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GENERAL MANAGEMENT PLAN

August 1986



**KNIFE RIVER INDIAN VILLAGES
NATIONAL HISTORIC SITE
NORTH DAKOTA**

National Park Service • Rocky Mountain Region

Recommended by:

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8/5/86
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INTRODUCTION

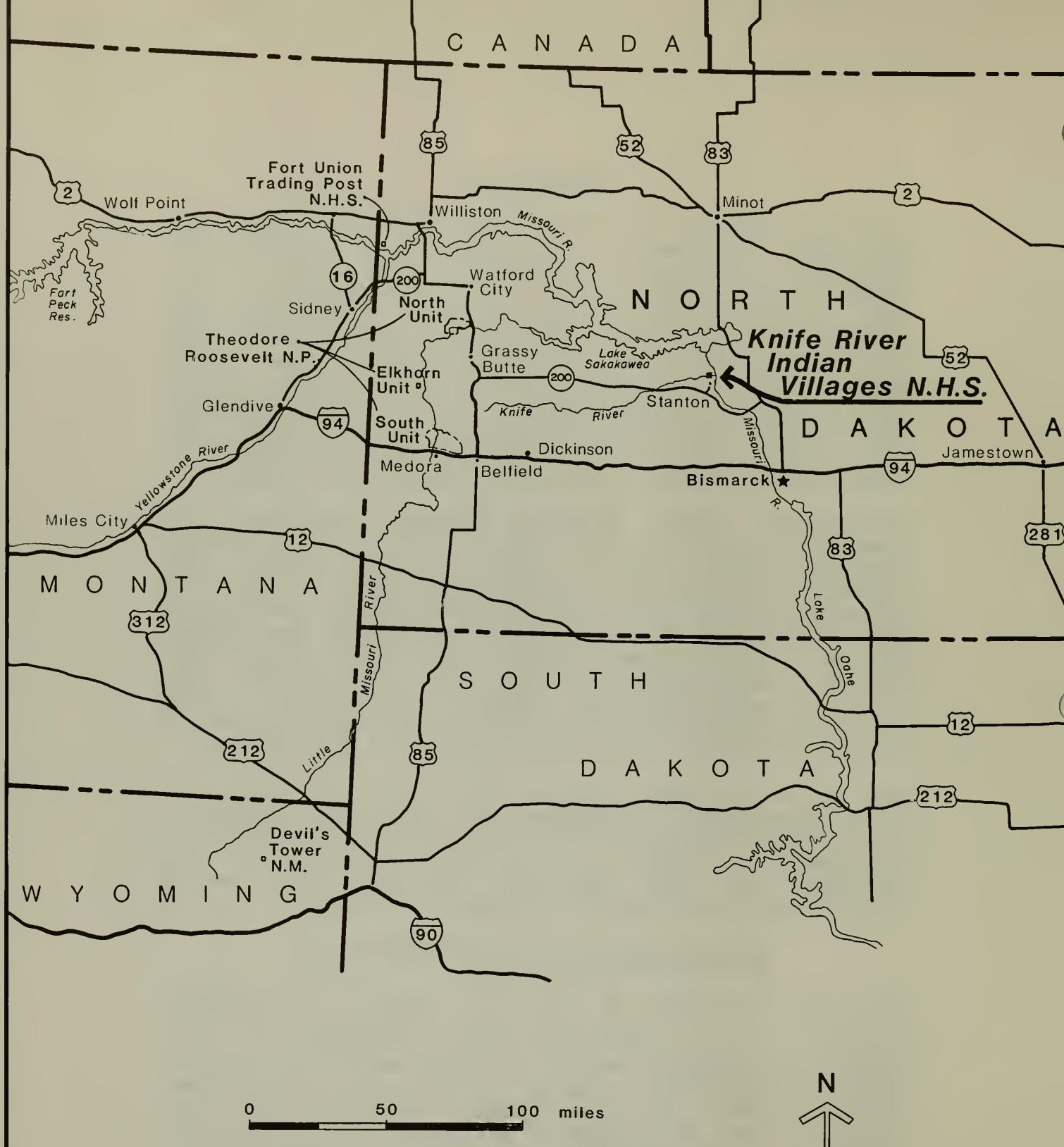
An Environmental Assessment (EA) which disclosed the potential environmental consequences of implementing this revised plan was made available for public review in May 1986. This revised General Management Plan (GMP) incorporates some modifications to the proposal illustrated in the EA. These modifications were made in response to comments received during the public review period. A Finding of No Significant Impact was published in August 1986. That document describes the National Park Service decision to implement this plan. Also included is a finding that this plan and alternatives do not constitute a significant impact.

Knife River Indian Villages National Historic Site occupies 1,293.35 acres in central North Dakota, Congressional District at Large, Mercer County. The national historic site was established in 1974 to preserve certain historic and archeological remnants of the culture and agricultural lifestyles of the Plains Indians. The national historic site is a day-use area with an average length of stay less than 2 hours. The principle activities that visitors participate in are viewing exhibits, walking interpretive trails, viewing cultural resource sites, and fishing the Knife River.

The purpose of this revised GMP is to set forth the basic management strategies for achieving identified objectives. It also outlines the appropriate level of development necessary to provide visitor use and enjoyment of the national historic site while protecting its natural and cultural resources.

THE REVISED GENERAL MANAGEMENT PLAN

This plan provides a balanced response to resource protection, park management, and visitor-use issues. Included are various protection strategies for all known archeological sites and strategies to protect unknown archeological sites if they are encountered. Also included are facilities necessary for the management and protection of archeological collections. Adoption of the 1984 decision regarding location of the proposed visitor/administrative facility enhances park management and visitor-use needs. Park management and cultural resource protection is further enhanced with relocation of the Big Hidatsa trailhead and provisions to expand maintenance and storage facilities outside



Vicinity Map

Knife River Indian Villages National Historic Site

U.S. Dept. of the Interior - National Park Service

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the park (perhaps in the City of Stanton). Visitor-use needs are also recognized by providing for dispersed recreation use (particularly fishing) along the Knife River. Monitoring and other measures to reduce effects of visitor use on archeological sites along the Knife River will also be provided.

LAND USE AND MANAGEMENT

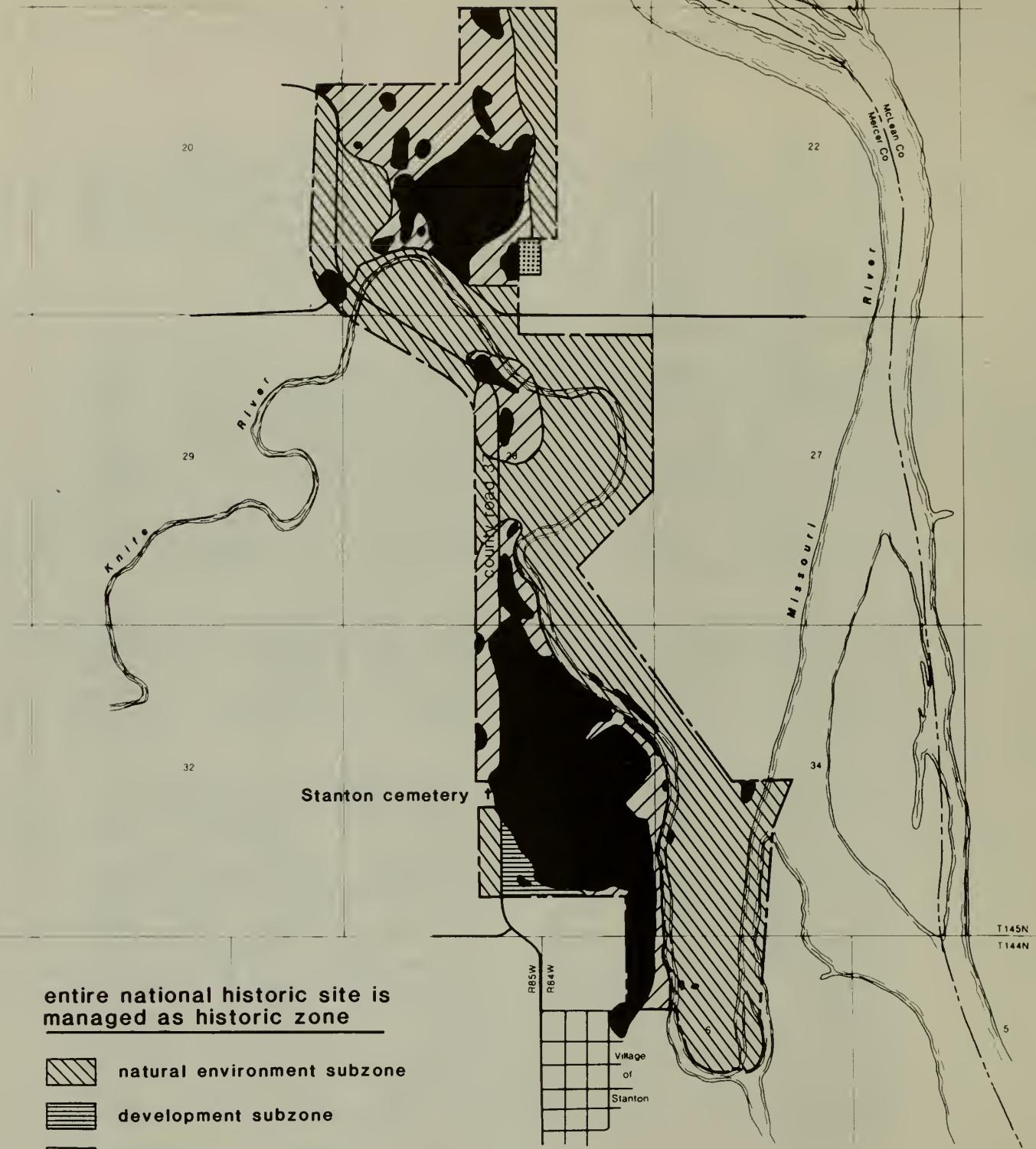
Management zoning (see Management Zoning Map) specifies long-term allocation of the land resources within Knife River Indian Villages National Historic Site. The entire national historic site is within the Historic Zone with three subzones. The development subzone comprises about 9 acres or 1 percent of the site, about 641 acres or 49 percent is within the natural environment subzone, and 643 acres or 50 percent of the site is classified as a cultural resource subzone.

The development subzone includes the visitor/administrative facility, maintenance area, and residence. Within the natural environment subzone are natural resources including the Knife River, prairie grasses, riparian vegetation, cottonwood terraces, and other various wildlife habitats.

Encompassed within the cultural resource subzone are the archeological sites and immediately adjacent areas.

Management within the development subzone includes strategy necessary to provide and maintain developments that serve the needs of the visitor and park management. Conservation of natural resources and processes is emphasized in the natural environment subzone while management within the cultural resource subzone pursues the preservation and protection of archeological sites and values. Because the entire park is within the Historic Zone, all activities are tempered by the preservation, protection, and interpretation of cultural resources and their settings.

A majority of Knife River Indian Villages National Historic Site is surrounded by private lands. These lands have been developed with roads, residences, and extensive agricultural improvements. Viewsheds within natural zones of the historic site include these private lands. Because of the evidence of man's culturally modified environment and the small size of the natural zones, there is no potential for the



Management Zoning Knife River Indian Villages National Historic Site

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visitor to experience primitive, unconfined recreation and solitude. Needs will continue to exist for management of vegetation, fire, and noxious weeds. For these reasons, the natural zones of the national historic site do not qualify for wilderness designation.

LAND PROTECTION

The park includes 1,293.35 acres within its authorized boundary. In the remote possibility that the Running Deer Site is determined to be a winter village or if activities at this site are significantly related to occupation of Big Hidatsa, the National Park Service will pursue protection of this site.

The national historic site includes 1,066.00 acres of non-Federal mineral rights including tract number 01-115 where the proposed visitor/administrative facility would be constructed. There is a need to research mineral potential and environmental threats that may be posed by mineral developments prior to making decisions on land protection strategies which address this condition.

CULTURAL AND NATURAL RESOURCE MANAGEMENT

River Erosion

Three and one-half miles of the channel and mouth of Knife River are located within the park. Spring runoffs and flash floods, typical of meandering prairie streams, frequently result in riverbank erosion. These processes damage cultural resource sites and threaten to damage roads within the park.

Use of structural improvements (such as rip-rap or other constructed controls) to control riverbank erosion will be limited to areas containing cultural resource sites that should be protected "in-place." Initiation of a study to evaluate riverbank sites that should be protected "in-place" is required. This study may be conducted in conjunction with the Water Resource Management Plan. Structural improvements can also be used where erosion threatens roads or facilities within the park. Maintenance of the park's historic integrity should be used as the primary factor when designing river bank erosion control features. Concrete masses or other controls which do not repeat the surrounding

landscapes' characteristics should be avoided. Material that allows revegetation to give appearance of a natural landscape should be used.

Vegetation Management

Knife River Indian Villages National Historic Site is comprised of upland mid-grass areas and riparian bottom-land woods. All areas of the park have been intensively impacted by man. During early development of the park, emphasis was placed on managing the vegetation to aid cultural resource interpretation. However, sufficient insight was not present at the time to realize that returning the area to the "natural scene" typical of the 1804-1805 period, as called for in the master plan, would mean clear cutting the entire areas' timber and creating a barren, dusty scene around the village areas.

The goal of vegetation management in the natural zone is to restore native vegetative communities, in as far as possible, and the processes that maintain those ecosystems. In the cultural zone, goal of vegetation management is to provide natural vegetative patterns that closely resemble the time period of major village occupation.

To implement these goals, research should be conducted in conjunction with mechanical, biological, and prescribed burning programs. Research should monitor the effects of vegetative treatment on cultural and natural resources. As information is collected, vegetative management programs should be modified to meet desired objectives.

Fire Management

Since park establishment, there has been an accumulation of grassland and riparian fuel buildup. This has increased the risk of wildfire threatening both park and private properties. At the present time all fires are suppressed in cooperation with the Stanton Rural Fire Department. The effects of fire on surface and subsurface archeological resources is unknown; however, it is known that fire has occurred in the past and has played a historic role in the maintenance of ecosystems.

An interim fire management plan should be developed and executed. This plan should include prescriptions that

reduce fuel buildup through prescribed burning. In the event of wildfire, suppression will occur unless the fire is needed to meet vegetation management goals. All wildfire that constitutes a threat to life, health, safety, or property will be suppressed. Research on the fire ecology of the park and its effects on cultural resources should occur in conjunction with the interim fire management plan. As information is collected and findings reached, the fire management plan should be amended accordingly. The goal of fire management is to take immediate on-the-ground action while providing provisions for research to modify actions as new data are collected.

Boundary Controls

Knife River Indian Villages National Historic Site has 5 miles of boundary which are either unfenced or inadequately fenced and marked. The current scenic easement does not grant the right to fence this area. Lack of boundary controls result in livestock trespass from adjacent farms and ranches, trespassing, and hunting.

Under this plan, all boundaries would be fenced and posted except for the 400-foot scenic easement. Signs along Mercer County Road 37 will indicate to visitors when they have entered and left the national historic site. Park staff will monitor the effects of game-hunting activities along all county maintained roads lying within the park boundary. Should it be determined that hunting activities threaten the safety of park visitors, management will pursue a solution through cooperative efforts with local, county, and State Agencies.

Fishing Management

Fishing of the Knife River from banks of the Sakakawea archeological site is a popular sport with local residents. The area is easily accessible, and it is presumed the area is popular because it is the best "fishing hole" along the river in the park. It is known that the lower Knife River provides a sport-fish catch of 1.02 which is considerably higher than the statewide average of .37 fish per-angler hour. It is also known that the mouth of the Knife River is an important feeding and breeding ground for many aquatic species.

Fishing from banks of the Sakakawea archeological site may continue with close surveillance by park staff to insure protection of the cultural resources. Visitor conflicts would be reduced by providing main interpretive access to Sakakawea Village from the relocated visitor/administrative facility. Fisherman access to the site would continue from the existing parking area. Inventories would also be collected to determine "fishing holes" which might be available in less sensitive areas. If they exist, fishermen would be encouraged to use these areas.

Poison Ivy Control

Poison ivy has invaded a large portion of the riparian woodlands. These dense stands pose a degree of hazard to visitors and park staff making the areas unusable.

A combination of mowing or cutting, prescribed burning, chemical control, and biological control should be used to control poison ivy populations in the short-term. In the long-term, the ecological situation should be evaluated and a systematic program developed to maintain poison ivy control.

Threatened and Endangered Species

The only endangered species known to use the park is the Bald Eagle (Haliaeetus leucocephalus). This species winters along the Missouri River and there are frequent documented sightings within Knife River Indian Villages National Historic Site. There are no known rare, threatened, or endangered plants within the park.

Inventories should be collected to determine the presence of any additional rare, threatened, or endangered species. If these resources are identified, management plans should be developed and implemented in cooperation with the U.S. Fish and Wildlife Service.

Air Quality

Knife River Indian Villages National Historic Site is located in the heart of an energy corridor that provides gas, coal, oil, and hydroelectric power for the United States and Canada. The cumulative effects of existing and proposed energy developments are unknown. The North Dakota State Department of Health monitors air quality in the State and is the Agency responsible for issuing permits related to air quality.

At present, the Agency has several air quality monitoring stations in the vicinity of Knife River Indian Villages National Historic Site.

The national historic site is classified as a Class II airshed; data from monitoring stations in nearby communities indicate no present National Ambient Air Quality Standard violations. There are 10 incumbent consuming resources within 150 miles of the historic site, 6 of these sources are located within 30 miles. The concern at Knife River is the potential for future degradation of air quality as a result of energy related developments in the area.

Under this plan, the Knife River staff will consult with the Regional Air Quality Coordinator and the Air Quality Division in Denver regarding work with the State of North Dakota to periodically monitor air within the park when monitoring stations in the vicinity indicate potential problems.

Noxious Weed Control

Leafy spurge, Canadian thistle, and other weed species occur in scattered locations in the park. Mercer County has a noxious weed control program as dictated by State law. Cooperation between the park and county has occurred. A 1982 State law granted authority to weed boards to control weeds on all lands and assess the appropriate landowners for these costs. State and local entities believe that this law encompasses Federally-owned and -managed properties.

The park will continue to coordinate programs with State and local entities. Areas of infestation will be clearly defined and mapped and a systematic control program implemented. The program includes provisions for more efficient control of noxious weeds and monitoring to determine environmental side effects.

Water Resources

The park contains two major rivers, the Knife and Missouri, that are environmentally and historically significant.

A Water Resource Management Plan needs to be developed that identifies the resources, threats, and best management practices. It should also identify data base voids and inventory needs.

Control of Rodent Burrowing Activities

Each of the three major villages in the park (Big Hidatsa, Lower Hidatsa, and Sakakawea Village) have large resident populations of burrowing rodents. The overall ongoing effect of burrowing activities is to destroy intact archeological deposits and redeposit displaced artifacts in new contexts not related to original human inhabitants of the villages. In 1977 a controlled surface artifact collection study was conducted. The results of this project suggest that if current rodent activity had been constant over time, about 60 percent of the estimated total volume of cultural deposits at Sakakawea Village could be disturbed and that about 40 percent of the total volume of cultural resource deposits at the Lower Hidatsa Site could be disturbed.

To effectively control rodent populations, there is a need to develop an integrated pest management plan. The plan should consider use of vegetation management, chemical agents, and/or mechanical measures to reduce rodent populations in key archeological areas.

Management and Protection of Archeological Collection

As a result of the 5-year Phase I archeological research program, there are approximately 800,000 artifacts, or 764 cubic feet of museum material. This material needs to be catalogued, properly stored, and made available to bona fide researchers. Because additional phases of archeological investigation may occur in the future, it is expected this collection could grow.

The bulk of the 800,000 artifacts are presently at the University of North Dakota, this material is scheduled to be returned to Knife River Indian Villages National Historic Site in 1986.

Under this plan, facilities to store artifacts with expected research and exhibit interest will be constructed in the proposed visitor/administrative facility. Following comprehensive review by park management and the Rocky Mountain Region cultural resource staff, artifacts will be classified in exhibit, research, and storage categories. Those items classified in the storage category will be stored in retrievable, sealed containers onsite within or adjacent to the proposed facilities. All work shall be

in conformance with NPS-28. Also included in the proposed visitor/ administrative facility is a museum lab for use by both private researchers and National Park Service archeologists.

If necessary, arrangements to store artifacts at the Midwest Archeological Center, the University of North Dakota, or other suitable areas will be pursued until completion of the proposed visitor/administrative facility.

Evaluation and Protection of Running Deer Site

Since park authorization, the Running Deer Site has been identified. In the remote possibility that Running Deer is determined to be a winter village site, it would constitute a major and highly significant cultural resource. Phase I, archeological survey data, suggests the Running Deer Site is contemporaneous to Big Hidatsa. It is unlikely that it is a winter village because of its immediate proximity to Big Hidatsa where wood supplies are likely to have been decimated. However, the site is important because it may be a special activity location related to Big Hidatsa.

This plan includes provisions for the National Park Service to fund research to determine whether Running Deer was a winter village or a site significantly related to Big Hidatsa. If it proves to be a winter village or if activities at this site are significantly related to the occupation of Big Hidatsa, the National Park Service would pursue its protection.

Document National Register of Historic Places Status

As a historical unit of the National Park System, Knife River was automatically included in the National Register of Historic Places on the date of its authorization, October 26, 1974. The Big Hidatsa Village Site was placed on the National Register on October 15, 1966. No followup documentation in the form of National Register of Historic Places nomination forms was ever prepared and submitted.

A single multiple resource nomination is currently being prepared for the entire park addressing all archeological and historical resources presently known in the park.

Impacts of the River Access Road on the Elbee Site

The river access road intrudes upon the Elbee Site and the cumulative effects of continued vehicle access across this site are not totally known.

In this plan, the access road and parking would be retained. Use of the road and parking will be monitored to determine effects to the Elbee Site, and, if necessary, mitigation measures will be employed as necessary to reduce adverse effects. Consultations with the Advisory Council on Historic Preservation and the State Historic Preservation Officer will be pursued at the time mitigation measures are necessary.

Management of Sakakawea Site

Sakakawea Village is a major site and is a principle attraction for park visitors. Several issues are affecting long-term preservation of the site.

Continued erosion by the Knife River on lower reaches of the site

Overland water flow that is causing site "sloughing"

Inadvertent destruction of exposed artifacts by recreational users

Need to provide interpretation of this unique and popular resource.

In this plan, a task force will be used to develop a site management plan that includes measures to (1) reduce vandalism, (2) improve interpretation, and (3) reduce or eliminate erosion of the site.

Reconstruction of Earthlodge

The current master plan includes provisions for earthlodge reconstruction in the Sakakawea Village Site. Reconstructed earthlodges currently exist at Fort Abraham Lincoln State Park in the Slant Indian Village located about 60 miles from Knife River Indian Villages National Historic Site.

Under this plan, earthlodge reconstruction or replicas will not be provided at Knife River Indian Villages

National Historic Site; however, an interpretive earthlodge could be constructed within the identified development zone to aid interpretation efforts.

VISITOR USE AND INTERPRETATION

The major thrust of visitor use will be oriented towards the proposed visitor/administrative facility, Sakakawea Village, Lower Hidatsa Site, and Big Hidatsa Site.

Capacity of the visitor/administrative facility will be about 125 persons at one time. Interpretation, information distribution, and orientation are the major visitor services provided by this facility. The exhibit area, audiovisual area, sales outlet, and lobby are included. From this location, an interpretive trail system providing access to the Lower Hidatsa Site and terminating at Sakakawea Village will be provided for visitors wishing to experience the nature of Indian life along the Knife and Missouri Rivers. To enhance interpretive activities, an interpretive earthlodge would be constructed near the visitor/administrative facility. It is intended to provide a focus for interpretation, the scale and feeling of an earthlodge should be provided. However, it is not the intent to reconstruct or replicate an earthlodge.

Parking to accommodate 15 to 20 vehicles will be provided at a relocated trailhead for the Big Hidatsa Trail. This area will be used as a major interpretive focal point.

River access near the Sakakawea Village cutbank will be continued; however, this access will be primarily oriented to fishermen. Those visitors who desire interpretation of this area would use the trail system which begins at the proposed visitor/administrative facility. Fishing at this site would continue; however, the park will evaluate other areas with potential "fishing holes" and encourage fishermen to use these less archeologically sensitive areas.

Hunting is prohibited within boundaries of the national historic site. The entire park is closed to all means of public motorized travel except on designated roads. Within the park, the Knife River is closed to all public motorized craft. Park staff will enforce this closure as provided for in an agreement between the National Park Service and State of North Dakota, dated May 23, 1977.

Dispersed recreation use for visitors desiring a more natural setting will be provided along riparian woodlands of the Missouri River peninsula.

Some overnight facilities are provided at the Stanton City Park, these facilities will not be duplicated by the National Park Service. Campgrounds and other overnight accommodations will not be provided within the national historic site.

Interpretive objectives for the park are

To preserve the irreplaceable archeological resources of the park and restore the natural setting to a period in history that will permit interpretation of a vast array of interpretive themes.

To provide a visitor contact facility and interpretive programs to accommodate year-round day-use activities.

To cooperate with other Federal and State Agencies to improve access and vehicular circulation to and through the park.

To work with other governmental Agencies, educational institutions, and private interests toward protection of the historic scene outside the national historic site.

Interpretation will be provided through a variety of methods and practices. Interpretation is guided by the following themes and subthemes:

Natural Environment

a. The confluence of the Knife and Missouri Rivers afforded favorable conditions for establishing settlements of human populations. Today, the Missouri River floodplain is a dwindling resource, one that is being closely monitored by the State of North Dakota.

b. The flora and fauna that exist in this area are here primarily because of the riparian habitat conducive to their concentration.

Village Life

- a. An occupational sequence that covered a period of several thousand years is reflected in the variety of archeological resources present in the park and the surrounding region.
- b. The semisedentary culture of the Mandan and Hidatsa contrast markedly with the hunting/gathering lifestyle of neighboring Assiniboin, Crow, Cree, Cheyenne, various groups of Dakota, and other tribal groups. The economic practices of the Mandan and Hidatsa also contrast with different ways in which the resources of the region were utilized by Woodland and Archaic Tradition predecessors.
- c. Similarities and contrasts can be found in comparisons of Mandan/Hidatsa horticultural practices and modern agricultural methods and products. Crop production in this northern region attests to their unique ability to develop a successful system to cope with the harsh climate.
- d. Mandan/Hidatsa settlement patterning, economic practices, and architectural forms reflect a successful adaptation to a rigorous environment and can be compared/contrasted with the way Euro-Americans have adapted to the same environment.

Inter-Tribal Trade and Conflict

- a. The Mandan/Hidatsa, and perhaps other earlier occupants of the area, bartered with other tribes outside the area for surplus foodstuffs, pelts, and other local products for the necessities of life not readily available. Horses played a vital link in the trade network between hunting/gathering tribes and semisedentary village people of this area. Trading activities continued into the historic period, with the villages continuing to serve as center of the trade network. Inhabitants of the villages often played a middleman role in intertribal trade and became very affluent because of this role.
- b. Calumet ceremonies involving the establishment of fictive-kinship ties between members of different tribes played an important role in intertribal trade. These ceremonies not only facilitated actual trade between groups--even groups who were at war with each other at the time--but also expedited the exchange of

ceremonial and other cultural traits between Plains tribes, thus contributing to a relatively rapid spread of certain cultural characteristics between Plains Indians.

Euro-American Contact Period

- a. As an established area of trade, the villages were "naturals" when the fur trade from Canada and the eastern United States expanded into the plains and the Missouri Valley.
- b. Early exploration and westward expansion by the Euro-Americans brought visits by Henry, Bradbury, Catlin, Bodmer, Prince Maximilian, Audubon, Lewis and Clark, and other prominent travelers who recorded their impressions for posterity.
- c. It is thought Toussaint Charbonneau was living in the Sakakawea Village when he was engaged by Lewis and Clark to serve as an interpreter for their journey of exploration (1804-1806) to the Pacific Ocean. Charbonneau was accompanied by his Indian wife, Sakakawea, who rendered valuable service to the expedition during the journey.

Exhibits/Waysides

The visitor/administrative facility will include exhibits that emphasize sensitivity to the value and fragility of the archeological resources; the sociocultural systems of the Mandan and Hidatsa villages; the extent and significance of trade in prehistoric and historic times in the Middle Missouri River Valley region; historic European-American contact with the villages; early occupancy of the area covering a continuum of perhaps 8,000 years; natural history and man's dependency on nature for food and shelter; and the art and science of archeological investigations. Exhibits within the visitor facility will be directed towards the focal point of an interpretive earthlodge.

Wayside exhibits are proposed for a number of areas throughout the park. These should be developed with a common design element to make them easily recognizable as belonging to the park. Wayside exhibits are proposed at the park entrance, Sakakawea Cutbank, Sakakawea Village, Big Hidatsa Site, Lower Hidatsa Site, and the Missouri River's natural peninsula.

In addition to exhibits, interpretation will be provided by a series of pamphlets. These pamphlets could include

The villages - earthlodge architecture

The people - farmers, hunters and traders

Sociocultural evaluation - more than 6,000 years on the Knife River

How do we know - an archeologists' view

The land - then and now

A heritage - the ceremonies, dances, arts, crafts.

PARK OPERATIONS

Maintenance facilities will be retained in their present location. The current visitor/administrative facility will be converted to a National Park Service employee residence.

Office space will be provided in the proposed visitor/administrative facility. Included are six offices, library, storage area for daily maintenance equipment, and conference room. Management of the area upon full implementation of this plan requires the following staffing levels:

Position	Person Years
Area Manager	1.0
Park Ranger, Resource Management, Visitor Protection	1.0
Park Ranger, Interpretation	1.0
Museum Specialist/Archeologist	1.0
Maintenance Worker	1.0
Clerk Typist	1.0
Park Technician-Interpretation (seasonal)	.6
Park Technician-Interpretation (seasonal)	.3
Maintenance Worker (part-time)	.8
Clerk Typist (part-time)	.6
Total	<u>8.3</u>

Annual operations and maintenance budget required for the park upon full implementation of this plan is approximately \$315,000.

GENERAL DEVELOPMENTS/DEVELOPMENT CONCEPTS

The General Management Plan Map illustrates overall concepts for Knife River Indian Villages National Historic Site. The following discussions provide more specific guidance for each area within the park.

Visitor/Administrative Facility

This structure will include provisions for interpretive, administrative, daily maintenance, and artifact management needs. It will be designed to minimize energy consumption and be accessible to and usable by the physically disabled. Pursuant to the November 1984 Finding of No Significant Impact, this structure will be located in the southwest portion of the park. The visitor/administrative facility will include an audio-visual area, exhibit space, lobby, rest rooms, offices, museum, and museum laboratory. Total size of the structure is approximately 4,200 square feet on the main floor.

Provisions to store artifacts with research and exhibit value will be provided within the visitor/ administrative facility. Remaining artifacts will be stored in retrievable, sealed containers (consistent with NPS-28 standards).

Support facilities within the visitor/administrative complex will include:

Parking for 25 cars and 2 buses designed with flexibility to accommodate recreation vehicles

22-foot entrance road with 3-foot shoulders, entrance gate, and sign

Six-stall administrative parking lot

Trails that provide access to archeological sites

Utilities (1) electricity obtained from Oliver-Mercer Rural Electric via underground cable buried along the entrance road, (2) water and sewer obtained from City of Stanton requiring line extension along the county and entrance roads, and (3) telephone lines buried along the entrance road

Interpretive earthlodge oriented towards interpretive exhibits.

As illustrated on the Visitor/Administrative Facility, Development Concepts Map, major elements of development concepts are as follows:

The visitor contact/administrative facility should be located to provide unobstructed visual and pedestrian access to those archeological sites determined to be most significant.

Parking should be located between the visitor contact/administrative facility and the county road and should be hidden as much as possible from the archeological sites.

The vehicular approach to the visitor contact/administrative facility should provide for an attractive view of the building and visitor entrance. Ideally, this view should not be across the parking area.

Circulation within the parking area should be counter clockwise, allowing for drop-offs at the visitor contact/administrative facility entrance for vehicles entering the parking area.

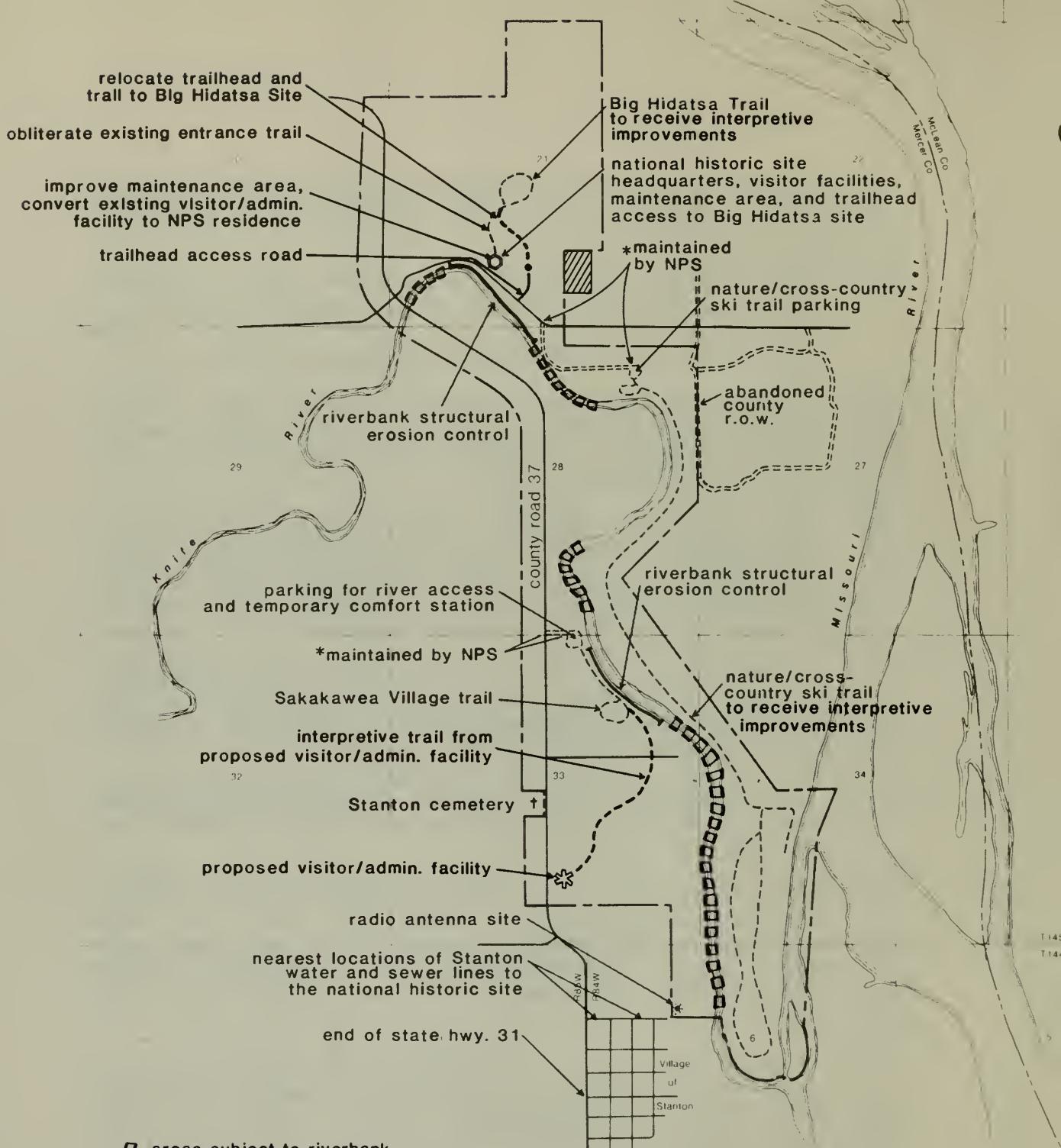
The primary visitor contact entrance should face south away from prevailing cold winter winds, and toward the winter sun.

Since the north and west sides of the visitor contact/administrative facility will be most exposed to cold winter winds, these building edges are most appropriate for special energy conservation treatment such as berthing and blank walls.

Construction of an interpretive earthlodge should have a location orientation towards exhibits within the visitor/administrative facility as well as the interpretive trail to outlying archeological site.

Maintenance Facilities

The maintenance area will be retained in its current location. A 1,500-square-foot maintenance building and fuel tanks will be retained in this area. If additional maintenance facilities, covered storage, and fenced maintenance yards are required in the future, the park will seek arrangements for these facilities outside the national historic site (such as in the City of Stanton).



- areas subject to riverbank
 - structural erosion control or other
 - cultural resource mitigation practices

-  protect Running Deer Site if found to be winter village or significantly related to Big Hidatsa Site

* 1.5 miles of gravel roads maintained by N.P.S.

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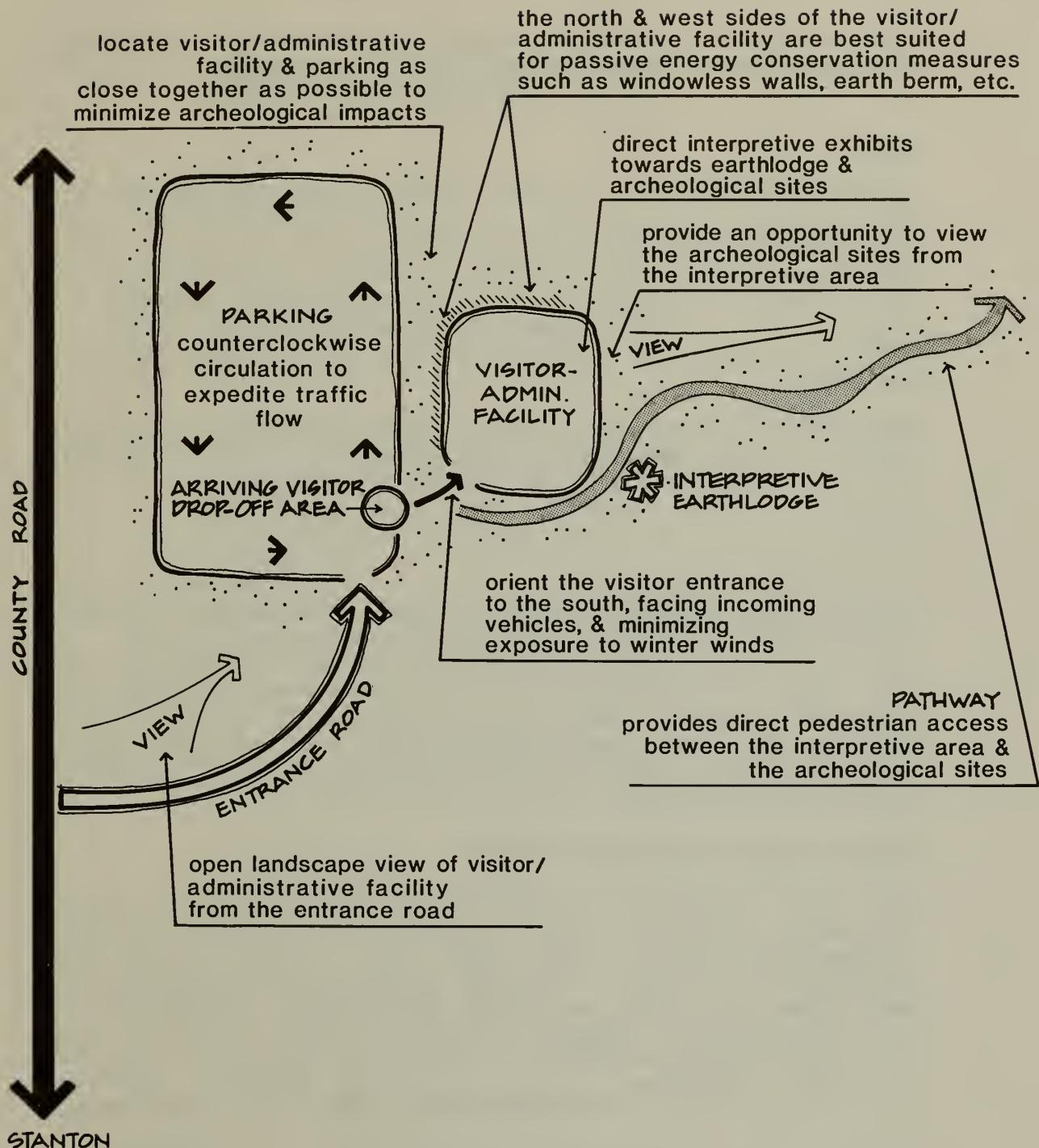
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General Management Plan

Knife River Indian Villages National Historic Site

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Visitor/ Administrative Facility – Development Concept
Knife River Indian Villages National Historic Site

Located south of the maintenance yard is the existing visitor/administrative facility. The structure will be converted to a National Park Service residence.

Roads

About 1.5 miles of gravel road will be maintained by the National Park Service. Four miles of unmaintained dirt road are within the national historic site. The Sakakawea Village river access road and parking will be maintained in its current location and standard. Because this access road crosses the Elbee Site, a program to monitor effects to the Elbee Site will be employed.

Responsibility for improvement and maintenance of all county roads within and adjacent to the national historic site will remain with Mercer County.

Trails

Interpretive improvements will be provided along the .5-mile Big Hidatsa Trail, 2-mile Sakakawea Village Trail, and 6 miles of hiking and nature trail. A crossing of the Knife River may also be provided. A new trail of 1.5 miles will be constructed from the proposed visitor/administrative facility to Sakakawea Village and the Lower Hidatsa Site. A trailhead will be constructed east of the maintenance area to serve the Big Hidatsa Site.

PHASING SCHEDULE/COST SUMMARY

It is not possible for all proposed activities to occur at once. Because of budgetary constraints, it is recognized that it may take many years to totally implement this plan. Various aspects of this plan will be phased as funds are made available. Following is the conceptual phasing program for this plan. Estimated costs shown are gross construction. Source of the estimates is the Denver Service Center, Estimating Branch, October 1984, Class "C" Estimates.

PHASE	ACTIVITY	ESTIMATED COST
I	Construct a 4,200-square-foot visitor/administrative facility with visitor parking (25 cars, 2 buses), administrative parking (6 cars), access road (22 feet wide, 500 feet long), and site utilities.	\$2,143,000

	Construct 1.5 miles of trail from the visitor/administrative facility to the Lower Hidatsa Site and Sakakawea Village.	\$ 92,000
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TOTAL PHASE I DEVELOPMENT COSTS		\$2,235,000
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II	Construct interpretive earth-lodge adjacent to visitor/administrative facility.	\$ 50,000
	Construct Interpretive Waysides at the park entrance, Sakakawea Cutbank, Sakakawea Village, Big Hidatsa Site, Lower Hidatsa Site, and Missouri River natural peninsula	\$ 169,000
	Landscape the maintenance area to minimized obtrusive views as seen from the Big Hidatsa access trail.	\$ 12,000
	Convert existing visitor/administrative facility to a National Park Service residence.	\$ 29,000
	Relocate Big Hidatsa Trailhead and parking.	\$ 45,000
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TOTAL PHASE II DEVELOPMENT COSTS		\$ 305,000
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GRAND TOTAL DEVELOPMENT COSTS		\$2,540,000
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ADDITIONAL PLANS/STUDIES NEEDED

1. Study to determine relationship of the Running Deer Site to the Big Hidatsa Site.
2. Study to determine which archeological sites should be protected from river erosion "in-place."

3. Water Resource Management Plan addressing resources, threats, and best management practices associated with the Knife and Missouri Rivers.

4. Research of mineral potential and environmental threats that may be posed by mineral development of the 1,066 acres of non-Federal mineral rights within the national historic site.

5. Research to determine the effects of vegetation treatment on cultural and natural resources.

6. Research of the park's fire ecology and the effects of fire on cultural resources.

7. Fire Management Plan including prescriptions to reduce fuel buildup through prescribed burning.

8. Collect inventories to determine the presence of rare, threatened, or endangered species of plants and animals.

9. Integrated Pest Management Plan addressing control of rodent burrowing activities.

10. Site Management Plan for Sakakawea Village addressing vandalism, interpretation, and soil erosion.

11. Evaluation of the Knife River to determine potential fishing areas within the national historic site.

LIST OF PREPARERS

This revised General Management Plan was prepared by an interdisciplinary team composed of Rocky Mountain Regional Office and Knife River Indian Villages National Historic Site staff, the team members are:

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Others who were active in the preparation of this document are:

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