaluated in the course of plan development will be summarized in the file memorandum. In such cases, it still may be advantageous to solicit comments from the public for substantive comments or for maintenance of good public relations.

Normally, however, the Water Resource Management Plan will be a combination document containing an environmental assessment and environmental review. Public review requirements for environmental assessments will apply.

Based upon review of the alternatives and analysis and evaluation of public comments, the Regional Director will select a recommended course of action. The rationale for rejection or selection of each alternative will be documented in the environmental review. If, on the other hand, the proposals are substantively changed and they have been reviewed as a NEPA document, an amendment will be prepared and made available for public review. If public interest is intense, the environmental assessment and environmental review can be prepared as separate documents, each subject to public scrutiny. A separate plan, prepared following release of the environmental review and taking into consideration public comments, also should be considered.

Also, a determination will be made in the environmental review as to whether the selected strategies constitute a major Federal action with significant environmental impacts which were not previously addressed by the environmental document covering the General Management Plan. If so, a commitment will be made to

⁴ NPS-2, Chapter 6, Page 1, Release No. 2, dated July 1978

prepare an environmental statement. If not, the decision not to prepare an environmental statement will be documented.

Water resource management planners must be familiar with the most recent Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) and have a working knowledge of the National Park Service derivative procedures implementing NEPA as incorporated in NPS-12.

V. PROCEDURES AND RESPONSIBILITIES

Proposals to prepare Water Resource Management Plans will be listed on the Outline of Planning Requirements as action plans and will be supported by Water Resource Proposal Form 10-250.

Superintendents annually will review their park Water Resources Management Plans. If a review reveals a need for revision, a proposal to revise the plan will be considered for placement on the Outline of Planning Requirements.

Document/Process	Prepared By	Reviewed By	Recommended By	Approved By
1. Outline of Planning Requirements	Superintendent	Regional Water Resources Personnel	Superintendent	Regional Director
2. Form 10-250	Cooperatively by park and Regional Office	Regional Water Resources Personnel	Superintendent	Regional Director
3. Development, Analysis and Selection of Alternative Plans	Cooperatively by park and Regional Water Resources Personnel	Regional Office	Superintendent	Regional Director
4. Water Resource Management Plan	Cooperatively by park and Regional Water Resources Personnel	Regional Office and Division of Air and Water Resources in WASO	Superintendent	Regional Director

