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U.S. Department of the Interior

Delaware Water Gap National Recreation Area
Pennsylvania / New Jersey



Delaware Water Gap National Recreation Area Trails Plan & General Management Plan Amendment

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INTRODUCTION

This document is the final Trails Plan that describes the designated trail system at Delaware Water Gap National Recreation Area (DWGNRA). This document is also a General Management Plan Amendment (GMPA) that replaces the section of the 1987 GMP that deals with trails.

A General Management Plan (GMP) is prepared and periodically updated for each unit of the National Park System (NPS) in order to help the NPS, in consultation with the public, decide what resource conditions and visitor experiences a park should provide, and why. A GMP sets direction for resource protection and visitor use in consultation with the public, and NPS adopts its findings and uses them to guide the management of a park for 10 to 15 years. In short, it tells park managers what they should be doing and why.

Because there may be many different approaches to park use, management and development, the process for developing GMP amendments investigates a range of alternatives that may allow a park to achieve its goals. To help the public and NPS understand what would happen if an alternative were adopted, the impacts of each alternative on the natural and cultural environment are described and compared. These descriptions are contained in an Environmental Impact Statement (EIS), which is prepared to satisfy the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended. After a full range of alternatives has been evaluated for potential impacts on the environment, the NPS, in consultation with the public, chooses the alternative to be implemented.

Prior to the adoption of this Trails Plan/GMP Amendment, an EIS was prepared in accordance with the requirements of NEPA. The EIS presented and analyzed three alternatives for the designation of a parkwide trail system. The EIS described the environment that would be affected and the environmental consequences of implementing the proposed action. A Record of Decision, documenting the park's decision to adopt the trail system described in this Trails Plan, was signed by the Regional Director in January, 2000.

This Trails Plan describes an optimal trail system in the park and provides a foundation for future decision making. Typically, site-specific details and recommendations are not included since the GMP is intended to provide a foundation for more detailed management decisions. When site-specific decisions are made that require additional analysis of impacts, more detailed assessments of impacts will be prepared in a separate environmental document as part of the implementation planning.

Implementing a trail system will take many years and required increases in staff, funding and volunteers. The rate and order of implementation of specific actions presented in this Trails Plan will depend upon the availability of funding and management priorities in future years. Prioritizing improvements and development will be necessary to ensure that park management goals are met.

BACKGROUND

PARK ORIGINS AND LEGISLATIVE HISTORY

For thousands of years, the beauty and tranquility of the Upper Delaware River Valley have captivated people. American Indians located settlements close to its shores, while explorers and frontiersmen traversed its waters on their search for opportunities in the untamed New World. In the early nineteenth century, Americans' interest in the area for hunting, fishing and visual enjoyment of the natural scene prompted the beginning of the resort industry. By the 1890s, hotels and boarding houses sprang up all over the area now called the "Poconos" and flourished until the Depression.

Floods along the Delaware River in the 1950s prompted the United States Army Corps of Engineers (USACE) to propose a dam for flood control, water supply and power generation. This dam would create a reservoir extending from Tocks Island 37 miles upstream to Port Jervis, New York. As part of the proposed Tocks Island Dam, a new national recreation area would be created and managed by the National Park Service. On September 1, 1965, Congress authorized by Public Law 89-158 the creation of the Delaware Water Gap National Recreation Area. The park was established to provide "for public outdoor recreation use and enjoyment of the proposed Tocks Island Reservoir and lands adjacent thereto...and for the preservation of the scenic, scientific, and historic features contributing to public enjoyment of such lands and water."

In the late 1960s, as part of the planning and public participation process, local residents and environmentalists began raising concerns about the effects the reservoir would have on the valley. During this time, the USACE began acquiring lands surrounding the Delaware River within the proposed dam area. By the early 1970s, the reservoir project was halted indefinitely for ecological and economic concerns. In 1978, all federal lands within the boundary were transferred from the USACE to the National Park Service. Also, the segment of the Delaware river contained within the DWGNRA boundaries was designated as the Middle Delaware Scenic and Recreational River, a component of the Wild and Scenic River System, by the Parks and Recreation Act of 1978 (P.L. 95-625, 16 U.S.C. 1274) (U.S. Congress, 1978). By 1992, the Tocks Island Dam project was de-authorized.

PARK SIGNIFICANCE

Significance statements capture what attributes make the park resources and values important enough to warrant national park designation. The significance statements for DWGNRA are:

Significant Natural Area

The park is the largest natural area in the National Park System between Virginia and Maine and one of the largest protected natural areas in the metropolitan corridor extending from Washington, D.C. to Boston, Massachusetts.

Access to Visitors

The park is the ninth most visited in the entire National Park System. Much of this visitation is from the nearby, rapidly expanding New York, northern New Jersey and Philadelphia metropolitan areas, and is growing at a steady rate.

Recreational Resources

The Delaware River, which winds for about 40 miles through the park, is the park's focal point. Its exceptional quality water provides some of the best canoeing, rafting, tubing and fishing to be found in the East. Other recreational opportunities are also found in abundance, including:

- Technical climbing on escarpments;
- Hunting and fishing on land, ponds and streams;
- Swimming in lakes and the Delaware River;
- Camping on both shore and river's several islands;
- Hiking on many miles of trails, including a significant section of the Appalachian National Scenic Trail;
- Bicycling and horseback riding on many miles of appropriately designated trails; and
- Birdwatching, wildlife photography and nature study

Natural Resources

The Kittatinny Ridge parallels the river to the east, and the escarpment of the Pocono Plateau bounds it on the west. The ridges and river valley contain streams, waterfalls, numerous geologic features, and a diversity of plants and wildlife, including black bears, bald eagles, river otters, and other species not typically associated with areas so close to cities.

Cultural Resources

The park has a remarkable variety of cultural resources. Archaeological investigations continue to uncover an extraordinary number of American Indian villages, camps and other sites. Artifacts found in the area indicate continuous human occupation from about 8,500 BC to the present. There are historical vestiges of the French and Indian war and the frontier life of early America. There are examples of the distinctive architecture of the Delaware Valley, ranging from Dutch to Victorian and in a variety of construction materials. Several historic villages capture the sights and activities of America's past.

Water Quality

The waters of the Delaware River are of exceptional quality, and provide drinking water to ten percent of the nation's population. The stretches of the river through Upper Delaware National Scenic & Recreational River and DWGNRA, a section of 125 miles long, are classified as "special protection waters" which have "exceptionally high scenic, recreational and ecological values." Under the regulations applicable to this category, "no measurable change in existing water quality [is permitted] except towards natural conditions."

PARK PURPOSE

The park's authorizing legislation may be summarized in the following purpose statements. Purpose statements capture the reasons for which a park was set aside as part of the National Park System and provide the most fundamental criteria against which the appropriateness of all plan recommendations, operational decisions and actions are tested. The purposes of DWGNRA are:

- **Recreational Use and Enjoyment**

Provide for public outdoor recreation use and enjoyment, assuring that such use and enjoyment has a minimal impact on the park's natural and cultural resources.

- **Park Resource Protection**

Preserve the natural, cultural and scenic resources contributing to public enjoyment of parklands and waters.

- **River Resource Protection**

Protect and enhance the values which caused the river to be included in the national wild and scenic river system.

- **Education**

Foster preservation and educational activities that support natural and cultural resource protection.

- **Research and Conservation**

Protect park resources through research and appropriate resource conservation and restoration practices.

PARK MISSION GOALS

Mission goals are the most general of three kinds of goals NPS uses to implement the Government Performance and Results Act. Park mission goals, although based on the NPS's servicewide mission goals, are specific to the park and reflect the park's purpose and significance. Mission goals are expressed in terms of desired resource conditions and appropriate visitor experiences. These include:

- *Provide for public outdoor recreation use and enjoyment, assuring that such use and enjoyment has a minimal impact on the park's natural and cultural resources.*

- *Preserve the natural resources contributing to public enjoyment of park lands and waters and promoting biological diversity.*
- *Preserve the cultural resources contributing to public enjoyment of park lands and waters.*
- *Preserve the scenic resources contributing to the public enjoyment of park lands and waters.*
- *Manage the park in an efficient, cost-effective manner in order to attain the goals specified above.*

PARK MISSION STATEMENT

The park mission statement sums up our understanding of why DWGNRA was created and why it matters to Americans:

- *The mission of the National Park Service in Delaware Water Gap NRA is to provide outdoor recreation opportunities while conserving the natural, cultural and scenic resources of the recreation area. In so doing, the park will work cooperatively with surrounding communities and the public to achieve the conservation goals of the Delaware River region.*

HISTORY OF PARK TRAILS

Trails have always been an important part of the Delaware Water Gap NRA. American Indians established footpaths as transportation routes through the river valley. European settlers capitalized on the existing transportation network already established by the American Indians, widening the footpaths into roads for horseback travel. The most famous and heavily used was the Minsi Path, which extended from Stroudsburg through Milford in the area of modern Route 209. This path aided European settlers and as settlements continued to grow, so did the transportation network.

The land area now comprised by the park was fairly extensively developed prior to its designation as a National Recreation Area. The properties now encompassed by the park formerly contained a diverse range of development, including private residences, commercial recreational facilities, vacation homes and hunting cabins. The land acquisition for the Tocks Island project included many roads and old road traces as part of the new park. Many of the former residents relocated to nearby communities and continue to use the park. Local knowledge and traditional use has led to the development of numerous informal trails by which former residents continue to access favorite sites. These are the basis for the collection of trails that existed in the park prior to the adoptions of this Trails Plan.

SUMMARY OF THE PLANNING PROCESS

PURPOSE AND NEED FOR DESIGNATION OF A TRAILS SYSTEM

The park's 1987 GMP identified the need for a trail system that will "offer visitors new perspectives on natural and cultural resources, provide opportunities to get off the main traffic arteries and out of developed areas and help disperse visitor use and expand variety for activities available." The GMP also proposed a potential configuration for this trail system. For a variety of reasons, this GMP trail system was not fully implemented. The park instead chose to develop trails on an individual basis in conjunction with local trail organizations. However, growing concerns about potential impacts on habitat areas for rare, threatened and endangered species, user conflicts and dissatisfaction with the limited number of trails and facilities, prompted park management to recognize the need for a comprehensive trails plan that would address the long-term needs of visitors and balance resource protection.

TRAILS SYSTEM GOALS

Because this GMPA focuses only on trails and related visitor use and facilities, goals for the trails system articulate in very specific terms the ideals the park will strive to attain. The six trail system goals for DWGNRA are as follows:

- *Promote visitor safety and ensure the provision of high quality recreation experiences*

Trails, facilities and services affect visitor safety and the quality of the recreational experience, whether provided by NPS or one of its cooperating organizations. Convenient park trails and facilities that do not harm or infringe upon park resources, and services and interpretive opportunities that are available when visitors need them are important to enjoyment of the park. Also important is provision of a diversity of trails and facilities that provides a range of uses for various levels of expertise and interest of park visitors.

- *Promote a system configuration that will minimize resource impacts*

Understanding both the impacts that individual trails and multiple networks have on the natural, cultural and scenic features is critical for future preservation of park resources. Provision of a system that balances the number of trails and their various uses with protecting significant park resources is important.

- *Protect park resources through a planned program of trail construction & maintenance*

Investing appropriate time, funds, staff and volunteers will be essential for the long-term success of the new trail system. Developing standards, setting priorities and coordinating management activities will ensure that resource impacts are minimal and funds are used in a cost-effective manner.

- *Recognize and minimize potential conflicts among user groups*

People using the park's trail system have different needs and expectations. Often uses are seen as competing rather than cooperative. Good trail design and an educated user will increase satisfaction in trail experiences.

- *Encourage cooperative partnerships with volunteer organizations, adjacent landowners, municipalities and other government agencies*

DWGNRA and a number of non-profit entities, public bodies, civic groups and private sector interests have common goals for enhanced recreation and interpretation. Existing partnerships for trail development and maintenance have aided all partners in achieving their goals.

Enhancing such partnerships and developing new ones will be fundamental to the success of the new trail system, and to bringing the associated benefits to the public. Like all national park areas, DWGNRA struggles to find human and fiscal resources to meet the increasing needs for protection of resources and to fulfill the expectations of its visitors. Partnerships that benefit all parties will address the problems of insufficient means and increasing demands.

- *Provide educational opportunities that offer visitors new perspectives on natural and cultural resources*

Visitors have better experiences in a park when they understand the importance of its story and resources. Information, orientation, interpretation and education are park activities that help visitors discover the most significant meanings to them and that help them make connections between the tangible resources of the park and the intangible values and meaning that resources represent.

ISSUES RELATED TO MISSION GOALS

During the planning process, the public, state and federal agencies, and park staff raised many issues about existing conditions on park trails and the process for future development. Those concerns are summarized in the following issues:

Issues related to Mission Goal 1: Resource Preservation

- *Overused trails are leading to resource degradation*

Existing trails could not handle the quantity and intensity of visitor use. At DWGNRA, there has been a four-fold increase in visitation over approximately 20 years. In 1976, visitation was approximately 1.2 million recreational visits per year. Some of the most popular recreational sites have 1,000 or more visitors per day on summer weekends.

Users bypass crowded or wet areas and venture beyond the edges of established trails, causing erosion and vegetation disturbance. Present park trails have had little or no engineering such as drainage structures, proper grading or improved surfaces. The levels of use on some of these trails causes rapid deterioration of the surface, with resulting problems such as muddy surface, ponded water and erosion. When visitors encounter ponded water on a trail, they will bypass it and create a side trail around the obstacle. This results in soil compaction, loss of adjacent vegetation and additional erosion problems.

- *Existing trails may be impacting resources and sensitive areas*

Many present park trails were established informally. This park provides critical habitat for rare, threatened and endangered (RTE) species of wildlife and vegetation. Hundreds of known archaeological sites are scattered throughout the park.

Little or no work has been undertaken on lands adjacent to present park trails to identify the presence of sensitive resources such as wetlands, streams and floodplains, RTE species, rare plants, cultural landscape issues, and archaeological resources. The park is mandated by laws and executive orders to protect these resources, but has not analyzed the intensity and impact of various uses on trails, some of which may be located in these sensitive areas.

Issue related to Mission Goal 2: Visitor Use and Experience

- *Public demand for trails has increased dramatically over the last few years*

Over the last five years, there has been a dramatic increase in trail development throughout the country. Close proximity to large populations and the demand for high quality, low impact recreational opportunities has increased pressure on communities and parks to provide for more trails accommodating a variety of uses. Competing uses for the same trail areas causes conflict and dissatisfaction among users.

New Jersey recreation areas at Worthington State Forest, Stokes State Forest, High Point State Park, and the Appalachian National Scenic Trail experienced unparalleled demands for more trail uses and facilities. The 1994 New Jersey Open Space and Outdoor Recreation Plan identified walking for pleasure and biking as the second and fifth most popular outdoor recreational activities in the state. Current and projected deficits in facilities for these popular activities were noted for both Sussex and Warren Counties.

In Pennsylvania, the 1991-1997 State Recreation Plan lists hiking, jogging and bicycling as three of the top five recreation uses in the Monroe, Pike and Northampton County areas. As part of an opinion survey for that plan, 50% of respondents reported that they do not participate in recreations activities because facilities are too crowded. Forty two percent of respondents favored an increase in bike paths (second highest response), and 32% favored an increase in hiking trails. Respondents participated yearly in the following activities: jogging 57%, hiking 42%, bicycling 36%, snow skiing 14% and horseback riding 8%.

- *Access and orientation to present park trails is difficult*

The park is intersected by more than fifty local, county and interstate routes, making orientation difficult for visitors. Lack of signage and official park trail maps leads to confusion over locations and appropriate uses. Visitors are repeatedly sent to the same trail areas, causing overuse and resource degradation. The park has a trail brochure for visitors but it was not the result of a coordinated effort to create a trails system. Some of the trails on the brochure are designated and marked in the field but others are nothing more than a line on a map or a road trace.

- *Facilities needed for trail users are inadequate*

There are inadequate parking and restroom facilities at some of the most crowded trail areas. People park vehicles on grass and in wooded areas not intended for this use.

Issues Related to Mission Goal 3: Operation and Cooperative Partnerships

- *The best trail system configuration is unknown*

When the planning process started, there were potentially hundreds of miles of trails within the park boundary. Park management wanted to know which trails presented the best opportunities for including in a larger system and where staff, time and funds should be dedicated.

RELATIONSHIP TO OTHER PLANS, PROJECTS AND PARTNERSHIPS

The 1987 General Management Plan

The 1987 General Management Plan is the current guiding document for the park. It establishes the management philosophy and identifies means to address issues and achieve management objectives. Prior to the adoption of this Trails Plan, the park's trail system was based upon the direction established in the 1987 GMP.

1997 Government Performance and Results Act Strategic Park Management Plan

In 1997, NPS developed a system wide plan to meet the requirements of the Government Performance and Results Act of 1993, and each unit of the National Park System developed its own Strategic Park Management Plan. As part of that process, DWGNRA developed a new significance statement, purpose statements, mission statement, mission goals, and long term goals to guide the park. The Trails Plan, developed in this General Management Plan Amendment, is based upon the statements and goals outlined in the Strategic Park Management Plan.

Trail Partners

Partnerships will be the key to developing a successful trail system. The park works with committed groups and individuals who volunteer countless hours to help improve the condition and quality of trails for a diversity of users. The following organizations have a Memorandum of Understanding or cooperative agreement with the park for trail maintenance or management:

Appalachian National Scenic Trail

Considered one of the premier long-distance hiking trails in the country, the Appalachian National Scenic Trail (AT) is an important component of the proposed system at DWGNRA. The AT is a 2,100-mile footpath that extends from Mount Katahdin in Maine to Springer Mountain in Georgia and traverses the hills, valleys and ridgelines of the Appalachian Mountain system. In 1937, through the efforts of private citizens and government agencies, the AT pathway was completed and designated a national scenic trail with the passage of the National Trails Systems Act in 1968. Supported by a dedicated trail community, the AT attracts the interest of hikers, volunteers, landowners, local officials, federal and state agency personnel and citizens of towns through which it passes.

Approximately 30 miles of the AT are found within the DWGNRA beginning in Pennsylvania at Tott's Gap and extending to Stokes State Forest in New Jersey. Its proximity to New York, Philadelphia and Interstate 80 make this one of the most heavily used sections of the AT.

Maintenance and management of the AT is accomplished through a unique partnership arrangement. By law, overall responsibility for administration of the AT rests with the Secretary of the Interior, and is carried out by the NPS through its Appalachian Trail Park Office (ATPO). Congress, with emphasis on ensuring Trail-wide consistency of management operations, development and maintenance standards, and conformance with applicable laws, regulations, and policies as defined in the Comprehensive Plan for the AT.

The heart of the AT rests in its clubs and the Appalachian Trail Conference (ATC). ATC is a nonprofit educational organization representing the citizen interest in the Appalachian Trail and dedicated to the preservation, maintenance and enjoyment of the Appalachian Trailway. Since 1925, the ATC and its member clubs have conceived, built, and maintained the AT in cooperation with the federal and state agencies. In 1984, the NPS and the ATC signed a landmark Delegation Agreement under which the NPS delegated certain management responsibilities to the ATC for NPS-acquired lands outside National Park boundaries.

At DWGNRA, responsibility for the day-to-day management, maintenance and monitoring of the AT and associated facilities within the park boundaries was delegated to the ATC. Using its member organizations, the ATC carries out its responsibilities through the efforts of the Wilmington Trail Club in Pennsylvania and the New York-New Jersey Trail Conference in New Jersey. Park staff provides critical services for fire suppression, visitor-use management, law enforcement, emergency medical services and search and rescue operations on all park and adjacent ATPO-acquired lands with the AT corridor.

New York-New Jersey Trail Conference

The New York-New Jersey Trail Conference (NY-NJTC) is a volunteer nonprofit organization and federation of 85 hiking and outdoor groups and 10,000 individual members. They have delegated responsibility for the AT in the NJ section of the park. Under a 1996 Memorandum of Understanding between the park and NY-NJTC, NY-NJTC agreed to maintain specific hiking trails in the park other than the AT. These trails include: Pioneer, Coppermine, Thunder Mountain, Rattlesnake Swamp, Orchard, and Buttermilk Falls.

Appalachian Mountain Club

Founded in 1876, the Appalachian Mountain Club (AMC) is the country's oldest conservation and recreation organization. AMC has a long history with the DWGNRA spanning several decades. In 1988, the park initiated a cooperative agreement with the AMC to collect and analyze pertinent data regarding the park's existing and potential hiking trail resources and appropriate hiking trail planning, design and management recommendations. Their work is the foundation for this plan. AMC maintains the Mohican Outdoor Center in NJ and the American Youth Hostel, Hornbecks Creek, Karamac, Toms Creek and Van Campens Glen trails.

Kittatinny Mountain Bike Association

In 1997, the Kittatinny Mountain Bike Association (KIMBA) signed a cooperative agreement with DWGNRA for the purpose of restoring and maintaining certain park trails. Under this agreement, KIMBA agreed to: rehabilitate and maintain the Blue Mountain Lake trail in NJ; authorize volunteer bike patrols by KIMBA at certain times of the year on that trail; develop public information brochures, maps, and other documents pertaining to bike trail use; and provide clinics at the Blue Mountain Lake bike trailhead on bicycle safety, maintenance and trail etiquette.

Delaware Water Gap Equestrian Advisory Committee

Dedicated to the planning, development and maintenance of horse trails in the park, the Delaware Water Gap Equestrian Advisory Committee signed a Memorandum of Understanding to assist the park with equestrian-related efforts. They maintain the Conashaugh View Trail and the upper Ridge Road Trail.

EVALUATION OF ALTERNATIVES

In general, the process of planning a parkwide trail system followed three steps. First, NPS staff researched and analyzed present park and proposed trails for inclusion in a new parkwide system. Next, management strategies were developed, explaining how management prescriptions will guide park trail management in the future. Then, three alternatives were developed during a process of public consultation that included workshops to review issues, resources, initial concepts and draft alternatives. Finally, through the NEPA scoping and public review process, information was distributed to workshop participants and other interested individuals for comments and suggestions.

Information Gathering

In order to gain a better understanding of the current conditions of present park trails and potential new areas for expansion the planning team collected, evaluated and mapped the best available trail information. Site information was gained through extensive field visits and detailed study of documents including municipal, topographic and geologic maps, history books, and local and regional development plans. Field information was gathered from first hand observations while hiking and driving the suggested trails and existing road traces. Data recorded on-site and from the documents included locations of present and proposed trails, existing and potential uses, the condition of the trail surfaces, necessary improvements, sensitive, threatened or endangered flora and fauna, significant cultural and historic sites, and opportunities for connections, views and interpretation.

Interviews were conducted with rangers, natural and cultural resources specialists, maintenance, preservation and design specialists and park managers. Additional meetings were held with the various county planning departments, organizations that currently have agreements with the park, and representatives from the New Jersey Department of Environmental Protection, Division of Parks and Forestry. Five public meetings were held to gather data and comments from the general public and the many interests they represent.

All information received both verbally and in writing was recoded graphically on park maps. An extensive and detailed map was produced as a result of the comments and field work. This map showed potential and present park trails and uses, trailheads, parking, and interpretation opportunities. These maps were produced using the park's Geographic Information System (GIS) that allowed information to be separated and evaluated by resource category.

Trails Evaluation

Criteria for trails and systems were developed as a result of public comments on what should be part of a good system, and in response to the trail system goals and the park mission. Using information gathered from the field and presented on maps, each present park trail, old road, and potential new trail was discussed and evaluated by a team of staff representing all park disciplines.

As part of the evaluation process, three types of trails were identified and are defined below. These terms are referenced throughout this document and include:

Present Park Trail – these trails are existing paths, named and recognized by park management and cooperative partners as places to direct visitors. Information about their location and use is provided by the park, its partners, and in publications. Maintenance and improvements on these trails is conducted by either park staff or a partner organization.

Informal Trail – These informal paths, also referred to as social trails, are remnants of former roads and routes established by users over the years. These trails are not recognized by the park or cooperating partners as places to send visitors and their locations are not publicized. But, many locals and visitors familiar with the park continue to use them as trails.

Proposed Trail – These trails are recommended for inclusion in the new designated system for the park. Some present park trails have been renamed, relocated or removed to protect resources, improve the trail surface, or enhance the experience. Other proposed trails may include improved and renamed informal trails. There may also be a combination of present park trails with new construction to provide for different recreational uses and minimize resources damage.

The evaluation criteria applied to the new trails were:

- Trail can provide for more than one use
- Trail can be linked with others to form a loop
- Trail is a premier location for a specific use
- Trail avoids sensitive areas such as rare, threatened or endangered habitats or archaeological sites
- Trail connects or leads to natural, scenic, cultural or historical resources
- Trail provides an opportunity for education and resource interpretation
- Trail provides users with a sense of the park
- Trail requires low maintenance
- Trail or adjacent facilities requires no new construction
- Trail has existing facilities along or nearby

- Trail can be maintained by a cooperative group

In addition to these evaluation criteria, other planning considerations included the visions and future development efforts of all neighboring jurisdictions; the use of existing trails and road traces where possible; and the need to accommodate parking and trailheads. Also considered were design guidelines for development taken from a number of sources, including NPS standards, Federal Highway Administration, Rails to Trails Conservancy, and others.

- Hiking trails should have a minimum 3 foot tread width of compacted bare soil. The vertical clearance should be 8 feet minimum.
- The tread width for equestrians is 5 feet minimum with 8 feet preferred when both equestrians and hikers share a trail. The surface can be compacted bare soil or gravel. The vertical clearance for equestrians is 10 feet minimum.
- Trails designed for cross-country skiing should have a minimum tread width of 4 feet with a vertical clearance of 7 feet above the average snow level.
- Trails designed for multiple uses such as hiking and biking should be constructed of compacted gravel and have an 8 foot minimum tread width. These trails require 2-foot shoulders clear of branches and debris adjacent to the tread. The vertical clearance should be a minimum of 8 feet.

The trail system planning included discussions concerning accessibility. As part of the trails planning effort, a preliminary evaluation for accessibility was done on some trail segments in accordance with the Recreation Opportunity Spectrum (ROS) classification. This classification was developed by the USDA Forest Service and further refined by The Design Guide: Universal Access to Outdoor Recreation published by PLAE, Inc, 1993.

The ROS divides recreation settings into four basic categories, from urban to primitive, and then rates the individual trail segments from easy to most difficult. The ROS is based upon three premises:

- 1) People purposefully choose settings for their recreational activities.
- 2) Choices are made with the expectation of achieving particular recreation experiences.
- 3) It is desirable, from a planning perspective, to present a diverse spectrum of activity and recreation setting opportunities, ranging from highly developed to primitive, from which people may choose.

It is anticipated that detailed evaluations and ratings will be completed on all trail segments as they are implemented.

Alternatives Evaluated

Using a more refined trail map developed at the conclusion of the evaluation stage, three alternatives were created during a two-day working session by NPS staff and presented to the public at two meetings. The alternatives were organized by offering a variety of experiences unique to the DWGNRA, and responding to the park's goals and public suggestions.

Alternative A: Continuation of Current Management

This alternative described the current situation and assumed the continuation of current management practices for trails. It provided a baseline for comparison with the other alternatives, as required by the National Environmental Policy Act regulations. Alternative A retained the management guidance for the 1987 General Management Plan. The park would continue to operate without a designated trail system and the overall scope of trail development in the park would not be defined. Existing trails and facilities would remain, including some recognized park trails, the Appalachian National Scenic Trail and a maze of old road traces and informal trails that are not connected. All new development would be considered on an individual basis and would only occur with the cooperation of a user group or if specific funding were available for construction. Park staff would continue to direct visitors to recognized park trails associated with specific park attractions. Obvious resource degradation would be handled on an individual basis, often by closing the affected section of the trail. Unnoticed resource degradation and cumulative impacts, if any, would likely continue.

Alternative B: Multiple Linking Networks

This alternative, the park's proposed plan, would designate a parkwide trail system that would define an overall scope of trail development within the park. Alternative B represented the full potential for trail development in the park within known environmental and resources protection constraints. This alternative would double the amount of present park trail miles and provide the greatest opportunities for hiking, biking, cross-country skiing, and equestrian activities. Trails would be organized into four individual networks: the Appalachian, Country Road, Gap View and River Valley. Visitor experience and natural features determined each of these networks with connections to each other and various trail opportunities outside the park. Comfort facilities, signage and interpretation would be expanded as formalized trailheads were developed.

Alternative C: Independent Networks

This alternative would also designate a parkwide trail system and define an overall scope of trail development within the park; however, Alternative C did not utilize the full potential for trail development within the park. This alternative emphasized networks and different visitor experiences, but was organized in small distinctive geographic areas emphasizing a specific use and interesting park attractions. Some larger networks such as the Appalachian and River Valley were included, as well as trails that led to a particular destination point. Comfort facilities, signage and interpretation would also be expanded as formalized trailheads were developed.

SUMMARY OF ENVIRONMENTAL IMPACT ANALYSIS

Following is a summary of the impact topics that were identified and evaluated during the planning process and a summary of potential environmental effects of implementing the Trails Plan along with the requirements for further study and impact analysis that will be needed as trails are upgraded or developed. A detailed analysis of environmental effects of implementing the Trails Plan in comparison to the no-action alternative and one designation option may be found in the Draft Environmental Impact Statement and the Final Environmental Impact Statement, prepared in accordance with the National Environmental Policy Act of 1969 (P.L. 91-190 as amended).

Impact Topics

To focus analysis of potential consequences of implementing any of the three alternatives, specific impact topics were selected for further analysis based on legislative requirements, resource information, planning issues, concerns expressed by the public, NPS and other agencies during scoping. Impact topics selected for further analysis included natural resources (topography, soils, floodplains, water resources, vegetation, wildlife, and prime or unique farmlands), cultural resources, landscape character and visual resources, and the socioeconomic environment.

Other impacts were eliminated from further evaluation. These included air quality, climate change, hazardous materials, noise, sacred sites, and Indian Trust resources, socially or economically disadvantaged populations, and public health and safety.

General Methodology

Natural Resources

The impact analysis was conducted in accordance with the direction of NPS77-Natural Resources Management Guideline, NPS Management Policies, Director's Order 2-Planning, and NPS12-Environmental Compliance. These documents provide general guidance for compliance with various laws, executive orders, and other regulations, including the National Environmental Policy Act of 1969 (NEPA), the Endangered Species Act, the Clean Air Act, the Clean Water Act, the Wilderness Act, the Wild & Scenic Rivers Act, Executive Order 11988 (floodplain Management), Executive Order 11990 (protection of Wetlands) and a Memorandum dated August 11, 1980 from the Council on Environmental Quality (protection of farmlands).

Second, the level of detail, method of analysis and scope of the environmental impact statement were determined. Impacts were evaluated at a level that permitted decisions to be made about the management prescriptions that form the Trails Plan. The likely actions that may result from the management prescription are evaluated at a level that will allow them to be implemented. However, in some cases, actions that may result from the management prescriptions cannot be implemented without additional site-specific environmental assessment in compliance with NEPA and other applicable laws and policies. Environmental consequences were evaluated in the most specific manner possible. In all cases, the best available information indicated that the actions evaluated were feasible as presented and that the analysis of consequences is accurate.

Third, the location and nature of specific trails were evaluated to determine their potential to affect natural resources. Locations of trails were compared to known sensitive areas for the various natural resource topics. The extent and type of impact were then evaluated for their potential to affect the known resources.

Wherever possible, actions were mapped using the park's GIS system. Because site-specific designs for most actions have not been developed, changes in land use, vegetation and soil disturbance are estimated at the maximum that could be affected. Actions to minimize impacts included using already-disturbed areas as much as possible where development is planned,

avoiding sensitive resources, using sustainable design techniques, mitigating resource damage through careful design of implementation procedures, phasing, timing, and other similar actions.

Cultural Resources

The National Historic Preservation Act of 1966 and its subsequent amendments govern the treatment of archaeological and historical properties. Section 106 of the act specifies that all governmental agencies must take archaeological and cultural impacts into account before implementing any federal action. Section 110 specifies that all government agencies inventory all of their historic properties and evaluate them according to the criteria of the National Register of Historic Places. The National Park Service's Director's Order 28 (formerly Cultural Resources Management Guidelines NPS-28) provides guidance for implementing policy in regard to the preservation and treatment of archaeological, cultural and historic properties included within a park.

The revised regulations of the Advisory Council on Historic Preservation (36 CFR 800.8) provide the methodology for assessing the impacts on historic resources. An effect on a significant historic property or landscape occurs if an action has the potential to change the characteristics that qualify that property or landscape for listing on the National Register. If the action diminishes the integrity of those characteristics, it is considered to have an adverse effect. Effects that may occur later than, or at a distance from the location of the undertaking, are considered potential impacts of the action and are called indirect effects. If effects cannot be avoided during the specific design of trails or facilities, mitigation will be developed in consultation with the state historic preservation officer and the Advisory Council on Historic Preservation.

Summary of Potential Effects of Implementing the Trails Plan

RESOURCE	POTENTIAL EFFECTS
NATURAL RESOURCES	
Topographic features	No major effect Minimal cut & fill
Prime and Unique Agricultural Lands	5.9 acres affected No major effect

Soils (erosion potential measured as slopes greater than 25%)	<p>8 miles of trail</p> <p>New trails miles primarily on existing roads</p> <p>Minimal effect on soils</p>
Floodplains	<p>Some trails in floodplains</p> <p>No major effect</p> <p>Trails not usable when flooded and may require clean up or repair</p>
Surface Waters, Streamflow, Water Quality (potential effects measured as location within 150 feet of mapped resources and number of stream crossings)	<p>76 miles of trails</p> <p>30 parking lots</p> <p>179 stream crossings that use existing trails & road traces</p> <p>16 new stream crossings</p> <p>Possible short-term effects due to construction; mitigate by implementing erosion and sedimentation controls</p> <p>No major long-term effects</p> <p>Mitigate with proper design, engineering and restoration.</p>
Wetlands	<p>Minimal to no effect</p> <p>Field surveys conducted for all upgrade and new trails</p> <p>Design revised to avoid and minimize impacts</p>
Groundwater	No adverse effects
Fish and Wildlife	<p>Potential exists for adverse effects due to human presence but extent not predictable</p> <p>Potential for least overall impact due to human presence by providing greatest dispersal of users</p> <p>Possible short-term impacts during construction; mitigate impacts to water habitats by proper erosion & sediment controls and monitoring</p> <p>Negligible loss of habitat and displacement of wildlife due to construction</p> <p>Mitigate by vegetation management to ensure habitat diversity</p>

Vegetation and Non-Native “Exotic” Species	<p data-bbox="706 197 1114 338">5 miles in cropland 14 miles in old fields & thickets 204 miles in forest 34 miles of new trail</p> <p data-bbox="706 380 1308 447">The AT encroaches on 2 important native plant communities</p> <p data-bbox="706 489 1365 556">Other trails may encroach on 9 additional important native plant communities</p> <p data-bbox="706 598 1429 739">Potential adverse effects from invasion by exotic species due to construction; mitigate by minimizing earth disturbance and restoring disturbed soils with native species</p> <p data-bbox="706 781 1411 888">Potential beneficial effects from vegetation clearing for proposed trails by removing exotic species and controlling further invasion</p> <p data-bbox="706 930 1385 1037">Potential for adverse effects to important native plant communities due to invasion of exotic species and increased use</p> <p data-bbox="706 1079 1414 1142">Would require further study and would be addressed by trail-specific environmental assessments</p>
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Threatened or Endangered Species; Bald Eagle	<p><u>Wintering</u></p> <p>11.9 miles of trail in 400 meter buffer</p> <p>Consultation with US Fish & Wildlife Service to ensure no adverse impacts</p> <p>Reduction in potential for adverse effects by relocating snowmobile trail out of buffer and by dispersing users more widely</p> <p><u>Nesting</u></p> <p>Nesting attempt in 1999; failed for unknown reasons</p> <p>Future nesting attempts may occur</p> <p>Consultation with US Fish and Wildlife Service would ensure no adverse impacts</p> <p>Mitigation measures for both wintering and nesting include locating trails behind vegetative screening, seasonal restrictions on construction, and possibly seasonal closures during critical periods</p>
Threatened or Endangered Species: Bog Turtle	<p>2 trails skirt wetlands that may support bog turtles</p> <p>12 trails skirt wetlands that contain suitable habitat</p> <p>Consultation with US Fish & Wildlife Service would ensure no adverse impacts</p> <p>Mitigation measures include realigning trails to avoid wetlands and installing fences, vegetation and other barriers to exclude users from bog turtle habitat</p>

Threatened or Endangered Species:	30 miles of new trails in forest would require some tree removal
Indiana Bat	<p>Consultation with US Fish and Wildlife would ensure no adverse impacts</p> <p>Mitigation measures include reducing tree removal to minimum necessary and removing trees during months when bats would not be present</p>
Threatened or Endangered Species:	Potential effects due to trail development and upgrades would be addressed by site specific studies and trail-specific environmental assessments
Small Whorled Pogonia and Northeastern Bulrush	<p>Consultation with US Fish & Wildlife would ensure no adverse impacts</p>
CULTURAL RESOURCES	
Cultural Landscapes	<p>No effect where trails utilize existing circulation patterns</p> <p>Potential adverse effects due to widening, regarding, changing alignment or circulation patterns</p> <p>Potential beneficial effects due to reduction in use of existing informal trails</p> <p>Potential effects due to trail development and upgrades would be addressed by site specific studies and trail-specific environmental assessments</p> <p>Consultation under Section 106 would ensure no adverse impacts</p> <p>Mitigation measures include using existing roads and circulation patterns, designing trail & features to be compatible with the landscape, preserve characteristic vegetation, avoid use of non-characteristic ornamental plants, identify changes to distinguish from existing cultural features</p>
Archaeological Resources	Potential adverse effects from vandalism due to increased use

Archaeological Resources (continued)	<p>Potential beneficial effects due to reduction in use of existing informal trails and increased emphasis on education</p> <p>Potential effects due to trail development and upgrades would be addressed by site specific studies and trail-specific environmental assessments</p> <p>Consultation under Section 106 would ensure no adverse impacts</p> <p>Mitigation measures include using existing roads, redesigning to avoid sensitive sites, planting vegetative screening, retrieving and preserving recovered artifacts</p>
SOCIO-ECONOMIC ENVIRONMENT	
Inholdings	<p>Trails would cross 12 privately-owned parcels: 2 parcels currently have trails and NPS is purchasing 4 other parcels</p> <p>Trails would cross 21 non-NPS public parcels: 8 currently have trails</p> <p>Agreements with owners of remaining parcels would be sought</p>
Road Closures	<p>Conashaugh Road would be closed to vehicular traffic, including the section that connects to Long Meadow Road</p> <p>The access road to the Zimmermann property would be converted to trail use; if Zimmermann property was opened to the public, alternate access would have to be developed</p> <p>Big Egypt Road would become part of a trail system, requiring shared use of bicycles, hikers, and motor vehicles; the road is not plowed in winter and would be open to snowmobiles</p> <p>Mountain Road would be open to equestrian use, requiring shared use with motor vehicles</p>

	Upper Ridge Road would be incorporated into the Country Road Trail, requiring closure of Upper Ridge Road to equestrian use; compensated by opening Mountain Road to equestrian use
	On all trails having shared use with motor vehicles, speed restrictions and other measures would be implemented
Economic Effects	Estimated trail users: 563,071 Estimated total dollars entering local economy (direct & indirect): \$7,597,327

HISTORY OF COMMUNITY PARTICIPATION

As part of the scoping for this GMPA, a series of public workshops were held in order to capture ideas, comments and concerns.

Three preliminary community workshops were held in September 1997 in Matamoras, PA, Bushkill, PA, and Oxford, NJ. The park sent 250 letters to potential participants and placed notices in the local newspapers and the Federal Register. Members of the community heard a brief presentation about why the park needs a trail plan and ideas on how it might be developed. Participants were then involved in a variety of small and large group exercises focusing on their wishes for, and concerns about, a new designated park trail system. Comment sheets were also available for more extensive thoughts.

In November 1997, a summary of the comments received at the September meetings was sent back to participants. The summary reflected the thoughts of the many participants and was not edited; comments appeared as they were originally recorded. The planning team received many suggestions for potential trail areas and expressions of concern over use conflict and resource protection.

In January 1998, a Notice of Intent to Pursue an Environmental Impact Statement (EIS) was placed in the Federal Register. In February 1998, the park held two public meetings, one in Oxford, NJ and one in Bushkill, PA, to describe both the EIS and GMPA processes and gather additional concerns and ideas. The results of these meetings helped the planning team develop different options for a new system.

The three alternatives for designation of a new trail system were presented at two public meetings, one in Oxford, NJ, and one in Bushkill, PA, in March 1998. Resource information, criteria for trail selection and an explanation of the philosophy for each alternative were presented. Participants gave both verbal and written comments that were incorporated in the selection of alternatives presented in the Environmental Impact Statement.

Over 450 copies of the Draft Trails Plan/GMPA/EIS were distributed to agencies, organizations and individuals in July 1999 and was followed by a 90-day public review and comment period. In addition, the document was available on the park's website and in all public libraries adjacent to the park.

Three public workshops were held in August 1999 in Oxford, NJ, Bushkill, PA, and Matamoras, PA, to explain the information contained in the draft plan and solicit comments. An additional public workshop was held in September 1999 in Bushkill, PA. The public was informed of the meeting locations and times through letters, the Federal Register and notices published in local media outlets. Approximately 150 people attended the four meetings.

Public comments were received by a variety of methods. At the public meetings, individuals were invited to discuss the draft plan with NPS staff and submit comments on comment forms. These comment forms could also be filled out and mailed back to the park at a later time. Individuals could also write their ideas and comments on separate flip charts set up as comment boards.

The Final Environmental Impact Statement was distributed for a 30-day review/no-action period in November 1999. The Final EIS was issued in an abbreviated format and must be integrated with the Draft Trails Plan/General Management Plan Amendment/Environmental Impact Statement issued in June 1999, to be considered a complete document. The abbreviated format was used for the Final Environmental Impact Statement because the changes to the draft document were minor and confined primarily to factual corrections, which did not modify the analysis.

The Trails Plan/GMPA/EIS became final upon the signing of the Record of Decision by the Northeast Regional Director on January 18, 2000.

TRAILS PLAN

DESIGNATED TRAIL SYSTEM: MULTIPLE LINKING NETWORKS

DWGNRA is defined by its distinctive landscape and features: a river valley with wooded mountain ridges, agricultural fields, streams, creeks and ravines, and historic villages and buildings. These features and the opportunities they provide for a high quality visitor experience are the organizing foundation for the trail system.

The Trails Plan designates a trail system organized into four networks: the Appalachian, Country Road, Gap View and River Valley. Each network contains a series of trails that enhance a particular visitor experience and provide for specific uses. The Trails Plan represents the full potential for trail development in the park within known environmental and resource protection constraints. All trail development is coordinated toward a common goal and the full scope of trail development parkwide has been defined.

The four networks are as follows.

Appalachian Trail Network: These hiking trails provide an isolated, remote, wooded experience for the majority of the network.	
<i>Present Park Trails</i>	<i>Proposed Trails</i>
Appalachian National Scenic Blue Blaze Buttermilk Falls Coppermine Kaiser Rattlesnake Swamp Red Dot	Crater Lake Loop Long Pine Pond Loop

Country Road Network: These trails provide a country road experience passing through agricultural landscapes, historic districts and cultural sites such as historic towns, bridges, and cemeteries. Opportunities for multiple uses along a spine, with spurs for individual uses are promoted. Use is directed and connected to Stokes State Forest and High Point State Park.	
<i>Present Park Trails</i>	<i>Proposed Trails</i>
Blue Mountain Lake Buttermilk Falls Military Road Orchard Pioneer Upper Ridge Road	Country Road Coventry Road Farmers Trace Hamilton Ridge Mountain Road Peters Valley

Van Campens Glen	Pool Colony Rivers Bend Silver Spray Falls Walpack Environmental Education Center Walpack Ridge Woods Road
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Gap View Network: This network focuses on the unique scenic view of the water gap, the Delaware River and cultural sites associated with the former resort and railroad industries. This network would focus on present park trails and facilities for intensive day-use hiking on the majority of its trails.

<i>Present Park Trails</i>	<i>Proposed trails</i>
Appalachian National Scenic Arrow Island Blue Blaze Karamac Slateford Loop Red Dot	Gap to Slateford Karamac Railroad Kittatinny House Historic

River Valley Network: Many opportunities to explore waterfalls, the Delaware River, creeks, ravines, ridges and wooded areas are provided by these trails. An extensive multiple use system is the foundation for this network that links most of the major facilities together and provides connections to other existing and planned trails outside the park boundary.

<i>Present Park Trails</i>	<i>Proposed Trails</i>
Childs Park Conashaugh View Dingmans Creek Hidden Lake Loop Hornbecks Creek PEEC Railway Avenue Raymondskill Creek Toms Creek	Adams Creek Adams Creek to Conashaugh Link Bride and Groom Cliff Park Dingmans to Hornbecks Eshback Hornbecks – PEEC McDade Recreational McDade to Stucki Pond Mill Creek Sproul Road Theune

Resource Preservation

Trail improvement and development is focused on disturbed areas, old road traces and existing routes. Sections of trail requiring new construction are limited and focus on improving safety and environmental quality. Present park trails will be improved to provide proper drainage and appropriate surfaces to limit encroachment on adjacent vegetation and soil compaction and erosion. Present park trails impacting on sensitive habitats, cultural landscapes or archaeological sites will be relocated. Informal trails affecting important natural and cultural resources will be eliminated.

Visitor Use and Facilities

Opportunities to explore the park in a variety of ways will be increased. The designated trail system is comprised of 53 trails totally approximately 223 miles. Approximately 34 miles of the total require new construction. Hiking will continue to be a designated use of all trails. Many new multi-use trails throughout the park can potentially be developed, increasing mileage for biking to 95 miles, horse use to 19 miles and cross country skiing to 93 miles.

Visitor Experience

Each network and its collection of trails focus on a specific visitor experience and provide access to significant park resources.

Operations, Partnerships and Cooperative Actions

A new office will be created in the park to manage the trails system and coordinate the efforts of resource protection, law enforcement, maintenance and interpretation. Appropriate levels of staffing and funds will be requested. Law enforcement and patrolling will be increased to improve safety and reduce user conflicts. The implementation of these actions is contingent on funding.

The missions of both the park and coordinating organizations will be enhanced and supported through establishment of the trail system. Existing partnerships will be maintained and expanded with the Appalachian Trail Park Office, the Appalachian Trail Conference, the Appalachian Mountain Club, the Delaware Water Gap Equestrian Advisory Committee, the Kittatinny Mountain Bike Association, the New Jersey State Parks, the NY-NJ Trail Conference and the Wilmington Trail Club. New Partners will be encouraged to sponsor the development and maintenance of present park and proposed trails. Partners' roles in education, patrolling, compliance, and resource education will be expanded. A volunteer trail patrol program will be initiated, similar to the Ridge Runner program of the Appalachian Trail. This cadre of volunteers would patrol park trails to: inform and educate visitors in best practices for trail use; monitor resource damage and trail safety conditions; provide first aid or other visitor assistance; and report violators to park rangers.

CARRYING CAPACITY

Establishing a carrying capacity for trails requires determining the point at which additional users degrade park resources and the interpretive experience suggested in each network. Visitors may enter DWGNRA at over 50 points, including interstate highways, state and local roads, and by river access both north and south of park boundaries. As a result, most visitors that enter and

use the national recreation area are not contacted by a ranger or park representative, and many are not properly oriented and informed. The park does not have accurate counts of visitors using various trails. For this plan, current and projected visitor use was determined by working with Pennsylvania State University staff.

Currently, present park trails associated with major visitor centers, picnic areas, or attractions such as waterfall, are experiencing the highest concentrated use. Majority of the use occurs on summer weekends in places such as the Appalachian National Scenic Trail off of Interstate-80, Dingmans Falls, Childs Park, and Buttermilk Falls. In the past few years, DWGNRA has taken positive steps to address trail-related resource impacts. Through the assistance of their trail partners, new boardwalks and steps were installed at Dingmans Falls and Buttermilk Falls to reduce soil erosion and direct visitor use.

One of the major goals of this plan is to disperse visitors and various uses through the development of additional trails and facilities. Each network, and its collection of trails, was designed to focus on a specific visitor experience and provide access to significant park resources. Opportunities to explore the park in a variety of ways would be promoted. Designing and establishing multi-use trails, such as the McDade Recreational Trail and the Country Road Trail, will help manage concentrated use in the park, by offering a safe recreational trail experience while helping to protect the park's natural and cultural resources from uncontrolled visitation. In addition, the numbers of users on trails is often determined by the amount of access points, parking spaces and facilities available to them. This plan includes 62 existing and potential trailheads that vary in size and facilities. These trailheads would be designed and developed to complement the adjacent trails and their appropriate uses.

In order to increase the capacity of the trails system to handle large amounts of visitation, former road traces and disturbed areas became the foundation for improvements and developments. Trails will be enhanced through proper design, engineering and drainage to reduce impacts and provide a safe and enjoyable experience. Park staff would also survey and document trail damage to adjacent resources. Present park trails that encourage encroachment would be relocated or eliminated. The park would establish monitoring programs and encourage partner participation in both monitoring and education.

MANAGEMENT PRESCRIPTIONS

Various approaches to trail use, management and development are possible. Some of these approaches may represent competing demands for the same resource base. To address these conflicts, NPS General Management Plans establish *management prescriptions*, which provide the policy foundation for making specific decisions about resources and visitor use.

The park's 1987 GMP does not contain management prescriptions because they are a relatively new concept mandated under the Director's Order #2 for planning. Management prescriptions describe the specific resource conditions and visitor experience that are to be achieved and maintained over time. Based on these characteristics, each management prescription identifies the kinds and levels of visitor use, management activities, and development that are appropriate

for maintaining those desired conditions. Management prescriptions help managers of a park decide which implementing actions are appropriate. A range of actions is possible as a result of the adoption of a management prescription, and the purpose of the prescription is to ensure that an action is appropriate to protect resources and provide for visitor use and interpretation.

MISSION GOAL	CURRENT MANAGEMENT DIRECTION	ACTIONS TAKEN
<p>Preserve the natural, cultural and scenic resources contributing to the public enjoyment of park lands and waters.</p>	<p>Pedestrian, horse and bicycle traffic is managed to minimize resource damage and/or loss.</p> <p>Encroachment on sensitive habitats and sites is minimized.</p>	<p>Work with partners to increase education, safety, patrolling and enforcement.</p> <p>Increase ranger presence for resource protection.</p> <p>Emphasize visitor's contributions to resource protection in orientation and information materials.</p> <p>Use construction methods for new and proposed trails that can sustain the designated visitor use.</p> <p>Establish monitoring program.</p> <p>Establish programs to protect sensitive resources.</p> <p>Existing trails that encourage encroachment are relocated.</p> <p>Close undesignated trails.</p> <p>Restore disturbed areas.</p> <p>New trails avoid sensitive areas.</p> <p>Increase partner participation in monitoring and education.</p> <p>Survey and document trail damage to adjacent resources.</p>
<p>Provide for public outdoor recreation use and enjoyment, assuring that such use and enjoyment has a minimal impact on the park's natural and cultural resources.</p>	<p>Appropriate numbers of trails and facilities consistent with visitor use are available and accessible.</p> <p>Park visitors are able to easily locate trails.</p> <p>Information about the park's new trail opportunities is accurate and available through a variety of media.</p>	<p>Increase mileage for hiking, biking, equestrian activities, cross country skiing, and snowmobiling.</p> <p>Develop formal trailheads with parking, maps, kiosks, and signage. Install more portable toilets or comfort stations where appropriate.</p> <p>Develop a coordinated trail signage and interpretive system.</p>

		<p>Install new signs, wayside exhibits and informational kiosks (as necessary) at all trailheads.</p> <p>Work with partners to develop and distribute accurate information about trail opportunities and restrictions.</p> <p>Increase information about trails on park website.</p> <p>Create and improved system of publications with assistance from existing partners.</p> <p>Plan and implement workshops and other hands-on activities in conjunction with various user groups.</p>
<p>Manage the park in an efficient, cost effective manner in order to attain the goals specified above.</p>	<p>Staff and funds are sufficient for support of a new trail system.</p> <p>Existing trail partnerships are maintained and strengthened to expand NPS's ability to protect resources and deliver high quality recreational experiences.</p> <p>Opportunities to link trails adjacent to the park with the new system are encouraged and supported by NPS.</p>	<p>Create office in park to manage trail system.</p> <p>Approve and fund increases in staff for design, construction, compliance, maintenance and enforcement.</p> <p>Establish seasonal maintenance crews.</p> <p>Work with partners to increase financial participation and new sources of funding.</p> <p>Work with volunteer groups to expand and extend their services to the park.</p> <p>Expand the ways volunteers can assist with trail maintenance, safety programs, education and conflict resolution.</p> <p>Collaborate with local communities and organizations to plan and develop linkages.</p> <p>Work with new partners to strategize trail funding opportunities.</p>

TRAILS PRIORITY AND PHASING

Implementing this Trails Plan will take many years and requires increases in staff, funding and volunteers. The focus is on developing and improving the network “spines,” that is, the major trail in each network, followed by connectors that provide important linkages between trails and networks. However, the rate and order of implementation of specific actions will depend upon the availability of funding and management priorities in future years. Prioritizing improvements and development will be necessary to ensure that park management goals are met.

This plan provides a guide and approximate locations for trail and trailhead development. Before construction begins, design development, construction drawings and specifications will need to be completed. Additionally, site specific compliance may be required.

Priority I

Based upon present and projected use and available funding, the Joseph M. McDade Recreational Trail (MRT) and associated trailheads should take the highest priority for improvement and new construction. All trails and trailheads connecting the MRT would follow this development. Establishing the MRT as the highest priority will help to manage the concentrated use on the PA side of the park, offering a safe recreational trail experience while guiding use, and helping to protect the parks natural and cultural resources from uncontrolled visitation.

Priority II

The Country Road Trail and associated trailheads in New Jersey would be the next priority for improvement and new construction. This will provide an opportunity for an extended recreational trail experience in a rural setting from Millbrook Village to the northern park boundary. Improvements to the Appalachian National Scenic Trail and associated trailheads, where necessary, would also be a high priority.

Priority III

The remaining connector trails would be developed according to park needs and local support. As construction of connector trails proceeds, the park staff would encourage and support extensions to other projects beyond the DWGNRA boundaries.

COMPLIANCE REQUIREMENTS

Future Nepa Actions

As individual trails are proposed for upgrade or development, and where environmental assessments are necessary, all required site-specific studies would be done and a determination would be made concerning the environmental consequences of a proposed action. If no significant adverse effects are identified, a Finding of No Significant Impact (FONSI) may be prepared and appended to the GMPA. If the proposed trail is found to have potential for significant impact, the trail would be re-designed to avoid and minimize the impact. Alternatively, an EIS maybe prepared which would document the potential impact in a Record of Decision (ROD). The FONSI and ROD would conclude the compliance process for the National Environmental Policy Act for the involved actions.

Appendix B contains a partial listing of laws, regulations and policies that pertain to the planning process.

Natural Resources

In the Commonwealth of Pennsylvania, natural resource compliance is coordinated with the U.S. Army Corps of Engineers, Pennsylvania Department of Environmental Protection (DEP) and in

the State of New Jersey, with the New Jersey Department of Environmental Protection. During the NEPA compliance process, consultation with the respective DEPs will ensure compliance with all state air and water quality standards. Any actions in floodplains or wetlands in the park will comply with Executive Orders 11988 and 11990 (floodplain management and wetlands protection). Any necessary approvals or permits from the states or other federal agencies will be obtained prior to action.

The NPS will consult with the U.S. Fish and Wildlife Service (USFWS) to avoid or mitigate adverse effects to endangered and threatened species and critical habitat.

Cultural Resources

Potential impacts on the park's cultural resources will be addressed under the provisions for assessing effects outlined in 36 CFR Part 800, regulations issued by the Advisory Council on Historic Preservation (ACHP) implementing section 106 of the National Historic Preservation Act of 1966, as amended (NHPA; 16 USC 4709 et seq.) Under the "Criteria of Effect" (36 CFR Part 800.9(a)), federal undertakings are considered to have an effect when they alter the character, integrity, use of cultural resource, or the qualities that qualify a property for listing in the National Register of Historic Places.

The NPS will consult with the respective Pennsylvania and New Jersey State Historic Preservation Officers (SHPO) and the ACHP to ensure that NPS operations, management and administration provide for the site's cultural resources in accordance with the intent of NPS policies and with sections 106, 110, and 111 of the NHPA, as stated in the 1995 Programmatic Agreement (PA) among the NPS, the ACHP and the National Conference of State Historic Preservation Officers. Under section V.A. of the programmatic agreement, all undertakings that are not considered programmatic exclusions would be reviewed in accordance with 36 CFR Part 800.

Internally, the NPS will complete an "Assessment of Actions Having an Effect on Cultural Resources" (XXX form) prior to implementation of any proposed action. The form would document any projected effects and outline actions proposed to mitigate any effects. All implementing actions for cultural resources will be reviewed using the XX form and reviewed by the park's team of cultural resource advisors as specified in the 1995 PA.

Before any ground-disturbing action by the NPS, the park's archaeologist will determine the need for archaeological inventory or testing. Any such studies will be carried out and evaluated for effect before construction, in consultation with the SHPO and the ACHP.

TRAIL DESCRIPTIONS

These summaries generally describe the mileage, location, surface and attractions associated with each individual trail. Parking, restroom facilities, new construction and potential improvements to the trail surface have also been included. As part of designing a new designated trail system, some trail names and locations have been changed. These changes were necessary to either minimize resource damage or provide for a better recreational experience.

<p>Adams Creek Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: A 1.0 mile trail which rises quickly above Adams Creek and then follows the rock walls of the old homestead road to the base of the lower Adams Creek falls. The trail has three major stream crossings, travels into a hemlock gorge, and ends deep in the Adams Creek drainage. In the gorge, the trail ends at the base of some steep rock outcrops. Backtracking approximately one-third mile provides a connection to the Bride & Groom Loop Trail for an extended hiking experience.</p> <p>Access & Facilities: Parking at Adams Creek Trailhead off Route 209.</p> <p>Improvements & Maintenance: This proposed trail is an old woods road currently hiked by park users. It has a width of 3-15 feet in places and would require minimal improvements to its natural surface.</p>
<p>Adams Creek to Conashaugh Link <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: This link trail is approximately a 1.3 mile hike, which traverses a small feeder creek connecting the scenic Adams Creek hemlock ravine to the Conashaugh View hiking and equestrian trail. Visitors will enjoy a scenic hemlock gorge busy with bird life. The trail is steep and may be considered difficult.</p> <p>Access & Facilities: Parking at Adams creek Trailhead off Route 209.</p> <p>Improvements & Maintenance: This 3-5 foot wide natural surface trail will make use of the alignment of an existing old road trace. Some clearing of brush and surface preparations will be necessary. Approximately 104 feet of new construction will be necessary.</p>

<p>Appalachian National Scenic Trail <i>Northampton and Monroe Counties, Pennsylvania, Warren and Sussex Counties, New Jersey</i> Appalachian Trail Network/Gap View Network</p>	<p>Description: the 27.3 mile National Scenic Trail is dedicated to through hikers who are traveling from Georgia to Maine, or for those who wish to experience smaller portions of the trail. The segment of the trail which runs through the park is considered to be moderate hiking.</p> <p>Access & Facilities: Parking at Red Dot, Kaiser, Camp Road, Lake Lenape, Rattlesnake Swamp, Skyline, and Blue Mt. Road Trailheads. Parking and restrooms available at Dunnfield, Coppermine, and Buttermilk Falls Trailheads.</p> <p>Improvements & Maintenance: The AT is managed through cooperative agreements and a Memorandum of Understanding with both the Appalachian NST Park Office and the Appalachian Trail Conference. The Wilmington Trail Club is responsible for maintaining the PA portion of the AT and the NY-NJ Trail Conference, the NJ section.</p>
<p>Arrow Island Trail <i>Northampton County, Pennsylvania</i> Gap View Network</p>	<p>Description: This 1.1 mile natural surface hiking trail will link Slateford Farm Loop with Gap to Slateford Trail. The trail starts at the Arrow Island Overlook parking lot and follows the Minsi slope approximately one mile to the Duck Pond Trailhead with a connection to Slateford Loop Trail. The trail abounds in geologic formations along with scenic vistas of the Gap. From the parking lot, the hiker will experience moderate to steep conditions to the Slateford Loop where the trail levels out to become a less strenuous hike.</p> <p>Access & Facilities: Parking at Arrow Island Overlook and Duck Pond Trailheads.</p> <p>Improvements & Maintenance: Currently maintained by park staff.</p>

<p>Blue Blaze <i>Warren County, New Jersey</i> Appalachian Trail Network/Gap View Network</p>	<p>Description: A very popular hiking trail which branches off the Appalachian Trail from the Dunnfield Creek drainage and ascends, with steep and rugged sections, up the backside of Mt. Tammany to a wonderful viewpoint overlooking the water gap. The trail then joins with another popular trail, the Red Dot, providing an opportunity for an alternate route down the mountain. This is a heavily used loop hike blazed with blue dots and is approximately 1.5 miles in length. The trail lies within both DWGNRA and Worthington State Forest.</p> <p>Access & Facilities: Parking available at Red Dot Trailhead. Parking and restrooms available at Dunnfield Trailhead.</p> <p>Improvements & Maintenance: Appalachian Trail Conference partners, park staff and State Forest staff work cooperatively to maintain and manage the trail.</p>
<p>Blue Mountain Lake Trail <i>Sussex County, New Jersey</i> Country Road Network</p>	<p>Description: A network of roadways, remnants of a former housing development, provide several miles of decomposing asphalt and dirt roadways in a densely wooded area surrounding Blue Mountain Lake and Hemlock Pond. Approximately 7.4 miles of these trails are designated and well-marked for hiking, mountain biking and cross-country skiing activities. During periods of snow cover this area provides some of the best cross-country skiing in the state. This is an existing trail but it would be linked to Pool Colony and Crater Lake Loop.</p> <p>Access & Facilities: Parking at Blue Mountain Lake Trailhead.</p> <p>Improvements & Maintenance: Existing trail would be resurfaced with crushed gravel. Site maintained under cooperative agreement with Kittatinny Mountain Bike Association.</p>

<p>Bride and Groom Loop <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: On this 2.8 mile hiking trail which follows the old country roads of the Bride & Groom Resort and the County Line Road, visitors will travel through hemlock groves and former farm fields where cattle once grazed. The Sproul Road and Adams Creek trails offer extensions to this hike. Access & Facilities: Parking at Bride & Groom Trailhead. Improvements & Maintenance: Clearing, surface improvements and approximately 0.5 miles of new construction will be necessary to complete loop along Route 739.</p>
<p>Buttermilk Falls Trail <i>Sussex County, New Jersey</i> Appalachian Trail Network</p>	<p>Description: A wonderful opportunity for an intimate visit to a multi-tiered waterfall environment on a trail providing boardwalks and steps adjacent to the falls. Above the falls the trail continues another 1.5 miles up the Kittatinny Ridge, crossing Woods Road Trail, and on to the Appalachian Trail. Best visited following a period of rain fall. As an intersecting trail with the Appalachian Trail, this trail is marked with blue blazes. Access & Facilities: Parking at Buttermilk Falls Trailhead. Restroom Facilities will be added to expanded trailhead. Improvements & Maintenance: Currently maintained by the NY-NJ Trail Conference.</p>
<p>Childs Park Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: Existing trail that would be connected to other segments along the Dingmans Creek to form new Dingmans Creek Trail. This hiking trail is a 1.4 mile loop which follows both sides of Dingmans Creek as it steeply drops through Fulmer, Factory, and Deer Leap Falls. Four bridges cross the creek connecting each side of the trail, allowing visitors to shorten their hike through the deep gorge. The trail surface is a combination of natural shale and constructed walkways. Access & Facilities: Parking and restrooms at the Childs Park Trailhead. Improvements & Maintenance: Maintained by park staff.</p>

<p>Cliff Park Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: A 4.5 mile hiking trail located predominantly on a privately owned road trace. This trail connects the Raymondskill Falls Area with the Milford Knob overlook. A short distance from the road are the Pitman Cliffs, where visitors may enjoy spectacular views of the Delaware River Valley.</p> <p>Access & Facilities: Parking and restrooms available at Raymondskill Falls Trailhead.</p>
<p>Conashaugh View Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: A 7.0 mile hiking, horse and cross-country skiing trail on gravel surface. This trail welcomes equestrian users and hikers who would like to experience a moderate to easy ride or hike. The trail extends from the historic Zimmermann Farm area through a stand of hardwood trees. Portions of the trail run along a mountain bluff providing scenic vistas. A section of the trail is on Long Meadow Road. Hikers and riders are advised caution when on this portion of the trail.</p> <p>Access & Facilities: Parking at Conashaugh View Trailhead.</p> <p>Improvements & Maintenance: Maintained under Memorandum of Understanding with Delaware Water Gap Equestrian Advisory Committee. A 0.7 mile old road trace section would be added to form an additional loop. Cross-country skiing would be added as a use and the section open to vehicular traffic on Conashaugh Road would be closed.</p>
<p>Coppermine Trail <i>Warren County, New Jersey</i> Appalachian Trail Network</p>	<p>Description: This popular 2.0 mile trail, with red blazes, leads up a very steep hemlock ravine from the historic Pahaquarry Copper Mines to the Appalachian Trail atop the Kittatinny Ridge, with ready access to the Appalachian Mountain Club facility at Camp Mohican. Two short spurs, one within the historic mining site and another further up the ridge connect to the Kaiser Trail, which leads up the ridge just to the south.</p> <p>Access & Facilities: Parking and restrooms available at Coppermine Trailhead. Parking at Camp Road Trailhead.</p> <p>Improvements & Maintenance: Maintained</p>

	by the NY-NJ Trail Conference.
Country Road Trail <i>Warren and Sussex Counties, New Jersey</i> Country Road Network	<p>Description: A system of road traces linking numerous natural and historic village sites from Watergate Recreation Site to the northern boundary of the park. This 24.6 mile through route offers great potential for hikers and bicyclists.</p> <p>Access & Facilities: Parking and restrooms available at Watergate, Millbrook, Blue Mountain Lake, and Van Campens Glen Trailheads. Parking at Donkey Corner, Walpack Ridge, Old Dingmans Road, Van Ness Road, Jager Road, Millville, Farmers Trace, Hamilton, Peters Valley, Silver Spray Falls, Van Campens Inn, Walpack Environmental and the Buck Lot Trailheads.</p> <p>Improvements & Maintenance: Former road traces would be upgraded to new gravel surface and approximately 6.7 miles of new construction would be necessary.</p>
Coventry Pond Trail <i>Warren County, New Jersey</i> Country Road Network	<p>Description: An abandoned county roadway leading from just above the former mill site at Millbrook Village in a gentle climb to a small woodland pond. This is a short hike of approximately one mile roundtrip to a quiet and somewhat secluded wooded area.</p> <p>Access & Facilities: Parking and restrooms available at Millbrook Trailhead.</p> <p>Improvements & Maintenance: Old road trace would need clearing and surface work. One culvert would be replaced.</p>
Crater Lake Loop <i>Sussex County, New Jersey</i> Appalachian Trail Network	<p>Description: A 1.3 mile trail leading from Crater Lake Parking Lot, at the terminus of Skyline Drive, circling around Crater Lake, with a spur to Hemlock Pond. At the north side of Crater Lake the trail route is shared with the Appalachian Trail.</p> <p>Access & Facilities: Parking available at Crater Lake Trailhead.</p> <p>Improvements & Maintenance: Section of trail around Hemlock Pond is maintained by the NY-NJ Trail Conference.</p>

<p>Dingmans Creek Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: This 5.3 mile trail extends from the Dingmans Launch to the McDade Trail and continues west along the Dingmans Creek drainage to the Childs Park picnic area. A moderately strenuous natural surfaced trail with a segment constructed of raised boardwalks. The trail passes through the Dingmans Falls developed area, which includes one mile of trail with raised boardwalks passing through hemlock groves and mountain laurel barrens, and going past Silver Thread Falls and Dingmans Falls. The trail steeply rises on steps above the falls then follows the gentle rise of the creek to Childs Park.</p> <p>Access & Facilities: Parking and restrooms available at Childs Park, Dingmans Falls and Dingmans Launch Trailheads.</p> <p>Improvements & Maintenance: 1.25 miles of new construction will be necessary.</p>
<p>Dingmans to Hornbecks <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: A 3.8 mile natural surface hiking trail that connects the Hornbecks Creek Trail to the Dingmans Creek Trail. The hike is along the Cactus Ridge where numerous vistas of the farmland and river valley below are offered. The hike should be considered easy to moderate.</p> <p>Access & Facilities: Parking available at the Loch Lomond Trailhead. Access to the trail can be attained at Hornbecks, Dingmans Falls, or Dingmans Launch trailheads.</p> <p>Improvements & Maintenance: New construction for 0.5 mile ravine (south) section. Remaining portion of trail is a road trace that will require surface upgrading.</p>
<p>Eshback Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: A network of 9.7 miles of loop trails which rapidly rise out of the valley floor onto the ridge tops and saddles following old logging roads through hardwood forests past wetlands and shale outcroppings. This system of inter-looping trails will accommodate hiking, biking and snowmobile use. This trail will provide connections to Toms Creek, Mill Creek and the McDade Trail.</p>

	<p>Access & Facilities: Tom's Creek, Eshback, Lower Eshback, Upper Eshback, and Stucki Pond Trailheads.</p> <p>Improvements & Maintenance: Recommended improvements include drainage structures, regarding and surfacing with compacted gravel. One mile of new construction will also be necessary.</p>
<p>Farmers Trace Trail <i>Sussex County, New Jersey</i> Country Road Network</p>	<p>Description: This 1.4 mile natural surface trail, along the base of the Kittatinny Ridge near Walpack, offers a quiet sylvan experience for hiking, bicycling and equestrian activity.</p> <p>Access & Facilities: Parking available at Silver Spray Falls and Farmers Trace Trailheads.</p> <p>Improvements & Maintenance: Old road trace would be resurfaced with crushed gravel.</p>
<p>Gap to Slateford Trail <i>Monroe and Northampton Counties, Pennsylvania</i> Gap View Network</p>	<p>Description: This 3.5 mile hiking/biking trail extends from approximately the Delaware water Gap Trail Station to the park boundary. The trail extends over a converted rail bed to offer the hiker or biker an easy tour of the scenic Delaware Water Gap. It is envisioned that this trail would continue to Portland, PA (and beyond) to the south and into Monroe County to the north. There are opportunities to connect to county and state wide regional trail systems.</p> <p>Access & Facilities: Parking at Point of Gap with potential at Old Train station.</p> <p>Improvements & Maintenance: Development of this trail is predicated on abandonment of railroad use.</p>
<p>Hamilton Ridge Trail <i>Warren County, New Jersey</i> Country Road Network</p>	<p>Description: Present park trail with biking added as an additional use. This former township road travels approximately 2.8 miles along the forested top of Hamilton Ridge between Old Mine Road above Millbrook Village and the Van Campen Brook near the entrance to the Depew Recreation Area. Overall the route traverses relatively level terrain with portions of the trail surfaced with decomposing asphalt. This trail is ideal for</p>

	<p>hiking and could be an excellent opportunity to accommodate persons confined to a wheelchair. The trail offers hiking connections to the Orchard Trail, Van Campens Glen Trail and Pioneer Trail.</p> <p>Access & Facilities: Parking available at Hamilton Trailhead. Access to the Hamilton Ridge Trail can be made from the Van Campens Glen and Hamilton Trailheads.</p> <p>Improvements & Maintenance: Add crushed gravel to existing surface.</p>
<p>Hidden Lake Loop Trail <i>Monroe County, Pennsylvania</i> River Valley Network</p>	<p>Description: An existing 1.9 mile dirt and gravel loop trail around the edge of a stocked trout lake. The trail is fairly level and passes the Hidden Lake picnic area and the Hidden Lake Lodge. This trail will accommodate hiking, cross-country skiing and has grades which could be prepared to be well suited for those individuals who are mobility impaired and/or wheelchair bound.</p> <p>Access & Facilities: Parking and restrooms at Hidden Lake Trailhead.</p> <p>Improvements & Maintenance: Crushed gravel would be added to the existing surface. A 0.3 mile section would be added to the present location to connect with the Theune trail.</p>
<p>Hornbecks Creek Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: An existing 2.0 mile hiking trail which follows the old Glenside Rod & Gun Club road along Hornbecks Creek to the base of the lower Indian Ladders then rises steeply along the shale cliffs. The trail rises with the creek into a narrow hemlock grove, past the upper Indian Ladders Falls, and ends at the old Emery Homestead on Emery Road.</p> <p>Access & Facilities: Parking at Hornbecks and Upper Hornbecks Trailheads.</p>

<p>Hornbecks-PEEC Connector <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: An existing 0.5 mile logging road that connects the PEEC trails with the Hornbecks Creek Trail. This is considered a steep hiking trail. Access & Facilities: Parking at Hornbecks and Upper Hornbecks Trailheads. Improvements & Maintenance: Existing old road trace would require surface improvements.</p>
<p>Kaiser Trail <i>Warren County, New Jersey</i> Appalachian Trail Network</p>	<p>Description: This existing 2.0 mile trail, park of a former woods road over the Kittatinny Ridge, provides access to two spurs connecting to the Coppermine Trail and eventually leads up to the Appalachian Trail. It provides a convenient access to Raccoon Ridge, an exposed ridge top and a favorite raptor observation point through the autumn months. Access & Facilities: Parking and restrooms at Coppermine and Kaiser Trailheads.</p>
<p>Karamac Trail <i>Warren County, New Jersey</i> Gap View Network</p>	<p>Description: From the Karamac Trailhead, this short trail of approximately 0.5 mile, permits access to both the Delaware River at the former New York, Susquehanna and Western Railroad Bridge abutment, and to the site of the former Karamac Hotel. An additional 0.5 mile section would be added to become a 1.0 mile loop trail and would provide a connection to the Karamac Railroad Trail. Access & Facilities: Parking at Karamac Trailhead. Improvements & Maintenance: Needs surface improvements and is maintained by the Appalachian Mountain Club.</p>
<p>Karamac Railroad Trail <i>Warren County, New Jersey</i> Gap View Network</p>	<p>Description: This one mile level hiking trail parallels the Delaware River from just north of the I-80 Bridge upriver to the remnant stone piers of the former New York, Susquehanna and Western Railroad Bridge, which extended across the river to Pennsylvania. The trail provides for an easy and short hike and would be suitable for wheelchair use. Majority lies in Worthington State Forest and would require their cooperation.</p>

	<p>Access & Facilities: Parking at Karamac Trailhead and ADA lot.</p> <p>Improvements & Maintenance: New trail would require improvements and surfacing with crushed gravel.</p>
<p>Kittatinny House Historic Trail <i>Monroe County, Pennsylvania</i> Gap View Network</p>	<p>Description: A 3.9 mile series of natural surface hiking trails that traverse an historic area at the site of the Kittatinny House which is listed on the National Register of Historic Places. The trail climbs a moderate grade and connects the Delaware Water Gap trailhead by way of Caledonia Creek up to the Appalachian Trail.</p> <p>Access & Facilities: Lake Lenape Trailhead has parking and restrooms. Resort Point Trailhead has parking.</p> <p>Improvements & Maintenance: Clearing and surface improvements will be necessary.</p>
<p>Long Pine Pond Loop Trail <i>Sussex County, New Jersey</i> Appalachian Trail Network</p>	<p>Description: This 2.2 mile hiking trail will loop around Long Pine Pond. The trail provides a connection to the Appalachian Trail.</p> <p>Access & Facilities: Parking at Blue Mountain Road and Skyline Drive Trailheads.</p> <p>Improvements & Maintenance: New construction for 0.7 miles of trail. Remaining portion is located on former road trace and require surface improvements.</p>
<p>McDade Recreational Trail <i>Monroe and Pike Counties, Pennsylvania</i> River Valley Network</p>	<p>Description: A 32 mile crushed gravel trail for biking, hiking, and cross-country skiing which parallels U.S. Highway 209 and River Road. The trail will provide a continuous connection between the northern end of the park at Milford Beach and the southern boundary of the park. This trail will provide a major biking, hiking and skiing route the entire length of the park. It passes through historic farmlands, apple orchards, pine plantations, and shale quarries. The trail connects most existing facilities and frequently visited trails on the Pennsylvania side of the Delaware River.</p> <p>Access & Facilities: Parking and restrooms at Hialeah, Smithfield Beach, Turn Farm, Bushkill Visitor Center, Bushkill Launch,</p>

	<p>Toms Creek, Eshback, Mill Creek, Hornbecks, Adams Creek, Zimmermann, Shanna and Milford Beach Trailheads.</p> <p>Improvements & Maintenance: Sections of old road traces will be surfaced with crushed gravel along with 18 miles of new construction.</p>
<p>McDade Trail to Stucki Pond <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: This is a 1.3 mile road trace which rises steeply from the Broadhead Farmlands to the hard wood and cactus lined ridge connecting the McDade Recreational Trail with the Stucki Pond area. It will accommodate bikers and hikers.</p> <p>Access & Facilities: Parking at Stucki Pond Trailhead.</p> <p>Improvements & Maintenance: Surfacing with crushed gravel would be required.</p>
<p>Mill Creek Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: This trail is a 0.5 mile hiking trail following an old road trace adjacent to Mill Creek. At its terminus to the south, the hiker can connect to the McDade to Stucki Pond Trail or to the north, across the creek, to the PEEC Trail System.</p> <p>Access & Facilities: Mill Creek Trailhead.</p> <p>Improvements & Maintenance: Surface improvements to the trail and a bridge over Mill Creek will be necessary.</p>
<p>Military Road Trail <i>Sussex County, New Jersey</i> Country Road Network</p>	<p>Description: An existing 1.1 mile natural hiking trail over the Walpack Ridge connecting the Van Campen Inn at the base of the ridge across the flats from the Delaware River, to the village of Walpack. This trail has great interpretive opportunities.</p> <p>Access & Facilities: Parking at Van Campen Inn Trailhead.</p>

<p>Mountain Road Trail <i>Sussex County, New Jersey</i> Country Road Network</p>	<p>Description: These 5.9 miles of roadways through the Walpack Valley provide hiking, biking and equestrian opportunities along Mountain Road north to Stokes State Forest.</p> <p>Access & Facilities: Access to this trail can be obtained from the Buttermilk Falls, Silver Spray Falls and Farmers Trace Trailheads. Parking available at Silver Spray Falls and Walpack Environmental Education Center Trailheads.</p> <p>Improvements & Maintenance: Adding crushed gravel to the surface will be necessary.</p>
<p>Orchard Trail <i>Warren County, New Jersey</i> Country Road Network</p>	<p>Description: From Millbrook Village, this short hiking trail with a gentle climb winds approximately 0.25 mile up to the Hamilton Ridge Trail. The trail passes along an old spring site among remnants of a former orchard where an old farmstead once existed.</p> <p>Access & Facilities: Parking and restrooms are available at Millbrook Trailhead. Parking available at Hamilton Trailhead.</p> <p>Improvements & Maintenance: Maintained by the NY-NJ Trail Conference.</p>
<p>PEEC Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: An 8.9 mile hiking trail system comprises the Sunrise, Confidence, Two Ponds, Fossil, Scenic Gorge and Tumbling Waters trails which take visitors past upland ponds, through pine plantations, past majestic waterfalls, and through natural wetlands. The trails offer vistas of the Delaware Valley and provide excellent interpretive and education opportunities.</p> <p>Access & Facilities: Parking at Pocono Environmental Education Center (PEEC) lot</p> <p>Improvements & Maintenance: Maintained by PEEC staff.</p>

<p>Peters Valley Trail <i>Sussex County, New Jersey</i> Country Road Network</p>	<p>Description: A 1.5 mile hiking trail on old road traces that provides a safe pathway around the village and keeps people off the roads. This trail system can be accessed from the Peters Valley Trailhead and provides connections to the Country Road Trail. Access & Facilities: Parking at Peters Valley Trailhead. Improvements & Maintenance: Surface improvements to road traces and 150 feet of new construction would be necessary.</p>
<p>Pioneer Trail <i>Warren County, New Jersey</i> Country Road Network</p>	<p>Description: Currently, this 2.9 mile hiking trail traverses the southwestern flank of the Hamilton Ridge. A 2.0 mile section is deleted and the 1.4 mile Lower Hamilton Trail is added, making the total trail 2.3 miles. Access & Facilities: Parking and restrooms at Millbrook, Hamilton and Van Campens Glen. Improvements & Maintenance: Maintained by the NY-NJ Trail Conference.</p>
<p>Pool Colony <i>Sussex County, New Jersey</i> Country Road Network</p>	<p>Description: A 5.3 mile hiking and cross-country skiing loop trail on existing roadbeds. Provides connection for cross-country skiing into Blue Mountain Lake Trail. This system of trails is comprised of abandoned roadways from a former housing development. Access & Facilities: Parking available at Blue Mountain Lake Trailhead. Improvements & Maintenance: Surface improvements to the decomposed asphalt surface would be necessary.</p>
<p>Railway Avenue Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: An existing 0.5 mile hiking trail in Bushkill Village, which is located on an abandoned asphalt road and railroad spur. Due to the tabletop flat topography, the trail is ideal for mobility impaired and wheelchair bound users. Dense hardwood tree cover with intermittent expanses of open field and marsh areas surrounds the existing roadbed. The area is favored for birding and frequented in the fall for the abounding colors. Access & Facilities: Parking needs to be developed.</p>

	<p>Improvements & Maintenance: The trail will need little maintenance and few improvements. The blacktop roadway surface is in relatively good condition and the railroad spur has a good base of crushed stone with little or no erosion.</p>
<p>Rattlesnake Swamp Trail <i>Warren County, New Jersey</i> Appalachian Trail Network</p>	<p>Description: A 3.25 mile natural surface hiking trail that extends south to the AMC lot. Access & Facilities: Parking available at the AMC lot and Rattlesnake Swamp Trailhead.</p>
<p>Raymondskill Creek Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: An existing 0.5 mile natural surface hiking trail system. The trail connects the lower, middle, and upper Raymondskill Falls viewing areas. The steep and narrow trails cut into the fragile shale walls and visitors are encouraged to stay inside the wooden fence rails. The trail switches back upon itself down to the Raymondskill Creek where the old trail bridge once stood. Additionally, a 1.7 mile trail proposed connection would extend beyond the upper falls across Raymondskill Road along old road trace leading to Hackers Falls, making the trail 2.2 miles. This new trail will eliminate the many social trails that have developed leading to the upper and lower falls. Access & Facilities: Parking and restrooms are available at Raymondskill and Hackers Falls Trailheads. Improvements & Maintenance: A new 0.6 mile section will require construction.</p>
<p>Red Dot Trail <i>Warren County, New Jersey</i> Appalachian Trail Network/Gap View Network</p>	<p>Description: This steep and rugged 1.5 mile trail, with red dot blazes, leads up Mt. Tammany, eventually joining the Blue Blaze trail at a spectacular overlook of the Gap area. The trailhead for the Red Dot Trail is at the Department of Transportation Parking Lot off I-80 immediately east of the Dunnfield Parking Lot. This is a very popular route and is usually very busy in pleasant weather. An alternative return route can be made by descending Mt. Tammany into the Dunnfield drainage and to the Dunnfield Lot via the Blue Blaze Trail.</p>

	<p>Access and Facilities: Parking available at Red Dot Trailhead. Parking and restrooms available at Dunnfield Trailhead.</p>
<p>Rivers Bend Trail <i>Sussex and Warren Counties, New Jersey</i> Country Road Network</p>	<p>Description: This 3.0 mile crushed gravel hiking and biking trail follows along the slopes above the Delaware River. It provides a connection from the River Bend Trail Group Campsite to the Hamilton Ridge Trail and the Country Road Trail. The northern segment of the trail between the Country Road Trail and Rivers Bend Trail Group Campsite is designated for hiking and biking use. The remaining segment to the south is designated for hiking only.</p> <p>Access and Facilities: Parking and restrooms at Millbrook. Parking only at Hamilton Trailhead.</p> <p>Improvements and Maintenance: Surface improvements on old road traces including crushed gravel.</p>
<p>Silver Spray Falls Trail <i>Sussex County, New Jersey</i> Country Road Network</p>	<p>Description: This 1.7 mile hiking trail ascends to the wooded Kittatinny Ridge from Mountain Road following a minor drainage up to a small falls. It can be accessed from the Silver Spray Falls Trailhead.</p> <p>Access and Facilities: Parking at Silver Spray Falls Trailhead</p> <p>Improvements and Maintenance: Some surface improvements are necessary.</p>
<p>Slateford Loop Trail <i>Northampton County, Pennsylvania</i> Gap View Network</p>	<p>Description: Bordered by mixed hardwoods, this 2.5 mile trail traverses the former Slateford farm and Duck Pond. The double looped trail is frequented by various song and marsh birds and abounds in spring wild flowers. The trail is suitable for beginner and advanced cross-country ski enthusiasts.</p> <p>Access and Facilities: Parking at Duck Pond Trailhead</p>
<p>Sproul Road Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: A ½ mile natural surface hiking trail connecting the shale mines and Conashaugh View with the Bride and Groom Loop trails. Most of the trail originally served</p>

	<p>as a main road thoroughfare at the turn of the century and the old roadway is lined with historic rock walls. The trail also passes the farm ponds and fields of the Zimmerman dairy farm and crosses Adams Creek at the restored Sproul electric generating plant.</p> <p>Access and Facilities: Parking available at Bride and Groom Trailhead.</p> <p>Improvements and Maintenance: This trail would need surface improvements and bridge reconstruction along the existing old road trace.</p>
<p>Theune Trail <i>Monroe County, Pennsylvania</i> River Valley Network</p>	<p>Description: A 3.8 mile crushed gravel hiking, biking and cross country skiing trail that connects with the McDade Recreational Trail. This picturesque trail traverses the ridge from the Hidden Lake Loop trail down to the Delaware River through open meadows and mature stands of timber. The trail would be considered moderate for bikers and hikers and challenging for cross country skiing.</p> <p>Access and Facilities: Parking at Turn Farm and Hidden Lake Trailheads.</p> <p>Improvements and Maintenance: Gravel surface would be added to old road trace.</p>
<p>Tom's Creek Trail <i>Pike County, Pennsylvania</i> River Valley Network</p>	<p>Description: A .7 mile connector is added to the existing trail to form connection from Tom's Creek Trail to Eshbach trails.</p> <p>Access and Facilities: Parking is available at Tom's Creek and Lower Eshbach.</p> <p>Improvements and Maintenance: New section would need surface improvements.</p>
<p>VanCampens Glen Trail <i>Warren County, New Jersey</i> Country Road Network</p>	<p>Description: In this alternative, the trail ends at Watergate Recreation Site. A 0.6 mile section from Watergate to Millbrook becomes part of the Country Road Trail.</p>
<p>VanCampens to Rattlesnake Connector <i>Warren County, New Jersey</i> Country Road Network</p>	<p>Description: This is a hiking trail that extends approximately 0.9 miles. It connects the Van Campens Glen Trail with the Rattlesnake Swamp Trail by way of a steep drainage off the Kittatinny Ridge.</p> <p>Access and Facilities: Parking and restrooms</p>

	<p>are available at Rattlesnake Swamp and Van Campens Glen Trailheads.</p> <p>Improvements and Maintenance: this trail would need 0.8 miles of new construction.</p>
<p>Walpack Environmental Education Center Trail <i>Sussex County, New Jersey</i> Country Road Network</p>	<p>Description: A 2.2 mile hiking trail through a wooded area with a small, secluded pond. Students of the nearby Walpack Environmental Education Center frequently use this route which offers natural history interpretation opportunities. This trail links to Country Road Trail and Mountain Road Trail.</p> <p>Access and Facilities: Parking is available at Walpack Environmental Trailhead.</p> <p>Improvements and Maintenance: Surface improvements to existing road trace and 468 feet of new construction would be necessary.</p>
<p>Walpack Ridge Trail <i>Sussex County, New Jersey</i> Country Road Network</p>	<p>Description: This 2.7 mile hiking trail, which incorporates the Thunder Mountain Trail, extends north from the Military Road Trail along a ridge west of the Village of Walpack. It offers an approximately 2.0 mile loop with connections to the Country Road Trail.</p> <p>Access and Facilities: Parking available at Walpack Ridge Trailhead.</p>
<p>Woods Road Trail <i>Sussex County, New Jersey</i> Country Road Network</p>	<p>Description: This 3.1 mile hiking, biking, and cross country ski trail extends along an old road trace that lies about three quarters of the way up the northwest slope of the Kittatinny Ridge. It extends from Hemlock Pond and the Blue Mountain Lake trail at the south to the Farmers trace Trail at the north. Buttermilk Falls and Silver Spray Falls Trails can be accessed by way of the Woods Road Trail. This trail offers an important link to the recreational connection between the National Recreation Area and Stokes State Forest.</p> <p>Access and Facilities: Parking available at Blue Mountain Lake and Farmers Trace Trailheads.</p> <p>Improvements and Maintenance: Old road trace would be surfaced with crushed gravel.</p>

OPERATIONS AND MAINTENANCE

The number of additional NPS staff required to support the designated trail system was calculated by estimating the time needed to accomplish the actions listed for each prescription. Support costs were based on current costs, and include training, travel, utilities, supplies, vehicles and other related expenses.

Existing Trail Operations and Maintenance Costs

ACTIVITY	ANNUAL COST
Development and Maintenance	\$35,000
Trails Planning, Coordination and Management	15,000
Park Trail Crew	15,000
Total	\$65,000

Projected Additional Operations and Maintenance Costs

ACTIVITY	ANNUAL COST
Establish Park Trails Office:	
Trail coordinator, GS-023-09	\$46,200
Support costs (20%)	9,200
Increase Ranger Patrol:	
Seasonal patrol rangers, GS-025-05	44,000
Support costs (20%)	8,800
Install Trail Signage:	
Trail signs	1,000
Wayside exhibits	5,000
Trailhead bulletin boards	4,000
Expand Seasonal Maintenance Crew:	
Crew leader (WG-6) and 5 laborers (WG-3)	72,500
Support costs (20%)	14,500
Create or Revise Publications (maps, brochures)	5,000
Conduct Workshops	2,500
Increase Monitoring Program:	
Seasonal biological technician. GS-5	10,000
Special studies contracting	10,000
Total Estimated Annual Operating Costs	\$232,700

TRAIL SYSTEM DEVELOPMENT

Cost estimates for developing and upgrading the trails included in the system were calculated based on a comparison of effort to improve or develop particular trail types. Trail types, natural or gravel trails, will accommodate a designated use through applying a required width and surface material. A given trail may need to be constructed where none currently exists or may require various degrees of work to become usable, safe and maintainable. An estimated

difference in cost for improvements vs. upgrades was established to quantify these differences. Further, it is assumed that a certain, minimal amount of work will be necessary to bring existing trails into a formal, safe working order such as signage, tree trimming and brushing, and some spot surface treatments for drainage control and erosion repairs. These costs were not included in the estimated price. For this reason, the mileage of improved trails should not equal the total mileage of trails.

Projected Trail Upgrade and Development Costs

Construction Type	Miles	Construction Cost per Mile	Gross Construction Costs	Design Costs	Project Total
Natural Surface: Improvements and Upgrades	58	\$ 24,600			
Natural Surface: New Construction	17	\$ 32,100			
Gravel Surface: Improvements and Upgrades	94	\$ 97,000			
Gravel Surface: New Construction	20	\$ 145,000			
Trailheads/Parking Lots					
			\$16,917,034	\$2,432,200	\$49,354,234

TRAILHEADS

The conceptual trailhead used in the planning process may include any or all of the following: gravel surface, wheel stops, benches, a bicycle rack, orientation panels, informational and directional signs, trash cans, and a comfort station. The table of projected costs for developing the trailheads included in this plan was based on a conceptual idea of what would be most appropriate for each designated trailhead.

The need for restrooms at a trailhead was determined based on an analysis of parking spaces, the current volume of use per trail, and an estimate of the potential for increased use through development of a trail. The potential for increased use is quantified by: plans for expanding or upgrading a parking lot; a new trail providing a connection to other high use areas or completing a loop; the amount of time a trail user expends on a given trail and the resulting frequency a facility provides per visit; and, significant resources that would be protected by providing a restroom. In general, for parking areas with less than 10 cars, no additional comfort facilities were planned. For parking areas with greater than 10 and less than 20 spaces, 2 toilet fixtures would be provided, one for each sex. For parking areas serving greater than 20 cars, a minimum of 4 toilet fixtures may be provided.

Water based, conventional septic tank and leachfield systems will be the first priority wherever

economical and where the soils permit. When this option fails, alternate systems will be considered. The types of restroom services vary, depending upon such factors as locality, climate, topography, local soils, and accessibility. Federal guidelines and research documents, such as NPS-83, Guidelines for the Selection of a Toilet Facility, Remote Waste Management, In Depth Design and Maintenance for Vault Toilets, and Composting Toilet Systems, Planning, Design, and Maintenance will be utilized in the selection of an appropriate wastewater treatment and disposal system specific to each remote site. Portable chemical toilets are inexpensive alternatives for areas with access for pumping and seasonal use. These toilets are often not well received by the public, inspire vandalism and, per NPS-83 are not recommended for use in a permanent installation. Vault toilets are typically low cost to construct, are not unduly limited by the numbers of visitors that can be served and are suggested for use in areas that are accessible to pumping service vehicles. However, vault toilets can create odor problems where wind is limited, air inversions occur or where convection currents from the solar heat gain is limited. Electric fans can be an alternative to assist in evacuating the restroom, but odors can still accumulate just outside the vent and therefore, just outside the building. Maintenance is also a chore as disgruntled visitors often resort to throwing items down the fixture that cannot be pumped. Composting toilets are suitable for remote areas where pumping is not an option. These fixtures are not recommended for conditions where visitation is greater than 75 visitors per day per toilet. They often require a lot of attention, continual addition of wood chips and aerating the compost, draining excess liquids, etc.

Selection of restroom facilities for the trailheads demonstrating upgrades of comfort stations or construction of a new facility was made on the above criteria. Best design and construction practices will be incorporated to protect public health while reducing capital investment and minimize maintenance labor and replacement costs at each trailhead.

Projected Trailhead Upgrade Costs

Trailhead Name	EXISTING			PROPOSED			
	Surface Type	Parking Spaces	Comfort Station	Surface Type	Parking Spaces	Comfort Station	Cost*
ADA (Karamac)	dirt	6	none	gravel	6	none	4,660
Adams Creek	dirt	8	none	gravel	8	none	6,660
AMC Lot	gravel	30	none	gravel	30	none	7,200
Arrow Island	asphalt	18	none	asphalt	18	chemical	10,400
Blue Mountain Lake	gravel	20	chemical	gravel	20	chemical	5,700
Blue Mountain Road (at AT weather station)	dirt	12	none	gravel	12	none	16,340
Bride and Groom	dirt	3	none	gravel	3	none	2,330
Buck Lot	dirt	4	none	gravel	10	chemical	12,650
Bushkill Launch	asphalt	25	compost	asphalt	25	compost	2,700
Bushkill Visitor Center	gravel	40	water	gravel	40	water	4,300
Buttermilk Falls	gravel	20	chemical	gravel	20	chemical	5,700

Camp Road	dirt	3	none	gravel	3	none	2,330
Childs Park	gravel	25	compost	gravel	25	compost	9,150
Conashaugh View	gravel	25	chemical	gravel	25	chemical	6,450
Coppermine	dirt	20	chemical	gravel	20	chemical	12,600
Crater Lake	gravel	20	none	gravel	20	compost	48,500
Dingmans Falls	asphalt	30	chemical	asphalt	30	compost	2,700
Dingmans Launch	asphalt	80	water	asphalt	80	water	2,700
Donkey Corner	dirt	2	none	asphalt	2	none	1,820
Duck Pond	asphalt	12	vault	asphalt	12	vault	2,700
Dunnfield	asphalt	30	yes	asphalt	30	yes	5,400
Eshback	dirt	20	none	gravel	20	compost	57,000
Farmers Trace	dirt	4	none	gravel	4	none	2,840
Hackers Falls	gravel	10	none	gravel	10	chemical	7,700
Hamilton	gravel	5	none	gravel	8	none	5,750
Hialeah	gravel	20	vault	gravel	25	compost	90,150
Hidden Lake	asphalt	20	chemical	asphalt	20	none	8,400
Hornbecks	gravel	4	none	gravel	4	none	2,840
Jager Road	dirt	10	none	gravel	10	chemical	12,650
Kaiser	gravel	20	none	gravel	20	chemical	10,700
Karamac	gravel	15	none	gravel	15	chemical	9,950
Lake Lenape	gravel	25	chemical	gravel	25	chemical	6,450
Loch Lomond	gravel	12	chemical	gravel	12	chemical	4,500
Lower Eshback	gravel	10	compost	gravel	10	compost	4,200
Milford Beach	asphalt		water	asphalt		water	2,700
Mill Creek	gravel	10	none	gravel	10	chemical	6,700
Millbrook	asphalt		water	asphalt		water	5,400
Millville	dirt	5	none	gravel	10	chemical	16,575
Old Dingmans Road	dirt	4	none	gravel	10	chemical	11,830
Old Train Station	gravel	30	none	gravel	30	compost	84,900
Peter's Valley	asphalt	6	none	asphalt	6	none	800
Pocono Environmental	gravel	20	none	gravel	20	none	5,700
Point of Gap	asphalt	40	chemical	asphalt	40	chemical	2,700
	dirt	5	none	gravel	5	none	3,350
Rattlesnake Swamp	gravel	8	none	gravel	8	none	5,560
Raymondskill Fall	asphalt	20	compost	asphalt	20	compost	2,700
	dirt	10	none	gravel	10	none	5,750
Red Dot (not NPS property)	asphalt	20	n/a	asphalt	20	n/a	2,700
Resort Point	asphalt	12	none	asphalt	12	chemical	5,200
Shanna	dirt	40	none	gravel	40	compost	67,500

Silver Spray Falls	dirt	2	none	gravel	2	none	1,820
Skyline	gravel	8	none	gravel	8	none	5,300
Smithfield Beach	asphalt	278	compost	asphalt	278	compost	5,400
Stucki Pond	gravel	10	none	gravel	10	chemical	4,375
Toms Creek	gravel	20	chemical	gravel	20	compost	50,700
Turn Farm	gravel	14	none	gravel	14	chemical	9,800
Upper Eshback	dirt	4	none	gravel	4	none	2,840
Upper Hornbecks	dirt	3	none	gravel	3	none	2,330
Van Campen Inn	gravel	20	none	gravel	20	compost	50,700
Van Campens Glen	gravel	15	chemical	gravel	15	chemical	4,950
Van Ness Road	gravel	4	none	gravel	4	none	2,840
Walpack Environmental	dirt	30	water	gravel	30	water	20,250
Walpack Ridge	gravel	5	none	gravel	5	chemical	6,700
Watergate	asphalt	50	water	asphalt	50	water	5,400
Zimmermann	dirt	5	none	gravel	5	none	5,250
						TOTAL	\$804,840

*Unit prices used for cost estimates:

Comfort station unit prices: chemical toilets \$ 2,500
composting (2) \$45,000
composting (4) \$75,000

Parking lot unit prices: dirt to gravel, less than 5 spaces \$ 510
dirt to gravel, more than 5 spaces \$ 495
gravel to gravel \$150

Signage: minimal \$ 800
waysides \$2,700

APPENDIX A: NATIONAL PARK SERVICE PLANNING TEAM AND CONTRIBUTORS

DELAWARE WATER GAP NATIONAL RECREATION AREA

William Laitner, Superintendent

Dave Herrera, Assistant Superintendent

Bob Kirby, Assistant Superintendent

Elizabeth Johnson, Chief of Natural Resources (former)

Dennis McGinnis, Chief of Maintenance (former)

Doyle Nelson, Chief Ranger

Randy Turner, Chief of Visitor Services and Cultural Resources (former)

Allan Ambler, Biologist

Cindy Braanley, Office Automation Clerk

Brad Clawson, NJ Operations Supervisor

Kathy Commisso, Secretary

Larry Commisso, Resource Management Ranger

Bob Geis, Roads & Trails Facilities Manager

Keith High, GIS Specialist

Cynthia Hunter, Civil Engineer

Jacki Katzmire, Natural Resource Specialist

Jennifer Kavanaugh, Pennsylvania Ranger

Sue Kopezynski, Historian

Chris Nelson, Superintendent's Secretary

Zehra Osman, Community Planner

Jeff Shreiner, Biologist

Tom Solon, Historical Architect

Barry Sullivan, New Jersey District Ranger (former)

Wayne Valentine, New Jersey District Ranger

Ed Whitaker, Pennsylvania District Ranger

John Wright, Archeologist

PHILADELPHIA SUPPORT OFFICE-STEWARDSHIP & PARTNERSHIPS

Mark Alexander, Landscape Architect

James Farrell, Visual Production Specialist

Deirdre Gibson, Park Planning Program Manager

Helen Mahan-Forester, Community Planner and Project Leader

Cynthia Wilkerson, Environmental Protection Specialist

CONSULTANTS (ECONOMIC ANALYSIS)

Alan Graefe, Pennsylvania State University

Arun Upneja, Pennsylvania State University

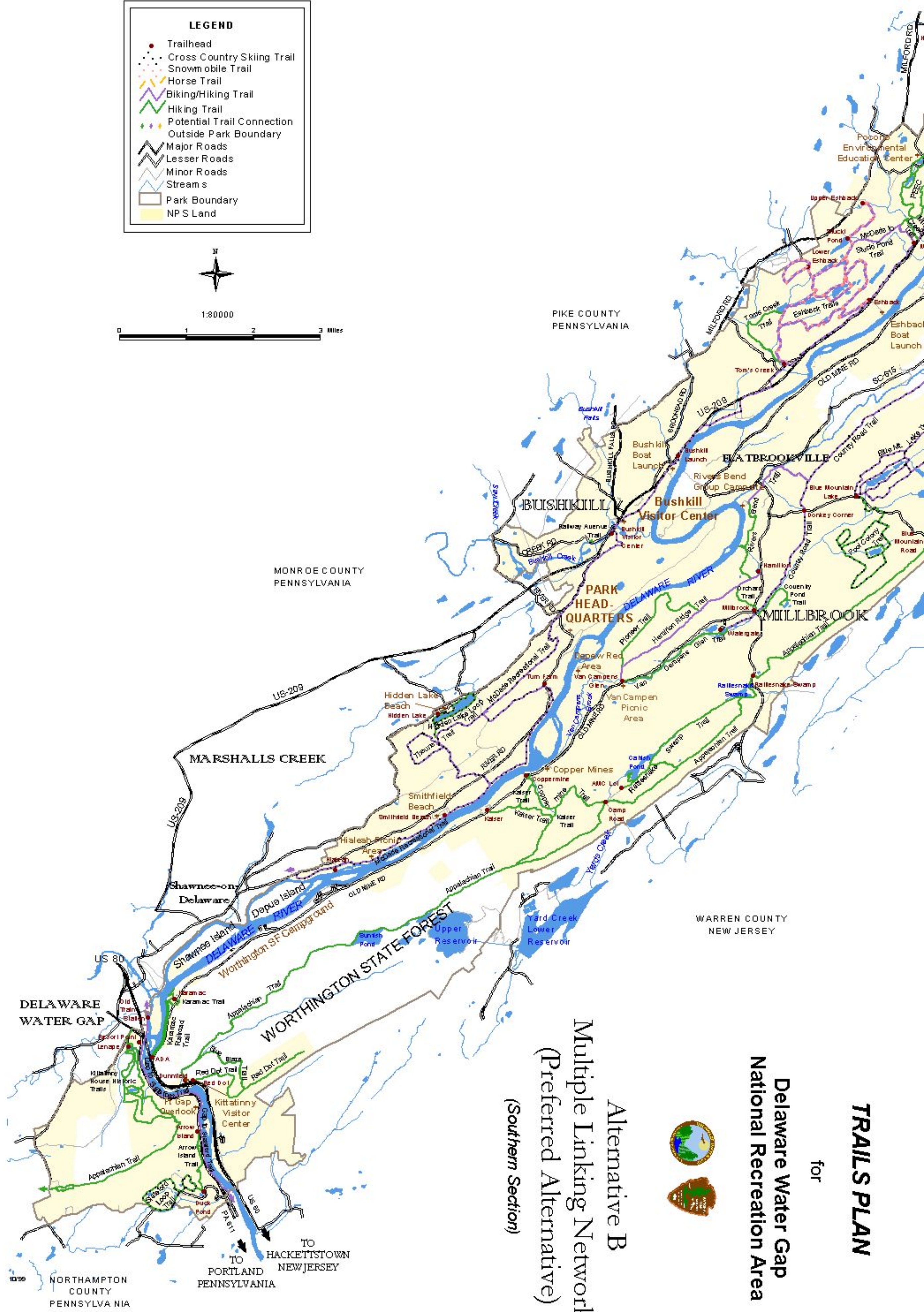
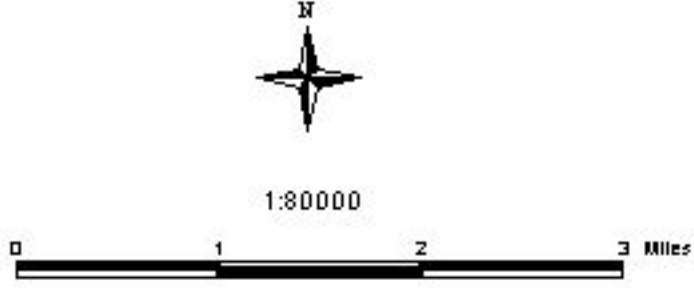
Hans Vogelsong, Pennsylvania State University

Roger Moore, North Carolina State University

APPENDIX B: PERTINENT LAWS AND REGULATIONS

LEGEND

- Trailhead
- Cross Country Skiing Trail
- Snowmobile Trail
- Horse Trail
- Biking/Hiking Trail
- Hiking Trail
- Potential Trail Connection
- Outside Park Boundary
- Major Roads
- Lesser Roads
- Minor Roads
- Streams
- Park Boundary
- NPS Land



TRAILS PLAN
 for
**Delaware Water Gap
National Recreation Area**

Alternative B
Multiple Linking Networks
(Preferred Alternative)
(Southern Section)



TRAILS PLAN

for

Delaware Water Gap
National Recreation Area



Alternative B Multiple Linking Networks (Preferred Alternative) (Northern Section)

