

general management plan
development concept plans

D-42A

THEODORE ROOSEVELT



NATIONAL PARK / NORTH DAKOTA

ON MICROFILM

Color Scans

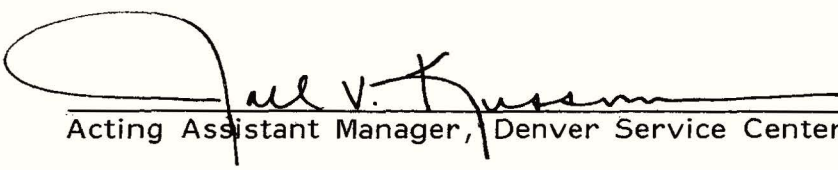
10/25/2002

PLEASE RETURN TO
TECHNICAL INFORMATION CENTER
DENVER SERVICE CENTER
NATIONAL PARK SERVICE

RECOMMENDED:

Mack Shaver
Superintendent, Theodore Roosevelt National Park

June 2, 1987
Date


Acting Assistant Manager, Denver Service Center

6-2-87
Date

APPROVED:

Lorraine Montzinger
Regional Director, Rocky Mountain Region

June 3, 1987
Date

GENERAL MANAGEMENT PLAN
DEVELOPMENT CONCEPT PLANS

THEODORE ROOSEVELT NATIONAL PARK
North Dakota

U.S. Department of the Interior / National Park Service

SUMMARY

This document was prepared to replace the 1973 Master Plan for Theodore Roosevelt National Park. That plan has become obsolete and no longer applicable for resolution of current issues involving the park. Two recently approved reports were instrumental in the preparation and understanding of this document; namely, the "Statement for Management" (1985) and the Natural Resources Management Plan and Environmental Assessment (1984).

This General Management Plan provides the necessary strategies to guide management, use, and development of the park for the next 10 years. A separate Land Protection Plan, prepared in conjunction with this plan, addresses the private and other nonfederal lands and interests within the authorized park boundary and the protection of park resources from external influences.

This 10-year planning effort can best be summarized as addressing resource management, with particular attention devoted to flood protection, bison management, historic building preservation, and visitor use needs. This will be accomplished by expanding trails, upgrading sanitation facilities, developing facilities for horse users and the handicapped, and increasing visitor contact and interpretive opportunities. In addition, there will be a continuing awareness of and focus on oil and gas development and other industrial activities outside the park that could have far-reaching impacts on park resources. Private property within the park, as addressed in the Land Protection Plan, is recommended for either fee acquisition or scenic easement acquisition.

Implementation of this General Management Plan over the 10-year period totals \$21,291,000. This figure includes construction, staffing, and operations costs. Annual operations costs and staffing will be \$1,444,000 and 45 full-time equivalent (FTE) positions. Annual additional operations costs and personnel (FTEs) will be \$302,000 and 9 FTEs. Development costs will total \$8,317,000.

The public involvement portion of this planning process began on February 7 and 24, 1984, when news releases announced the initiation of planning for a general management plan for Theodore Roosevelt National Park, and that public scoping meetings would be held that March in Watford City and Medora, North Dakota. Interested persons were invited to hear an explanation of the planning process, and to express their views on issues to be considered.

The first meeting, held at the Civic Center in Watford City on March 6, was attended by 14 people. The second meeting, held at the Community Building in Medora on March 7, was attended by nine people. The participants' discussion of many issues of concern to them was beneficial to the planning team.

A scoping brochure was released in June 1984 notifying the public of progress on the study since the February meetings, issues to be addressed, public participation opportunities, and an invitation to provide more issues for consideration. At the same time three questionnaires were prepared to find out what facilities and services the public thought were appropriate for the north unit, the Painted Canyon area in the south unit, and the remainder of the south unit. These three questionnaires and the scoping brochure have been made available to the public at entrance stations and the Medora visitor center on a continuing basis so that information can be received year-round. In addition, individuals who own land in the park have been contacted to the extent practicable.

During June-August 1986, a Draft General Management Plan/Development Concept Plans/Land Protection Plan/Environmental Assessment was circulated for public review for 60 days. Comments were received and considered in the development of this final General Management Plan. Based on the review, it was determined that the alternative selected (preferred alternative) was neither controversial nor constituted a major federal action. Therefore, an environmental impact statement is not required.

CONTENTS

INTRODUCTION	1
Description and Purpose of the Park	1
Park Growth and Management Direction	5
PURPOSE AND NEED FOR THE PLAN	8
Legal, Administrative, and Environmental Constraints	8
Issues and Concerns	9
Resource Management	9
Visitor Use and Development	14
Park Operations	15
THE PLAN	17
Introduction	17
Management Zoning	17
Natural Resource Management	23
Cultural Resource Management	31
Visitor Use	33
Recreation	34
Interpretation	34
General Safety and Sanitation	36
Flood-Related Safety and Sanitation	37
Special Populations	40
Park Operations	41
General Development/Development Concept Plans	43
Costs and Personnel	44
ALTERNATIVES CONSIDERED BUT REJECTED	67
PLAN IMPLEMENTATION	68
FUTURE PLANS AND STUDIES NEEDED	74
THE ENVIRONMENT	75
Natural Resources	75
Geology/Terrain	75
Vegetation/Soils	75
Wildlife	77
Threatened and Endangered Species	78
Water Resources	79
Floodplains and Wetlands	79
Air Quality	81
Cultural Resources	83
Archeological Resources	83
Historic Resources	83
Collections	84
Recreation/Visitor Use	84
Regional Recreation Resources and Uses	84
Park Use Patterns and Trends	85
Interpretive Resources and Programs	90

Facility Analysis	93
Roads, Trails, and Parking	93
Buildings and Facilities	93
Utility and Park Operations Systems	94
FINDING OF NO SIGNIFICANT IMPACT	96
APPENDIXES	103
A: Legislation	104
B: Management Objectives	128
C: Cost Analysis and Staffing Requirements	130
BIBLIOGRAPHY	146
LIST OF PREPARERS	150

ILLUSTRATIONS

Region	3
North Unit Management Zoning	19
South Unit Management Zoning	21
North Unit General Development Plan/Flood Data	45
South Unit General Development Plan/Flood Data	47
District Headquarters Development Concept Plan	49
Bison Corral Development Concept Plan	51
Squaw Creek Campground Development Concept Plan	53
Elkhorn Unit Development Concept Plan	55
East Entrance Station Relocation Development Concept Plan	57
Peaceful Valley Development Concept Plan	59
Cottonwood Campground Development Concept Plan	61
Painted Canyon Development Concept Plan	63
Medora Headquarters Development Concept Plan	65
Visitor Origin	86
Total Recreation Visits	86
Absolute Change in Recreation Visits	87
1983 Seasonal Use	87
Relative Change in Campground Visits	89
Projected Growth in Campground Visits	90

TABLES

1. Management Zoning	18
2. Construction Priorities	69
3. Summary of Development/Staffing/Operations Costs	70
4. General Vegetation Composition in Existing Developed Areas	76
5. Visitor Use Development Proposals and Alternatives	98
6. Summary of Impacts	101



Theodore Roosevelt National Park from Painted Canyon overlook

INTRODUCTION

This section, which describes the setting, features, purpose, and history of Theodore Roosevelt National Park, contains information that provides an overall understanding and familiarity with the park, including legislative background. Management objectives for the park are included in appendix B. The overall objectives are to protect and preserve the natural and cultural environments, to permit natural processes to continue with a minimum of human disturbance, and to provide opportunities for enjoyable visitor experiences, including an understanding of the park's resources.

DESCRIPTION AND PURPOSE OF THE PARK

The park, which has been set aside as three separate units (north, Elkhorn, and south) in western North Dakota, is dedicated to the preservation and public enjoyment of important historic, scenic, and natural resources (see Region map). A central, unifying feature of the 110 square mile park (approximately 70,634 acres) is the free-flowing Little Missouri River, which winds through the south and north units and forms the east boundary of the small Elkhorn unit where Roosevelt once had a ranch headquarters. The south and Elkhorn units of the park are in Billings County, and the north unit is in McKenzie County.

The park memorializes Theodore Roosevelt for his outstanding contributions to conservation and interprets late 19th century "open range" cattle ranching history closely associated with him. The park also preserves natural resources that had an important influence on the man and the actions he took as president. Without Roosevelt's experiences and perceptions gained here in his formative years between 1883 and 1898, the development of America's forest and park conservation programs might have been much different. The historical associations with Roosevelt primarily involve the Elkhorn and south units of the park. Historic resources of the north unit include structures of Civilian Conservation Corps (CCC) vintage, built when this unit was part of the Roosevelt Recreation Demonstration Area, and traces of the Long X cattle trail.

The colorful North Dakota badlands comprise the primary scenic attraction of the park. They straddle the Little Missouri River from south of Medora to the river's mouth to the east of the park's north unit at Lake Sakakawea. The badlands within the park are only part of a larger region of dissected and banded hills and bluffs interspersed with grassy uplands. The meandering valley of the Little Missouri, with its cottonwood-dominated woodlands, presents an attractive centerpiece for the colorful badlands scenery.

Another significant feature of the park is its flora and fauna. Nearly 800 species of vascular plants and 252 species of vertebrate wildlife are found in the park. Reintroduced bison, bighorn sheep, and elk, as well as the long-term native mule deer, white-tailed deer, pronghorn, badger,

beaver, coyote, porcupine, eagle, hawk, and the ubiquitous prairie dog are the most frequently observed wildlife. An interpretive display herd of longhorn steers in the north unit is also popular with visitors, in addition to a herd of wild horses that roam the south unit.

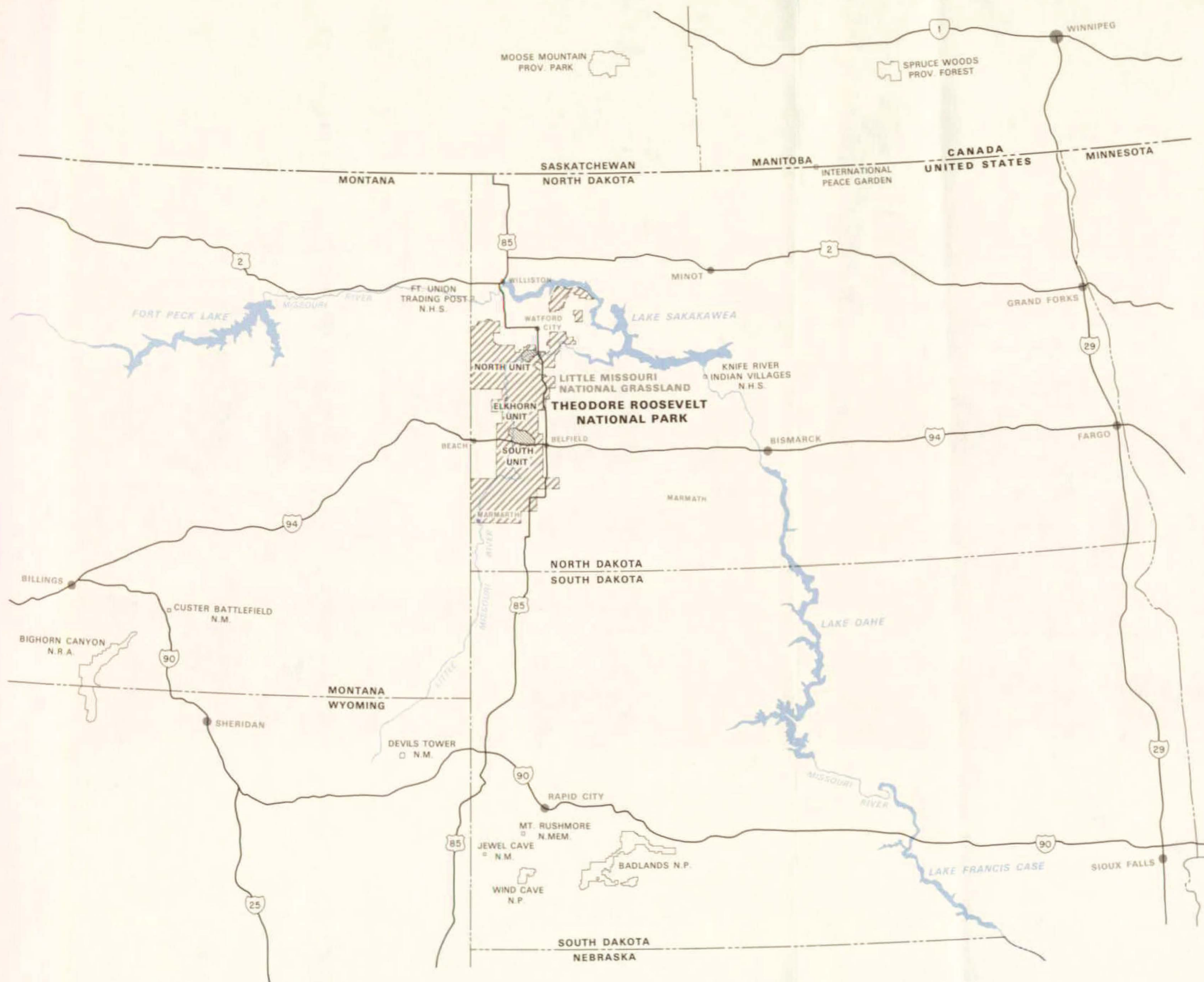
Approximately 42 percent of the park has been designated as wilderness. The undeveloped backcountry provides excellent opportunities for hiking, horseback riding, and exploring, and for experiencing the environment much the way Theodore Roosevelt did.

The scenic beauty and recreational opportunities of the 24,070-acre north unit are particularly popular with nearby North Dakota residents and with those vacationers traveling the north-south US 85 route between Canada, the Black Hills, and points south. However, the 46,128-acre south unit has been and will continue to be the focus of most visitor use and awareness. This portion of the park is immediately adjacent to Interstate 94--a primary east-west travel route--and historic Medora, just south of the interstate. The park headquarters, including the principal visitor center and adjacent Maltese Cross cabin (Roosevelt's first ranch dwelling), is found within this small but summer-bustling town. From Medora a scenic loop road takes visitors north and east past a popular prairie dog town, the historic Peaceful Valley ranch and Little Missouri River bottoms, and several scenic overlooks. Many stop to view the south unit of the park from the Painted Canyon overlook and visitor center, incorporated into a rest area along I-94. The former east entrance to the park, which has historic stone structures built during the thirties, has been abandoned, along with old Highway 10 (which has since been obliterated). The old entrance lies within $\frac{1}{2}$ mile of the loop road and is easily accessible to hikers.

Peaceful Valley ranch, which contains several historic buildings, is used for the park's only concession operation. The concession provides rental horses and trail rides of varying lengths. The concession operator utilizes but does not own any of the ranch facilities.

The 218-acre undeveloped Elkhorn unit, containing minimal remnants of Roosevelt's second ranch headquarters, receives light visitation. The area is well removed from highways, and auto access is difficult. Access to the vicinity of the unit is scheduled for improvement by the local counties; this should result in a significant percentage increase in visitation, although the total number of visitors will not be very high.

The character of the areas surrounding the park has changed greatly in the last two decades. The discovery of widespread and often rich reserves of oil and gas has been the primary factor. Structures, smoke, and dust from related oil and gas developments can be seen from highways, roads, and stopping points just outside the park, and particularly from scenic vistas within the park.



REGION

THEODORE ROOSEVELT NATIONAL PARK NORTH DAKOTA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

387 20,016
MAY 85 DSC



- THEODORE ROOSEVELT NATIONAL PARK
- LITTLE MISSOURI NATIONAL GRASSLAND

ON MICROFILM

PARK GROWTH AND MANAGEMENT DIRECTION

Theodore Roosevelt National Park had its beginnings in August 1934, when CCC camps, under the sponsorship of the North Dakota State Historical Society and the direction of the National Park Service, began work in what was then known as the Roosevelt Regional State Park.

Initially, two parcels of state land inside what are now the north and south units were acquired by the historical society for the CCC project. Additional lands for park development became available through the federal government's submarginal land purchase program, under which homestead lands were purchased from those unable to derive a living from them. Through an arrangement between federal agencies and the state of North Dakota, submarginal lands within certain specified boundaries were made available for park development as they were acquired. These lands, together with intermingled remnants of the original public domain and state school lands, qualified as a recreation demonstration area (RDA) when, beginning about 1936, a total of 46 such areas were established throughout the United States. These RDAs were to enable the federal government, through the National Park Service, to aid the states by developing recreation areas on lands of low agricultural value and demonstrating their worth for public park purposes.

Until the last CCC camp was closed in the south unit in 1941, a significant amount of park development was accomplished through the combined work of the CCC and several Emergency Relief Administration (ERA) and Work Project Administration (WPA) projects.

The Roosevelt RDA remained under the custody of the National Park Service during World War II. In April 1946, the U.S. Fish and Wildlife Service took over its administration. On April 25, 1947, a locally supported congressional bill, which became Public Law 38 (61 Stat. 52), established the area as Theodore Roosevelt National Memorial Park.

The new memorial park contained only a portion of the south unit of the former RDA and was provided authority to acquire certain lands thought to contain the Elkhorn ranch site. The reduced boundaries were a concession to local livestock interests concerned about the amount of good grazing lands included in the RDA. The legislation also provided for the exchange of the remaining RDA lands to eliminate private holdings within the park boundaries.

The Act of June 10, 1948 (62 Stat. 352) amended the establishing act, adding some land from the former RDA and also adding land west of the Little Missouri River that included the petrified forest. The act also corrected the description of the Elkhorn ranch unit lands. The Act of June 12, 1948 (62 Stat. 384) added the north unit to the park including all but the six northernmost sections of the former north unit of the RDA.

The Act of March 24, 1956 (70 Stat. 55) added lands on the north side of the village of Medora for park headquarters development. This act also



The overlook shelter, above, and the picnic shelter in Squaw Creek campground, below, were built in the north unit by the Civilian Conservation Corps in the late 1930s while the area was still part of the Roosevelt Recreation Demonstration Area.



authorized the secretary of the interior to make future boundary adjustments along US 10 and US 85, due to realignment, with certain acreage limitations. The secretary adjusted the boundaries in 1963 to conform to the realignment of US 10, now reconstructed and designated I-94. This excluded 398.39 acres and added 459.04 acres.

Snowmobiling has occurred along the Little Missouri River inside (and outside) the park for a number of years. In 1974, an environmental assessment was prepared, and subsequently the river within the north and south units was designated under special regulations as an authorized snowmobile trail. Use is confined to the riverbed, and under current regulations, entry and exit must be made from outside the park. While snowmobiling is light and has not caused significant problems, it would be difficult to control if it were prohibited.

In the late 1960s, the U.S. Geological Survey determined that certain lands along the south boundary of the east end of the park's south unit were being subjected to drainage of valuable minerals by oil and gas producing wells on adjoining land to the south, outside the park. This meant that the drained oil and gas could be recovered without payment to the federal government. As a result, in 1975 nine tracts of park land, which are within the Fryburg-Scoria known geologic structure and contain the drainable area, were leased by the Bureau of Land Management to the Amerada-Hess Corporation. Directional drilling into this area has been successful, and all leases are held by oil and gas production. (Note: A known geologic structure (or KGS) is a subterranean trap in which an accumulation of oil or gas has been discovered by drilling and determined to be productive.)

The memorial park was designated Theodore Roosevelt National Park by PL 95-625 (92 Stat. 3467), enacted November 10, 1978. This same act (92 Stat. 3490) designated 29,920 acres within the park as wilderness, while another section of the act (92 Stat. 3475) authorized a boundary adjustment at the north unit to add approximately 146 acres to and delete approximately 160 acres from the park.

For many years Theodore Roosevelt National Memorial Park was managed as a historic area of the national park system. Over the past 10 to 12 years, however, there has been a growing recognition of the significance of the park's natural resources and of the park as a natural area. In addition, there has been an increasing realization that these resources greatly influenced Roosevelt's thinking as a conservationist. The effect has been a shift in management emphasis which is resulting in a more balanced interpretation of the area's natural and historical significance.

PURPOSE AND NEED FOR THE PLAN

The following material describes management constraints and, most importantly, summarizes the issues and concerns that are fully addressed in "The Plan" section. This planning effort was needed since the 1973 Master Plan was obsolete and did not address current issues affecting park resources, developments, and visitors, although the 1985 "Statement for Management" provides an inventory of park conditions and an analysis of principal issues and problems. Issues and concerns have also been treated extensively in the July 1984 Natural Resources Management Plan and Environmental Assessment; information on natural resources has been summarized from that plan for use in this document.

LEGAL, ADMINISTRATIVE, AND ENVIRONMENTAL CONSTRAINTS

There are few legal or congressional constraints that impinge on management of the park exclusively. The Act of June 12, 1948 (62 Stat. 384) reserved to stockmen of the area surrounding the north and south units a perpetual right-of-way through the park along the Little Missouri River for the trailing of livestock to and from the railroad. In this same vein, the park is required to maintain and keep open the East River road in the south unit to the north boundary of the unit for use by ranchers living adjacent to the park. Local rancher and Billings County access is also permitted on a farm road that passes through the Elkhorn unit. In addition, the park's enabling legislation (61 Stat. 52, April 25, 1947) limited expenditures for reconstruction of the Elkhorn ranch site (land and buildings) to \$40,000.

The park is closed to mineral entry under the 1872 Mining Law and to mineral leasing of federally owned subsurface resources, including oil and gas. The legislation that provides the first basis for this determination is the Mineral Leasing Act of 1920. However, both the 1970 National Park Service Administration Act (PL 91-383, 84 Stat. 825) and the 1978 Redwood amendments to the NPS Administration Act (PL 95-250, 92 Stat. 163) reaffirmed the park's closure to all forms of mineral entry and leasing.

Another constraint, which is both administrative and legal, involves the fact that all three units of the park have been designated a class I area for the purpose of preventing significant deterioration of air quality, in accordance with the 1977 Clean Air Act amendments. This can affect existing and proposed point sources of air pollution outside the park and is also a constraint on any NPS development or management activity that could affect air quality.

An additional constraint involves the 740.51 acres of private and state owned land within the park boundary. Congress included these lands to protect resources and allow for visitor use where appropriate, but the Park Service does not have unlimited authority for their management as long as they are privately owned. This constraint also applies to the

1,300 acres of nonfederal or part-nonfederal subsurface (mineral) rights within the park.

Because of the requirements of Executive Order 11988 ("Floodplain Management") and Executive Order 11990 ("Protection of Wetlands") as well as NPS final procedures for implementing these orders (45 FR 35916 as revised by 47 FR 36718), certain restrictions must be placed on development and use within floodplains and wetlands. Surveying of the 100- and 500-year floodplains was completed by the U.S. Geological Survey in 1984 (with subsequent mapping performed by the National Park Service) for all areas of the park involving the Little Missouri River lowlands and potential flash-flood areas near the mouths of three side drainages along the Little Missouri. Based on the results of these surveys, a statement of findings will be prepared for any developments remaining or proposed in the 100- and 500-year floodplains, as required by NPS final procedures.

The park's separation into three distinct units makes it quite impossible to manage the area as an ecological system. Maintaining natural area and wilderness characteristics is made very difficult because of developments on and uses of adjacent private, state, and federal lands. The developments and uses include extensive oil and gas recovery operations and crop and livestock production. They have caused or increased problems with air and auditory pollution, exotic plant infestation, maintenance and protection of rare, threatened, or endangered plants and wildlife, and boundary control of larger wildlife species. (The 7-foot fencing of the perimeter of the park is now keeping bison in and livestock out of the park.)

The climate of the Northern Plains region affects development planning, structure maintenance, and visitor use. Summer temperatures can be uncomfortable in unshaded areas not exposed to breezes, while winter temperatures and winds can produce chill factors approaching -100°F. Snowfall is generally light, but accumulations cover the ground during most of the winter months. Most park roads are generally closed from December through April because of snowdrifts and ice.

ISSUES AND CONCERNS

Issues and concerns, both parkwide and those specific to the north, Elkhorn, and south units, are described below. Resource management concerns are grouped by type of issue, rather than area of the park.

Resource Management

As a result of ongoing research, study, and observation over the last several years, significant natural and cultural resource management issues have been identified. Major natural resource management problems include air and noise pollution and visual intrusions.

Energy development outside the park, in its several aspects, constitutes the greatest single concern for the park. As recently as 1970, the areas surrounding the three park units consisted of grazing lands and vacant areas with few roads, limited croplands, scattered oil and gas wells, and little habitation. The air over the park was clear, and sounds were mostly limited to those from the railroad and the new interstate highway south of the south unit. The backcountry of both the south and north units was, in effect, a part of a much larger backcountry that stretched to the horizon.

The energy development boom that began in the extensive Williston Basin in the early 1970s has, however, drastically changed the scene. There are hundreds of oil and gas wells within 6 to 7 miles of the three park units--predominantly on areas of the Little Missouri National Grasslands (Forest Service) and private lands. Fewer wells are on public domain (Bureau of Land Management) and state lands. Some wells are within 1,000 feet or less of the park boundaries. The greatest concentrations and closest wells are to the north and northeast, to the west, and to the south of the east end of the south unit; adjacent to the Elkhorn unit; and west of the north unit.

Somewhat farther from the park are many other oil and gas wells and several gas processing plants, existing or proposed, that do or could add to the park's air pollution, such as acid rain and snow, hydrogen sulfide, and sulfur dioxide. A natural gas sweetening plant is proposed for construction by the Northern Natural Gas Products Company in the vicinity of Rawson, approximately 12 miles northwest of the north unit. If the plant is built as proposed, it would emit substantial quantities of sulfur dioxide (SO_2), as well as other gases and particulates. The SO_2 emissions could significantly increase air pollution over the north unit and, at times, exceed the class 1 air quality standards (increments) of the park.

Approximately 75 to 150 miles from the park (both to the east and west and into eastern Montana), there are several existing (or proposed) coal-fired electric generating plants, natural gas processing plants, coal to methanol conversion plants, and oil refining plants that could increase the park's air quality problems. Should all the proposed plants be built, there would be 20 (or more) point sources of pollution that could have an adverse effect on the air quality of the park, if the best available control technology is not used. This would not eliminate all pollution but would reduce it as much as technically possible.

The potential for large-scale recovery and processing of lignite in western North Dakota and eastern Montana is another air quality concern. Lignite is a relatively low grade form of coal found extensively in this area. The 1986 draft "North Dakota Resources Management Plan" issued by the Bureau of Land Management identified 13-18 coal study areas, which by definition contain economically minable coal deposits of sufficient quantity to support mine-mouth coal-powered conversion facilities. The plan acknowledged that air quality degradation (SO_2 and particulates) would likely be from mining and lignite conversion.² All proposed coal study

areas are within the park's airshed, and several are within 1 to 10 miles of the park units.

Lignite-fueled power plants must be built close to the source of the fuel. Because of the strip mining and large-scale developments that would be involved, the threat to maintenance of park air quality with major lignite development would be potentially greater than that from current forms of energy development and processing. Particulate matter, sulfur dioxide, and nitrogen oxides would likely be the primary pollutants.

Several sources of environmental concern are related to the oil and gas development, including visual impacts, noise, and obnoxious odors that conflict with the solitude and natural scene of the park. These environmental impacts are caused by various structures and conditions such as batteries of large tanks, new high standard roads, hydrogen sulfide gas, flaring wells, smoke, dust, and pump engines. Smoke and particulate matter are frequently observed from the park. Some of the smoke or haze is probably from indeterminate sources, including the plants mentioned above, some distance away.

The Forest Service has given increasing emphasis to including environmental stipulations in oil and gas leases; however, only since 1975 has the agency asked for lease requirements specifically aimed at reducing park impacts. Many older leases remaining in effect through oil and gas production contain few, if any, environmental stipulations. The new "Custer National Forest Plan" gives greater emphasis to environmental concerns, but proposes a visual quality objective of "partial retention" for the area seen from the park. The Bureau of Land Management and the state of North Dakota do not have such policies; however, the acreage of BLM and state lands close to the park is limited.

Other significant natural resource management concerns involve the need for a parkwide bison management plan, including stocking rate guidelines, and relocation of the bison corral in the north unit and development of an additional bison corral in the south unit to facilitate easier and safer herding, capture, and handling of the animals by park staff. Also needed is a wild horse management plan (for the south unit), including a determination of the role and appropriateness of these animals in the park ecosystem. A management plan, together with an evaluation of their environmental impacts, is needed for the exotic longhorn cattle herd that is kept within the north unit. This is an artificially maintained herd of steers only, but the cattle have been retained as a historical display because of their popularity with visitors.

A park herd of California bighorn sheep, introduced to replace the extinct Audubon bighorn sheep, was observed to previously total 32 animals in 1979 but has declined to 4 animals because of lung disease complications and other factors not completely understood. Elk, which were formerly common in the badlands, were experimentally reintroduced in the south unit in 1985. Long-range restoration and management plans are needed for these two species.

Porcupine and beaver have taken an inordinately heavy toll on cottonwood trees, particularly along the river and major drainages; natural population regulation may not be operating within the park. A program to research this problem along with ongoing management through monitoring and periodic relocation/reduction is needed.

Other wildlife concerns include prairie dogs in the south unit and threatened and endangered species. Prairie dogs have expanded their towns into visitor and administrative use sites in the Peaceful Valley area. An environmental assessment and control measures may be needed to deal with the present problem and prevent further damage such as their digging holes in paved roads and parking areas. The park contains possible habitat for several endangered and threatened species, including the bald eagle, whooping crane, black-footed ferret, and peregrine falcon. Additional efforts are needed to survey for the presence of these species, as well as to protect habitats, supplement populations, and/or reintroduce species into suitable habitats, as appropriate.

Since the park's establishment, all wildland fires have been suppressed. This has resulted in increases of woody species and dense, rank herbaceous cover. A parkwide fire management plan is needed that will take into account the need for prescribed burning and natural fires that will provide for nutrient cycling and other natural ecological processes.

Several exotic plants, especially leafy spurge, have invaded the park area (primarily the south unit), with numbers and groups of plants increasing at an alarming rate. Exotic plants tend to form homogeneous stands, excluding other (native) plants and decreasing vegetative diversity. Recent chemical control efforts have prevented increases in most exotic plant species but have not decreased leafy spurge. A more effective control program is needed, while range management needs to be oriented to maintaining natural vegetative and wildlife habitats and species. Another concern is the negative effect of airborne acid material deposition, from precipitation (acid rain) and dry material, on vegetation and amphibian habitat.

An issue closely related to energy development is the potential water quality and flood hazard problems from sources outside the park. This concern is associated with groundwater aquifers and watercourses that enter the park from areas outside the park where contamination could arise. Flood hazards along the Little Missouri River, a significant and different problem, are discussed separately.

Because extensive oil and gas development and transport are being conducted outside the park but within the drainage area of park aquifers and watersheds, aquifer and stream contamination could occur. Large oil and gas storage and treatment facilities are within the watershed, and there is a risk of well blowouts or contaminant spills into tributary waters of the Little Missouri River, with subsequent contamination of the river and possibly water wells and springs within the park. The river could also have contamination where pipelines, railways, and highway bridges cross.

The free-flowing Little Missouri River meanders for 24 miles through the south and north units and along the east boundary of the Elkhorn unit of the park. The river drains a considerable area upstream from the park, and river flows can fluctuate from less than 10 to 110,000 cubic feet per second, and temporary ice jams can form during late winter and early spring thaws. In addition, the channel can experience movement and changes in profile, subjecting the river to high-flow flooding and especially ice-jam flooding, as well as bank erosion. The most frustrating problem has been at the park headquarters area at Medora where significant ice-jam or high-flow flooding occurred in 1907, 1929, 1947, 1952, and 1972. The March 1947 flood, almost a 100-year discharge, was the most serious on record. It caused considerable property damage, and most of the town residents were forced to evacuate.

Cottonwood campground, Peaceful Valley ranch and picnic area, and portions of the river road in the south unit, as well as Squaw Creek campground/picnic area and small portions of the main road and headquarters area in the north unit are also in the Little Missouri River floodplain or in flash-flood hazard areas. All of these areas are potentially subject to backwater flooding and limited high-flow flooding, when rising water is accompanied by ice breakup. Squaw Creek campground has also been affected by bank erosion. Potential flash-flood hazard areas have been identified at and above the mouths of Knutson, Paddock, and Squaw creeks. Squaw Creek campground/picnic area and the Peaceful Valley ranch and picnic area could be affected by flash-flooding.

A major issue or concern for the park has been the need to determine the extent and depth of the 100- and 500-year floodplains along the Little Missouri River, the location of flash-flood hazard areas, and the actions that must be taken as established by federal requirements once the floodplain and flash-flood hazard areas are known. Since the first two items have been determined as a part of this planning effort, the issue focuses on the last item--the actions required (see discussion in "The Plan" section). Primarily these actions will affect developed recreation sites near the river in the north and south units of the park and most of the park headquarters area at Medora, where diking will probably be required.

Other natural resource management concerns include the need for baseline inventories of the natural resources and a wilderness/backcountry management plan, including more information on day use and possible impacts (mainly on wildlife) by backcountry users.

Information on the cultural resources (archeological and historic) of the park is incomplete. A parkwide archeological survey must be conducted to comply with section 110(a)(2) of the National Historic Preservation Act as amended, to meet the requirements of EO 11593 (36 FR 8921), and to determine all sites eligible for the National Register of Historic Places. In addition, more complete information, including surveys, needs to be developed on park historic sites, including remains and events of the early ranching era.

Another cultural resource management issue is to determine what, if anything, should be done to either retain, protect, reconstruct, move, change the use of, or interpret historic structures, remnants, or artifacts within the park units. The north unit includes the CCC camp-tender residence, three CCC shelters, the old stone quarry, and the Long X cattle trail; the Elkhorn unit includes the Theodore Roosevelt ranch site; and the south unit includes the stone structures at the old east entrance, Painted Canyon overlook stone pylon, Maltese Cross cabin, the visitor center museum and library collections, beef corral site, and Peaceful Valley ranch. Also, there is a need to determine which of the above should be the subjects of historic park themes.

Visitor Use and Development

Parkwide visitor use and development issues and concerns primarily involve the need to make improvements at existing recreation sites. A limited number of completely new recreational developments, such as trails and group camping facilities, will correct obvious deficiencies. Other concerns involve inadequate visitor contact and interpretive facilities. In some cases, the solutions to these needs will be interrelated with improvements that must be made to meet health and safety requirements, particularly floodplain requirements.

A primary concern in the north unit is the small, inadequately furnished, and poorly insulated trailer as well as the adjacent small and marginally heated ranger station near the entrance; both are used for visitor contact, storage purposes, fee collections, and management and office work. Also, there is no public restroom. Properly designed space for these activities is considered essential because these facilities serve as both the principal visitor contact point and the administrative headquarters for the unit.

At the Squaw Creek campground, the inadequate parking for the picnic area results in improper parking, while the sewage lagoon needs to be resized because it is too large to adequately digest wastewater. Most horse use of the unit now originates from national forest land and a private dude ranch just east of the park boundary, resulting in a need to cross US 85 and excessive distance to the more remote and interesting areas of the unit. A group horse camp is needed at a suitable location west of US 85. At present the only real access point to accommodate increasing canoe and snowmobile use of the Little Missouri River is within the undeveloped and narrow right-of-way of US 85 at the river bridge. Improved river access points are needed.

Within the unit, there are currently no interpretive/recreation facilities, including trails, specifically designed for the handicapped. Additional concerns include visual obtrusiveness of local and Western Area Power Administration overhead powerlines at the east end of the unit and a need to have NPS input for a new state wayside exhibit (sign) that may be provided on US 85.

The new road planned by Billings and Golden Valley counties will greatly improve access to the Elkhorn unit. This should result in a sharp increase in visitation and a need for visitor facilities, which are now nonexistent. Highway and entrance signing, wayside-type exhibits, parking, picnic facilities, trail access, sanitary facilities, drinking water, and interpreter/ranger services will be needed on a seasonal basis to meet day use visitor needs and to protect the site.

In the south unit, the increased use of recreational vehicles (including trailers) dictates a need for more pull-through parking spaces at Cottonwood campground. Additional parking and improved vehicle circulation are needed at the Peaceful Valley picnic area. Also, there are no public canoe-launching sites and associated parking in the unit, which make it inconvenient for long canoe trips starting at Medora.

There are no designated, improved trails that begin in the vicinity of the Painted Canyon overlook/visitor center, the Medora visitor center/headquarters area, or the scenic viewpoint and parking area at Buck Hill. Also, no trails are specifically oriented to the users of Cottonwood campground, nor is there a trail connector (crossing the Little Missouri River) at this location. All four of these areas are very popular with visitors, but the Painted Canyon and headquarters area are the most heavily visited. Trail improvements are needed to meet demands and provide safe hiking opportunities. Also, a handicap-accessible trail in the south unit is needed, as well as a parking area and more hiking opportunity from the former Rough Rider horse camp located north of the Little Missouri River bridge and west of the river.

Opportunities for identifying and interpreting interesting resources have not been taken advantage of along the south unit loop road. In addition, there is no interpretation at Buck Hill--the most spectacular viewpoint on or near the loop--and no sanitary facilities along the entire route. The Buck Hill spur road is difficult to maintain, as unstable earth under the road causes continuing damage to the paved surface.

At the Painted Canyon visitor center, lobby space is poorly used, and opportunities to introduce visitors to activities and resources in the park have not been used to full advantage. The solar heating system for the building is costly to maintain, unreliable, and does not produce sufficient heat to keep the facility open during any of the colder fall, winter, and spring months. The existing sewage lagoon is far too large to digest the sewage, while the largest cell is so little used that sunlight is destroying the lining. Significant modifications in both of these units are required to prevent further deterioration and operational breakdown.

Park Operations

The lack of staffing is both a parkwide and a specific concern. More employees (both permanent and seasonal) are needed to monitor air and water quality, to handle maintenance functions, to provide basic visitor services, and to provide natural resource management and protection.

Specific shortfalls in resource and visitor protection staffing exist with backcountry patrol, especially in the north unit; with routine protection patrols and fence maintenance in the Elkhorn unit; and with visitor services at the Painted Canyon visitor center in the south unit.

In the north unit, inadequate housing for both permanent and seasonal employees is a concern. The two mobile homes have deteriorated because of the harsh climate and general wear, and they need to be replaced by the most cost-effective, yet durable type of structure. Enclosed vehicle storage space is insufficient, and outdoor parking in the winter makes it difficult to get the equipment into operation for both routine and emergency needs. The maintenance building is too small and limited for orderly storage and conduct of sheltered work activities. The headquarters area sewage lagoon is unlined and filled to capacity during summer months. The addition of a much needed public restroom here will make the lagoon totally inadequate in size, even without lining. The radio communications tower, which is not riveted correctly, needs to be renovated for proper operation and then fenced.

In the Elkhorn unit, tools for trail and grounds maintenance, fire suppression, and first-aid activities need to be stored securely on-site. Rustic, inexpensive, low-maintenance quarters for seasonal staff are needed out of view of public use areas.

In the south unit, actions required to provide protection from potential flooding at Medora and at the Cottonwood campground/Peaceful Valley areas and the need for modification of the Painted Canyon sewage and solar heating systems and the Buck Hill spur road were covered in the issues and concerns for natural resource management and visitor use and development.

THE PLAN

INTRODUCTION

This section describes the zoning and resource management considered necessary to protect and preserve park resources, and it presents the plan for visitor use, staffing, and development. Staffing needs to accommodate projected programs and uses are identified in the "Plan Implementation" section and in appendix C. Proposals involving land and minerals protection, including landownership and use, are presented in the Land Protection Plan.

MANAGEMENT ZONING

Management zoning establishes the overall strategies for management of land within the boundary; the zoning scheme is based largely on resource values, with provision made for retention of existing development.

For NPS management purposes, the park, consisting of 70,634 total acres, will be divided into four zones--natural, cultural (formerly historic), development, and special use (see Management Zoning maps for the north and south units). The natural zone (68,248.73 acres) will be managed to maintain the primitive character and natural processes of the park. Management strategies in the cultural zone (215.66 acres) will focus on preservation, interpretation, and protection of historic and archeological resources. The development zone (1,685 acres) will provide the necessary space for visitor and management facilities and utilities. The special use zone (485 acres) consists of land east of the US 85 right-of-way in the north unit. The area is proposed for scenic easements and will be subject to agricultural, recreational, and limited residential and visitor service uses such as small-scale accommodations that are compatible with protection of scenic values. However, industrial facilities would not be compatible.

Table 1 summarizes this information and gives examples of permitted activities and development in each of the zones. Nonfederal lands are zoned to indicate the management strategy that will be used when the land is eventually acquired by the National Park Service. Until that happens, management zoning will not apply to these lands.

PL 95-625 (92 Stat. 3490), dated November 10, 1978, designated the Theodore Roosevelt Wilderness. This legislation added 29,920 acres (19,410 in the north unit and 10,510 in the south unit) to the national wilderness preservation system. These acreages are included in the natural zone.

The cultural zones, as shown on the Management Zoning maps, are tentative. These areas will be modified as necessary after a determination of significance by qualified professional historians and archeologists. Significant sites and districts will be nominated for inclusion on the

Table 1: Management Zoning

		Natural Zone	Cultural Zone	Development Zone	Special Use Zone
Permitted Activities					
Recreational		Interpretation of natural features, hiking, camping, picnicking, backpacking, canoeing, fishing, horseback riding	Interpretation of historic and archeological features	Scenic touring, hiking, picnicking, horseback riding, fishing, interpretive programs, camping	Hiking, horseback riding
Nonrecreational		Research	Research	Maintenance of utilities	Grazing, ranching, and limited residential uses
Comments					The above scenic easement activities could continue indefinitely. Scenic easements lie east of the US 85 right-of-way in the north unit.
Permitted Development		Minimal facilities necessary for the preservation and enjoyment of natural values	Access to cultural resources, trails for confining and containing use, protective enclosures, interpretive facilities	Permanent structures to support visitor and management activities	Practices permitted by the terms of the scenic easements
Management Strategy		Perpetuation of natural processes and primitive character, use of resources subject to protection of other natural values	Preservation, restoration where deemed appropriate by professional analysis, interpretation	Maintenance of facilities, provision of visitor services	Consumption of renewable resources subject to protection of scenic values
Acreage	Unit				Totals
	North	22,864.88	0.44	720	485
	Elkhorn	None	213.00	5	None
	South	45,383.85	2.22	960	None
	Total	68,248.73	215.66	1,685	485
Percentage					
	North	95	< 1	3	2
	Elkhorn	0	98	2	0
	South	98	< 1	2	0
	Total	97	< 1	2	< 1
					100

L&M NONFEDERAL LANDS AND MINERALS

WILDERNESS

Proposed zoning is shown for nonfederal lands and minerals to indicate the management philosophy that would be used if ever acquired, either in fee title or as scenic easements, by the National Park Service. Until that happens this zoning would not apply. See land status and mineral status maps for ownership details.





The natural zone consists of the majority of this unit where the management strategy would be the perpetuation of natural processes and primitive character. The 19,410 acres in the National Wilderness Preservation System are included.

The cultural zone consists of 3 CCC stone and wood shelters and the CCC camp-tender residence.

The development zone consists of paved roads (125 foot wide corridor), unpaved roads and utility lines (66 foot wide corridor), and other developments such as buildings, campgrounds, picnic areas, parking, wayside exhibits, utility systems, corrals and storage.

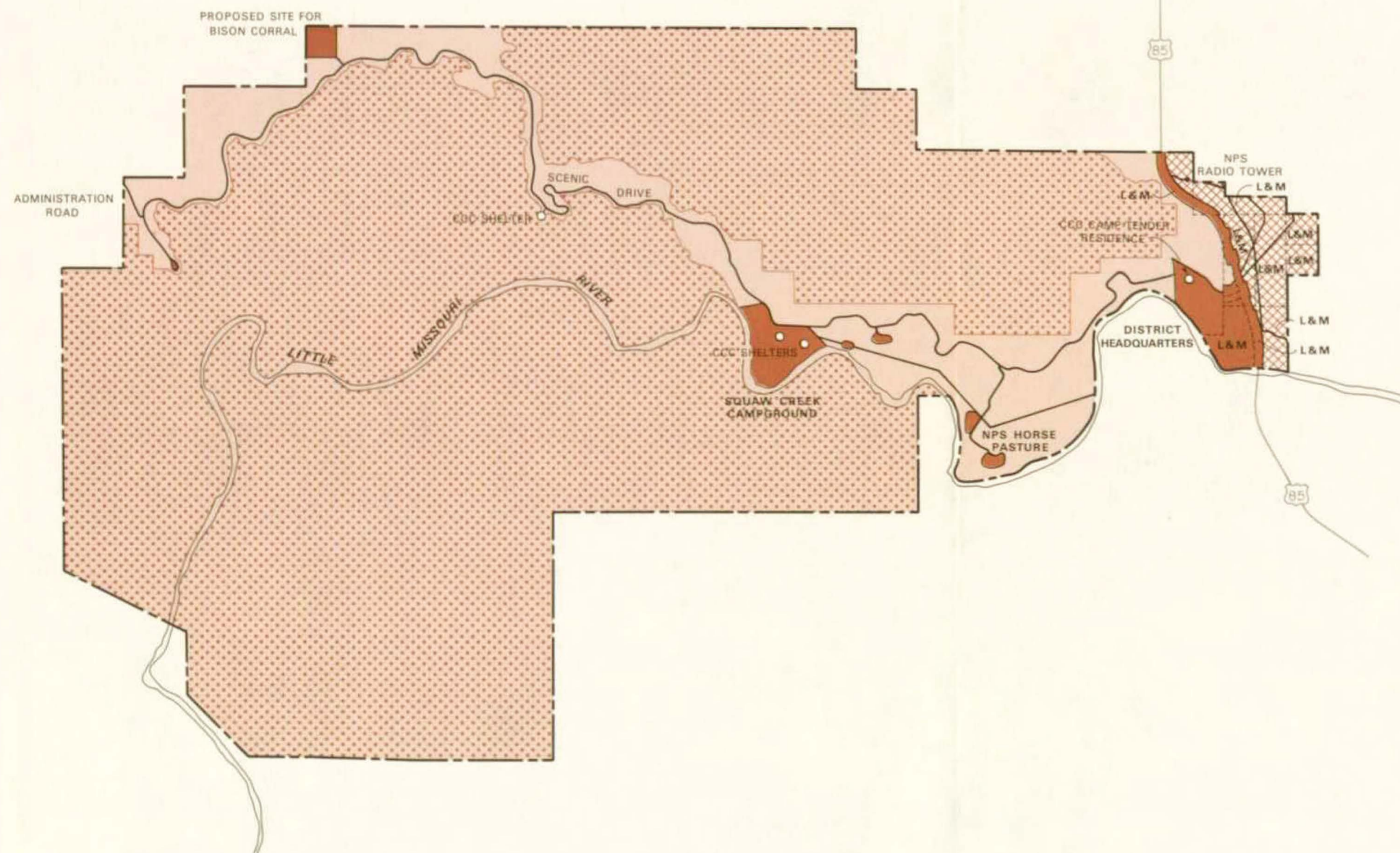
The special use zone consists of land east of the U.S. Highway 85 right-of-way where domestic livestock grazing, ranching and limited residential uses would be appropriate. The primary objective would be to retain a pastoral, ranching scene.

MANAGEMENT ZONES ACREAGE % OF NORTH UNIT

	NATURAL	22,864.88	95
	CULTURAL	0.44	<1
	DEVELOPMENT	720	3
	SPECIAL USE	485	2
TOTAL		24,070.32	100

NORTH UNIT MANAGEMENT ZONING THEODORE ROOSEVELT NATIONAL PARK NORTH DAKOTA UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

387 | 20,033-B
Sept. 86 | DSC



ON MICROFILM

- L&M NONFEDERAL LANDS AND MINERALS
- M NONFEDERAL MINERALS
- O/G UNITIZED OIL/GAS LEASE

WILDERNESS WILDERNESS

Proposed zoning is shown for nonfederal lands and minerals to indicate the management philosophy that would be used if ever acquired by the National Park Service. Until that happens this zoning would not apply. See land status and mineral status maps for ownership details.

The natural zone consists of the majority of this unit where the management strategy would be the perpetuation of natural processes and primitive character. The 10,510 acres in the National Wilderness Preservation System are included.

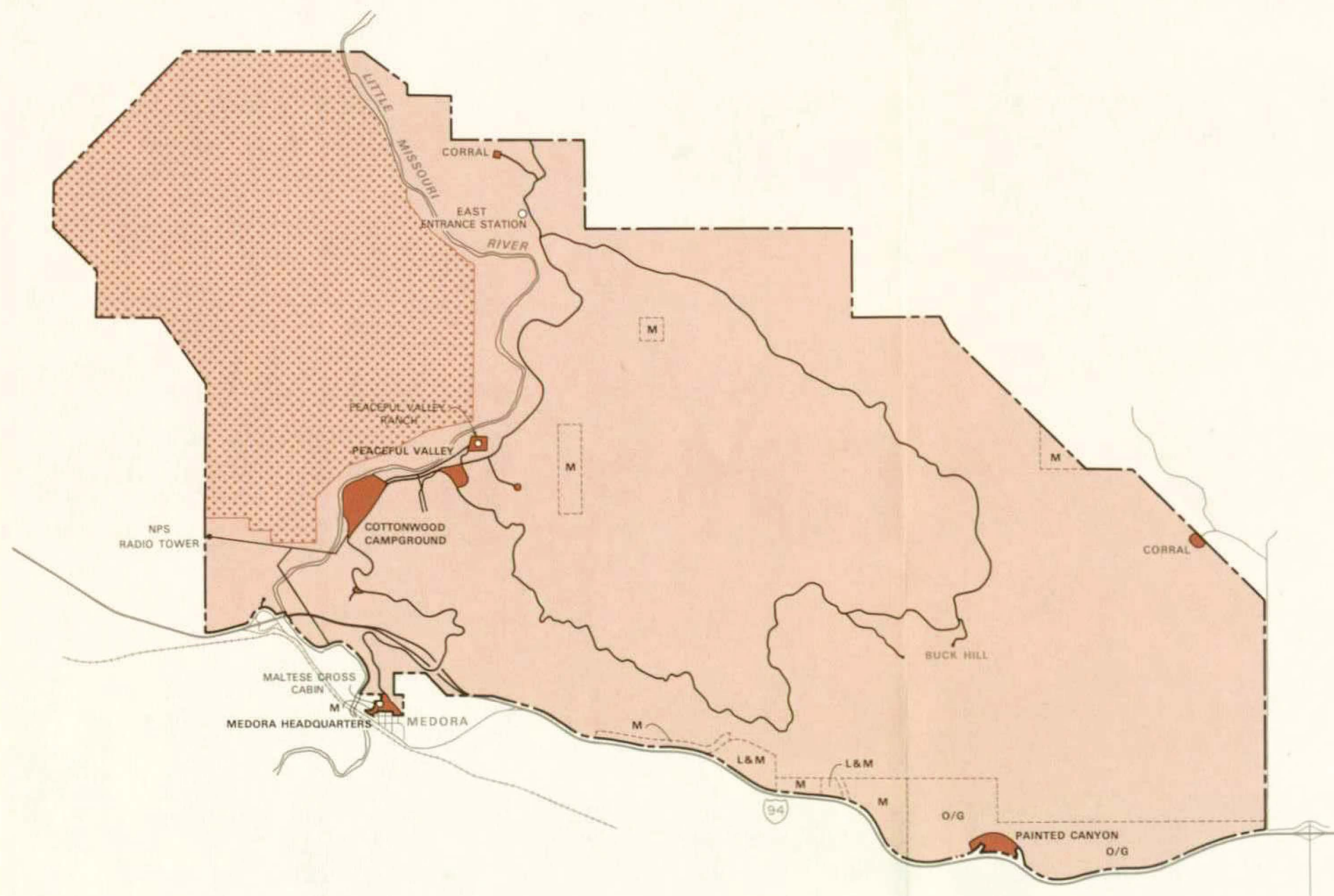
The cultural zone consists of the Maltese Cross Cabin, the Peaceful Valley Ranch and the East Entrance Station.

The development zone consists of paved roads (125 foot wide corridor), unpaved roads and utility lines (66 foot wide corridor), and other developments such as buildings, campgrounds, picnic areas, parking, wayside exhibits, utility systems, corrals and storage.

MANAGEMENT ZONES	ACREAGE	% OF SOUTH UNIT
 NATURAL	45,383.85	98
 CULTURAL	2.22	<1
 DEVELOPMENT	960	2
SPECIAL USE	NONE	NONE
TOTAL	46,346.07	100

SOUTH UNIT
MANAGEMENT ZONING
THEODORE ROOSEVELT NATIONAL PARK
NORTH DAKOTA
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

387 | 20,032-B
Sept. 86 | DSC



ON MICROFILM

National Register of Historic Places. The located archeological sites, which number more than 50, are not included on the maps in order to protect their integrity.

NATURAL RESOURCE MANAGEMENT

The policies, rules, and regulations established by the National Park Service for natural areas will be followed in the administration and management of natural resources. The protection, preservation, and management of the natural environment to ensure ecosystem integrity while providing for visitor enjoyment and safety will be the principal considerations. Natural processes, both biotic and abiotic, will be permitted to continue with a minimum of human disturbance. However, because the park is not free from man-made influences affecting ecosystems and their processes, some active manipulation (e.g., exotic plant control, prescribed burning, and wildlife population reductions) will be necessary to meet resource management objectives. Also, because the park does not include a complete ecosystem with its many components, some of these activities may need to be continued indefinitely.

Additional research is needed to establish a baseline against which existing and potential threats to resources may be measured. When these data needs have been met and the park environment has been restored to its proposed condition, resource management programs will shift major emphasis to monitoring resources and processes.

Air Quality

This is the most important and difficult to manage natural resource problem and a major effect of energy development outside the park. Recommendations aimed at increased monitoring and mitigation of this problem are discussed below:

Establish air quality trend data base maps showing point sources of pollution.

Continue the air quality monitoring program in the south and north units of the park. The program will be coordinated with present research projects on sensitive plant and animal species.

Continue mapping and photographing all structures around the park that are considered visual intrusions, some of which are also sources of air pollution.

Continue monitoring new oil and gas developments adjacent to the park that degrade scenic vistas and produce noise, smoke, and/or gas.

Coordinate with the North Dakota Industrial Commission and other appropriate state agencies, as well as private oil and gas companies,

to gain cooperation in reducing impacts from the installation of new wells, from production equipment, and from other developments on private or state lands close to the park boundaries. Such activities as no burning of waste pits, removal of unneeded equipment, use of vapor recovery units on tanks, and muting or screening of visual impacts and sounds will be strongly encouraged.

Continue coordination with the Forest Service and the Bureau of Land Management in their attempts to reduce adverse impacts of oil and gas operations. Carefully review current draft management plans and future draft area plans and make appropriate recommendations. Also, work with the Forest Service in preparing environmental stipulations for new leases that may be issued, especially between 1986 and 1987 when a number of leases will be considered for reissuance. To the extent possible, make this site-specific and complete this coordination work by personally reviewing questions and explaining comments on the plans and lease documents with appropriate Forest Service personnel.

The park superintendent, with technical input from the National Park Service's Air Quality Office and the Rocky Mountain Region, should identify a threshold limit of the amount of air pollution that the park's sensitive resources will bear from SO₂ sources. This limit should then be made part of the public record and included in park planning documents.

The emphasis for proposed development and processing of coal resources must be to continue monitoring the situation; coordinate with the states of North Dakota and Montana, other agencies, and the Air Quality Office (NPS); and promote public awareness of the class I air quality standards established for the park areas.

The geological formations of the park tend to be soft and erosive. As a result, sinkholes, slumping of material from cliffs and hillsides, and soil erosion have threatened park roads, trails, and visitor facilities. The primary problems have been with road stabilization and riverbank erosion at Squaw Creek campground. Monitoring, reconstructing or relocating facilities, and signing and other provisions for ensuring visitor safety and stability of improvements in developed areas will be undertaken where geological activity may occur.

Exotic Plants

Approximately 23 species of exotic plants are known to occur in various habitats in the park. Six are of special interest because they are efficient competitors and spread rapidly, they now infest large acreages, and/or they require control under the North Dakota noxious weeds law, which requires "every person to eradicate or control the spread of noxious weed on lands owned or controlled by him in the State." To date, chemical treatment of leafy spurge (Euphorbia esula), Canada thistle (Cirsium arvense), and knapweeds (Centaurea sp.), all classified as

noxious by the state, has been carried out to try and slow their spread and eliminate local populations whenever feasible. Park staff are involved in collecting specimens and mapping infestations of these and other exotic plants. An integrated approach to exotic plant management, including chemical, mechanical, and biological control techniques will be taken. The park will continue to maintain close contact with researchers studying biological control methods and will coordinate with other agencies for the use of herbicides and mechanical treatments in and around the park.

Vegetation and Soils

These park resources have stabilized since the period of severe soil erosion in the 1930s, which was caused by drought and heavy grazing on then privately owned ranges. Following the park's establishment in 1947, grazing by domestic herbivores was eliminated (although small populations of bison were introduced in 1956 and after), and fires were actively suppressed. Low consumption of herbaceous vegetation has caused a heavy buildup of litter layers and a decrease in range diversity and productivity. Since the basic soil and vegetation restoration has been accomplished, restoration of the natural grazing and fire regime is necessary for proper vegetation use and plant community development. With implementation of these programs will come the reestablishment of associated ecosystem processes of nutrient cycling, energy flow, and hydrologic cycling. Various ecosystem components will be added to attempt a duplication of the natural systems, including the use of natural and prescribed fire, introduction and management of major wildlife, increased research and monitoring of plant life and processes affecting the vegetation resource, and management of exotic plants.

Historically, the Elkhorn ranch site was probably barren and dusty. However, since the turn of the century, it has reverted to grass and woodland. Most of the unit will be zoned cultural, and the natural scene will be emphasized through prescribed grazing and fire.

Water Resources Management

For the most part, concern is directed toward degradation of groundwater aquifers and surface waters threatened by energy development and chemical transportation on highways and railroads within the Little Missouri River watershed. Oil and gas drilling, storage, and treatment facilities, as well as injection wells for waste salt water, are located near the park. Water systems for visitor and administrative use are periodically sampled for chemical and microbiological analysis. By 1986 these systems should all be chemically treated to comply with public health requirements.

A number of springs and wells have been developed for use by wildlife, and chemical analysis has been done on some of them, but the remaining sources need to be sampled to establish a baseline condition. The plan calls for continued periodic water sample collection and analysis,

maintenance and repair of domestic and wildlife watering systems, and development of a comprehensive water resources management plan.

Recommended actions to alleviate external threats to water quality are as follows:

Coordinate with the Forest Service, Bureau of Land Management, and state of North Dakota to ensure there is some form of environmental monitoring and reporting of existing oil and gas operations. The monitoring should include several areas of concern, including detecting and seeking correction of potential aquifer and stream contamination that could affect the park.

Directly monitor oil- and gas-related problem or potential problem situations, especially on private land adjacent to park boundaries. Report problems to appropriate federal and/or state agencies to effect corrections as necessary.

Solutions to the problem of flooding along the Little Missouri River are defined in the discussion on safety and sanitation.

Acid Deposition

From precipitation and dry material, acid deposition has been recorded in the park and is attributable to the continued increase of pollutant emitting sources. Acid deposition measurement is essential for management and protection of park resources, as studies have identified significant biological impacts from acid deposition in Europe and North America. Continued monitoring through the National Atmospheric Deposition Program will establish a baseline condition, and research programs to study the effects of acid deposition on biological resources will be initiated.

External Influences Problems

Other than those associated with energy exploration and development, external influences problems involve communication, power transmission, and transportation facilities. New proposals for additional facilities are frequent, and scenic vistas from inside the park to the outside have already been significantly affected and continued degradation is possible. These threats will be monitored in an effort to maintain or improve the visitor's experience. Park staff will continue to work with county, state, and federal agencies and private companies to minimize aesthetic impacts around the park.

Natural Resource Baseline Inventories

In the past these inventories concentrated on major species or groups, and the inventory process needs to be expanded to other biotic and abiotic resources. Surveys will be conducted and the data used for

assessing population trends; for determining resource quality, quantity, and natural history; for monitoring of sensitive resources for decline or degradation, especially that caused by human activity; and for initiating research proposals to resolve problems discovered from baseline inventories.

Bison

The bison are an integral component of the badlands environment, and their interaction with the fauna and flora of the area is essential to simulate natural conditions. The plan calls for maintaining the park's high fencing, relocating the corral in the north unit to the north boundary while retaining the present site as NPS horse pasture, and upgrading the existing wild horse corral in the northeast corner of the south unit as a second facility for bison. In addition, forage use and herd size will be monitored; roundups and herd reductions will be conducted as needed, including disease testing and vaccination; and research programs on population characteristics, social structure, and the ecological role of bison in the park ecosystem will be initiated. The data generated from these activities will be incorporated into a bison management plan.

Wild Horses

Found in the south unit, the wild horses are considered a historical demonstration; however, population management is required to minimize their effects on other resources. Studies are needed to determine range use, carrying capacity, and the role these horses occupy in the natural environment of the park. Until this information becomes available, the wild horse population will be surveyed annually to determine expansion rates; also, there will be periodic roundups and reduction in the population through public auctions.

Audubon Bighorn Sheep

The Ovis canadensis auduboni, once common in badlands, are now extinct. In 1956 a population of California bighorn sheep (O. c. californica) was introduced in the south unit. However, this population, due to disease complications, has declined from 32 animals in 1979 to four. Planning is underway to introduce a sheep population in an enclosure in the south unit west of the Little Missouri River. The animals will be medicated for the lungworm infestation. In addition, an attempt will be made to stabilize the condition of and obtain reproductive recruitment from the existing animals, thereby gradually developing a self-sustaining population of bighorn.

These steps are necessary because the park is dependent on the state of North Dakota for technical assistance and replacement animals. The state maintains healthy, medicated herds of bighorn sheep outside the park and

has indicated it will not provide additional sheep unless the park takes action to save the remaining sheep by implementing a medication program.

Deer and Pronghorn

Populations of deer and pronghorn have remained relatively stable for the last 10 years as determined by trend studies and by aerial surveys over the last five years. Deer populations appear to have reached carrying capacity, and with the reintroduction of elk, populations of deer and pronghorn and their use of vegetation will require monitoring. Pronghorn and deer move freely in and out of the park, and during hunting season, pressure is intense along the park boundary. Patrols will be conducted during hunting season to discourage poaching, fences will be modified to allow continued free movement, aerial survey and population monitoring will be continued, and habitat utilization studies of reintroduced elk will be completed.

Elk

The elk were common in the North Dakota badlands historically, and because of their role as a major wild herbivore in the badlands ecosystem, a program for elk introduction into the park was developed. In March 1985, an initial experimental introduction of 47 elk were brought to the south unit of the park from Wind Cave National Park in South Dakota. Like the deer and pronghorn, the elk will be allowed to range inside and outside the park. A research program to study movements, habitat preference and use, and development of an optimum stocking level has been initiated.

Longhorn Cattle

The cattle are displayed in the north unit as a historical demonstration of the cattle associated with 1880s cattle drives into the Dakotas; a portion of the Long X cattle trail reportedly crossed the unit. During the winter, the herd consists of about 20 steers. They require tending, including salting, watering, and feeding. Because they restrict themselves to a relatively small area year-round (about 400 acres), their grazing may have a detrimental impact on the area's vegetation. A small nonbreeding herd will continue to be maintained, and their range use will be studied for possible environmental impacts.

Porcupine and Beaver

Populations of porcupine and beaver are currently monitored to determine their impact on groves of hardwood trees that are associated with watercourses and wooded draws. Because of girdling of stems and branches and felling of trees by these animals, damage to hardwoods in and near recreation sites occurs. This results in dead and damaged

trees, which create hazards for the public and eventual problems for the animals themselves because the populations may be out of balance due to the lack of natural mortality factors. Monitoring and studying of population dynamics and habitat use will be continued. Animals will be removed and relocated as needed, and repellents will be experimented with and evaluated. The latter two actions will be pursued only until this situation can be brought back into balance.

Black-Tailed Prairie Dogs

The prairie dogs have been causing some minor management problems because of their activities in visitor use areas along roads, at parking areas, and in campgrounds and picnic areas. Mechanical or chemical control has not been conducted in 20 years, and in general, populations have remained stable. Prairie dogs are an important component of the prairie environment and so are necessary in ecosystem management. The plan calls for applying minimum control methods in developed areas, mapping prairie dog towns every three to four years, determining the potential black-footed ferret habitat provided by prairie dog towns, and studying the relationship of prairie dogs with other elements of the park environment.

Carnivores, Small Mammals, Amphibians, and Reptiles

All of these groups of species have received limited management attention mostly because of the difficulty in counting these populations and in determining habitat requirements. Baseline data will be gathered, including species present, critical habitat needs, and population densities. Continued maintenance of as nearly a natural environment as possible and careful assessment of management activities will most likely maintain sufficient habitat for these animals.

Avian Management

Endemic and exotic birdlife management has been limited, with the Christmas bird counts, the breeding bird survey in the north unit, and raptor nest surveys being conducted. The park provides widely varying protected habitats for birds, with minimal disturbance by human activity. Other actions will include location and mapping of critical habitats, investigation of habitat requirements, investigation of interactions of exotic birds in the badlands ecosystem, and evaluation of human activities that could affect bird populations or their habitats.

Endangered and Threatened Species

The park comprises potential range for a number of endangered and threatened species. Of the federally listed species, bald eagles (Haliaeetus leucocephalus) and whooping cranes (Grus americana) have

been sighted migrating through the park, while habitat potential exists for the interior least tern (Sterna antillarum athalassos), black-footed ferret (Mustela nigripes), peregrine falcon (Falco peregrinus), and piping plover (Charadrius melodus). Three plant species, three birds, and one mammal listed as endangered or threatened by the state of North Dakota have been located or reported in the park, and habitat potential may exist for others. The plan calls for continued protection of endangered and threatened species and their habitats, coordination with other agencies for surveying and management, surveying and monitoring of populations within the park, and evaluation of habitat suitability for supplementing existing populations or starting new ones. As discussed in the 1984 Natural Resources Management Plan, reintroduction of rare flora and fauna will be considered when feasible and a source of the species became available.

Boundary Control

It is necessary to contain bison within the park and to exclude cattle. Most of the park boundary is now fenced with high, woven wire. This fencing is needed because bison escapes have resulted in costs to herd the animals back and to pay for damage to fences and crops of adjacent landowners. The high, woven wire fencing around the park will continue to be maintained. Also, wildlife crossings will be added to the fence, and their effectiveness will be monitored.

Fire Management

Up to now, fire management has included total suppression of natural and man-caused fire and very limited use of prescribed burning. Protection from fire has resulted in increases of woody species and dense, rank herbaceous cover, thereby increasing the risk of catastrophic fire. Complete suppression has interfered with ecological processes, and a natural fire regime needs to be reestablished. Actions to be taken include development of a fire management plan, zoning of park lands for the use of fire, maintaining and upgrading suppression and prescribed burning capabilities, researching the role of natural fire in the badlands environment, and conducting small-scale experimental prescribed burns.

Backcountry

A primary resource of the park, the backcountry includes the designated wilderness and portions of the park away from development zones. Its management is affected by management actions for other resources. Specific actions will include regular protection patrolling and maintenance of foot and horseback trails, restricted use of critical wildlife habitat areas, monitoring of day and overnight visitation, and preparation of a wilderness/backcountry management plan.

CULTURAL RESOURCE MANAGEMENT

A preliminary draft "Cultural Resources Management Plan" has been completed by park staff to determine the specific requirements for resource protection. While that plan has yet to be approved, its findings and recommendations provided useful information that has been considered in this planning effort.

Because of the lack of a comprehensive archeological survey, the park is not in compliance with section 110(a)(2) of the National Historic Preservation Act, as amended in 1980, which dictates that such a survey must be accomplished. This completed survey of the park will allow an evaluation to be made of the eligibility of cultural sites for inclusion on the National Register of Historic Places. Also, it will provide a valuable interpretive tool to address aboriginal and homesteading use of the park as well as valuable information on which to base improvements or construction, which could otherwise result in costly delays until mitigation was completed on a previously unknown site encountered during such work.

Until such time as parkwide archeological and historic surveys are completed, any activity in an area not previously surveyed that requires ground disturbance will first need an archeological inspection to prevent destruction of prehistoric or historic sites and artifacts. If cultural resources are or may be present, consultation will be conducted with the North Dakota state historic preservation officer and the Advisory Council on Historic Preservation.

The only cultural resource in the north unit that will be affected by this plan is the camp-tender residence. The wood frame structure, with board-and-batten siding and a wood shingle roof, was constructed by the CCC in the mid-1930s. It was originally intended for temporary use, and as a result, the interior is wholly substandard for present-day occupancy. The building is historically significant because of the CCC presence and activity in the area during the 1930s; it is potentially eligible for listing on the National Register. To retain the building's historical value, the camp-tender residence will be kept on its present, original site. A new park road realignment that passes close to the structure will require vegetative screening to mitigate disruption to the historic scene.

The camp-tender residence will be used for storage purposes, and only minimum interior work will be required. The exterior of the building will be repaired, repainted, reshingled, etc., to restore the building to its historical appearance. A historic structure report should be completed on the building prior to repairs. Removal of historic fabric will require section 106 compliance before any restoration or maintenance was begun.

The Elkhorn unit comprises the ranch site that Theodore Roosevelt developed in 1884 along the Little Missouri River about 35 miles north of Medora. When Theodore Roosevelt National Memorial Park was established in 1947, the legislation authorized the reconstruction of the ranch

buildings at a cost not to exceed \$40,000. Since that date, however, historical evidence has not been found to enable reconstruction of more than the exteriors of the ranch house and stable. Current NPS policy, as reflected in the "Cultural Resource Management Guidelines" (NPS-28), states that "the Service does not endorse, support, or encourage the reconstruction of historic or prehistoric structures." In those few instances when reconstruction may be permitted, sufficient data must be available to allow reproduction with a minimum of conjecture. Because of the circumstance, lack of policy support, increased costs of reconstruction since legislation was authorized, and inadequate data, reconstruction in this case will not likely be approved.

Archeological investigations have discovered the sites and configurations of the various buildings associated with the ranch. In lieu of reconstruction, the plan calls for the delineation (by marking) of the foundations or edges of the ranch house, stable, blacksmith shop, well site, chicken pen, shed, dugout, and corral.

An area of resources concern surrounds the Elkhorn unit (see Elkhorn Unit DCP map). It encompasses an area of special concern to the National Park Service. Federal, state, and private lands are involved. This area is especially important in conveying to the visitor a sense of the isolation and character of the landscape that influenced Roosevelt in the development of his great conservation ethic. Cooperative efforts with the Forest Service, State Historical Society, Bureau of Land Management, and private sector will be continued to minimize modern intrusions into this relatively small area. The National Park Service has worked and will continue to work closely with the Forest Service and the Bureau of Land Management to limit surface occupancy and incorporate limited surface use stipulations on oil and gas leases adjacent to the Elkhorn unit. This has proven to be a useful tool toward protecting the park resources and values by recognizing this adjacent area of resources concern. The Land Protection Plan contains more detailed information about the area of resources concern.

The plan for the south unit involves several facilities and historic structures. At the Medora visitor center, fire suppression systems will be installed in the Maltese Cross cabin and the rooms in the visitor center that house the museum and library collections. The historic Maltese Cross cabin is a log structure with a wood shingle roof. Theodore Roosevelt first inhabited this cabin upon coming to the Medora area, and a number of his original possessions, along with other period pieces, are on display here. A fire suppression system will guarantee that the historic artifacts within these structures will not be damaged. The museum and library collections are partially protected by fire detection and intrusion alarm systems that were installed in 1985.

The remainder of the known cultural resources in the south unit include the stone structures at the old east entrance and the stone pylon at the Painted Canyon overlook (which were built by the ERA), and the three Peaceful Valley ranch structures. Constructed in 1938, the structures at the former entrance include the check station and privy as well as two

stone walls. The entrance station was closed and abandoned in 1968 with the completion of a nearby stretch of I-94.

The plan calls for moving the entrance structures to a new location and adaptively using them. This will allow park staff and/or public use, which to date has not been possible. The relocation site tentatively chosen is near the gravel road in the vicinity of the north entrance to the south unit. Because of the structures' potential for inclusion on the National Register, compliance procedures will be followed prior to relocation. Once the buildings have been relocated, the check station will need exterior work involving masonry repointing, replacement of wood roof shingles, and consolidation or replacement of log rafter ends.

The stone pylon bearing the park sign at Painted Canyon was moved to a new, permanent location in 1985. Some masonry repointing may be necessary; also, a pull-off type parking zone will be located adjacent to the sign.

VISITOR USE

Following are the specific actions to support well-established recreational patterns and uses, emphasizing the improvement of existing facilities and services, including safeguards from possible flooding:

- floodproofing of visitor facilities and utilities and provision of warning systems in/on flood-prone recreation sites and trails to provide for visitor safety and minimize property and facility damage (includes diking at Medora)

- improvements in existing recreation site parking and utilities, especially sewage lagoons, but also including the Painted Canyon visitor center solar heating system

- provision of new facilities and signs to aid horseback, canoe, and river snowmobile use generally; recreation and interpretive use of the Elkhorn unit; and park information/interpretation for US 85 travelers in the north unit

- addition and improvement of trails in areas of highest demand and greatest recreational opportunity and development of a trailhead west of river in the south unit

- improvement of information/interpretive, parking, and toilet facilities at the north unit headquarters area (multipurpose improvements), and information/interpretive and toilet facilities along the south unit loop road

- redesign and improvement of the interior of the Painted Canyon visitor center and relocation of the historic old east entrance station to near the north entrance of the south unit

relocation of the obtrusive high-voltage Western Area Power Administration (WAPA) power line at the east end of the north unit (through encouragement and as practicable), and undergrounding of the smaller local rural electric cooperative (REC) lines (by National Park Service) where they are on federal park lands

All visitor use related actions (including recreation, interpretation, safety and sanitation, and special populations) and cost estimates are summarized in appendix C.

Recreation

The most significant recreational improvements will be made in the following areas or complexes:

- | | |
|---------------------|---|
| <u>North unit</u> | <ul style="list-style-type: none">- district headquarters- Squaw Creek campground/picnic area- bison corral area |
| <u>Elkhorn Unit</u> | <ul style="list-style-type: none">- historic ranch site/adjacent development areas |
| <u>South Unit</u> | <ul style="list-style-type: none">- Medora/park headquarters- Cottonwood campground- Peaceful Valley area- north entrance (old east entrance station relocation)- Painted Canyon area |

Recreational developments involving portions of the park outside the nine areas listed above will include a new trailhead at the former horse camp west of the river and several miles of associated trails in the western portion of the south unit, improvements along the south unit loop road, and a new trail between Buck Hill and the Painted Canyon overlook.

Interpretation

The existing parkwide "Interpretive Prospectus" was prepared in 1973 when the park was managed as a historic area. It does not adequately address the need for balanced interpretation of the area's natural and historical significance. Current management objectives for the park recognize and include the significance of natural resources and their influence on Theodore Roosevelt.

A new parkwide interpretive prospectus and wayside exhibit plan will be prepared that will address recent changes in interpretation objectives and identify how interpretation can best be accomplished at the various sites.

Except for recreational use of the two developed areas and along the scenic drive, the visitor experience in the north unit is a low intensity wilderness experience and will remain so.

For many visitors to this unit, the state-maintained overlook and wayside exhibit on US 85 is the first opportunity to learn about the park. For this reason, the National Park Service is concerned with its message. However, the Park Service has no jurisdiction or maintenance responsibilities, although advisory consultation on park-related highway sign information is a normal cooperative activity. A special effort will be made to offer advice and assistance to the state to ensure the use of appropriate highway exhibit/signing.

The north unit visitor contact facility is currently inadequate both in terms of interpretation for visitors and sufficient space for interpretive support functions such as museum collections and library and work area for the interpreters. A new multipurpose facility is proposed that will provide a brief orientation to the whole park but focus on the north unit and its relationship to the other units (see "Park Operations" section for description of facility). Orientation will describe the north unit and the opportunities available, and interpretation will cover the themes of natural history, wilderness, and the relationship of humans with the park environment.

The proposed wayside exhibit plan and interpretive prospectus will define the media to be used. The design of the proposed visitor contact facility and the selection of media should be sufficiently flexible to allow for changeable interpretive messages. The intent will be to provide enough diversity in interpretation to sustain the interest of the many repeat visitors to the north unit.

Implementation of the development concept plan for the Elkhorn unit is contingent on construction of the new trans-river county road. Currently, access is via unpaved, unsigned roads that are often impassable. Upon completion of the road, appropriate directional road signing will be installed. Increased visitation would be anticipated as a result of improved access and signing. The interpretive theme for this unit will focus on ranch life when Theodore Roosevelt lived here and the influence this life had on him. Interpretation will primarily be self-guided (wayside exhibits and tour folder) to allow visitors to identify the locations of former ranch facilities and contemplate this quiet, scenic area with minimal intrusion. Imagination through innovative interpretive techniques will play an important part since no reconstruction will take place. During high visitation levels when resource damage may occur, park staff will be present to provide protection while conducting guided walks or carrying out resource management and caretaking duties.

Most visitors to the park only see the south unit. A large percentage of these stop only at the Painted Canyon overlook/visitor center, where outstanding views of the badlands scenery are available. Signs will be provided to encourage visitors to enter the visitor center at Painted Canyon and to discover that it is more than a rest stop and that there are things of interest to see and do here. The interior of the visitor center will be redesigned to better utilize space, improve facility placement, and resolve inadequate interpretation problems. The proposed interpretive prospectus will define in detail how the visitor center will be

developed. Interpretive themes will include the significance of the park as a whole, geological origin of the badlands, and air quality. Guided walks will continue to be offered. An interpretive trail below the Painted Canyon rim will be developed.

A wayside exhibit plan for the south unit loop road, including Buck Hill, will be developed. The exhibit plan will be coordinated with the development of new pullouts. This is particularly important because there are interesting resources along the road that have not been interpreted because of a lack of safe parking. Road improvements, however, are not included in this general management plan; they will be accomplished as a part of the park maintenance and rehabilitation program. The Skyline Vista trail will be improved to a self-guiding, handicap-accessible, interpretive trail.

Buck Hill is currently not interpreted; yet its prime location affords an outstanding panorama of badlands scenery. The themes for this site will include the geological origin of the badlands, grassland ecosystem, and human habitation. To preserve the beauty and isolated feel of this windblown hilltop, any wayside exhibits should be at the parking area. A publication will accomplish interpretation from the hilltop.

The costs for the improvements proposed for the interior of the Painted Canyon visitor center, the tour folder and wayside exhibits for the Elkhorn unit, and the new interpretive exhibits for the south unit loop road and at Buck Hill are not included in this plan. They will be determined by the interpretive prospectus and specific development plans.

General Safety and Sanitation

Visitor safety will continue to be emphasized on signs, in brochures, and through personal contacts and interpretive messages. Certain visitor and park operation facilities also need to be improved or built to meet safety needs for visitors and park staff. Implementation of the development and other actions that follow will reduce existing or potential safety and sanitation problems, including making sewage systems operate more effectively (these items are treated in greater detail in later sections).

Safety Items. The periodic herding and capturing of the bison can cause hazards for both park staff and horses. The bison can also go through the weak parts of the old corrals, which can cause them injuries. The plan calls for relocating the north unit bison corral to the north boundary and building an additional bison corral at the site of the existing wild horse corral along the northeast boundary of the south unit. This will make roundup operations easier and safer.

An unheated building will be constructed at the north unit headquarters to house maintenance and emergency vehicles that may otherwise be difficult to start and operate during colder months in responding to emergencies. The existing north unit maintenance building space will be enlarged to provide a safer, less-cluttered shop operation and better space for administering first aid and storage of first-aid equipment.

An interpretive trail will be developed below the rim at the Painted Canyon overlook to discourage visitors from using informal paths to venture onto steep, risky terrain.

The existing Buck Hill spur road, which is paved but in a deteriorating condition, will be converted to gravel for vehicle safety.

Concentrated levels of hydrogen sulfide and sulfur dioxide gas from oil and gas operations have been sufficiently strong on occasion to cause physical discomfort to park visitors and staff. Actions (many of which involve working with other agencies and interests) should be taken to attempt to reduce these incidents.

Sanitation Items. The sewage lagoon at the north unit district headquarters will be enlarged and lined, and the sewage lagoon at Squaw Creek campground will be resized.

A floodproof vault toilet will be built in the Elkhorn unit for public use, along with a second small vault toilet and primitive shower for staff use.

The six existing pit toilets at Peaceful Valley ranch and picnic area will be replaced with a flush-type comfort station at the ranch and two vault toilets at the picnic area. (Additional required sanitation changes are covered in the flood-related actions that follow.)

Vault toilets will be installed at Buck Hill and two other locations along the south unit loop road.

The largest sewage lagoon cell at Painted Canyon overlook will be reduced in size and relined; the reduced cell will be used for secondary treatment.

Flood-Related Safety and Sanitation

Many structures and facilities in the park are in the 100-year floodplain (base flood area) of the Little Missouri River and the 100-year flash-flood hazard area of two of its tributaries--Paddock and Squaw creeks. Another tributary, Knutson Creek, contains no development other than trails. (See North Unit and South Unit General Development Plan/Flood Data maps, and Development Concept Plan maps for Medora Headquarters, Cottonwood Campground, Peaceful Valley, Elkhorn Unit, Squaw Creek Campground, Bison Corral, and North Unit District Headquarters for detailed information on flooding.)

The basic NPS policy for floodplains and high-hazard areas (flash-flood areas) is to avoid having developments within the 100-year floodplain whenever there is a practicable alternative, and to prohibit the development of structures in which humans might seek shelter in potential flash-flood areas.

Flood-warning systems and evacuation plans will be developed by the park staff for dealing with all Little Missouri River flood-prone lands and tributary drainage flash-flood hazard areas. Because of a lack of suitable relocation sites, the plan will retain all developed areas within the floodplain and flash-flood areas in their present locations. However, as stated earlier, federal requirements dictate that actions must be taken to minimize life, property, and stream contamination hazards.

During the summer season, about 10 concession employees live in the bunkhouse and recently renovated ranch house at Peaceful Valley, which will be flooded by 100-year floods of the Little Missouri River and 100-year flash floods of Paddock Creek. The use of these structures as dwellings should be phased out in the long term.

Warning signs will be posted in flood-hazard areas and along sections of trails that could be subjected to flash flooding. Facilities and structures will be marked with flood heights. In addition, detection and communication capabilities will be implemented, evacuation strategies will be developed, and provisions will be made for emergency water and sewer service or temporarily closing areas and deactivating utilities.

A 100-year flood of the Little Missouri River will affect developed area facilities as follows:

	<u>Depth of water over floor of buildings</u>
Squaw Creek Area:	Camp-tender residence - 3½ feet Comfort stations - 2¼, 4, and 5 feet Picnic shelters - 6 and 9 feet
Peaceful Valley Area:	Ranch buildings - 4 feet Picnic area - 0 to 2 feet
Cottonwood Campground:	Camp-tender residence - 2 feet Comfort stations - 4, 5, 6, and 7 feet
Park Headquarters (Medora):	Visitor center - 3½ feet Maltese Cross cabin - 4½ feet Administration building and park housing - ½ to 5 feet

The plan calls for floodproofing or replacement and floodproofing of structures and utilities at Squaw Creek, Peaceful Valley, and Cottonwood campground. At Medora, a permanent dike along the west edge of the headquarters area will be required.

At Squaw Creek campground/picnic area, the camp-tender residence will be raised approximately 4 feet and placed on (hidden) concrete pilings. The structure should be anchored so as to prevent flotation, collapse, or lateral movement. Earth should be placed under the building and sloped

to the sides so that it is sited on top of a natural-appearing hill with appropriate landscaping. Access to the building will be by a paved ramp or a ramp and steps to a porch. The camp-tender structure as well as the three comfort stations will be altered by installing watertight doors, waterproofing material for the walls, and making other similar modifications. The comfort stations will also be placed on concrete pilings and natural-appearing hills; paved trails or ramps will provide access. The power transformers for each building will also need to be raised, as will the sewage system pump station control panel (on a post).

At the Elkhorn ranch site, the parking area, picnic area, and vault toilet will be built a short distance above the 100-year floodplain, while the water well, storage buildings, ranger tent platforms, and staff toilet and primitive shower will be situated on slightly higher ground. The public toilet will be built as a floodproof unit, with a vault that could be sealed manually. The well will be a sealed unit. Signs and markers delineating the historic ranch structures will be installed and maintained.

At the Peaceful Valley ranch and picnic area, the plan calls for replacement of existing pit toilets with a flush unit at the ranch and two vault comfort stations at the picnic area. The new toilets should be raised and floodproofed in the same manner as the Squaw Creek campground toilets. Additional flood-protection improvements for the ranch will include construction of a sewage lift station and sewer force main to an area above the 100-year floodplain; here an influent manhole, septic tank, and leach field will be installed.

At Cottonwood campground, all four comfort stations and the camp-tender residence will be raised and floodproofed in the same manner as the Squaw Creek campground toilets. The sewage system will be floodproofed by modifying the two lift stations and sewage lines within the campground. A sewer force main will be extended to an area above the 100-year floodplain, where a new influent manhole, septic tank, and leach field will be placed. The five existing septic tanks will be removed. A new well and pump house will be floodproofed.

In the Medora headquarters area, a permanent flood control dike will be constructed from the base of the slope east of the Maltese Cross cabin to the Burlington Northern Railroad embankment. A gap will be left for the old highway 10 bypass; it will be temporarily closed with sandbags in the event of a flood. The dike, 1,800-feet long and 7 feet high (average), will be built slightly above the 100-year flood elevation. Approximately 300 feet (17 percent) of its length, including the highway gap, will not be within the park. The dike will protect about 49 acres within Medora (most of the developed portion of the town) from a 100-year flood. Seventy-five percent of this area will not be within the park. A hydraulic study should be conducted to determine the extent to which the Little Missouri River will be raised in a 100-year flood because of the presence of the new dike.

NPS final procedures for implementing EO 11988 define critical actions as those for which even a slight chance of flooding is too great. These

procedures require the use of sites completely outside the 500-year floodplain for all critical actions, which include the construction or rehabilitation of facilities or structures that contain irreplaceable historic objects or documents. However, at present, irreplaceable historic objects are kept in both the visitor center and the Maltese Cross cabin. In order to protect these resources, the historic objects and documents will be removed and taken to higher ground when a catastrophic flood appeared imminent. In addition, the height of the proposed 100-year floodplain dike and a short segment of the Burlington-Northern Railroad will be raised to the 500-year floodplain level through the use of sandbags and earth. The difference between the two floodplain levels is about 4 feet.

Special Populations

NPS "Management Policies" state that "to the greatest extent possible, commensurate with physical limitations, the handicapped should be able to enjoy the park using the same facilities as the non-handicapped visitor. Special interpretive facilities and programs for handicapped people are encouraged where good potential for participation is indicated."

Significant emphasis has already been placed on making visitor facilities within the park accessible to the handicapped, but more needs to be done. As a result, approximately \$130,000 has been specifically obligated for handicap-use improvements at the Painted Canyon overlook/visitor center, Medora visitor center, and several recreation sites. Improvements involve such modifications as making buildings more accessible; providing special toilets, wash basins, and fountains; and creating special handicap units in campgrounds. These improvements have been separately approved and funded and are not dependent on implementation of this plan.

Minor improvements, such as better signs, curb cuts, parking space striping and marking, and ramps, will continue to be made as a part of ongoing maintenance. The improvements program described in the previous paragraph will also include some of these items.

Unfortunately, some of the required floodproofing modifications, described earlier under safety and sanitation, will decrease handicap accessibility. However, design criteria will attempt to keep such reductions at a minimum.

Any new visitor or staff facilities proposed and any alterations to existing facilities will comply with all appropriate laws and regulations, including the Architectural Barriers Act of 1968 (42 USC 4151 et. seq., as amended by 88 Stat. 1617). In addition, as possible, interpretive programs will be made suitable and accessible for most special populations.

The following improvements will be made to benefit the handicapped:

- A new handicap-accessible building will be constructed at the north unit district headquarters that will include space for visitor contact and interpretation.

A handicap-accessible nature trail will be provided in the north unit (at a safe and suitable location to be determined).

The Skyline Vista trail in the south unit will be upgraded for handicap accessibility.

The access trail in the Elkhorn unit will be stabilized for the handicapped.

Park Operations

Park operations involve the adequacy and effectiveness of facilities (including staff housing) needed for park management, as well as the staffing necessary to perform management, park protection, visitor services, study/research, and maintenance functions. This may also involve arrangements/agreements with others that may be required for effective management of the park and lands adjacent to the park.

The small ranger station and information trailer at the district headquarters area of the north unit are totally inadequate in size, furnishings, and/or condition for both staff and visitors. The trailer, an older model and poorly insulated, cannot be used during the colder months. A new building (approximately 5,850 square feet including basement) will be constructed to house district ranger and interpreter offices, as well as space for a multiuse meeting room, library, storage, fee collection, public restrooms, publication sales, public information, and park interpretation. At the time of construction, a waterline to the building will also be required. The existing ranger station and visitor contact trailer will be removed following completion of the new building.

There is an acute shortage of park housing in the north unit for the permanent and seasonal employees who are needed to ensure the hiring of qualified seasonal personnel and adequate protection for visitors, resources and facilities, including implementation of proposed flash-flood evacuation plans. In addition, some of the existing housing is of poor quality. As a result, new and replacement quarters for seasonal and permanent employees will be constructed. The development and provision of park housing for employees must be in conformance with NPS management policies, as currently set out by the January 1985 "Government Furnished Quarters Management Guidelines" (NPS-36).

The nearby communities of Watford City (population 2,119), 14 miles away, and Killdeer (population 790), 35 miles away, are located in the oil and gas rich Williston Basin. Due to recent ups and downs of this volatile energy industry, the region's economy has become boom or bust for the communities. Rental and purchase housing prices fluctuate accordingly, and prospective NPS employees, especially seasonals, are unable to afford housing in the boom times, and could find that rental costs become unaffordable when bust changed to boom times. This could result in the resignation of affected employees. In addition, it is difficult to recruit qualified personnel in this remote area without park housing.

At present employment is limited to singles or people who live in nearby communities.

Three quarters, the CCC camp-tender residence (currently used for seasonal housing) and two trailers occupied by various employees, are substandard to the extent of having slumlike qualities. These facilities have become badly deteriorated over the years due to poor construction and the harsh climate of the area and cannot keep out frost and rain, as well as rodents and insects. For example, the furnace in one trailer can bring the inside temperature to only 50°F when it is -30°F outside. The NPS policy is to eliminate trailers as housing units.

These substandard units should be replaced with modular duplexes and apartments designed for energy efficiency and longevity. The number of units needed, estimated at six, will be determined by staffing needs. Multifamily units will be provided if they are the most cost-effective. When replacement housing becomes available, the camp-tender residence will be used for storage purposes.

Under present conditions at the north unit headquarters, several maintenance and emergency vehicles (e.g., snow removal trucks and a protection division vehicle) must be kept outdoors because of a serious lack of space in the maintenance building. Subzero temperatures and drifting snow hamper efforts to get the equipment operational, and dig-out and warm-up time are required. To alleviate this situation, an unheated, wind-sheltered structure with power for engine heaters will be constructed to keep these vehicles on call at all times. Construction of this relatively simple structure will be less expensive than an addition to the existing maintenance building. Also, site restrictions demand that the new vehicle storage area be in a separate location.

The existing three-bay north unit maintenance building is too small for the sheltered work activities and storage facility that it is required to support. Floor space needed for vehicle maintenance and safe shop operation is occupied by lumber, equipment, and materials storage. One wall, now containing fire suppression equipment, is inadequate for future fire management programs. First aid, now less satisfactorily conducted at the entrance station, should be relocated to individual space in the nearby maintenance building. The existing building space will be enlarged to accommodate a carpenter shop, a first-aid station, a fire cache, and small equipment storage.

Use of the historic CCC camp-tender residence at the north unit headquarters for storage will require minimal interior improvements as well as exterior maintenance improvements.

The north unit radio tower is not riveted properly, resulting in mixed frequencies and interference. The tower will be refitted, reriveted, and fenced.

There are no facilities in the remote Elkhorn unit. When the county road access is improved including a bridge over the Little Missouri River, a

short access road and limited visitor use and operational facilities on-site will be needed. A small building for securely storing trail and grounds maintenance tools, fire management apparatus, and first-aid items will be constructed. Tent platforms, a small vault toilet, and a primitive shower will also be needed for a small seasonal staff during the summer. These structures will be low in cost, low in maintenance, and out of view of public use areas. The access road will require a special use permit or right-of-way from the State Historical Society and/or the Forest Service.

No park operations improvements will be made in the south unit.

A highly visible and obtrusive high-voltage WAPA power line diagonally crosses the private land at the east end of the north unit before it spans US 85, passes just south and east of the unit headquarters area, and then crosses the Little Missouri River. A smaller REC power line, which serves NPS facilities, is found in this same area. A spur REC line also serves Squaw Creek campground to the west. The REC lines will be buried underground wherever they are on federal park property. WAPA will be encouraged to relocate their line outside the park when the line requires replacement or major maintenance/repair. No new major aboveground transmission lines should be permitted to cross this or any other areas of the park.

General Development/Development Concept Plans

Some of the facilities in the park have been serving the public for many years and are in need of repair or improvement. In other cases, special actions have never been taken and basic improvements never provided because of no funds and no clear management/planning direction; floodproofing, new trails, and better located toilets are three examples.

The primary developments called for in the plan will (1) meet statutory requirements by protecting life and property from flooding; (2) meet curatorial and cultural resource standards by protecting or providing safe storage for irreplaceable artifacts, books, papers, and historic structures; (3) fulfill health, sanitation, and utility operational standards by providing new vault or flush toilets and improving sewage lagoons and other utility systems; (4) meet critical needs for improved or additional visitor contact, interpretive, office, and quarters space; and (5) meet safety needs and provide additional opportunities for the handicapped. In addition, improvements in campgrounds, picnic areas, river access, trails, and administration and maintenance facilities will make support services and overall park management more efficient and provide additional recreational and interpretive opportunities. These actions are not, however, intended to produce significant changes in facility capacity or to alter the basic recreational experience.

Facilities and improvements to be undertaken are shown on the accompanying Development Concept Plan maps. Additional development is shown on the North Unit and South Unit General Development Plan/Flood Data maps. The nine development concept plan areas generally represent where the most significant or numerous changes will be made.

Costs and Personnel

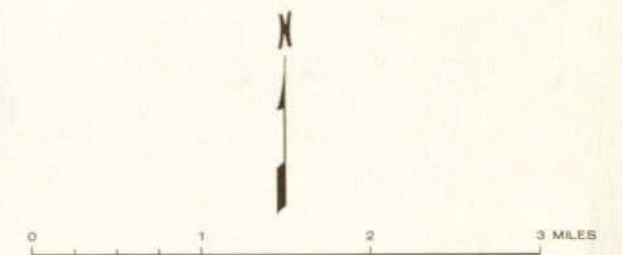
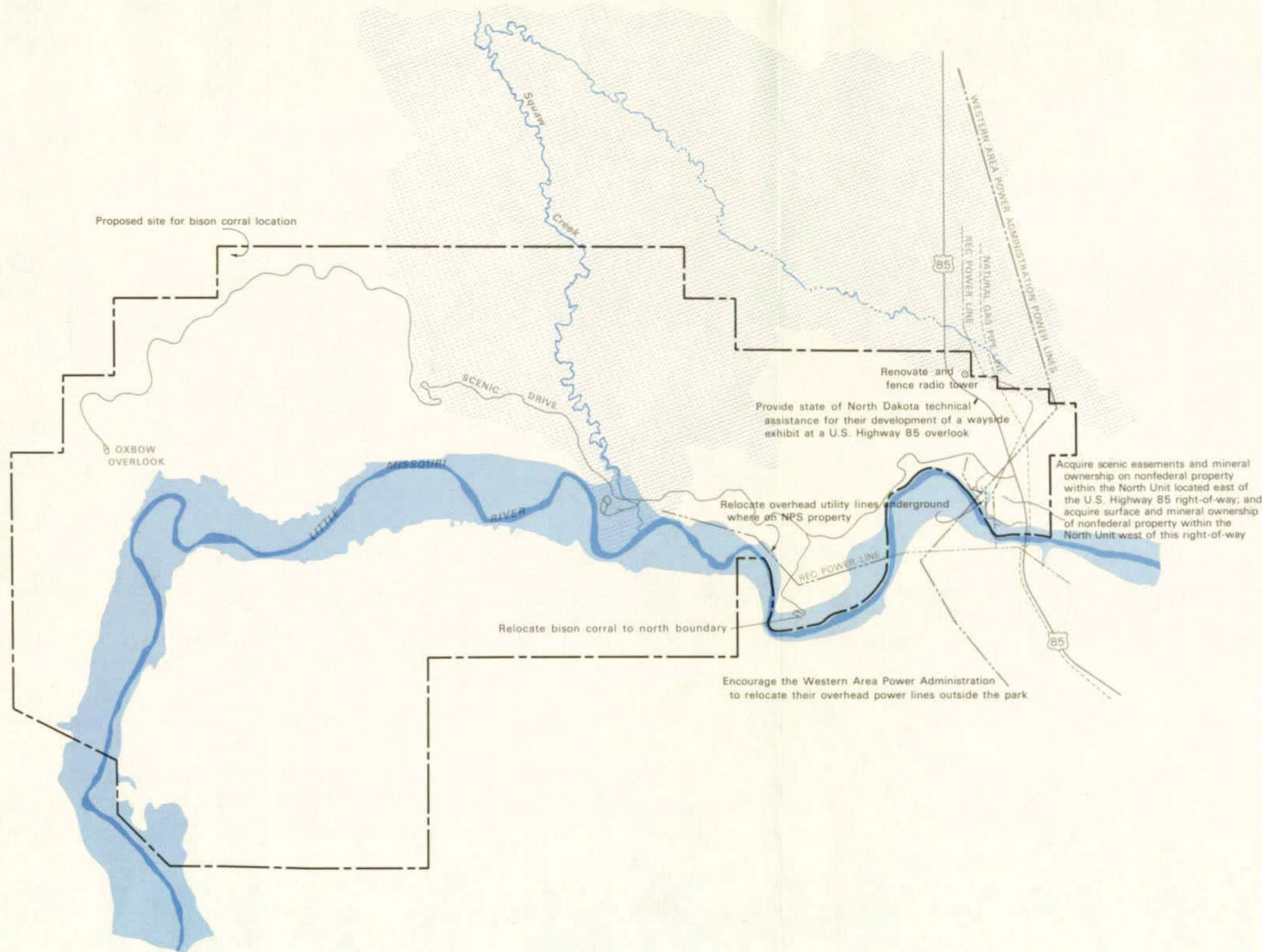
Associated costs and priorities for the various developments are given in the "Plan Implementation" section.

NORTH UNIT GENERAL DEVELOPMENT PLAN FLOOD DATA

THEODORE ROOSEVELT NATIONAL PARK
NORTH DAKOTA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

387 20,031-C
NOV 86 DSC



**LITTLE MISSOURI RIVER
100-YEAR FLOODPLAIN**
**SQUAW CREEK DRAINAGE
26 1/2 SQUARE MILES**
PARK BOUNDARY

Proposed actions are shown in black, and existing conditions are shown in gray.

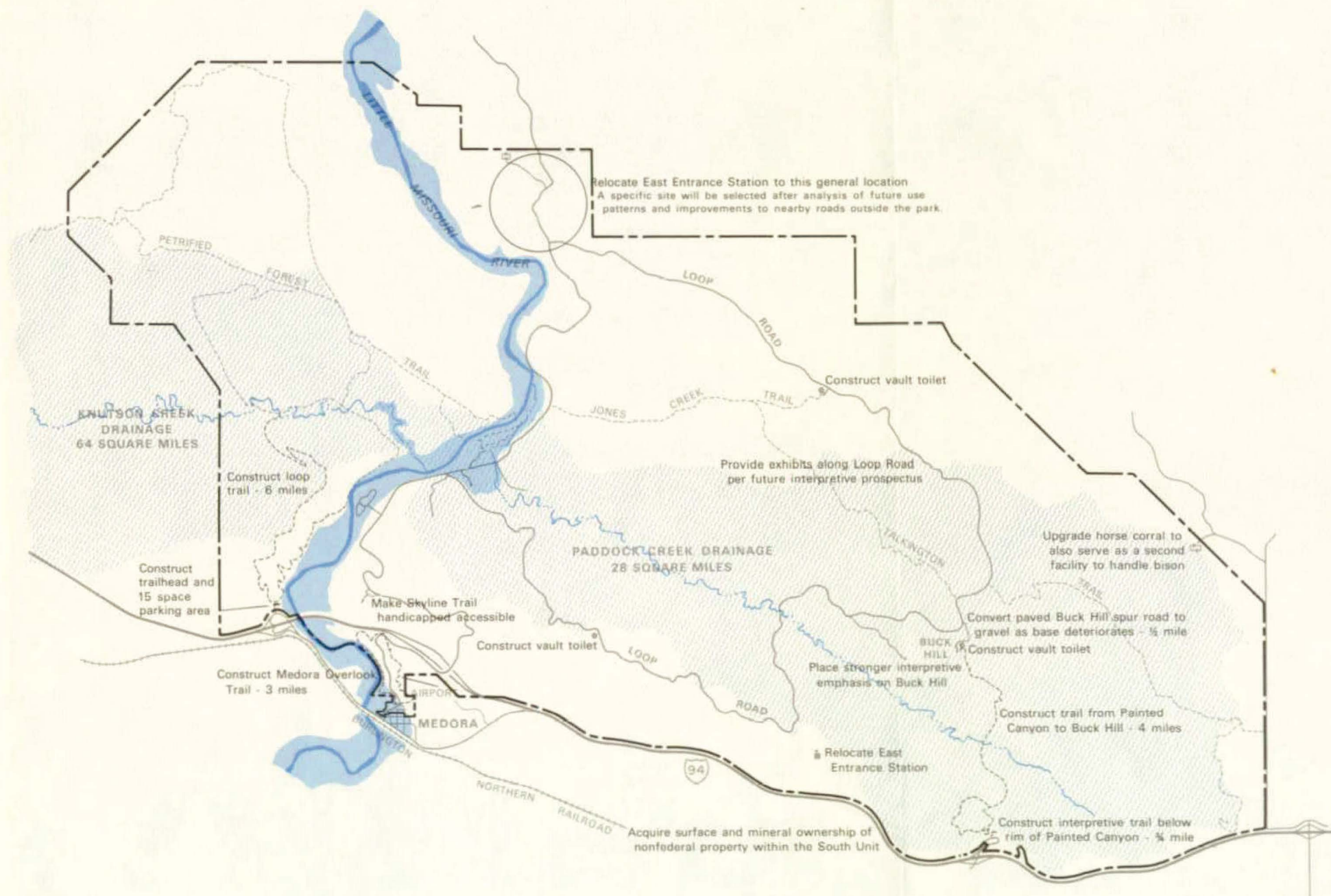
ON MICROFILM

SOUTH UNIT GENERAL DEVELOPMENT PLAN FLOOD DATA

THEODORE ROOSEVELT NATIONAL PARK
NORTH DAKOTA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

387	20,030-A
JAN 86	DSC



LITTLE MISSOURI RIVER
100-YEAR FLOODPLAIN

MAJOR CREEK DRAINAGES

PARK BOUNDARY

Proposed actions are shown in black, and existing conditions are shown in gray.

ON MICROFILM

NORTH UNIT DISTRICT HEADQUARTERS

DEVELOPMENT CONCEPT PLAN
THEODORE ROOSEVELT NATIONAL PARK
NORTH DAKOTA

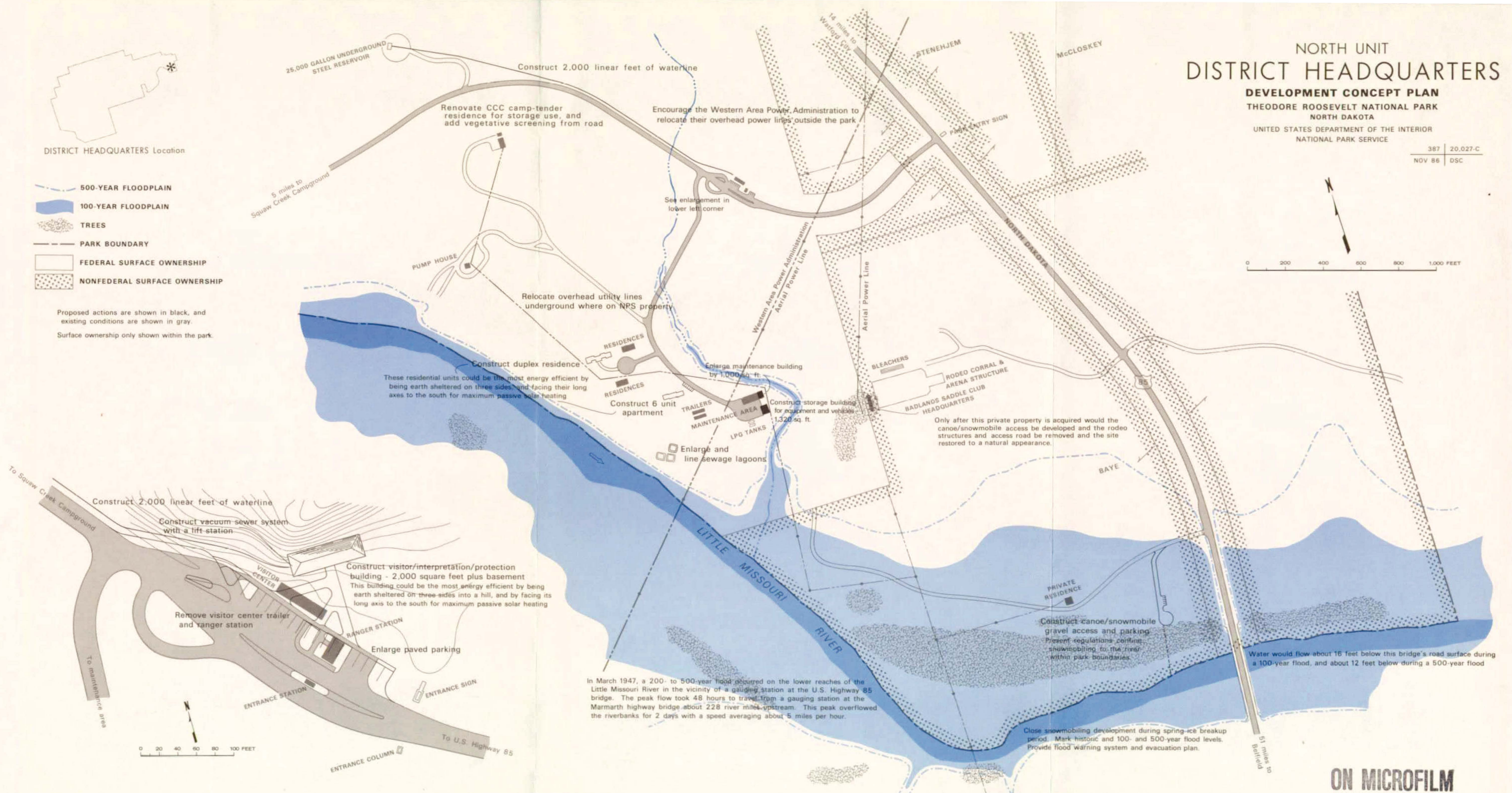
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

387 20.027-C
NOV 86 DSC

DISTRICT HEADQUARTERS Location

- 500-YEAR FLOODPLAIN
- 100-YEAR FLOODPLAIN
- TREES
- PARK BOUNDARY
- FEDERAL SURFACE OWNERSHIP
- NONFEDERAL SURFACE OWNERSHIP

Proposed actions are shown in black, and existing conditions are shown in gray.
Surface ownership only shown within the park.



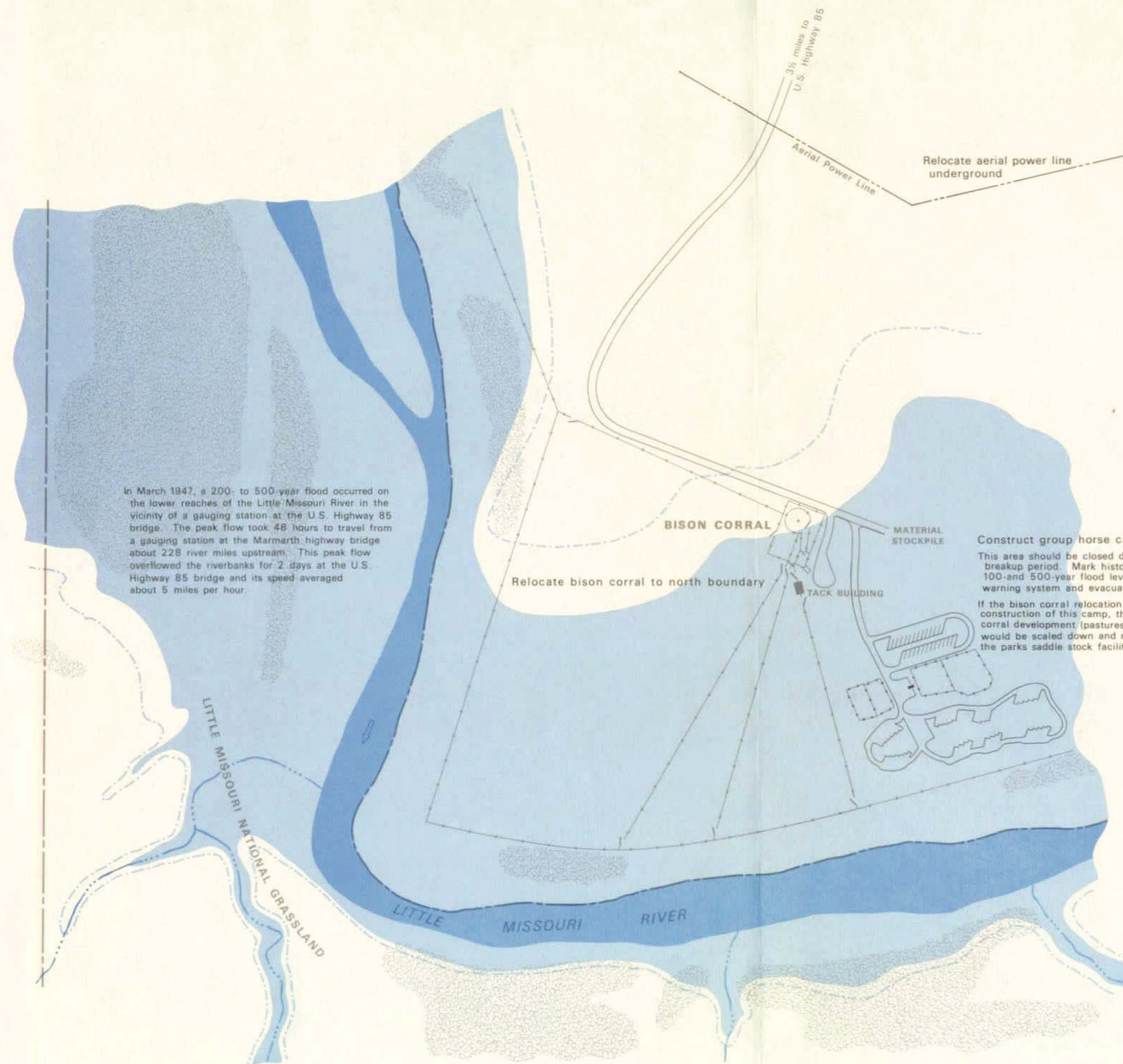
NORTH UNIT BISON CORRAL

DEVELOPMENT CONCEPT PLAN

THEODORE ROOSEVELT NATIONAL PARK NORTH DAKOTA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

387	20,021-B
Sept. 86	DSC



In March 1947, a 200- to 500-year flood occurred on the lower reaches of the Little Missouri River in the vicinity of a gauging station at the U.S. Highway 85 bridge. The peak flow took 48 hours to travel from a gauging station at the Marmarth highway bridge about 228 river miles upstream. This peak flow overflowed the riverbanks for 2 days at the U.S. Highway 85 bridge and its speed averaged about 5 miles per hour.

Construct group horse camp

This area should be closed during spring ice breakup period. Mark historic and 100- and 500-year flood levels. Provide flood warning system and evacuation plan.

If the bison corral relocation occurs prior to construction of this camp, the existing bison corral development (pastures and pens) would be scaled down and maintained as the park's saddle stock facility.

- 500-YEAR FLOODPLAIN
- 100-YEAR FLOODPLAIN
- TREES
- PARK BOUNDARY

Proposed actions are shown in black, and existing conditions are shown in gray.

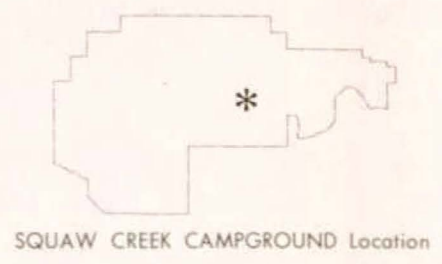
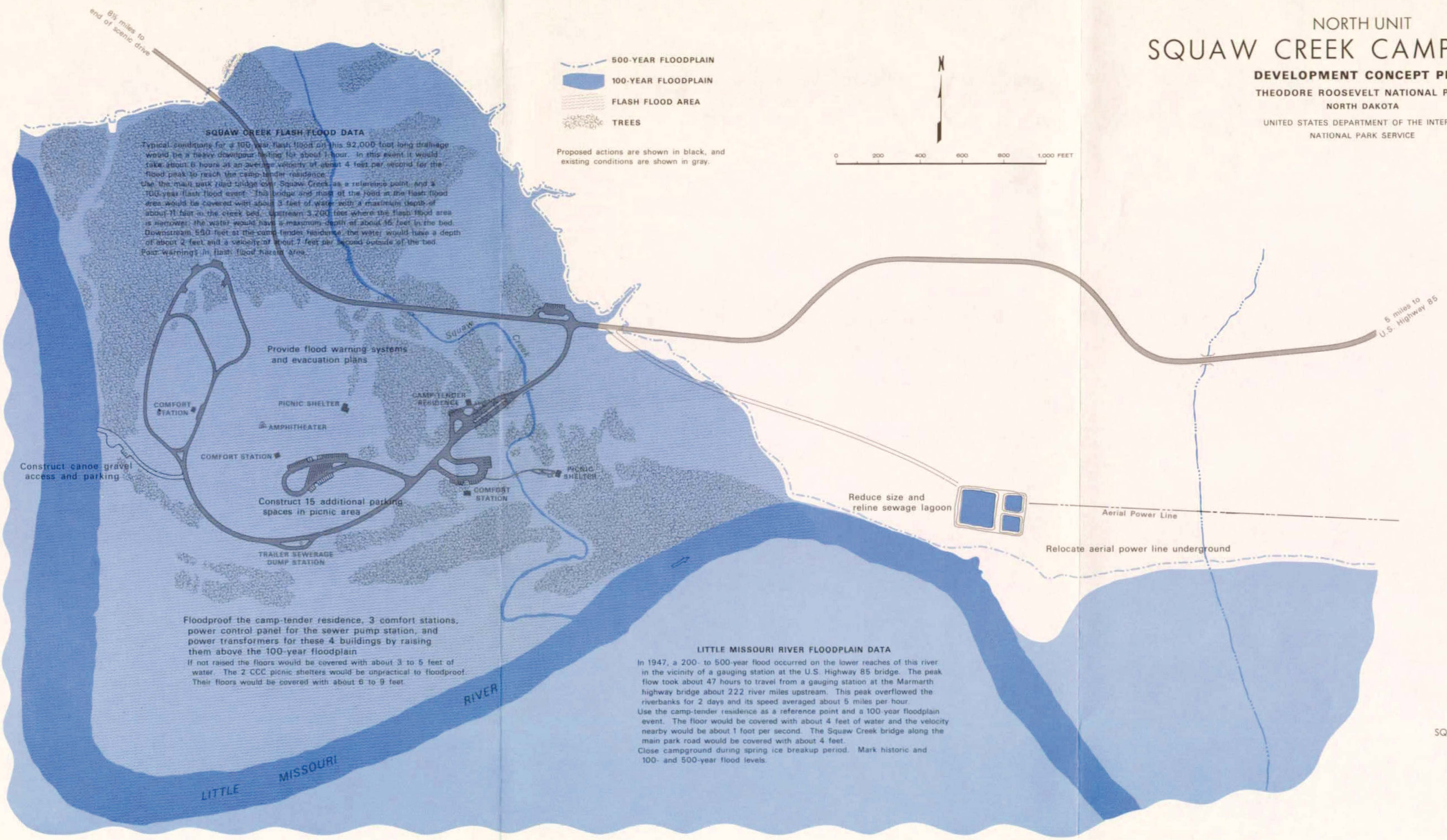


BISON CORRAL Location

ON MICROFILM

NORTH UNIT
SQUAW CREEK CAMPGROUND
DEVELOPMENT CONCEPT PLAN
THEODORE ROOSEVELT NATIONAL PARK
NORTH DAKOTA
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

387 20,029-B
Sept. 86 DSC



ON MICROFILM

ELKHORN UNIT

DEVELOPMENT CONCEPT PLAN

THEODORE ROOSEVELT NATIONAL PARK
NORTH DAKOTA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

387 20.013-D
JUN 87 DSC



- 500-YEAR FLOODPLAIN
- 100-YEAR FLOODPLAIN
- TREES
- PARK BOUNDARY
- AREA OF RESOURCES CONCERN
- UNPAVED MAINTAINED ROAD
- UNPAVED UNMAINTAINED ROAD
- FEDERAL SURFACE OWNERSHIP
- NONFEDERAL SURFACE OWNERSHIP

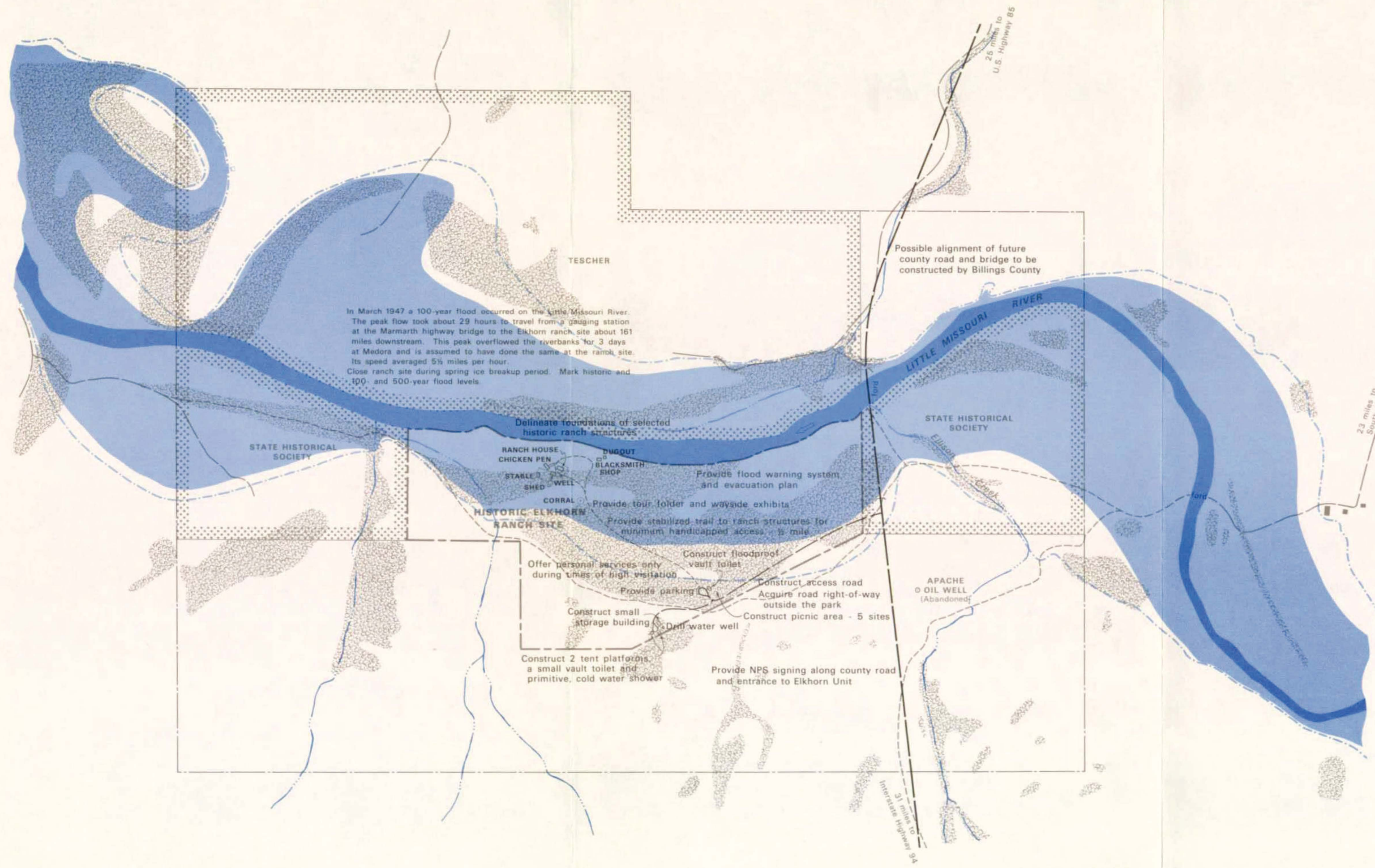
Proposed actions are shown in black, and existing conditions are shown in gray.

Proposed actions to occur only upon completion of the trans-river road by Golden Valley and Billings counties.

Surface ownership only shown within the park and area of resources concern.

A recent court case determined that the state of North Dakota owned the bed of the Little Missouri River. This case has been appealed.

The management zoning for the Elkhorn Unit is cultural except for 5 acres which are development.



In March 1947 a 100-year flood occurred on the Little Missouri River. The peak flow took about 29 hours to travel from a gauging station at the Marmarth highway bridge to the Elkhorn ranch site about 161 miles downstream. This peak overflowed the riverbanks for 3 days at Medora and is assumed to have done the same at the ranch site. Its speed averaged 5 1/2 miles per hour. Close ranch site during spring ice breakup period. Mark historic and 100- and 500-year flood levels.

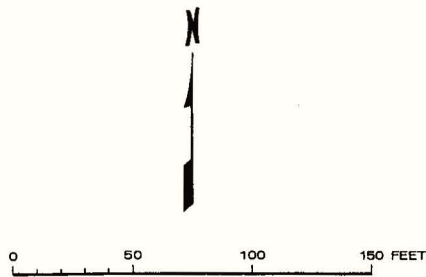
ON MICROFILM

SOUTH UNIT
EAST ENTRANCE STATION
RELOCATION

DEVELOPMENT CONCEPT PLAN

THEODORE ROOSEVELT NATIONAL PARK
NORTH DAKOTA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

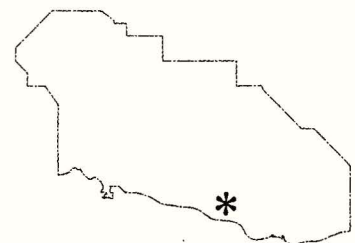
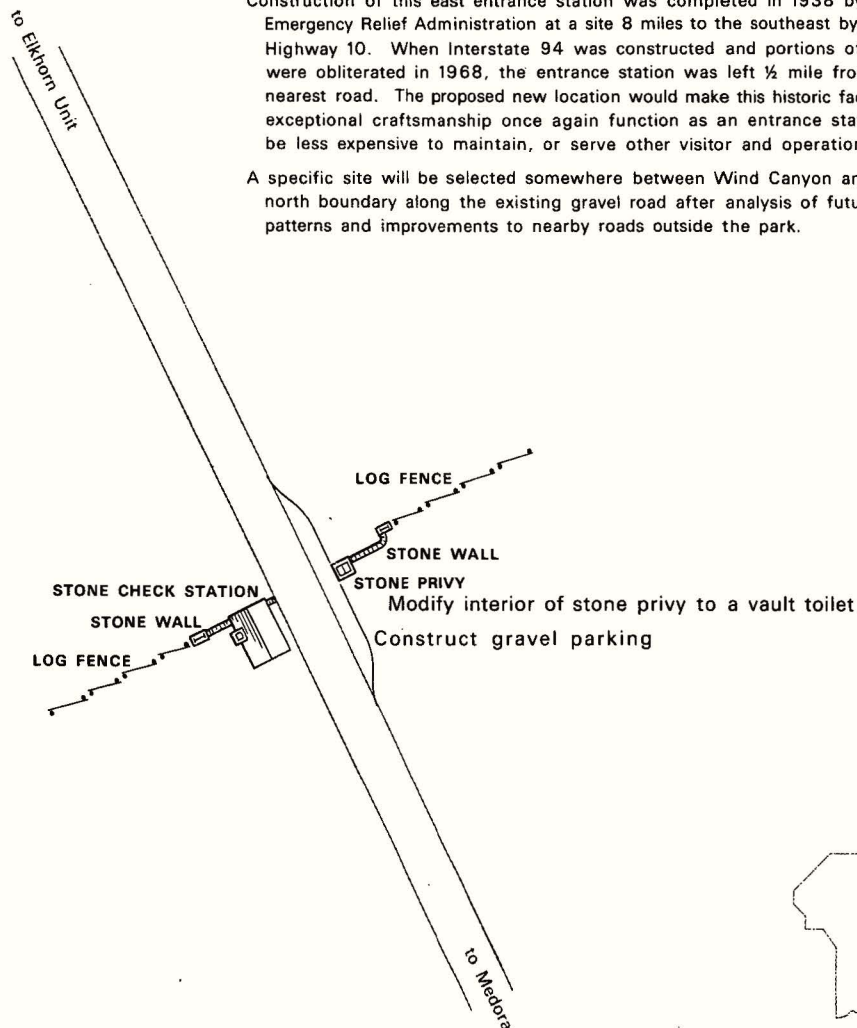


387	20,022-B
APR 86	DSC

Proposed actions are shown in black, and existing conditions are shown in gray.

Construction of this east entrance station was completed in 1938 by the Emergency Relief Administration at a site 8 miles to the southeast by U.S. Highway 10. When Interstate 94 was constructed and portions of U.S. 10 were obliterated in 1968, the entrance station was left ½ mile from the nearest road. The proposed new location would make this historic facility of exceptional craftsmanship once again function as an entrance station and be less expensive to maintain, or serve other visitor and operational needs.

A specific site will be selected somewhere between Wind Canyon and the north boundary along the existing gravel road after analysis of future use patterns and improvements to nearby roads outside the park.



EAST ENTRANCE STATION Location

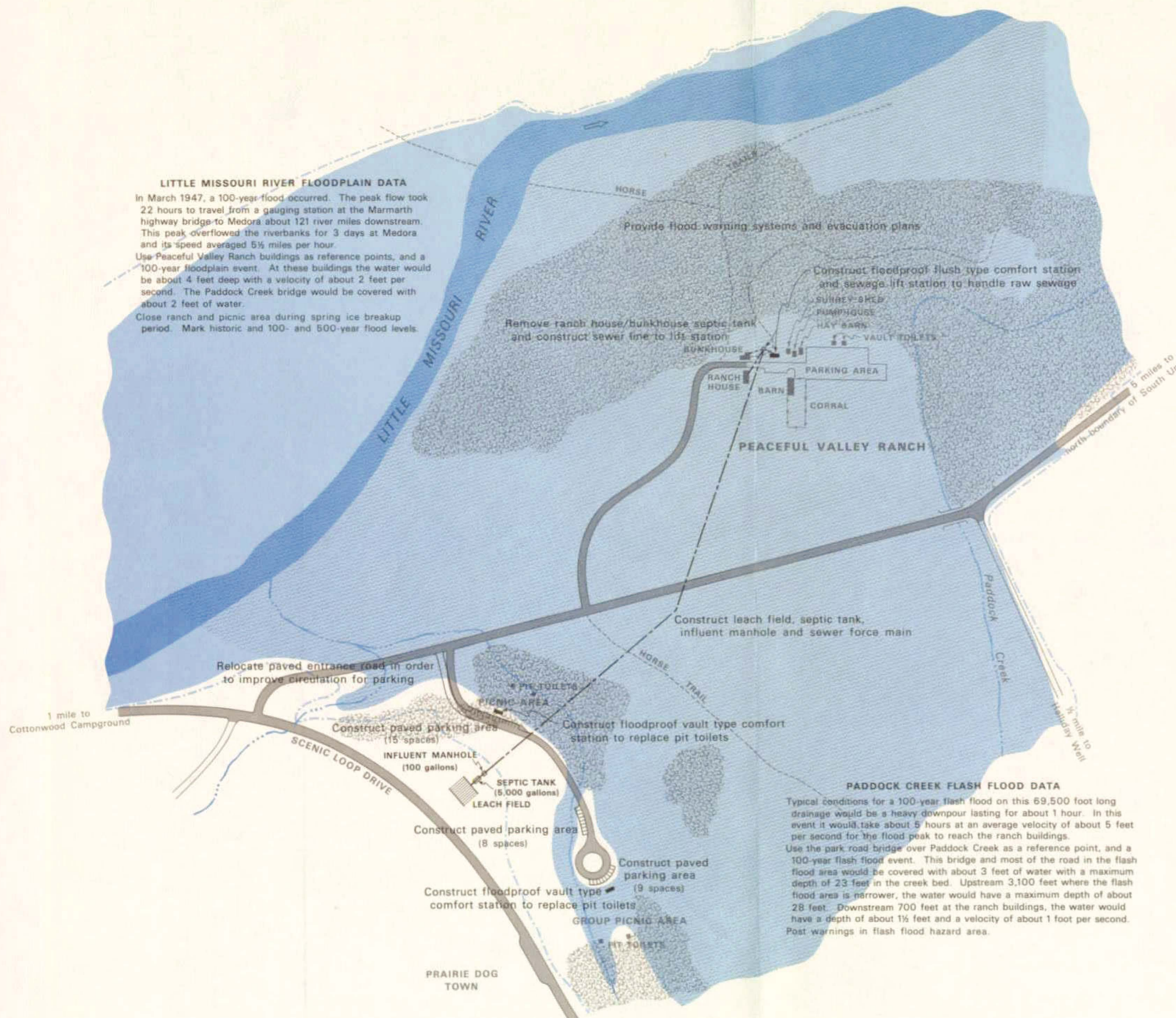
ON MICROFILM

SOUTH UNIT PEACEFUL VALLEY

DEVELOPMENT CONCEPT PLAN THEODORE ROOSEVELT NATIONAL PARK NORTH DAKOTA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

387 20,020-A
JAN 86 DSC



Proposed actions are shown in black, and existing conditions are shown in gray.



PEACEFUL VALLEY Location

ON MICROFILM

SOUTH UNIT COTTONWOOD CAMPGROUND

DEVELOPMENT CONCEPT PLAN

THEODORE ROOSEVELT NATIONAL PARK
NORTH DAKOTA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

387 20,019-A
JAN 86 DSC

Construct loop trail - 6 miles

1 mile to
Peaceful Valley Ranch

ROUGH RIDERS HORSE AND GROUP CAMP

Construction of this facility has been programmed and is not included in this development concept plan.

Provide flood warning system and evacuation plan

Redesign sewage treatment:

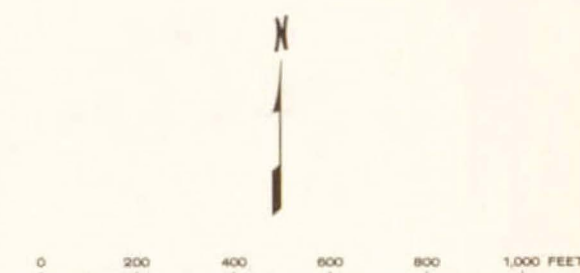
- Modify lift stations to handle raw sewage
- Remove 5 septic tanks, 2 leach fields and sewer force main to southern leach field
- Construct sewer line from camp-tender residence to lift station
- Construct sewer force main between 2 comfort stations
- Extend sewer force main above the 100-year floodplain
- Construct influent manhole (400 gallons), septic tank (20,000 gallons) and leach field (1,400 linear feet)
- Floodproof the well and pump house

Floodproof the camp-tender residence and 4 comfort stations by raising them above the 100-year floodplain. If not raised, the floor of the residence would be covered with about 2 feet of water and the comfort stations from about 4 to 7 feet of water in a 100-year flood.

Redesign spur campsites to paved pull-through type

In March 1947, a 100-year flood occurred on the Little Missouri River. The peak flow took 22 hours to travel from a gauging station at the Marmarth highway bridge to Medora, about 125 river miles downstream. The peak overflowed the riverbanks for 3 days at Medora and its speed averaged 5 1/2 miles per hour. Close campground and horse and group camp areas during spring ice breakup period. Mark historic and 100- and 500-year flood levels.

5 miles to
Medora



- 500-YEAR FLOODPLAIN
- 100-YEAR FLOODPLAIN
- TREES
- SEWER LINE, LIFT STATION

Proposed actions are shown in black, and existing conditions are shown in gray.



COTTONWOOD CAMPGROUND Location

ON MICROFILM

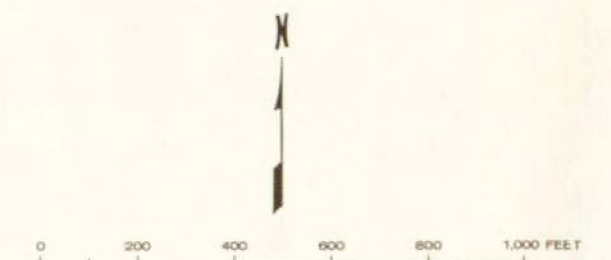
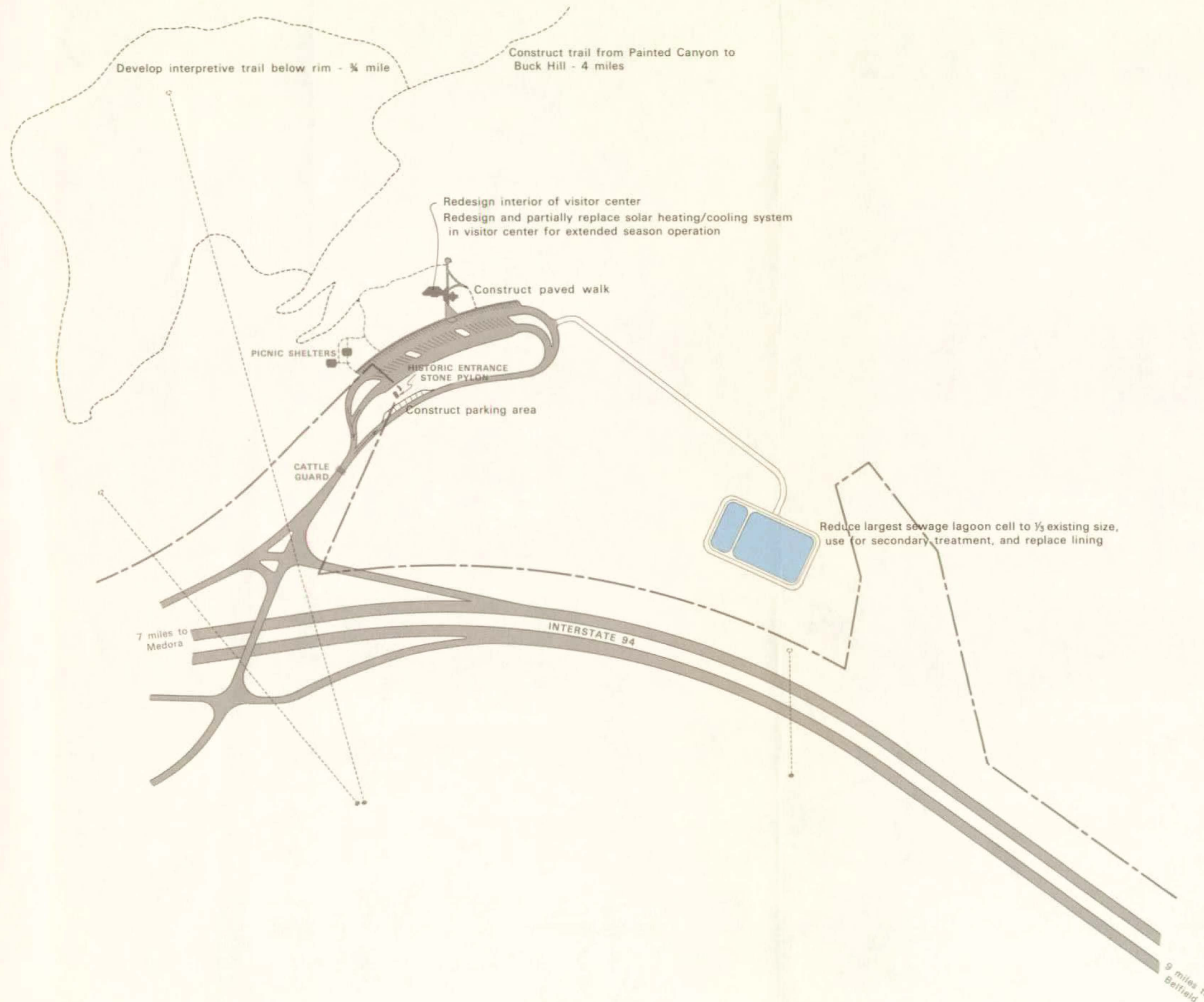
SOUTH UNIT PAINTED CANYON

DEVELOPMENT CONCEPT PLAN

THEODORE ROOSEVELT NATIONAL PARK
NORTH DAKOTA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

387	20,015-A
JAN 86	DSC



--- PARK BOUNDARY
 Bottom of well Top of well
 --- OIL WELL (Directionally drilled)

Proposed actions are shown in black, and existing conditions are shown in gray.



PAINTED CANYON Location

ON MICROFILM

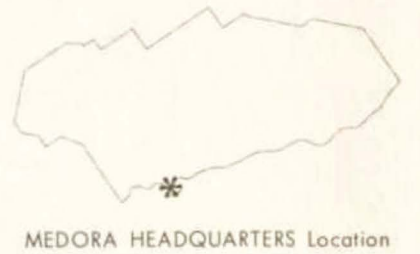
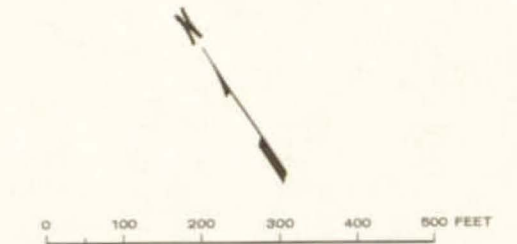
SOUTH UNIT MEDORA HEADQUARTERS

DEVELOPMENT CONCEPT PLAN

THEODORE ROOSEVELT NATIONAL PARK
NORTH DAKOTA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

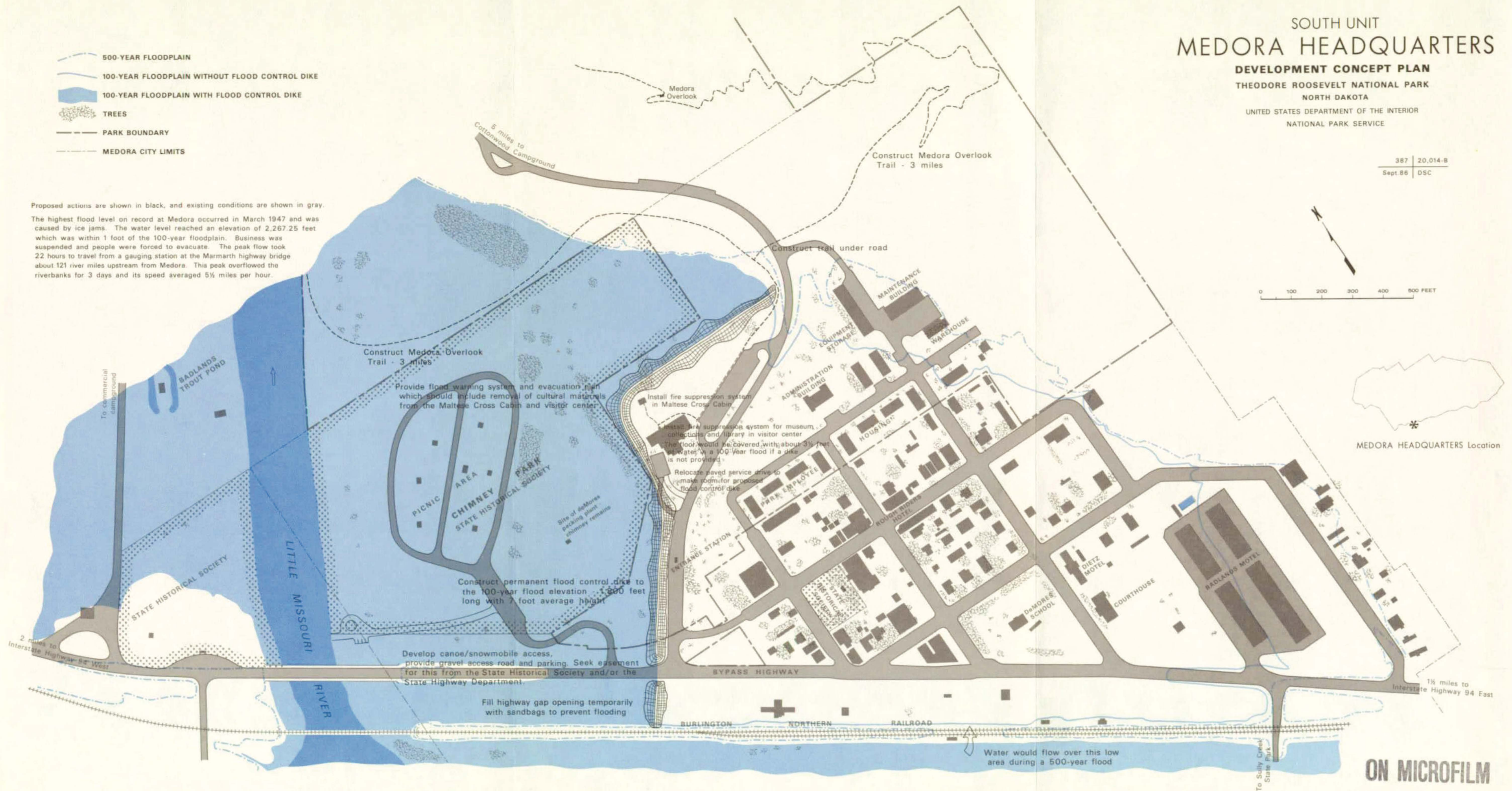
387 20,014-B
Sept. 86 DSC



MEDORA HEADQUARTERS Location

- 500-YEAR FLOODPLAIN
- 100-YEAR FLOODPLAIN WITHOUT FLOOD CONTROL DIKE
- 100-YEAR FLOODPLAIN WITH FLOOD CONTROL DIKE
- TREES
- PARK BOUNDARY
- MEDORA CITY LIMITS

Proposed actions are shown in black, and existing conditions are shown in gray.
The highest flood level on record at Medora occurred in March 1947 and was caused by ice jams. The water level reached an elevation of 2,267.25 feet which was within 1 foot of the 100-year floodplain. Business was suspended and people were forced to evacuate. The peak flow took 22 hours to travel from a gauging station at the Marmarth highway bridge about 121 river miles upstream from Medora. This peak overflowed the riverbanks for 3 days and its speed averaged 5 1/2 miles per hour.



Water would flow over this low area during a 500-year flood

ON MICROFILM

ALTERNATIVES CONSIDERED BUT REJECTED

Several proposed actions and alternatives to proposed actions were considered, and, at some point in the general management and land protection planning process, were eliminated. For the most part, these alternatives were judged to be infeasible and/or impractical.

To deal with the parkwide problem of nonfederally owned mineral rights, an alternative was developed that would involve securing agreements from owners that they would develop these rights only through directional drilling from outside the park. This was rejected for several reasons, including the fact that only rights along the park boundary can be so developed and because it was subsequently determined that directional drilling into subsurface park lands should be discouraged. In addition, it would probably be difficult to get such agreements in many cases.

Another parkwide proposal involved developing a scenic connecting parkway between the north, Elkhorn, and south units of the park. This was dropped because of questionable need combined with the problems of high costs and serious environmental/ranching operation disturbances that would be involved.

In the north unit, several land protection alternatives were considered for dealing with the private lands at the east end of the unit. These included (1) acquiring all private lands in fee, (2) eliminating some of the private lands east of US 85 through recommending an acreage-reduction boundary change with fee or scenic easement acquisition of the remaining private lands, and (3) acquiring the private lands west of US 85, while eliminating all private lands east of the highway through recommending a boundary change that would more or less parallel the highway. All of these proposed alternatives were eliminated because it was determined that a less-than-fee interest was needed in the lands east of US 85 to control development and protect the view from the highway and park entrance area.

Past proposals to reconstruct all significant Theodore Roosevelt ranch structures and develop substantial visitor and staff facilities at and immediately adjacent to the Elkhorn unit were considered but not accepted as alternatives. Such development is believed excessive to all need, even with improved county road access. It would also greatly exceed the long-standing \$40,000 expenditure limitation, violate cultural resource reconstruction policies, and alter the quiet, pastoral environment.

Finally, one south unit alternative that was considered would have relocated the park headquarters area to a higher area, well above flood-prone Medora. This was discarded because of high costs, loss of existing investments, and the fact the town serves as the ideal and only appropriate location to contact and serve park visitors in this area. Any relocation site would be either well above or well removed from the town and the present headquarters location.

PLAN IMPLEMENTATION

CONSTRUCTION PRIORITIES

Table 2 lists construction projects by priority. This list is only a tentative guide and is based on conditions known as of 1985 and in anticipation of projected funding in the future.

ACTIONS AND COSTS

Development, staffing, and operations costs are shown in table 3 (more detailed information can be found in appendix C). Development costs are given in gross 1985 dollars. The additional personnel (park staffing) required to implement and support this plan on an ongoing basis is shown in terms of full-time equivalents (FTEs). In other words, a development or management action that has been estimated to require an additional full-time employee for a year is shown as 1.00 FTE. Two employees required for six months each would also be shown as 1.00 FTE.

Table 2: Construction Priorities

Project by Priority	1	2	3	4	5	6	7	8	9	10	Future
1. <u>North Unit (Package 113)</u>											
Provide flood-warning systems/evacuation plans	A	P	C								
Construct employee housing	A	P	C								
Construct visitor contact building, redesign parking, and improve utilities	A	P	C								
Enlarge maintenance building, construct equipment storage building, and renovate camp-tender residence	A	P	C								
Floodproof Squaw Creek campground and picnic area buildings	A	P	C								
Relocate bison corral	A	P	C								
Provide group horse camp	A	P	C								
Renovate radio tower	A	P	C								
Enlarge Squaw Creek picnic area parking	A	P	C								
Provide handicap-accessible trail	A	P	C								
Develop canoe/snowmobile access	A	P	C								
Bury overhead utility lines	A	P	C								
2. <u>South Unit (Package 164)</u>											
Provide flood-warning systems/evacuation plans				A	P	C					
Construct flood-control dike in Medora				A	P	C					
Install fire suppression systems in Maltese Cross cabin and visitor center				A	P	C					
Floodproof comfort station at Peaceful Valley ranch and relocate sewage treatment above 100-year floodplain at Peaceful Valley ranch and Cottonwood campground				A	P	C					
Floodproof existing structures and relocate sewage treatment at Cottonwood campground above 100-year floodplain				A	P	C					
Install two floodproof vault toilets at Peaceful Valley picnic area and three along loop road				A	P	C					
Fix solar heating system at Painted Canyon and reduce size of sewage lagoon				A	P	C					
Replace pavement on Buck Hill road				A	P	C					
Redesign Cottonwood campground and improve circulation for Peaceful Valley picnic area				A	P	C					
Upgrade bison corral				A	P	C					
Make Skyline trail handicap accessible				A	P	C					
Develop canoe/snowmobile access at Medora				A	P	C					
Develop interpretive trail at Painted Canyon; trail from Painted Canyon to Buck Hill				A	P	C					
Provide trailhead parking and trail west of Little Missouri River				A	P	C					
Develop Medora overlook trail				A	P	C					
Relocate east entrance station				A	P	C					
3. <u>Elkhorn Unit (Package 208)</u>											
Provide access road, parking, and flood-warning system/evacuation plan							A	P	C		
Construct picnic area, floodproof vault toilet, drill water well, and provide highway signing							A	P	C		
Construct small storage building, three tent platforms, small vault toilet, and cold water shower.							A	P	C		
Delineate historic building foundations, trail for handicapped							A	P	C		

A = Advance Planning
P = Project Planning
C = Construction

Table 3: Summary of Development/Staffing/Operations Costs

<u>Location - Description</u>	<u>Development Cost</u>	<u>Staffing-FTEs</u>	<u>Operations Cost</u>
<u>NORTH UNIT</u>			
<u>Resource Management</u>			
Relocate bison corral	\$ 224,000	.07	\$ 4,100
Floodproof Squaw Creek campground/picnic area	213,000	.02	800
Provide flood-warning systems/evacuation plans	<u>24,000</u>	<u> </u>	<u> </u>
Total	\$ 461,000	.09	\$ 4,900
<u>Vistor Use</u>			
Provide group horse camp	\$ 726,000	.53	\$18,600
Bury overhead utility lines	350,000		
Construct visitor contact building/parking	2,198,000	1.35	44,471
Provide canoe/snowmobile access	208,000	.07	2,010
Utility additions and improvement	114,000		
Enlarge picnic area parking	39,000	.06	1,520
Develop trail for handicapped	<u>23,000</u>	<u>.06</u>	<u>2,100</u>
Total	\$3,658,000	2.06	\$68,701
<u>Operations</u>			
Construct employee housing	\$ 580,000	.20	\$ 8,400
Construct maintenance building	105,000	.20	8,400
Construct equipment storage	97,000	.05	2,100
Renovate radio tower	44,000		
Renovate CCC camp- tender residence	34,000	.02	840
Enlarge sewage lagoon	<u>27,000</u>	<u> </u>	<u> </u>
Total	\$ 887,000	.47	\$19,740
Totals - North Unit	\$5,006,000	2.62	\$93,341

<u>Location - Description</u>	<u>Development Cost</u>	<u>Staffing-FTEs</u>	<u>Operations Cost</u>
<u>ELKHORN UNIT</u>			
<u>Resource Management</u>			
Delineate historic building foundations	\$ 13,000	.02	\$ 840
Emphasize natural scene		.03	3,000
Provide flood-warning system/evacuation plan	<u>8,000</u>	<u> </u>	<u> </u>
Total	\$ 21,000	.05	\$ 3,840
<u>Visitor Use</u>			
Construct access road and parking	\$122,000	.30	\$14,400
Drill water well	66,000		
Provide floodproof vault toilet	45,000	.50	21,000
Develop trail for handicapped	27,000	.10	4,200
Provide 5-site picnic area	15,000		
Provide highway signing	13,000	.02	840
Provide tour folder and more personal tours		.40	7,947
Monitor camping demand	<u> </u>	<u>.01</u>	<u>150</u>
Total	\$288,000	1.33	\$48,537
<u>Operations</u>			
Provide small storage building	\$ 16,000		
Provide small vault toilet cold water shower, and three tent platforms	<u>5,000</u>	<u>.71</u>	<u>29,550</u>
Total	\$ 21,000	.71	\$29,550
Totals - Elkhorn Unit	\$330,000	2.09	\$81,927

<u>Location - Description</u>	<u>Development Cost</u>	<u>Staffing-FTEs</u>	<u>Operations Cost</u>
-------------------------------	-------------------------	----------------------	------------------------

SOUTH UNIT

Resource Management

Construct flood control dike in Medora	\$ 451,000	.20	\$ 8,400
Floodproof structures in Cottonwood campground	451,000	.04	1,600
Relocate sewage treatment, construct floodproof comfort station at Peaceful Valley ranch	293,000	.20	8,400
Provide 2 floodproof vault toilets at Peaceful Valley picnic area	81,000		
Provide flood-warning systems/evacuation plans	32,000		
Upgrade bison corral	240,000	.28	12,400
Restore and relocate east entrance structures	67,000	.22	8,700
Install fire suppression system in Medora visitor center	27,000		
Install fire suppression system in Maltese Cross cabin	8,000		
Total	\$1,650,000	.94	\$ 39,500

Visitor Use

Fix solar heating system at Painted Canyon	\$ 242,000	.35	\$ 6,374
Replace pavement on Buck Hill road	47,000	.20	8,400
Construct trail west of river	193,000	.14	5,800
Construct Medora overlook trail	183,000	.30	2,810
Redesign Cottonwood campground	174,000	.18	4,900
Improve circulation - Peaceful Valley picnic area	172,000		
Build vault toilets - loop road	135,000	.40	16,800
Reduce size of sewage lagoon - Painted Canyon	56,000		
Develop interpretive trails - Painted Canyon	42,000	.70	9,957
Develop trailhead parking west of river	37,000	.02	400

<u>Location - Description</u>	<u>Development Cost</u>	<u>Staffing-FTEs</u>	<u>Operations Cost</u>
<u>SOUTH UNIT (cont.)</u>			
<u>Visitor Use (cont.)</u>			
Develop canoe/snowmobile access at Medora	29,000	.01	150
Make Skyline trail handicap accessible	11,000	.02	400
Develop trail - Painted Canyon to Buck Hill	10,000	.03	600
Provide maintenance for all new trails		.58	24,300
Provide more interpreta- tion on Buck Hill		.35	6,654
Monitor or allow canoe camping		.01	150
Total	\$1,331,000	3.29	\$ 87,695
<u>Operations - None</u>			
Totals - South Unit	<u>\$2,981,000</u>	<u>4.23</u>	<u>\$127,195</u>
Grand Totals - All Units			
Staffing/Operations		8.94	\$302,463
Development	\$8,317,000		

Notes:

Cost estimates include funds for archeological and historic section 106 compliance.

Total development cost estimates are class "C", which are conceptual in nature and based on similar facilities in other parks. These include construction, material, labor, advance and project planning, construction supervision, and facilitating administrative services costs.

FUTURE PLANS AND STUDIES NEEDED

The following resource-specific plans and surveys are needed; in some cases, work is underway or draft plans exist:

- Various wildlife management plans
- Fire management plan
- Historic resource study
- Collections management plan
- Water resources management plan
- Cultural resources management plan
- Archeological survey
- Interpretive prospectus
- Wayside exhibit plans
- Minerals management plan
- Wilderness/backcountry management plan
- Hydraulic study of effects of proposed dike on floodwaters at Medora

The following cultural resource plans and reports are also needed, although not as greatly as the cultural resource items listed above:

- Historic structures preservation guide
- Historic American Buildings Survey
- Historic furnishing reports

Although a historic structure report has been completed on the extant historic structures (NPS 1980) and studies have been made on the Elkhorn ranch and Maltese Cross cabin (Mattison 1950, 1960; NPS 1959), as well as an administrative history (Petty 1965, Harmon 1985), further cultural study of the park is needed. To promote better management and broader interpretation, a historic resource study is needed. Such a study will add to the knowledge of the homesteading that occurred in the park, could provide further information on the Long X cattle trail and beef corral area, and could determine the importance of the CCC stone quarry in the north unit. A special study could be programmed for identifying individual homestead sites.

The programmed parkwide archeological survey should be completed as soon as possible to comply with section 110(a)(2) of the National Historic Preservation Act as amended. Such a survey will aid in the assessment of National Register nomination needs, which is also necessary for extant structures.

THE ENVIRONMENT

NATURAL RESOURCES

Geology/Terrain

Theodore Roosevelt National Park provides an outstanding representation of the North Dakota badlands, formed by the Little Missouri River. Much of the park is a maze of canyons, buttes, and coulees. Elevations in the park range from 1,958 feet along the river in the north unit to 2,850 feet at Buck Hill in the south unit. Erosion has produced an infinite variety of landforms interspersed by buttes and ridges, with rolling prairies extending outward from the rim of the badlands.

Rock formations of three ages are found in the park; however, fossil remains of ancient flora and fauna are almost exclusively representative of the Paleocene epoch. Fossils are rare, but occasional shells of freshwater clams and snails and the skeletal remains of archaic alligators have been found in the North Dakota badlands. Petrified stumps of ancient coniferous trees are more common; a concentration of these is found in the western portion of the south unit. These remains were formed in the silica-rich environment of volcanic ash which covered the trees; silica replaced the cellulose content.

Trees and other plants that died and were buried by alluvial sediments were transformed by pressure into seams of lignite coal, which are found throughout the badlands. Lignite seams ignited by natural sources baked overlying sediments to form a brick-like, red stone known locally as scoria.

Vegetation/Soils

Soils found within the park are regosols, developed from excessively drained, medium-textured, and calcareous parent material. Textures range from loams to clay loams. These soils can cause problems when water is present. The saturated soils tend to slump and slip, which can result in difficulties with road construction and maintenance, such as at Buck Hill, and cliff and hillside stability, such as at Painted Canyon.

The vegetation is adapted to the soil types and the semiarid climate and varies according to slope, aspect, soil, and moisture availability. The vegetation can be grouped into six physiographic/vegetational classes including upland grasslands, dry breaks, wooded draws, sagebrush and grassland bottoms, floodplain forests, and a riparian class (see table 4 for vegetation composition in park areas).

The distribution and abundance of the natural vegetation have been changed by activities such as grazing, cultivation, and protection from fire. Leafy spurge, Canada thistle, yellow sweet-clover, brome-grasses, and other exotic plants are widespread.

Table 4: General Vegetation Composition in Existing Developed Areas

<u>Location</u>	<u>Common Plants</u>	<u>Physiographic/Vegetation Class</u>
<u>North Unit</u>		
CCC camp-tender residence	Wheatgrasses, needlegrasses, silver sagebrush, fringed sage	Sagebrush-grassland bottom
Squaw Creek picnic area and campground	Cottonwood, green ash, wheatgrasses, wildrye, juniper	Floodplain forest
Squaw Creek nature trail	Cottonwood, green ash, wheatgrasses, needlegrasses, wildrye, silver sagebrush, fringed sage	Sagebrush-grassland bottom/floodplain forest
District headquarters-entrance area	Wheatgrasses, needlegrasses, sedges, maintained lawn	Upland grassland/lawn
District headquarters-housing area	Wheatgrasses, needlegrasses, sedges, silver sagebrush, snowberry, lawns	Upland grassland/sagebrush-grassland bottom/lawn
District headquarters-maintenance area	Wheatgrasses, needlegrasses, sedges, silver sagebrush, snowberry, lawns, cottonwood	Upland grassland/sagebrush-grassland bottom/lawn
Sewage lagoon area	Wheatgrasses, wildrye, silver sagebrush, chemically controlled weeds and brush	Sagebrush-grassland bottom
Overhead power lines	Wheatgrasses, needlegrasses, wildrye, fringed sage, little bluestem, sideoats grama, saltbush, cottonwood	Upland grassland/dry breaks/sagebrush-grassland bottom/floodplain forest
<u>Elkhorn Unit</u>		
Historic structure locations	Cottonwood, wheatgrasses, prairie sandreed, wildrye, fringed sage, juniper	Floodplain forest
<u>South Unit</u>		
Maltese Cross cabin	Smooth brome, lawn, cottonwood	Floodplain forest/lawn
East entrance station	Prairie dog weed, blue grama, threeawn, wheatgrasses, needlegrasses	Dry breaks/upland grassland
Painted Canyon visitor center	Maintained lawn, seeded exotic and native grasses	Lawn
Bison corral	Wheatgrasses, needlegrasses, green ash, chokecherry silver sagebrush, little bluestem	Upland grassland/wooded draw
Horse corral	Wheatgrasses, needlegrasses, sedges silver sagebrush, snowberry	Upland grassland
Cottonwood campground	Cottonwood, juniper, green ash, wildrye, wheatgrasses, sedges, silver sagebrush	Floodplain forest/sagebrush-grassland bottom
Skyline trail	Smooth brome, western wheatgrass	Upland grassland
Peaceful Valley picnic area	Green ash, cottonwood, chokecherry, wheatgrasses, wildrye, snowberry	Woody draw
Buck Hill	Wheatgrasses, needlegrasses, sideoats grama, little bluestem, creeping juniper, juniper	Upland grassland/dry breaks
Painted Canyon sewage lagoon	Wheatgrasses, prairie junegrass, fringed sage, needlegrasses	Upland grassland
Peaceful Valley ranch	Cottonwood, juniper, mowed lawn, silver sagebrush, wheatgrasses	Floodplain forest/sagebrush-grassland bottom/lawn
Headquarters area	Seeded/sodded, mowed lawns, cottonwood	Sagebrush-grassland bottom/lawn

Sites with deep, well-drained soils on moderately to gently rolling areas make up the upland grasslands. Wheatgrasses, needlegrasses, blue grama, and upland sedges dominate these areas. A variety of forbs make up about 10 percent of the herbage, while shrubs such as snowberry and prairie rose are less abundant.

The dry breaks are characterized by bare, eroded soils or scoria surfaces. Plant life is limited with sparse stands of little bluestem, blue grama, sideoats grama, and red threeawn. Shrubs such as creeping juniper, saltbush, and greasewood are scattered.

Wooded draws are dominated by Rocky Mountain juniper, green ash, and chokecherry. Common understory species include snowberry, skunkbush sumac, sedges, wildrye, ricegrass, mosses, and lichens. In the Achenbach Hills, some upland draws are dominated by quaking aspen.

The sagebrush and grassland bottoms are formed by alluvial deposits from the river and its larger tributaries. These higher floodplains and river terraces are dominated by silver sagebrush, western wheatgrass, needle and thread, and blue grama. Fringed sage, prairie rose, and snowberry are minor, woody components.

Floodplain forests are found along perennial watercourses and are dominated by plains cottonwood. Other important species include Rocky Mountain juniper, green ash, chokecherry, wildrye, wheatgrasses, and sedges. Large expanses in the north unit are devoid of woody understory and instead have a dense cover of grasses and forbs.

Riparian vegetation is generally a narrow band between the floodplain forest and a perennial stream. A variety of willows are the dominant vegetative species. Wildrye and sometimes prairie cordgrass or rushes may be found. The willows are generally low growing and bushy in appearance, as they are periodically flooded or scoured by the seasonal actions of the river and streams.

There are no prime or unique agricultural lands within the park.

Wildlife

Large mammals found within the park include white-tailed deer, mule deer, bison, elk, pronghorn, wild horses, longhorn steers, and a small band of bighorn sheep. A program to supplement the bighorn band is being developed, while the elk reintroduction is still considered to be in an experimental stage.

Mammalian predators found in the area include coyote, bobcat, red fox, badger, and weasel. Sightings of mountain lion have been reported. Many other mammals inhabit the park, including small rodents, skunks, beavers, porcupine, and prairie dogs.

Many birds of prey nest in the park. Those that nest on steep-sided buttes or in large trees include golden eagles, prairie falcons, kestrels, turkey vultures, great-horned owls, screech owls, and red-tailed and rough-legged hawks. Marsh hawks and burrowing owls are ground nesters. A great variety of passerine and four gallinaceous birds also nest within the park.

Threatened and Endangered Species

There are no plant species in the park that are currently included or proposed for inclusion on the federal endangered or threatened species lists. However, two species--bursage (Ambrosia acanthicarpa) and desert wire lettuce (Stephenomeria runcinata) both occur in the park, and are listed as endangered by the North Dakota Natural Heritage Program. Three other species found in the park--alkali sacaton (Sporobolus airoides), squirreltail (Sitanion hystrix), and double bladderpod (Physaria brassicoides)--are considered threatened by the state.

Currently there are no wildlife species that inhabit or could inhabit the park that are considered as threatened on the federal list. The federally endangered black-footed ferret (Mustela nigripes); which is associated with prairie dog towns, could possibly inhabit the park, but its occurrence is unknown. The peregrine falcon (Falco peregrinus) formerly nested in the badlands, but nesting has not been recorded recently. Two winter sightings have been reported, but subsequent nesting has not been observed. Recently listed as federally endangered is the interior least tern (Sterna antillarum athalassos); little is known of this species, but the park may serve as habitat. The piping plover (Charadrius melodus) has recently been listed as federally threatened, but this species has not been sighted in the park.

The endangered gray wolf (Canis lupus) has been extirpated from the area, and because livestock production is a major economic base for the region, its reintroduction or reinhabitation is unlikely. The endangered bald eagle (Haliaeetus leucocephalus) is commonly seen along the river during spring and fall migration, while the endangered whooping crane (Grus americana) is rarely spotted. Within the park, both species use riparian habitat along the river only briefly while migrating.

In addition, two federal category 2 species have been sighted in the park. (Category 2 means that information indicates the possible appropriateness of listing these species as threatened or endangered; however, further research and field study are needed.) The ferruginous hawk (Buteo regalis) and Swainson's hawk (Buteo swainsoni) probably nest in the vicinity of the park. Other category 2 species for which the park may serve as habitat include the pallid sturgeon (Scaphirhynchus albus), long-billed curlew (Numenius americanus), and swift fox (Vulpes velox). The lynx (Felis lynx), also on this list, may have been in the area in the past but is not at the present time.

Species listed as endangered by the North Dakota Natural Heritage Program and of interest to western North Dakota include the black bear (Ursus americanus), fisher (Martes pennanti), and river otter (Lutra canadensis). None of these has been recently recorded in the park. Two state-listed threatened species, the golden eagle (Aquila chrysaetos) and prairie falcon (Falco mexicanus), are commonly seen and nest in the park; little is known regarding the occurrence, distribution, and use of the park by the mountain lion (Felis concolor) or merlin (Falco columbarius).

Because overlapping of these sensitive species between federal and state lists is common, they have been recorded here only once under the most protective classification. Little is known about many of these species' relationship to the park environment, although efforts are being made to gather more data. Aerial surveys were made in 1983 and 1984 and are scheduled every two to three years to locate raptor nest sites; ground surveys will be made annually to monitor reproductive success. Over the past several years, park staff and university researchers have surveyed, collected, and identified plant specimens and have located rare flora within the park. Occasional seining is conducted in the perennial streams to collect specimens of common fishes and to locate rare species.

Water Resources

The major surface water resource in the park is the wild and free-flowing Little Missouri River and its tributaries. The river flows through the north and south units and along the eastern boundary of the Elkhorn unit. Because of its designation as a scenic river by the state of North Dakota, diversions and impoundments on the main stem are prohibited. There are 13 developed springs and 18 wells in the park. Data on flow rates and chemical characteristics from these sources and the river are incomplete. The primary concern regarding water resources relates to potential pollution of streams and underground aquifers from oil and gas development and chemical transportation. Oil and gas development includes waste salt water injection wells, storage and treatment facilities, and gas pipelines, including pipelines buried under the Little Missouri River bed. Seepage of crude oil into a major Little Missouri tributary upstream from the park has been reported.

Floodplains and Wetlands

In 1984 the U.S. Geological Survey located the 100- and 500-year floodplains of the Little Missouri River in the Medora, Cottonwood campground, Peaceful Valley, Elkhorn ranch, Squaw Creek campground, and north unit headquarters areas. Permanent survey markers were installed in appropriate locations. The National Park Service then mapped these floodplains for use in future planning. A large portion of Medora, including the park headquarters, the Medora visitor center, Maltese Cross cabin, and most of the park housing area, are within the 100-year floodplain, as are the Cottonwood campground, the Peaceful Valley area,

and all the historic remains in the Elkhorn ranch unit. In addition, the Squaw Creek campground/picnic area (including all historic structures) and approximately one-half of the north unit bison corral are in the 100-year floodplain.

The Peaceful Valley ranch and picnic area are in the Paddock Creek 100-year flash-flood area, and the Squaw Creek campground/picnic area is within the Squaw Creek 100-year flash-flood area. Flash floods could also be experienced in the Knutson Creek drainage, but no developments other than trails are located along this stream. Within these three flash-flood areas are segments of several trails, short portions of which cross Squaw, Paddock, and Knutson creeks. (Refer to DCP maps for Squaw Creek campground and Peaceful Valley, and the General Development Plan/Flood Data maps for location of these drainages and trails.)

Above the Little Missouri bottomlands, the tributary streams, prone to flash floods, have narrow channels in steep-sided canyons where flash floods would be quite destructive and dangerous. No facilities except trails are located in these areas. Close to the river, where they pass through developed visitor use areas, the tributary stream floodplains become rather broad. However, USGS calculations for depths and velocities during 100-year flash floods at these locations indicate there would be a hazard to persons and property.

The danger in flash flood and other high hazard areas is extremely difficult to assess because of the many variables involved. This highlights the importance of having adequate information and analysis on each flash-flood area in question so that rational decisions can be made about what developments, if any, will be permitted.

NPS final procedures for implementing EO 11988 and EO 11990 exempt picnic and camping facilities and their associated sanitary facilities from compliance with the orders, provided that floodproofing is a consideration in their design or construction. All entrance, access, and internal roads to or within existing developments are also exempt from compliance with the floodplain orders.

The U.S. Army Corps of Engineers, through the Remote Sensing Lab at the University of Nebraska-Omaha, has mapped the wetlands along the Little Missouri River using high altitude LANDSAT satellite imagery. A very broad classification was used, which separated open water, marsh, and riparian habitats. The last two are most important for wetland classification, and the data showed that about 66 acres of widely scattered riparian wetlands occur in the north unit, and 57 acres occur in the south unit. No marsh wetlands were recorded along the river or elsewhere in either unit. The riparian wetlands would nearly correspond to the riparian physiographic/vegetational class discussed previously.

An informal aerial reconnaissance along the river by the U.S. Fish and Wildlife Service resulted in an opinion that some palustrine forested wetlands occurred in the park, but that they are probably insignificant in total area and value as wetlands habitat.

Neither this survey nor the LANDSAT photography was ground-truthed. Wetlands will be preserved in accordance with EO 11990 and by the normal park procedures of environmental assessment for any major management activity or new development.

Air Quality

As far as can be determined, the air quality of the park has been excellent until recently. Natural transient pollution from wildfires, blowing dust, and burning coal veins occurred with no significant long-lasting impacts on the environment. However, with the demand for fossil fuels and electricity increasing and the potential for the production of both in the Williston Basin, the basin has become a major energy development area, with great potential for negative impacts on aesthetic and natural environments.

The park's first air pollution monitoring equipment--a high volume, total suspended particulates sampler--was installed in the south unit in 1974. In 1977, the park prepared its first documentation of air quality and related values, including historical quality and significant vistas. Also, in accordance with the 1977 Clean Air Act amendments, all three units of the park were designated a mandatory class I area for purposes of preventing significant deterioration of air quality.

In 1979, a monitoring facility to sample sulfur dioxide, hydrogen sulfide, total suspended particulates, and fine particulates was placed in the north unit, and the park was issued a teleradiometer to measure visual range reduction in the south unit.

Following enactment of the 1977 Clean Air Act amendments, the Environmental Protection Agency published visibility protection regulations. Those regulations gave the secretary of the interior an opportunity to identify scenic views from class I areas of specific landmarks or panoramas located outside the class I areas that were important or integral to the park visitor's visual experience. Identification of the integral vistas would not have assured protection of air quality in those vistas. However, it would have required states such as North Dakota to include vistas identified by the secretary in their state implementation plans and to consider the costs and benefits of preventing visibility degradation that might affect those vistas before deciding to permit new air pollution sources.

Using draft guidelines developed by the National Park Service's Air Quality Division, the park prepared a list of integral vistas in 1980. This list included viewpoints such as Badlands Overlook, Bentonitic Clay, Boicourt, Buck Hill, Elkhorn Ranch, Johnson's Plateau, Little Missouri, Man and Grass, Medora Overlook, Oxbow, Painted Canyon, and Ridgeline Nature Trail. The vistas included Badland Terrain, Kildeer Mountains, Bullion Buttes, Sentinel Butte, South River Bluffs, DeMores Chateau, Custer National Grassland Plateau, Stock Butte, Maltese Cross Cabin, Little Missouri Town Site, West River Crossing (Kellogg Ranch), and

Little Missouri National Grassland. The draft guidelines and preliminary list of integral vistas were published in the Federal Register in January 1981 (46 CFR 3646) and April 1981 (46 FR 23389). The list of vistas was also given to the state of North Dakota.

Following completion of a detailed regulatory impact analysis, the secretary of the interior on October 25, 1985, decided not to publish a final regulation officially designating integral vistas. The secretary emphasized that his decision did not reflect a judgment that integral vistas are not worthy of protection. He also made it clear that the Park Service will continue to have the responsibility to participate in individual state permitting and regulatory decisions, and through this participation, have an opportunity to raise concerns regarding protection of scenic views. The secretary believes that parks can work cooperatively with states and private interests under existing regulatory programs to resolve air quality related resource conflicts.

To date, approximately 1,500 producing oil and gas wells have been drilled in the two counties, which include the three park units. Sources of air pollution from this development include hydrogen sulfide and sulfur dioxide from gas flaring, hydrogen sulfide associated with escaping natural gas, and smoke and particulates from reserve pit burning and construction.

From 1982 through 1984 the Park Service responded to seven PSD (prevention of significant deterioration) permit applications for energy conversion and natural gas sweetening facilities within a 125-mile radius of the park. NPS computer modeling of emissions predicted that some class I air quality standards (increments) within the park would be exceeded, although the standards at the source areas would not necessarily be violated. However, since the Park Service also determined that visibility and pollution-sensitive plant species would not be significantly affected, the Department of the Interior issued a certification of no unacceptable adverse impact on the park for these facilities (1984). As a result, the state has granted construction permits for six of the seven plants (one had withdrawn its application).

Air quality activities in the park are numerous. They include monitoring visibility and air quality, researching plant effects, mapping and photographing visual intrusions and new energy developments near the park, reporting violations of state air pollution standards, responding to public inquiries regarding air pollution in the park, contacting news media and the public, coordinating with the State Industrial Commission regarding reduction of visual and other impacts of energy development, and cooperating with the Forest Service and Bureau of Land Management regarding oil and gas permit stipulations and review of planning documents. In addition, the park staff, in cooperation with the NPS Rocky Mountain Region and Denver-based Air Quality Division, will continue to review air quality permit applications submitted to the North Dakota Department of Health to identify potential air quality problems. This plan recognizes that development around the park will continue but seeks to minimize harmful impacts wherever possible.

CULTURAL RESOURCES

Archeological Resources

Only a small portion of the park has been surveyed for archeological resources. In 1968 James Sperry of the North Dakota State Historical Society surveyed parts of the north and south units, and located 37 prehistoric Indian sites. Another 8 prehistoric Indian sites were found by Ralph Hartley of the Midwest Archeological Center in the 1979-80 period during a survey for the realignment right-of-way of 6 miles of the north unit (NPS 1981). Approximately 30 to 40 homestead sites have been documented by park personnel, but none of these areas has been surveyed. Basically, the Elkhorn unit has received the greatest archeological attention.

Historic Resources

The park was originally established for its historical association with Theodore Roosevelt and the open range cattle industry. The principal Roosevelt-related historic site is the Elkhorn ranch location, which has no surviving structures and only minimal archeological remains, including those of the ranch house, stable, blacksmith shop, dugout, well, chicken pen, shed, and corral. Shallow ground indentations exist where the structures' foundations were situated. For a few structures, some rough foundation stones remain. Some posts, pieces of wood, stone pillars (ranch house), etc. have been removed. Elkhorn served as the headquarters for Roosevelt's second ranch from late 1884 to 1890. The Long X cattle trail, which crosses a portion of the north unit, was used to drive Texas longhorn cattle into McKenzie County, particularly to the Long X ranch operated by the Reynolds brothers. A third site in the south unit was purportedly used by the Marquis de Mores as a corral (generally known as the beef corral).

The Peaceful Valley ranch in the south unit also represents the ranching era and dates to 1885. By 1920 it was operating as a dude ranch, which was when the ranch received its name. Currently, the ranch consists of a ranch house, bunk house, and a barn-equestrian center, and serves as the base for the horse concession.

The Maltese Cross cabin, located near the Medora visitor center, still remains from the first Roosevelt ranch, south of Medora.

The other historic theme connected with the park involves the federal relief programs and their projects during the depression years of the 1930s. The sites of CCC camps are in both the north and south units of the park. From 1934 to 1941 the CCC built the following north unit structures: the camp-tender cabin, two picnic shelters (made of stone and heavy timbers) at the Squaw Creek campground/picnic area, and the Little Missouri River overlook shelter. The CCC obtained some of their building material from a stone quarry, which is located in the north unit. The ERA constructed the south unit's old east entrance station, its stone

privy, and the stone pylon, which was relocated to the Painted Canyon area in 1968.

Collections

The park museum collections, which are housed in both the Medora visitor center and the Maltese Cross cabin, reflect the natural and human history themes of the park. These objects represent an ongoing effort to assemble acquisitions to successfully interpret both themes. In addition, a small library collection is stored in the visitor center. These books, which cover a range of natural and historical subjects, are for use by the staff, Theodore Roosevelt Nature and History Association members, very interested visitors, and researchers.

RECREATION/VISITOR USE

Regional Recreation Resources and Uses

Most campers who stay in the vicinity of the north unit use Squaw Creek campground. There are no Forest Service or state campgrounds in the area. There are motels in nearby Watford City and a dude ranch immediately east of the unit. The access road for the dude ranch lies just south of and across US 85 from the entrance to the north unit.

When water conditions permit, some river canoeing occurs. Canoes can be rented from a private supplier just outside the north unit, although many users bring their own. Most trips begin upstream, and many canoeists do not take out until they have passed through the unit. In the winter, snowmobilers using the river also pass through the unit. The north unit is a destination for quite a few horse user groups. Hunting is not permitted in the park, but deer, elk, and small game hunting occurs on lands surrounding the north unit.

The Elkhorn unit is relatively isolated. There are no significant recreational developments anywhere near the unit. The closest campgrounds and motels are along I-94 and in Medora. As in the north unit, some river canoeing occurs when water conditions permit, while snowmobiling occurs on the river during the winter. Virtually all trips begin upstream, and many canoeists do not take out until they have passed through the unit. There is little horse use and only a minimum of small game hunting in the area surrounding this unit.

A significant amount of summer use occurs in the vicinity of Medora, gateway to the south unit. In addition to the Cottonwood campground, there are private campgrounds at Medora. A Forest Service campground with 37 units is located off I-94, 7 miles west of Medora. Sullys Creek State Primitive Park with 12 camping/picnicking sites lies to the south of Medora. There are several motels near the park headquarters and entrance in Medora.

Medora has a number of other attractions for visitors, including the Chimney Park State Historic Site/Picnic Area and the Chateau DeMores Historic Site.

As in the other two park units, some river canoeing occurs when water conditions permit. Canoes can be rented in the area, although many bring their own. Most trips begin immediately upstream, and most canoeists do not take out until they have passed beyond the south unit. In the winter, snowmobilers using the river pass through the park.

The south unit is also a destination for a number of horse user groups. There is no hunting in the park, but big and small game hunting is the principal recreational use of lands surrounding the unit.

Park Use Patterns and Trends

The principal activity of visitors to the park is sight-seeing by motor vehicle. Excluding those who stop only at the Painted Canyon area, most visitors drive at least a portion of the scenic park road in either the south or the north unit of the park.

Visitor Use Counts. Visitor counts have been recorded at the park since it was first opened in 1948, although the method of recording visitation has changed several times. Originally, entrance station employees made actual counts of both vehicles and visitors. When stations were not manned, counts were estimated.

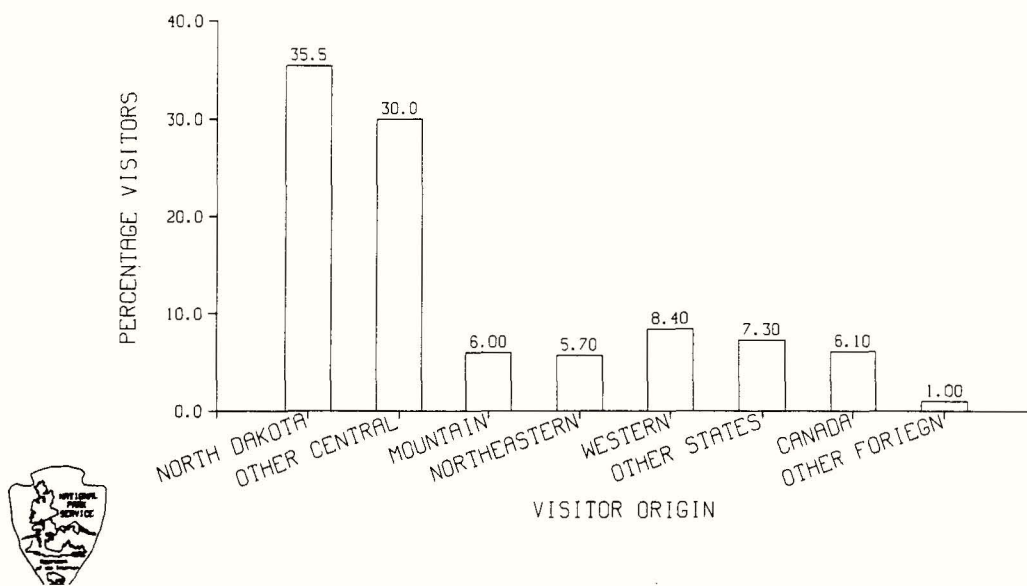
In recent years, traffic counters have been used to measure the number of vehicles. The early models provided unreliable counts because they used pneumatic tubes. Magnetic induction counters have now been installed and are providing much more reliable counts. Traffic counters are located on the incoming lanes at the north unit entrance station and the south unit entrance station, and on the entrance road to the Painted Canyon overlook/rest area.

Park visitation is currently measured in terms of number of visits. Theoretically, a visit is the entry of one visitor into the park one time. Thus, a family of four that visits the north unit once and the south unit twice has made 12 visits to the park. Visits are determined by multiplying traffic counts times the average number of visitors per vehicle. This average is revised occasionally, resulting in recorded changes in number of visits.

The last major change of vehicle occupancy multiplier was in 1983. Traffic counts that year decreased 16.1 percent from 1982 levels. However, the reported number of visits decreased by 38.3 percent because of the adjustment in the multiplier.

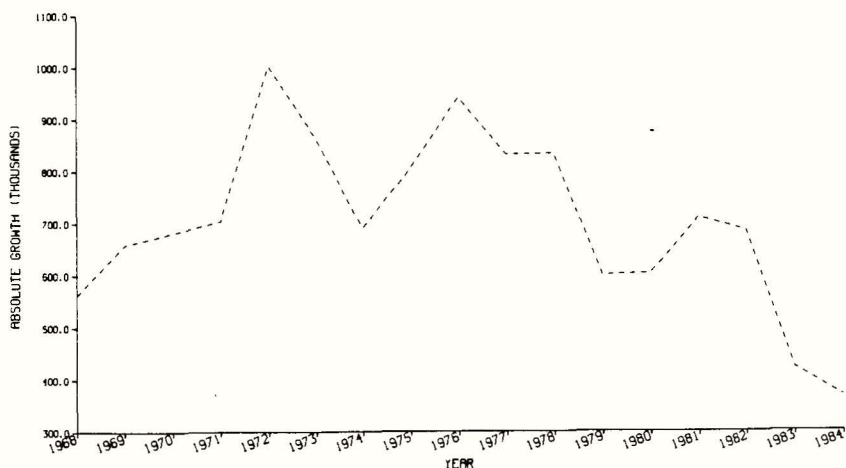
Visitor Origin and Length of Stay. As illustrated in the following graph, about one-third of the park visitors come from within the state; another third of the visitors are from other north-central states, especially Minnesota. The average length of stay at Painted Canyon is 18 minutes; in the south unit, 2.2 hours; and in the north unit, 2 hours.

VISITOR ORIGIN



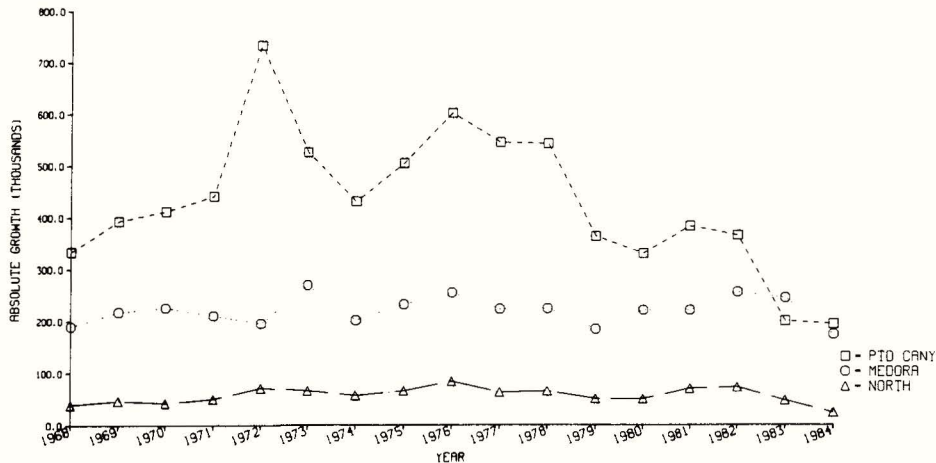
Past Use Levels. Up until I-94 opened in 1966, visitation in the park had been averaging about 250,000 visits per year. With the new interstate and the counts taken at the Painted Canyon rest area, visitation steadily increased until the first oil embargo in 1973. The peak year for visitation occurred in 1972 when 1,001,767 visits were recorded (see following graph). From 1973 through 1982, visitation averaged about 750,000 visits per year. Visitation dropped steeply in 1983 and 1984. As discussed above, the vehicle occupancy rate had been decreasing for several years. This rate was adjusted in 1983. Because of this adjustment, it is likely that over half of the reported 1983 drop actually occurred in previous years.

TOTAL RECREATION VISITS



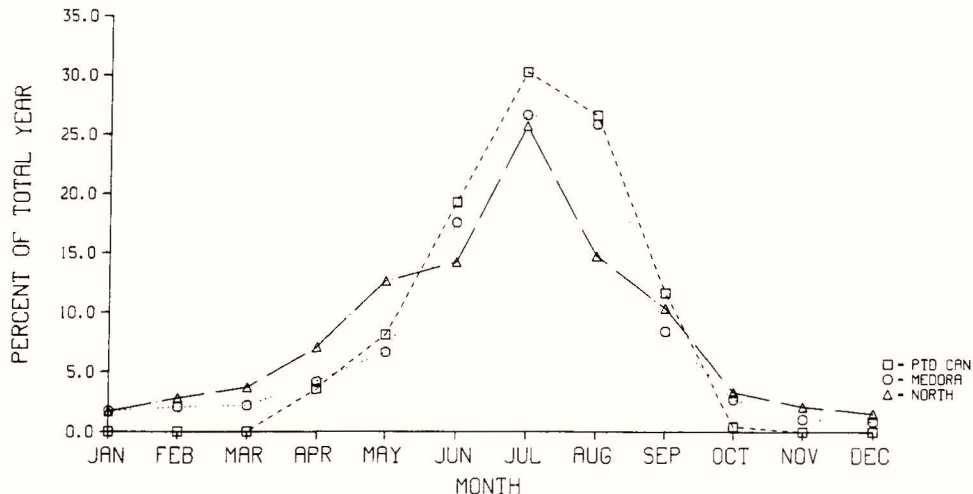
Use Levels by Area. As illustrated in the following graph, Painted Canyon accounted for 52 percent of the 1981-1983 visits, the south unit 37 percent, and the north unit 11 percent. However, when visitation is measured by visitor days, Painted Canyon accounted for only 12 percent, while 70 percent occurred at the south unit and 18 percent occurred at the north unit. The 1984 use levels for each of the three areas were lower than at any time in the previous 17 years.

ABSOLUTE CHANGE IN RECREATION VISITS



Peak Use Periods. A review of the visitor use records for the last 10 years shows July to be the peak visitation month. Since December 1982, the Painted Canyon area has been closed during the winter months. This closure has reduced recorded park visitation by approximately two-thirds from December through March. The following graph illustrates visitation for the 1983 season.

1983 SEASONAL USE



The peak visitation day of the week varies somewhat by location. At the south unit this usually occurs on a Saturday. At the north unit the peak day generally occurs on a Sunday due to heavy local use. At the Painted Canyon overlook, the peak day typically occurs on a weekday when interstate highway traffic is highest.

In 1984 the peak day at the south unit was September 2, when 1,920 visits were recorded (57 percent above the average daily use for the June through August period). The 1984 peak day at Painted Canyon was September 3, when 2,040 visitors stopped there (30 percent above the average summer day). The 1983 peak day for the north unit was August 22, when 662 visits were recorded (135 percent above the average summer day).

Projected Growth in Use. In computing present growth rate, data collected prior to 1968 cannot be used. The following events occurred in the three previous years:

- I-94 was opened and the old east entrance was closed.
- Entrance fees were imposed.
- Painted Canyon was opened and then temporarily closed due to slumping of the nearby slope.
- The south unit scenic loop road and the Buck Hill viewpoint were opened.
- The Burning Coal Vein had become a major attraction.

Linear regression analysis was performed on growth from 1968 through 1984. For the Painted Canyon overlook, this indicated a long-term decrease of 12,000 visits per year (equivalent to 6 percent of 1984 visits). Medora is experiencing a decrease of 1,000 visits per year (1 percent of 1984 visits).

Due to major road construction, 1984 visitation was excluded in analyzing visitation to the north unit. The long-term growth rate at that unit is 1,000 visits annually (equivalent to 2 percent of 1983 visits).

The reasons for the decreases in visitation at Painted Canyon and Medora are not fully understood. For future planning purposes, perhaps the best assumption is that visitation will continue at approximately the present levels. The north unit use may well continue to grow about 2 percent a year.

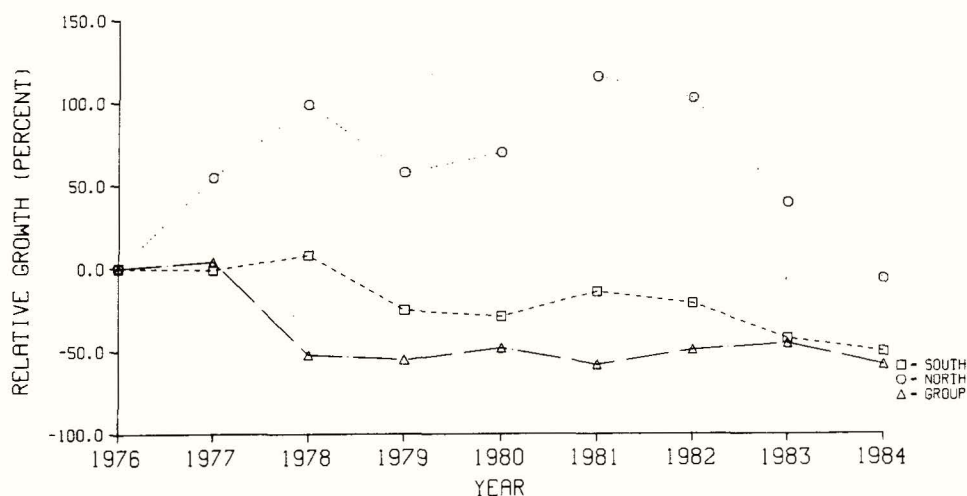
Campground Use and Future Growth. The numbers of campers are determined from campground registration records during the fee collection season and by actual counts during the off-season when fees are not collected. Although group camping is not reported by area, about 70 percent occurs in the south unit.

Camping is a major recreational activity. In 1977 camper nights represented 13 percent of visits to the north unit. This has remained

fairly stable and was 14 percent in 1983. In contrast, equivalent statistics for the south unit reflect a decrease from 15 percent in 1977 to 11 percent in 1984. This decrease may have been due to the development of commercial campgrounds adjacent to the park or to the increase in park camping fees.

As shown in the following graph, south unit camping and group camping have dropped 50 percent and 58 percent, respectively. In contrast, north unit camping use grew 40 percent through 1983.

RELATIVE CHANGE IN CAMPGROUND VISITS

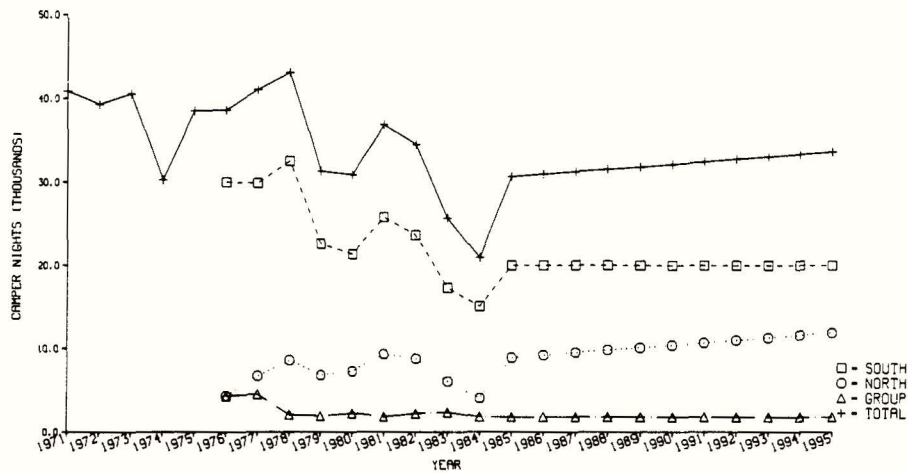


Linear regression analysis was used to determine long-term (1976 through 1984) growth rates. Group camping is currently decreasing somewhat (16 percent of 1984 use). Individual camping in the south unit is decreasing by about 2,000 camper nights annually (2 percent of 1984 use). As with total visitation, the safest assumption is that future camping will continue at present levels.

Due to major road construction, 1984 visitation was excluded in analyzing camping in the north unit. The long-term growth rate at that unit is 300 camper nights annually (5 percent of 1983 visits). This growth rate is more than double that of the growth rate of total visitation to the north unit. This may reflect an increase in nonlocal use.

Backcountry campers are required to obtain a permit, and use counts are taken from those permits. Day hikers are not recorded or reported. The concessioner maintains records of use on the guided trail rides, and use is reported in the annual concession report.

PROJECTED GROWTH IN CAMPGROUND VISITS



Interpretive Resources and Programs

The north unit is approached via US 85. As the road descends into the deep valley of the Little Missouri River from both the north and south, pulloffs provide the opportunity for travelers to view the badlands, canyons, and buttes. One pulloff north and another one south of the park entrance are signed with identical plaques that interpret the badlands but do not mention the park. Despite two other signs that mention the distance to the park entrance, highway travelers may pass the unit's entrance without any knowledge of the park or the opportunities it provides.

Upon entering the north unit, there is an entrance fee kiosk, a small frame ranger station, a trailer that serves as an interim, seasonal visitor center, and a small parking area. Most of the trailer space is devoted to visitor use. It is furnished with old exhibits (ca. 1959), an audiovisual unit, and an information desk, all salvaged from the Medora visitor center when it was remodeled. There is no orientation exhibit specific to the north unit. The remainder of the trailer space contains the district library, district herbarium, cooperating association stock storage, and a small work space for the interpreters.

In early September each year, the district interpreter must move to the (rather poorly) heated ranger station, where there is no space for visitor use, as well as no information desk, exhibits, AV program, or publications sales area. Thus, for nine months of the year there is no visitor center at the north unit.

The ranger station is cramped for protection functions and totally inadequate to accommodate interpretive functions. All supplies and files

must be left in the trailer. Projects requiring a larger, heated space demand use of the interpreter's residence. Both the trailer and the ranger station lack adequate interpretive storage space.

Other interpretive facilities at the north unit include a rear screen projection amphitheater at Squaw Creek campground, which is used for summer evening campfire programs; two self-guiding nature trails; and the wayside exhibits along the 13 miles of park road. The wayside exhibits are old, worn out, and slightly out-of-date. Only 6 miles of the road are open during the winter months. There is no auto tour guide for the north unit at this time. Trailhead access to the Squaw Creek nature trail is through the group campground.

The Elkhorn unit is isolated, undeveloped, and marked only by NPS boundary signs. Most visitors approach from the east and must ford the Little Missouri River to reach the site. When the water level permits, some visitors come to the unit by canoe.

The Elkhorn ranch site is the most important in the park for understanding the significance of Theodore Roosevelt's experiences in the badlands. Yet, few visitors attempt a visit because of the difficult access. Those who do inquire are given a handout with directions and a brief history of the ranch. Building locations are marked with posts, but there is no on-site interpretation.

Access to the south unit is via I-94. Westbound visitors make their first park contact at Painted Canyon, and eastbound visitors make their first park contact at Medora.

The Painted Canyon overlook and rest area on I-94 is the most heavily visited area of the park; for many, it is their only contact with the park. Interstate signs identify Painted Canyon as a rest area and visitor center only. While there is no vehicular access to the south unit road system from Painted Canyon, the rest area is part of the park and provides one of the best, if not the best, views of the south unit. Despite the NPS arrowhead on the visitor center and the stone pylon bearing the name of the park, travelers do not readily recognize this as a national park. Once visitors view the badlands, they want more information and will enter the visitor center. It is here that most visitors learn that this is a part of the park.

The Painted Canyon facilities were originally operated year-round and designed to allow the restrooms to remain open regardless of visitor center operating hours. Extensive vandalism of the restrooms and the need to reduce operating costs resulted in closure of the facilities from mid-November to mid-April. Winter weather conditions and limited visitation have also been factors. A locked gate prevents vehicular access, so if visitors wish to enjoy the view from the overlook, they must climb the gate and walk nearly $\frac{1}{4}$ mile.

The visitor center contains an information desk with a built-in, rear screen, random access, slide projection system; a three-sided,

free-standing exhibit that includes a basic orientation map and two panels on wildlife; a cooperating association publication sales area; a sectional sofa; a free-standing, rear screen projection AV unit that shows a three-minute slide program on the badlands environment; and a beautiful, uninterpreted view of Painted Canyon and the park through the large north wall windows. Much of the interior space is poorly utilized, and there is virtually no interpretation of the park and its significance, geology, or air quality.

Visitors to Painted Canyon are instantly drawn to the canyon rim to view its depth and its expanse. Many even attempt the descent into the canyon, although there are no developed or marked trails. Visitor traffic has created several trails; but the trails are unimproved and sections are steep. When staffing permits, primarily on weekends, well-attended ranger-guided walks are offered into the canyon. Existing wayside exhibits touch lightly on the story of the area but offer no in-depth information about the park and its opportunities. In short, Painted Canyon lacks the quality interpretive devices necessary to adequately serve the large number of visitors and provide appropriate information about the park and its opportunities.

The entrance to the south unit is at Medora, 7 miles west of Painted Canyon. A year-round visitor center houses a museum exhibit area, a theater that regularly shows a 13-minute film titled "T.R. Country," a cooperating association publications sales area, and the standard NPS information desk. In addition, the building houses the park library, park curatorial storage, and work areas for the district interpreters and rangers. These relatively new facilities were constructed under the guidance of the existing interpretive prospectus; thus, they dwell heavily on Theodore Roosevelt and the era in which he ranched here. Natural history themes are mostly lacking.

The south unit may be traveled via a 36-mile loop drive that begins and ends at the Medora visitor center. Wayside exhibits along the drive are old, worn out, out-of-date, and not sufficiently comprehensive. Also, there are not enough pull-offs along the south unit road; cars parked on the road shoulder often pose a safety problem. A self-guiding auto tour brochure for the south unit drive is sold by the cooperating association and is extremely popular. It is useful only from spring through fall, as 20 miles of the scenic drive are closed in the winter.

Buck Hill, the highest point in the south unit, lies about halfway along the scenic drive and is accessed by road and foot trail. The top of Buck Hill offers a breathtaking 360° view of the badlands, including Painted Canyon. There is no interpretation of any kind at Buck Hill.

Along the south unit drive are two self-guiding trails and two other short trails for which publications are being developed. However, there are no self-guiding trails near the Medora visitor center or Cottonwood campground. At the campground, a rear-screen projection amphitheater is used by the interpretive staff to provide campfire programs during the summer.

FACILITY ANALYSIS

Roads, Trails, and Parking

There are 55 miles of primary paved roads in the park--39 miles need reconstruction or overlay and are in fair to poor condition, are narrow, and have no shoulders; 16 miles must be kept open during bad weather and are in good condition. The 9 miles of secondary gravel-improved roads all need widening, resurfacing, and drainage work to be brought up to standards.

There are three bridges in the park; all are new or less than five years old and in good condition.

The 5 miles of paved trails need major repairs and adaptation for use by the handicapped. There are 85 miles of horseback riding and hiking trails in the park--all 85 miles need repair work, new signing, marking, and general improvement to stop erosion and make them easier for visitor use.

There are five primary parking areas around the visitor centers, campgrounds, and picnic areas, and five secondary parking areas at trailheads, pullouts, and overlooks. All are currently in fair condition and capacity is adequate. There are 12 scenic pullouts in the park for one to five cars. More pullouts and some vault toilets are needed around the loop road.

Buildings and Facilities

There are about 69 buildings in the park, including two visitor centers, which are new or remodeled and in good condition, and one visitor center trailer, which is inadequate. There are seven modern comfort stations and two amphitheaters in the campgrounds. These structures are in good, sound condition except for the paint and seating.

The other buildings and facilities are used for visitor purposes, administration, and concession employee quarters, or will remain as historic structures. The Peaceful Valley ranch house is rented to the horse concessioner. The barn and bunkhouse are used under terms of the concession permit. Except for the historic structures, the buildings are in fair condition with some maintenance repairs needed to bring them up to park standards.

The 12 structures below are on the List of Classified Structures, and all need minor to major repair or rehabilitation work in the near future.

Medora visitor center area - one (Maltese Cross) log cabin

Peaceful Valley ranch - one log barn, one log-and-frame bunkhouse, and one log-and-frame ranch house

Painted Canyon overlook - one stone masonry pylon

North unit entrance - two stone masonry pylons

North unit headquarters - frame, board-and-batten camp-tender cabin

Old east entrance - stone masonry check station, walls, and pit privy

North unit, Squaw Creek picnic area - two picnic shelters (built with logs and stone fireplaces)

North unit overlook - one shelter (built with logs with stone corners and walls)

There are two family campgrounds totaling 130 units and two picnic areas in the park. Some revisions and repairs are needed to adapt the campgrounds to accommodate needed visitor services.

Since the Rough Rider campground access was destroyed during a 1978 high water period, the small Halliday Wells camping area in the south unit is being used to accommodate group campers and horse groups.

The Painted Canyon visitor center was constructed in 1978, with solar power as a primary source of heat. The solar system will not work because of the design and poor quality of the heat absorption panels. Therefore, the center and comfort stations must be closed during the colder months.

Utility and Park Operations Systems

The park has a new 60-kilowatt emergency generator, which supplies the Medora headquarters with water and sewer system power when commercial power is off.

The park owns and operates 12 domestic water systems; six of these systems have been rehabilitated and chlorinators added for treatment. In addition, the distribution system of one has been replaced. The Medora headquarters water system needs to be improved by drilling a new well and replacing the treatment system.

There are about 20 wildlife watering systems in the park. These consist of wells or springs with concrete, plastic, or fiberglass dish tanks to water buffalo, horses, longhorn steers, and other wildlife. All of these systems need major repairs, some need new wells drilled, and all need dish tank repairs or replacement.

The park has three lagoon sewage systems. The Medora headquarters sewer system is connected to the city system; however, the city is having trouble with proper operation of their lagoons and therefore difficulty

disposing of its waste. There are other sewage facilities in the park that involve septic tanks or pit or vault toilets.

The park has a radio system that consists of 4 repeater stations with 2 towers, 3 base stations, 37 mobile units, and approximately 35 portable radios. The system was recently redesigned and renovated and is generally in very good condition. Repeater links that will tie together Theodore Roosevelt National Park, Fort Union Trading Post National Historic Site, and Knife River Indian Villages National Historic Site are proposed for the future.

The park has two road oil storage facilities, and both are in good condition. The south unit facility will hold 12,000 gallons of road oil and the north unit will hold 4,000 gallons.

All south unit headquarters buildings have separate fuel oil storage facilities, and the north unit has two larger propane storage facilities. All quarters have separate fuel storage tanks. Some of the tanks have been replaced; others will be replaced within three years pending the availability of funding.

FINDING OF NO SIGNIFICANT IMPACT

The National Park Service proposes to replace the 1973 Master Plan for Theodore Roosevelt National Park with a general management plan (GMP). The 1973 Master Plan has become obsolete and no longer applicable for resolution of current issues involving the park. The GMP provides the necessary strategies to guide management, use, and development of the park for the next 10 years. A draft plan and environmental assessment (EA) was prepared in May 1986. That document analyzed four feasible alternatives including preferred (proposed action), continuation of existing conditions (no action), minimum requirements, and other practicable actions. The development concept plans and land protection plan (LPP) were included as part of the GMP effort. For comparison purposes, table 5 describes all alternative actions and proposals by park unit (North, Elkhorn, and South).

The EA describes the natural, cultural, and socioeconomic environments of the park and surrounding region and assesses the environmental impacts that would result from implementation of the four alternatives.

The LPP, which was released as part of the draft GMP, addresses the private and other nonfederal lands and interests within the authorized park boundary and the protection of park resources from external influences. After public review the LPP has been redone as a separate document and will be processed accordingly, so it will not be cleared as part of this finding of no significant impact (FONSI).

This 10-year planning effort can best be summarized as addressing resource management, with particular attention devoted to flood protection, bison management, historic building preservation, and visitor use needs. This would be accomplished by expanding trails, upgrading sanitation facilities, developing facilities for horse users and the handicapped, and increasing visitor contact and interpretive opportunities. In addition, there would be a continuing awareness of, and focus on, oil and gas development and other industrial activities outside the park that could have far-reaching impacts on park resources. Efforts will be pursued to work cooperatively toward mitigation and resolution of impacts. Private property within the park is recommended for either fee acquisition or scenic easement acquisition.

This alternative was chosen because it would provide the most management and cost-effective solution to each issue or need. Compared to the 70,416.39 total acres in the park and an existing 1,685 acres of park development, the small number of acres that would be adversely affected by the preferred alternative is considered insignificant.

Implementation of the preferred alternative would result in adverse impacts on only 78.5 acres of soils and vegetation for new development over existing use. Construction sites would undergo accelerated erosion until vegetation was reestablished in cleared areas. To the extent

possible, buildings, roads, and other impervious structures would be designed to collect and channel runoff into natural drainages. Runoff in these areas might cause localized increases in erosion and changes in soil nutrient transport. Runoff would escape into adjacent vegetated areas, which could result in more mesic conditions and altered vegetation composition. Construction of a permanent dike at Medora would have a minimum adverse impact on the natural moderation of floods, water quality maintenance, groundwater recharge, and living, cultural, and cultivated resource values. Impacts on wildlife, cultural, and socioeconomic resources and air and visual quality would be minimal.

The public comment period for the EA lasted 84 days, and 20-30 responses were received. It should be noted that at the onset of the planning process, there were approximately 10,000 scoping questionnaires distributed to the public. Approximately 600 people offered comments and input at the beginning and during the process.

The preferred alternative, or proposed action, constitutes the National Park Service's GMP for Theodore Roosevelt National Park.

The impacts identified by the EA are such that this 10-year planning effort does not constitute a major federal action significantly affecting the human environment. Therefore, an environmental impact statement will not be prepared for this planning effort.

Recommended: Mack Shaver June 2, 1987
Superintendent, Theodore Roosevelt National Park Date

Approved: Lorraine Mintzmeier June 3, 1987
Regional Director, Rocky Mountain Region Date

Table 5: Visitor Use Development Proposals and Alternatives

<u>Park Unit and Area</u>	<u>Preferred Alternative (Proposed Action)</u>	<u>Continuation of Existing Conditions Alternative</u>	<u>Minimum Requirements Alternative</u>	<u>Other Practicable Alternative</u>	<u>Rationale for Proposed Action</u>
NORTH-District Headquarters Area	Add public restrooms and more parking as part of new multi-purpose structure improvements at entrance.	No change; retain existing limited facilities.	Same as preferred.	Same as preferred.	There are no restrooms in this area. Parking is adequate only for present small ranger station and trailer.
NORTH-Squaw Creek Campground Area	Redesign picnic area for additional parking.	No change.	Same as preferred.	Relocate area out of flash-flood zone and provide adequate parking.	Properly designed parking for this area is inadequate, and improper parking results. No appropriate relocation sites.
	Develop canoe access point along Little Missouri River at Squaw Creek and develop canoe/snow-mobile access point on or near Wright/Baye property in the district headquarters area.	No change; no access points.	Develop a canoe/snow-mobile access point on Little Missouri either at Squaw Creek or at district headquarters area (not both).	Develop canoe/snow-mobile access point along Little Missouri River at Squaw Creek and also on or near Wright/Baye property in the district headquarters area.	Canoeing on the river is increasing, but with little support from the National Park Service. Proposed action would make 5-mile and longer trips possible and provide access for other recreationists.
	Provide new trailhead for Squaw Creek nature trail.	No change.	Same as preferred.	Same as preferred.	Existing trailhead is inadequate, especially with proposal to make this a handicap trail.
NORTH-Bison Corral Area	Build group horse camp, either here, two alternate locations on Wright/Baye property, or east of Squaw Creek campground.	No change; no group horse camp in unit.	Cooperate with Forest Service in providing horse camp south of river near US 85.	Same as preferred.	There is a demand for group horse camping in the park. Most such use now originates from private area east of US 85. Highway must be crossed; park trails too remote. Feasibility of Forest Service funding and construction is uncertain.
ELKHORN	Develop short access road from south, parking, and small picnic area; flood-proof water well and vault toilet; and build trail from parking to former ranch headquarters site. (Trail should meet minimum standards).	No changes; no developments. Use existing primitive road into unit for foot access.	Develop short access road and parking; floodproof vault toilet; and build trail to former ranch headquarters site. Truck in water; no picnic facilities.	Develop longer access road from north and all improvements proposed under preferred alternative.	Counties' proposed new road and river bridge would bring more visitors to the unit and make the trip much easier than it is now. (Proposed action is based on assumption the road would pass south of the unit.) Once access is improved, the trail and minimum recreation facilities would be required. Trucked-in water could be expensive in the long-term.

<u>Park Unit and Area</u>	<u>Preferred Alternative (Proposed Action)</u>	<u>Continuation of Existing Conditions Alternative</u>	<u>Minimum Requirements Alternative</u>	<u>Other Practicable Alternative</u>	<u>Rationale for Proposed Action</u>
SOUTH-Peaceful Valley	Provide additional parking and improve vehicle circulation at picnic area.	No changes.	Same as preferred.	Relocate area above 100-year floodplain and provide adequate parking. Build foot-bridge across river at Peaceful Valley ranch for horses and hikers.	Redesigned parking is needed to alleviate congestion; it would not attract additional use. No adequate relocation sites are possible. Footbridge is not essential during low water level.
SOUTH-Cottonwood Campground	Redesign the remaining parking spurs for campsites to the paved pull-through type.	No changes.	Same as preferred.	Same as preferred.	There is a greater need for pull-through parking loops (as opposed to spurs) than when this campground was designed and built. Recreation vehicles and trailers are now more numerous. A few campsites would be lost, but area is seldom fully used.
SOUTH-Cottonwood Campground/ Area West of River	Develop 6-mile loop trail west of river beginning at Cottonwood campground.	No change; no new trail.	No change; no new trail.	Same as preferred.	Campground users have little access to trails. This demand results in unplanned trails on steep, eroding slopes east of the campground.
SOUTH-Loop Road	Build vault toilets at Buck Hill and two other locations along loop road.	No change; no toilets.	Build vault toilet at Buck Hill location only.	Same as preferred.	There are no toilets along the loop road, a situation that contributes to hurried trips along this scenic drive. Buck Hill is an obvious location for one toilet. Other locations would be determined following further study. Interpretive facilities would also be improved.
SOUTH-Loop Road (Buck Hill Spur)	Convert ½-mile long Buck Hill road to gravel as base deteriorates.	Convert road to trail as base deteriorates.	Same as preferred.	Continue replacing pavement or road. Also improve base and drainage.	This steep spur road is underlain by moving earth. The pavement buckles, whereas dirt and gravel can be easily regraded. Trail access would prevent many from reaching the scenic high point off the end of this spur, while complete reconstruction might not be successful.
SOUTH-Buck Hill Painted Canyon	Develop trail between Buck Hill overlook and Painted Canyon overlook.	No change; no trail.	No change; no trail.	Same as preferred.	This is an excellent opportunity to connect two high-use scenic areas through varied terrain. There are no existing trails available at these two popular areas.

<u>Park Unit and Area</u>	<u>Preferred Alternative (Proposed Action)</u>	<u>Continuation of Existing Conditions Alternative</u>	<u>Minimum Requirements Alternative</u>	<u>Other Practicable Alternative</u>	<u>Rationale for Proposed Action</u>
SOUTH-West of Little Missouri River	Develop new trailhead/parking area just north of I-94 on the west side of river.	No changes; no improvements.	No changes; no improvements.	Same as preferred.	The NPS radio tower has been relocated, opening additional terrain for hiking. Opportunities for hiking scenic ravines and ridges are available. The trailhead is needed for access when the river is too high to safely ford.
SOUTH-Medora/Park Headquarters Area	Develop a Medora overlook trail - a loop about 3 miles long, beginning at the visitor center and extending to the top of the mesa above Medora.	No changes; no trail.	No changes; no trail.	Same as preferred.	This area is one of the two most heavily visited within the park and the single-most important orientation point, but there are no existing trail opportunities. A trail would offer outstanding views and diverse vegetation.
	Develop canoe/snowmobile access point along river at Medora (cooperate with North Dakota Historical Society, riverfront landowner adjacent to Chimney Park). Provide graded parking area.	No change; no formal access point.	Same as preferred.	Same as preferred.	Most canoe/snowmobile trips require parking at beginning and end of trip; however, there is no developed public put-in site at Medora. Longer trips could be made to the north unit or beyond. Short canoe trip take-outs could be handled at Cottonwood campground or Peaceful Valley.
SOUTH-Painted Canyon Area (Visitor Center)	Completely redesign and replace solar heating system for reliable and extended season operation.	No change; continue to operate with existing system.	Same as preferred.	Same as preferred.	The existing solar thermal system was custom-designed for the visitor center. It is unreliable, includes substandard collector panels, is costly to maintain, and will not produce sufficient heat to keep the center open during the colder spring and fall months. Parts are also difficult to obtain. Complete replacement with more reliable solar or conventional system is under study. Renovation for longer season or year-round operation is also being considered.

Table 6: Summary of Impacts

Following is a simplified comparison summary of impacts based on the expected effects of each alternative, in terms of beneficial (+), no effect or no net effect (0), adverse (-), and uncertain (U). In some cases, there would be both beneficial and adverse effects, but the net effect is what is shown.

	<u>Continuation of Existing Conditions</u>	<u>Preferred</u>	<u>Minimum Requirements</u>	<u>Other Practicable</u>
Natural Environment				
Geology/soils/vegetation	-	-	-	-
Wildlife	0	-	-	-
Threatened/endangered species	0	U	U	U
Water resources	-	+	+	+
Floodplains/wetlands (all effects, including those on park visitors)	-	+	+	+
Visual quality	0	+	+	+
Cultural Resources				
Archeological resources	0	0	0	-
Historic resources	0	0	0	-
Collections	-	+	+	+
Socioeconomic Environment				
Landownership and use	+	0	0	0
Other (misc. visitor services)	0	+	+	+
Visitor Use/Interpretation	0	+	+	+
Park Management/Operations	-	+	+	+

APPENDIXES

- A: Legislation
- B: Management Objectives
- C: Cost Analysis and Staffing Requirements

APPENDIX A: LEGISLATION

VI. LEGISLATION RELATING TO NATIONAL MEMORIAL PARK

1. Theodore Roosevelt National Memorial Park

	Page
Establishment of park; acquisition of lands authorized.....	305
.....Act of April 25, 1947	305
Boundaries revised.....	308
.....Act of June 10, 1948	308
Addition of lands to park.....	311
.....Act of June 12, 1948	311
Correcting omission of words from Act of June 10, 1948.....	312
.....Joint Resolution of June 29, 1948	312
Establishment of Theodore Roosevelt Centennial Commission authorized.....	313
.....Joint Resolution of July 28, 1955	313
Revision of park boundaries authorized.....	314
.....Act of March 24, 1956	314
Additional appropriation authorized for Theodore Roosevelt Centennial Commission.....	316
.....Excerpt from Act of July 31, 1956	316
Amendment to Joint Resolution of July 28, 1955, establishing Theodore Roosevelt Centennial Commission, authorizing an appropriation for Commission.....	317
.....Act of August 6, 1956	317
Amendment to Joint Resolution of July 28, 1955, establishing Theodore Roosevelt Centennial Commission, authorizing and requesting the President to issue a proclamation.....	317
.....Joint Resolution of September 4, 1957	317
Secretary of the Interior authorized to provide water and sewage disposal facilities to Medora.....	317
.....Act of August 31, 1961	317

An Act To establish the Theodore Roosevelt National Memorial Park; to erect a monument in memory of Theodore Roosevelt in the village of Medora, North Dakota; and for other purposes, approved April 25, 1947 (61 Stat. 52)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That all those certain tracts, pieces, or parcels of land, title to which is vested in the United States of America, and being in the State of North Dakota, and within the boundaries particularly described, as follows, to wit: Beginning at the point where the north line of the right-of-way of United States Highway Numbered 10 intersects the east boundary of section 36, township 140 north, range 101 west, fifth principal meridian; thence southwesterly and northwesterly along the north line of said right-of-way through section 1, township 139 north, range 101 west, and sections, 36, 35, 34, 27, 28, and 29, township 140 north, range 101 west, to the west boundary of said section 29; north along section lines to the northwest corner of said section 29; west along section line to the southwest corner of section 19, township 140 north, range 101 west; north along township line to the southeast corner of the northeast quarter of the northeast

North Dakota.
Theodore
Roosevelt
National Me-
morial Park.

quarter of section 24, township 140 north, range 102 west; west to the southwest corner of the northeast quarter of the northeast quarter of said section 24; north to the northwest corner of the northeast quarter of the northeast quarter of said section 24; westerly along section lines to the southwest corner of section 16, township 140 north, range 102 west; northerly along section lines to the northwest corner of section 4, township 140 north, range 102 west; thence west along township line to the southwest corner of the southeast quarter of section 34, township 141 north, range 102 west; northerly through the center of sections 34 and 27 to the northwest corner of the northeast quarter of section 27 of said township 141 north, range 102 west; easterly along section lines to the northeast corner of section 28, township 141 north, range 101 west; south along section lines to the southeast corner of said section 28; east along section line to the northeast corner of section 34, township 141 north, range 101 west; south to the northwest corner of the southwest quarter of section 35, township 141 north, range 101 west; easterly through center of sections 35 and 36 to the northeast corner of the southeast quarter of said section 36 of said township 141 north, range 101 west; south to the southeast corner of said section 36; thence east along township line to the northeast corner of lot 3, section 2, township 140 north, range 101 west; southerly through the center of sections 2 and 11 to the southeast corner of the southwest quarter of said section 11, township 140 north, range 101 west; easterly along section lines to the northeast corner of section 13 of said township 140 north, range 101 west; southerly along township line to the northwest corner of section 19, township 140 north, range 100 west; easterly along north line of said section 19 to the northeast corner of the northwest quarter; southerly through center of sections 19, 30, and 31 to the northwest corner of the southeast quarter of section 31; easterly along the center of said section 31 to the northeast corner of the southeast quarter; southerly along the east line of said section 31 to the southeast corner; westerly along the township line to the east line of section 36, township 140 north, range 101 west; northerly along the township line between townships 140 north, range 100 west and 140 north, range 101 west to the north right-of-way line of United States Highway Numbered 10, the place of beginning, containing thirty-five thousand two hundred and seventy acres, more or less, are hereby dedicated and set apart as a public park for the benefit and enjoyment of the people, and shall be known as the Theodore Roosevelt National Memorial Park. The Secretary of the Interior is authorized, in his discretion, to construct and maintain a road or highway through the park connecting with a State or Federal highway. (16 U.S.C. § 241 as amended. See pp. 308-310, 312-313.)

Construction,
etc., of
highway.

SEC. 2. The Secretary of the Interior is hereby authorized to cause condemnation proceedings to be instituted in the name of the United States under the provisions of the Act of August 1, 1888, entitled "An Act to authorize the condemnation of lands for sites for public buildings, and other purposes" (25 Stat. 357), to acquire title to the lands, interests therein, or rights pertaining thereto that are privately owned within the boundaries of the said national park, and such property, when acquired, shall become a part thereof: *Provided*, That when the owner of such lands, interests therein, or rights pertaining thereto shall fix a price for the same, which, in the opinion of the Secretary of the Interior, shall be reasonable, the Secretary may purchase the same without further delay: *Provided further*, That the Secretary of the Interior is authorized to accept, on behalf of the United States, donations of land, interests therein, or rights pertaining thereto required for the Theodore Roosevelt National Memorial Park: *And provided further*, That title and evidence of title to land and interests therein acquired for said park shall be satisfactory to the Attorney General. (16 U.S.C. § 242.)

Acquisition of private lands, etc.

40 U.S.C. §§ 257, 258.

Purchase.

Donations.

Titles, etc.

SEC. 3. That for the purposes of acquiring non-Federal lands within the boundaries of said park as established by this Act, the Secretary of the Interior is hereby authorized, in his discretion, to exchange federally owned lands within the Roosevelt recreational demonstration area project, located outside the boundaries of the park for State or privately owned lands of approximately equal value within the boundaries of the park, when in his opinion such action is in the interest of the United States, the title to any lands acquired under this section to be satisfactory to the Attorney General. Upon the vesting of title thereto in the United States, any lands acquired pursuant to this authorization shall become a part of the park and shall be subject to the laws applicable thereto. (16 U.S.C. § 243.)

Exchange of lands.

SEC. 4. The Secretary of the Interior is further authorized to obtain by purchase or condemnation proceedings, as part of said Theodore Roosevelt National Memorial Park, lots 2, 3, 4, and 6 of section 33, township 144, range 102, and to reconstruct thereon the log ranch house thirty by sixty feet, the log blacksmith shop sixteen by twenty feet, one log stable sixteen by twenty feet, one log stable twenty by thirty feet, log dog house, three log rectangular corrals, and one log circular corral, as they existed at the time the premises were occupied by Theodore Roosevelt: *Provided*, That the total cost of such land and buildings shall not exceed \$40,000. (16 U.S.C. § 244 as amended. See p. 311.)

Acquisition of lots for reconstruction of buildings.

Cost limitation.

SEC. 5. The administration, protection, and development of the aforesaid park shall be exercised under the

Administration, etc., of park.

5 U.S.C. § 485;
16 U.S.C.
§§ 1, 2-4, 22,
43.
Medora,
N. Dak.
Erection of
monument.
Cost limitation.

direction of the Secretary of the Interior by the National Park Service, subject to the provisions of the Act of August 25, 1916 (39 Stat. 535), entitled "An Act to establish a National Park Service, and for other purposes", as amended. (16 U.S.C. § 245.)

Care and
upkeep.

SEC. 6. The Secretary of the Interior is authorized to erect a monument in memory of Theodore Roosevelt, in the village of Medora, North Dakota, with the advice of the Commission of Fine Arts: *Provided*, That the cost of the monument shall not exceed \$35,000 and there shall be conveyed to the United States such suitable site as may in the judgment of the Secretary be required for said monument: *Provided further*, That the village of Medora, or other public agency or organization, shall furnish, in writing, assurance satisfactory to the Secretary of its willingness to assume the perpetual care and upkeep of the monument. (Repealed, 16 U.S.C. § 246. See p. 311.)

Existing
claims, etc.

SEC. 7. That nothing herein contained shall affect any valid existing claim, location, or entry under the land laws of the United States, whether for homestead, mineral, right-of-way, or any other purposes whatsoever, or shall affect the right of any such claimant, locator, or entryman to the full use and enjoyment of his land. (16 U.S.C. § 247.)

Appropriations
authorized.

SEC. 8. There are authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act. (16 U.S.C. § 241 note.)

An Act To amend the Act of April 25, 1947, relating to the establishment of the Theodore Roosevelt National Memorial Park, and for other purposes, approved June 10, 1948 (62 Stat. 352)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Act of April 25, 1947, is hereby amended as follows:

Theodore
Roosevelt
National Me-
morial Park.
61 Stat. 52.
16 U.S.C.,
Supp. I, § 241.
Post, pp. 384,
1102.

Amend section 1 to read "That all those certain tracts, pieces, or parcels of land, title to which is vested in the United States of America, and being in the State of North Dakota, and within the boundaries particularly described, as follows, to wit: Beginning at the point where the north line of the right-of-way of United States Highway Numbered 10 intersects the east boundary of section 36, township 140 north, range 101 west, fifth principal meridian; thence southwesterly and northwesterly along the north line of said right-of-way through section 1, township 139 north, range 101 west, and sections 36, 35, 34, 27, 28, 29, and 30, township 140 north, range 101 west; thence northwesterly and southwesterly along the north line of the right-of-way of said highway to be relocated as shown on the right-of-way plat for project SNFAP 283C(3) filed for record in the office of the register of

deeds, Medora, North Dakota, book numbered 2 of plats, page 68, on June 13, 1942, through section 25 and the east half of the northeast quarter of section 26, township 140 north, range 102 west, to the point of intersection with the east sixteenth section line of said section 26; thence north along the sixteenth section line to the northwest corner of the northeast quarter of the northeast quarter of said section 26; thence northwesterly along a line to the northwest corner of the southwest quarter of the southeast quarter of section 23, township 140 north, range 102 west; thence westerly along the sixteenth section line to the northeast corner of the southeast quarter of the southeast quarter of section 22; township 140 north, range 102 west; thence southerly along the east section line to the southeast corner of said section 22; thence westerly along the south line of said section 22 to the point of intersection with the right bank of the Little Missouri River; thence northerly and westerly along the right bank of said river to the point of intersection with the east line of section 21, township 140 north, range 102 west; thence southerly along the east line of said section 21, to the intersection with the north line of the right-of-way of the Northern Pacific Railway, which point lies north of said United States Highway Numbered 10; thence westerly along the north line of said right-of-way to the point of intersection with the north line of the right-of-way of said United States Highway Numbered 10; thence westerly along the north line of the right-of-way of said highway through said section 21 to the intersection with the west line of said section 21; thence northerly along the west line of said section 21, and sections 16 and 9, thence continuing northerly to the southeast corner of Government lot 9, section 5, township 140 north, range 102 west; thence northwesterly to the northwest corner of Government lot 2 in said section 5; thence westerly to the southwest corner of the southeast quarter of section 34, township 141 north, range 102 west; thence northerly along the quarter section line to the northwest corner of the said southeast quarter of section 34; thence northwesterly along a line to the southwest corner of section 27, township 141 north, range 102 west; thence northerly along the west line of said section 27, to the southwest corner of the northwest quarter of said section 27; thence northeasterly along a line to the southwest corner of the southeast quarter of section 22, township 141 north, range 102 west; thence continuing northeasterly along a line to the southwest corner of the northwest quarter of section 23, township 141 north, range 102 west; thence continuing northeasterly along a line to the northeast corner of said northwest quarter of section 23; thence easterly along the north lines of said section 23, and section 24, township 141 north, range 102 west; to

the northwest corner of section 19, township 141 north, range 101 west; thence continuing easterly along the north line of said section 19 to the northwest corner of the northeast quarter of said section 19; thence southeasterly along a line to the northwest corner of the southwest quarter of the southwest quarter of the northwest quarter of section 20, township 141 north, range 101 west; thence southerly along the west line of said section 20 to the northwest corner of the southwest quarter of section 20; thence easterly to the northwest corner of the southeast quarter of section 20; thence southerly to the southwest corner of the southeast quarter of said section 20; thence easterly along the north lines of section 29 and section 28, to the northeast corner of section 28, township 141 north, range 101 west; thence southerly along the west line of section 27, township 141 north, range 101 west, to the southwest corner of said section 27; thence easterly along the north lines of sections 34, 35, and 36 to the northeast corner of section 36, township 141 north, range 101 west; thence southerly along the east line of said section 36 to the southwest corner of section 31, township 141 north, range 100 west; thence easterly to the southeast corner of said section 31; thence southeasterly along a line to the northwest corner of Government lot 7 of section 2, township 140 north, range 101 west; thence continuing southeasterly along a line to the northwest corner of the southwest quarter of section 1, township 140 north, range 101 west; thence continuing southeasterly along a line to the northwest corner of the northeast quarter of section 12, township 140 north, range 101 west; thence continuing southeasterly along a line to the northwest corner of the southwest quarter of section 7, township 140 north, range 100 west; thence easterly along the quarter section line to the northwest corner of the southeast quarter of said section 7; thence southeasterly along a line to the northwest corner of section 17, township 140 north, range 100 west; thence continuing southeasterly along a line to a point which is 33 feet west of the east line of said section 17, and 33 feet north of the south line of said section 17; thence southerly on a line which lies 33 feet west of and parallel to the east lines of sections 20, 29, and 32 of township 140 north, range 100 west, to the point of intersection with the north right-of-way line of United States Highway Numbered 10; thence westerly along the north line of said right-of-way through said sections 32 and 31, township 140 north, range 100 west, to the point of intersection with the east boundary of section 36, township 140 north, range 101 west, the place of beginning, containing forty-nine thousand one hundred and fifty-three and seventy-nine one-hundredths acres more or less." (16 U.S.C. § 241. -See pp. 305-306, 312-313.)

Amend section 4 by striking out "lots 2, 3, 4, and 6 of section 33, township 144, range 102," and inserting in lieu thereof "lots 6 and 7, section 33, township 144 north, range 102 west; southeast quarter of southwest quarter, section 32, township 144 north, range 102 west; lots 4 and 5, section 4, township 143, range 102 west; and those parts of lot 1 and the southeast quarter of the northeast quarter, section 5, township 143 north, range 102 west, that lie north and east of a line running diagonally from the northwest corner of said lot 1 to the southeast corner of the southeast quarter of the northeast quarter of said section 5." (16 U.S.C. § 244. See p. 307.)

61 Stat. 54.

Strike out all of section 6 and renumber the remaining sections accordingly. (16 U.S.C. § 246. See p. 308.)

61 Stat. 54.

SEC. 2. Administrative jurisdiction over any of such lands that the Secretary of the Interior finds are not required for exchange purposes as herein provided may be conveyed to other Federal agencies by the Secretary of the Interior without exchange of funds, or if such lands are not required by other Federal agencies they may be conveyed to the State of North Dakota without reimbursement to the United States. (16 U.S.C. § 241 note.)

Conveyance to other agencies.

An Act To add certain lands to the Theodore Roosevelt National Memorial Park, in the State of North Dakota, and for other purposes, approved June 12, 1948 (62 Stat. 384)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following-described lands are hereby made a part of the Theodore Roosevelt National Memorial Park, subject to all laws and regulations applicable thereto:

Theodore Roosevelt National Memorial Park. *Ante*, p. 352; *post*, p. 1102.

Beginning at the southwest corner of section 17, township 147 north, range 100 west; thence north along the west boundaries of sections 17, 8, 5, township 147 north, range 100 west, and section 32 to the southwest corner of section 29, township 148 north, range 100 west; thence east to the southwest corner of the southeast quarter of section 29; thence north to the northwest corner of the southwest quarter of the northeast quarter of section 29; thence east to the northeast corner of the southeast quarter of the northeast quarter of section 29; thence north along west boundary of sections 28 and 21 to the west quarter corner of section 21; thence east to the east quarter corner of section 21; thence north along west boundary of section 22 to the northwest corner of section 22; thence east along the north boundaries of sections 22, 23, 24, township 148 north, range 100 west and sections 19 and 20 to the north quarter corner of section 20, township 148 north, range 99 west; thence south to the northwest corner of the southeast quarter of section 20; thence east to the east quarter corner of section 20; thence south

to the southeast corner of section 20; thence along the north boundaries of sections 28, 27, and 26, township 148 north, range 99 west, to the northeast corner of section 26; thence south along east boundaries of sections 26 and 35 to the east quarter corner of section 35, township 148 north, range 99 west; thence west to the north bank of Little Missouri River; thence following the north bank of the Little Missouri River in a generally westerly direction to where the north bank of the river crosses the north boundary of section 4, township 147 north, range 99 west; thence west to the northwest corner of section 4; thence south to the southeast corner of section 5; thence west along the south boundaries of sections 5 and 6, township 147 north, range 99 west, and section 1, township 147 north, range 100 west to the northeast corner of section 11; thence south along east boundaries of sections 11 and 14 to the southeast corner of section 14; thence west along the south boundaries of sections 14, 15, 16, and 17 to the point of beginning, all west of the fifth principal meridian. (16 U.S.C. §241a.)

Acquisition of
non-Federal
land.

Right-of-way
for stockmen.

Administrative
jurisdiction.

SEC. 2. That for the purposes of acquiring non-Federal lands within the boundaries of said park as established by this Act, the Secretary of the Interior is hereby authorized, in his discretion, to exchange federally owned lands within sections 1, 12, and 13, township 148 north, range 100 west, and sections 6, 7, and 18, township 148 north, range 99 west. Reserving, however, to the stockmen of the surrounding area a perpetual right-of-way through the park for the trailing of livestock, to and from the railroad, along and adjacent to the Little Missouri River, being the same trail or route which has been used by the stockmen for that purpose since the beginning of the livestock industry in the area. Administrative jurisdiction over any of such lands that the Secretary of the Interior finds are not required for exchange purposes as herein provided may be conveyed to other Federal agencies by the Secretary of the Interior without exchange of funds, or if such lands are not required by other Federal agencies they may be conveyed to the State of North Dakota without reimbursement to the United States. (16 U.S.C. § 241b.)

Joint Resolution Correcting Act establishing the Theodore Roosevelt National Memorial Park, as amended, approved June 29, 1948 (62 Stat. 1102)

Theodore
Roosevelt
National Me-
morial Park.
61 Stat. 52.
Ante, pp. 352,
384.

Whereas a clerical or printer's error by omission of words appears in section 1 of Public Law Numbered 620 amending the Act of April 25, 1947, establishing the Theodore Roosevelt National Memorial Park: Therefore be it

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,

That section 1 of the Act of April 25, 1947, establishing the Theodore Roosevelt National Memorial Park as amended by Public Law Numbered 620 be further amended by striking out the period at the end of section 1 and inserting the following: “, are hereby dedicated and set apart as a public park for the benefit and enjoyment of the people, and shall be known as the Theodore Roosevelt National Memorial Park. The Secretary of the Interior is authorized, in his discretion, to construct and maintain a road or highway through the park connecting with a State or Federal highway.” (See 16 U.S.C. § 241 note. See pp. 308-310.)

Construction of road, etc.

Joint Resolution To establish a commission for the celebration of the one-hundredth anniversary of the birth of Theodore Roosevelt, approved July 28, 1955 (69 Stat. 383)

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,

That there is hereby established a commission to be known as the Theodore Roosevelt Centennial Commission (hereinafter referred to as the “Commission”) which shall be composed of fifteen Commissioners as follows: The President of the United States, the President of the Senate, and the Speaker of the House of Representatives, all ex officio, and eight persons to be appointed by the President of the United States, two Senators to be appointed by the President of the Senate, and two Representatives to be appointed by the Speaker of the House of Representatives.

Theodore Roosevelt Centennial Commission Establishment.

SEC. 2. It shall be the duty of the Commission, after announcement to the American people of its creation and purpose, to prepare plans and a program for signalizing the one hundredth anniversary of the birth of Theodore Roosevelt in the year 1958, including plans for the completion of the development of Theodore Roosevelt Island in the Potomac River in accordance with the Act entitled “An Act to establish a memorial to Theodore Roosevelt in the National Capital,” approved May 21, 1932 (47 Stat. 163) as amended by the Act approved February 11, 1933 (47 Stat. 799), and including the completion of the development of Theodore Roosevelt National Memorial Park in North Dakota, created by the Act of April 25, 1947 (61 Stat. 52), as amended. In preparing such plans and program, the Commission shall give due consideration to any plan which may be submitted to it, and shall take such steps as may be necessary to coordinate and correlate its plans with those prepared by State or civic bodies. If the participation of other nations in the commemoration is deemed advisable, the Commission may communicate to that end with the governments of such nations through the State Department.

40 U.S.C. 124-126.

16 U.S.C. 241-247.

314 VI. NATIONAL MEMORIAL PARK—THEODORE ROOSEVELT

63 Stat. 954.
5 U.S.C. 1071
note.

SEC. 3. (a) The Commission shall select a Chairman and a Vice Chairman from among its members, and may employ, without regard to the civil-service laws or the Classification Act of 1949, such employees as may be necessary in carrying out its functions.

(b) Service of an individual as a member of the Commission shall not be considered as service or employment bringing such individual within the provisions of section 216, 281, 283, 284, 434, or 1914 of title 18 of the United States Code, or section 190 of the Revised Statutes (5 U.S.C. 99) or section 412 of the Mutual Defense Assistance Act of 1949 (22 U.S.C. 1584); nor shall any member of the Commission by reason of his status as such be deemed to be an "officer of the Government" within the meaning of the Act of April 27, 1916 (5 U.S.C. 101.)

62 Stat. 694.
63 Stat. 721.
39 Stat. 54.

SEC. 4. The Commissioners shall serve without compensation, but may be reimbursed for expenses incurred by them in carrying out the duties of the Commission.

SEC. 5. When the Commission has approved a plan of celebration, it shall submit it, insofar as it relates to the fine arts, to the Commission of Fine Arts for its approval.

Report to
Congress.

SEC. 6. The Commission shall, on or before March 1, 1956, make a report to the Congress in order that further enabling legislation may be enacted.

Appropriation.

SEC. 7. There are hereby authorized to be appropriated such sums as may be necessary to carry out the provisions of this joint resolution, but in no event shall the sums hereby authorized to be appropriated exceed a total of \$10,000.

Expiration
date.

SEC. 8. The Commission shall expire upon the completion of its duties, but in no event later than October 27, 1959.

An Act To revise the boundaries of the Theodore Roosevelt National Memorial Park, in the State of North Dakota, and for other purposes, approved March 24, 1956 (70 Stat. 55)

Theodore
Roosevelt
National Me-
morial Park.
Boundaries.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following-described lands are hereby made a part of the Theodore Roosevelt National Memorial Park, subject to all laws and regulations applicable thereto: Beginning at a point in block 11 of the village of Medora, North Dakota, said point being on the northerly right-of-way line of Third Avenue a distance of 160 feet westerly from the northwest corner of the intersection of Third Avenue and Main Street; thence northerly a distance of 140 feet to a point on a line parallel to and 160 feet westerly of the westerly right-of-way line of Main Street; thence easterly 10 feet along a line parallel to and 140 feet northerly of the northerly right-of-way line of Third Avenue to a point

150 feet westerly of the westerly right-of-way line of Main Street; thence northerly 20 feet along a line parallel to and 150 feet westerly of the westerly right-of-way line of Main Street to a point on a line parallel to and 160 feet northerly of the northerly right-of-way line of Third Avenue; thence easterly along said line a distance of 150 feet to a point on the westerly right-of-way line of Main Street; thence northerly a distance of 40 feet along said westerly right-of-way line of Main Street to a point 200 feet northerly from the northwest corner of the intersection of Third Avenue and Main Street; thence easterly along a line parallel to and 200 feet northerly of the northerly right-of-way line of Third Avenue a distance of 970 feet to the northwesterly corner of lot 3 in block 8; thence southerly along the westerly line of lots 3 to 10, inclusive, in block 8 a distance of 200 feet to a point on the northerly right-of-way line of Third Avenue; thence along the northerly right-of-way line of Third Avenue extended easterly to a point on the west sixteenth line of section 26; thence northerly along said sixteenth line to a point on the section line common to sections 23 and 26; thence westerly along said section line to a point which is 600 feet easterly of the section corner common to sections 22, 23, 26, and 27; thence northerly along a line parallel to and 600 feet easterly from the section line common to sections 22 and 23 to a point on the south sixteenth line of section 23; thence westerly along said sixteenth line a distance of 600 feet to a point on the section line common to sections 22 and 23; thence southerly along said section line to the section corner common to sections 22, 23, 26, and 27; thence southerly along the section line common to sections 26 and 27 a distance of 390.5 feet; thence westerly a distance of 421.7 feet to a point on a line parallel to and 390.5 feet southerly from the section line common to sections 22 and 27; thence southerly a distance of 360 feet to a point in block 4 on a line parallel to and 150 feet westerly from the westerly right-of-way line of Main Street extended northerly; thence southwesterly on a straight line through the southwesterly corner of block 4 to a point on the southerly right-of-way line of Second Avenue extended westerly; thence westerly along said westerly extension of the southerly right-of-way line of Second Avenue to a point on the northeasterly right-of-way line of United States Highway Numbered 10; thence southeasterly along said northeasterly right-of-way line of United States Highway Numbered 10 to the intersection or juncture of said right-of-way line with the northerly right-of-way line of Third Avenue; thence easterly to the point of beginning; and all of that part of block 12 in the village of Medora that lies westerly of a line parallel to and westerly a distance of 140 feet

**Block 6,
Medora.** from the westerly right-of-way line of Main Street; all in township 140 north, range 102 west, fifth principal meridian: *Provided*, That the lands and improvements thereon located in block 6 in the village of Medora now administered and used by the United States Forest Service, Department of Agriculture, shall not become a part of the park pursuant to this section until such time as they are transferred to the Department of the Interior by the Secretary of Agriculture. (16 U.S.C. § 241c.)

Exclusion. SEC. 2. The following area is hereby excluded from the park: That portion of section 8 lying southwest of a line between the common corner of sections 8, 9, 16, and 17 and the northwest corner of the southwest quarter section 8; that portion of section 16 lying southwest of a line between the southeast corner southwest quarter and the northwest corner southwest quarter section 16; and section 17, township 147 north, range 100 west, fifth principal meridian, North Dakota. (16 U.S.C. § 241d.)

**Boundary ad-
justments.** SEC. 3. The Secretary of the Interior is authorized to make further adjustments in the boundaries of the park along United States Highways Numbered 10 and 85 as he deems advisable and in the public interest if and when the alinement of these highways is changed: *Provided*, That not to exceed five hundred acres may be added to the park and not to exceed two thousand acres may be excluded from the park by such adjustments. Boundary adjustments made pursuant to this section shall be effective upon publication thereof in the Federal Register and all Federal land excluded from the park pursuant to this Act shall be transferred to the Secretary of Agriculture for administration or disposition in accordance with title III of the Bankhead-Jones Farm Tenant Act. (16 U.S.C. § 241e.)

**Publication
in FR.**

50 Stat. 525.
7 U.S.C. 1010-
1013.
**Exchange au-
thority.**

61 Stat. 54.
16 U.S.C. 243,
241b.

SEC. 4. The land exchange authority relating to Theodore Roosevelt National Memorial Park prescribed by section 3 of the Act of April 25, 1947 (61 Stat. 52), and by section 2 of the Act of June 12, 1948 (62 Stat. 384), shall be applicable also to the lands described in section 1 of this Act. (16 U.S.C. § 241f.)

Excerpt from "An Act Making supplemental appropriations for the fiscal year ending June 30, 1957, and for other purposes," approved July 31, 1956 (70 Stat. 763, 767)

**Second
Supplemental
Appropriation
Act, 1957.**

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, to supply supplemental appropriations (this Act may be cited as the "Second Supplemental Appropriation Act, 1957") for the fiscal year ending June 30, 1957, and for other purposes, namely:

* * * * *

THEODORE ROOSEVELT CENTENNIAL COMMISSION

For an additional amount for "Theodore Roosevelt Centennial Commission," \$163,400, to remain available until expended: *Provided*, That this paragraph shall become effective only upon the enactment into law of S. 3386, Eighty-fourth Congress.

An Act To amend the joint resolution entitled "Joint Resolution to establish a commission for the celebration of the one hundredth anniversary of the birth of Theodore Roosevelt," approved July 28, 1955, approved August 6, 1956 (70 Stat. 1035)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 7 of the joint resolution entitled "Joint resolution to establish a commission for the celebration of the one hundredth anniversary of the birth of Theodore Roosevelt", approved July 28, 1955, is amended to read as follows:

Theodore
Roosevelt
celebration.

69 Stat. 384.

"Sec. 7. There is hereby authorized to be appropriated not to exceed the sum of \$150,000 to carry out the provisions of this joint resolution."

Appropriation.

Joint Resolution To authorize and request the President to issue a proclamation in connection with the centennial of the birth of Theodore Roosevelt, approved September 4, 1957 (71 Stat. 617)

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the joint resolution entitled, "Joint resolution to establish a commission for the celebration of the one hundredth anniversary of the birth of Theodore Roosevelt", approved July 28, 1955 (69 Stat. 348), is amended by adding at the end thereof the following new section:

Theodore
Roosevelt
Centennial
Commission.

69 Stat. 383.

"Sec. 9. The President is authorized and requested to issue a proclamation, inviting the people of the United States to observe the centennial anniversary of the birth of Theodore Roosevelt, which will occur in 1958, with appropriate ceremonies and activities during that year."

Proclamation.

An Act To authorize the Secretary of the Interior to provide water and sewage disposal facilities to the Medora area adjoining the Theodore Roosevelt National Memorial Park, North Dakota, and for other purposes, approved August 31, 1961 (75 Stat. 423)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to afford adequate facilities to persons visiting Theodore Roosevelt National Memorial Park, and to enhance the setting of the park entrance and further the interpretive program of the park through encouraging the preservation and restoration of the pioneer cattle town of Medora, North Dakota, and its associations with Theodore Roosevelt, by non-Federal endeavors in accordance with house concurrent resolutions

Theodore
Roosevelt
National Me-
morial Park.
N. Dak.

"T" and "U" of the 1959 Session Laws of the State of North Dakota, pages 878 and 879, the Secretary of the Interior is authorized to modernize the water and sewage facilities of the village of Medora adjoining the park, in the manner hereinafter provided.

Medora,
N. Dak.
Water and
sewage fa-
cilities.

SEC. 2. The Secretary of the Interior is authorized to construct, operate, and maintain, on rights-of-way donated for the purpose and in such manner as he shall consider to be in the public interest, water supply and sewage disposal systems to serve Federal and non-Federal properties in the said Medora area, and he may make existing Federal systems available to serve such properties: *Provided*, That non-Federal users of the systems shall comply with standards of use prescribed by the Secretary and shall be charged rates sufficient to recover a pro rata share of depreciation and costs of operation and maintenance of the systems plus interest on the Federal investment in the systems. Funds obtained from such non-Federal users of the systems shall be deposited in the Treasury of the United States as miscellaneous receipts, with the exception that the Secretary may consider as appropriation reimbursements to be credited in the appropriation current at the time received, such amount of the aforesaid collections as may be necessary to reimburse, on a pro rata basis, appropriated operating funds expended for maintenance and operation costs of the systems.

Conditions for
construction.

SEC. 3. Construction of the facilities authorized herein shall not be undertaken or use of existing Federal systems authorized until at least 80 per centum of the potential non-Federal users, as defined by the Secretary of the Interior, are committed to connecting to said water and sewage systems and until there shall have been reached an agreement with the duly authorized officials of the village of Medora, by which the village is obligated to adopt and enforce a zoning ordinance which complies with standards prescribed by the Secretary for the purpose of preserving the historic character of Medora and affording a park-like setting in the vicinity of the park and the entrance thereto.

Appropriation.

SEC. 4. There are authorized to be appropriated for the construction of these facilities such sums as may be required therefor, not to exceed \$100,000.

4. National Park System 95th Congress Omnibus

An Act to authorize additional appropriations for the acquisition of lands and interests in lands within the Sawtooth National Recreation Area in Idaho. (92 Stat. 3467) (P.L. 95-625)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE AND TABLE OF CONTENTS

SECTION 1. This Act may be cited as the "National Parks and Recreation Act of 1978".

TABLE OF CONTENTS

- Sec. 1. Short title and table of contents.
- Sec. 2. Definition.
- Sec. 3. Authorization of appropriations.

TITLE I—DEVELOPMENT CEILING INCREASES

- Sec. 101. Specific increases.
 - Agate Fossil Beds National Monument.
 - Andersonville National Historic Site.
 - Andrew Johnson National Historic Site.
 - Biscayne National Monument.
 - Capitol Reef National Park.
 - Carl Sandburg Home National Historic Site.
 - Cowpens National Battlefield Site.
 - De Soto National Memorial.
 - Fort Bowie National Historic Site.
 - Frederick Douglass Home, District of Columbia.
 - Grant Kohrs Ranch National Historic Site.
 - Guadalupe Mountains National Park.
 - Gulf Islands National Seashore.
 - Harper's Ferry National Historical Park.
 - Hubbell Trading Post National Historic Site.
 - Indiana Dunes National Lakeshore.
 - John Muir National Historic site.
 - Lands in Prince Georges and Charles Counties, Maryland.
 - Longfellow National Historic Site.
 - Pecos National Monument.
 - Perry's Victory and International Peace Memorial.
 - San Juan Island National Historical Park.
 - Sitka National Historical Park.
 - Statue of Liberty National Monument.
 - Thaddeus Kosciuszko Home National Historic Site.
 - Tuskegee Institute National Historic Site.
 - Whiskeytown-Shasta-Trinity National Recreation Area.
 - William Howard Taft National Historic Site.
 - Wilson's Creek National Battlefield.

TITLE II—ACQUISITION CEILING INCREASES

- Sec. 201. Acquisition ceilings.
 - Big Cypress National Preserve.
 - Buffalo National River.
 - Cumberland Island National Seashore.
- Sec. 202. Sawtooth National Recreation Area.

TITLE III—BOUNDARY CHANGES

- Sec. 301. Revision of boundaries.
 - Bent's Old Fort National Historic Site.

- Sec. 511. Maggie L. Walker National Historic Site.
- Sec. 512. Crow Creek Village Archeological Site.

Subtitle B—Trails

- Sec. 551. Amendments to National Trail Systems Act.

TITLE VI—MISCELLANEOUS PROVISIONS

- Sec. 601. Facilities at Yellowstone National Park.
- Sec. 602. Ridgeland Area study.
- Sec. 603. Preservation of historical and archaeological data.
- Sec. 604. New area studies, general management plans, and contracts.
- Sec. 605. Oak Creek Canyon and Chiricahua National Monument studies.
- Sec. 606. Land and Water Conservation Fund accomplishments reporting date.
- Sec. 607. Hells Canyon National Recreation Area.
- Sec. 608. Irvine Coast-Laguna, California study.
- Sec. 609. Theodore Roosevelt Inaugural National Historic Site.
- Sec. 610. Theodore Roosevelt National Park.
- Sec. 611. Badlands National Park.
- Sec. 612. Albert Einstein Memorial.
- Sec. 613. Pearson-Skubitz Big Hill Lake.
- Sec. 614. Advisory Council on Historic Preservation.

TITLE VII—WILD AND SCENIC RIVERS ACT AMENDMENTS

Subtitle A—Addition of Segments

- Sec. 701. Addition of Pere Marquette Segment.
- Sec. 702. Addition of Rio Grande Segment.
- Sec. 703. Addition of Skagit Segments.
- Sec. 704. Addition of Upper Delaware Segment; special provisions.
- Sec. 705. Addition of Middle Delaware Segment.
- Sec. 706. Addition of the American Segment.
- Sec. 707. Addition of Missouri Segment.
- Sec. 708. Addition of Saint Joe Segments.

Subtitle B—Studies

- Sec. 721. Designation of the Kern River (North Fork) for study.
- Sec. 722. Designation of the Loxahatchee River for study.
- Sec. 723. Designation of the Ogeechee River for study.
- Sec. 724. Designation of certain segment of the Salt River for study.
- Sec. 725. Designation of the Verde River for study.
- Sec. 726. Designation of the San Francisco River for study.
- Sec. 727. Designation of Fish Creek for study.
- Sec. 728. Designation of Black Creek for study.
- Sec. 729. Designation of Allegheny River for study.
- Sec. 730. Designation of the Cacapon River for study.
- Sec. 731. Designation of the Escatawpa River for study.
- Sec. 732. Designation of the Myakka River for study.
- Sec. 733. Designation of Soldier Creek for study.
- Sec. 734. Designation of Red River for study.
- Sec. 735. Authorization for study.
- Sec. 736. Study period.

Subtitle C—Authorizations for Funding

- Sec. 751. Eleven Point River.
- Sec. 752. Rogue River.
- Sec. 753. Saint Croix River.
- Sec. 754. Salmon River.
- Sec. 755. Chattooga River.

(2) Buffalo National River, Arkansas: Section 7 of the Act of March 1, 1972 (86 Stat. 44), is amended by changing "\$30,071,500" to "\$39,948,000".

(3) Cumberland Island National Seashore, Georgia: Section 10 of the Act of October 23, 1972 (86 Stat. 1066), is amended by changing "\$10,500,000" to "\$28,500,000".

SAWTOOTH NATIONAL RECREATION AREA

SEC. 202. Section 13 of the Act of August 22, 1972 (86 Stat. 612), is amended by changing "\$19,802,000" to "\$47,802,000".

TITLE III—BOUNDARY CHANGES

REVISION OF BOUNDARIES

SEC. 301. The boundaries of the following units of the National Park System are revised as follows, and there are authorized to be appropriated such sums as may be necessary, but not exceed the amounts specified in the following paragraphs for acquisitions of lands and interests in lands within areas added by reason of such revisions:

(1) Bent's Old Fort National Historic Site, Colorado: To add approximately six hundred and twenty-two acres as generally depicted on the map entitled "Boundary Map, Bent's Old Fort National Historic Site, Colorado", numbered 417-80,007-A, and dated June 1976: \$842,000.

(2) Cape Cod National Seashore, Massachusetts: To add approximately thirteen acres and to delete approximately sixteen acres as generally depicted on the map entitled "Cape Cod National Seashore Boundary Map", numbered 609-60,015 and dated February 1978.

(3) Chiricahua National Monument, Arizona: To add approximately four hundred and forty acres as generally depicted on the map entitled "Boundary Map, Chiricahua National Monument, Arizona", numbered 145-80,002, and dated August 1977: \$294,000.

(4) Coronado National Memorial, Arizona: To add approximately three thousand and forty acres and delete approximately twelve hundred acres as generally depicted on the map entitled "Land Status Map 01, Coronado National Memorial, Cochise County, Arizona", numbered 8630/80,001, and dated October 1977: \$1,410,000.

(5) Eisenhower National Historic Site, Pennsylvania: To add approximately one hundred ninety-five and eighty-three one-hundredths acres as generally depicted on the map entitled "Boundary Map, Eisenhower National Historic Site, Adams County, Pennsylvania", numbered 446-40,001B, and dated April 1978: \$166,000.

numbered 894-40,001, and dated May 1978: \$3,500,000.

(13) Montezuma Castle National Monument, Arizona: To add approximately thirteen acres, and to delete approximately five acres as generally depicted on the map entitled "Montezuma Castle National Monument, Arizona", numbered 20,006, and dated April 1978.

(14) Oregon Caves National Monument, Oregon: To add approximately eight acres as generally depicted on the map entitled "Oregon Cave, Oregon", numbered 20,000, and dated April 1978: \$107,000.

(15) Salem Maritime National Historic Site, Massachusetts: To add approximately fifteen one-hundredths of an acre as generally depicted on the map entitled "Salem Maritime National Historic Site Boundary Map", numbered 373-80,010, and dated February 1978: \$67,500.

(16) Theodore Roosevelt National Memorial Park, North Dakota: To add approximately one hundred and forty-six acres, and delete approximately one hundred and sixty acres as generally depicted on map entitled "Boundary Map Theodore Roosevelt National Memorial Park-North Unit McKenzie County/North Dakota", numbered 387/80,020, and dated July 1977.

(17) Tumacacori National Monument, Arizona: To add approximately seven acres, and delete approximately eleven-hundredths of an acre as generally depicted on the map entitled "Boundary Map, Tumacacori National Monument, Arizona", numbered 311-80,009-A, and dated March 1978: \$24,000.

(18) (A) Tuzigoot National Monument, Arizona: To add approximately seven hundred and ninety-one acres as generally depicted on the map entitled "Master Proposal, Tuzigoot National Monument", numbered 378-30,000D, and dated January 1973: \$1,350,000.

(B) The Secretary is authorized to acquire by donation, purchase with donated or appropriated funds, exchange or otherwise and subject to such terms, reservations, conditions applied to the acquired lands as he may deem satisfactory, the lands and interests in lands that are included within the boundaries of the Tuzigoot National Monument as revised by this paragraph. When so acquired, they shall be administered in accordance with provisions of law generally applicable to units of the National Park System, including the Act of August 25, 1916 (39 Stat. 535).

(C) In exercising his authority to acquire such lands and interests in lands by exchange, the Secretary may accept title to any non-Federal property

(c) Section 7(b) of such Act is amended by striking the phrase "Brookhaven town park at", and inserting in lieu thereof: "Ocean Ridge portion of".

(d) Section 10 of such Act is amended by striking "\$18,000,000", and inserting in lieu thereof "\$23,000,000".

CUMBERLAND ISLAND NATIONAL SEASHORE

SEC. 323. Section 1 of the Act of October 23, 1972 (86 Stat. 1066), is amended by changing the phrase "numbered CUIS-40,000B, and dated June 1971," to read "numbered CUIS 40,000D, and dated January 1978,".

TITLE IV—WILDERNESS

DESIGNATION OF AREAS

SEC. 401. The following lands are hereby designated as wilderness in accordance with section 3(c) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132(c)), and shall be administered by the Secretary in accordance with the applicable provisions of the Wilderness Act:

(1) Buffalo National river, Arkansas, wilderness comprising approximately ten thousand five hundred and twenty-nine acres and potential wilderness additions comprising approximately twenty-five thousand four hundred and seventy-one acres depicted on a map entitled "Wilderness Plan, Buffalo National River, Arkansas", numbered 173-20,036-B and dated March 1975, to be known as the Buffalo National River Wilderness.

(2) Carlsbad Caverns National Park, New Mexico, wilderness comprising approximately thirty-three thousand one hundred and twenty-five acres and potential wilderness additions comprising approximately three hundred and twenty acres, depicted on a map entitled "Wilderness Plan, Carlsbad Caverns National Park, New Mexico," numbered 130-20,003-B and dated January 1978, to be known as the Carlsbad Caverns Wilderness. By January 1, 1980, the Secretary shall review the remainder of the park and shall report to the President, in accordance with section 3 (c) and (d) of the Wilderness Act (78 Stat. 891; 16 U.S.C. 1132 (c) and (d)), his recommendations as to the suitability or nonsuitability of any additional areas within the park for preservation as wilderness, and any designation of such areas as wilderness shall be accomplished in accordance with said subsections of the Wilderness Act.

(3) Everglades National Park, Florida, wilderness comprising approximately one million two hundred and ninety-six thousand five hundred acres and potential wilderness additions comprising approximately eighty-one thousand nine hundred

acres, depicted on a map entitled "Wilderness Plan, Everglades National Park, Florida", numbered 160-20,011 and dated June 1974, to be known as the Everglades Wilderness.

(4) Guadalupe Mountains National Park, Texas, wilderness comprising approximately forty-six thousand eight hundred and fifty acres, depicted on a map entitled "Wilderness Plan, Guadalupe Mountains National Park, Texas", numbered 166-20,006-B and dated July 1972, to be known as the Guadalupe Mountains Wilderness.

(5) Gulf Islands National Seashore, Florida, and Mississippi, wilderness comprising approximately one thousand eight hundred acres and potential wilderness additions comprising approximately two thousand eight hundred acres, depicted on a map entitled "Wilderness Plan, Gulf Islands National Seashore, Mississippi, Florida", numbered 635-20,018--A and dated March 1977, to be known as the Gulf Islands Wilderness.

(6) Hawaii Volcanoes National Park, Hawaii, wilderness comprising approximately one hundred and twenty-three thousand one hundred acres and potential wilderness additions comprising approximately seven thousand eight hundred and fifty acres, depicted on a map entitled "Wilderness Plan, Hawaii Volcanoes National Park, Hawaii", numbered 124-20,020 and dated April 1974, to be known as the Hawaii Volcanoes Wilderness.

(7) Organ Pipe Cactus National Monument, Arizona, wilderness comprising approximately three hundred and twelve thousand six hundred acres and potential wilderness additions comprising approximately one thousand two hundred and forty acres, depicted on a map entitled "Wilderness Plan, Organ Pipe Cactus National Monument, Arizona", numbered 157-20,001-B and dated October 1978, to be known as the Organ Pipe Cactus Wilderness.

(8) Theodore Roosevelt National Memorial Park, North Dakota, wilderness comprising approximately twenty-nine thousand nine hundred and twenty acres, depicted on maps entitled "Theodore Roosevelt National Memorial Park, North Dakota" (North Unit and South Unit) numbered 387-20,007-E and dated January 1978, to be known as the Theodore Roosevelt Wilderness.

MAP AND DESCRIPTION

SEC. 402. A map and description of the boundaries of the areas designated in this title shall be on file and available for public inspection in the office of the Director of the National Park Service, Department of the Interior, and in the Office of the Superintendent of each area designated in this title. As soon as practicable after this

Area", numbered IRV-90,000, and dated June 1978, and in order to consider protection of the area's unique ecology and topography, its watershed and marine environment, and public outdoor recreation opportunities, the Secretary shall study, investigate, and formulate recommendations on the feasibility and desirability of establishing such area as a unit of the National Park System, such as a park, recreation area, or seashore. The Secretary shall consult with other appropriate Federal agencies, as well as with the appropriate State and local bodies and officials involved, and shall coordinate the study with applicable local and State plans and planning activities relating to the area. Federal departments and agencies are authorized and directed to cooperate with the Secretary and, to the extent permitted by law, to furnish such statistics, data, reports, and other material as the Secretary may deem necessary for purposes of the study.

(b) The Secretary shall submit to the President and the Congress of the United States, within six months after the date of enactment of this section, a report of his findings and recommendations. The report of the Secretary shall contain, but not be limited to, findings with respect to—

(1) the scenic, scientific, natural, and outdoor recreation values of the Irvine Coast-Laguna area;

(2) the type of Federal, State, and local programs that are feasible and desirable in the public interest to preserve, develop, and make accessible for public use the values identified; and

(3) the relationship of any recommended national park, recreation area, or seashore area to existing or proposed Federal, State, and local programs to manage in the public interest the natural resources of the entire Irvine Coast-Laguna area.

(c) There is hereby authorized to be appropriated \$50,000 to carry out the provisions of this section.

THEODORE ROOSEVELT INAUGURAL NATIONAL HISTORIC SITE

SEC. 609. The first section of the Act entitled "An Act to provide for the acquisition and preservation of the real property known as the Ansley Wilcox House in Buffalo, New York, as a national historic site", approved November 2, 1966 (Public Law 89-708), is amended by striking out "at no expense to the United States" and inserting in lieu thereof "at no direct operating expense to the Department of the Interior,".

THEODORE ROOSEVELT NATIONAL PARK

SEC. 610. The area formerly known as the "Theodore Roosevelt National Memorial Park", established by the Act of April 25, 1947 (61 Stat. 52), shall henceforth be known as the "Theodore Roosevelt National Park".

the Capitol in the City of Bismarck, on Tuesday, the sixth day of January, one thousand nine hundred and eighty-one.

HOUSE BILL NO. 1206
(Representatives Thompson, Whalen)
(Senator Roen)

AN ACT to cede to the United States concurrent criminal jurisdiction on lands within the Theodore Roosevelt national park, Fort Union trading post national historic site, and Knife River Indian villages national historic site, and to provide for retrocession of that jurisdiction.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF THE
STATE OF NORTH DAKOTA:

SECTION 1. STATE OFFENSES - CONCURRENT JURISDICTION CEDED TO THE UNITED STATES. Concurrent jurisdiction is hereby ceded to the United States over offenses, as defined in section 12.1-01-04, when committed within boundaries of the tracts of land designated as:


1. Theodore Roosevelt national park.
2. Fort Union trading post national historic site.
3. Knife River Indian villages national historic site.


SECTION 2. CONCURRENT JURISDICTION - VESTED UPON ACCEPTANCE. The concurrent jurisdiction ceded by section 1 of this Act shall be vested upon acceptance by the United States by and through its appropriate officials and shall continue so long as the lands within the designated areas are dedicated to park or historic site purposes.

SECTION 3. RETROCESSION OF JURISDICTION - ACCEPTANCE - FILING.

1. The consent of North Dakota is hereby given to the retrocession by the United States of the jurisdiction granted by section 1 of this Act, either partially or wholly. A partial retrocession may be with respect to particular territory or particular offenses, or both. The governor is authorized to accept any such retrocession of jurisdiction on behalf of North Dakota.

2. When the governor receives written notification from the authorized official or agent of the United States that the United States desires or is willing to retrocede jurisdiction to North Dakota as provided in subsection 1, the governor may accept, and after filing the original acceptance with the secretary of state, the retrocession of jurisdiction will become effective.


Speaker of the House


Chief Clerk of the House


President of the Senate


Secretary of the Senate

This certifies that the within bill originated in the House of Representatives of the Forty-seventh Legislative Assembly of the State of North Dakota and is known on the records of that body as House Bill No. 1206.

Vote: Ayes 90 Nays 0 Absent 10

Vote: Ayes 48 Nays 0 Absent 2



Chief Clerk of the House

Received by the Governor at 1:20 P.M. on February 19, 1981.

Approved at 9:29 A.M. on February 20, 1981.


Governor

Filed in this office this 20th day of Feb., 1981, at 2:24 o'clock P.M.


Secretary of State

APPENDIX B: MANAGEMENT OBJECTIVES

These management objectives are taken from the 1985 "Statement for Management" for Theodore Roosevelt National Park.

MANAGEMENT, ADMINISTRATION, AND SUPPORT

Cooperate with all federal, state, and local agencies and individuals so that the resources of the park will be protected from visual or physical intrusion related to all development on the periphery of the park boundary, in accordance with Executive Order 11593.

Acquire privately owned lands using eminent domain procedures only as necessary to prevent adverse uses.

INTERPRETATION AND VISITOR SERVICES

Provide opportunities for visitors to be aware of and appreciate Theodore Roosevelt's experiences in the Little Missouri badlands, his associations with the open range cattle ranching industry, and his influences on the conservation movement in the United States.

Provide opportunities for visitors to experience the badlands environment and its resources and to reach an understanding of them, just as Theodore Roosevelt did.

Provide public access, service, and opportunity for use and enjoyment at the Elkhorn ranch.

Provide opportunities for use of school groups, independent scholars, and researchers for the study of western American history and the environment according to the historic, cultural, and natural resources contained in each park unit.

Provide as a corollary, off-site interpretive programs during winter seasons to schools, organizations, and civic groups.

Provide a static interpretive display at the Painted Canyon overlook visitor center regarding the air quality and acid rain research and monitoring programs conducted at that location and throughout the park.

CULTURAL RESOURCE MANAGEMENT

Specifically identify individually qualified prehistoric/historic sites and structures with appropriate boundaries for nomination to the National Register of Historic Places and take subsequent action to remove all inappropriate lands now listed.

Complete survey and research at the earliest possible time to identify and evaluate historic and cultural resources so that they will be properly preserved and considered on the basis of complete factual knowledge in all related management decisions and subsequent actions.

NATURAL RESOURCE MANAGEMENT

Restore and maintain, to the extent feasible, the endemic plants and animals and ecological processes of the Little Missouri badlands to a condition symbolic of the scene during Theodore Roosevelt's association with the area.

Complete survey and research at the earliest possible time to identify and evaluate natural resources so that they will be properly preserved and considered on the basis of complete factual knowledge in all related management decisions and subsequent actions.

Maximize public access to these resources.

Protect and enhance the park's class I clean air status and identify, evaluate, and preserve the park's air quality related resources in accordance with existing and future National Park Service and other federal and state legislative and regulatory mandates.

Appendix C: Cost Analysis and Staffing Requirements (As of December 1985)

Category, Activity, or Place	Action	Plan Rationale	Staffing Rationale
<u>NORTH UNIT</u>			
<u>Natural Resources</u> Bison corral	Relocate corral operation to north boundary; maintain present site as NPS horse pasture and for new horse camp; see later section) \$ 211,000 new corral 13,000 site restoration .02 (GS-12)/\$2,000 .05 (WG-7)/\$2,100	Driving bison to the existing corral, which is distant from their range, results in massive scattering of animals because of forested terrain and steep bad-lands with sink holes. The new site will allow a more efficient and selective reduction of the herd	Required to maintain fence, corrals, and access road Relocate to area that is more open so buffalo may be more easily captured; increase needed for planning and supervision of construction
<u>Cultural Resources</u> District Headquarters	Leave CCC camp-tender building in place, renovate for storage; add vegetative screening \$ 32,000 remodel 650 s.f. 2,000 vegetation \$ 34,000 .02 (WG-7)/\$840	This historic structure, while in a site suitable for its proposed use, is wholly substandard on the interior and requires extensive remodeling. Vegetative screening will mitigate its view from the realigned park road.	Required to maintain building and provide ground maintenance
<u>Recreation</u> Camping/ Picnicking	Redesign Squaw Creek picnic area for additional parking - 15 spaces \$ \$ 39,000 0.05 (GS-9)/\$1,100 0.01 (WG-5)/\$420	Additional structured parking will accommodate groups now partly improperly parked and will not attract additional use to the area. Picnic structures have historical architectural significance, and moving would be expensive and alter this site	Increase required for planning input Required to maintain additional parking.

Category, Activity, or Place	Action	Plan Rationale	Staffing Rationale
Camping (horse)	Build group horse camp in park at bison corral \$ 726,000 0.23 (GS-5)/\$6,000 0.3 (WG-7)/\$12,600	There is a demand for group horse camping in the park. Most such use now originates from private area east of US 85. Highway must be crossed; park trails too remote. Feasibility of Forest Service funding and construction is un- certain.	Additional campground requires maintenance for grounds, water system and other Public Health Service services
Camping (canoe)	No designated canoe camps, permit only - no change except monitor canoe camping demand for potential future designation of sites 0 0.01 (GS-6)/\$150	Demand for canoe camps is low and can be accommodated by permit without resource damage.	
Canoe and/or Snowmobile Access	Develop canoe access point at Squaw Creek campground and canoe/snowmobile access point on Wright/Baye property \$ 208,000 0.03 (GS-9)/\$600 0.03 (WG-5)/\$1,260	Canoeing and snowmobiling are increasing and have little formal NPS support. These suitable acti- vities will be encouraged by for- malizing access points with pro- tected parking. Both longer trips, and a shorter 5-mile trip requiring a put-in and take-out point, will be encouraged through this action.	Increase required to monitor and document use and provide protection services Required to maintain access roads to river
Trails	Develop handicap-accessible nature trail in suitable location Pave 1,700 ft. \$ 23,000 0.05 (WG-5)/\$2,100	Existing trailhead is inadequate, especially with proposal to make this a handicap trail.	Needed to maintain handicap trail
Interpretation/ Visitor Contact US 85 Overlook	Provide state with technical assistance in their production of new wayside exhibit 0	The National Park Service is interested in the message con- tained in state waysides near the park, but has no jurisdiction or maintenance responsibilities. Advice on sign information is a normal cooperative activity.	

Category, Activity, or Place	Action	Plan Rationale	Staffing Rationale
District Headquarters	<p>At entrance site build a new facility for combined functions:</p> <ul style="list-style-type: none"> - District ranger/interpreter office - Protection security - Multipurpose meeting room/library - Storage for supplies and specimens - Public restrooms - Fee collection/permit issuance - Information/publication sales - Interpretive media to be prescribed by future interpretive prospectus, covering themes of wilderness and natural resources and man in the park environment. Use changeable media to extent possible 	<p>Considering the small staff with shared responsibilities for protection and interpretation, only a combined-function facility with employees in close proximity is feasible. All visitor and management activities needing enclosure are currently conducted in a poorly insulated trailer and a small, two-room ranger station. Entrance fee collection, staff briefings, desk work, storage of sensitive protection, and business with the public all take place in a crowded, disruptive place. There is no separate space to store physical evidence or to respond to medical emergencies. The nearest public restroom is 5 miles away at Squaw Creek Campground. No further space is available for storing scientific specimens and library collections, and no existing space for these functions, or for visitor reception, can be heated in winter. A combined staff saves money, but properly designed space for this purpose and to meet minimal visitor needs is essential.</p>	
	<p>\$2,167,000 new building at entrance area (5,850 s.f. includes basement)</p> <p><u>\$2,167,000</u></p> <p>0.55 (GS-5)/\$10,871 0.8 (WG-7)/\$33,600</p>		<p>Operating increase is needed to supplement existing personnel, enabling facility to be open to serve visitors throughout most of year, particularly spring and fall. Without increase, facility will not be operated to serve visitors' needs for information, restrooms, etc.</p>
	<p>Add more parking at new entrance facility</p> <p><u>\$ 31,000</u></p>	<p>Existing parking is adequate only for the present trailer and ranger station.</p>	<p>WG-7 would be needed to maintain new facility and provide janitorial services.</p>

Category,
Activity,
or Place

Action

Plan Rationale

Staffing Rationale

Administration
and Facilities
District
Headquarters

Provide new and replacement
quarters for permanent and-
seasonal employees (modular or
comparable structures)

\$ 177,000 2-1,200 s.f.
for permanents
\$ 403,000 6-550 s.f.
for seasonals

\$ 580,000

0.2 (WG-7)/\$8,400

Two trailers housing required-
occupancy employees have deterior-
ated in this severe climate and need
to be replaced by the most cost-
effective type of structure (modular
compared to "stick type" on-site
construction). Watford City, 15
miles north, has limited available
units for sale or rent; fluctuating
and sometimes prohibitively high
housing prices and rental rates
prevail due to energy development.
Employment of all qualified seasonal
personnel from the local resident
population is seldom possible. Other
than the substandard camp-tender
residence serving as a summer
dormitory for male employees, there
are no other seasonal quarters
available for the minimal number of
employees needed to ensure adequate
protection for resources, facilities,
and visitors. Adequate on-site
residency will be required to imple-
ment the flash-flood evacuation plan.

Required to maintain new quarters
and provide utilities

Build enclosed cold-storage building
for equipment and vehicles

2 bays, 660 s.f. each

\$ 97,000

0.05 (WG-7)/\$2,100

Several maintenance and emergency
vehicles (such as snow removal trucks
and fire truck) are kept outdoors
because of no space in the mainten-
ance building. Long periods of
subfreezing temperature and drift-
ing snow hamper efforts to put this
equipment in operation, and require
"digout" and warming time. An
unheated, wind-sheltered structure
with power for oil-system warming
will keep this equipment "on call"
through the winter.

Additional maintenance would be
required to provide services and
utilities to maintenance storage
facility

Enlarge maintenance building for
these functions:

- Carpenter shop
- First-aid station
- Fire cache (related to fire
management needs)
- Small equipment storage

add on 1,000 s.f.

\$ 105,000

0.2 (WG-7)/\$8,400

The existing maintenance building
with three small bays is the center
for most sheltered work activities,
and is also the only indoor storage
facility in the district. Floor
space needed for vehicle maintenance
and safe shop operation is consumed
by lumber, equipment, and stacked
gear. One wall now containing
fire suppression equipment lacks
adequate space for future fire
management programs. First-aid,
now unsatisfactorily conducted at
the entrance station, should be
relocated to individual space in the
nearby maintenance building.

Required to maintain and provide
utility services to expanded
maintenance facilities

Category, Activity, or Place	Action	Plan Rationale	Staffing Rationale
Utilities District Headquarters	Enlarge and line sewage lagoon \$ 27,000	This unlined lagoon is filled to capacity in summer. Were it properly lined, present use would cause it to overflow. Once public restrooms are provided, the lagoon will be totally inadequate. Regardless of other proposed actions, the lagoon should be enlarged.	
	Underground REC power lines, encourage WAPA to relocate their line 15,500 l.f. \$ 350,000	Because of visual intrusiveness, overhead utilities in the headquarters area should be undergrounded. Nearby WAPA lines could be relocated in the long term when replacement is required.	
	Construct waterline from storage tank to visitor/interpretation/protection building 2,000 l.f. \$ 58,000		
Squaw Creek Campground	Resize sewage lagoon \$ 56,000	The lagoon is too large to adequately digest wastewater. In reducing its size, relining is also needed.	
Radio Communications	Renovate and fence tower \$ 44,000	The tower is not riveted properly. Each loose piece of metal is a separate transmitter, resulting in mixed frequencies and interference. Refitting and riveting is the only solution.	
Floodplain/ Flash-flood Strategy Squaw Creek Campground/ Picnic Area	Floodproof structures and utilities to comply with 100-year flood regulations; provide flood-warning systems and evacuation plans for areas with flood potential	The campground and picnic area will remain in their present site because there are no suitable relocation areas in the north unit. Areas of suitable slope outside the floodplain have no shade and/or are in wilderness.	
Campground Subtotal	floodproof 3 buildings \$ 163,000 0.02 (GS-12)/\$800		Increase needed to prepare warning and evacuation plan
Picnic Area Subtotal	\$ 50,000 floodproof 1 building 0 shelters - no \$ 50,000 floodproofing		
Warning System Subtotal	\$ 24,000* (includes \$8,000 for group horse camp near bison corral in floodplain)		
Total Flood Prevention Costs	\$ 237,000		

Category,
Activity,
or Place

Action

Plan Rationale

Staffing Rationale

North Unit
Subtotals
Capital
Investment-
Development
Cost:

\$5,006,000

Staffing/
Operations:
FTE
Cost

12.86
\$ 405,106

10-Year Costs:
Development
Staffing/
Operations

\$5,006,000
\$3,613,000

Grand Total

\$8,619,000

Category, Activity, or Place	Action	Plan Rationale	Staffing Rationale
<u>ELKHORN UNIT**</u>			
<u>Roads/Parking</u> <u>Access Strategy</u> (Note: NPS supports the counties in selecting the "southern route" for new public road across this region.)	Counties select southern route for new road, and NPS connects to unit with short access road and small parking area (rights-of-way from landowners would be necessary)	Golden Valley and Billings counties have been studying an east-west road improvement program, including a new bridge across the Little Missouri River, in the general latitude of the Elkhorn unit. A northern route would be distant from Elkhorn and infeasible to connect with a spur road because of rough terrain. The southern route will require 1 mile or less of new access road, thereby connecting most directly and best meeting NPS objectives.	Increase needed to develop and implement visitor protection and resource management plan with projected increased use brought about by improved access
	$\frac{1}{2}$ mile of gravel entrance road		Provide maintenance for access road and parking area, cleanup and garbage removal
	\$ 122,000		
	0.1 (GS-9)&12)/\$6,000		
	0.2 (WG-7)/\$8,400		
<u>Natural</u> <u>Resources</u> <u>Zoning and</u> <u>Biotic</u> <u>Management</u>	Zone most of unit cultural; emphasize natural scene (prescribed grazing and fire through resource management planning)	Elkhorn Ranch since abandonment at the turn of the century has reverted to scenic grass and woodland. This change will be interpreted and contrasted to the historic scene in which vegetation was sparse and the site probably barren and dusty.	Increase need to prepare and carry out natural scene management plan
	0		
	0.03 (GS-9)/\$3,000		
<u>Cultural</u> <u>Resources</u> <u>Historic</u> <u>Structures</u>	Delineate foundations of selected structures	These sites are in the 100-year floodplain, making protection of capital investment costly and resulting in significant alteration of the historic site. Only the foundations of the house, barn, and blacksmith shop and the well site need be marked for interpretation of the ranch.	Required to keep foundation delineations in place and provide area cleanup
	\$ 13,000		Increase to provide protection patrols for delineated foundations
	0.02 (WG-7)/\$840		
<u>Recreation</u> <u>Camping</u> (backcountry)	No designated camps for hikers, horses, and canoes; permit only. No change, except monitor camping demand for potential future designa- tion of sites.	Demand for backcountry camping is low and can be accommodated by permit without resource damage. The staff will monitor this use, and any future decision to provide designated campsites will be supported by future environmental documentation.	Increase required to control and monitor camping use
	0		
	0.01 (GS-6)/\$150		
<u>Recreation</u> <u>Picnicking</u>	Provide small picnic area 5 sites	Once road access is improved, minimum recreation facilities will be required. A small picnic area then would be appropriate.	
	\$ 15,000		

Category, Activity, or Place	Action	Plan Rationale *	Staffing Rationale
Trails	<p>Stabilize access trail for minimum handicap access</p> <p>new trail, stabilized (3,700 ft.)</p> <p>\$ 27,000</p> <p>0.1 (WG-7)/\$4,200</p>	<p>A well-defined, smooth trail will be needed to bring most visitors to the ranch site; the surface to be compatible with the natural and historic scene.</p>	<p>Maintain minimum access handicap trail; provide area cleanup</p>
Interpretation/ Visitor Contact Signing	<p>Provide highway and entrance signing</p> <p>\$ 13,000</p> <p>0.02 (WG-7)/\$840</p>	<p>At present, there are no signs on remote dirt approach roads, and visitors are easily confused. Signing appropriate to the standard of access and volume of use will guide visitors to the site.</p>	<p>Provide upkeep on signs and area cleanup, purchase sign repair materials</p>
Interpretive Methods	<p>Provide tour folder and wayside exhibits for site</p> <p>*</p> <p>0.05 (GS-4)/\$989</p> <p>Offer personal services only during times of high visitation**</p> <p>0</p> <p>0.35 (GS-5)/\$6,958</p>	<p>The principal media for this quiet, scenic area will be self-guiding and unobtrusive to encourage individual interpretation and contemplation.</p> <p>Larger numbers of visitors during specific periods (e.g., weekends in summer) justify guided hikes to interpret and protect the resource.</p>	<p>Increase is needed for implementing/maintenance of folders and waysides; without it, visitors will be deprived of basic site information</p> <p>Without accompanying increase, few visitors will receive interpretation of site and its significance; site protection will be threatened by increased visitation and accompanying vandalism</p>
Administration and Facilities Trailhead Parking and Ranch Areas	<p>Build small storage building for maintenance and protection near trailhead</p> <p>160 s.f. seasonal use only</p> <p>\$ 16,000</p> <p>Build tent platforms, small vault toilets, and primitive, cold water shower for seasonal staff</p> <p>120 s.f., wood (2)</p> <p>\$ 5,000</p> <p>0.01 (GS-7)/\$150</p> <p>0.7 (WG-7)/\$29,400</p>	<p>Tools for trail and grounds maintenance, fire management, first-aid, etc. will need to be stored securely on-site.</p> <p>A small seasonal staff for resource protection and interpretation will need quarters during the summer. Rustic quarters out of view of public use areas will require little maintenance and little or no rental fee. In winter, patrols from the south unit will be adequate for site protection.</p>	<p>Increase needed to provide protection patrol for the development</p> <p>Increase level of protection patrols in line with value of developments</p> <p>Maintenance required for small building, seasonal tent platforms, floodproof vault toilet, and well to provide sanitary services and utilities to meet PHS laws</p>

<u>Category, Activity, or Place</u>	<u>Action</u>	<u>Plan Rationale</u>	<u>Staffing Rationale</u>
<u>Utilities</u>	Build floodproof vault toilet	A toilet proximal to the trailhead and staff quarters will be essential. If it is in the 100-year floodplain, it must have a vault that can be sealed manually.	
<u>Trailhead</u>	\$ 45,000		
<u>Parking and Ranch Areas</u>	Drill well for drinking water; floodproof	Potable artesian water is believed to be developable on-site, therefore requiring no power and being the most cost-effective solution. If it is in the 100-year floodplain, the system will be floodproofed.	
	\$ 66,000		
	0.5 (WG-7)/\$21,000		
<u>Floodplain/ Flash-Flood Strategy</u>	Provide flood-warning systems and evacuation plans for areas with flood potential	The foundation markers, wayside signs, and access trail will be designed to withstand destructive effects of water, and the area will be closed to public use during high floods. The new access road and parking area, as well as other new facilities previously described, will be located outside the 100-year floodplain or elevated to prevent flood damage.	
<u>Access and Ranch</u>	\$ 8,000		
<u>Elkhorn Unit Subtotals</u>			
Capital			
Investment- Development			
Cost	\$ 330,000		
Staffing/ Operations:			
FTE	3.14		
Cost:	\$ 99,727		
10-Year Costs:			
Development	\$ 330,000		
Staffing/ Operations	\$ 629,000		
Grand Total	\$ 959,000		

Category, Activity, or Place	Action	Plan Rationale	Staffing Rationale
<u>SOUTH UNIT</u>			
<u>Natural Resources</u> Bison Corral	Keep in present location; upgrade existing horse corral in northeastern corner of unit as a second facility to handle bison	The existing corral, on the west edge of the range, can be miles from where the animals congregate at the time of the drive. The longer the drive, the more scattering and potential for injury. A second corral on the east side of the range will reduce roundup time and make future operations safer.	
	upgrade horse corral		Increase required to make improvements and then properly maintain
	\$ 240,000		
	0.08 (GS-6&9)/\$6,000 0.2 (WG-7)/\$8,400		Maintenance required to repair fence corral shutes and additional corral will increase cost of maintenance
<u>Cultural Resources</u> Headquarters Area	Install fire suppression system in Maltese Cross cabin	This historic cabin, a major visitor attraction, contains objects associated with Theodore Roosevelt and his period of occupancy. Fire would cause irreplaceable loss.	
	\$ 8,000		
	Provide fire suppression system in visitor center	Numerous historic objects and extensive library materials, including original records, are inadequately protected from fire.	
East Entrance Station			
	Move station; use adaptively elsewhere	This substantial historic structure (attractive dressed stone) has been abandoned more than 20 years since the east entrance road was relocated. It has no access by road. Relocation will be relatively inexpensive, and a new entrance site location with road access will be an appropriate use for the historic structures.	Adaptive use will require maintenance to structures as well as other support services such as utilities and PHS compliance
	\$ 19,000 move structures		
	48,000 adapt. restor.		
	\$ 67,000		
	0.02 (GS-6)/\$300 0.2 (WG-7)/\$8,400		Increase needed to monitor use and provide periodic protection patrols

Category, Activity, or Place	Action	Plan Rationale	Staffing Rationale
Recreation Camping (vehicular)	<p>Redesign spur campsites in Cottonwood campground to pull-through</p> <p>\$ 174,000</p> <p>0.1 (GS-12,9,6)/\$2,900</p>	<p>Now that recreational vehicles (some with trailers) are more numerous, there is far more need for pull-through rather than pull-in loops. Some pull-in sites will be converted even though a few campsites will be lost. This loss is acceptable because the campground is seldom used to capacity. More spacious campsites and safer circulation will result.</p>	<p>Increase for management and protection of the facility during use season; construction of the Rough Riders horse/group camp has been programmed and is not included in this GMP</p>
Camping (canoe)	<p>Manage horse/group camp</p> <p>0.08 (GS-9)/\$2,000</p> <p>No designated canoe camps - permit only; no change, except monitor camping demand for potential future designation of sites</p> <p>0</p> <p>0.01 (GS-5)/\$150</p>	<p>Demand for canoe camping is low and can be accommodated by permit without resource damage. The staff will monitor this use, and any future decision to provide designated campsites will be supported by environmental documentation.</p>	<p>Increase required to manage, monitor, and document use</p>
Canoe/ Snowmobile Access	<p>Develop canoe/snowmobile access point (cooperate with State Historical Society in providing launch site at Medora)</p> <p>\$ 29,000</p> <p>0.01 (GS-9)/\$150</p>	<p>Most canoe/snowmobile trips require parking at beginning and end of trip; however, there is no developed public put-in site at Medora. Longer trips could be made to the north unit or beyond. Short canoe trip take-outs could be handled at Cottonwood campground or Peaceful Valley.</p>	<p>Increase needed to plan and coordinate setup of access point</p>
Trails	<p>Develop 6-mile loop west of river, beginning at Cottonwood campground</p> <p>\$ 193,000</p> <p>0.14 (GS-9&12)/\$5,800</p> <p>Develop interpretive trail below rim at Painted Canyon</p> <p>\$ 26,000 trail (4,000 ft)</p> <p>16,000 retaining walls</p> <p>\$ 42,000</p> <p>0.7 (GS-4)/\$9,957</p>	<p>Visitors at the campground have relatively little access to trails and loops. This unmet demand results in unplanned trails on steep eroding slopes east of the campground.</p> <p>Unmet demand for below-rim foot travel is resulting in unplanned paths and visitors entering steep terrain. Painted Canyon is the first view of the badlands for many. Not only do people want to walk after a long drive, but also learn about the resources through self-guided interpretation.</p>	<p>Increase needed to lay out trail and to supervise construction; thereafter for patrol and provide maintenance support</p> <p>Increase needed to support interpretive patrols and guided walks on proposed trail. Without it, visitor safety will be threatened, and visitors will not gain an understanding of the park's significance and recreational opportunities</p>

Category,
Activity,
or Place

Action

Plan Rationale

Staffing Rationale

Develop Medora overlook trail,
loop about 3 mi.

\$ 151,000 trail
(18,500 ft.)
32,000 retaining walls
\$ 183,000

0.2 (GS-4)/\$2,660

0.1 (GS-9)/\$150

Develop low-standard trail - Buck
Hill to Painted Canyon

21,000 ft
\$ 10,000

0.03 (GS-9)/\$600

Improve Skyline trail to make
handicap accessible

pave 1,000 ft.
\$ 11,000

\$ 400

0

Build new parking and trailhead
at former horse camp west of river

0.02 (GS-9&6)/\$400

dirt parking, 15 vehicles

\$ 37,000

0.58 (WG-7)/\$24,300

Maintenance for
all new trails
proposed in
alternatives

This area is one of the two most
heavily visited within the park and
the single-most important orientation
point, but there are no existing
trail opportunities. A trail would
offer outstanding views and diverse
vegetation.

This is an excellent opportunity
to connect two high-use scenic
areas through varied terrain.
There are no existing trails avail-
able at these two popular areas.

Hard surfacing this existing trail
on flat terrain, which leads to bluff
top views, is the best opportunity
for wheelchair access in the unit.

The NPS radio tower has been re-
located, opening additional terrain
for hiking. Opportunities for
hiking scenic ravines and ridges
are available. The trailhead is
needed for access when the river
is too high to safely ford.

Increase required to provide inter-
pretive patrols and guided walks
on proposed trail, thereby en-
hancing visitor safety and under-
standing of the park

Increase needed to assist in plan
and layout of trail

Increase needed to plan and
layout trail for maintenance;
assistance thereafter

Increase needed to fund inter-
pretive trail leaflet; without it
visitors will not have access to
basic information about park
resources

Increase required to monitor use
and provide protection and in-
cidental maintenance after con-
struction

Provide personal service and
supplies to maintain all new or
ungraded trails; cyclic maintenance
required to keep visitor use trails
open

Category, Activity, or Place	Action	Plan Rationale	Staffing Rationale
Interpretation/ Visitor Contact Painted Canyon	<p>Redesign interior of visitor center. New interpretive prospectus will prescribe media to interpret these themes:</p> <ul style="list-style-type: none"> -Significance of park as a whole -Geological origin of the badlands -Air quality 	Existing lobby space is poorly used. For example, the audiovisual program is set up without regard to distractions, expansive view windows are not used, and opportunities to introduce visitors to activities and resources in the park have been lost. To correct wasted space and effectively orient visitors to the park, remodeling in conjunction with specialized interpretive planning will be required.	
Loop Road	<p>New exhibits per new wayside exhibit plan</p>	Several opportunities for interpreting interesting resources along this road have never been realized. The waysides will be coordinated with selection of location and design of new pull-outs. The wayside exhibit plan will take into account the need for a future parkwide interpretive prospectus.	
	<p>Place stronger interpretive emphasis on this major viewpoint</p>	Buck Hill is the midpoint on the loop road and the most spectacular viewpoint. The hill seems to be the major destination, yet there is no interpretation present; its geologic origin and opportunities for seeing distant park landscapes are not readily understood. Wayside and other interpretive planning are needed.	Increase required to fund informal interpretation at Buck Hill during hours of peak visitation, thereby enhancing visitor safety and understanding of park
	<p>0.35 (GS-4)/\$6,654</p>		
Roads/Parking Peaceful Valley	<p>Provide additional parking and improve circulation at picnic area</p>	Redesigned parking will alleviate congestion and will not attract additional use to the flood area.	
	<p>\$ 172,000</p>		
	<p>Convert Buck Hill spur road to gravel as base deteriorates</p>	This steep spur road is underlain by actively moving earth. The pavement buckles and becomes dangerous, whereas dirt and gravel can be regraded easily. Access only by trail would discourage many visitors from seeing the scenic high point of the loop road, and complete reconstruction with drainage corrections might not be entirely successful.	
	<p>½ mile</p>		
	<p>\$ 47,000</p>		
	<p>9.2 (WG-7)/\$8,400</p>		WG-7 required to keep gravel road to Buck Hill graded and safe for visitor travel

Category, Activity, or Place	Action	Plan Rationale	Staffing Rationale
<u>Utilities</u> <u>Painted</u> <u>Canyon</u>	Reduce largest cell to 1/3 existing size and replace lining	The existing lagoon was oversized and is too large to digest the sewage. The largest cell is so little used that sunlight is disintegrating the lining. Reconstruction and relining are necessary.	
	\$ 56,000		
	Completely redesign and replace heating system for extended season of operation	The existing solar thermal system was custom-designed for the visitor center. It is unreliable, includes substandard collector panels, is costly to maintain, and will not produce sufficient heat to keep the center open during the colder spring and fall months. Parts are also difficult to obtain. Complete replacement with more reliable solar or conventional system is under study. Renovation for longer season or year-round operation is also being considered.	Current funding/staffing levels do not allow NPS to operate facility in the spring and fall; without an increase, facility will be closed at times when visitation demands it to be operated
	\$ 242,000		
	0.35 (GS-4)/\$6,374		
Loop Road	Build vault toilets at Buck Hill and two other suitable locations	There are no toilets along the loop road, a situation that contributes to hurried trips along this scenic drive. Buck Hill is an obvious location for one toilet. Other locations will be determined following further study. Interpretive facilities will also be improved.	WG-7 required to maintain vault toilets on loop road to meet PHS laws
	\$ 135,000		
	0.4 (WG-7)/\$16,800		
<u>Floodplain/</u> <u>Flash-Flood</u> <u>Strategy</u> <u>Headquarters</u> <u>Area</u>	Build permanent dike behind visitor center/Maltese Cross cabin); provide warning system and evacuation plan for areas with flood potential	Providing a lower dike system close to the park facilities requiring floodproofing will cost less than riverbank dikes and also will protect most of Medora. The dikes will be largely on NPS land with the city of Medora and others as involved. Higher riverbank dikes will have to be built on land belonging to the North Dakota Historical Society, and permits from the Army Corps of Engineers will be needed.	Maintenance worker required to perform grounds work
	\$ 8,000 warning sys. 451,000 dike (1,700' \$ 459,000 long, 7' high avg.)		
	0.2 (WG-7)/\$8,400		
Cottonwood Campground	Floodproof structures and utilities to comply with 100-year flood regulations; provide warning system and evacuation plan for areas with flood potential	At Cottonwood Campground, the camp-tenders residence and public comfort stations will be floodproofed to fully comply with regulations. Redesigning the treatment facilities within the floodplain is impracticable. Compliance can be met only by relocating them entirely away. Lift stations will be required.	
	\$ 8,000 warning sys. 184,000 reloc. sew.trmt. 267,000 waterproof/elev. \$ 459,000 cmpd. struct.		
	0.04 (GS-12)/\$1,600		Increase required to prepare evacuation plan and provide warning system

<u>Category, Activity, or Place</u>	<u>Action</u>	<u>Plan Rationale</u>	<u>Staffing Rationale</u>
Peaceful Valley Ranch	Let flood and repair damage; provide warning systems and evacuation plans for areas with flood potential; provide floodproof comfort station and relocate sewage treatment above 100-year floodplain	At the Peaceful Valley horse con- cession the 100-year flood will inundate the structures about 5 feet; floodproofing by berming or by elevating buildings will be expensive and greatly alter the historic scene, so repair is recommended.	
	relocate sewage treatment; build new comfort station		
	<u>\$ 293,000</u>		
	0.2 (WG-7)/\$8,400		WG-7 required to maintain new comfort station and operate sewage treatment to meet PHS laws
Peaceful Valley Picnic Area	Let flood and repair damage; provide warning system and evacuation plans for areas with flood potential; provide 2 floodproof vault toilets	At Peaceful Valley picnic area, use is during the day, and evacuation will prevent flash-flood danger to visitors and loss of private property.	
	<u>\$ 81,000</u>		
Warning System Subtotal	<u>\$ 16,000</u>		
<u>South Unit Subtotals</u>			
Capital Investment- Development Cost:	\$2,981,000		
Staffing/ Operations:			
FTE	29.16		
Cost	<u>\$ 938,914</u>		
10-Year Costs:			
Development	\$2,981,000		
Staffing/ Operations	<u>\$8,732,000</u>		
Grand Total	\$11,713,000		

Category, Activity, or Place	Action	Plan Rationale	Staffing Rationale
<u>PARKWIDE TOTALS</u>			
Capital Investment- Development Cost:	\$8,317,000		
Staffing/ Operations:			
FTE	45.16		
Cost	\$1,443,747		
10-Year Costs:			
Development	\$8,317,000		
Staffing/ Operations	<u>\$12,974,000</u>		
GRAND TOTAL	\$21,291,000		

Notes:

* Development costs not included; would be determined by future interpretive prospectus.

**Proposed actions occur only upon completion of the new trans-river road by Golden Valley and Billings counties.
Until then, continuation of existing conditions alternative will prevail.

1. All land protection discussions and recommendations are presented in the Land Protection Plan.
2. A few subjects affecting the south unit were dropped as planning issues due to the ability of the park to solve them through maintenance measures at existing operational levels. These include the standard of the East River Road, water quality at headquarters, and deployment of staffing at visitor centers.
3. The problem of mixed traffic (horses, pedestrians, and vehicles) at the Peaceful Valley horse concession is not adequately documented and requires additional observation by the park staff. Solutions probably can be resolved operationally without specific GMP guidance; if needed, a future DCP could be programmed. Any ground-disturbing proposals would be the subject of future environmental documentation.
4. Costs are based on 1985 dollars.
5. Total capital investment cost estimates are class "C", which are conceptual in nature and based on similar facilities in other parks. These include construction, material, labor, advance and project planning, construction supervision, and facilitating administration services costs.
6. Personnel staffing and their operational costs are provided on an annual basis except for the 10-year totals at the end of each unit.

BIBLIOGRAPHY

BILLINGS COUNTY, NORTH DAKOTA

- 1974-5 "Billings County Zoning Resolution No. 1," and "Amendment to Section XX." Billings County Board of County Commissioners.

CITY OF MEDORA, NORTH DAKOTA

- 1983 "City of Medora Historical Integrity Zoning Ordinance." Roosevelt-Custer Regional Council, Dickinson, North Dakota.

EDWARDS, M.J. and J.K. ABLEITER

- 1944 "Soil Survey: Billings County, North Dakota," U.S. Department of Agriculture and North Dakota Agricultural Experiment Station, Ser. 1934, No. 25.

FOREST SERVICE, U.S. DEPARTMENT OF AGRICULTURE

- 1974 Management Prescription for the Badlands Planning Unit and Final Environmental Statement, Little Missouri National Grasslands, Custer National Forest. Northern Region.
- 1975 Management Plan and Final Environmental Statement, Rolling Prairie Planning Unit, Little Missouri National Grasslands, Custer National Forest. Northern Region.
- 1983 "Visitors Map, Little Missouri National Grasslands, North Dakota" (showing landownership.)

GEOLOGICAL SURVEY, U.S. DEPARTMENT OF THE INTERIOR

- 1985 "Flood Analysis Along the Little Missouri River Within and Adjacent to Theodore Roosevelt National Park, North Dakota," by Douglas G. Emerson and Kathleen M. Macek-Rowland. Water Resources Division, Bismarck, North Dakota, with Letter of May 24, 1985.

HANSEN, P.L., R.B. HOPKINS, and G.R. HOFFMAN

- 1980 "An Ecological Study of Theodore Roosevelt National Park: Habitat Types and Their Ecological Components." University of South Dakota.

HANSEN, P.L., G.R. HOFFMAN, and A.J. BJUGSTAD

- 1984 "The Vegetation of Theodore Roosevelt National Park: A Habitat Type Classification," USDA Forest and Range Experiment Station, General Technical Report RM-113.

HARMON, DAVID

- 1985 "An Administrative History of Theodore Roosevelt National Park."

MARLOW, C.B., L. IRBY, and J. NORLAND

1984 "Optimum Carrying Capacity of Bison in Theodore Roosevelt National Park, Final Report."

NATIONAL PARK SERVICE, U.S. DEPARTMENT OF THE INTERIOR

1962 "Archeological Investigations of the Elkhorn Ranch Site," by Dee C. Taylor. Midwest Archeological Center, Lincoln, Nebraska.

1972 Wilderness Recommendation, Theodore Roosevelt National Park, North Dakota. Denver Service Center, Denver, Colorado.

1973a Interpretive Prospectus, Theodore Roosevelt National Memorial Park, North Dakota. Denver Service Center, Denver, Colorado.

1973b Master Plan, Theodore Roosevelt National Memorial Park, North Dakota. Denver Service Center, Denver, Colorado.

1975 "Theodore Roosevelt National Memorial Park, Proposed Sewer Line Archeological Reconnaissance," by Marvin Kay. Memorandum dated March 3, 1975, to Chief, Midwest Archeological Center, Lincoln.

1977a "Archeological Survey of Theodore Roosevelt National Memorial Park," by Thomas D. Thiessen. Memorandum dated April 1, 1977 to Superintendent, Theodore Roosevelt National Memorial Park, Medora, North Dakota.

1977b "Archeological Reconnaissance of the Painted Canyon Overlook." Memorandum dated June 7, 1977, to Superintendent, Theodore Roosevelt National Memorial Park, Medora.

1978a Assessment of Alternatives, Elkhorn Unit Development, Theodore Roosevelt National Memorial Park, North Dakota. Theodore Roosevelt National Park. Medora.

1978b "Archeological Survey in the Buck Hill Slide Area of the Scenic Loop Road in Theodore Roosevelt National Memorial Park, South Unit," by Robert K. Nickel. Memorandum dated July 17, 1978, to Chief, Midwest Archeological Center, Lincoln.

1980 Historic Structure Report, Historical Data Section, CCC Structures/ Peaceful Valley Ranch/Maltese Cross Cabin/Elkhorn Ranch, Theodore Roosevelt National Park, North Dakota, by Louis Torres. Denver Service Center, Denver.

1981 "Archeological Survey, Theodore Roosevelt National Park, 1979-1980." Midwest Archeological Center, Lincoln.

- 1982 General Management Plan/Final Environmental Impact Statement/ Statement of Findings, Capitol Reef National Park, Utah. Denver Service Center, Denver.
- 1982-84 "Annual Statements for Interpretation and Visitor Services." Theodore Roosevelt National Park, Medora.
- 1983-84 "Draft Cultural Resources Management Plan." Theodore Roosevelt National Park, Medora.
- 1984a Natural Resources Management Plan and Continued Environmental Assessment, Theodore Roosevelt National Park, North Dakota. Theodore Roosevelt National Park, Medora.
- 1984b Draft Land Protection Plan, Chaco Culture National Historical Park, New Mexico. Denver Service Center, Denver.
- 1985a "Government Furnished Quarters Management Guideline, NPS-36, Release No. 2." Washington, D.C.
- 1985b "Review Draft General Management Plan/Development Concept Plans/Land Protection Plan/Environmental Assessment, Dinosaur National Monument, Colorado and Utah." Denver Service Center, Denver.
- 1985c Land Protection Plan, Pictured Rocks National Lakeshore, Michigan. Denver Service Center, Denver.
- 1985d "Statement for Management, Theodore Roosevelt National Park." Theodore Roosevelt National Park, Medora.

PETTY, WARREN J.
 1965 "Park History."

STATE OF NORTH DAKOTA

- 1982a North Dakota Century Code, as passed by the State Legislature, Chapters 20.08.03, 24.17, 33.15.04, 61.04.02, 61.28, 61.29, and 63.01.1, including Regulations No. R63-01.1-1 and R63-01.1-2.
- 1982b Little Missouri Scenic River Commission Summary of Policies and Procedures. November.
- 1983a Letter of November 15, with attachments from Harold G. Vavra, Director, North Dakota Aeronautics Commission to Harvey D. Wickware, Superintendent, Theodore Roosevelt National Park commenting on statements regarding the Medora Airport in the Draft National Resources Management Plan and Environmental Assessment for Theodore Roosevelt National Park.

- 1983b EPA-Approved North Dakota State Air Pollution Control Implementation Plan (40 CFR 52.1820).

U.S. DEPARTMENT OF AGRICULTURE

- 1942 "Soil Survey: Billings County, North Dakota," U.S. Department of Agriculture and North Dakota Agricultural Experiment Station, Ser. 1933, No. 37.

U.S. DEPARTMENT OF THE INTERIOR

- 1982a New Tools for Land Protection: An Introductory Handbook, Office of the Assistant Secretary for Fish and Wildlife and Parks.
- 1982b "Preliminary Certification of No Adverse Impact on Theodore Roosevelt National Park and Lostwood National Wildlife Refuge" (47 FR 30222, July 12, 1982).
- 1983 National Park Service, 36 CFR Ch. 1, "Land Protection Plans, Final interpretive rule," as published in the Federal Register, Vol. 48, No. 92, Wednesday, May 11, 1983.
- 1985 "Final Determination to Extend Certification of No Adverse Impact on Theodore Roosevelt National Park and Lostwood National Wildlife Refuge under Section 165(d)(2)(C)(iii) of the Clean Air Act" (50 FR 7658, February 25, 1985).

LIST OF PREPARERS

NATIONAL PARK SERVICE

Denver Service Center

Larry Knowles, Team Captain/Landscape Architect
Linda Russo, Technical Publications Writer-Editor
Don Bock, Outdoor Recreation Planner
John Myers, Cartographer
Allen Hagood, Environmental Specialist
John Austin, Socioeconomic Specialist
Roberta Seibel, Planner
Dave Scherer, Historic Architect
Berle Clemensen, Historian
Keith Dunbar, Outdoor Recreation Planner
Bruce McCraney, Landscape Architect
Robert Todd, Cartographer
Dick McNulty, Engineering Estimator

Theodore Roosevelt National Park

Harvey Wickware, Superintendent
Micki Hellickson, Interpretive Planner
Jeff Bradybaugh, Resource Management Specialist
Bob Powell, Chief Ranger
Dick Bennett, Chief of Maintenance
Other park staff

Rocky Mountain Region

Roy Slatkavitz, Planning Coordinator/Chief of Planning
Belva Skiver, Realty Assistant
Lee Garrison, Realty Specialist
Dick Young, Chief, Land Resources Division

Denver-Based Washington Office

Erik Hauge, Environmental Specialist
Sid Covington, Geologist
Marcie Sullivan, Conveyance Examiner
Opal Bradford, Realty Specialist
Howard Stark, Realty Specialist
Bill Oates, Mining Engineer Technician
Leslie Vaculik, Petroleum Engineer
Frank Buono, Environmental Protection Specialist

U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, BISMARCK, NORTH DAKOTA

Doug Emerson
Kathleen Macek-Rowland
Orlo Crosby

As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

Publication services were provided by the graphics and editorial staffs of the Denver Service Center. NPS D-42A, June 1987