National Park Service
U.S. Department of the Interior

Pipestone National Monument · Minnesota



Final General Management Plan / Environmental Impact Statement
Pipestone National Monument

Draft General Management Plan / Environmental Impact Statement

PIPESTONE NATIONAL MONUMENT

Pipestone County, Minnesota

This *General Management Plan / Environmental Impact Statement* describes four alternatives for the future management of Pipestone National Monument. The approved plan will guide the management of the national monument for the next 15 to 20 years. It will establish a direction for managing cultural and natural resources, the visitor experience, and American Indian cultural use so that future opportunities and problems can be addressed effectively.

The *Draft General Management Plan / Environmental Impact Statement* identified alternative 3 as the preferred alternative. As a result of public comment on that document, the National Park Service reconsidered its preferred alternative in light of substantial comment and consultation with American Indian tribes. Accordingly, alternative 1 is now the preferred alternative.

Pipestone National Monument protects quarries of pipestone (catlinite) that have been used by American Indians since prehistoric times. Pipestone is carved into objects, most notably pipes, for use in sacred rituals. The quarries remain sites of sacred importance to American Indians. The national monument also contains examples of remnant prairie types, some globally threatened, and two federally listed species, one threatened and one endangered.

Issues of concern in the plan include sensitivity to and interpretation of American Indian practices and traditions associated with the quarries and sacred sites, inadequate facilities, external threats to the national monument's integrity from development along or visible from its boundaries, and preserving the superintendent's house of the former Pipestone Indian School (outside the national monument).

The **no-action alternative** would continue the current management of Pipestone National Monument. Maintenance, the visitor center, trails, the entry road, and parking would be unchanged, as would onsite housing for a law enforcement ranger. American Indian ceremonial use of The Three Maidens rock formation would be unchanged, as would use by the Hiawatha Club as a backdrop for its annual pageant. No land would be acquired. Adverse effects on floodplains would continue, and if flooding occurred there could be some danger to visitors and employees.

Alternative 1 is the new preferred alternative. The alternative would reduce the development in the heart of the national monument, preserving its setting, site history, and spiritual significance as the source of pipestone. The visitor center and parking area would be removed, enabling visitors to see the site much as it appeared prehistorically and to sense its significance to American Indians. The national monument would acquire a parcel of school district land to the northeast and would seek a cooperative agreement with the U.S. Fish and Wildlife Service (USFWS) and the Minnesota Department of Natural Resources (MDNR) to coordinate management of the 100-acre Pipestone Wildlife Management Area. American Indian ceremonial use of the Three Maidens area would be unchanged. The Hiawatha Club would continue to use the Three Maidens as a backdrop for its pageant under permit restrictions, and the area would be restored to prairie. Sun Dances would continue, but modifications of use might be made on the basis of impact and the sustainability of resources. Quarries would continue to be allocated by permit. Razing the visitor center would cause a major adverse effect on a historic structure and one historic cultural landscape. Removal of the structures will be addressed in consultation with the State Historic Preservation Office.

Alternative 2 would focus on the significance of the pipestone quarries, the quarrying process, and its importance in American Indian culture. The entry road and housing for a law enforcement ranger would be unchanged. Sun Dances would be discontinued, and the area would be restored to tallgrass prairie. This would decrease compaction and allow remnant prairie to recover. The bridge below Winnewissa Falls would be replaced downstream, removing a restriction to the creek's natural flow. The National Park Service would acquire the Pipestone Indian School superintendent's house, the school district parcel, and the Pipestone Wildlife Management Area, adding 116 acres of wildlife habitat and resulting in an overall increase of about 112 acres of restored prairie, a long-term major beneficial effect. Acquiring the USFWS/ MDNR land would expand visitors' opportunities to learn about cultural and natural resources and prairie restoration. American Indian ceremonial use of the Three Maidens would be unchanged. The Hiawatha Club would continue to use the Three Maidens as a backdrop for its pageant under permit restrictions. The visitor center would be rehabilitated, and measures would be taken to protect it against flooding. The Pipestone Indian School superintendent's house would be rehabilitated and interpreted to explain its relationship to the national monument and the Indian school phenomenon in general.

Alternative 3 would focus on the improvement of existing facilities and conditions without a major change in operations. The visitor center would be rehabilitated to better accommodate visitor services, exhibits, American Indian demonstrators, the cooperating association, and national memorial staff. The museum collections would be moved within the visitor center to a location out of the floodplain. The use of the Three Maidens by American Indians and the Hiawatha Club would continue as in alternative 2. Sun Dances would be permitted, but modifications of use might be made. The bridge below Winnewissa Falls would be replaced downstream, removing a restriction to the creek's natural flow. The National Park Service would acquire the school district parcel and would seek a cooperative agreement to coordinate management of the USFWS/MDNR wildlife management area. The National Park Service would not acquire the Pipestone Indian School superintendent's house but would seek to assist with preservation and interpretation.

SUMMARY

INTRODUCTION

This *General Management Plan / Environmental Impact Statement* is intended to define a direction for the management of Pipestone National Monument for the next 15 to 20 years. The approved plan will provide a framework for making decisions about managing cultural and natural resources, the visitor experience, and American Indian cultural use so that future opportunities and problems can be addressed effectively. The plan will prescribe the resource conditions and visitor experiences to be achieved according to law, policy, regulations, public expectations, and the national monument's purpose, significance, and special mandates.

General management plans are intended to be long-term documents that establish and articulate a management philosophy and framework for decision making and problem solving in units of the national park system.

Pipestone National Monument protects active quarries of pipestone (catlinite) that have been used by American Indians from prehistoric times to the present. The pipestone is carved into objects, most notably pipes, for personal or ceremonial use. The quarries remain a site of spiritual importance to American Indians.

Besides the quarries, the national monument contains examples of remnant prairie types that have been lost elsewhere in the plains states. The area also is significant in the history of American botany.

The planning team evaluated the potential consequences that the actions of each alternative would have on cultural and natural resources, the visitor experience, and socioeconomic resources. The beneficial or adverse effects were categorized as either short term or long term, and their intensity was rated as negligible, minor, moderate, or major.

ISSUES TO BE ADDRESSED

Key management issues are summarized in five questions, called decision points. The decision points helped define the management alternatives that are described and evaluated in this draft general management plan. The decision points ask

- How can the national monument accommodate American Indian uses and interests while managing for cultural and natural resource values?
- To what degree will affiliated tribes and the National Park Service collaborate to interpret the history, culture, and artistic heritage of the Plains Indians?
- How can the national monument preserve cultural resources and natural resources while providing effective visitor services?
- To what degree can the national monument respond more effectively to external activities, concerns, and threats?
- To what extent should facilities be expanded to accommodate current or future uses, and what type of management actions might be desirable to better manage the flow of visitors in various facilities and areas of the national monument at one time?

ALTERNATIVES AND EFFECTS

This document analyzes the current conditions and three alternatives for the appropriate levels of service and use at Pipestone National Monument.

The *Draft General Management Plan / Environmental Impact Statement* identified alternative 3 as the preferred alternative. As a result of public comment on that document, the National Park Service reconsidered its preferred alternative in light of substantial

comment and consultation with American Indian tribes. Accordingly, alternative 1 is now the preferred alternative.

The No-Action Alternative

Under the no-action alternative, which represents the existing conditions, the management of Pipestone National Monument would continue as before. This alternative is presented as a way of comparing current conditions to possible future conditions, as described in the other alternatives. It provides a baseline for understanding why certain future changes may be necessary or advisable.

In this alternative, maintenance would remain attached to the visitor center, which would remain in its present location, and the parking would be unchanged. The cooperating association would remain in the visitor center. Administration would remain in the visitor center and a converted house. The entry road would be unchanged. Housing for a law enforcement ranger still would be onsite in a second existing house.

The museum collections and archives, remaining in the visitor center as at present, would be secure under this alternative, but there could be long-term adverse impacts unless the threat of flooding was eliminated.

The trails in the national monument would be unchanged, as would the bridge on Pipestone Creek below Winnewissa Falls.

The Three Maidens area management would be unchanged, as would American Indian ceremonial use. The Hiawatha Club would continue to use the Three Maidens formation in its pageant under permit as at present. The wayside exhibit parking area, the picnic area, and the restrooms would be unchanged.

An informal superintendent's Indian consultation group would be established under the no-action alternative. Sun Dances would continue to be permitted. Quarries would continue to be allocated by permit.

The Indian School superintendent's house would remain outside the national monument, and there would be no National Park Service (NPS) interpretation of that structure.

The National Park Service would not acquire the school district land south of Minnesota West Community and Technical College on the eastern boundary.

The Pipestone Wildlife Management Area, which the Minnesota Department of Natural Resources (MDNR) manages for hunting and fishing under an agreement with the U.S. Fish and Wildlife Service (USFWS), would be managed as at present, while the National Park Service would work toward a cooperative agreement with these two agencies to better coordinate activities.

As at present, the remnant prairie would be managed to preserve its significance; restored prairie would be managed to recover native species; and the National Park Service would continue its efforts to control exotic plant species in the national monument.

NPS efforts to restore the tallgrass prairie would result in a moderate beneficial effect on vegetation overall despite the fragmentation of habitat, the existence of structures, the presence of corridors for the entrance of exotic plants, and heavy visitation in a large area of the national monument.

Adverse effects on natural and beneficial floodplain values would continue, as would adverse effects on the floodplains' ability to function normally during flooding. Although the possibility of loss of life would be extremely small, if flooding occurred there could be some danger to visitors and employees, a major adverse impact.

Alternative 1 (New Preferred Alternative)

Alternative 1 would focus on reducing development in the heart of the national monument. Emphasis would be placed on preserv-

ing the setting, the site history, and the spiritual significance of the national monument as the source of pipestone. The existing visitor center and parking would be removed from among the quarries. This, along with ongoing prairie restoration, would enable visitors to see the site much as it appeared prehistorically and to sense the significance of the site to American Indians. Razing the Mission 66 visitor center would cause a major adverse effect on a historic structure and one historic cultural landscape. An agreement with the State Historic Preservation Officer would be sought to provide a means to document the Mission 66 structures.

A new entrance would be created on the east side of the national monument just north of Pipestone Creek.

The maintenance operation would be moved out of the national monument. A cooperative maintenance agreement would be sought with another public or private entity to house the operation. If that should prove impossible, the National Park Service would contract for or lease space.

A visitor center for the national monument would be created outside the boundaries. A cooperative agreement, lease, or contract would be made with a private or public entity. Administration still would be in the visitor center (at its new location). The cooperating association's office and sales area and the American Indian demonstrators also would move into the new facility.

Moving the museum collections and archives outside the national monument would result in short-term minor adverse effects from the move, but in the long term, moderate beneficial effects would result from gaining state-of-the-art space for curation, research, and storage.

The converted house and the law enforcement ranger housing would be removed from the national monument and the site restored to prairie.

A staffed interpretive kiosk, parking, and restroom facilities would be placed at a new entrance above Winnewissa Falls.

The picnic area and associated parking would be removed from the national monument, and the area would be restored to prairie. The existing wayside exhibit parking area at the Three Maidens would be retained. The current visitor center parking area would be removed.

The entry road would be shortened to end in a small parking area at the south quarry entrance. This would be used only by quarriers and visitors with disabilities.

American Indian ceremonial use of the Three Maidens area would be unchanged. The Hiawatha Club would continue to use the Three Maidens as a backdrop for its pageant under permit restrictions, but there would be no direct contact with the formation, and the area would be restored to prairie.

Sun Dances still would be permitted, but modifications of use might be made on the basis of impact and the sustainability of resources. Quarries would continue to be allocated by permit.

An informal superintendent's Indian consultation group would be established.

The National Park Service would acquire the 15.3 acres of school district land south of Minnesota West Community and Technical College on the eastern boundary, and the prairie would be restored.

The National Park Service would not acquire the Indian School superintendent's house but would work with the owners to provide NPS assistance with interpretation and preservation of the structure (see appendix F).

New visitor trails would be developed to reach the existing trail system. The bridge on Pipestone Creek below Winnewissa Falls would be unchanged.

The National Park Service would seek a cooperative agreement with the U.S. Fish and Wildlife Service and the Minnesota Department of Natural Resources to preserve and protect the resources in the wildlife management area and to promote coordination of mutually beneficial management activities. Working with these two agencies to restore 100 acres of their land, along with managing the Sun Dance area within a carrying capacity and removing 3 acres of development and restoring the prairie, would result in a long-term moderate beneficial effect on remnant and restored tallgrass prairie.

Removing the entry road and restoring the natural contours of the land would improve the water flow through the national monument, possibly restoring soil moisture levels in mesic crystalline bedrock prairie, a long-term moderate beneficial effect.

Mowing the Sun Dance area and allowing the Sun Dances to continue would cause a long-term moderate adverse effect on wildlife, which might be mitigated somewhat by establishing a carrying capacity.

A new prairie overlook would be developed on the west edge of the national monument. The entire prairie would be managed to decrease visitor impacts on remnant and restored prairies.

The actions of alternative 1 would result in long-term moderate beneficial effects on wetlands (including those in the riparian corridor) and noticeable long-term moderate local beneficial effects on hydrology.

Removing about 2 acres of buildings and impermeable surfaces would cause a beneficial effect on floodplain values. Although the possibility of loss of life would be extremely small, if flooding occurred there could be some danger to visitors and employees, a major adverse impact.

The National Park Service would continue its efforts to control exotic plant species in the national monument and would work with the owners of adjacent property to identify and eradicate exotics.

Alternative 2

The focus of alternative 2 would be on the significance of the pipestone quarries, the quarrying process, the methods used, the items created, and their importance in American Indian culture. This alternative would depend heavily on interpretation in the visitor center.

The visitor center would be rehabilitated, and measures would be taken to protect it against flooding. Most administrative functions would remain in the visitor center. The building would be enlarged to include an expanded research library; better collections storage, classrooms for educational and community use, more office space, updated exhibits, and improved space for the cooperating association's offices, displays, and storage. Parking at the visitor center would remain, but the configuration might change because of the expansion. The entry road would be unchanged. Housing for a law enforcement ranger still would be in the existing house.

The National Park Service would acquire the Pipestone Indian School superintendent's house, the 15.3-acre tract of school district land south of that house, and about 100 acres of USFWS/MDNR land. The boundary of Pipestone National Monument would be adjusted to include these acquisitions.

By acquiring the USFWS/MDNR wildlife management area, the National Park Service could expand opportunities for visitors to learn about cultural and natural resources, ceremonial uses, and prairie restoration.

Acquiring the USFWS/MDNR land and the school district lands, removing the outdoor maintenance storage area, and managing the acquired areas as prairie would result in a net gain of about 116 acres of wildlife habitat: a long-term moderate beneficial effect on wildlife.

Managing the USFWS/MDNR land to maintain or improve water flow would cause a moderate long-term beneficial effect on hydrology.

The acreage of tallgrass prairie would be increased by restoring 1 acre of maintenance storage area, acquiring 100 acres of USFWS/MDNR land, and acquiring and managing as prairie 13 acres of the 15.3 acres of acquired school district land. With prairie preservation decreased by about 2 acres if the quarry zone was extended beyond the present limits, the overall increase in restored prairie would be about 112 acres; a long-term major beneficial effect on the prairies.

Maintenance would be moved onto part of the acquired land just south of Minnesota West Community and Technical College.

Building a separate maintenance facility would adversely affect about 2 acres of soils. Removing the maintenance storage area and restoring it to its natural state would eliminate soil compaction, allowing natural processes to return.

Rehabilitating the visitor center would cause long-term moderate beneficial effects on the cultural landscape from the Civilian Conservation Corps (CCC) era, on historic structures, and on museum collections and archives.

Moving artifacts, specimens, and documents to new quarters in the rehabilitated building would result in long-term moderate beneficial effects from gaining state-of-the-art space for curation, research, and storage.

The Pipestone Indian School superintendent's house would be rehabilitated and interpreted to explain its relationship to the national monument and the Indian school phenomenon in general. This would be a major interpretive focus in the national monument.

American Indian ceremonial use of the Three Maidens area would be unchanged. The Hiawatha Club would continue to use the formation as a backdrop for its pageant under permit restrictions. The picnic area and restrooms would be unchanged.

A new parking area would be created along the entry road by expanding the existing wayside. The road / paved area between this site and the Three Maidens would be removed so that prairie plant species could be reestablished.

The use of the Sun Dance grounds would be discontinued under this alternative, and the area would be restored to tallgrass prairie. Discontinuing the Sun Dances and not mowing the Sun Dance grounds would allow remnant prairie to recover and would decrease compaction, both long-term moderate beneficial effects.

Quarries would continue to be allocated by permit. An active demonstration quarry would be developed to offer better understanding of the quarrying process and training for new quarriers in techniques, safety, and interpretation.

Adverse effects on natural and beneficial floodplain values would continue, as would adverse effects on the floodplains' ability to function normally during flooding. Although the possibility of loss of life would be extremely small, if flooding occurred there could be some danger to visitors and employees, a major adverse impact.

The bridge below Winnewissa Falls would be removed and a new bridge constructed down-

stream. Relocating the bridge could inhibit access and traditional use of the falls as an ethnographic resource, a long-term moderate adverse effect. Relocating the bridge farther downstream would remove a restriction to the creek's natural flow, a moderate long-term beneficial effect.

An informal superintendent's Indian consultation group would be established.

All existing trails would be upgraded to NPS standards. New trails might be added for on-site interpretation and education.

The remnant prairie would be managed to preserve its significance, and restored prairie would be managed to recover native plant species. The National Park Service would continue its efforts to control exotic plant species in the national monument and would work with the owners of adjacent property to identify and eradicate exotics.

Alternative 3

Alternative 3 was developed to upgrade and maintain the current operations and structures of the Monument.

The maintenance function would be moved offsite. A cooperative agreement with another governmental agency could be worked out under which the maintenance facility could be housed jointly with a similar facility, whether city, county, or state.

The visitor center would be rehabilitated to better accommodate visitor services, exhibits, American Indian demonstrators, the cooperating association, and national monument staff. With maintenance moved offsite, more space would be available for classrooms, interpretation, and exhibits. Expanded facilities would include a research library and access to collections. The parking for this facility would be unchanged. Rehabilitating the building would result in long-term moderate beneficial effects on the CCC-era cultural landscape and on historic structures.

The museum collections and archives would be moved to a new or newly rehabilitated area within the visitor center above the 500-year floodplain or into the converted house. Moving the collections and archives would cause short-term minor adverse effects from the move, but in the long term, moderate beneficial effects would result from gaining state-of-the-art space for curation, research, and storage.

One house would be designated as housing for a law enforcement ranger; the other would be rehabilitated as office space, museum collections storage, or staff housing.

American Indian ceremonial use of the Three Maidens area would be unchanged. The Hiawatha Club would continue to use the formation as a backdrop for its pageant under permit restrictions. The picnic area and restrooms would be unchanged. The wayside parking area along the entry road would remain, as would the parking between the Three Maidens and the picnic area.

Sun Dances would be permitted, but modifications of use might be made on the basis of impact and the sustainability of resources. Continuing the two annual Sun Dances would result in either a long-term minor beneficial effect or a moderate adverse effect on ethnographic resources, depending on the perspective of the person rendering the opinion.

Quarries would continue to be allocated by permit. An active demonstration quarry would be developed to help visitors better understand the quarrying process and to offer training for new quarriers in techniques, safety, and interpretation.

An informal superintendent's Indian consultation group would be established.

The National Park Service would not acquire the Indian School superintendent's house but

would work with the owners to provide NPS assistance with interpretation and preservation of the structure (see appendix F). Rehabilitation/preservation of the house would cause a long-term moderate beneficial effect on that historic structure.

The National Park Service would acquire the 15.3 acres of school district land south of Minnesota West Community and Technical College on the eastern boundary, and the prairie would be restored.

The National Park Service would initiate a cooperative agreement with the Minnesota Department of Natural Resources and the U.S. Fish and Wildlife Service to coordinate the management of law enforcement, Indian ceremonial use, research, prescribed fires, exotic plants, seed collection, and prairie restoration and rehabilitation.

The efforts to restore the tallgrass prairie (including 100 acres of USFWS/MDNR land and 15.3 acres of school district lands) would result in a moderate overall beneficial effect on vegetation from alternative 3. These benefits would occur despite the fragmentation of habitat, the existence of structures, the presence of corridors for the entrance of exotic plants, and heavy visitation in a large area of the national monument (managed within a carrying capacity). This is because systematic efforts would increase the abundance, distribution, quantity, and quality of habitat.

Alternative 3 would result in a moderate long-term local beneficial effect on hydrology.

Adverse effects on natural and beneficial floodplain values would continue, as would adverse effects on the floodplains' ability to function normally during flooding. Although the possibility of loss of life would be extremely small, if flooding occurred there could be some danger to visitors and employees, a major adverse impact.

All existing trails would be upgraded to NPS standards. New trails might be added for on-site interpretation and education. The bridge below Winnewissa Falls would be removed and a new bridge built downstream.

The remnant prairie would be managed to preserve its significance, and restored prairie would be managed to recover native plant species.

The National Park Service would continue its efforts to control exotic plant species in the national monument and would work with the owners of adjacent property to identify and eradicate exotics.

CONTENTS

PURPOSE OF AND NEED FOR THE PLAN

Purpose, Need, and Scoping 3
Brief Description of the National Monument 3
Purpose of the Plan 3
Need for the Plan 4
The Scoping Process 4
Notices and Meetings 4
Newsletters 7
Issues 7
Cultural Resource Management 7
Natural Resource Management 9
Interpretation and Visitor Orientation 9
Boundary and Cross-Boundary Concerns 10
Facilities 11
Issues Not Addressed in This Plan 12
Deauthorization 12
Permit Changes 12
Cultural Resource Issues 12
Natural Resource Issues 13
Impact Topics (Resources and Values at Stake in the Planning Process) 13
Cultural Resources 13
Natural Resources 14
Visitor Experience 14
Socioeconomic Environment 14
National Monument Operations 14
Impact Topics Considered but Dismissed from Further Consideration 15
Archeology 15
Indian Trust Resources 15
Environmental Justice 17
Sioux Quartzite Rock Formation and Sioux Quartzite Prairie 17
Water Quality 18
Water Quantity 19
Prime and Unique Farmland 19
Threatened or Endangered Species and Species of Special Concern 19
Air Quality 20
Public Health and Safety 20
Energy Requirements and Conservation Potential 20
Traffic 23
Conflicts with Local Land Use Plans and Policies 23

Laws, Policies, and Mandates 24
National Monument Purpose 24
National Monument Significance 24
Mission and Themes 24
Mission Goals 24
Interpretive Themes 24

Special Mandates and Administrative Commitments 25
Servicewide Laws and Policies 25
Management Requirements for Cultural Resources 26
Management Requirements for Natural Resources 30
Management Requirements for Visitor Use and Experience 37
Rights-of-Way and Telecommunications Infrastructure 38
Sustainable Design and Development 39
Trails 40

ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE

Introduction 43
Decision Points 43
Relationship to Other Agencies' Plans 44
The Permitting Process to Quarry Pipestone 44
Land Acquisition 44
Pipestone Indian School Superintendent's House 45
Pipestone Area School District Land 46
Pipestone Wildlife Management Area 48
Development of Cost Estimates 49
Initial One-Time Costs 49
Recurring Annual Costs 49
Land Acquisition Costs 49
NPS Facilities Model 49
Comparison of Alternatives and Environmental Consequences 49

Management Zones / Management Prescriptions 50
Administrative Zone 50
Resource Condition or Character 50
Visitor Experience 50
Appropriate Kinds of Facilities 50
Visitor Services Zone 50
Resource Condition or Character 50
Visitor Experience 50
Appropriate Kinds of Facilities 50
Prairie Preservation Zone 51
Resource Condition or Character 51
Visitor Experience 51
Appropriate Kinds of Facilities 51
Quarry Zone 51
Resource Condition or Character 51
Visitor Experience 51
Appropriate Kinds of Facilities 51
Ceremonial Use Zone 51
Resource Condition or Character 51
Visitor Experience 52
Appropriate Kinds of Facilities 52
Three Maidens Zone 52
Resource Condition or Character 52

Visitor Experience 52
Appropriate Kinds of Facilities 52

No-Action Alternative 54
Description 54
Protection of Cultural Resources 57
Boundary Adjustments 58
Costs 58
Implementation of the Plan 59

Alternative 1 (Preferred Alternative) 60
Description 60
Management Zones 60
Administrative Zone 60
Visitor Services Zone 60
Prairie Preservation Zone 63
Quarry Zone 63
Ceremonial Use Zone 64
Three Maidens Zone 64
Visitor Use and Experience 64
Resource Protection 65
Cultural Resources 65
Natural Resources 66
Boundary Adjustments 67
Costs 67

Alternative 2 68
Description 68
Management Zones 68
Administrative Zone 68
Visitor Services Zone 68
Prairie Preservation Zone 68
Quarry Zone 69
Ceremonial Use Zone 69
Three Maidens Zone 69
Visitor Use and Experience 70
Resource Protection 70
Cultural Resources 70
Natural Resources 73
Boundary Adjustments 74
Costs 74

Alternative 3 76
Description 76
Management Zones 76
Administrative Zone 76
Visitor Services Zone 77
Prairie Preservation Zone 77
Quarry Zone 77
Ceremonial Use Zone 78
Three Maidens Zone 78

Visitor Use and Experience 78
Resource Protection 81
Cultural Resources 81
Natural Resources 82
Boundary Adjustments 82
Costs 83

Alternatives Eliminated from Further Consideration 84
Introduce Bison To The National Monument 84
Make Pipestone National Monument a Regional Center for Indigenous Studies 84
Provide Campground Facilities for Ceremonial Use 84

The Environmentally Preferable Alternative 85

Mitigation and Additional Studies 87
Cultural Resources 87
Historic Structures 87
Cultural Landscapes 87
Ethnographic Resources 87
Natural Resources 87
Ground Disturbance/Soils 87
Vegetation 87
Water Resources 88
Threatened or Endangered Species and Species of Special Concern 88
Air Quality 89

Comparison of Alternatives 90

Costs Estimates 102

AFFECTED ENVIRONMENT

Introduction 105

Cultural Resources 106
Introduction 106
Catlinite 106
Archeological Resources 107
Ethnographic Resources 108
Pipestone National Monument: An Ethnographic Landscape 108
Landscape Periods 110
Ethnographic Resources 113
Historic Structures and Cultural Landscapes 114
National Register of Historic Places Listings 114
Eligibility for National Register of Historic Places 115
No Historic Cultural Landscapes Documented 115
Landscape Setting 115
Historic Contexts 116
Museum Collections and Archives 116
The Number and Nature of Collections 117

Collections Management 118
Upper Midwest Indian Cultural Center 120
Petroglyphs 120

Natural Resources 122
Setting 122
Sioux Quartzite Rock Formation 122
Vegetation 122
Sioux Quartzite Prairie 122
Remnant Tallgrass Prairie 123
Restored Tallgrass Prairie 123
Oak Savanna/Woodland Areas 124
Wetlands and Riparian Corridor 124
Floodplains 125
Hydrology 126
Soils 126
Wildlife 126
Threatened or Endangered Species and Species of Special Concern 127

Visitor Use and Experience 129
Experiencing the Resources 129
Freedom to Go at One's Own Pace 129
Orientation and Interpretation 129
Safety 130

Socioeconomic Environment 131
Pipestone County 131
Income 131
Population and Housing 131
Fees and Visitation 132
Economic Influences of the National Monument 132

ENVIRONMENTAL CONSEQUENCES

Methodology for Analyzing Environmental Consequences 137
Introduction 137
Projects That Make up the Cumulative Impact Scenario 137
Past Actions 138
Current and Future Actions 139
Impairment of Resources 139
Methodology for Assessing Effects on Cultural Resources 140
Effects on Cultural Resources and Section 106 140
Intensity — Cultural Landscapes 141
Intensity — Ethnographic Resources 142
Intensity — Historic Structures 143
Intensity — Museum Collections and Archives 144
Methodology for Assessing Effects on Natural Resources 144
Vegetation 145
Wetlands and Riparian Corridor 145

Floodplains 145
Hydrology 145
Soils 146
Wildlife 146
Threatened or Endangered Species and Species of Special Concern 146
Methodology for Assessing Effects on Visitor Use and Experience 147
Methodology for Assessing Effects on the Socioeconomic Environment 147
Methodology for Assessing Effects on National Monument Operations 147

Impacts of the No-Action Alternative 149
Cultural Resources 149
Cultural Landscapes 149
Ethnographic Resources 150
Historic Structures 153
Museum Collections and Archives 154
Natural Resources 154
Vegetation 154
Wetlands and Riparian Corridor 156
Floodplains 157
Hydrology 158
Soils 159
Wildlife 160
Threatened or Endangered Species and Species of Special Concern 160
Visitor Use and Experience 161
Three Maidens Area 161
Visitor Center Area 161
Circle Trail Area 162
Quarry Area 162
Prairie Area 162
Socioeconomic Environment 162
Quarriers and Demonstrators 162
Businesses 163
Community 163
National Monument Operations 163
Maintenance 163
Facilities 164
Emergency Response Time 164
Ability to Enforce Regulations 164
Unavoidable Adverse Impacts 164
Irreversible and Irretrievable Commitments of Resources 165
Relationships of Short-term Uses of the Environment and Long-term Productivity 165

Impacts of Alternative 1 166
Cultural Resources 166
Cultural Landscapes 166
Ethnographic Resources 168
Historic Structures 170
Museum Collections and Archives 172
Natural Resources 173
Vegetation 173
Wetlands and Riparian Corridor 175
Floodplains 176

Hydrology 177
Soils 178
Wildlife 179
Threatened or Endangered Species and Species of Special Concern 180
Visitor Use and Experience 181
Three Maidens Area 181
New Entrance Area 181
Circle Trail Area 182
Quarry Area 182
Prairie Area 182
Socioeconomic Environment 182
Quarriers and Demonstrators 182
Businesses 183
Community 183
National Monument Operations 183
Maintenance 183
Facilities 184
Emergency Response Time 184
Ability to Enforce Regulations 184
Unavoidable Adverse Impacts 185
Irreversible and Irretrievable Commitments of Resources 185
Relationship of Short-term Uses of the Environment and Long-term Productivity 185

Impacts of Alternative 2 187
Cultural Resources 187
Cultural Landscapes 187
Ethnographic Resources 188
Historic Structures 191
Museum Collections and Archives 192
Natural Resources 193
Vegetation 193
Wetlands and Riparian Corridor 195
Floodplains 195
Hydrology 196
Soils 197
Wildlife 198
Threatened or Endangered Species and Species of Special Concern 199
Visitor Use and Experience 200
Three Maidens Area 200
New Visitor Center Area 200
Circle Trail Area 200
Quarry Area 200
Prairie Area 200
Socioeconomic Environment 201
Quarriers and Demonstrators 201
Businesses 201
Community 201
National Monument Operations 202
Maintenance 202
Facilities 202
Emergency Response Time 202

Ability to Enforce Regulations 202
Unavoidable Adverse Impacts 202
Irreversible and Irretrievable Commitments of Resources 203
Relationships of Short-term Uses of the Environment and Long-term Productivity 203

Impacts of Alternative 3 204
Cultural Resources 204
Cultural Landscapes 204
Ethnographic Resources 205
Historic Structures 207
Museum Collections and Archives 209
Natural Resources 209
Vegetation 209
Wetlands and Riparian Corridor 211
Floodplains 212
Hydrology 214
Soils 214
Wildlife 215
Threatened or Endangered Species and Species of Special Concern 216
Visitor Use and Experience 217
Three Maidens Area 217
Visitor Center Area 218
Circle Trail Area 218
Prairie Area 218
Socioeconomic Environment 218
Quarriers and Demonstrators 218
Businesses 218
Community 219
National Monument Operations 219
Maintenance 219
Facilities 219
Emergency Response Time 219
Ability to Enforce Regulations 220
Unavoidable Adverse Impacts 220
Irreversible and Irretrievable Commitments of Resources 220
Relationships of Short-term Uses of the Environment and Long-term Productivity 220

CONSULTATION AND COORDINATION WITH OTHERS

Public Involvement 225
American Indian Involvement 225
Public Meetings and Newsletters 225
Consultation 226
Tribes, Agencies, and Organizations to Which This Document Was Sent 228

Substantive Comments and NPS Responses 233

APPENDIXES / SELECTED BIBLIOGRAPHY / PREPARERS / INDEX

Appendix A: Relationships with American Indians 287
Appendix B: Establishing Legislation 290
Appendix C: Threatened or Endangered Species and Species of Special Concern 292
Appendix D: Correspondence with Minnesota State Historic Preservation Office 305
Appendix E: Statement of Findings — Floodplains 309
Appendix F: The National Historic Preservation Act and NPS Assistance 311

Selected Bibliography 312

Preparers of the Document 319

Index 321

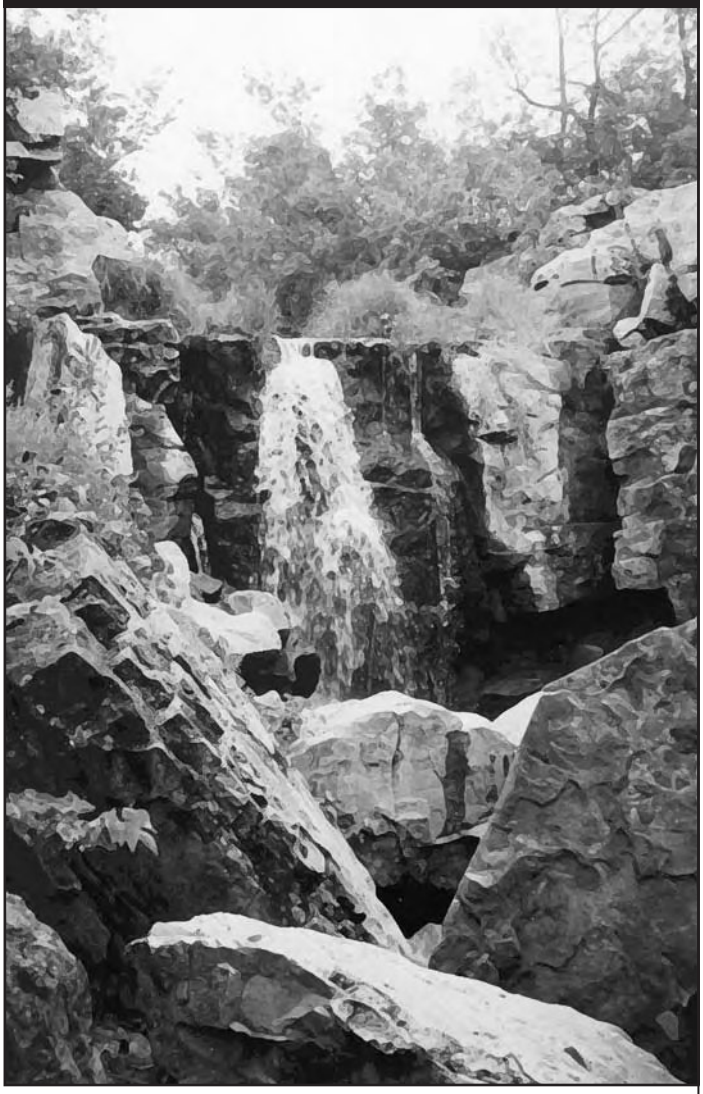
Maps

Vicinity 5
No-Action Alternative 55
Alternative 1 61
Alternative 2 71
Alternative 3 79

Tables

Table 1: Special Status Species and Critical Habitat at Pipestone National Monument 22
Table 2: Management Prescriptions 53
Table 3: Comparison of Alternatives 90
Table 4: Comparison of Environmental Consequences 94
Table 5: Estimated Costs 102
Table 6: Pipestone County Per Capita Income Change, 1959–1999 131
Table 7: Population Trends in the Study Area 1960–2000 131
Table 8: Visitation, 1990–2003 132
Table 9: Local Economic Influences from Visitation to Pipestone National Monument 133
Table 10: Economic Impacts of Visitor Spending by Sectors 133
Table 11: Future National Historic Preservation Act Compliance Required for Implementation of Specific Actions (Preferred Alternative) 227

PURPOSE OF AND NEED FOR THE PLAN



PURPOSE, NEED, AND SCOPING

This *Draft General Management Plan / Environmental Impact Statement* presents and analyzes three alternative future directions for the management and use of Pipestone National Monument. Alternative 1 has been identified as the alternative preferred by the National Park Service (NPS) for the future direction of management. The potential environmental effects of all alternatives have been identified and assessed.

General management plans are intended to be long-term documents that establish and articulate a management philosophy and framework for decision making and problem solving in units of the national park system. General management plans usually provide guidance during a 15-to 20-year period.

Actions directed by general management plans or in subsequent implementation plans are accomplished over time. Budget restrictions, requirements for additional data or regulatory compliance, and competing national park system priorities prevent the immediate implementation of many actions. Major or especially costly actions could be implemented 10 or more years into the future.

BRIEF DESCRIPTION OF THE NATIONAL MONUMENT

Pipestone National Monument was established on August 25, 1937, by an act of Congress. It is in southwestern Minnesota in Pipestone County, population 9,895 (2000 census). Three incorporated communities exist in Pipestone County: Edgerton, population 1,037; Jasper, population 558; and the city of Pipestone, which borders the national monument, population 4,359 (see the Location map).

Pipestone National Monument encompasses 281.78 acres. The national monument protects quarries of pipestone (catlinite) used by American Indians from prehistoric times to the present. The pipestone was carved into objects, most notably pipes, for use in sacred rituals. That practice continues today. The quarries remain a site of sacred importance to American Indians. Other locations in the national monument play a role in stories and ceremonies associated with the quarrying of pipestone and American Indian history.

Besides the quarries, the national monument contains examples of remnant prairie vegetation types that have been lost elsewhere in the plains states. The site is also significant in the history of American botany, as the Nicollet expedition stopped here to record the native plant life. The expedition notes are still available to verify how little the site has changed since that time.

The paved Circle Trail allows visitors to observe the quarries and other locations associated with American Indian use of the site, Winnewissa Falls, a plaque commemorating the Nicollet expedition, approximately 150 years of names carved into rock, several unique rock formations, and the native tallgrass prairie. A visitor center provides information and orientation to site resources before visitors start to walk along the trail.

PURPOSE OF THE PLAN

The purpose of this *General Management Plan / Environmental Impact Statement* is to clearly define a direction for resource preservation, visitor experience, and American Indian cultural use at Pipestone National Monument.

The approved plan will provide a framework for proactive decision-making, including decisions about managing cultural and natural resources and about visitor use and development. This will allow managers to address future opportunities and problems effectively.

This plan will prescribe the resource conditions, visitor experiences, and American Indian cultural uses that are to be achieved and maintained in the national monument over time. What must be achieved according to law and policy will be clarified on the basis of review of the national monument's purpose, significance, special mandates, and the body of laws and policies directing management. Management decisions that must be made where law, policy, or regulations do not provide clear guidance or limits will be based on the national monument's purpose, the range of public expectations and concerns, resource analysis, the evaluation of the cultural, natural, and social impacts of alternative courses of action, and consideration of long-term economic costs.

This document will not describe how particular programs or projects will be implemented or prioritized. Those decisions will be deferred to more detailed implementation planning, which will follow the broad, comprehensive decision-making presented in this document.

NEED FOR THE PLAN

The previous *Master Plan* for Pipestone National Monument, which was approved in 1966, contained no accompanying environmental analysis document. Because that plan dealt mainly with site development rather than management, it was essentially obsolete following the completion of the visitor center addition in 1972. Since then, several of the facilities have changed functions, have been significantly altered, or have been removed.

Pipestone National Monument never has had a general management plan to guide its management, interpretation, and development. It has functioned only with the guidance of periodic *Statement for Management* documents and, more recently, annual performance plans prepared under the guidance of the Government Performance and Results Act of 1993.

This plan will provide broad direction for the future of Pipestone National Monument and will help managers make purposeful decisions based on a deliberate vision.

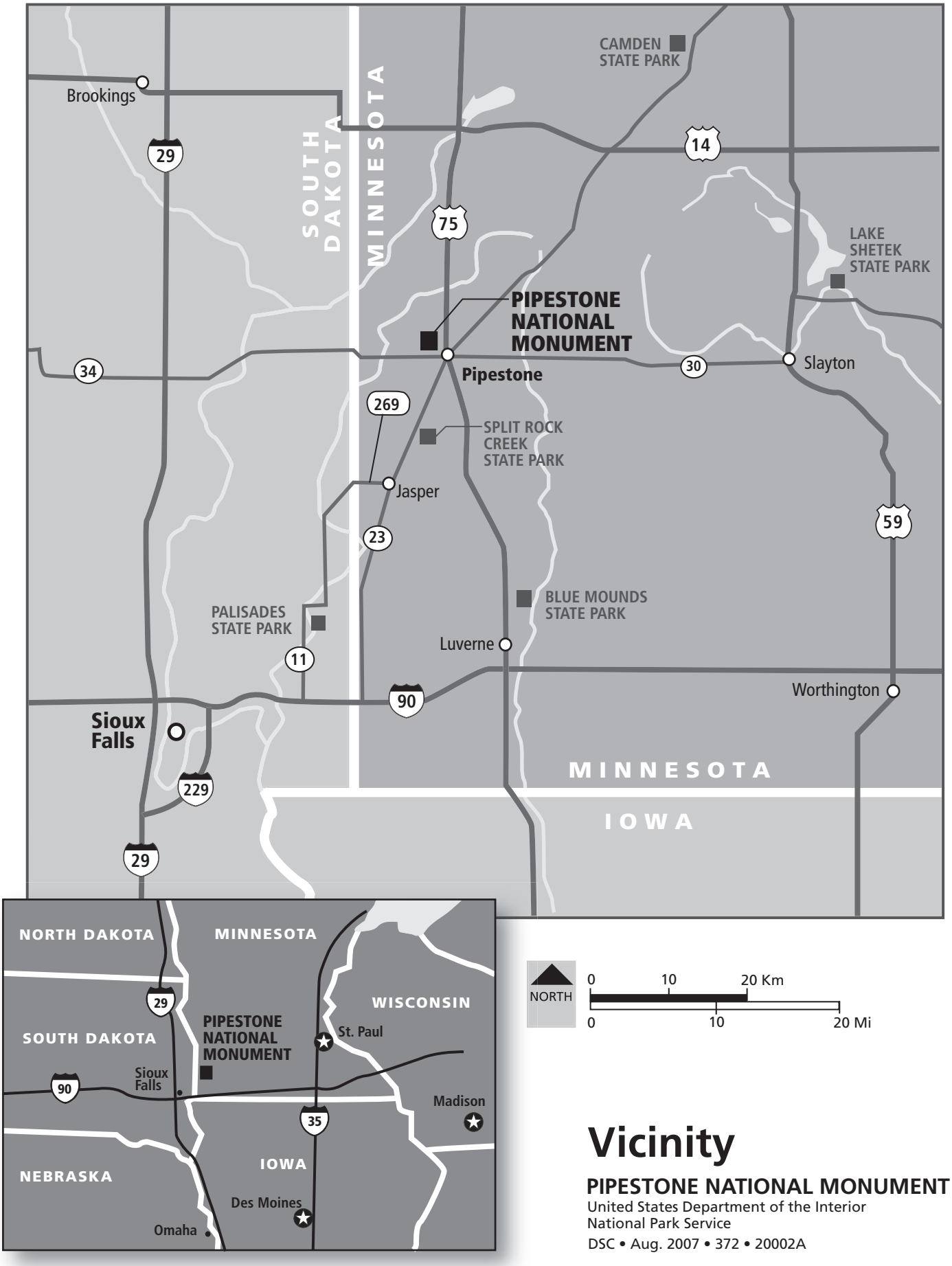
THE SCOPING PROCESS

Notices and Meetings

The planning for a general management plan for Pipestone National Monument began in August 2000 with a news release announcing the beginning of the general management plan / environmental impact statement process and a notice that was published in the *Federal Register* (September 25, 2000, vol. 65, no. 186, p.5, 7620).

In accordance with federal compliance requirements, members of the national monument staff wrote letters to 27 tribes inviting participation in two October 2000 public open houses at the national monument and offering to meet individually with tribes at a later date, should they so request. Other letters were sent to the Advisory Council on Historic Preservation, the Minnesota state historic preservation officer, the U.S. Fish and Wildlife Service, the Minnesota state representative who represents the Pipestone area, the Minnesota Department of Natural Resources, other interested federal and state agencies, local governments, quarriers, and interested individuals and organizations. Followup telephone calls were also made to the 27 tribes.

The open houses of October 11 and 12, 2000, were designed to hear the concerns and desires of the public regarding the national monument before planning began and to help the planning team take those issues and desires into consideration during the planning process. Comments were received in the general areas of protecting cultural and natural resources, interpretation and orientation, the national monument boundary, American Indian use, facilities, cooperative programs, and community outreach. A total of 19 people attended the meetings.



Vicinity

PIPESTONE NATIONAL MONUMENT

United States Department of the Interior
National Park Service

DSC • Aug. 2007 • 372 • 20002A

Twelve more tribal governments were later identified as having a connection to Pipestone National Monument and were invited by letter and telephone contact to participate and provide input into the plan.

The planning team met at the national monument with tribal council members and the Elder Cultural Resource Committee of the Lower Brule Sioux Tribe on October 30, 2000, to discuss their concerns and participation in the planning process.

On January 22, 2001, the Chairman of the Upper Sioux Community met with the superintendent at the national monument to discuss the plan.

A second news release was sent out in February 2001. That release outlined the planning process and reiterated how the public could become involved in the process. Approximately 20 letters, e-mail messages, and mail-in responses were received in response to this and the initial news release that was sent out in August 2000, requesting public comment. This was in addition to the comments provided by the people who attended the public meetings.

On Wednesday, April 25, 2001, the superintendent, the team captain, and two members of the planning team met at the invitation of the Yankton Sioux Tribe at the Fort Randall (South Dakota) Casino/Hotel to explain the planning process and to answer questions about the plan and American Indian involvement in it.

A representative of the Minnesota state historic preservation office (SHPO) met with the national monument staff and planning team on June 28, 2001, to discuss the preliminary alternatives and the role of that office in the planning.

The national monument issued a third news release on August 1, 2001, which explained the plan's progress to that date and noted that the schedule had been slowed in order to gain more public input. It again explained how the public might express its thoughts and concerns to the planning team.

Newsletters

A newsletter produced in June 2002 described two preliminary alternatives and requested that members of the public respond using a postage-paid mail-back form. A total of 12 comments about that newsletter were received.

ISSUES

The major issues to be addressed in the plan are outlined below. They were identified during public meetings, from responses to the first newsletter, through data gathering, and from internal NPS discussions.

Cultural Resource Management

Visitor Center. The visitor center is within the 100-year floodplain, and floodwaters have threatened the visitor center in the past. The alternatives need to identify how to protect the cultural resources on display and in storage.

The current visitor center museum was completed in 1958 as part of the "Mission 66" program of the National Park Service. There have been minor changes and additions to the exhibits. Some museum exhibits do not meet current curatorial standards, placing the collection at risk. The museum does not meet NPS baseline research guidelines contained in NPS-28, "Cultural Resource Management Guidelines" (1995). The cultural workroom space was converted to curatorial storage and office space; therefore, there is no workroom. Dust particles from the cultural demonstrations of pipestone carving cause curatorial problems for the collections and exhibits throughout the visitor center. There is no

separate library space for research. The library shares space with the interpretation office.

Cultural resource management is a collateral duty of the resource program manager. Because of other workload responsibilities, only basic management and protection are provided for the collections.

Sacred Site and Use by Visitors. There is an inherent tension between the Pipestone National Monument that is a sacred site to many American Indians and the Pipestone National Monument that is a part of the national park system. Some American Indians believe that the pipestone quarried at the national monument is sacred and hold the site to be a place of reverence. Many American Indians still adhere to the traditions and practices surrounding the quarrying of pipestone.

The national monument relates to the oral history and culture of many tribes because it contains several locations associated with stories that are passed from generation to generation. The National Park Service is charged with preserving and *interpreting* those practices and traditions for all visitors. The western viewpoint of the exhibits and the interpretation offered may not always tell the entire story from the American Indian perspective.

One example of this difference in the world view is the current location of the visitor center. One group of tribal elders has asked the National Park Service to consider removing the visitor center from its location in the middle of the national monument. The visitor center was placed where it is in the 1950s to immerse visitors in the national monument and to ease access to the quarries. That decision may not have reflected consideration of the Indian viewpoint.

Another example is related to the Three Maidens rock formation near the entrance to the national monument. Some American Indians pray and leave offerings at this location. It also is a major feature of the interpretive story, the first stop on a tour of Pipestone National Monument. A nearby picnic area and parking area are used considerably by visitors, and American Indians may be somewhat reluctant to visit the Three Maidens when visitors are at the site.

For more than 50 years the Hiawatha Club has used the Three Maidens formation as a backdrop and staging area for its annual Song of Hiawatha Pageant (the 59th pageant is in 2007). The national monument has worked with the Hiawatha Club to minimize any physical contact with the formation and to ensure that American Indian use is not impeded. However, the Sisseton-Wahpeton Sioux Tribe has declared the formation a sacred site (along with Leaping Rock and a rock formation called The Oracle). That action may call for an additional level of care as the pageant's secular use of an American Indian sacred site continues.

The issue of balancing Pipestone National Monument's significance to American Indians in a sensitive way with providing an educational experience to visitors as a National Park Service area is difficult. NPS managers must be constantly aware of potential conflicts and react thoughtfully and sensitively.

Pipestone Indian School Superintendent's House. The former Pipestone Indian School is an integral part of the site's history. The Indian School superintendent's house (outside the national monument boundary) represents the history of that institution and the national monument. The structure is deteriorated. The organization that owns it, the Keepers of the Sacred Tradition of Pipemakers, lacks the funds to stabilize and rehabilitate this structure, which is listed in the National Register of Historic Places. Its role in interpretation needs to be defined, and a determination needs to be made about whether the National Park Service should acquire it.

Natural Resource Management

Floodplains and Wetlands. Floodplain and wetland values are compromised by the presence of the visitor center and residences in the 100-year floodplain or wetland areas. The bridges on Pipestone Creek are an impediment to floodwaters.

Threatened or Endangered Species. Two federally listed threatened or endangered species inhabit the national monument, the endangered Topeka shiner (*Notropis topeka*) and the threatened western prairie fringed orchid (*Platanthera praeclara*). In addition, a number of Minnesota state-listed rare plants can be found within the national monument boundaries. Most of these are located along a globally threatened habitat, the Sioux quartzite prairie. The plan must ensure the protection of these species.

Tallgrass Prairie. The national monument has areas of remnant tallgrass prairie and restored tallgrass prairie that are affected by an employee residence and administrative offices, by special uses in the national monument, and by exotic weeds growing inside and outside of its boundaries. It also contains Sioux quartzite prairie that has been relatively unaffected by development in the national monument.

Interpretation and Visitor Orientation

Congestion. Visitation is concentrated into the prime resource areas of the national monument, the visitor center area, the circle and quarry trails, and the Three Maidens picnic area.

At times of special events involving school groups, or during times of heavier visitation periods between Memorial Day and Labor Day, there is visitor congestion at the visitor center. The most congested areas are the restrooms, the exhibit areas, and the information desk.

Inadequate Facilities. The national monument staff's ability to offer orientation and interpretation is limited by existing facilities, exhibits, and staffing. Improved orientation and interpretation would enhance visitor understanding of the significance of Pipestone National Monument and allow visitors to make the best use of their time. Year-round interpretive efforts consist of an orientation film, a self-guiding trail and brochure, museum exhibits, wayside exhibits, and interpretive talks. In addition, from April to October American Indians demonstrate and interpret pipe-making and other craft items.

In recent years Congress has required Pipestone National Monument to collect an entrance fee from all visitors except American Indians. The logical location for fee collection would be the entrance off Hiawatha Avenue; however, this is made infeasible by the visitation numbers, the seasonality of visitation, the expense of hiring fee collection staff, and the small return after salaries are paid. Instead, fees are collected at the information desk in the visitor center to take advantage of the person already behind the counter. This does not allow the collection of fees from visitors who, for one reason or another, do not enter the visitor center. This would include repeat visitors, people who have little time to see the site and therefore skip the visitor center, and people who use the trails for exercise or the picnic area for gatherings.

The visitor center was constructed in two separate phases. The first phase, which consisted of administrative and maintenance areas and a public area with sales and museum exhibit space, was completed in 1958. The second phase, the Upper Midwest Cultural Center, completed in 1972, added a large exhibit, demonstration, and sales area with storage. The original sales area was then redesigned; it is now used for projection equipment for the theater. The two-phase design created essentially two visitor areas separated by a breezeway. The breezeway functions as exhibit space and as the exit to the Circle Trail through the

north side door and the end of the Circle Trail through the south side door. The ranger at the information desk is not able to see what is occurring in the rear demonstration area or to monitor the activities of visitors using the breezeway doors.

The phase one interpretive exhibits are dated, historically inaccurate, inadequate in number, poorly designed by today's standards, difficult to maintain, and culturally offensive to some. The museum is cramped during high visitation, and display lighting is dated. The theater seats only 45 visitors. The orientation slide program, which was designed in the 1960s and updated in the 1980s, although still serviceable, does not meet modern standards, and it does not include discussion of the prairie landscape.

The phase two area consists of a large room with tile floors, demonstration booths, exhibits, and a cooperating association sales area. American Indian demonstrators carve pipestone and answer visitors' questions in the three small demonstration booths. The cooperating association area gives visitors an opportunity to buy items carved from pipestone, books, and educational items related to the history of the national monument. The association's office is behind the sales desk.

Opposite the sales area is a small exhibit area (The Gallery) for permanent or short-term displays. Behind the demonstrator booths is the national monument's collection storage, a small break room, a law enforcement ranger office, cooperating association storage and work area, and general storage. The configuration and size of this area do not allow it to meet the national monument's functional needs.

Boundary and Cross-Boundary Concerns

Exotic Plants. The national monument is working to restore native tallgrass prairie vegetation within the boundary. This is made more difficult in areas where nonnative vegetation is growing on adjacent land just outside the national monument boundary.

Access. Restricted vehicle access to the north quarries and the Sun Dance area is available via a dirt road through the Pipestone Wildlife Management Area, which the Minnesota Department of Natural Resources (MDNR) manages for hunting and fishing under an agreement with the U.S. Fish and Wildlife Service (USFWS).

Private land abuts the south boundary. It is divided between the Hiawatha Club on the east and private residential and agricultural land on the west. The Hiawatha Club property is bounded on the east by Hiawatha Avenue, on the north by the entrance road to the national monument, and on the south by the Three Maidens formation and the picnic area. This land has a historic field of tiled lines and shallow ditches that drain slowly into a natural area before crossing into the national monument.

The second parcel abuts the Hiawatha Club property on the east and the south boundary of the national monument. Single and multifamily dwellings are slowly being added in the parcel while vacant land is farmed. When fully developed, it will have the potential to direct stormwater into the national monument if not abated. This would affect tallgrass prairie and wetlands. Development also would increase sound, affecting wildlife movement. It would have the potential to introduce exotic species and, if left unscreened, it could add to the existing visual intrusions along the southern boundary.

If the school land northeast of the national monument was filled and developed, flooding problems in the national monument would increase.

School District Land. On the northeast boundary of Pipestone National Monument, just south of the Minnesota West Community and Technical College, are 15.3 acres belonging to the local school district. This parcel of

land, which has direct access to Hiawatha Avenue, has been zoned for development by the city of Pipestone. Development is occurring across Hiawatha Avenue to the east, and it is logical to conclude that the school district land also will be developed in the future.

Scenic Resources. The view of the prairie landscape is interrupted on the southwestern vista by large powerline towers and a 200-foot wind turbine. Wind power is a recently discovered natural resource in southwestern Minnesota, and initial planning for the development of wind farms and individually owned wind turbines has begun. Pipestone National Monument has eight potential cultural landscapes and one ethnographic landscape. The development of wind farms and wind turbines within the viewsheds of the national monument would be inconsistent with the scenic values of these landscapes.

When Pipestone National Monument was created, the surrounding lands were agricultural, and there were few obstructions to views from the national monument all the way to the horizon. Now, as the city of Pipestone has grown closer to the national monument, and as developments have appeared within view, the sense of open, endless prairie that was the setting for the quarries is being compromised. The cultural and ethnographic landscape of the national monument and the aesthetic values of the prairie are becoming more difficult for visitors to picture and for interpreters to explain.

Facilities

Building Inadequacies. The national monument's visitor center / administrative and maintenance building was constructed in two phases. The first phase containing these components was completed in 1958. The second phase added the Upper Midwest Indian Cultural Center in 1972. A garage bay and enclosure of the passageway to the maintenance area were added in 1985. The enclosed passageway serves as an office for the chief of maintenance and also accommodates supply storage.

The visitor center shows the typical problems of an older building — occasional roof leaks, small and inadequate restrooms and workspace, limited library space and collection storage, inadequate storage for supplies, and no conference rooms. The office portion is not large enough to handle the current staff size, so the staff offices are split between this and a converted residence. The space available for the cooperating association's office, sales area, and storage is also inadequate, necessitating the rental of offsite storage space.

The maintenance facility, which also is in the building described above, is inadequate for the kinds of activities that are required of it today. It is inefficient and lacks storage space. It is necessary to leave the garage doors open during some functions such as painting and sanding for health reasons (even in winter). It lacks office space, is far from the storage yard for large items, has limited covered storage for vehicles, and is adjacent to the Circle Trail. This is one of the few maintenance facilities anywhere in the national park system that is physically part of a visitor center.

The plumbing and electrical systems are dated and not up to current codes. The heating, ventilating, and air conditioning (HVAC) units are subject to recurring problems and are inadequate to heat and cool the building. The building lacks insulation and therefore is uncomfortable in both summer and winter. The air handling system does not completely remove pipestone dust from the air, but the dust does not appear to pose a health hazard under current standards. (According to the September 28, 2001, memorandum from Industrial Hygienist, U.S. Department of the Interior, "personal exposures to respirable silica were well below any of the occupational exposure standards.") However, a film of pipestone

dust appears throughout the building, necessitating constant cleaning.

ISSUES NOT ADDRESSED IN THIS PLAN

Deauthorization

During scoping for this plan, various American Indian individuals and groups asked about continued NPS management of Pipestone National Monument. Many American Indians consider this area sacred. Some have said they feel that its status as a national monument diminishes the sacredness of the site. Because authorizing new units of the national park system and deauthorizing existing units is the responsibility of Congress, this plan does not evaluate the option of deauthorizing Pipestone National Monument. Such an action would follow a request by Congress for the National Park Service to evaluate the positive and negative effects of that option. Until Congress makes such a request, deauthorization is not within the scope or authority of this plan.

Permit Changes

Some American Indians have said they think the amount of stone quarried should be controlled by the National Park Service or tribal authority. Others suggest that pipestone should be quarried by the National Park Service, with American Indian employees, or it should be provided to American Indians at no cost. Still others question the appropriateness of the items carved and want the National Park Service to limit the production of sacred objects for sale only to American Indians.

The National Park Service oversees the permits under which American Indians are allowed to quarry pipestone. Once quarried, the pipestone is the property of the quarrier, and the National Park Service cannot control what is carved.

There is much disagreement and misunderstanding about what is appropriate in the quarrying process, pipemaking, and ceremonial activity at the national monument. A thorough understanding of all positions is needed to make informed decisions. Because Congress has specifically addressed these activities (see Code of Federal Regulations, 36 CFR 7.42), giving purview to the superintendent of Pipestone National Monument, issues surrounding permits will not be discussed further in this plan.

Cultural Resource Issues

Quarry Safety. As the quarries are worked, the rubble from the process becomes a safety concern for the quarrier. Quarriers are expected to construct walls of quarried quartzite rock to hold back the rubble. However, as quarries become deeper and rubble piles get larger, there is a greater possibility of accident for both the public and the quarriers. Visitors are warned not to climb on rubble piles and to stay on the trails. The violation of these requirements is a matter of enforcement rather than an issue normally dealt with in a general management plan.

The national monument instructs quarriers about the importance of wall construction and methods for safe quarrying. Further, the national monument staff monitors the quarries to identify unsafe conditions and has the ability to enforce the safety conditions described in the permit. At some point, the depth of the quarry and the difficulty of moving the overburden out of the quarry will dictate that the quarry be abandoned. In such a situation, safety is a matter of permit enforcement rather than a general management plan issue.

Limits on Quarrying. Some American Indian groups have said they believe that it is appropriate to allow only a defined amount of excavation, and they want the national monument to set limits or allow them to set limits. Again, the superintendent has the discretion to set appropriate limits on quarrying, so this is not a general management plan issue (see discussion of the regulations, p. 16).

Natural Resource Issues

Water Quality. Runoff from the city of Pipestone and byproducts from agriculture into Pipestone Creek degrade water quality in the national monument and may affect species of concern and rare habitats. Because concentrations of fecal coliform have exceeded water quality standards, Minnesota has listed Pipestone Creek as an impaired water body (Minn. Pollution Control Agency 1984). This issue, brought up in scoping, cannot be solved by the *General Management Plan* because most factors affecting the water quality of Pipestone Creek originate outside the national monument. However, the National Park Service would coordinate with local governments, landowners, or the state to improve water quality.

To ensure that activities in the national monument would not introduce pollutants into Pipestone Creek, the National Park Service would follow the "servicewide laws and policies" described later in this chapter (p. 25) and the "Mitigation and Additional Studies" section in the "Alternatives" chapter. (p. 87).

New Quarries. Studies have indicated that there are adequate quantities of pipestone in the national monument, although the pipestone layer declines at a 6% slope to the east. There is a concern that quarrying will become so difficult (because of the depth and overburden) that current methods of excavation will become infeasible. Opening more quarries might affect the natural resources. The opening or closing of quarries is at the discretion of the superintendent, who must balance the significance of any natural resources with the legislated purpose of the national monument and other applicable laws before making a decision (see discussion of the regulations, p. 16). This is not a general management plan issue.

Pumping. The effects on natural resources from pumping spring runoff and groundwater from quarries onto the prairie to provide early season access are unknown. Hydrology, vegetation, soils, and threatened or endangered species might be affected by water pumped out of the quarries and onto the prairie. The water quality is unknown. Sometimes pumping the quarries is an ineffective tool, since they often refill as they are being pumped. This issue will not be dealt with in this plan. However, a hydrology and ecology study is proposed to determine any mitigation measures that might be needed and to understand all other issues surrounding pumping.

IMPACT TOPICS (RESOURCES AND VALUES AT STAKE IN THE PLANNING PROCESS)

Impact topics are aspects of the environment that National Park Service staff, the public, or others believe could be affected by actions in one or more of the alternatives. Specific impact topics were developed for discussion and to allow comparison of the environmental consequences of each alternative. These impact topics were identified on the basis of federal laws, regulations, and executive orders; NPS *Management Policies 2006*; and NPS knowledge of limited or easily affected resources. A brief rationale for the selection of each impact topic is given below.

Cultural Resources

Cultural resource impact topics were selected on the basis of major values identified in the national monument's enabling legislation, values identified in the scoping process, and applicable laws and executive orders pertaining to cultural resources (the 1966 National Historic Preservation Act, the National Environmental Policy Act). The topics are ethnographic resources, collections, historic structures, and cultural landscapes.

Opening any new pipestone quarries is at the discretion of the superintendent of the nation-

al monument. In any future year, to open new quarries before issuing the annual quarrying permits would require taking into account natural resource and cultural resource factors. The latter would include the desire to make the quarries as accessible as possible to American Indians wanting to quarry, while at the same time balancing the need to preserve natural resources. Whether the number of quarriers is restricted or enlarged in any given year would depend on how the superintendent determined the number of permits to issue that year.

Ethnographic resources, which make up much of the national monument's collections, landscapes, and exhibits, are the focus for much of the story of Pipestone National Monument. Several sites that are sacred to American Indians are, at the same time, important interpretive locales in the national monument. This plan proposes actions that would affect some or all of these resources.

Collections, historic structures, and cultural landscapes will be directly affected by the decisions made in a general management plan. Both the collections and the historic structures are in a floodplain, so this plan suggests various ways to protect them. Actions that would involve various levels of treatment for specific areas of the national monument's landscape are proposed in this plan.

Natural Resources

The planning team selected nine natural resource impact topics. The selection was based on the major values or issues the team identified early in the planning process, as well as on applicable laws and executive orders (for example, the Endangered Species Act of 1973, as amended; Executive Order [EO] 11988, "floodplain management"; and EO 11990, "protection of wetlands"). The following aspects of the natural environment will be impact topics because the actions of the alternatives might affect them:

- remnant tallgrass prairie
- mesic crystalline bedrock prairie
- restored tallgrass prairie
- wetlands and riparian corridor
- floodplains
- hydrology
- soils
- wildlife
- threatened or endangered species (Topeka shiner and western prairie fringed orchid)

Table 1 (p. 22) contains a complete list of federally listed threatened, endangered, and candidate species and state-listed threatened, endangered, and special concern species. These listings were provided by the U.S. Fish and Wildlife Service and the state of Minnesota. The table shows whether each species will be an impact topic or has been dismissed as an impact topic.

Visitor Experience

The planning team identified the visitor experience as an important topic that would be affected appreciably under all the alternatives. Visitor experience involves such things as visitor enjoyment, freedom to go at one's own pace, orientation, interpretation, and access.

Socioeconomic Environment

Analyzing the local economic impacts provides the context for evaluating the possible effects on the local economy that could result from adopting any of the alternatives. In addition, the national monument has neighbors that could be affected by the plan alternatives. The impact topics discussed are the local and regional economy.

National Monument Operations

The alternatives proposed in this plan could affect NPS operations in the national monument; therefore, this topic will be considered for each alternative. Items in the operations category are staffing, maintenance, facilities,

emergency response time, and ability to enforce regulations.

IMPACT TOPICS CONSIDERED BUT DISMISSED FROM FURTHER CONSIDERATION

Archeology

About 95% of Pipestone National Monument has been systematically surveyed archeologically. Because of the thorough archeological surveying and inventorying that has been conducted, archeological resources as an impact topic is dismissed from further consideration in this *General Management Plan / Environmental Impact Statement*. The amount of ground disturbance for proposed development in the three "action" alternatives would be minimal, and known archeological resources would be avoided by any development proposed, such as a new parking lot or new segments of existing trails as rerouted. Potential new facility sites would be resurveyed for archeological resources, and the National Park Service would follow other steps described in "Management Requirements for Cultural Resources" (beginning on p. 26).

Any sites discovered would be evaluated for their eligibility for listing in the National Register of Historic Places in their own right or as an amendment to the existing national register listing for the entire national monument. Archeological monitoring procedures would be put in place to deal with any inadvertent discoveries of artifacts or human remains. If discoveries were made, construction underway would be stopped immediately, the national monument's superintendent would be notified, and proper consultation would be initiated with the state historic preservation office and the American Indian tribes traditionally associated with Pipestone National Monument.

Any sites found to be potentially affected would be the subjects of appropriate consultations with the state historic preservation office and the associated tribes. It also should be noted here that all actions with the potential to affect cultural resources would be the subjects of consultation with the Minnesota state historic preservation office and, if necessary, the Advisory Council of Historic Preservation, as appropriate.

(The term *traditionally associated peoples* is defined in appendix A, p. 287. *Traditional,* used as an adjective in this document, as in *traditional practices* or *traditional cultural practices*, connotes a contemporary interest in Pipestone National Monument linked to a tribe's, a family's, a group's, or a people's cultural heritage and social identity involved in the past with what is now the national monument.)

Indian Trust Resources

President Clinton's April 29, 1994, "Memorandum for the Heads of Executive Departments and Agencies" directs that

> Each executive department and agency shall assess the impact of federal government plans, projects, programs, and activities on tribal trust resources and assure that tribal government rights and concerns are considered during the development of such plans, projects, programs, and activities.

Order 3175 of the secretary of the interior, November 8, 1993, says the following:

> The heads of bureaus and offices are responsible for being aware of the impact of their plans, projects, programs or activities on Indian trust resources. Bureaus and offices when engaged in the planning of any proposed project or action will ensure that any anticipated effects on Indian trust resources are explicitly addressed in the planning, decision and operational documents. These documents should clearly state the rationale for the recommended decision and explain how

the decision will be consistent with the department's trust responsibilities.

In addition to the executive and secretarial orders, the NPS planning process requires the evaluation of potential Indian trust resources in planning documents. That is, are Indian trust resources present or not? The planning team has concluded that there are no Indian trust resources at Pipestone, and the subject will not be an impact topic for the following reasons:

a. One definition of tribal trust resources is "those natural resources, either on or off Indian lands, retained by, or reserved by or for Indian tribes through treaties, statutes, judicial decisions, and executive orders, which are protected by a fiduciary [trust] obligation on the part of the United States" (subsection B, section 3, Secretarial Order 3206, Bruce Babbitt, June 5, 1997). None of the lands in Pipestone are trust resources according to this definition.

b. The planning team considered whether the red catlinite pipestone in Pipestone National Monument or the national monument itself should be regarded as an Indian trust resource. The lands comprising Pipestone National Monument in southwestern Minnesota are not held in trust by the secretary of the interior for the benefit of American Indians because of their status as American Indians. The National Park Service has considered whether when, in 1937, Congress created the national monument and "reserved to Indians of all tribes . . . the quarrying of the red pipestone" within the national monument, the pipestone became a trust resource for the benefit and use of Indians or tribes. The National Park Service has concluded it did not. In other words, the enabling legislation's reservation of the quarrying of pipestone "to Indians of all tribes" did not establish an Indian trust resource just because it was being done on behalf of American Indians.

The text of the act — "An Act to Establish the Pipestone National Monument in the State of Minnesota" — of August 25, 1937, is reprinted in appendix B. Section 1 establishes that Congress created the national monument "for the benefit and enjoyment of the people of the United States." Section 2 states that the national monument shall be managed by the National Park Service under the direction of the secretary of the interior consistent with the provisions of the Organic Act of the National Park Service — "An Act to Establish a National Park Service" — of August 25, 1916. The Organic Act requires the secretary of the interior through the National Park Service "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" of all Americans.

It is section 3 of the 1937 enabling legislation that speaks of "the quarrying of the red pipestone" as "reserved to Indians of all tribes." Section 3 adds that the quarrying is to occur "under regulations to be prescribed by the Secretary of the Interior." The National Park Service believes that "the quarrying of the red pipestone . . . reserved to Indians of all tribes . . . under regulations to be prescribed by the Secretary of the Interior" recognized a historic and cultural use of the resource. But such recognition does not translate into the creation of a trust resource because the quarrying is to take place in the context of first managing and preserving the pipestone for the benefit of all Americans as required by both the Organic Act and the enabling legislation.

The current regulations are reprinted below. They are published in the Code of Federal Regulations (36 CFR 7.42) July 1, 2000, revision, and first published for Pipestone National Monument in the Federal Register (34 FR 5377) on March 19, 1969.

"[Volume] 36 [Part] 7 [Section] 42, Pipestone National Monument [36 CFR 7.42]:

(a) An American Indian desiring to quarry and work 'Catlinite' pipestone shall first secure a permit from the Superintendent. The Superintendent shall issue a permit to any American Indian applicant, Provided that: (1) In the judgment of the Superintendent, the number of permittees then quarrying or working the pipestone is not so large as to be inconsistent with preservation of the deposit and (2) a suitable area is available for conduct of the operation. The permit shall be issued without charge and shall be valid only during the calendar year in which it is issued.

"(b) An American Indian desiring to sell handicraft products produced by him, members of his family, or by other Indians under his supervision or under contract to him, including pipestone articles, shall apply to the Superintendent. The Superintendent shall grant the permit provided that (1) in his judgment the number of permittees selling handicraft products is not so large as to be inconsistent with the enjoyment of visitors to the Pipestone National Monument and (2) a suitable area is available for conduct of the operation. The permit shall be issued without charge and shall be valid only during the calendar year in which it is issued."

Environmental Justice

Executive Order (EO) 12898 requires that federal agencies identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations. None of the proposed alternatives would have a disproportionately high and adverse effect on any minority or low-income population or community. This conclusion is based on the following information:

- The proposed developments and actions in the alternatives would not result in any identifiable adverse human health effects.
- The impacts on the natural and physical environment that would occur in any of the alternatives would not significantly and adversely affect any minority or low-income population or community.
- The alternatives would not result in any identified effects that would be specific to any minority or low-income community.
- The planning team actively solicited public comments during the development of this plan and gave equal consideration to all input, regardless of the commenter's age, race, income status, or other socioeconomic or demographic factors.
- The staff of Pipestone National Monument has consulted and worked with the various American Indian communities and will continue to do so in cooperative efforts to improve communications and resolve any problems that occur. No effects were identified that would disproportionately and adversely affect American Indians.
- Effects on the socioeconomic environment due to the alternatives would be minor or positive and would occur mostly within the local and regional geographic area near the national monument. These effects would not occur at one time but would be spread over a number of years. The effects on the socioeconomic environment would not substantially alter the physical and social structure of the nearby communities.

Sioux Quartzite Rock Formation and Sioux Quartzite Prairie

Sioux quartzite, old metamorphosed sandstone, is the dominant geologic feature of the national monument. It forms a prominent escarpment (cliff face) trending south to north through the eastern part of the national monument. The outcrops provide unique habitat for many plant species not found elsewhere in the prairie; therefore, this is known as the Sioux quartzite prairie. According to the memorandum of understanding with the Min-

nesota Natural Heritage Register, "The rock outcrop flora, however, appears to be fairly well protected from threat due to its unsuitability for other uses" (Minn. DNR 1983b). The Sioux quartzite prairie at Pipestone National Monument represents one of the least disturbed examples of this rare community type globally (NPS 2001a).

The Nature Conservancy has designated the 20 acres of Sioux Quartzite prairie type as "endangered throughout its range" and cites the national monument's Sioux quartzite outcrops as one of the few intact examples of this rare community type. Considering the importance of the globally significant outcrops and associated vegetation, there are no actions proposed in the alternatives that would affect these aspects of the natural environment. New development, including trails, would avoid these resources. Manual weed control would continue. Monitoring of water levels in existing wells would detect changes in water levels, if any, caused by the pumping of quarries so that pumping could be mitigated or stopped if necessary. Because actions that would affect the outcrops would be avoided in every alternative, there would be no impacts on the Sioux quartzite rock formation and the Sioux quartzite prairie. Therefore, they will not be impact topics in this document.

Water Quality

Most factors affecting the water quality of Pipestone Creek originate outside the national monument. The Water Resources Division of the National Park Service retrieved surface water quality data for Pipestone National Monument from six of the U.S. Environmental Protection Agency's national databases. On the basis of the data inventories and analyses contained in its report, the Water Resources Division concluded that surface waters in the study area appear to have been affected by human activities. Potential human-caused sources of contaminants are municipal wastewater discharges, agricultural operations, residential development, gravel pit operations, stormwater runoff, recreational use, and atmospheric deposition.

Pipestone Creek is listed on the state of Minnesota's 303D list of streams that do not meet water quality standards. It was placed on the list because it contains high bacterial counts. Bacterial counts could affect visitors getting into the water. For this reason, signs and national monument employees advise visitors not to enter Pipestone Creek.

The water quality of Pipestone Creek might be affected by the actions of the alternatives such as construction, removing facilities, or relocating the bridge on Pipestone Creek below Winnewissa Falls. Actions such as construction, removing facilities, or relocating the bridge would use best management practices such as the placement of silt fences to ensure that construction-related effects would be minimal and to prevent long-term impacts on water quality from the displacement of soils. Construction materials would be kept in work areas, especially if the construction took place near streams or natural drainages.

The National Park Service would coordinate with local governments, landowners, or the state and would take the actions described in this section.

To ensure that activities in the national monument do not introduce pollutants to Pipestone Creek, the national monument staff would continue to implement the actions described under "Servicewide Laws and Policies," (beginning on page 25) under the headings "Water Resources," "Floodplains," and "Wetlands and Riparian Corridor." The staff also would implement the mitigating measures described under "Mitigation and Additional Studies," beginning on page 87.

A group of stakeholders is working to set up a watershed council that would address water quality issues. However, because the watershed covers more than 30 square miles and the national monument covers only 282 acres,

national monument actions are unlikely to affect water quality appreciably.

Adhering to servicewide laws and policies and implementing the mitigating measures described in this document would reduce the potential impacts to a negligible level and a short-term duration. Therefore, water quality is not an impact topic in this document.

Water Quantity

In all alternatives of this plan, water for use by visitors and national monument employees would come from the city of Pipestone. The water for personal consumption is abundant. Therefore, water quantity will not be a topic for impact analysis.

Prime and Unique Farmland

In August 1980, the Council on Environmental Quality (CEQ) directed that federal agencies must assess the effects of their actions on farmland soils classified as prime or unique by the Natural Resources Conservation Service (NRCS), U.S. Department of Agriculture. Prime or unique farmland is defined as soil that produces general crops such as common foods, forage, fiber, and oil seed. Unique farmland produces specialty crops such as fruits, vegetables, and nuts. According to the Natural Resources Conservation Service, the following seven soil types in Pipestone National Monument occupy approximately 50% of the national monument and are classified as prime farmlands:

Athelwold silty clay loam
Brookings silty clay loam, 0–3% slopes
Ihlen silty clay loam, 0–2% slopes
Kranzburg silty clay loam, 0–2% slopes
Kranzburg silty clay loam, 2–4% slopes
Kranzburg silty clay loam, 3–6% slopes, eroded
Vienna silty clay loam, 3–6% slopes, eroded (VbB2)

The section of land along the west boundary, which was added to the national monument in the 1950s, was farmed, and grazing probably occurred in other areas of the national monument. Although historically sections of the national monument were farmed, the Natural Resources Conservation Service advises that the land at Pipestone National Monument probably never was used for commercial cropland. In the 1930s, when the national monument was established, farming in the area was family farming, in which food and fiber were grown for the use of family and livestock. There were no cash crops.

NRCS records do not go back to the 1930s; therefore, it is most reasonable to conclude that family subsistence farming was the type of farming, if any, that was taking place in the area that is now the national monument (NRCS, Jerry Purdin, District Conservationist, Pipestone, MN, pers. comm., 11/6/01).

Because prime farmland in the national monument was not used to produce cash crops, it is not necessary to prepare an NRCS form AD 1006, "Farmland Conversion Impact Reading," and prime farmland need not be considered as an impact topic in this document (NRCS, Ken Matzdorf, Technical Soils Services Coordinator, Saint Paul, MN, 11/07/01). Therefore, this topic has been dismissed from further consideration.

Threatened or Endangered Species and Species of Special Concern

The U.S. Fish and Wildlife Service and the state of Minnesota have provided lists of species that may possibly occur in the national monument (see appendix C). Some species that might be affected by the actions of the alternatives will be impact topics. Others would not be affected and have been dismissed as impact topics for this document.

The U.S. Fish and Wildlife Service lists the following federally listed threatened (T),

endangered (E), and candidate (C) species for Pipestone County:

Topeka shiner (E)
Western prairie fringed orchid (T)
Dakota skipper (C)

Two federally listed species will be topics for impact assessment, Topeka shiner (endangered) and western prairie fringed orchid (threatened). Also see table 1.

The Minnesota Natural Heritage Database, Element Occurrence Records, "List of Known Rare Features in Pipestone National Monument Sorted by Class and Element Name" lists the following special status species at the national monument. These species are associated with the Sioux quartzite prairie:

water-hyssop
buffalo grass
short-pointed umbrella-sedge
mud plantain
blackfoot quillwort
mudwort
hairy water clover
plains prickly pear
tumble grass
slender plantain

None of the alternatives would affect Sioux quartzite prairie; therefore, these species have been dismissed as impact topics.

Several state-listed species have been dismissed. It is unlikely that Henslow's sparrow can be found in the national monument because, even though it was sighted in the national monument in 1985, it was not found in the grassland bird inventory in 2000. Therefore, Henslow's sparrow has been dismissed as an impact topic. Two species have been dismissed because the national monument has no documented observations of them: the Dakota skipper and a lichen (*Buella nigra*).

Air Quality

Pipestone National Monument is classified as a class II area under the National Clean Air Act of 1977. In a class II area, moderate degradation of air quality is allowed. The national monument is in the airshed of a city of about 4,500 people. No air quality monitoring stations are nearby. There have been no air quality problems in the national monument except odors and dust from agricultural activities.

Actions of the alternatives that have the potential to affect air quality are demolition, construction, and the use of heavy equipment. Adhering to servicewide laws and policies and implementing the mitigating measures described in this document would reduce the potential impacts to a negligible level and a short-term duration. Therefore, air quality will not be a topic for impact assessment.

Public Health and Safety

The proposed developments and actions in the alternatives would not result in any identifiable human health or safety impacts, either direct or indirect. The alternatives were designed to take these factors into consideration and to remove them wherever possible.

Energy Requirements and Conservation Potential

Some alternatives describe the need for new facilities, some for the expansion of facilities. The actions of the alternatives could affect energy consumption through the use of large machinery to construct or demolish facilities, through the design of new facilities or additions to facilities, and through the use of equipment to maintain the national monument and for such activities as pumping quarries and restoring prairie.

Energy consumption in buildings and utilities would be considered in alternative design concepts. The maximum energy saving concepts would be implemented in consistency with fiscal constraints. As has been mentioned (p. 11), the facilities in the national monument are outdated, with serious problems in heating, ventilating, and air conditioning systems.

Without detailed designs for all structures, it is possible to say only that energy consumption would be minimized as much as possible with the use of the latest energy-saving measures and "green design." However, in any action alternative, rehabilitation or expansion would involve improvements to current energy

TABLE 1: SPECIAL STATUS SPECIES AND CRITICAL HABITAT AT PIPESTONE NATIONAL MONUMENT

Species	Status	Designated Critical Habitat	Found in National Monument	Potential Presence in Project Area	I = Impact Topic D = Dismissed as an Impact Topic
[FE= federal endangered; FT= federal threatened; FC=federal candidate; SE= state endangered; ST= state threatened; SS= state special concern.]					
Western prairie fringed orchid *(Platanthera praeclara)*	FT SE	no	yes	Potential habitat: Western mesic prairies and sedge meadows—present. Species present in national monument.	I
Topeka shiner *(Notropis topeka)*	FE SS	yes	yes	Potential habitat: Prairie rivers and streams; first order prairie streams—present. Species present in national monument in Pipestone Creek.	I
Dakota skipper (*Hesperia dacotae*)	FC ST	no	no	Potential habitat: native mixed-grass prairie to tallgrass prairie—present. Species not present in monument; no documented observations of this species; therefore, it will not be an impact topic.	D
Henslow's sparrow *(Ammodramus henslowii)*	SE		no	Potential habitat: tall grasses, wetter areas—present. Species not present in national monument; was present in 1985 (Snyder 1986). Not recorded in 1998 bird survey (NPS 2000b). Unlikely that species is present now, so it would not be affected by any alternative of this plan.	D
Water hyssop *(Bacopa rotundifolia)*	SS		yes	Potential habitat: Sioux quartzite prairie—present. Species present in the national monument.	D
Buffalo grass *(Buchloe dactyloides)*	SS		yes	Potential habitat: Sioux quartzite prairie—present. Species present in the national monument.	D
Lichen (*Buella nigra*)	SE		no	Potential habitat present. Species not known to be present in national monument. Not listed in 1984 "Changes in the Lichen Flora of Pipestone National Monument, Minnesota," by Gary D. Wilson and Timothy W. Vinyard in *The Prairie Naturalist* 8(1): 9–14.	D
Short-pointed umbrella-sedge *(Cyperus acuminatus)*	ST		yes	Potential habitat: Sioux quartzite cliffs near wet pools—present. Whether species still can be found in the national monument is uncertain.	D
Mud plantain *(Heteranthera limosa)*	ST		yes	Potential habitat: Sioux quartzite prairie—present. Species can be found in the national monument.	D
Blackfoot quillwort (*Isoetes melanopoda)*	SE		yes	Potential habitat: Sioux quartzite prairie—present. Whether species still can be found in the national monument is uncertain.	D
Mudwort *(Limosella aquatica)*	SS		yes	Potential habitat: Sioux quartzite prairie—present. Species can be found in the national monument.	D
Hairy water clover (hairy pepperwort) (*Marsilea vestita)*	SE		yes	Potential habitat: Sioux quartzite prairie—present. Species can be found in the national monument.	D
Plains prickly pear *(Opuntia macrohiza)*	SS		yes	Potential habitat: Sioux quartzite prairie—present. Species can be found in the national monument.	D
Slender plantain (long-leaf plantain) *(Plantago elongata)*	ST		yes	Potential habitat: ephemeral pools in Sioux quartzite—present. Whether species still can be found in the national monument is uncertain.	D
Tumble grass *(Schedonnardus paniculatus)*	SS		yes	Potential habitat: Sioux quartzite prairie—present. Species can be found in the national monument.	D

* On June 13, 2002, the U.S. Fish and Wildlife Service published an updated list of candidates for Endangered Species Act listing. The Dakota skipper was listed in several states, including Minnesota. NPS management policies require that candidates for listing be treated the same as listed species would be. Pipestone is well within the current range of this primitive type of butterfly. On March 30, 2004, the species was still listed as "candidate."

inefficiencies. The difference in energy consumption among the action alternatives would be minimal. The facilities in each action alternative would be expected to be comparable to or more energy-efficient than the existing facilities.

In addition, to minimize energy consumption, the national monument staff would follow the principles described in the "Sustainable Design and Development" table under "Servicewide Laws and Policies" (p. 87). Therefore, energy consumption will not be a topic for impact assessment.

Traffic

One U.S. Highway and two state highways (MN 23 and 30) bisect the city of Pipestone.

Most visitors either exit the north-south U.S. 75, turning west on Reservation Avenue and following it into the national monument, or drive north on Hiawatha Avenue to Reservation Avenue, then turn west into the national monument. Only during special events such as the Hiawatha Pageant or the Watertower Festival do city streets and highways become congested. None of the alternatives described would appreciably alter traffic on any highway or city street, so there would be no impact on traffic. The topic has been considered and dismissed.

Conflicts with Local Land Use Plans and Policies

Pipestone National Monument is in conformance with all local land use plans, policies, or controls. The staff of the national monument works closely with city and county governments to ensure that its actions do not conflict in any way with those of local government. No alternative would be implemented if such conflicts could not be resolved.

LAWS, POLICIES, AND MANDATES

Each unit in the national park system is guided by agencywide and park-specific laws, regulations, and policies. Understanding this guidance and how it affects each unit's mission is fundamental to planning for the future. This section highlights the missions (expressed as purpose, significance, and mission goals) and legal and policy mandates that guide the management of Pipestone National Monument. These mission and mandate statements define the parameters within which all management actions must fall. All alternatives to be considered in the general management planning effort must be consistent with and contribute to fulfilling these missions and mandates.

NATIONAL MONUMENT PURPOSE

The legislative purpose of Pipestone National Monument is threefold:

- to administer and protect the pipestone quarries, reserving the quarrying of pipestone for Indians of all tribes
- to preserve, protect, and interpret the cultural and natural resources associated with Pipestone National Monument
- to provide for the enjoyment and benefit of all people

NATIONAL MONUMENT SIGNIFICANCE

The following statements identify significant cultural and natural components of Pipestone National Monument's ethnographic landscape.

- Pipestone National Monument is significant as the only location where American Indians have quarried the red pipestone (catlinite) from very early times to the present.
- The national monument is significant as a sacred site associated with American Indian spiritual beliefs and cultural activities.
- Pipestone National Monument is significant for its history of American Indian and European–American contact and exploration in the early 1800s, specific quarrying rights, and the Pipestone Indian School (1893–1953).
- Pipestone National Monument protects a significant cultural/ethnographic landscape.
- Pipestone National Monument is significant for the landscape it protects, which consists of the tallgrass prairie that developed in association with the site's distinct geologic and hydrologic features. These features combine to provide an unusual array of habitats supporting a diverse assortment of prairie plants and animals and rare habitats, federally listed threatened and endangered species, and globally rare remnant plant communities.

MISSION AND THEMES

Mission Goals

- Continue to provide for American Indian use and access for the quarrying of the pipestone and cultural uses.
- Preserve and protect cultural and natural resources.
- Provide for the public use, enjoyment, and understanding of Pipestone National Monument.

Interpretive Themes

- In traditional and contemporary American Indian cultures, pipes represent both a symbolic and tangible connection to their spiritual and everyday life.

- The perpetuation of the ancient practice of quarrying pipestone by hand at Pipestone National Monument illustrates the vitality and continuity of American Indian cultures in the 21st century.
- Many American Indians regard the landscape protected at Pipestone National Monument with reverence and respect as a sacred and spiritual place of great importance and significance — a place to honor traditional ways and celebrate living cultures.
- For many generations, American Indians gathered in the area of the national monument to seek the sacred red stone, catlinite. When European–Americans entered the surrounding area to farm its fertile prairie soils, misunderstanding and tensions inevitably developed over the profoundly different beliefs about the meaning and significance of the land.
- The unique components of the remnant prairie ecosystem thus far have demonstrated resilience to past patterns of land use in and around Pipestone National Monument. The survival of this fragile prairie through conservation offers proof that persistence can overcome adversity.

SPECIAL MANDATES AND ADMINISTRATIVE COMMITMENTS

Pipestone National Monument is listed in the National Register of Historic Places.

The memorandum of understanding of 1983 between the National Park Service and the state placed Pipestone National Monument on the Minnesota Natural Heritage Register because it has features of Minnesota's natural diversity. According to the memorandum of understanding,

> These lands are vital to the development and maintenance of a system of areas with scientific and/or natural values for the research and teaching of conservation and for the preservation of valuable plant and animal species and communities. Specific features of interest are the Sioux Quartzite Prairie, Sioux Quartzite Outcrops and eleven species designated endangered, threatened, or of special concern to the state.

Nine federally listed and/or state listed species are now present in the national monument.

SERVICEWIDE LAWS AND POLICIES

As with all units of the national park system, the management of Pipestone National Monument is guided by the 1916 Organic Act (which created the National Park Service), the General Authorities Act of 1970, the act of March 27, 1978, relating to the management of the national park system, and other applicable federal laws and regulations such as the Endangered Species Act and the National Historic Preservation Act. Actions are also guided by NPS *Management Policies 2006* and the enabling legislation (see appendix B).

Many resource conditions and some aspects of the visitor experience are prescribed by these legal mandates and NPS policies. Although attaining some of these conditions has been deferred in the national monument because of funding or staffing limitations, the National Park Service will continue to strive to implement these requirements with or without a new general management plan. This plan is not needed to decide, for instance, whether or not it is appropriate to protect endangered species, control exotic species, improve water quality, protect archeological sites, provide access for visitors with disabilities, permit quarrying of pipestone, or conserve artifacts.

The conditions prescribed by laws, regulations, and policies most pertinent to the planning and management of the national monument are summarized in the following sections.

Management Requirements for Cultural Resources

The management requirements for archeological resources, ethnographic resources, (see definition in the "Affected Environment chapter, p. 103), historic structures, cultural landscapes, resources, and museum collections and archives are delineated below.

Archeological Resources Current laws and policies require that the following conditions be achieved in national park system units:	
Desired Conditions	**Source**
Archeological sites will be identified and inventoried and their significance determined and documented. Archeological sites will be protected in an undisturbed condition unless it is determined through formal processes that disturbance or natural deterioration is unavoidable. When disturbance or deterioration is unavoidable, the site will be professionally documented and salvaged in consultation with the state historic preservation officer and American Indian tribes.	National Historic Preservation Act; Archeological Resources Protection Act; *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*; programmatic memorandum of agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995); NPS *Management Policies 2006*
Compliance Actions The National Park Service will take the following kinds of actions to meet legal and policy requirements related to archeological sites: • Treat all archeological resources as eligible for listing in the National Register of Historic Places pending a formal determination by the National Park Service and the Minnesota state historic preservation office as to their significance. • Protect all archeological resources eligible for listing in or listed in the national register. If disturbing such resources is unavoidable, conduct formal consultation with the Advisory Council on Historic Preservation, as appropriate, the state historic preservation officer, and when appropriate, affiliated American Indian tribes in accordance with the National Historic Preservation Act and implementing regulations.	

Ethnographic Resources. Certain contemporary American Indian and other communities are permitted by law, regulation, or policy to pursue customary religious, subsistence, and other cultural uses of NPS resources with which they are traditionally associated. Recognizing that its resource protection mandate affects this human use and cultural context of national monument resources, the National Park Service plans and executes programs in ways to safeguard cultural and natural resources while reflecting informed concern for contemporary peoples and cultures traditionally associated with them (also see appendix A).

Ethnographic Resources Current laws and policies require that the following conditions be achieved in national park system units:	
Desired Conditions	**Source**
Appropriate cultural anthropological research sites will be conducted with groups associated with the national monument.	National Historic Preservation Act; Advisory Council on Historic Preservation implementing regulations; NPS *Management Policies 2006*
All agencies, including the National Park Service, are required to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of sacred sites.	EO 13007 on American Indian Sacred Sites; American Indian Religious Freedom Act

Ethnographic Resources (continued)	
Desired Conditions	**Source**
Management decisions will reflect knowledge about and understanding of potentially affect Native American cultures and people, gained through research and consultations with the potentially affected groups. Resources based on ethnographic inventory results will be evaluated for eligibility and listing in the National Register of Historic Places as traditional cultural properties as appropriate according to the relevant peoples involved.	NPS *Management Policies 2006*
NPS general regulations on access to and use of natural and cultural resources in parks will be applied in an informed and balanced manner consistent with national monument purposes, and the National Park Service will not unreasonably interfere with any American Indian use of traditional areas or sacred resources that does not result in the degradation of resources.	EO 13007 on American Indian Sacred Sites; American Indian Religious Freedom Act; NPS *Management Policies 2006*
Other federal agencies, state and local governments, potentially affected American Indian and other communities, interested groups, the state historic preservation officer, and the Advisory Council on Historic Preservation will be given opportunities to become informed about and comment on anticipated NPS actions at the earliest practicable time.	National Historic Preservation Act; programmatic memorandum of agreement among NPS, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995); American Indian Religious Freedom Act; Native American Graves Protection and Repatriation Act; EO 13007 on American Indian Sacred Sites, presidential memorandum of April 29, 1994, on government-to-government relations with tribal governments; NPS *Management Policies 2006*
All agencies are required to consult with tribal governments before taking actions that affect federally recognized tribal governments. These consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals. Parks (including Pipestone National Monument) must regularly consult with traditionally associated American Indians about planning, management, and operational decisions that affect subsistence activities, sacred materials or places, or other ethnographic resources with which they are historically associated.	American Indian Religious Freedom Act; Presidential memorandum of April 29, 1994, on government-to-government relations with tribal governments; National Historic Preservation Act; Advisory Council for Historic Preservation implementing regulations
The identities of community consultants and information about sacred and other culturally sensitive places and practices will be kept confidential when research agreements or other circumstances warrant.	National Historic Preservation Act; NPS *Management Policies 2006*
American Indians and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains, sacred objects, objects of cultural patrimony, and associated funerary objects will be consulted when such items may be disturbed or are encountered on national monument lands.	NPS *Management Policies 2006*; Native American Graves Protection and Repatriation Act

Ethnographic Resources—Compliance Actions

- To accomplish the above goals, the National Park Service will take the following actions:
- Continue to provide access to sacred sites and pipestone quarries for Indians of all tribes.
- Survey and inventory ethnographic resources and document their significance.
- The entire national monument is listed in the National Register of Historic Places, which includes a list of ethnographic resources found at the national monument.
- Protect all ethnographic resources listed in the national register. If disturbance of such resources is unavoidable, conduct formal consultation with the Advisory Council on Historic Preservation, as appropriate, with the state historic preservation officer, and with American Indian tribes. This consultation will be in accordance with the National Historic Preservation Act, the implementing regulations of the Advisory Council for Historic Preservation, and the programmatic agreement.
- Conduct regular consultations with affiliated tribes to continue to improve communications and resolve any problems or misunderstandings that occur.
- Continue to encourage the employment of American Indians from all tribes to apply for employment as vacancies occur. This will improve and encourage cultural diversity in the workplace.

Historic Structures and Cultural Landscapes

Current laws and policies require that the following conditions be achieved for historic properties (buildings, structures, roads, trails, or cultural landscapes:

Desired Conditions	Source
Historic structures and cultural landscapes will be inventoried and their significance and integrity evaluated under national register criteria. The qualities that contribute to the listing or eligibility for listing of historic properties in the National Register of Historic Places will be protected in accordance with *The Secretary of the Interior's Treatment Standards* (unless it is determined through a formal process that disturbance or natural deterioration is unavoidable).	National Historic Preservation Act; Archeological and Historic Resources Preservation Act; *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*; the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes;* programmatic memorandum of agreement among NPS, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995); NPS *Management Policies 2006;* NPS-28: "Cultural Resource Management Guidelines" (1994); Directive to evaluate Mission 66 Properties

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to historic structures and cultural landscapes:

- Determine the appropriate level of preservation for each resource formally determined to be eligible for listing or listed in the national register (subject to *The Secretary of the Interior's Standards*.
- Implement and maintain the appropriate level of preservation for such resources.
- Analyze the design elements (materials, colors, shape, massing, scale, architectural details, and site details) of historic structures (intersections, curbing, signs, picnic tables, roads and trails, and cultural landscapes) in the national monument to guide the rehabilitation and maintenance of sites and structures.
- Before modifying any historic properties that are listed in the National Register of Historic Places, the National Park Service will consult with the Minnesota state historic preservation officer and the Advisory Council on Historic Preservation and American Indian tribes, as appropriate.

Museum Collections

Current laws and policies require that the following conditions be achieved in the national monument for museum collections.

Desired Conditions	Source
All museum objects and manuscripts will be identified and inventoried and their significance determined and documented. The qualities that contribute to the significance of collections will be protected in accordance with established standards.	Native American Graves Protection and Repatriation Act; NPS *Management Policies 2006;* Director's Order 24;: NPS *Museum Collections Management*; NPS *Museum Handbook*

Compliance Actions

To accomplish the above goals, the National Park Service will take the following actions:

- Inventory and catalog all national monument museum collections in accordance with standards in the NPS Museum Handbook.
- Develop and implement a collection management program according to NPS standards to guide the protection, conservation, and use of museum objects.
- Analyze the design elements (materials, colors, shape, massing, scale, architectural details, and site details) of historic structures (intersections, curbing, signs, picnic tables, roads and trails, and cultural landscapes) in the national monument to guide the rehabilitation and maintenance of sites and structures.
- This program will also address the proper display of artifacts (such as pipes bowls and stems) in a culturally sensitive manner.

Management Requirements for Natural Resources

The management requirements for natural resources— air quality, wetlands, floodplains, water resources, soils, threatened and endangered species, native vegetation and animals, exotic species, ecosystem management, natural sounds, night sky, and wildland fire — are delineated below.

Air Quality

The national monument is a class II air quality area. Current laws and policies require that the following conditions be achieved in the national monument:

Desired Conditions	Source
Air quality in the national monument meets national ambient air quality standards (NAAQS) for specified pollutants. Healthful indoor air quality at NPS facilities will be ensured.	Clean Air Act; NPS *Management Policies 2006*
Pipestone National Monument activities will not contribute to deterioration in air quality.	Clean Air Act; NPS *Management Policies 2006*

Compliance Actions

The National Park Service has little direct control over air quality in the airshed encompassing the national monument, and no monitoring is being conducted. The National Park Service will take the following kinds of actions to meet legal and policy requirements related to air quality:

- Participate in regional air pollution control plans and regulations and review permit applications for major new air pollution sources.
- Conduct operations in compliance with federal, state, and local air quality regulations.

Wetlands

Current laws and policies require that the following conditions for wetlands be achieved in the national monument:

Desired Conditions	Source
The natural and beneficial values of wetlands will be preserved and enhanced.	Clean Water Act; EO 11990 "Protection of Wetlands"; NPS *Management Policies 2006;* DO 77-1, "Wetland Protection"; Rivers and Harbors Act
The National Park Service will implement a "no net loss of wetlands" policy and strive to achieve a longer-term goal of net gain of wetlands across the national park system through the restoration of previously degraded or destroyed wetlands.	DO 77-1, "Wetland Protection"; NPS *Management Policies 2006;* EO 11514, "Protection and Enhancement of Environmental Quality
Where natural wetland characteristics or functions have been degraded or lost through previous or ongoing human activities, the National Park Service will, to the extent appropriate and practicable, restore them to predisturbance conditions.	DO 77-1, "Wetland Protection"; NPS *Management Policies 2006*
The National Park Service will avoid direct or indirect support of new construction in wetlands unless there are no reasonable alternatives, and the preferred alternative includes all practicable measures to minimize harm to wetlands.	EO 11990 "Protection of Wetlands"; NPS *Management Policies 2006*
The National Park Service will compensate for remaining unavoidable adverse impacts on wetlands by restoring wetlands that have been previously destroyed or degraded.	DO 77-1, "Wetland Protection"; NPS *Management Policies 2006;* Rivers and Harbors Act; EO 11514, "Protection and Enhancement of Environmental Quality

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to wetlands:

- Prepare maps of jurisdictional and other wetlands using the NPS-required Cowardin system as described in U.S. EPA 1989.
- Continue efforts to restore native vegetation in wetland areas in the national monument.

Floodplains

Current laws and policies require that the following conditions for wetlands be achieved in the national monument:

Desired Conditions	Source
Natural floodplain values will be preserved or restored.	EO 11988, "Floodplain Management"; Rivers and Harbors Act; NPS *Management Policies 2006;* Special Directive (SD) 93-4, "Floodplain Management: Revised Guidelines for National Park Service Floodplain Compliance" (1993)
Long-term and short-term environmental effects associated with the occupancy and modification of floodplains will be avoided.	DO 77-2, "Floodplain Management"; National Flood Insurance Program (44 CFR 60); SD 93-4, "Floodplain Management: Revised Guidelines for National Park Service Floodplain Compliance" (1993); NPS *Management Policies 2006*
When it is not practicable to locate or relocate development or inappropriate human activities to a site outside the floodplain or where the floodplain will not be affected, the NPS will do the following: • prepare and approve a statement of findings in accordance with DO 77-2 • use nonstructural measures as much as practicable to reduce hazards to human life and property while minimizing impacts on the natural resources of floodplains •ensure that structures and facilities are designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR 60)	DO 77-1, "Wetland Protection"; NPS *Management Policies 2006*

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to floodplains:

- Remove from the 500-year floodplain or protect from the 500-year flood the following items that are within the 100-year floodplain at the visitor center/administration/maintenance building:
  curatorial storage of artifacts and museum items
- Should the national monument headquarters building remain in its current location within the 100-year floodplain, prepare a statement of findings describing why there is no practicable alternative to leaving the building in the floodplain and what mitigation will be undertaken to protect the building from the effects of flooding.
- Work with the U.S. Army Corps of Engineers and the city of Pipestone to ensure that actions taken to reduce damage from future flooding outside the national monument do not cause detrimental effects on the national monument's cultural and natural resources.
- If any additional structures are proposed for construction in the floodplain, prepare a statement of findings as described above.
- Any future construction in the national monument or outside using federal monies will be accompanied by a statement of findings describing the need to place development within the 100-year floodplain, the flood hazard associated with the proposed development site, and the plans to mitigate this flood hazard.

Water Resources

Current laws and policies require that the following conditions for wetlands be achieved in the national monument:

Desired Conditions	Source
Surface water and groundwater will be restored or enhanced.	Clean Water Act; NPS *Management Policies 2006*
NPS and NPS-permitted programs and facilities will be maintained and operated to avoid the pollution of surface water and groundwater.	Clean Water Act; EO 12088, "Protection and Enhancement of Environmental Quality"; NPS *Management Policies 2006*; Rivers and Harbors Act

Water Resources (continued)

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to water resources:

- Where possible within the national monument and where funds are available, restore Pipestone Creek to a more sustainable ecosystem with a native riparian vegetation community and natural creek geomorphology.
- Continue water quality monitoring to complete water quality database.
- Apply best management practices to all pollution-generating activities and facilities in the national monument (such as NPS maintenance and storage facilities and parking areas); minimize the use of pesticides, fertilizers, and other chemicals and manage them in keeping with NPS policy and federal regulations.
- Work through or with other entities to resolve known water quality problems.
- Press for continued and expanded monitoring to complete the requirement for a water quality database and reveal any unknown water quality problems.
- Work with interested groups near the national monument to achieve cooperative ecosystem management of the area surrounding Pipestone Creek through a long-term, comprehensive plan for conservation and use.
- Conduct a study to evaluate the impacts, if any, on national monument resources caused by pumping water from quarries onto prairie. Hydrology, vegetation, soils, and threatened and endangered species might be affected by water pumped out of quarries onto the prairie.
- Monitor water level in the national monument well and in any other drill holes to be sure that pumping of quarries does not affect water table. Drilling more wells might be necessary for test purposes. If the water level in any well or drill hole falls, consult Water Resources Division of the National Park Service about what actions, if any, should be taken. Monitor vegetation, soils, and threatened and endangered species, looking for any changes in their conditions that might be attributable to pumping.

Soils

Current laws and policies require that the following conditions for wetlands be achieved in the national monument:

Desired Conditions	Source
The National Park Service will actively seek to understand and preserve the soil resources and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil or its contamination of other resources.	NPS *Management Policies 2006*
The superintendent will take management action to prevent — or, if that is not possible, to minimize — adverse, potentially irreversible impacts on soils. Soil conservation and soil amendment practices may be implemented to reduce impacts. The importation of offsite soil or soil amendments may be used to restore damaged sites. Offsite soil normally will be salvaged soil, not soil removed from pristine sites, unless the use of pristine site soil can be achieved without causing any overall ecosystem impairment. Before using any offsite materials, the national monument will develop a prescription and select materials that will be needed to restore the physical, chemical, and biological characteristics of original native soils without introducing any exotic species.	NPS *Management Policies 2006*
When soil excavation is an unavoidable part of an approved facility development project, the National Park Service will minimize soil excavation, erosion, and offsite soil migration during and after the development activity.	NPS *Management Policies 2006*

When the use of a soil fertilizer or other soil amendment is an unavoidable part of restoring a natural landscape or maintaining an altered plant community, the use will be guided by a written prescription. The prescription will be designed to ensure that such use of soil fertilizer or soil amendment will not unacceptably alter the physical, chemical, or biological characteristics of the soil, the biological community, or surface water or groundwater.	NPS *Management Policies 2006*

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to soils:

- Update the soils map of the national monument in digital format so that it can be used in the national monument's geographic information system (GIS).
- Whenever possible, the staff of the national monument will educate visitors about soils.

Threatened and Endangered Species

Current laws and policies require that the following conditions for wetlands be achieved in the national monument:

Desired Conditions	Source
Federally listed and state-listed threatened and endangered species and their habitats will be sustained.	Endangered Species Act; NPS *Management Policies 2006*
Managing populations of exotic plant and animal species, up to and including eradication, will be undertaken wherever such species threaten national monument resources or public health and when control is prudent and feasible.	NPS *Management Policies 2006;* EO 13112, "Invasive Species
Native species populations that have been severely reduced in or extirpated from the national monument will be restored where feasible and sustainable.	NPS *Management Policies 2006*

Compliance Actions

The National Park Service will take the following kinds of actions (listed in priority order) to meet legal and policy requirements related to species of special concern:

- Complete an inventory of plants and animals in the national monument and regularly monitor the distribution and condition (health, disease) of selected species that are (a) indicators of ecosystem condition and diversity, (b) rare or protected species, (c) invasive exotics, (d) native species capable of creating resource problems (such as habitat decline due to overpopulation).
- Develop a long-term program for reversing the destructive effects of exotic species.
- Study the environmental and ecological effects of exotic species invasion to assess threats and prioritize management actions.
- Undertake research to assess the methods by which exotic species become established and spread into native plant communities so that strategies for preventing their introduction and establishment can be developed and implemented.
- Continue to develop methods to restore native tallgrass prairie and stabilize eroding areas.
- Research soil properties, including nutrients and microorganisms, to learn how to restore native plant communities.
- Determine the source of soil nutrients and the effects of atmospheric pollution on soils.

Native Vegetation and Animals

Current laws and policies require that the following conditions for wetlands be achieved in the national monument:

Desired Conditions	Source
The National Park Service will maintain as parts of the natural ecosystem all native plants and animals in the national monument. Federally listed and state-listed threatened and endangered species and their habitats will be sustained.	NPS *Management Policies 2006;* NPS-77, "Natural Resources Management Guidelines

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to native wildlife and vegetation:

- Complete an inventory of plants and animals in the national monument and regularly monitor the distribution and condition of selected species that are indicators of the ecosystem condition and diversity.
- Develop methods to restore native biological communities.
- Minimize human impacts on native plants, animals, populations, communities, and ecosystems and the processes that sustain them.
- Where feasible, restore native plant and animal populations that have been extirpated in the national monument by past human-caused action.
- Whenever possible, rely on natural processes to maintain native plant and animal species and to influence natural fluctuations in populations of these species.
- Protect a full range of genetic types (genotypes) of native plant and animal populations in the national monument by perpetuating natural evolutionary processes and minimizing human interference with evolving genetic diversity.

Exotic Species

Current laws and policies require that the following conditions for wetlands be achieved in the national monument:

Desired Conditions	Source
The management of populations of exotic plant and animal species, up to and including eradication, will be undertaken wherever such species threaten national monument resources or public health and when control is prudent and feasible.	NPS *Management Policies 2006;* EO 13112, "Invasive Species"; NPS-77, "Natural Resources Management Guidelines"

Compliance Actions

Many species of invasive exotic plants have become established throughout much of the national monument and threaten native species. Given time, these aggressive exotic plants can greatly expand their populations, alter prairie and wildlife habitats, and change scenery by replacing native species. These effects, which clearly are already occurring in some areas of the national monument, will worsen substantially if left untreated. A sustained effort is needed to control these internal threats to the native species and their natural habitats. Similar impacts can occur with some native species, and care must be taken to manage these species.

The national monument monitors the tallgrass prairie and sensitive native species through the Prairie Cluster Long Term Ecological Monitoring Program.

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to exotic species:

- Complete an inventory of plants and animals in the national monument and regularly monitor the distribution and condition (health, disease) of selected species that are (a) invasive exotics (b) native species capable of creating resource problems (such as habitat decline due to overpopulation).
- Develop a long-term program for reversing the destructive effects of exotic species.
- Study the environmental and ecological effects of exotic species invasion to assess threats and prioritize management actions.
- Undertake research to assess the methods by which exotic species become established and spread into native plant communities so that strategies for preventing their introduction and establishment can be developed and implemented.
- Continue to develop methods to restore native tallgrass prairie and stabilize eroding areas.
- Research soil properties, including nutrients and microorganisms, to learn how to restore native plant communities.
- Determine the source of soil nutrients and the effects of atmospheric pollution on soils.

Ecosystem Management

Current laws and policies require that the following conditions for wetlands be achieved in the national monument:

Desired Conditions	Source
The national monument is managed holistically as part of a greater ecological, social, economic, and cultural system.	NPS *Management Policies 2006 (ch.*1,4)

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to ecosystem management:

- To protect ecosystem habitat and wildlife corridors, continue to seek cooperative agreements with the U.S. Fish and Wildlife Service, the Minnesota Department of Natural Resources, and other agencies that manage adjacent land.
- Continue to develop cooperative agreements, partnerships, and other feasible arrangements to set an example in resource conservation and innovation and to facilitate research related to national monument resources and their management.
- Work collaboratively with the landowners inside and outside the monument to protect viewsheds leading into and in the national monument and seen from within the national monument. Use cooperative agreements, conservation easements, donation, land exchanges, cooperatively produced management plans, or other tools to accomplish the protection of the views.

Natural Sounds

An important part of the NPS mission is to preserve or restore the natural soundscapes associated with national parks. The sounds of nature are among the intrinsic elements that combine to form the environment of our national parks.

Desired Conditions	Source
The National Park Service will preserve the natural ambient soundscapes, restore degraded soundscapes to the natural ambient condition wherever possible, and protect natural soundscapes from degradation due to human-caused noise. Disruptions from recreational uses will be managed to provide a high quality visitor experience in an effort to preserve or restore the natural quiet and natural sounds.	NPS *Management Policies 2006*
Noise sources are managed to preserve or restore the natural soundscape.	Executive memorandum signed by President Clinton on April 22, 1996

Compliance Actions

The National Park Service will take the following kinds of actions to comply with the policies listed above:

- Actions will be taken to prevent or minimize unnatural sounds adversely affecting national monument resources or values or visitors' enjoyment of them.
- The National Park Service will work with the Federal Aviation Administration (FAA), tour operators, commercial businesses, and general aviation interests to encourage aircraft to fly outside the national monument, especially for flights where the presence of the national monument is incidental to the purpose of the flight (transit between two points). Actions that might be considered to encourage pilots to fly outside the national monument include identifying the national monument on route maps as a noise-sensitive area, educating pilots about the reasons for keeping a distance from the national monument, and encouraging pilots to comply with FAA regulations and advisory guidance, in a manner that will minimize noise and other impacts.
- The national monument staff will continue to require tour bus companies to comply with regulations designed to reduce noise levels (for example, turning off engines when buses are parked).
- Noise generated by NPS management activities will be minimized by strictly regulating administrative functions such as the use of motorized equipment. Noise will be a consideration in the procurement and use of equipment by the national monument staff.

Night Sky

The national monument's night sky is a feature that contributes to visitors' experiences. Current laws and policies require that the following conditions be achieved in the national monument:

Desired Conditions	Source
The National Park Service will cooperate with national monument neighbors and local government agencies to seek ways to minimize the intrusion of artificial light into the night scene in the national monument. In natural areas, artificial outdoor lighting will be limited to basic safety requirements and will be shielded when possible.	NPS *Management Policies 2006*

Compliance Actions

The National Park Service will take the following kinds of actions to comply with the policy mentioned above:

- The national monument staff will work with local communities and other agencies to encourage the protection of the night sky.
- The national monument staff will evaluate the impacts on the night sky caused by national monument facilities. If light sources in the national monument are determined to be affecting night skies, the staff will study alternatives such as shielding lights, changing lamp types, or eliminating unnecessary sources.

Wildland Fire	
Current laws and policies require that the following conditions be achieved in the national monument:	
Desired Conditions	**Source**
Pipestone National Monument fire management programs will be designed to meet resource management objectives prescribed for the various areas of the national monument and to ensure that the safety of firefighters and the public is not compromised. All wildland fires will be aggressively suppressed, taking into account the cultural and natural resources to be protected and the safety of firefighters and the public.	DO 18, "Wildland Fire Management"; NPS *Management Policies 2006*

Compliance Actions

The National Park Service will take the following kinds of actions to comply with the policies listed above:

- All fires burning in natural or landscaped vegetation will be classified as either wildland fires or prescribed fires.
- All wildland fires will be effectively managed, considering resource values to be protected and firefighter and public safety, using the full range of strategic and tactical operations as described in an approved fire management plan.
- Prescribed fires are those fires ignited by managers to achieve resource objectives. To provide information on whether specified objectives are met, monitoring programs will be instituted for such fires to record fire behavior, smoke behavior, fire decisions, and fire effects.
- The national monument has an approved fire management plan and is in the process of updating the plan taking in account new requirements and formats.
- Since archeological resources, historic structures, and cultural landscapes could be affected by either wildland fires or prescribed fires, certain of these resources will be flagged for avoidance before any prescribed burn is conducted. After a wildland fire or prescribed fire, a post-fire cultural resource survey will be conducted to identify and evaluate any newly discovered resources or to document any damage to known resources.

Management Requirements for Visitor Use and Experience

The visitor experience is influenced by visitor activities, programs, and facilities. The management requirements for the visitor use and experience are delineated below.

Visitor Use and Experience	
Current laws and policies require that the following conditions be achieved in the national monument	
Desired Conditions	**Source**
Visitors will understand and appreciate resources and have the information necessary to adapt to the national monument's environments. Visitors will have opportunities to enjoy the national monument in ways that leave the resources unimpaired for future generations.	NPS Organic Act; NPS *Management Policies 2006;* DO 22, "Fee Collection"
Recreational uses will be promoted and regulated, and basic visitor needs will be met in keeping with the national monument's purposes.	NPS Organic Act; 36 CFR; NPS *Management Policies 2006*
To the extent feasible, facilities, programs, and services in the national monument will be accessible to and usable by all people, including those with disabilities.	Americans with Disabilities Act; Architectural Barriers Act; Rehabilitation Act; NPS *Management Policies 2006*
Visitors who use federal facilities and services for outdoor recreation may be required to pay a greater share of the cost of providing those opportunities than the population as a whole.	NPS *Management Policies 2006;* 1998 Executive Summary to Congress; Recreational Fee Demonstration Program, Progress Report to Congress, vol. 1: *Overview and Summary* (U.S. Department of the Interior, National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management; U.S. Department of Agriculture, Forest Service)

Visitor Use and Experience (continued)	
Desired Conditions	**Source**
Pipestone National Monument will identify implementation commitments for visitor carrying capacities for all areas of the unit.	1978 National Parks and Recreation Act (PL 95-625), NPS *Management Policies 2006*
Compliance Actions	
The laws, regulations, and policies leave considerable room for judgment about the best mix of types and levels of visitor use activities, programs, and facilities. However, the authority to charge fees is dictated by law and is therefore the same for all alternatives. The National Park Service will take the following kinds of actions to meet legal and policy requirements related to visitor experience and use of the national monument: • Give visitors the opportunity to understand, appreciate, and enjoy the national monument (management directions within this broad policy are discussed in the alternatives). • Continue to enforce the regulations governing visitor use and behavior in Title 36 of the Code of Federal Regulations (36 CFR). • Ensure that all programs and facilities in the national monument are accessible to the extent feasible. • Following approval of the *Final General Management Plan*, the National Park Service will undertake detailed planning to establish visitor carrying capacity strategies and monitoring programs.	

Rights-of-Way and Telecommunications Infrastructure

The management requirements for rights-of- way and telecommunications infrastructure are delineated in the table below.

Rights-of-Way and Telecommunications Infrastructure Current laws and policies require that the following conditions be achieved in the national monument:	
Desired Conditions	**Source**
Pipestone National Monument resources or public enjoyment of the national monument will not be denigrated by nonconforming uses. Telecommunication structures will be permitted in the national monument to the extent that they do not jeopardize its mission and resources. No new nonconforming uses or rights-of-way will be permitted through the national monument without specific statutory authority and approval by the director of the National Park Service or his/her representative, and such uses will be permitted only if there is no practicable alternative to such use of NPS lands.	Telecommunications Act; 16 USC 79; 23 USC 317; 36 CFR 14; NPS *Management Policies 2006;* DO 53A, "Wireless Telecommunications"; Reference Manual 53, "Special Park Uses." 1978 National Parks and Recreation Act (PL 95-625), NPS *Management Policies 2006*
Compliance Actions	
The Telecommunications Act of 1996 directs all federal agencies to help in the national goal of achieving a seamless telecommunications system throughout the United States by accommodating requests by telecommunication companies for the use of property, rights-of-way and easements to the extent allowable under each agency's mission. The National Park Service is legally obligated to permit telecommunication infrastructure in the parks if such facilities can be structured to avoid interference with national monument purposes. The management of Pipestone National Monument has determined that because of the national monument's small size and the scenic and ethnographic significance of its resources, there are no appropriate locations for aboveground telecommunication infrastructure in Pipestone National Monument.	

Sustainable Design and Development

Sustainability can be described as the result achieved by managing units of the national park system in ways that do not compromise the environment or its capacity to provide for present and future generations. Sustainable practices minimize the short-term and long- term environmental impacts of developments

and other activities through conserving resources, recycling, minimizing waste, and using energy-efficient and ecologically responsible materials and techniques. The management requirements for sustainable design and development are delineated in the table on the next page.

Sustainable Design and Development

Current laws and policies require that the following conditions for sustainability be achieved in the national monument:

Desired Conditions	Source
National Park Service and cooperating association facilities for visitor management will be harmonious with national monument resources, compatible with natural processes, aesthetically pleasing, functional, as accessible as possible to all segments of the population, energy-efficient, and cost-effective. Pipestone National Monument will identify implementation commitments for visitor carrying capacities for all areas of the unit.	NPS *Management Policies 2006;* EO 13123, "Greening the Government through Efficient Energy Management"; EO 13101, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition"; NPS *Guiding Principles of Sustainable Design;* DO 13, "Environmental Leadership"; DO 90, "Value Analysis; D0 32 "Cooperating Associations"

Compliance Actions

The NPS *Guiding Principles of Sustainable Design* (1993b) directs NPS management philosophy. It provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of biodiversity, and encourages responsible decisions. The guidebook articulates principles to be used in the design and management of tourist facilities that emphasize environmental sensitivity in construction, the use of nontoxic materials, resource conservation, recycling, and integrating visitors with natural and cultural settings.

Sustainability principles have been developed and will be followed for interpretation, natural resources, cultural resources, site design, building design, energy management, water supply, waste prevention, and facility maintenance and operations. The National Park Service also reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost-effective technology. Energy efficiency is incorporated into the decision-making process during the design and acquisition of buildings, facilities, and transportation systems emphasizing the use of renewable energy sources.

In addition to following the above principles, the National Park Service will take the following steps:

- The national monument staff will work with appropriate experts to make facilities and programs sustainable. Value analysis and value engineering, including life cycle cost analysis, will be performed to examine the energy, environmental, and economic implications of proposed developments.
- The national monument staff will support and encourage suppliers, permittees, and contractors to follow sustainable practices.
- National monument interpretive programs will address sustainable practices in and outside the national monument.

Trails

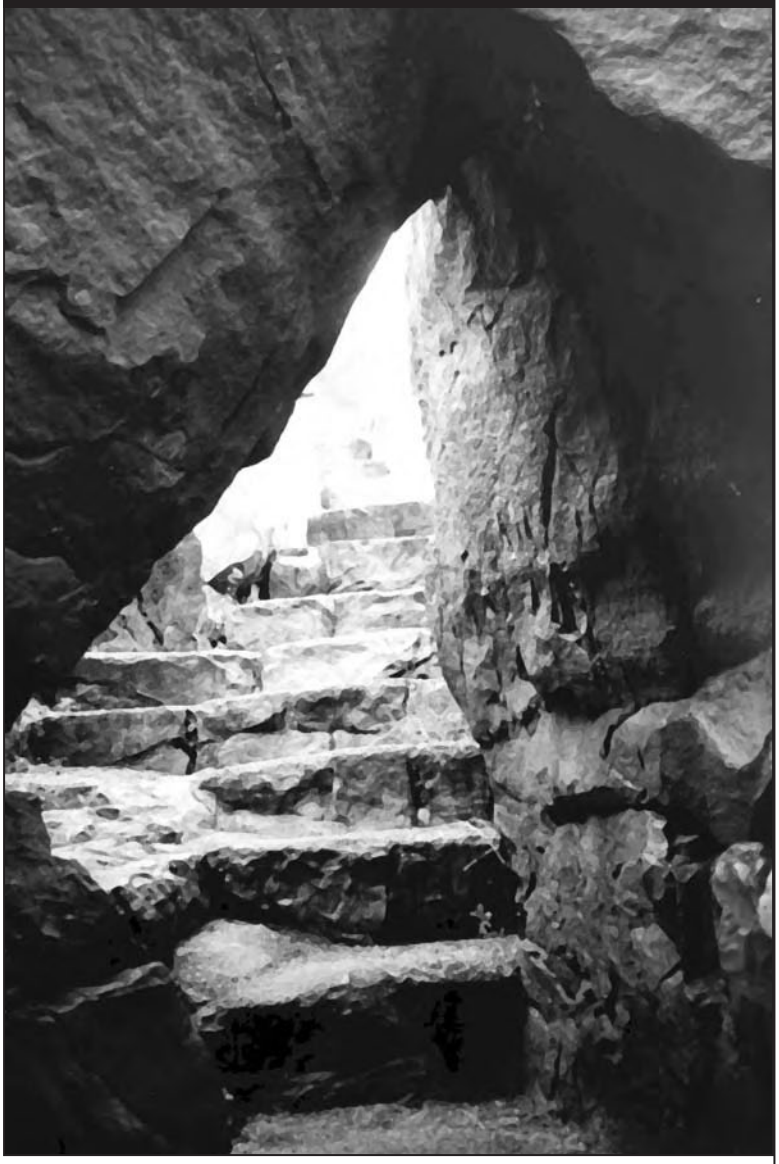
Trails	
Current laws and policies require that the following conditions be achieved in the national monument:	
Desired Conditions	**Source**
All trails will provide high-quality recreational opportunities while the resources of the national monument are protected. Trails will be designed and constructed to produce minimum disturbance to the natural environment, ensure the safety and enjoyment of users, and protect adjacent resources. The aesthetic quality of the area must be considered, and trails will function adequately for the intended use. All trails will be accessible to the extent possible.	NPS *Management Policies 2006;* NPS *Trails Management Handbook;* Architectural Barriers Rehabilitation Act; 43 CFR 17, "Regulations Regarding Enforcement of Nondiscrimination on the Basis of Disability in Department of the Interior Programs."

Compliance Actions (for Trails)

The National Park Service will take the following kinds of actions to comply with the policies mentioned above:

- All new or upgraded trails will need to be carefully situated, designed, and managed to do the following:
  - reduce conflicts with automobiles and incompatible uses
  - allow for a satisfying visitor experience of the national monument
  - allow accessibility by the greatest number of people
  - protect the resources of the national monument
- Heavily used trails and walks may be surfaced as necessary for visitor safety, accessibility for persons with impaired mobility, resource protection, or erosion control.
- Bridges will be kept to the minimum size needed to serve trail users and will be designed to harmonize with the surrounding natural scene and to be as unobtrusive as possible.
- All reasonable efforts will be made to make NPS facilities, programs, and services accessible to and usable by all people, including those with disabilities.

ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE



INTRODUCTION

Because Pipestone National Monument is sacred to many American Indians, every effort will be made to enhance that sacredness within the bounds of the National Park Service mission. Quiet and peacefulness in keeping with the spiritual nature of the site will be maintained.

DECISION POINTS

A variety of issues and concerns were identified by the general public, the national monument staff, tribes, and other agencies during scoping for this *Draft General Management Plan*. Comments, which were solicited at public meetings and through news releases, were received by e-mail, telephone, and letters. Additional information about public involvement is available in the "Consultation and Coordination" chapter.

Some comments were outside of the scope of this plan. Some concerns identified during scoping are already covered by laws, regulations, or policies or would be in violation of such requirements. These kinds of requirements are discussed under "Servicewide Laws and Policies," beginning on page 25. Because they are mandatory requirements, these matters are not subject to decision in this plan.

Other issues identified during scoping were at an operational or developmental level of detail. Such issues are most appropriately associated with the national monument's five-year strategic plan or implementation plans that are more detailed. Those plans will be based on the resource conditions and visitor experiences to be achieved at Pipestone National Monument, which will be established in the final general management plan. However, some of the concepts behind operational or developmental issues were incorporated into the alternatives considered in this draft plan to provide more clarity.

Scoping demonstrated that there is much that the public likes about the national monument. In particular, people want the existing feeling and character of the national monument to continue and be expanded. On the basis of these comments and agency concerns, four major resource condition and visitor experience issues, called decision points, were identified. This *Draft General Management Plan* focuses on addressing these decision points, which are shown below.

This document analyzes the current condition and three alternatives for the appropriate levels of service and use at the national monument. Concerns ("decision points") that led to the development of these alternatives include the following:

1. How can the national monument accommodate American Indian uses and interests while managing for cultural and natural resource values?

   Related issue categories: (a) use of quarries, (b) American Indian ceremonies, (c) special use permits, (d) carrying capacity for Sun Dance grounds.

2. To what degree will affiliated tribes and the National Park Service collaborate to interpret the history, culture, and artistic heritage of the Plains Indians?

   Related issue categories: (a) facilities, (b) cultural resources, (c) American Indian ceremonies, (d) interpretation and visitor use, (e) collections.

3. How can the national monument preserve cultural resources and natural resources while providing effective visitor services?

   Related issue categories: (a) prairie restoration, (b) visitor facilities (c) interpretation and visitor use,(d) cultural resources (landscape, artifacts, traditional uses, collections).

4. To what degree can the national monument respond more effectively to external activities, concerns, and threats?

   Related issue categories: (a) prairie restoration, (b) boundary concerns, (c) cultural resources, (d) water quality, (e) encroachment of exotic species, (f) viewshed.

5. To what extent should facilities be expanded to accommodate current or future uses, and what type of management actions might be desirable to better manage the flow of visitors in various facilities and areas of the national monument at one time?

   Related issue categories: (b) boundary concerns, (c) cultural resources, (d) water quality, (f) viewshed.

RELATIONSHIP TO OTHER AGENCIES' PLANS

Water quality sampling and field tests were conducted in Pipestone Creek both upstream and downstream of the national monument. Testing was done for fecal coliform, turbidity, total phosphorus, total nitrogen, nitrite-nitrate nitrogen, dissolved oxygen, and total suspended sediments (through a partnership with the Pipestone County Soil and Water Conservation District and the Minnesota Pollution Control Agency). Analysis and data management are being done by the Minnesota Department of Health. The purpose of the sampling is to verify the section 303(d) listing of Pipestone Creek as an impaired water body and eventually to determine the sources of pollution.

The Minnesota Pollution Control Agency has listed designated uses for the creek, including swimming and aquatic life. The section of Pipestone Creek in the national monument and upstream and downstream of the national monument does not comply with state water quality standards. The national monument's water quality monitoring program is consistent with the program established by the Clean Water Act and the NPS *Servicewide Strategic Plan.*

The Pipestone National Monument staff will manage western prairie fringed orchid and the Topeka shiner as required by the recovery plans of the U.S. Fish and Wildlife Service. Critical habitat designated by the U.S. Fish and Wildlife Service in the national monument will be managed as stipulated by that agency.

THE PERMITTING PROCESS TO QUARRY PIPESTONE

The superintendent of Pipestone National Monument requires that an individual applying for an annual permit to quarry pipestone show proof of affiliation with an American Indian tribe. More than one person may quarry at the same site. Any person assisting the quarrier at a site must also validate his or her affiliation with an American Indian tribe.

No permits are issued to tribes. The 1937 enabling legislation clearly states that pipestone quarrying is reserved to individual "Indians of all tribes," not to particular tribes.

LAND ACQUISITION

Three properties contiguous to the present Pipestone National Monument are considered for acquisition in one or more of the alternatives of this plan. Each property is described below. The criteria under which each could be acquired (from NPS *Management Policies 2006*, 3.5, "Boundary Adjustments") are listed below, and the relevant criteria are indicated in the following property descriptions.

1. Protect significant resources and values, or to enhance opportunities for public enjoyment related to park purposes;.

2. Address operational and management issues, such as the need for access or the need for boundaries to correspond to logical boundary delineations such as topographic or other natural features or roads; or
3. Otherwise protect park resources that are critical to fulfilling park purposes.

The following criteria must also be met if the acquisition is made with appropriated funds and is not merely a technical boundary revision.

4. The added lands will be feasible to administer considering their size, configuration, ownership, and hazardous substances, costs, the views of and impacts on local communities and surrounding jurisdictions, and other factors such as the presence of exotic species, and
5. Other alternatives for management and resource protection are not adequate.

Pipestone Indian School Superintendent's House

The Pipestone Indian School superintendent's house, which is listed in the National Register of Historic Places, is a two-story brick structure with a screened wooden porch. It sits on less than 1 acre of land within the south boundary of the Minnesota West Community and Technical College west of Hiawatha Avenue. The structure, which has been unoccupied for many years, is deteriorating rapidly. It is one of the few remaining structures from the Pipestone Indian School period; the others have been modified for use by the students of the college.

Because of its relatively small size and interior configuration, the superintendent's house was of little value to Minnesota West Community and Technical College. However, its historical importance influenced the state to give the house to the Keepers of the Sacred Tradition of Pipemakers.

The Pipestone Indian School superintendent's house is closely related to the history of Pipestone National Monument. After the reservation period, the Pipestone Indian School encompassed all the land that later would become the national monument. Many of the landscape features of the national monument can be dated to the Indian School period. A part of the national monument's significance is derived from the former Indian School lands. When the Hiawatha Pageant was first performed by Hiawatha Lake in the national monument, students from the Indian School played parts in the pageant, a reenactment of the famous Longfellow poem, "The Song of Hiawatha."

Indian School students may have engaged in quarrying activities or shaping pieces of pipestone. The original quarrying regulations for the new national monument were proposed by the Indian School superintendent. Some of those original regulations are still in effect. (Meets criterion 1.)

The history of the Pipestone Indian School superintendent's house (which is listed in the National Register of Historic Places) is closely related to the history of Pipestone National Monument and is covered by one of the significance statements ["Pipestone National Monument is significant for its history of American Indian and European–American contact and exploration in the early 1800s, specific quarrying rights, and the Pipestone Indian School (1893–1953)"]. Its acquisition would preserve this structure and provide a place for visitors to learn about the school's role in the national monument's history. (Meets criterion 4.)

There is no known controversy about this acquisition. Preserving the Pipestone Indian School superintendent's house is of concern to American Indians and community members alike. Its location on the edge of the national monument would facilitate administration and ease of access. Its story is closely related to the national monument's significance. There would be an initial preservation cost

and ongoing maintenance and staffing costs. (Meets criterion 5.)

The owners of the Pipestone Indian School superintendent's house have been unable to raise sufficient funds to stabilize it. The likelihood of state or federal grants is unknown. Preservation organizations in Pipestone, Minnesota, have an active interest in seeing the house preserved and interpreted, but they lack the funds to move forward. The structure was transferred to its present owners from the Minnesota Community and Technical College through the State of Minnesota. Therefore, it is unlikely that another preservation organization (such as the Minnesota Historical Society) would acquire the property. Without outside funding, and with its current owners lacking the funds to properly preserve and manage the property, the structure would continue to deteriorate.

Pipestone Area School District Land

A 15.3-acre parcel of land belonging to the Pipestone Area School District is along the northeast border of Pipestone National Monument, along the west side of Hiawatha Avenue. The border of the property is common with the south boundary of the Minnesota West Community and Technical College. The land has been cleared for cultivation. On the west and south sides, the sides abutting the national monument, the property is bounded by trees and the national monument's boundary fence. On the east, the property is unfenced, forming an open landscape to Hiawatha Avenue. On the north, the property abuts the campus of the college. The property was originally a part of the Pipestone Indian School. (Meets criterion 3.)

The above criterion relates directly to the following passage in the national monument's significance statement:

> Pipestone National Monument is significant for the landscape it protects, which consists of the tallgrass prairie that developed in association with the site's distinct geologic and hydrologic features. These features combine to provide an unusual array of habitats supporting a diverse assortment of prairie plants and animals and rare habitats, federally listed threatened and endangered species, and globally rare remnant plant communities.

Approximately 100 yards to the south of the school district lands is the Sioux quartzite ridge, home to a globally significant endangered plant community (Nature Conservancy, Association for Biodiversity Information, and the State of Minnesota).

The school district parcel functions as a "sponge" holding runoff water, slowly releasing it across the national monument as the soils dry out. It filters runoff from farming and development that otherwise would go directly into Pipestone Creek. The land also forms a barrier against exotic plant species that are more likely to get a foothold on disturbed land and then spread into the national monument.

The school district land also would help to preserve the soundscapes associated with the Winnewissa Falls and the Circle Trail by placing distance between these features and the road noise and present and planned development along Hiawatha Avenue. NPS ownership of the property would allow the boundary of the national monument to expand to Hiawatha Avenue, precluding any incompatible development between the avenue and the national monument.

Significant archeological resources that probably are related to those in the national monument have been traced to the school district land. The Richner Site, discovered in 1994, extends along the existing eastern boundary inside the monument bordering the school lands. It is believed this site was a catlinite workshop site. The debris found to date indicates that the site predates metal tools and may hold important clues to prehistoric processes for manufacturing catlinite artifacts.

There is no reason to believe it does not extend into school district lands, particularly since pipestone debris has been seen on the surface of this land.

If the National Park Service acquired this property, it could serve as a living laboratory for the restoration of a tallgrass prairie. Volunteers, local schools, and colleges could be partnered in an educational project to reclaim this former prairie land. If the National Park Service did not acquire the property, the opportunity to preserve related archeological resources would be lost, as would the educational opportunity to use the restoration of the tallgrass prairie as an interpretive tool.

If this property was developed, the opportunity to protect resources in the national monument would be seriously jeopardized because any hard surfaces would result in faster runoff directly into the national monument or into Pipestone Creek, increasing the possibility of flooding and diminishing the land's ability to filter out pollution.

Pipestone National Monument is working with state and local authorities to improve the water quality in Pipestone Creek. The national monument does not measurably contribute to the high bacterial levels in the creek. The National Park Service is concerned about the effects of odors, prohibiting body contact for visitor safety, and improving this critical habitat for a federally listed endangered species, the Topeka shiner. Acquiring the school district parcel would demonstrate that the National Park Service is serious about improving the water quality by returning the property to prairie and thus to a more natural condition. (Meets criterion 4.)

Adding the school district parcel to the national monument would result in a continuous NPS boundary along Hiawatha Avenue from the national monument's south boundary to the south boundary of Minnesota West Community and Technical College. Existing contiguous NPS land along Pipestone Creek to the south and west would allow this land to be easily reached and managed as part of the national monument. There are no buildings on the property to maintain. NPS management would be the same as actions underway elsewhere in the national monument — installing or repairing fences, removing nonnative species, and replanting with native species. These actions would be carried out gradually over the life of the plan by the existing resource management and maintenance staff. (Meets criterion 2.)

The entire property is owned by one owner, the Pipestone Area School District, which intends to sell it as excess to the school district's needs. There is no known controversy about this sale. Acquiring the school district parcel would help the national monument to control the entry of exotic plant species that have begun to get a foothold on the property, because the area could be replanted, extending the tallgrass prairie ecosystem. It also would end the annual applications of pesticides and fertilizer that have been used to sustain and improve agricultural crop yields. (Meets criterion 5.)

Up to this point, the management of this property by the school district has protected it from development. The school board plans to sell the parcel to be free from its day-to-day management. The most likely buyers would be private developers wanting to construct commercial buildings or houses. The property's size and nearness to the town of Pipestone make it highly desirable for commercial or homesite development.

The school district land is zoned R-3, which would allow, for example, multifamily development, parks, playgrounds, convalescent or nursing care homes, day care facilities, agriculture, and other essential services. Other conditional uses could be private schools, hotels, or nonprofit recreation. For any of these uses, a developer probably would drain the land to prepare it for commercial development. If the area should be used for any of these purposes, the effect on the national monument's water quality and hydrology could be adverse.

Pipestone Wildlife Management Area

Along the north boundary of Pipestone National Monument is the Pipestone Wildlife Management Area, which the Minnesota Department of Natural Resources (MDNR) manages for hunting and fishing under an agreement with the U.S. Fish and Wildlife Service (USFWS). The wildlife management area occupies approximately 100 acres, originally part of the Pipestone Indian School. The property is bounded on the north and west by County Road 67, on the south by the national monument, and on the east by the Minnesota West Community and Technical College.

The USFWS/MDNR property, which is managed for its wildlife values and the hunting of game birds and deer, contains Indian Lake and a smaller lake along Pipestone Creek that provide shelter for game birds and fish. The landscape and resources are similar to those of the national monument, but this land is not actively managed as prairie. Exotic, nonnative plant species have caused some degradation of the landscape. The property may contain evidence of prehistoric quarrying and other use by American Indians. (Meets criterion 1.)

NPS acquisition of the USFWS/MDNR property to the north would allow the national monument to actively restore prairie north to County Road 67. As with the school district property, acquiring this property would preserve any existing archeological resources associated with the national monument and offer an educational opportunity for visitors to see the restoration of prairie in progress.

Surface evidence indicates that the pipestone seam runs across this land. When the land was trenched and tile drainage lines were laid, pieces of pipestone were exposed. Thus, the seam in the monument extends from the north quarry line onto the USFWS/MDNR land. If the National Park Service acquired this land, the additional pipestone resource would be available for quarrying by future generations of American Indians. Surface evidence also indicates that a rather large area once served as a dumping ground for the Indian School; this began in 1892 and ended in 1953. A study of this area would be necessary to determine whether any hazardous materials exist prior to acquisition.

At present, access from the north through the game refuge during hunting seasons endangers visitor safety and hinders the use of the national monument. NPS acquisition of the USFWS/MDNR property would result in the national monument boundary on the west and north being the county road, and it would allow the national monument to control and maintain the north access used by national monument maintenance staff, quarriers, and Indians during the Sun Dance and other times of ceremonial use. (Meets criteria 2 and 4.)

There are no buildings on the USFWS/MDNR property to maintain. NPS management would involve the actions underway elsewhere in the national monument — removing fences, removing any human-made drainage structures to allow the soils to return to a more natural condition, removing nonnative plant species, and replanting with native species. These actions would be carried out gradually over the life of the plan by the existing resource management and maintenance staff.

NPS acquisition of the USFWS/MDNR lands would result in the boundary of the national monument being continuous from the west boundary of the Minnesota West Community and Technical College along the county road west and south to the southwest corner of the national monument. Existing contiguous NPS land would allow this land to be easily reached and managed as a part of the national monument. If the land is acquired, hunting would not continue on the USFWS/ MDNR parcel. (Meets criterion 2.)

Differing missions of the USFWS/MDNR and the National Park Service, a lack of funds, and the small size of the property have resulted in the USFWS/MDNR property being managed

in a manner very different from the national monument. Continuing the current management practices would not resolve the concerns for the spread of exotic plant species or the maintenance of the northern road access used by national monument maintenance, quarriers, and American Indians to reach the Sun Dance grounds. The possibility that another agency or organization would acquire the property and manage it similarly to the National Park Service is unknown, but it is considered unlikely.

DEVELOPMENT OF COST ESTIMATES

NPS decision makers and the public must consider an overall picture of the complete costs and advantages of various alternatives, including the no-action alternative, to make wise planning and management decisions for the national monument. Such consideration can shed light on the cost of the no-action alternative and make possible a more legitimate comparison to the action alternatives.

Initial One-Time Costs

- deferred maintenance or the cost of bringing existing assets up to NPS standards
- new development (including NPS transportation infrastructure costs)
- major rehabilitation or replacement of existing facilities and infrastructure
- interpretive media (audiovisual materials, exhibits, waysides, and publications)
- resource management and visitor service costs (resource and visitor inventories, implementation planning, compliance)
- other significant one-time costs such as removing development, purchasing transportation equipment, restoring resources, action on specific implementation plans or major compliance needs

Recurring Annual Costs

- annual national monument operating costs (staff salary and benefits, equipment, maintenance, utilities, monitoring, contract services, and the like)
- ongoing repair and rehabilitation of facilities (the projection of past trends and known future needs into an annual estimate)

Land Acquisition Costs

The acquisition of lands may be through donation or purchase. In either case, merely adding lands to the national monument does not immediately make funds available for maintenance, restoration, and operation. Although these have been figured into the initial and recurring costs explained above, it may be several years before funds are actually available to implement the plan.

Although the recurring costs associated with new lands have been figured into the cost estimates, the actual cost of purchasing the lands has not.

NPS Facilities Model

The National Park Service has developed facility models for several types of facilities, such as visitor centers and maintenance facilities, based on a number of factors unique to each national park system unit. This model was used in the development of cost estimates for Pipestone National Monument.

COMPARISON OF ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES

The actions of the alternatives are compared in table 3. The environmental consequences that would result from each alternative are compared in table 4.

MANAGEMENT ZONES / MANAGEMENT PRESCRIPTIONS

An important tool in planning and management is the establishment of management prescriptions for various areas or management zones in the national monument. Management prescriptions identify how each zone is to be managed to achieve a variety of desired future resource conditions and visitor experiences. The prescriptions for each zone are different, based on the significance of the resources, how visitors might access or use the zone, and the appropriateness of the facilities in that zone. The following management zones have been identified and their management prescriptions outlined. The management zones also are summarized in table 2.

ADMINISTRATIVE ZONE

Resource Condition or Character

Because it would contain support facilities, the administrative zone would consist mainly of areas of previously disturbed or developed areas. There would be no organized effort to restore prairie around structures in this zone, but it would be important to landscape with native plants to be as unobtrusive as possible. Maintaining the scenic quality of the surrounding area would be important. Noise levels could be higher than elsewhere if maintenance activities were to be carried out here.

Visitor Experience

Visitors would not be likely to spend time in the administrative zone.

Appropriate Kinds of Facilities

Facilities in the administrative zone would be those necessary to the operation of the national monument but not generally used by visitors, such as housing, maintenance, outdoor maintenance equipment storage area, offices, and staff parking. Historic structures not related to the national monument's story could be adaptively used for any of these functions.

VISITOR SERVICES ZONE

Resource Condition or Character

The visitor services zone would be in previously disturbed areas, or areas of relatively durable resources that could be modified for essential visitor needs. Any such modification would harmonize with the natural environment, natural processes, and scenic quality of the adjacent zones. Tolerance for any resource degradation would be higher than in most other zones. Adaptive reuse of historic structures would be appropriate.

Visitor Experience

The visitor services zone would be the primary focus of the visitor experience. Visitor services would be highly accessible and convenient, with a low level of physical exertion expected. Visitors would be heavily concentrated in this area, and interaction with NPS staff could be high. Natural sounds might be compromised because of the presence of vehicles and high levels of visitor use.

Appropriate Kinds of Facilities

The visitor services zone would include destination-oriented visitor facilities such as visitor centers, learning centers, staging areas, restrooms, and picnic facilities. Some trails, walkways, and parking areas also would be appropriate. Fences, barriers, and paving might be necessary to protect sensitive resources.

PRAIRIE PRESERVATION ZONE

Resource Condition or Character

The emphasis in the prairie preservation zone would be on restoring and perpetuating natural systems and processes. It would be intensively managed for the restoration of native species on disturbed lands. Where high quality prairie exists, monitoring and preemptive measures would be practiced to forestall any degradation. The integrity of the prairie in this zone is paramount. The goal would be to one day have a prairie whose restored areas would be virtually identical to the natural prairie. Tolerance for resource degradation would be low.

Visitor Experience

The prairie preservation zone would be a low density visitation area. Use would be restricted to existing trails. Natural quiet and scenic quality would be important in this zone. The restoration of native prairie would create a sense of the historic environment in which quarrying took place. There would be a sense of discovery and immersion in the natural landscape. The probability of encountering other visitors and NPS staff would be low to moderate.

Appropriate Kinds of Facilities

Paved and unpaved trails would be appropriate in the prairie preservation zone, depending on the level of use and the likelihood of environmental damage. Orientation signs and subtle wayside exhibits also would be appropriate. Other structures (such as fences, bridges, or boardwalks) would be appropriate only if they were required for resource protection.

QUARRY ZONE

Resource Condition or Character

Consumptive use of the red catlinite by American Indians would continue to be permitted. The focus of the quarry zone would be the quarries and associated activities. The tolerance for the disruption of natural processes associated with quarrying would be high.

Visitor Experience

Parts of the quarry zone would be a high visitor use area that would be a focus of NPS interpretation. These quarries are the ones closely associated with developed trails. The other quarries (mostly the northern quarries) would be closed to visitor access. Scenic quality and natural sounds would be somewhat compromised because of the visitor use and quarry drainage pumps. At times associated ceremonial activities might be carried out in this zone.

Appropriate Kinds of Facilities

Wayside exhibits and trash receptacles would be appropriate, as would retention walls along the trail, short trails, and benches.

CEREMONIAL USE ZONE

Resource Condition or Character

When not being used for American Indian ceremonies, the ceremonial use zone would be treated in a way similar to the prairie preservation zone. Native vegetation would be encouraged and nonnative species removed. Moderate (easily reversible) resource degradation would be allowed during the infrequent periods of ceremonial use.

Visitor Experience

Visitors normally would not be found in the ceremonial use zone. American Indians occasionally would use the zone for ceremonies such as the Sun Dance and sweat lodges. When it was being used only for sweat lodges, American Indians might experience solitude and natural sounds in a prairie environment. Sounds associated with ceremonial activities such as a Sun Dance would be moderate.

Appropriate Kinds of Facilities

Semipermanent or temporary facilities might consist of sweat lodges and facilities associated with the Sun Dances, such as the arbor and kitchen facilities. Trails and roads would remain unpaved.

THREE MAIDENS ZONE

Resource Condition or Character

The emphasis in the Three Maidens zone would be on maintaining and enhancing the natural and spiritual qualities of the immediate area around the Three Maidens rock formation. It would be intensively managed to restore a semblance of its prairie setting. The tolerance for resource degradation would be low.

Visitor Experience

Visitors would learn about the Three Maidens at discreet waysides at the roadside parking area and by brochure. The significance of the Three Maidens to American Indian spiritual and ceremonial life would be explained. Visitors would be expected to remain on the trail. Visitation would be moderate to high.

Appropriate Kinds of Facilities

Simple wayside signs and exhibits and a trail would be appropriate within the restored prairie. Fences could be appropriate only for resource protection.

TABLE 2: MANAGEMENT PRESCRIPTIONS

Resource Condition	Visitor Experience	Appropriate Kinds of Facilities
Administrative Zone		
Support facilities mainly in previously disturbed areas or developed areas; no organized effort to restore prairie, but landscaping with native plants to be unobtrusive; scenic quality of surrounding area maintained; more noise than elsewhere caused by maintenance.	Visitor presence in this zone unlikely.	Facilities necessary to operate national monument (such as housing, offices, maintenance storage, and staff parking); historic structures could be adaptively used for some functions.
Visitor Services Zone		
Previously disturbed areas or areas with relatively durable resources that could be modified to harmonize with natural environment, natural processes, and scenic qualities of adjacent zones; natural resources actively managed; historic structures and natural resources could be adapted or modified to support visitor activities.	This zone would be primary focus of the visitor experience; visitor services accessible and convenient; much onsite interpretation; high interaction with NPS staff; opportunities to interact with quarriers and demonstrators, self-guiding and ranger-led tours; vehicles and large numbers of visitors might compromise natural sounds	Destination-oriented facilities (visitor center, learning center, staging area, picnic tables, restrooms); some trails and parking areas; fences, barriers, and paving might be needed to protect sensitive resources.
Prairie Preservation Zone		
Integrity of prairie foremost in this zone; emphasis on restoring and perpetuating natural systems and processes; low tolerance for resource degradation; intensive management to restore native species on disturbed lands; in areas with high quality prairie, monitoring and preemptive measures taken to forestall degradation; goal to have prairie nearly identical to natural state.	Low density visitation; use restricted to existing trails; natural quiet and scenic quality protected; restored prairie would give a sense of historic environment, sense of discovery, immersion in natural landscape; low to moderate chance of contact with NPS staff or other visitors; interpretation by self-guiding brochures or signs, some changed seasonally.	Paved and unpaved trails; signs and wayside exhibits; fences, bridges, or boardwalks appropriate only if needed to protect resources.
Quarry Zone		
Consumptive use of catlinite (pipestone) continued; high resource impact area consistent with legislation; high tolerance for disruption of natural processes by quarrying.	High visitation to some parts of zone, with interpretation of quarrying by self-guiding or ranger-led tours; other quarry areas not open to visitors; scenic quality and natural sounds somewhat compromised by visitation and drainage pumps; many opportunities to interact with quarriers and NPS staff; ceremonial activities in this zone at times.	Access roads, parking areas; at times, retention walls or paving to protect sensitive areas.
Ceremonial Use Zone		
Native prairie vegetation would be encouraged; moderate effects on prairie from ceremonial use acceptable; archeological resources left undisturbed.	Not normally open to visitors; occasional American Indian use for sweat lodges or Sun Dances; when used for sweat lodges, solitude and natural sounds in a prairie environment available to American Indian users; sounds associated with ceremonial activities could be moderate.	Sweat lodges and temporary Sun Dance facilities such as arbor and kitchens; trails and roads left unpaved.
Three Maidens Zone		
Emphasis on maintaining and enhancing natural and spiritual qualities at Three Maidens formation; formation not disturbed; prairie restored.	High to moderate visitation, with visitors expected to remain on trails; waysides and brochure would explain significance of formation to American Indian spiritual and ceremonial life.	Trails, wayside exhibits, and signs in restored prairie; fences appropriate if needed to protect resources.

NO-ACTION ALTERNATIVE

DESCRIPTION

Under the no-action alternative the current management direction at the national monument would continue, and there would be no significant change in interpretation. This alternative is presented as a basis for comparing the three "action" alternatives. Examining the no-action alternative is also useful in understanding why the National Park Service or the public may believe that certain changes are necessary or advisable. The three "action" alternatives present ways of exploring those changes. The primary concerns with the no-action alternative are related to visitor, administrative, and maintenance facilities and the treatment and interpretation of cultural and natural resources.

Actions that are already funded have been included in the no-action alternative. One future action planned for implementation by the national monument, which has not been funded, is discussed under "Current and Future Actions," page 139. The impacts of this action are analyzed as part of the cumulative impact analysis (see the No-Action Alternative map).

The national monument staff would continue to protect and maintain known cultural and natural resources as made possible by available time and funding. Inventories and monitoring of cultural and natural resources would continue and be expanded if possible. The staff also would continue to encourage and seek funding for research needed to fill the gaps in knowledge about resources (following the national monument's strategic plan).

Efforts that are underway to remove exotic species and rehabilitate the existing prairies would continue. However, such efforts would be hampered by the existence of such species on adjacent lands, which provides a ready source for reintroduction onto national monument lands.

There would be no change in visitor facilities or in operations in the national monument. Visitor center operations, maintenance, and most headquarters operations would be carried out from the existing visitor center structure. A house near the entrance would continue to be used as office space for a ranger, for resource management staff, and for seasonal operations; another house would continue as a residence. Space for storage and staff offices would continue to be inadequate at the visitor center and the converted house.

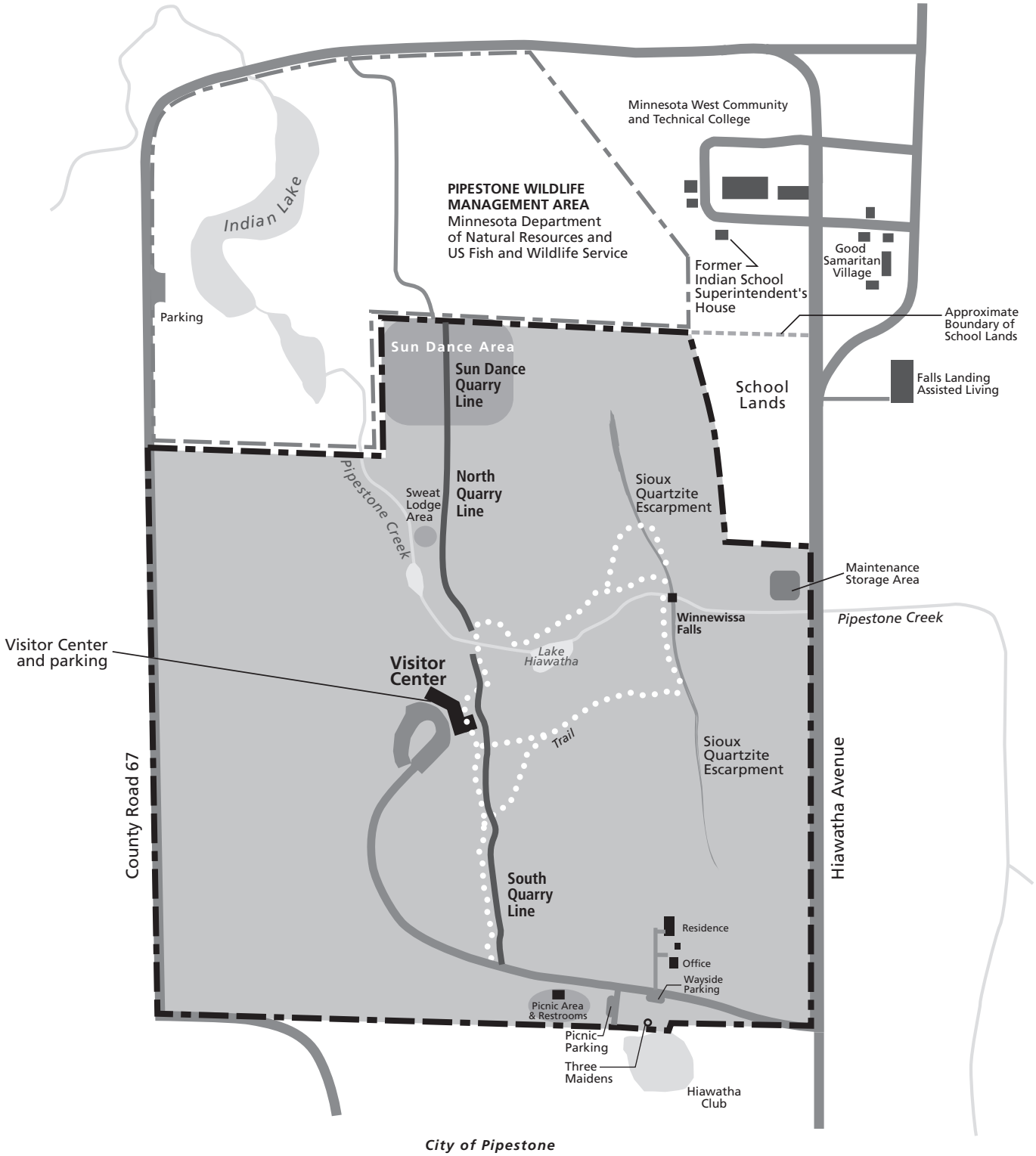
In areas near the popular Circle Trail, there would continue to be maintenance practices that are inappropriate for visitor use areas, such as fuel and vehicle storage, as well as activities that cause noise and fumes, such as vehicle repair, painting, or construction.

The visitor center and administrative functions would continue as at present. Structures and grounds would be maintained, NPS staff would continue to operate in a facility tat is cramped and dated.

The national monument would continue to coordinate with federal, state, and local agencies and other groups regarding the quality and quantity of water in Pipestone Creek. Coordination also would continue regarding endangered species, wildlife management, and law enforcement.

Visitors' use of the Three Maidens area would continue to be high. The area, which would be mowed for convenience, would continue to figure prominently in the Hiawatha Club's yearly pageant under the terms of a special use permit. Major interpretation of this feature would remain at a nearby wayside.

A driveway and the picnic area parking lot separate a picnic area from the Three Maidens. The picnic area and restrooms are popular with local users, as well as with visitors and



NPS BOUNDARY

PIPESTONE WILDLIFE MANAGEMENT AREA

NORTH

NO ACTION

PIPESTONE NATIONAL MONUMENT

United States Department of the Interior
National Park Service

DSC • Aug. 2007 • 372 • 20,003A

school groups that visit the national monument. All these would remain unchanged.

The Circle Trail leads from the visitor center to several quarries along the north quarry line, Pipestone Creek, Hiawatha Lake, the Nicollet expedition marker, Winnewissa Falls, Leaping Rock, and two natural stone faces visible in rock formations — before the trail circles back to the visitor center by way of the south quarry line. A bridge at Winnewissa Falls would continue to flood yearly and require repairs, and periodic repairs also would be necessary for the stone walls along the trail. The trail would continue to be a major focal point in the national monument.

The no-action alternative would not entail any changes to the north or south quarries; they would continue to be managed under the terms of a permit. The associated sweat lodges along the north quarry line would continue to be used.

The ceremonial grounds where the yearly Sun Dances take place would remain. The national monument staff would continue to mow the area yearly and monitor any changes in the prairie resulting from the use of the site. The kitchen facilities and the arbor used in the Sun Dances would be allowed to remain year-round as long as they were maintained by the permittee. All activities would continue to be governed by permit.

The Pipestone Indian School superintendent's house on the grounds of the Minnesota West Community and Technical College is owned by the Keepers of the Sacred Tradition of Pipemakers. It has a historical connection to Pipestone National Monument. The deteriorating house would remain outside of the national monument, unpreserved and uninterpreted.

PROTECTION OF CULTURAL RESOURCES

The National Park Service would continue to protect potential cultural landscapes by directing visitors to stay on designated trails and roads. The national monument staff would continue to research the historic context of different landscape periods over time, as described in the "Affected Environment" chapter. Later, cultural landscape specialists would use that information to identify, inventory, and report about the eligibility of potential cultural landscapes for listing in the National Register of Historic Places as contributing elements to the existing listing of the national monument as a whole (as of October 15, 1966). Additional study could suggest some interactions with particular land areas of certain plants, trees, and geographic formations integral to a landscape, the continued presence of which would protect the landscape. More study also could lead to the greater level of resource protection afforded by national register eligibility or listing.

The national monument staff would continue to protect ethnographic resources like the rock formations called The Oracle and the Three Maidens by directing visitors to stay on designated trails and roads. Visitor education about the cultural importance of ethnographic resources would continue through different types of informal interpretation available at the visitor center, which would increase visitors' cultural awareness of and sensitivity to American Indians' traditional uses of the ethnographic resources. Such interpretation would help visitors to understand various traditional uses in the vicinity of the resources such as spiritual communication near the resources or leaving sage or other offerings nearby. Visitor education would help to protect ethnographic resources by enhancing visitor understanding. The staff would continue to study ethnographic resources by conducting ongoing consultations with American Indians and by researching the ethnohistoric significance of the resources within the historic context of different

landscape periods over time. Cultural resource specialists would later use that information to identify, inventory, and report about the eligibility of potential traditional cultural properties for listing in the National Register of Historic Places as contributing elements to the existing listing of the national monument as a whole (as of October 15, 1966).

To be considered a *traditional cultural property,* an ethnographic resource must be listed in or eligible for listing in the national register. More study could lead to the additional level of resource protection afforded by national register eligibility or listing.

Requiring a special use permit for the Hiawatha Club to use the Three Maidens formation for its Hiawatha Pageant would protect the formation by specifying the conditions of use and recovery. The continuing and successful negotiations with the Hiawatha Club to reduce its intrusive use of the Three Maidens as part of the pageant is a source of comfort to American Indians who believe that the past practice of using the Three Maidens as a component of the pageant is inappropriate.

The Mission 66 visitor center would continue to be protected under the no-action alternative through its continued use as the national monument's administrative center, for interpretation of the national monument to visitors, and for the curation and storage of the national monument's important collections. The National Park Service considers the visitor center eligible for listing in the National Register of Historic Places because of its Mission 66 history, its architecture, and its associated landscaping and Circle Trail connections.

The National Park Service has received concurrence from the state historic preservation officer. The building's current eligibility and its anticipated eventual listing mean that the additional level of resource protection afforded by national register eligibility or listing may be considered to be in place now.

The national monument's collection of American Indian pipestone (catlinite) pipes and other museum collections and archives would continue to be housed in the visitor center. This would keep those important resources in the 100-year and 500-year floodplains, subject to damage in the unlikely but real possibility of a flood. However, the collections and archives still would be protected by implementing the national monument's collections emergency operations plan.

Despite the fact that the historic Pipestone Indian School superintendent's house was listed in the National Register of Historic Places on April 5, 1993, the no-action alternative would not in any way help to protect that historic structure as a cultural resource because the building would neither be acquired by the National Park Service nor would any NPS assistance be provided to preserve the building. It would continue to molder and deteriorate because of a lack of preservation funding under its present status.

BOUNDARY ADJUSTMENTS

The no-action alternative would not involve any change in the boundary of the national monument.

COSTS

The costs for the no-action alternative are given for comparison to other alternatives only; they are not to be used for budgeting purposes. The following assumptions have been made:

- All actions start in year one of the 20-year plan for comparison purposes (in actuality they may be funded at any time within the 20 years).
- Some proposals may never be funded within the 20 year life of the general management plan.

- Approval of the general management plan does not guarantee any funding for the proposed actions.
- Funding for some aspects of the plan may be provided by partners, donation, or other nonfederal funding sources.
- All costs are shown in today's dollars (actual costs may range from 30% below to 50% above the estimate).

Costs have been broken down into two categories—annual operating costs and one-time costs.

Annual costs include the costs associated with ongoing maintenance, utilities, staffing, supplies and materials, and any leasing costs.

One-time costs include deferred maintenance (such as bringing structures up to standard), new construction, the cost of removal or divestiture of resources, the cost of restoration of resources, the cost of rehabilitation, the cost of additions to structures, and any costs associated with documentation and research on the resources.

Annual operating costs: $8,759,000

One-time costs: $547,000

Total costs: $9,306,000

IMPLEMENTATION OF THE PLAN

Implementation of the alternatives is subject to future funding availability. Inclusion in an alternative does not mean that an action is guaranteed funding.

ALTERNATIVE 1 (PREFERRED ALTERNATIVE)

DESCRIPTION

Alternative 1 would focus on the reduction of development within the heart of the national monument. Emphasis would be placed on preserving the setting, the site history, and the spiritual significance of the national monument as the source of pipestone (see the Alternative 1 map). The visitor center and associated parking (both eligible for inclusion on the National Register of Historic Places) would be removed from among the quarries, and with ongoing prairie restoration, visitors would be able to see the site much as it was prehistorically and sense the power and significance of the site to American Indians.

Primary visitor services would be moved to a location close to or just within the monument boundary that would provide views of the site and/or good access, and promote a high probability of visitor contact. At that time the cooperating association's office, packing room, and sales area would be moved to the new location, along with the American Indian demonstrators. The facility would be in a location that would promote a high probability of visitor contact.

A new national monument entrance would be developed on already disturbed land north of Pipestone Creek on the national monument's east boundary. Parking, restrooms, and information kiosk, and trials would be developed.

The Pipestone Indian School superintendent's house would not be acquired under alternative 1, but the National Park Service would provide preservation technical assistance to the owners and commit to searching for funding for the stabilization and restoration of the House which is listed in the National Register of Historic Places (see appendix F for details).

The National Park Service would initiate a cooperative agreement with the Minnesota Department of Natural Resources and the U.S. Fish and Wildlife Service to coordinate certain activities such as law enforcement, research, seed collection, and the management of exotic species. Other activities that might be coordinated between the three agencies are the management of prescribed fires, prairie restoration and rehabilitation, and the establishment of a northern access route to the national monument.

MANAGEMENT ZONES

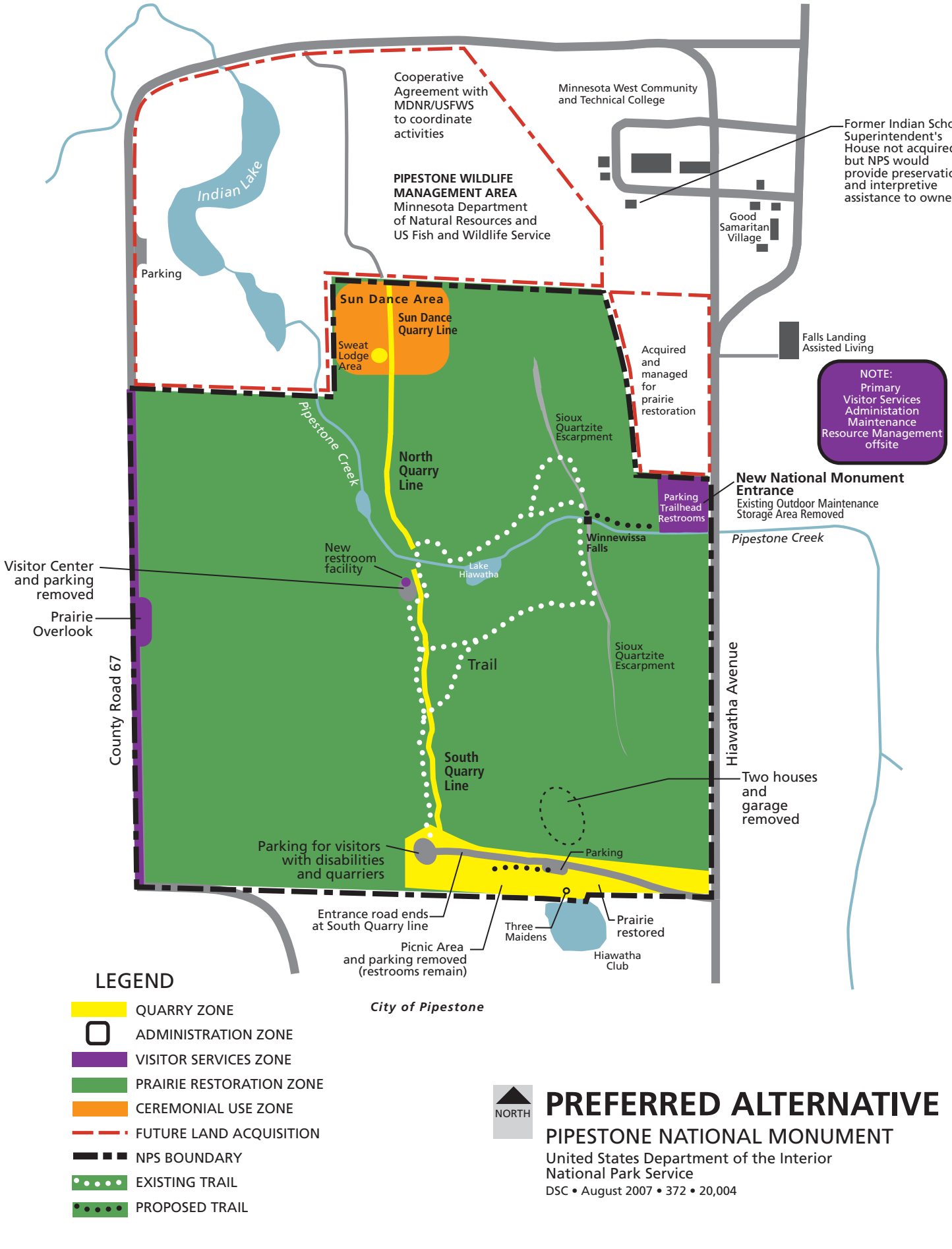
Administrative Zone

There would be no administrative zone in this alternative because the visitor center and its administrative function would be removed from the national monument, along with parking, maintenance, and the housing area.

Visitor Services Zone

In alternative 1 the visitor services zone would consist of three small areas — a new entrance area above Winnewissa Falls just west of Hiawatha Avenue and north of Pipestone Creek, a restroom facility on the western end of the Circle Trail, and a new prairie overlook on the west perimeter.

The new entrance area, which would be placed in a previously disturbed area, would have visitor parking, restroom facilities, and an interpretive/fee collection kiosk. The staffed kiosk would offer general information and orientation to the site and direct visitors to the trail system. It also would direct visitors to the new visitor center for a more in-depth understanding of the site. Visitors would follow a trail above Winnewissa Falls to connect with the existing Circle Trail.



PREFERRED ALTERNATIVE

PIPESTONE NATIONAL MONUMENT

United States Department of the Interior
National Park Service

DSC • August 2007 • 372 • 20,004

A new restroom facility would be constructed on the west end of the Circle Trail. The facility would be located so as to prevent conflicts with the sacred nature of the quarries and to prevent obstruction of scenic views.

A new prairie overlook off County Road 67 would provide visitors a vista into the national monument, unobstructed by powerlines or structures. It would allow a view approximating the site before Euro-American settlement.

Prairie Preservation Zone

The prairie preservation zone would encompass most of the national monument. It would include both restored and preserved prairie. Exotic species would be aggressively removed to create a semblance of the historic prairie appearance. The national monument staff would work with the owners of adjacent property to remove such species on adjoining lands. The water quality of Pipestone Creek and Indian and Hiawatha Lakes would be improved through renewed cooperation with the local and state authorities and the owners of upstream land. Features along the trails would be made accessible, or other interpretive means would be developed to give visitors with disabilities an opportunity to visualize the landscape.

Two houses and a garage structure just off the entrance road would be removed and the site replanted with native species. The ranger now living in one of the structures would find housing in nearby Pipestone. The office function of the other structure would be incorporated into the administrative facility offsite.

The National Park Service would acquire the local school district land along the national monument's east boundary south of Minnesota West Community and Technical College and would manage it to return it to a semblance of native prairie.

The National Park Service would initiate a cooperative agreement with the U.S. Fish and Wildlife Service and the Minnesota Department of Natural Resources to coordinate the resource management activities on the land north of the national monument. This would allow the removal of exotic plant species from that land so that it could be brought into a condition similar to that of the national monument, helping to curtail the invasion of such species into the national monument. Such coordination also would be necessary for prescribed burns, Sun Dances, quarrier access, and tallgrass prairie restoration.

Quarry Zone

In alternative 1, the quarry zone would consist of the north and south quarry lines and the area along, and south of, the entrance road from the south quarry line east to Hiawatha Avenue. It also would contain the Three Maidens area. The existing small parking area adjacent to the Three Maidens would be removed. The quarry zone would be the primary focus of visitor activity.

The appearance of the north and south quarry lines would remain much the same as at present. The management of the individual quarries would not change. The quarry lines would continue to be areas of high resource impact consistent with the national monument's legislation and individual quarry permits.

The current national monument entry road would end at the south quarry line, where several parking spaces would be installed for quarriers and visitors with disabilities. The picnic area and restrooms would be removed, and native plant species would be replanted to encourage reversion to prairie. Visitors requesting picnic facilities would be directed to the city park approximately two blocks south of the intersection of Reservation and Hiawatha avenues. In areas not actively being quarried, nonnative plant species would be removed and native species encouraged in a

manner similar to that practiced in the prairie preservation zone.

The quarry sweat lodge area in this zone would be removed, with new sweat lodges allowed in the ceremonial use zone, where such activity already exists. The area where the sweat lodges are now would revert to prairie.

New visitor trails could be constructed in this zone if necessary as a part of general access and interpretation of the quarries and other site features. Motorized vehicle access generally would be discouraged, but trails used by quarriers would be hardened in some fashion to ease the use of carts, wheelbarrows, and maintenance vehicles.

The Three Maidens area would continue to be both an interpretive focus of NPS interpretation and an important locale associated with the quarrying process. The site would be planted with native species and allowed to revert to prairie, with a trail nearby helping to guide and control visitor access. Because the Three Maidens should be a place of quiet contemplation and respect, interpretive signs would explain the importance of the site in American Indian culture and request visitors' help in preserving that atmosphere. The use of the Three Maidens during the Hiawatha Pageant would be restricted under permit.

Ceremonial Use Zone

In alternative 1, the ceremonial use zone would encompass only the area along the north boundary line where the annual Sun Dances take place, along with associated campsites and kitchen facilities.

Before ceremonial use of the site, the zone would be seeded with locally harvested tallgrass prairie plant species and mowed to a height consistent with species regeneration. Nonnative plant species would be actively removed.

A carrying capacity study would be undertaken to determine how much human use could occur within the zone before it would cause environmental damage. After this determination, ceremonial events would not be allowed to exceed the maximum capacity. Identifying and enforcing the carrying capacity would allow the natural healing of the site between uses.

Semipermanent structures for ceremonial purposes and ancillary structures such as kitchen facilities would remain year-round as long as they were maintained by the permittee and did not present a safety hazard.

Three Maidens Zone

There would be no Three Maidens zone in alternative 1. It has been combined with the quarry zone.

VISITOR USE AND EXPERIENCE

In alternative 1, most visitors would continue to approach Pipestone National Monument from the south by driving north on U.S. Highway 75 from the city of Pipestone. Quarriers and visitors with disabilities might make their first stop at the Three Maidens area near the south boundary of the national monument, but most would follow the directional signs along the east boundary to a new entrance area just west of Hiawatha Avenue and north of Pipestone Creek above Winnewissa Falls.

After leaving their vehicles in the parking lot, visitors would walk to a staffed kiosk to be greeted by a ranger, pay their entrance fees, get general information, and be oriented to the national monument's resources and trails. Fully accessible restrooms would be available nearby. Visitors with disabilities would be given a key to the Reservation Avenue gate, where there would be an accessible trail to the quarries.

Orientation provided by a ranger and a brochure would explain that a short trail from that kiosk leads to a location above Winnewissa Falls. From this vantage point, visitors would experience the site much as American Indians have done for centuries. This short trail would connect to the existing Circle Trail, where visitors still could walk past the Nicollet inscription and marker and see and hear Winnewissa Falls cascade over the quartzite bluffs. They could follow Pipestone Creek to Hiawatha Lake, see some pipestone quarry sites, and stroll past a remnant of a tallgrass prairie. Wayside exhibits along the trail would offer site-specific interpretation.

Visitors with disabilities would enter the national monument through the Reservation Avenue gate and park in a new parking area south of the quarry line also used by quarriers. The Three Maidens rock formation would be visible among prairie grasses instead of its current setting amid a mowed lawn and picnic area. Wayside exhibits here would explain that American Indians continue to revere these rocks as sacred. The exhibits also would describe the historic and cultural significance of this site; a trailhead exhibit would orient visitors to a trail leading to the quarries. Like the spur trail from the new entrance area, this trail would connect to the existing Circle Trail.

Visitors driving to the prairie overlook off County Road 67 would be treated to a view approximating how the site looked before European–American settlement — a swath of tallgrass prairie extending to the quartzite bluffs. With few interruptions by modern development, visitors would get a historically accurate experience. In keeping with this concept, no facilities would be developed at this overlook. Only wayside exhibits would interpret the national monument's natural and cultural history.

Visitors driving north on Hiawatha Avenue on the east side of the national monument could stop at the Pipestone Indian School and the Indian School superintendent's house. The house is located north of the national monument on the west side of Hiawatha Avenue. The National Park Service would not acquire the Indian School superintendent's house but would work with the owners to provide NPS assistance with interpretation and preservation of the structure (see appendix F).

RESOURCE PROTECTION

Cultural Resources

The national monument staff would continue to research the historic context of different landscape periods over time, as described in the "Affected Environment" chapter. Later, cultural landscape specialists would use that information to identify, inventory, and report about the eligibility of potential cultural landscapes for listing in the National Register of Historic Places as contributing elements to the existing listing of the national monument as a whole (as of October 15, 1966). Additional study could suggest some interactions with particular land areas of certain plants, trees, and geographic formations integral to a landscape, the continued presence of which would protect the landscape. More study also could lead to the greater level of resource protection afforded by national register eligibility or listing.

The national monument contains overlapping cultural landscapes. In this alternative, in which the visitor center would be razed, the anticipated result would be rehabilitation of a portion of the landscape associated with the historic, yet contemporary, line of pipestone quarries near the visitor center, which is the cultural landscape associated with quarrying and the one that relates most to the national monument's purpose. The later Mission 66 landscape features would be documented and removed.

The national monument staff would continue to protect ethnographic resources such as unique rock formations — for example, The

Oracle, Leaping Rock, and the Three Maidens — by directing visitors to stay on designated trails and roads. Visitor education about the cultural importance of ethnographic resources would continue through varied types of interpretation available at the visitor center. This would increase visitors' cultural awareness of and sensitivity to American Indians' traditional uses of specific sites and resources in the national monument. Such interpretation would help visitors to understand various traditional uses in the vicinity of the resources such as leaving sage or other offerings nearby. Visitor education would help to protect ethnographic resources by building up an enlightened constituency whose appreciative presence would value the resources and discourage the possibility of isolated vandalism.

The staff would continue to study ethnographic resources through ongoing consultations with American Indians and by researching the ethnohistoric significance of the resources within the historic context of different landscape periods over time. Later, cultural resource specialists would use that information to identify, inventory, and report about the eligibility of potential traditional cultural properties for listing in the National Register of Historic Places as contributing elements to the existing listing of the national monument as a whole (as of October 15, 1966). More study could lead to the greater level of resource protection afforded by national register eligibility or listing.

The Hiawatha Club's yearly use of the Three Maidens as a backdrop for its Hiawatha Pageant would continue; however, physical contact with the Three Maidens would not be permitted.

This alternative would involve razing the Mission 66 visitor center. Visitor orientation and administration functions would be moved to another location. The adverse effect on the historic fabric of the existing visitor center and on the other historic Mission 66 landscape features would be mitigated through a memorandum of agreement between the National Park Service and the state historic preservation officer. Concurrence with the state historic preservation officer and, if necessary, the Advisory Council on Historic Preservation, would be carried out in accordance with section 106 of the National Historic Preservation Act.

The National Park Service would not acquire the Indian School superintendent's house but would provide preservation technical assistance to the owners and commit to searching for funding for the stabilization and restoration of the House and interpretation (see appendices F and G). Thus, this alternative would help protect the house as a cultural resource.

In alternative 1 the national monument's museum collections and archives would be protected in a facility away from the national monument. This would remove those important resources from their current location in the 100-year and 500-year floodplains, where they could be subject to damage in the unlikely but real possibility of a flood.

Natural Resources

The restoration of tallgrass prairie, including the management of exotic plants and the use of prescribed fire, would continue in most of the national monument. The National Park Service would seek the cooperation of the national monument's neighbors in removing exotic plants on their lands, thereby reducing the chance of exotics moving onto national monument land.

NPS staff would continue to ensure that activities in the national monument would not introduce pollutants into Pipestone Creek. The National Park Service would work with local governments, landowners, and the state to improve the water quality in Pipestone Creek.

The staff would monitor the water level in the national monument's well to be sure that the pumping of quarries was not affecting the water table. It might be necessary to drill more wells for test purposes. Should the water level in any well fall, the staff would consult the Water Resources Division of the National Park Service about what actions, if any, should be taken.

BOUNDARY ADJUSTMENTS

In alternative 1, a boundary adjustment would be made to acquire a parcel of land owned by the Pipestone Area School District, placing the school district lands within the boundaries of the national monument. The land is south of Minnesota West Community and Technical College. This would add 15.3 acres to Pipestone National Monument. The property would be managed as part of the prairie preservation zone.

COSTS

Costs for alternative 1 are given for comparison to other alternatives only; they are not to be used for budgeting purposes.

The following assumptions have been made:

- All actions start in year one of the 20 year plan for comparison purposes (in actuality they may be funded at any time within the 20 years).
- Some proposals may never be funded within the 20 year life of the general management plan.
- Approval of the general management plan does not guarantee any funding for the proposed actions.
- Funding for some aspects of the plan may be provided by partners, donation, or other nonfederal funding sources.
- All costs are shown in today's dollars (actual costs may range from 30% below to 50% above the estimate).

Costs have been broken down into two categories—annual operating costs and one-time costs.

Annual costs include the costs associated with ongoing maintenance, utilities, staffing, supplies and materials, and any leasing costs.

One-time costs include deferred maintenance (such as bringing structures up to standard), new construction, the cost of removal or divestiture of resources, the cost of restoration of resources, the cost of rehabilitation, the cost of additions to structures, and any costs associated with documentation and research on the resources.

Initial land acquisition costs are not included in the cost estimates below. The acquisition of lands might be through donation or purchase. In either case, merely adding lands to the national monument would not immediately make funds available for maintenance, restoration, and operation. Although these have been figured into the initial cost explained above, it might be several years before funds are actually available to implement the plan.

Annual operating costs: $11,865,000

One-time costs: $1,771,000

Total costs: $13,636,000

ALTERNATIVE 2

DESCRIPTION

The focus of alternative 2 would be on the pipestone quarries, their significance, and the quarrying process. Emphasis would be placed on the methods used, the items created, their importance in American Indian culture, and the quarriers. Visitor access to the quarries would be enhanced. This alternative would depend heavily on interpretation and an enlarged visitor center (see alternative 2 map).

The National Park Service would acquire the Pipestone Indian School superintendent's house and 15.3 acres of land south of that house. The boundary of Pipestone National Monument would be adjusted to include these acquisitions. The superintendent's house would be rehabilitated and interpreted to explain its relationship to the national monument and the Indian school phenomenon (characteristic of the 19th and 20th centuries) that occurred in different parts of the United States (Fish 2001). This would be a major interpretive area in the national monument. The National Park Service also would seek to acquire the USFWS/MDNR land north of the boundary (about 100 acres) to manage as part of the national monument.

MANAGEMENT ZONES

Administrative Zone

The administrative zone would consist of two areas. In the first, the two houses just north of the entry road that are now used for office space and ranger housing would remain and function as at present. The second area would contain a new maintenance facility developed on newly acquired land along Hiawatha Avenue south of Minnesota West Community and Technical College. Most administrative functions would remain in the visitor center with visitor services.

Visitor Services Zone

The maintenance function would be separated from the visitor center / administration building and moved to a new location, as described above. This would allow the main structure, which contains the visitor center and the Upper Midwest Indian Cultural Center, to be rehabilitated and enlarged to include an expanded research library; better collections storage; classrooms for educational and community use; additional office space; updated exhibits and programs; and upgraded cooperating association storage, office, and display space. The visitor center redevelopment would include measures to protect against flooding. An active demonstration quarry would be developed to offer better understanding of the quarrying process and training for new quarriers in techniques, safety, and interpretation.

The large parking area in front of the visitor center would remain unchanged or would be slightly reconfigured to serve the enlarged facility. Also in the visitor services zone would be the picnic area and restrooms. A new parking area would be created along the entry road, and the road / paved area between this site and the Three Maidens would be removed so that prairie plant species could be reestablished.

Prairie Preservation Zone

The prairie preservation zone would comprise most of the site. It would contain the USFWS/MDNR lands north of the present national monument boundary. Also in this zone would be 15.3 acres of land proposed for acquisition along Hiawatha Avenue south of Minnesota West Community and Technical College, which would be proposed for a maintenance area. The water quality of Pipestone Creek and Indian and Hiawatha Lakes would be improved through cooperation with the local

and state authorities and the owners of upstream lands.

Exotic species would be aggressively removed to create a semblance of the historic prairie appearance. The national monument staff would work with the owners of adjacent property to remove such species on adjoining lands. This would be a way of forestalling the inadvertent reseeding of these unwanted species on national monument land.

All existing trails would be modified where feasible to bring them up to NPS standards. Features along the trails would be made accessible, or other interpretive means would be developed to give visitors with disabilities an opportunity to visualize the landscape. The nonhistoric bridge below the falls would be removed and a new bridge constructed downstream.

The use of the Sun Dance grounds would be discontinued under this alternative, and the area would be restored to tallgrass prairie.

Quarry Zone

In the quarry zone, emphasis would be placed on interpreting the quarrying and pipemaking processes.

If it was determined that acceptable quality pipestone can be found on the USFWS/MDNR lands, the quarry zone would roughly encompass the quarry line from the south boundary to the proposed north boundary line at the county road. Otherwise, the zone would end at the existing national monument boundary. The visitor center and a new demonstration quarry in the visitor services zone would separate the north and south quarry lines.

The management of the individual quarries would not change greatly. The quarry lines would continue to be areas of high resource impact consistent with national monument legislation and individual quarry permits.

In areas not actively being quarried, nonnative plant species would be removed and native species encouraged, similar to the practices in the prairie preservation zone. However, the primary purpose of this zone is quarrying; the removal of those reintroduced species might later be necessary because of the expansion of quarries.

New visitor trails could be constructed in this zone, if necessary, as a part of general access and interpretation of the quarries and other site features. Motorized vehicle access generally would be discouraged, but trails used by quarriers and national monument maintenance efforts would be hardened in some way to ease the use of carts and wheelbarrows.

Ceremonial Use Zone

In alternative 2, Sun Dance ceremonies would be discontinued. The existing kitchen facilities would be removed, and the land would be allowed to revert to tallgrass prairie. The ceremonial use zone would consist only of the site of existing sweat lodges along the north quarry line. These are closely associated with the rituals surrounding the quarries and pipestone extraction. To allow privacy of use, the area would continue to be out of the normal visitor interpretive areas.

Three Maidens Zone

The Three Maidens Zone in this alternative would consist of the immediate area surrounding the Three Maidens formation, in the national monument south of the entry road and east of the picnic area and restroom. This zone would continue to be both a focus of NPS interpretation and an important locale associated with American Indian use of the quarries. The site would be planted with native species and allowed to revert to prairie, with a trail nearby helping to guide and control visitor access. The parking area along the entry road would remain, but the parking between the Three Maidens and the picnic area would be removed.

Because the Three Maidens should be a place of respect and quiet contemplation, interpretive signs would explain the importance of the site in American Indian culture and request visitors' help in preserving that atmosphere. The use of the Three Maidens by the Hiawatha Club as a backdrop during the group's annual pageant could continue, but there would be no direct contact with the formation, as outlined in the special use permit.

VISITOR USE AND EXPERIENCE

In alternative 2, visitors would enter the national monument by the existing entry road, and many would make their first stop at the Three Maidens area. With parking for the picnic area eliminated and prairie grasses allowed to grow in this alternative, visitors would be better able to understand and appreciate the cultural and spiritual significance associated with this rock formation. Wayside exhibits here would explain the historic and cultural significance of this site.

A short drive (or walk or bicycle ride) down the entrance road would bring visitors to an enlarged visitor facility. After leaving their vehicles in the parking lot, visitors would walk to the visitor center to be greeted by a ranger, pay their entrance/user fees, get general information, and be oriented to the national monument's resources and trails. Fully accessible restrooms would be available in the visitor center.

Inside the enlarged visitor center, visitors would see well-designed exhibits interpreting the significance of the quarries, the pipes, and their importance in American Indian culture. Visitors also could observe and interact with American Indians demonstrating pipemaking and other crafts in the demonstration area. Educational groups would gather in a classroom setting to explore concepts that would connect their school curriculum to the national monument's resources. Researchers would find needed resources in the expanded research library and collection area.

Outside the visitor center would be an active demonstration and teaching quarry that visitors could observe. A demonstrator would physically work the quarry, teaching enrolled tribal members the art and science of quarrying. Visitors also would be able to watch the demonstrator to see how quarrying is done.

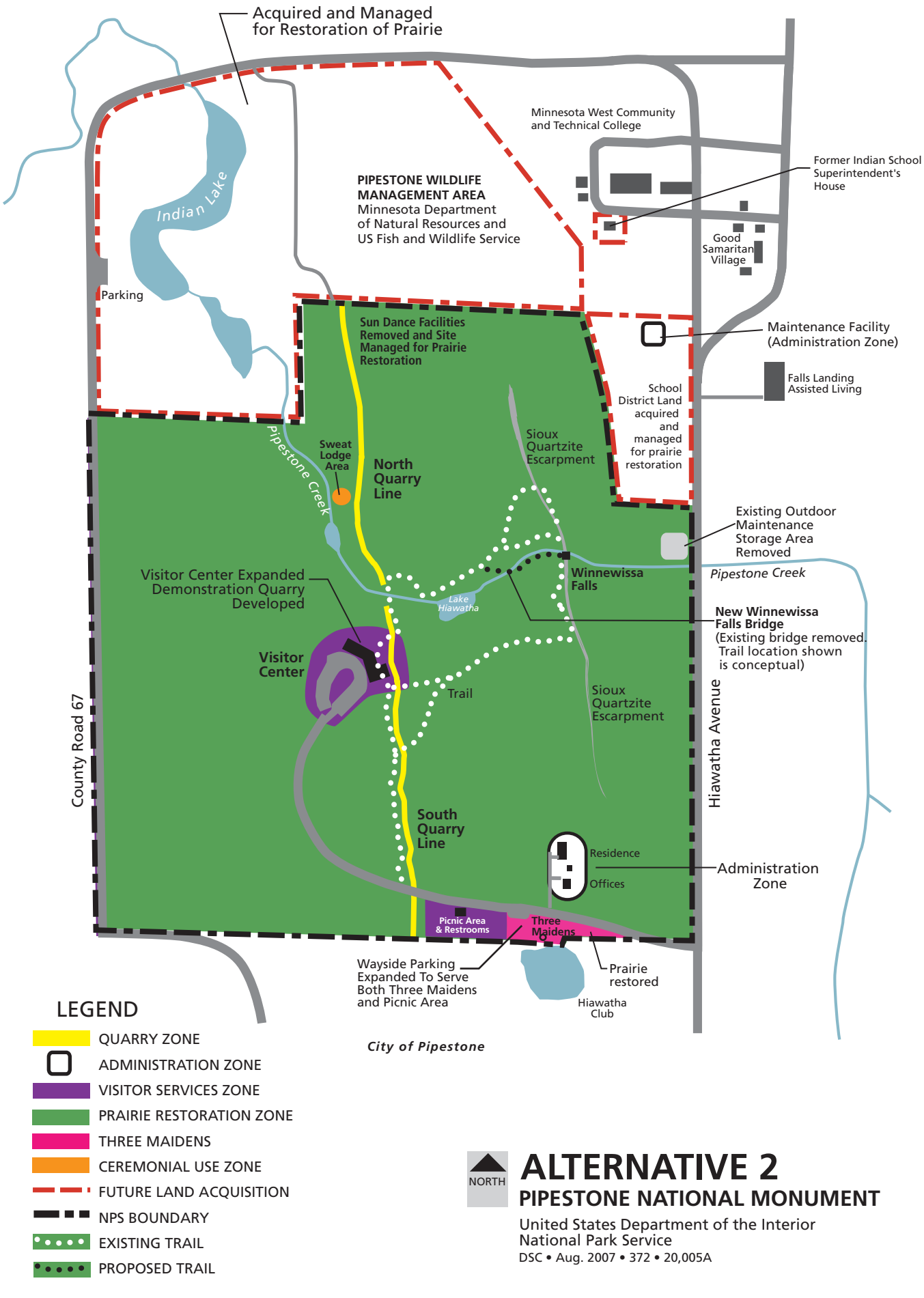
Orientation by a ranger or a wayside exhibit would direct visitors to the existing Circle Trail. Wayside exhibits along the trail would give site-specific interpretation and allow visitors to look into several quarries, follow along Pipestone Creek to Hiawatha Lake and Winnewissa Falls, walk up to the Nicollet inscription and marker, and stroll past the edge of the tallgrass prairie.

Even visitors who chose not to walk the trails would experience a prairie environment because most of the national monument would be in the prairie preservation zone. If some visitors chose not to take one of the existing trails, interpretive opportunities would be available to enable visitors, especially those with disabilities, to understand and appreciate the prairie landscape that once covered vast regions of the Midwest.

RESOURCE PROTECTION

Cultural Resources

The national monument staff would continue to protect ethnographic resources such as unique rock formations — for example, The Oracle, Leaping Rock, and the Three Maidens — by directing visitors to stay on designated trails and roads. Visitor education about the cultural importance of ethnographic resources would continue through different types of interpretation available at the visitor center. This would increase visitors' cultural awareness of and sensitivity to American Indians' traditional uses of specific sites in the national monument. Such interpretation


Acquired and Managed for Restoration of Prairie
Minnesota West Community and Technical College
Former Indian School Superintendent's House
PIPESTONE WILDLIFE MANAGEMENT AREA
Minnesota Department of Natural Resources and US Fish and Wildlife Service
Indian Lake
Good Samaritan Village
Parking
Sun Dance Facilities Removed and Site Managed for Prairie Restoration
Maintenance Facility (Administration Zone)
Falls Landing Assisted Living
School District Land acquired and managed for prairie restoration
Sioux Quartzite Escarpment
Pipestone Creek
Sweat Lodge Area
North Quarry Line
Existing Outdoor Maintenance Storage Area Removed
Visitor Center Expanded Demonstration Quarry Developed
Winnewissa Falls
Pipestone Creek
Lake Hiawatha
New Winnewissa Falls Bridge
(Existing bridge removed. Trail location shown is conceptual)
Visitor Center
Trail
Sioux Quartzite Escarpment
County Road 67
Hiawatha Avenue
South Quarry Line
Residence
Offices
Administration Zone
Picnic Area & Restrooms
Three Maidens
Wayside Parking Expanded To Serve Both Three Maidens and Picnic Area
Prairie restored
Hiawatha Club
City of Pipestone
LEGEND
QUARRY ZONE
ADMINISTRATION ZONE
VISITOR SERVICES ZONE
PRAIRIE RESTORATION ZONE
THREE MAIDENS
CEREMONIAL USE ZONE
FUTURE LAND ACQUISITION
NPS BOUNDARY
EXISTING TRAIL
PROPOSED TRAIL
NORTH
ALTERNATIVE 2
PIPESTONE NATIONAL MONUMENT
United States Department of the Interior
National Park Service
DSC • Aug. 2007 • 372 • 20,005A

would help visitors to understand various traditional uses in the vicinity of the resources such as leaving sage or other offerings nearby. Visitor education would help to protect ethnographic resources by building up an enlightened constituency that would appreciate the resources and discourage the possibility of isolated vandalism.

The staff would continue to study ethnographic resources through ongoing consultations with American Indians and by researching the ethnohistoric significance of the resources within the historic context of different landscape periods over time. Later, cultural resource specialists would use that information to identify, inventory, and report about the eligibility of potential traditional cultural properties for listing in the National Register of Historic Places as contributing elements to the existing listing of the national monument as a whole (as of October 15, 1966). More study could lead to the greater resource protection afforded by national register eligibility or listing.

A special use permit would continue to be issued to the Hiawatha Club for its use of the Three Maidens for its Hiawatha Pageant. The permit would specify the conditions under which the site could be used.

Relocating the 1998 bridge near Winnewissa Falls to a spot farther downstream would permit an unimpeded view of the falls. This would make the view more consistent with traditional American Indian use of the falls, because traditionally there would have been no bridge as a means of access to the falls.

Enlarging and rehabilitating the Mission 66 visitor center and using it as the national monument's administrative center, for interpreting the national monument to visitors and for the curation and storage of important collections would protect that historic structure.

As part of this general management planning process, cultural resource professionals from the Midwest Region of the National Park Service evaluated the Mission 66 development at Pipestone National Monument to determine its eligibility for the national register. The visitor center, the parking lot, the entry road, the interpretive trail, and the housing met the national register criteria for historic significance for properties less than 50 years old. The Minnesota state historic preservation officer concurred with the determination of eligibility on June 30, 2003. Appendix D contains a copy of the concurrence letter.

Housing the national monument's collection of American Indian pipestone (catlinite) pipes and other museum collections and archives in the rehabilitated visitor center would give those important resources more space at a higher level of protection. Although the visitor center still would be in the 100-year and 500-year floodplains, the likelihood of flood damage would be minimized by raising the curation and storage areas in the unlikely but real possibility of a flood. In addition, the collections and archives still would be protected by the actions recommended in the national monument's emergency operations plan. Rehabilitating the visitor center would mean that museum standards would be met, and there would be little possibility of flood damage or the need to implement the emergency plan.

By acquiring the Pipestone Indian School superintendent's house under alternative 2, the National Park Service would take responsibility for its preservation, which would help greatly to protect the house as a cultural resource. The building would be rehabilitated to serve as an interpretive center for the Pipestone Indian School aspect of the national monument's history.

Natural Resources

The restoration of tallgrass prairie, including the management of exotic plants and the use of prescribed fire, would continue in most of the national monument. The National Park

Service would seek the cooperation of the national monument's neighbors in removing exotic plants on their lands, thereby reducing the chance of exotics moving onto national monument land.

The NPS staff would continue to ensure that activities in the national monument would not introduce pollutants into Pipestone Creek. The National Park Service would work with local governments, landowners, and the state to improve the water quality in Pipestone Creek.

The staff would monitor the water level in the national monument's well to be sure that the pumping of quarries was not affecting the water table. It might be necessary to drill more wells for test purposes. Should the water level in any well fall, the staff would consult the NPS Water Resources Division about what actions, if any, should be taken.

The bridge on Pipestone Creek below Winnewissa Falls would be relocated to remove the barrier to the free flow of floodwaters that it creates. The redevelopment of the visitor center would include measures to protect that structure and the people who use it against flooding.

The use of the Sun Dance grounds would be discontinued, and the area would be restored to tallgrass prairie.

BOUNDARY ADJUSTMENTS

Under alternative 2, a boundary adjustment would be made to place three properties within the boundaries of Pipestone National Monument. Adding the parcel of school district land south of the Minnesota West Community and Technical College would add 15.3 acres, the Pipestone Indian School superintendent's house would add less than 1 acre, and the USFWS/MDNR property on the north boundary would add about 100 acres, for a total of approximately 116 acres. The superintendent's house would be managed as part of the visitor services zone. The USFWS/MDNR land and the school district parcel would be managed as part of the prairie preservation zone.

COSTS

Costs for alternative 2 are given for comparison to other alternatives only; they are not to be used for budgeting purposes.

The following assumptions have been made:

- All actions start in year one of the 20 year plan for comparison purposes (in actuality they may be funded at any time within the 20 years).
- Some proposals may never be funded within the 20 year life of the general management plan.
- Approval of the general management plan does not guarantee any funding for the proposed actions.
- Funding for some aspects of the plan may be provided by partners, donation, or other nonfederal funding sources.
- All costs are shown in today's dollars (actual costs may range from 30% below to 50% above the estimate).

Costs have been broken down into two categories—annual operating costs and one-time costs.

Annual costs include the costs associated with ongoing maintenance, utilities, staffing, supplies and materials, and any leasing costs.

One-time costs include deferred maintenance (such as bringing structures up to standard), new construction, the cost of removal or divestiture of resources, the cost of restoration of resources, the cost of rehabilitation, the cost of additions to structures, and any costs associated with documentation and research on the resources.

Initial land acquisition costs are not included in the cost estimates below. The acquisition of lands might be through donation or purchase. In either case, merely adding lands to the national monument would not immediately make funds available for maintenance, restoration, and operation. Although these have been figured into the initial cost explained above, it might be several years before funds are actually available to implement the plan.

Annual operating costs: $8,759,000

One-time costs: $5,080,000

Total costs: $13,839,000

ALTERNATIVE 3

DESCRIPTION

Alternative 3 was developed as a way to meld the most advantageous features of the other alternatives along with a rethinking of the visitor center's purpose and to better use its existing space (see Alternative 3 map). In determining the preferred alternative, planners considered which alternative would best meet the national monument's purpose, needs, and objectives as well as the following considerations:

- Provide for American Indian traditional and ceremonial uses.
- Preserve cultural and natural resources.
- Enhance spiritual qualities.
- Provide for visitor use, education, and enjoyment.
- Improve operational effectiveness and sustainability.

The national monument's visitor center/ administration building would be totally redesigned within the current structure. The building exterior would be preserved while the interior would be fully rehabilitated to better serve national monument visitor and staffing needs. Depending upon space constraints, the superintendent and administrative staff or, possibly, the museum collections could be housed in one of the houses near the national monument entrance.

The maintenance function would be removed from the visitor center to reduce the conflict between visitor use and national monument operations in the transition from the visitor center area to the trailheads. The reduction in maintenance activities directly adjacent to the visitor center would improve visitor experience. In addition, the freed-up space would allow for the consolidation of the remaining staff into the existing structure and still provide a small "cache" of custodial equipment and supplies. The maintenance function would be co-located with another public entity, possibly through a lease/build agreement, with the city, county, or Minnesota West Community and Technical College, on a property outside the national monument boundary.

Although the Indian School superintendent's house would not be acquired in this alternative, the National Park Service would work with the owners to provide technical assistance for the preservation and interpretation of the structure (see appendix F). The National Park Service would also work with the U.S. Fish and Wildlife Service and the Minnesota Department of Natural Resources to develop a cooperative agreement for prairie restoration, American Indian ceremonial use, law enforcement, and possible visitor opportunities on the land immediately north of the national monument (such as access to the Sun Dance area and the quarries). Other activities that might be coordinated between the three agencies would be the management of prescribed fires and the establishment of a northern access route to the national monument.

MANAGEMENT ZONES

Administrative Zone

In alternative 3, the administrative zone would consist of the immediate area surrounding the two houses. One house would be designated as housing for a law enforcement ranger; the other would become office space, space for collections, or seasonal housing.

In alternative 3, the administrative zone would consist of the immediate area surrounding the two houses that are currently functioning as law enforcement ranger housing and office space. One house would continue to be designated housing for a law enforcement ranger. The other would be rehabilitated for

staff housing unless, based on floodplain or space constraints within the rehabilitated visitor center, it becomes necessary to provide collections storage or additional office space.

Visitor Services Zone

The visitor services zone would comprise the visitor center, parking, and the immediate surrounding area including a new, active demonstration/teaching quarry. It also would encompass the picnic area and parking, and the Three Maidens parking area.

The visitor center would be rehabilitated to better accommodate visitor information, exhibits, museum collections storage, curatorial functions, an expanded research library, American Indian demonstrators, the cooperating association, and all national monument staff except maintenance. However, a bay or area for maintenance storage would also be provided.

If necessary, one of the houses in the Administrative Zone would be rehabilitated for office space for the superintendent and administrative staff or collections storage. A demonstration quarry nearby would be developed both to interpret the quarrying process for visitors and to teach new quarriers the basic quarrying techniques.

Prairie Preservation Zone

The prairie preservation zone, which would encompass most of the national monument, would consist of both restored and preserved prairie. Also in this zone would be the school district lands proposed for acquisition along Hiawatha Avenue south of Minnesota West Community and Technical College.

Exotic species would be aggressively removed to create a semblance of the appearance of the historic prairie. The national monument staff would work with the owners of adjacent property to remove such species on adjoining lands. This would be a way of forestalling inadvertent reseeding of these unwanted species on national monument lands.

The water quality of Pipestone Creek and Hiawatha Lake in the national monument and Indian Lake outside the national monument would be improved through renewed cooperation and information sharing with the local and state authorities and the owners of upstream land.

Existing trails would be upgraded where feasible. A new bridge would be built to cross Pipestone Creek downstream from Winnewissa Falls. It would be designed to be less obtrusive on the landscape, to allow visitors a better view of the falls, and perhaps to preclude the yearly repairs that are necessary after the spring thaw. Additional trails could be developed to further site interpretation / education and visitor outreach.

In alternative 3, the prairie preservation zone would serve as a learning laboratory for staff, researchers, and visitors regarding the preservation and restoration of native prairie. It also would serve as an educational tool for Pipestone schools and classes that visit the national monument.

Quarry Zone

In the quarry zone, emphasis would be placed on interpreting the quarrying and pipemaking processes.

The quarry zone would encompass the entire quarry line from the south boundary to the north boundary line bordering the USFWS/ MDNR property. On the north end, it would bisect the Sun Dance grounds. Thus, the zone would contain all the quarry line thought to possess pipestone except at the visitor center, where a demonstration quarry would be developed as part of the visitor services zone.

There would not be a substantial change in the management of individual quarries under alternative 3. The quarry lines would continue

to be areas of high resource impact consistent with national monument legislation and individual quarry permits.

In areas not actively being quarried, nonnative plant species would be removed and native species encouraged, similar to the practices in the prairie preservation zone. However, the primary purpose of this zone is quarrying; the reintroduced species might later have to be removed as new quarries were opened.

New trails could be constructed in this zone, if necessary, as a part of general access and interpretation of the quarries and other site features. The use of motorized vehicles would be prohibited except when needed for essential maintenance by national monument staff or contractors.

Ceremonial Use Zone

In alternative 3, the ceremonial use zone would contain the area along the north quarry line where sweat lodges now exist and the area along the north boundary line where the annual Sun Dances take place under permit, along with associated campsites and kitchen facilities. These semipermanent structures would be maintained by the users in accordance with applicable safety standards.

The Sun Dance site would be bisected by the quarry zone. The zone would be mowed before the first ceremonial use of each year. Nonnative plant species would be actively removed, but other than the use of native species, no attempt would be made to "restore" the prairie in this zone. A carrying capacity study would be undertaken to determine how much human use could occur in the Sun Dance site before it would cause environmental damage. After this determination, ceremonial events would not be allowed to exceed the maximum capacity. Identifying and enforcing the carrying capacity would allow the natural healing of the site between uses and reduce the amount of erosion control and replanting of native grasses and general site maintenance necessary after an event.

During a Sun Dance, the quarries bisecting the zone would continue to be fenced to ensure the safety of site users.

Three Maidens Zone

In this alternative as in alternative 2, the Three Maidens Zone would consist of the immediate area surrounding the Three Maidens formation south of the entry road and east of the picnic area / restroom. This zone would continue to be both a focus of NPS interpretation and an important locale associated with rituals surrounding the quarrying process. The site would be planted with native species and allowed to revert to prairie, with a trail nearby to help guide and control visitor access. The parking area along the entry road would remain, as would the parking between the Three Maidens and the picnic area.

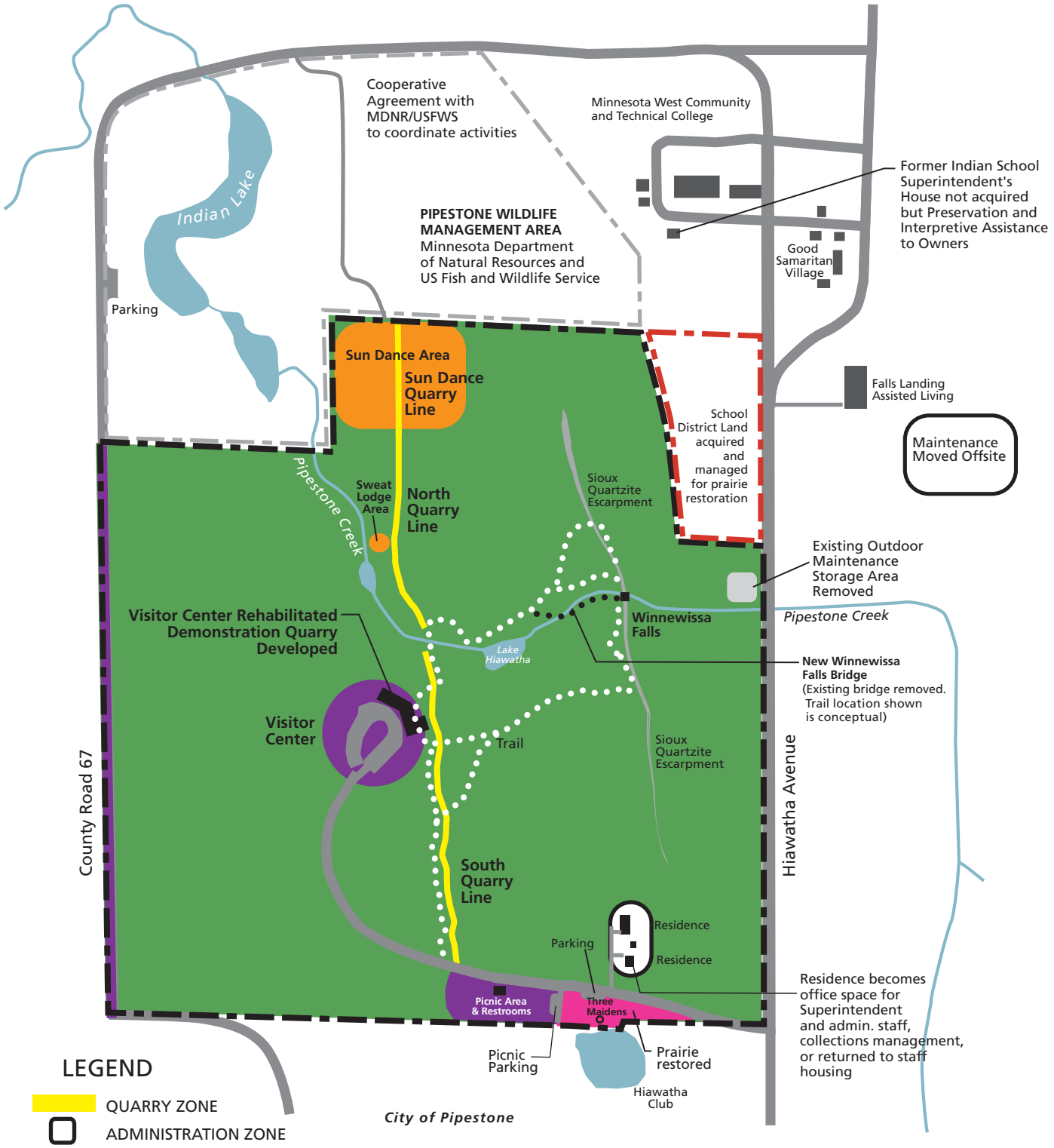
Because the Three Maidens should be a place of quiet contemplation and respect, interpretive signs would explain the importance of the site in American Indian culture, and visitors would be asked to help preserve that atmosphere.

The use of the Three Maidens by the Hiawatha Club as a backdrop during the annual pageant could continue, but direct contact with the formation would be reduced through additional safeguards required in the permit.

VISITOR USE AND EXPERIENCE

In alternative 3, visitors would enter the national monument by the existing entry road, and many would make their first stop at the Three Maidens wayside area.

Prairie grasses would be allowed to grow up around the Three Maidens. Wayside exhibits would explain the historic and cultural



ALTERNATIVE 3 PREFERRED ALTERNATIVE

PIPESTONE NATIONAL MONUMENT

United States Department of the Interior
National Park Service

DSC • Aug. 2007 • 372 • 20,006A

significance of this site and offer orientation to a trail leading to the quarries.

A short drive (or walk or bicycle ride) down the entrance road would bring visitors to a rehabilitated version of the existing visitor facility. After leaving their vehicles in the parking lot, visitors could walk to the visitor center to be greeted by a ranger, pay their entrance/user fees, get general information, and be oriented to the resources and trails of the national monument. Accessible restrooms also would be available in the rehabilitated visitor center.

Inside the rehabilitated visitor center, improved exhibits would interpret each of the interpretive themes for the national monument. Visitors could also observe and interact with American Indians in the demonstration area as pipemaking and other crafts were demonstrated.

Outside the visitor center would be an active demonstration quarry that visitors could observe. Part of the orientation made available by a ranger or a wayside exhibit would direct visitors to the existing Circle Trail. Wayside exhibits along the trail would give site-specific interpretation as visitors could look into a quarry or two, follow along Pipestone Creek to Hiawatha Lake and Winnewissa Falls, walk up to the Nicollet inscription and marker, and stroll past the edge of tallgrass prairie.

Visitors who chose not to walk the trails still could experience a prairie environment because most of the national monument would be in the prairie preservation zone. If some visitors chose not to take one of the existing trails (modified to NPS standards), interpretive opportunities would be available to enable visitors, especially those with disabilities, to understand and appreciate the prairie landscape that once covered vast regions of the Midwest.

RESOURCE PROTECTION

Cultural Resources

As part of this general management planning process, cultural resource professionals from the Midwest Region of the National Park Service evaluated the Mission 66 development at Pipestone National Monument to determine its eligibility for the National Register of Historic Places. The visitor center, the parking lot, the entrance road, the interpretive trail, and the housing met the national register criteria for historic significance for properties less than 50 years old. The Minnesota state historic preservation officer concurred with the determination of eligibility on June 30, 2003. Appendix D contains a copy of the concurrence letter. Although eligible, these structures have not yet been listed in the national register.

The national monument staff would continue to protect ethnographic resources (such as unique rock formations) by directing visitors to stay on designated trails and roads. Visitor education about the cultural importance of ethnographic resources would continue through different types of interpretation available at the visitor center. This would increase visitors' cultural awareness of and sensitivity to American Indians' traditional uses of the ethnographic resources. Such interpretation would help visitors to understand various traditional uses in the vicinity of the resources such as leaving sage or other offerings nearby. Visitor education would help to protect ethnographic resources by building up an enlightened constituency whose appreciative presence would value the resources and discourage the possibility of isolated vandalism.

The staff would continue to study ethnographic resources through ongoing consultations with American Indians and by researching the ethnohistoric significance of the resources within the historic context of different landscape periods over time. Later, cultural resource specialists would use that information to identify, inventory, and report about

the eligibility of potential traditional cultural properties for listing in the National Register of Historic Places as contributing elements to the existing listing of the national monument as a whole (as of October 15, 1966). More study could lead to the greater level of resource protection afforded by national register eligibility or listing.

The Hiawatha Club would continue to use the Three Maidens as a backdrop for its annual pageant. A special use permit would specify the conditions for the use of the site.

Relocating the bridge near Winnewissa Falls to a spot downstream of the falls would permit an unimpeded view of the falls. This would make the view more consistent with traditional American Indian use of the falls, because traditionally there would have been no bridge as a means of access to the falls.

Rehabilitating and reorganizing the Mission 66 visitor center and using it to better interpret the national monument to visitors would protect that historic structure.

Museum collections and archives would remain in the visitor center, a structure within both the 100- and 500-year floodplains. However, such resources would either be raised above the floodplain or designed to be easily evacuated prior to any flooding. Should this prove infeasible, museum collections and archives could be moved into the former residence now used for office space but proposed for rehabilitation as NPS housing.

The National Park Service would not acquire the Indian School superintendent's house but would work with the owners to provide technical assistance for the interpretation and preservation of the structure (see appendix F).

Thus, this alternative would help protect the house as a cultural resource.

Natural Resources

The restoration of tallgrass prairie, including the management of exotic plants and the use of prescribed fire, would continue in most of the national monument. The National Park Service would seek the cooperation of the national monument's neighbors in removing exotic plants on their lands, thereby reducing the chance of exotics moving onto national monument land.

The NPS staff would continue to ensure that activities in the national monument would not introduce pollutants into Pipestone Creek. The National Park Service would work with local governments, landowners, and the state to improve the water quality in Pipestone Creek.

The staff would monitor the water level in the national monument's well to be sure that the pumping of quarries was not affecting the water table. It might be necessary to drill more wells for test purposes. Should the water level in the well fall, the staff would consult the Water Resources Division of the National Park Service about what actions, if any, should be taken.

The bridge on Pipestone Creek below Winnewissa Falls would be relocated to remove the barrier to the free flow of floodwaters that it creates. The redevelopment of the visitor center would include measures to protect that structure and the people who use it against flooding.

BOUNDARY ADJUSTMENTS

In alternative 3, the preferred alternative, a boundary adjustment would be made to acquire a parcel of land owned by the Pipestone Area School District, placing the school district parcel within the boundaries of the national monument. The land is south of Minnesota West Community and Technical College. This would add 15.3 acres to Pipestone National Monument. This parcel would

be managed as part of the prairie preservation zone.

COSTS

The costs for alternative 3 are given for comparison to other alternatives only; they are not to be used for budgeting purposes.

The following assumptions have been made:

- All actions start in year one of the 20 year plan for comparison purposes (in actuality they may be funded at any time within the 20 years).
- Some proposals may never be funded within the 20 year life of the general management plan.
- Approval of the general management plan does not guarantee any funding for the proposed actions.
- Funding for some aspects of the plan may be provided by partners, donation, or other nonfederal funding sources.
- All costs are shown in today's dollars (actual costs may range from 30% below to 50% above the estimate).

Costs have been broken down into two categories—annual operating costs and one-time costs.

Annual costs include the costs associated with ongoing maintenance, utilities, staffing, supplies and materials, and any leasing costs.

One-time costs include deferred maintenance (such as bringing structures up to standard), new construction, the cost of removal or divestiture of resources, the cost of restoration of resources, the cost of rehabilitation, the cost of additions to structures, and any costs associated with documentation and research on the resources.

Initial land acquisition costs are not included in the cost estimates below. The acquisition of lands might be through donation or purchase. In either case, merely adding lands to the national monument would not immediately make funds available for maintenance, restoration, and operation. Although these have been figured into the initial cost explained above, it might be several years before funds are actually available to implement the plan.

Annual operating costs: $9,141,000

One-time costs: $3,372,000

Total costs: $12,513,000

ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

During the planning process, the public suggested several ideas that were dropped from further consideration because they would have resulted in unacceptable impacts on resources or visitors, or they were deemed to be outside the purpose of the national monument. These ideas are discussed below.

INTRODUCE BISON TO THE NATIONAL MONUMENT

Pipestone National Monument covers 281.78 acres. Approximately one-third to one-half of that is an active visitor use area or wetland along Pipestone Creek. The number of bison that could make use of the remaining acreage without significant environmental damage would be small. They would need to be penned in with heavy-duty bison fence to keep them safely separated from visitors. This would detract from the open prairie that the national monument is trying to restore. A large herd of bison is maintained at nearby Blue Mounds State Park, less than 20 miles away. Although they are a part of the site's history, bison are not necessary to an understanding of Pipestone National Monument or the quarrying process. Their maintenance would take considerable staff time that could be used more effectively elsewhere. Therefore, the introduction of bison was eliminated from further consideration.

MAKE PIPESTONE NATIONAL MONUMENT A REGIONAL CENTER FOR INDIGENOUS STUDIES

A suggestion to make Pipestone a research center through cooperation with American Indian tribes, the cooperating association, and local schools and universities was carefully considered. It was eventually eliminated because it was not specifically related to Pipestone National Monument, an extensive enlargement of facilities would have been required to accomplish that aim, and it would have refocused the national monument's resources away from the Pipestone story to one that could be better accommodated outside the national monument.

PROVIDE CAMPGROUND FACILITIES FOR CEREMONIAL USE

The idea of providing campground facilities for ceremonial use was suggested by many people during public scoping. It was carefully considered, but in the end it was rejected because the expense of developing and maintaining such a facility for only two or three weeks out of the year would have been prohibitive. It would have required bringing city water, sewer, and electrical service to the site. To justify the cost, it would have been necessary to encourage more events or open the site to all visitors. This would have resulted in a considerable adverse impact on the national monument's maintenance staff, the sacredness of the site, and local private campgrounds.

THE ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in section 101(b) of the National Environmental Policy Act. In the National Park Service, the environmentally preferable alternative is identified through the use of the following six criteria.

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
2. Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
3. Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
4. Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.
5. Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

As a result of public comment on the Draft GMP/EIS, the National Park Service has reconsidered its preferred alternative in light of substantial comment and consultation with American Indian tribes. Accordingly, the analysis of the environmentally preferred alternative has been reconsidered.

Each of the alternatives meets criteria 1 and 5 equally well.

Though each of the alternatives meets Criterion 2 in terms of ensuring a safe, healthful and productive surrounding, alternative 1 best ensures an esthetically and culturally pleasing surrounding by restoring the ethnographic landscape of the quarries within the tallgrass prairie.

Criterion 3 could be best met by alternative 1 or alternative 3. Either of these alternatives provide a wide range of beneficial use without degradation or risk to health and safety. Alternative 1 may increase the amount of traffic on adjacent roadways because of the relocation of primary visitor services. By leaving development in the center of the monument, alternative 3 would continue to interrupt the "sacredness" of the site to the culturally affiliated tribes and lessen the opportunity for other visitors to understand the site as sacred. Both alternatives 1 and 3 would allow the yearly Sun Dance ceremonies and the Hiawatha Club pageant to take place in areas of the national monument, with caveats to protect the natural resources.

The primary purpose of the monument focuses on protecting the quarries and preserving quarrying activities. For that reason, Criterion 4 would be best met by alternative 1 even though by doing so the National Register eligible visitor center and its associated cultural landscape would be demolished. Alternative 1 would restore the ethnographic landscape and strengthen the context of the quarries within a tallgrass prairie. Both alternatives 1 and 3 afford a means for preserving the Indian School Superintendent's house.

Each of the action alternatives would provide a means of restoring the prairie on neighboring lands.

Alternative 3 would meet criterion 6 because that alternative includes rehabilitating the existing visitor complex rather than demolishing or expanding the existing building,

and would find compatible new uses for the existing houses in the national monument.

Alternative 1 would meet criterion 6 because that alternative would restore a natural landscape by removing impermeable and reflective surfaces. Alternative 1, in the provision of visitor services in another location, provides an opportunity to reuse an existing facility or build a more sustainable structure, adhering to NPS guidelines for obtaining, at a minimum, silver LEED certification on new construction. Both alternatives 1 and 3 would make use of underused existing facilities outside the national monument for operations and resource management rather than expanding the existing facilities in the national monument.

The National Park Service has determined the environmentally preferable alternative is alternative 1. Although some specific actions of other alternatives might achieve levels of protection for certain cultural resources or the visitor experience similar to alternative 1, in aggregate this alternative would best achieve the six prescribed conditions listed above.

MITIGATION AND ADDITIONAL STUDIES

CULTURAL RESOURCES

Historic Structures

Before razing the visitor center and several associated Mission 66 structures under alternative 1, the National Park Service would prepare a mitigation plan for this adverse effect on a historic structure. The National Park Service would consult with the Minnesota state historic preservation officer, seeking concurrence about the necessary levels of collecting architectural drawings and taking photographs to document this Mission 66 building for history. Under alternatives 2 and 3, different rehabilitation plans would be proposed, including the expansion of the building (possibly vertically) in alternative 2. To accompany each of these rehabilitation plans, a mitigation plan would be developed in consultation with the state historic preservation officer.

Cultural Landscapes

Before pursuing any development under alternatives 1, 2, or 3 (such as for new trails or for upgrading trails or for relocating the bridge at Winnewissa Falls), the National Park Service would complete appropriate cultural landscape inventories and reports to determine how any potential cultural landscapes might be affected by such actions and ways to avoid or minimize any adverse effects on potential cultural landscapes.

Ethnographic Resources

An ethnographic study is underway that involves identifying plants that can be found within the national monument's boundaries and that some American Indians use now or have used in the past for spiritual, medicinal, or food purposes. The study also seeks further details about the identity of the American Indian tribes traditionally associated with the national monument. This study, when completed, will provide more information that may be helpful in reaching management decisions. The American Indian tribes identified to have ancestral ties to Pipestone National Monument would be given opportunities for input in the development of plans or programs involving beliefs, traditions, and other cultural values.

NATURAL RESOURCES

Ground Disturbance/Soils

Where possible, new development would be built on previously disturbed sites. During design and construction, the national monument's natural resource staff would identify areas to be avoided.

Best management practices for controlling soil erosion (such as installing silt fencing, retaining and replacing topsoil, revegetating sites with native species, and selective scheduling of construction activities) would be carried out to reduce runoff and soil loss from construction sites. To the extent possible, salvaged vegetation would be used rather than new planting or seeding. Workers would be required to control dust, and all construction machinery would have to meet air emission standards. Restoration efforts would be scheduled to minimize the effects on downstream water users.

Vegetation

The national monument staff would survey proposed development sites for sensitive species and would relocate new development if sensitive species populations were present. Similarly, trails, roads, campsites, and picnic sites would be located to avoid impacts on sensitive species.

To the extent possible, to help minimize the spread of nonnative plants, the managers of the national monument would allow only the use of weed-free materials and equipment for operations and visitor activities.

Water Resources

A statement of findings for floodplains has been prepared reflecting the selected alternative's removal of structures from the 100-year floodplain. More detail is available in the "Affected Environment" chapter, under "Natural Resources," beginning on page 122.

Any new facilities proposed for location in the floodplain (except trails and picnic facilities) would be designed to manage flood conditions, and a statement of findings for floodplains would be prepared. A statement of findings also would be required for any structures that would remain in the floodplain (see appendix E).

For critical actions in the 500-year floodplain (storing museum objects or existing fuel storage at the visitor center and maintenance area), mitigating measures would be undertaken. Such measures could involve moving the museum storage and fuel storage to a location out of the 500-year floodplain or constructing a protective embankment. Constructing an embankment would require the approval of a statement of findings for floodplains. Also required would be compliance under section 106 of the National Historic Preservation Act.

All facilities would be located to avoid wetlands if feasible. If avoiding wetlands was not feasible, other actions would be taken to comply with EO 11990 ("Protection of Wetlands"), the Clean Water Act, and Director's Order (DO) 77-1 ("Wetland Protection").

A search of the NRCS wetlands database did not result in the identification of sizeable wetlands at the monument, though a few small wetlands exist in the monument, totaling approximately seven acres. Hence, a statement of findings for wetlands has not been prepared. Caution would be exercised to protect these "micro" wetlands from damage caused by construction equipment, erosion, siltation, and other activities with the potential to affect wetlands.

Construction materials would be kept in work areas, especially if the construction took place near streams or natural drainages.

Wetlands would be delineated by qualified NPS staff or certified wetland specialists, and the wetlands would be marked before construction began.

Best management practices such as the use of silt fences would be implemented to ensure that construction-related effects were minimal and to prevent long-term impacts on water quality, wetlands, and aquatic species from displacement of soils.

Threatened or Endangered Species and Species of Special Concern

Pumping of the quarries would be discontinued if it was determined that it was affecting the Topeka shiner or the western prairie fringed orchid.

If the National Park Service decided to relocate the bridge near Winnewissa Falls, when planning for that project began, the national monument staff would consult with the U.S. Fish and Wildlife Service to determine if relocating the bridge would affect the Topeka shiner (a fish found in Pipestone Creek). If there appeared to be potential to affect the shiner, the National Park Service would develop mitigating measures to minimize any impact. Such measures would be implemented during the relocation of the bridge. Any further compliance with the Endangered Species Act would be carried out during the planning and design phase of the project. (More information is available in the passage "Impacts of Alternative 2," describing the

impacts on threatened or endangered species, p. 199)

If the sewer and water lines beneath the entry road were to be removed, at the beginning of the planning or design process for removing the lines, the National Park Service, in consultation with the U.S. Fish and Wildlife Service, would evaluate the potential effects on the western prairie fringed orchid and develop ways to mitigate those effects. (More information is available in the section, "Impacts of Alternative 1," describing the impacts on threatened or endangered species, p. 180).

Air Quality

The best available clean fuel technology would be applied (as it becomes available) to the extent feasible.

A dust abatement program would be implemented. Standard dust abatement measures could include the following:

- water or otherwise stabilize soils
- cover haul trucks
- enforce speed limits on unpaved roads
- minimize vegetation clearing
- revegetate after construction

COMPARISON OF ALTERNATIVES

TABLE 3: COMPARISON OF ALTERNATIVES

No-Action Alternative	Alternative 1, Preferred	Alternative 2	Alternative 3
Staffing and Operations			
Maintenance would remain attached to visitor center.	Maintenance function would be co-located with another public entity offsite, possibly through a lease/ build agreement.	Maintenance would be moved onto part of acquired land just south of Minnesota West Community and Technical College.	Maintenance function would be co-located with another public entity offsite, possibly through a lease/build agreement.
Administrative offices would remain in visitor center and converted house.	Administration and visitor center would be moved out of national monument; cooperative agreement, lease, or contract would be made with a private or public entity; converted house would be removed.	Administrative offices would be consolidated in rehabilitated visitor center; converted house would be used for operations, seasonal staff, or quarters.	Visitor center would be rehabilitated to house all national monument staff except maintenance. Superintendent and administrative staff could move to converted house if space constraints require it. Collections could also occupy converted house in the event they could not be protected from flooding in the visitor center. Otherwise, converted house would be used for staff housing.
Facilities			
Entry road would be maintained unchanged.	Entry road would be shortened to end in a small parking area at south quarry entrance for use only by quarriers and visitors with disabilities.	Entry road would be maintained unchanged.	Entry road would be maintained unchanged.
Visitor center would remain at current location. No additional space would be available in the visitor center for classroom, interpretation, or exhibits.	Visitor center would be moved out of national monument; staffed interpretive kiosk and restroom facilities would be placed at new entrance above Winnewissa Falls. More space would be available in the visitor center for classroom, interpretation, and exhibits.	Visitor center would be rehabilitated and enlarged for visitor services and staff needs; expanded facilities would be added, including research library, exhibits, collections access, and education/ teaching facilities for onsite and outreach activities; active demonstration quarry would be developed.	Visitor center would be rehabilitated for visitor services and exhibits, staff office space, museum collections storage, curatorial functions, and/or expanded research library. A new active demonstration quarry would be developed near the visitor center.

No-Action Alternative	Alternative 1, Preferred	Alternative 2	Alternative 3
Visitor center parking would remain unchanged.	Current visitor center parking area would be removed; new parking area would be added above Winnewissa Falls; parking for quarriers and visitors with disabilities would be developed at end of south quarry line. A new restroom facility would be constructed on the western end of the Circle Trail.	Parking at visitor center would be reconfigured depending on visitor center expansion.	Visitor center parking would be unchanged.
Housing for law enforcement ranger would continue to be onsite in existing house.	Law enforcement ranger housing would be removed from national monument.	Housing for law enforcement ranger would be onsite in existing house.	Housing for law enforcement ranger would be onsite in existing house.
Existing picnic area, with restrooms, access to water, and parking would remain unchanged.	Picnic area and associated parking would be removed from national monument; restrooms would be removed; area would be restored to prairie.	Picnic area would be unchanged, but parking would be combined with Three Maidens wayside exhibit parking.	Existing picnic area, with restrooms, access to water, and parking would remain unchanged.
The Landscape			
Remnant prairie would be managed to preserve its significance; restored prairie would be managed to recover native species.	Remnant prairie would be managed to preserve its significance; restored prairie would be managed to recover native species; new prairie overlook would be developed on west edge of national monument; all prairie would be managed to decrease visitor impacts on remnant and restored prairies.	Remnant prairie would be managed to preserve its significance; restored prairie would be managed to recover native plant species; a portion of prairie would serve as a learning laboratory.	Remnant prairie would be managed to preserve its significance; restored prairie would be managed to recover native plant species; a portion of prairie would serve as a learning laboratory.
Pipestone Area School District land south of Minnesota West Community and Technical College on eastern boundary would not be acquired.	Pipestone Area School District land south of Minnesota West Community and Technical College on eastern boundary would be acquired and prairie would be restored; would be managed in prairie preservation zone.	Pipestone Area School District land south of Minnesota West Community and Technical College on eastern boundary would be acquired; part of this land would be used for new maintenance facility; would be managed in prairie preservation zone.	15.3 acres of Pipestone Area School District land south of Minnesota West Community and Technical College on eastern boundary would be acquired, and prairie would be restored; would be managed in prairie preservation zone.

No-Action Alternative	Alternative 1, Preferred	Alternative 2	Alternative 3
USFWS/MDNR property north of the monument would continue to be owned and maintained by USFWS and MDNR. NPS would continue to work toward coordination/ cooperation of management activities to restore prairie, remove exotic species, etc. with USFWS/MDNR.	USFWS/MDNR property north of the monument would continue to be owned and maintained by USFWS and MDNR. NPS would work toward cooperative agreement for management activities that restore prairie, remove exotic species, etc. with USFWS/MDNR.	NPS would acquire USFWS/ MDNR land north of the monument to expand opportunities for visitors to learn about cultural and natural resources, ceremonial uses, and prairie restoration; would be managed in prairie preservation zone.	USFWS/MDNR property north of the monument would continue to be owned and maintained by USFWS and MDNR. NPS would work toward cooperative agreement for management activities that restore prairie, remove exotic species, etc. with USFWS/MDNR.
Control of exotic species in national monument would continue.	Control of exotic species in national monument would continue; NPS would work with owners of adjacent properties to identify and eradicate exotics.	Control of exotic species in national monument would continue; NPS would work with owners of adjacent properties to identify and eradicate exotics.	Control of exotic species in national monument would continue; NPS would work with owners of adjacent properties to identify and eradicate exotics.
Existing trails would be maintained; bridge would remain in current location.	New visitor trails to reach the existing trail system would be developed; bridge would remain in current location.	Existing trails would be upgraded; bridge would be relocated downstream of Winnewissa Falls; new trails would be possible for onsite interpretation, education, and outreach activities.	Existing trails would be upgraded; bridge would be relocated downstream of Winnewissa Falls; new trails would be possible for onsite interpretation, education, and outreach activities.
American Indian Interests			
Indian School superintendent's house would remain outside the national monument; no NPS assistance with interpretation or preservation would be provided.	Indian School superintendent's house would not be acquired but the NPS would assist in the preservation and interpretation of this historic structure.	Indian School superintendent's house would be acquired and rehabilitated inside and outside; interpretation would be offered onsite; would be managed as part of visitor services zone.	Indian School superintendent's house would not be acquired.
Cooperating association would remain in visitor center.	Cooperating association would be moved out of national monument into new visitor center.	Cooperating association would remain in existing visitor center.	Cooperating association would remain in existing visitor center.
Sun Dances would continue under permit.	Sun Dances would continue under permit; modifications of use might be made following a study of impact and sustainability of resources.	Sun Dance would no longer be permitted.	Sun Dances would continue under permit; modifications of use might be made following a study of impact and sustainability of resources.

No-Action Alternative	Alternative 1, Preferred	Alternative 2	Alternative 3
Management of Three Maidens area would be unchanged; American Indian ceremonial use would continue; Hiawatha Club use would continue under permit.	American Indian ceremonial use of Three Maidens area would be unchanged; area would be restored to prairie; picnic area with parking would be removed and returned to prairie; Hiawatha Club use of Three Maidens would be restricted under permit.	American Indian ceremonial use of Three Maidens area would be unchanged; area would be restored to prairie; picnic area parking and road would be removed; picnic area with restroom would be kept, but parking would be combined with Three Maidens parking along entry road; Hiawatha Club use of Three Maidens would be restricted under permit.	American Indian ceremonial use of Three Maidens area would be unchanged; immediate surrounding area would be restored to prairie; Three Maidens parking along entry road would remain unchanged; picnic area with restroom and parking would remain unchanged; Hiawatha Club use of Three Maidens would be restricted under permit.
Quarries would continue to be allocated via permit.	Quarries would continue to be allocated via permit.	Quarries would be allocated via permit; opportunities for education and interpretation of site's cultural heritage and quarrying process would be increased; a quarry would be developed for demonstrating quarrying process.	Quarries would be allocated via permit; opportunities for education and interpretation of site's cultural heritage and quarrying process would be increased; a quarry would be developed for demonstrating quarrying process.
No informal superintendent's Indian consultation group would be established.	Informal superintendent's Indian consultation group would be established.	Informal superintendent's Indian consultation group would be established.	Informal superintendent's Indian consultation group would be established.

TABLE 4: COMPARISON OF ENVIRONMENTAL CONSEQUENCES

Note: There would be no impairment of national monument resources or values under any of the alternatives.

No-Action Alternative	Alternative 1 (Preferred)	Alternative 2	Alternative 3
CULTURAL RESOURCES			
Cultural Landscapes			
Restoration would continue in conjunction with maintaining and preserving the remnant tallgrass prairie. This would result in a long-term minor to moderate beneficial effect on cultural landscapes. Remnant prairie preservation and prairie restoration from the recovery of native plant species would result in long-term minor to moderate beneficial effects on potentially eligible national register landscapes in the national monument.	Seven of the eight potential cultural landscapes would not be adversely affected. Removing the visitor center from the potential ethnographic landscape would result in a moderate to major long-term beneficial effect on the "Prehistoric Quarrying into the Historic Period" aspect of the ethnographic landscape. There would be major long-term adverse effects on one historic cultural landscape.	Implementing alternative 2 would result in a long-term moderate beneficial effect on the CCC-era cultural landscape.	Implementing alternative 3 would result in a long-term moderate beneficial effect on the CCC-era cultural landscape.
Ethnographic Resources			
Prairie preservation and restoration would result in minor to moderate beneficial effects on the ethnographic landscape. The distraction of traditional American Indian practitioners at ethnographic resources by inadvertent interruptions from non-Indian visitors would result in long-term minor adverse effects on traditional use associated with ethnographic resources. Continuing the two annual Sun Dances would result in either a long-term minor beneficial effect or a long-term moderate adverse effect, depending on the perspective of the person rendering the opinion.	The inadvertent distracting access of visitors to ethnographic resources in the presence of traditional practitioners would mean that the effects on traditional use associated with ethnographic resources would be minor, adverse, and long term. Removing the picnic area, parking area and restrooms near the Three Maidens rock formation would result in a long-term minor beneficial effect. Continuing the two annual Sun Dances would result in either a long-term minor beneficial effect or a moderate adverse effect, depending on the perspective of the person rendering the opinion.	The inadvertent distracting access of visitors to ethnographic resources in the presence of traditional practitioners would result in effects on traditional use associated with ethnographic resources under alternative 2 that would be minor, adverse, and long term. Relocating the bridge at Winnewissa Falls could benefit American Indians' traditional use of the falls, resulting in a moderate long-term beneficial effect. Removing the picnic parking area near the Three Maidens rock formation and expanding the Three Maidens interpretive pullout would result in a long-term minor beneficial effect on the traditional use of the Three Maidens because access would be accommodated without inadvertent distractions from picnicking visitors. Discontinuing the two annual Sun Dances would be either a long-term moderate adverse effect or a long-term moderate beneficial effect, depending on the perspective of the person rendering the opinion.	The inadvertent distracting access of visitors to ethnographic resources in the presence of traditional practitioners would mean that the effects on traditional use associated with ethnographic resources under alternative 3 would be minor, adverse, and long term. This would include the effects from expanding the Three Maidens parking lot. Relocating the bridge at Winnewissa Falls would not inhibit access and traditional use of the falls because the trail and trail abutments would remain, resulting in a moderate long-term beneficial effect. Continuing the two annual Sun Dances would be either a long-term moderate adverse effect or a long-term moderate beneficial effect, depending on the perspective of the person rendering the opinion.

No-Action Alternative	Alternative 1 (Preferred)	Alternative 2	Alternative 3
Historic Structures			
The historic Mission 66 visitor center building would continue to be preserved, a minor long-term beneficial effect. Without preservation intervention, the effects on the Pipestone Indian School superintendent's house would range from moderate today to major over time, and they would be adverse and long term.	Razing the Mission 66 visitor center building would cause a major long-term adverse effect. Rehabilitating the Pipestone Indian School superintendent's house would result in a moderate beneficial long-term effect on that historic structure.	Rehabilitating the historic Mission 66 visitor center building and the Pipestone Indian School superintendent's house would result in moderate beneficial long-term effects on those structures.	Rehabilitating the historic Mission 66 visitor center building and the Pipestone Indian School superintendent's house would result in moderate beneficial long-term effects on those structures.
Museum Collections and Archives			
Museum collections and archives generally would continue to be secure, but long-term moderate to major adverse impacts on these resources could result unless the threat of flooding was eliminated. Museum collections and archives eventually would have to be moved to quarters with more space, presumably to another institution in the region. Negligible to minor short-term adverse impacts would be brought about by the risk of moving artifacts, specimens, and documents, and there would be moderate long-term beneficial effects from acquiring new space for curation, research, and storage and from eliminating the threat of flooding.	Museum collections and archives would be better secured under alternative 1. Negligible to minor adverse short-term impacts would result from the risk of packing, moving, storing, and reinstalling the artifacts, specimens, and documents to new quarters. Moderate long-term beneficial effects would result from providing new state-of-the-art space for museum collections and archives away from the national monument, possibly in downtown Pipestone, to conduct future curation, research, and storage.	Museum collections and archives would be better secured under alternative 2. Negligible to minor short-term adverse impacts would result from the risk of packing, storing, and moving the artifacts, specimens, and documents to newly rehabilitated quarters. Moderate long-term beneficial effects would result from providing new state-of-the-art space for museum collections and archives in a rehabilitated visitor center in the national monument to conduct future curation, research, and storage.	Museum collections and archives would be better secured under alternative 3. Negligible to minor short-term adverse impacts would result from the risk of packing, moving, storing, and reinstalling the artifacts, specimens, and documents to a newly rehabilitated area of the visitor center. Moderate long-term beneficial effects would result from providing new state-of-the-art space for museum collections and archives.

No-Action Alternative	Alternative 1 (Preferred)	Alternative 2	Alternative 3
NATURAL RESOURCES			
Vegetation — Remnant and Restored Tallgrass Prairies			
Overall, despite the fragmentation of habitat, the occupancy of habitat by structures, the presence of corridors for the entrance of exotic plants, heavy visitor use in a large area of the national monument, and ongoing efforts to restore tallgrass prairie would result in a moderate beneficial effect on tallgrass prairie because these systematic efforts would increase the abundance, distribution, quantity, and quality of the habitat in the national monument.	Acquiring the school district lands and restoring 15.3 acres to remnant prairie, managing the use of the 8-acre Sun Dance area within a carrying capacity, and removing 6 acres of development, followed by the restoration of remnant tallgrass prairie, would result in a minor long-term beneficial effect on this community type. Removing the entrance road from the south quarry entrance to the visitor center, removing the visitor center and parking area, and restoring natural contours west of the south quarry line would improve water flow through the national monument, potentially restoring historic soil moisture levels in the mesic crystalline bedrock prairie — a potential moderate long-term beneficial effect. Increasing the size of the restored tallgrass prairie would cause a substantial increase in the abundance and distribution of the prairie community, a major long-term beneficial effect.	Overall, the effects on remnant and restored tallgrass prairie would be long term, major, and beneficial.	Overall, despite the fragmentation of habitat, the occupancy of habitat by structures, the presence of corridors for the entrance of exotic plants, and short-term heavy visitor use in an 8-acre area of the national monument managed within a carrying capacity, ongoing efforts to restore tallgrass prairie would result in a moderate beneficial effect on tallgrass prairie because these systematic efforts would increase the abundance, distribution, quantity, and quality of the habitat in the national monument.
Wetlands and Riparian Corridor			
Continued foot traffic in the wetlands near the picnic area, parking, and restrooms on the southern boundary of the national monument would result in long term minor adverse effects on wetlands.	The actions of alternative 1 would have an appreciable effect on natural processes and a minor long-term beneficial effect on wetlands, including those in the riparian corridor.	There would be no impact on wetlands or the riparian corridor.	Continued foot traffic in the wetlands near the picnic area, parking, and restrooms on the southern boundary of the national monument would result in long-term minor adverse effects on wetlands.

No-Action Alternative	Alternative 1 (Preferred)	Alternative 2	Alternative 3
Floodplains			
The continuing effects on natural and beneficial floodplain values and the continuing effects on the floodplains' ability to function normally during flooding would be minor, adverse, and long term. Although the possibility of loss of life would be extremely small, there would be some danger to visitors and employees. Risks would be minor to moderate, but flooding could cause major adverse effects on the visitors, employees, and property involved.	The net removal of about 5 acres of buildings and impermeable surfaces would cause a minor long term beneficial effect on natural and beneficial floodplain values. The continuing impact on the floodplains' ability to function normally during flooding would be minor, adverse, and long term. Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Risks would be minor to moderate, but flooding could cause major adverse impacts on the visitors, employees, and property involved.	The effects of alternative 2 on the ability of the floodplain to function normally would be local and slightly detectable, a minor adverse long-term effect. Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Risks would be minor to moderate, but flooding could cause major adverse impacts on the visitors, employees, and property involved.	The net removal of about 1 acre of buildings and impermeable surfaces would cause a minor long-term beneficial effect on natural and beneficial floodplain values. Keeping the visitor center, the parking and picnic areas, restrooms, and residences within the 100-year floodplain would prevent the restoration of natural and beneficial floodplain values and continue to affect the floodplain's ability to function normally during flooding, a minor long-term adverse impact. Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Risks would be minor to moderate, but flooding could cause major adverse impacts on the visitors, employees, and property involved.
Hydrology			
Floodwater would continue to be impeded by the bridge over Pipestone Creek near Winnewissa Falls, a moderate intermittent impact.	Alternative 1 would result in a moderate long-term local beneficial effect on hydrology.	Continued pumping of the quarries could lower the water table or decrease soil moisture, a potential minor short-term adverse effect that could be mitigated by discontinuing pumping. Relocating the falls bridge farther downstream would remove a restriction to the natural flow of the creek, a moderate long-term beneficial effect. Acquiring the school district lands south of Minnesota West Community and Technical College on the national monument's eastern boundary would maintain or improve water flow patterns, a moderate long-term beneficial effect on hydrology.	Alternative 3 would result in a moderate long-term local beneficial effect on hydrology.

No-Action Alternative	Alternative 1 (Preferred)	Alternative 2	Alternative 3
Soils			
Soil disturbance from such things as ongoing maintenance would result in minor adverse long-term impacts on soils. The effects from development such as eliminating inflow of water, diverting precipitation from natural drainages, and soil compaction would be minor, long term, and adverse.	Establishing a carrying capacity for the ceremonial area (about 8 acres) and removing facilities from about 6 acres would cause a minor long-term beneficial effect on soils. If grading of sites was necessary as part of restoration, some of the soil profile would be permanently lost, a minor long-term adverse effect on soil. Converting the maintenance outdoor equipment storage area to parking (about 1 acre), adding a small parking area at the south quarry entrance, and constructing a trail would cause a minor long-term adverse impact on soils.	Implementing alternative 2 could result in a long-term moderate adverse effect on about 3 acres of soil at the visitor center and potential new maintenance facility, and a long-term minor beneficial effect on about 8 acres at the Sun Dance site and 1 acre at the maintenance storage area.	Establishing a carrying capacity for the ceremonial area (about 8 acres) and removing facilities from about 1 acre would cause a minor long-term beneficial effect on soils. If grading at the fuel storage building or maintenance storage area was necessary, some of the soil profile could be permanently lost, a minor long-term adverse effect on soil.
Wildlife			
Overall, the fragmentation of wildlife habitat and the alteration of wildlife movement would continue to result in a long-term minor adverse effect.	A net gain of about 6 acres of habitat would cause a moderate long-term beneficial effect on wildlife. Establishing a carrying capacity for the Sun Dance grounds might mitigate the continuing minor long-term adverse impact on wildlife to some degree.	A moderate long-term beneficial effect on wildlife would result from a net gain of about 116 acres of wildlife habitat (from acquiring the USFWS/MDNR land, acquiring the school district land, removing the outdoor maintenance storage area, and managing the acquired areas as prairie). Because the mowing of the Sun Dance ground (8 acres) no longer would be permitted, nor would holding Sun Dances, the remnant prairie would be able to recover, a moderate long-term beneficial effect on wildlife.	A net gain of about 15.3 acres of habitat would result in a moderate long-term beneficial effect on wildlife. Establishing a carrying capacity for the Sun Dance grounds might mitigate the adverse impact of holding the Sun Dances to some degree, depending on the capacity determined, a minor long-term beneficial effect.

No-Action Alternative	Alternative 1 (Preferred)	Alternative 2	Alternative 3
Threatened or Endangered Species or Species of Special Concern			
Overall, the continued presence of development in the national monument, continued clearing of the road edges, and human disturbance would have no effect on the Topeka shiner or the western prairie fringed orchid.	This alternative would have no effect on the Topeka shiner. Removing houses and part of the access road and restoring natural vegetation would reduce human disturbance of the orchid habitat, causing a long-term minor beneficial effect. If the U.S. Fish and Wildlife Service determined that the orchid might be affected by removing the sewer and water lines from beneath one site occupied by orchids or by placing a small part of orchid habitat in the quarry zone, the National Park Service would develop mitigating measures in consultation with that agency to ensure that there would be no impacts on the orchid.	Increased quarrying and associated pumping might change the area's hydrology by lowering the water table and decreasing soil moisture availability. If pumping resulted in unacceptable impacts on, for example, the Topeka shiner in Pipestone Creek and the western prairie fringed orchid, it would be discontinued. There would be a potential short-term minor adverse impact on threatened and endangered species.	Adding a demonstration quarry and the associated pumping might change the area's hydrology by lowering the water table and decreasing soil moisture availability. There would be a potential short-term minor adverse impact on threatened and endangered species even though pumping would be stopped if impacts were identified. Demolishing the bridge and reconstructing it farther downstream would not be expected to have any effect on the Topeka shiner.

No-Action Alternative	Alternative 1 (Preferred)	Alternative 2	Alternative 3
VISITOR USE AND EXPERIENCE			
Long-term beneficial effects on visitors at Three Maidens area, cultural demonstrations in visitor center, along Circle Trail, at quarries, and at prairie remnant from continuing existing management; long-term adverse impacts from continuing existing conditions at information desk and restrooms and from inappropriate practices along Circle Trail. Continuing the existing management of visitor services would cause long-term major beneficial effects on visitors viewing the prairie area when walking the Circle Trail, at the Three Maidens area, at the cultural demonstrations in the visitor center, and at the quarries and the prairie remnant. It would result in long-term minor beneficial effects on visitors viewing the prairie area from vehicles going to and from the visitor center via the entry road. However, there would be long-term adverse impacts on the visitor experience from continuing the existing conditions in the visitor center and some inappropriate practices along the Circle Trail.	Alternative 1 would result in long-term major beneficial effects on the visitor experience at the Three Maidens area, the exhibits in the new offsite visitor facility, the restroom accommodations, the Circle Trail area, and the prairie remnant. There would be long-term moderate beneficial effects on the visitor experience at the information desk and the quarry area. A long-term moderate adverse effect on visitors would result from the effects on visitors' ability to find the new offsite visitor center.	Alternative 2 would result in major beneficial effects on the visitor experience at the new visitor center exhibits, the information desk, the demonstration area, the restrooms, the quarry area, the prairie area, and the Circle Trail. There would be moderate long-term beneficial effects on the visitor experience at the Three Maidens area. This alternative would cause no adverse effects on the visitor experience.	Alternative 3 would result in major beneficial effects on the visitor experience from (1) keeping and modifying the existing Circle Trail and moving the bridge downstream and redesigning it to make it less obtrusive, and (2) the continued opportunity for visitors to closely observe the vegetative species of the prairie remnant from the Circle Trail. There would be moderate beneficial effects from (1) allowing the Three Maidens zone to revert to prairie and establishing a trail to guide and control access, (2) the updated exhibits and improved interpretation at the rehabilitated visitor center, and (3) keeping the existing demonstration area in the rehabilitated visitor center and adding a quarrying demonstration area behind the visitor center. Adding accessible restrooms to the rehabilitated visitor center and continuing opportunity for visitors to observe the prairie remnant from the entry road would result in a minor beneficial effect on visitor experiences.
SOCIOECONOMIC ENVIRONMENT			
Quarriers and Demonstrators			
The no-action alternative would have no effect on quarriers and demonstrators.	Alternative 1 would cause a minor long-term inconvenience to some quarriers, and it would cause no impact on demonstrators. It would not result in any economic effects.	Alternative 2 would cause a negligible long-term beneficial economic effect on quarriers and demonstrators.	Alternative 3 would result in no effect on quarriers. Although the working conditions for demonstrators probably would be improved, there would be a negligible increase in earnings.

No-Action Alternative	Alternative 1 (Preferred)	Alternative 2	Alternative 3
Businesses			
The no-action alternative would result in a negligible long-term effect on businesses that are directly dependent on the national monument.	Alternative 1 would result in a negligible long term adverse effect on businesses that are dependent on the national monument. Should the Pipestone Indian Shrine Association move to another location, the effect would likely be minor.	Alternative 2 would result in a minor long-term socioeconomic effect on businesses that are directly dependent on the national monument.	Alternative 3 would result in a negligible long-term beneficial socioeconomic effect on businesses that are directly dependent on the national monument.
Community			
Because the employment and expenditures of the national monument are small compared to the county economy as a whole, the impacts of national monument employment and expenditures would continue to be negligible, long term, and beneficial.	Development activities included in alternative 1 would result in a minor short-term beneficial effect on the local and regional economy from construction dollars filtering into the local community.	Alternative 2 would result in a minor long-term socioeconomic effect on businesses that are directly dependent on the national monument.	Alternative 3 would result in a long-term minor beneficial socioeconomic effect on the local and regional economy.
NATIONAL MONUMENT OPERATIONS			
The no-action alternative would result in long-term moderate adverse impacts on maintenance and facilities. There would be no change in emergency response time or in the ability of the national monument staff to enforce regulations.	The construction of new facilities would result in major long-term beneficial effects. The development of new maintenance facilities and the improved quality of the work accomplished would cause long-term moderate beneficial effects. There would be no change in the national monument's ability to enforce laws and regulations. Moving maintenance away from the site would result in a long-term negligible adverse impact on the efficiency of maintenance activities. Having the visitor center offsite would cause a long-term moderate adverse impact on visitor services. Long-term minor adverse impacts could occur when visitors sought assistance in emergency situations.	Adding high-quality new facilities would result in long-term major beneficial effects. Moving the maintenance facility offsite would improve the ability of the visitor center to serve visitors' needs, a long-term moderate beneficial effect. Having the law enforcement ranger continue to live on the site and increasing the national monument staff would make more people available to respond to emergencies, a long-term negligible beneficial effect. There would be no long-term change in the ability of the national monument to enforce regulations.	Adding high-quality new facilities would result in long-term major beneficial effects. Adding a new offsite maintenance facility would remove conflicting sights and sounds and improve the national monument's ability to serve visitors' needs, a long-term moderate beneficial effect. Having the law enforcement ranger continue to live on the site and increasing the national monument staff would make more people available to respond to emergencies, a long-term negligible beneficial effect. There would be no change in the ability of the national monument to enforce regulations.

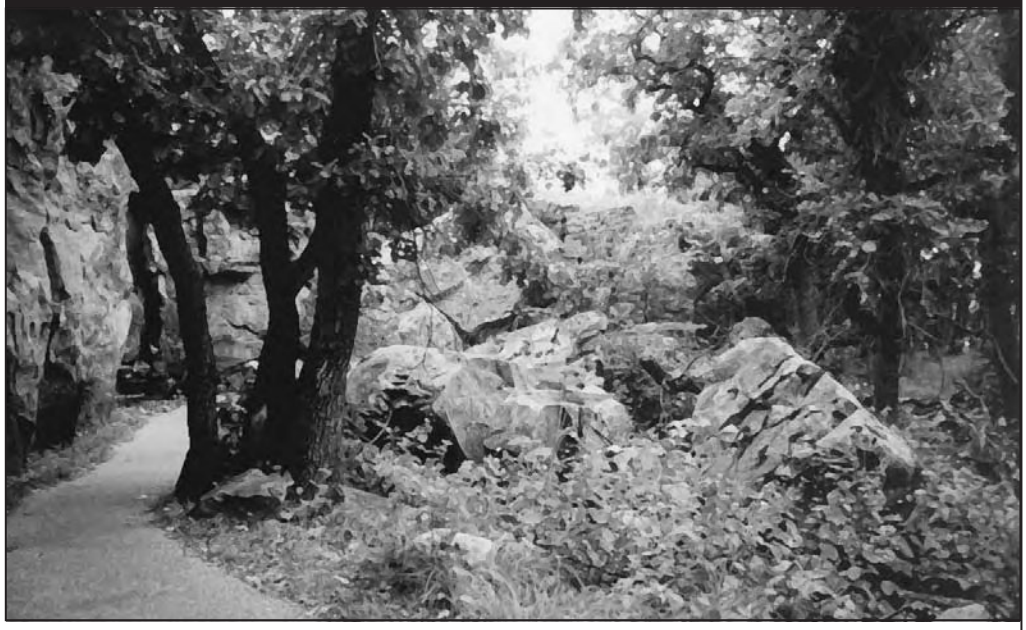
COSTS ESTIMATES

TABLE 5: ESTIMATED COSTS

	NO-ACTION ALTERNATIVE	ALTERNATIVE 1 (PREFERRED)	ALTERNATIVE 2	ALTERNATIVE 3
ESTIMATED COSTS OVER THE 20-YEAR LIFE OF THE PLAN (2006 dollars)				
Initial (Capital) Costs	$547,000	$1,771,000*	$5,080,000	$3,372,000
Recurring Annual Costs	$8,759,000	$11,865,000	$8,759,000	$9,141,000
Total Costs	$9,306,000	$13636,000	$13,839,000	$12,513,000

* This assumes construction of a new visitor center. If NPS chooses to relocate primary visitor services into an existing off-site location, capital costs would be minimal.

AFFECTED ENVIRONMENT



INTRODUCTION

In this chapter, the existing environment of Pipestone National Monument is described, along with the surrounding region. Its focus is on the resources, uses, facilities, and socioeconomic characteristics that have the potential to be affected if any of the alternatives were implemented.

CULTURAL RESOURCES

INTRODUCTION

Cultural resources are of five types:

1. archeological resources consisting of artifacts, objects, or other material remains in the ground as evidence of past human habitation or occupation over time
2. cultural landscapes that are historic or ethnographic and consist of distinctive features of the human-built environment or natural environment, or both, that represent aspects of a way of life of a people, group, or family
3. ethnographic resources consisting of particular places with natural or human-built features in what are now units of the national park system that contemporary peoples, groups, or families link to their traditional way of life, cultural heritage, and social identity
4. historic structures that are important to local, regional, or national history
5. museum collections and archives that relate to the history and setting of what happened in what is now the national monument or other type of unit of the national park system

Pipestone National Monument contains important cultural resources representative of human use over time, as well as ongoing use in what is now the national monument. The area was used primarily by prehistoric, historic, and contemporary American Indian peoples, tribes, groups, and individuals. The range in general spans the past 5,000 years; that is, from the Late Archaic Period of about 3000 B.C. in prehistoric times to the present. Pottery recovered on land in what is now the national monument attests to American Indian occupation during the Middle Woodland Period, circa. A.D. 500–700, through the Late Prehistoric Period, which ended about A.D. 1700. Pipestone quarrying, more precisely called the quarrying of catlinite pipestone, was important prehistorically. It continued through the historic American Indian period into the Euro–American periods of 19th century exploration and settlement, and it continues today.

Tobacco, or rather the shared use of tobacco, seems to have been a driving force. The ceremonial smoking of *Nicotiana rustica* and a few other species of tobacco was and is culturally important. The red catlinite pipestone deposits at Pipestone National Monument became and remain the most important source of carved pipe bowls for sacred ceremonial pipes.

CATLINITE

The distribution of catlinite has been far and wide over time and space. Blanks of catlinite, for instance, apparently were traded to villagers along the Missouri River from this spot, which is now Pipestone National Monument, by A.D. 900, perhaps earlier. People would quarry the red catlinite pipestone for their own use and for trading. Over the years, by way of example, 18th and 19th century ceremonial pipes have been noted and documented for their use in different provinces of Canada like New Brunswick and Quebec and in states of the United States like Alabama, Florida, Maine, and Oklahoma. Some pipes like these have been historically identified and physically traced to the catlinite quarries of present-day Pipestone National Monument.

Catlinite deposits occur mostly within the boundaries of the national monument, but some may extend north and south of the ridgeline of deposits and quarries within the present-day national monument.

Catlinite is chemically unique as a mineral. The tracing back to the national monument of

pipe bowls and other museum artifacts carved from catlinite can be done scientifically.

Catlinite is named for the artist George Catlin (1796–1872). well-known for his portraits of American Indians. Catlin was the first to document the quarries in art and narrative and the first to take samples of the red stone material back with him when he returned to the East. He visited the quarries in 1836, and shortly after that the distinctive red stone was named after him by Charles Thomas Jackson (1805–1880), a leading scientist of the time based in New England as a pioneer geologist and mineralogist. Catlin's painting relevant to the national monument is entitled *Pipestone Quarry on the Coteau des Prairies, Minnesota.*

Pipestone is a more general term than catlinite. It refers to claystones exhibiting color and characteristics similar to, but not identical with, catlinite. Pipestone is known to occur at a number of widespread locations in the United States, most of which have been used for stone aboriginal artifacts in prehistoric and historic times. The term *catlinite,* however, is reserved exclusively for claystone from the quarries at Pipestone National Monument.

Like other pipestone deposits, catlinite originated as mud put down on riverine floodplains during major flooding episodes. Subsequent sedimentary accretions were pressed into hardened clay or claystone as discontinuous thin beds encompassed within quartzite deposits that generally overlaid these catlinite or other pipestone layers as a vast regional geological stone formation known as Sioux quartzite. Sioux quartzite is composed of more than 90% medium-to-fine quartz sand grains encoated with hematite, which gives the stone a reddish to grayish appearance. It is hard and makes good building material, as the city of Pipestone, Minnesota, attests with its many historic buildings constructed of Sioux quartzite. In contrast, catlinite is softer, lacking quartz in its mineral composition, which gives it a carvable quality.

It could be said that the quartzite in which catlinite is embedded is purple because it generally has a darker hue than catlinite, which appears red, also due to hematite. Catlinite's color, however, may vary from dark maroon to almost white. The paler colors of catlinite, which are due to partial leaching of the hematite, often occur as spots. They characterize much of the catlinite taken from the national monument's Spotted Quarry.

ARCHEOLOGICAL RESOURCES

Pipestone National Monument encompasses an archeological district, the boundary of which coincides with that of the national monument. The entire national monument is officially recorded in the files of the Office of the Minnesota State Archaeologist, part of the office of the state historic preservation officer, as archeological site 21PP2. Just as Pipestone National Monument may be perceived as an ethnographic resource and landscape, as discussed below, so, too, can it be regarded as an archeological district. Both perceptions are consistent with the listing of Pipestone National Monument in the National Register of Historic Places on October 15, 1966.

The archeological district is composed of 42 localities where archeological features have been reported at various times over the past 120 years. Types of features reported are quarries, mounds, circular stone alignments that are also known as tipi rings, petroglyphs, a historic cemetery associated with the Pipestone Indian School, and campsites involving catlinite workshop areas.

There is a long history of investigation of the prehistoric and historic archeological resources of Pipestone National Monument. The earliest professional archeological investigation took place in 1882, when Philetus W. Norris of the Smithsonian Institution in Washington, D.C., excavated several mounds in the vicinity of the quarries. Another Smithsonian researcher, W. H. Holmes, visited the quarries in 1892 and

produced a detailed map showing 8 mounds and more than 350 circular stone alignments. In 1949, Paul Beaubien, an NPS archeologist, excavated at three locations along the quarry ridge of the north and south quarry lines, at two locations near the Leaping Rock / The Oracle formation, and elsewhere in the national monument. John S. Sigstad of the University of Colorado conducted a monument-wide archeological survey in 1965 under a contract with the National Park Service. At various times in the 1970s through 1990s, NPS archeologists from the Midwest Archeological Center surveyed the national monument's archeological resources.

The most intensive of these efforts occurred in 1993, 1994, and 1997–1998, when extensive surface surveys of the national monument were conducted after its grassy vegetation was reduced by prescribed burning. This work was done under the auspices of the National Park Service's Systemwide Archeological Inventory Program (SAIP). The effort recorded additional archeological resources and produced a detailed archeological base map. The work resulted in the working conclusion that the relatively thin soil mantle overlying the bedrock in Pipestone National Monument (less than 10 feet in most places) has been subject to long-term bioturbation by the action of burrowing rodents. This ongoing process of soil churning, so to speak, has the effects of both burying archeological features such as circular stone alignments and exposing them.

Because individual cultural features and artifacts can be either buried or exposed by this natural process at any given time, archeological inventories should be conducted while the ground is largely denuded of grass cover after controlled burns. These efforts will result in additional features and artifacts being added to the national monument's archeological base map and will increase knowledge of the national monument's archeological resources as a camping place to quarry and to seek religious experiences such as vision quests.

Chipped stone projectile points and the pottery found in the national monument are evidence of the presence of Archaic and Woodland Indian peoples; that is, of peoples who occupied the national monument from Late Archaic through Middle Woodland into Late Prehistoric times, as mentioned above in the overview for cultural resources. It is not known what the earliest date was by which catlinite was being purposefully extracted. It is fair to say that quarrying was not the only early purpose for being there. American Indians were present for a variety of purposes that could have included hunting, plant gathering, seeking shelter, religious and ceremonial observance, or quarrying.

ETHNOGRAPHIC RESOURCES

Pipestone National Monument: An Ethnographic Landscape

Ethnographic resources relate to particular places or areas that contemporary peoples link to their traditional way of life and cultural heritage. (An ethnographic resource is a site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it — [NPS 1998a, 181].) Ordinarily, ethnographic resources are identified with tribes, peoples, or groups traditionally associated with what is now a unit of the national park system, starting from the present and going back in time for the continuity of at least two generations. The implication is that a tribe, people, or group occupied and lived in a particular spot or territory. However, the general understanding or conventional wisdom is that the catlinite pipestone quarries were open to all tribes at all times to come and quarry and to take pieces home, from which they would carve the pipe bowls that were used for sacred and ceremonial purposes.

No single tribe actually lived at the quarries. Not even the Yankton Sioux, who have been closely associated with the quarries in modern

times, lived there. The exception to there being no political hegemony over the quarrying location attributed to any one tribe would be the Yankton Sioux Treaty of April 19, 1858, which was signed into law in 1859 by President James Buchanan. That treaty established an Indian reservation there for the Yankton Sioux Tribe.

European–American encroachment by way of the coming of railroads and agricultural settlement made protecting and preserving the area as a reservation difficult, particularly since no American Indians lived on the reservation. A proposal to place an Indian school on the site raised additional protest from the Yankton. The U.S. Justice Department sought a ruling in the United States Supreme Court and began negotiations. Jurisdiction later was transferred to the Indian Court of Claims, and in 1927 the Yankton Tribe was awarded a total of $330,558.90. With this decision, the Yankton ceded their right to quarry at Pipestone. Then the way was clear for Congress to pass the national monument's enabling legislation in 1937.

Since 1991 the national monument has served as the location of two annual Sun Dances, both held separately at different times during summer by special use permit. One is conducted by the American Indian Movement (AIM). which is headquartered in the Minneapolis–Saint Paul area. The other Sun Dance is conducted by the Yankton Sioux, whose official name as a tribal government is the Yankton Sioux Tribe of South Dakota. Midsummer to late summer is a traditional time to conduct a Sun Dance. Both groups conduct their ceremonies in the same location in Pipestone National Monument.

Although the Sun Dance is an ancient cultural element of many tribes of the Great Plains, it is not generally regarded as traditional to the quarries. Two anthropologists, David Hughes and Alice Stewart, who have conducted ethnographic interviews and have done ethnohistorical research pertinent to the Pipestone area, say that the Sun Dance "was never traditionally held at Pipestone" (Hughes and Stewart 1997, 39). However, a federal government ban on Sun Dances from the late 1800s until the mid-1900s created a tremendous historical gap among subsequent generations in the local community and in the oral history of many tribes. Interviews of elders and archival research may indicate an absence of the Sun Dance, but no doubt Sun Dances were conducted in secret during the time when they were banned by the government, out of sight of federal Indian agents on the reservations and out of sight of some tribal members who might have informed. The fact that tribal oral history does not note the occurrences of Sun Dances may not reflect what really happened.

The Sun Dance could have taken place on the grounds of what is now Pipestone National Monument. The National Park Service does not wish to preclude that possibility in history. Sun Dances could have been practiced by groups that quarried and camped in the immediate area of what is now the national monument. They also could have occurred locally, if not right at the quarries, because the traditional time for quarrying coincides with the traditional time for the Sun Dances. American Indian groups here to quarry were traditional practitioners of the Sun Dance, so it should be said that Sun Dances could well have taken place in what is now the national monument.

Sun Dances could have been prompted by the sacredness of the quarries themselves. Tribes as tribes did not necessarily come to quarry, but groups did, in addition to individuals. An extended family or another group within a tribe occasionally might have been large enough and of a disposition to conduct a Sun Dance in consultation with tribal leaders and elders as to appropriateness and timeliness during an encampment at the quarries. To read an ethnographic description of the Sun Dance, see *Oglala [Lakota] Religion*, by the anthropologist William K. Powers (1977).

Ethnographic landscapes generally are larger in area and broader in scope than the

vernacular or designed historic landscapes that often are considered under the category of cultural landscapes. Nonetheless, ethnographic landscapes certainly are a type of cultural landscape, and they are discussed as cultural resources in this section on ethnographic resources.

The entire national monument is an ethnographic resource, as well as an ethnographic landscape combined into one entity. This suggestion, put forth in this document, is gleaned from ethnographic information from ethnohistorical works (Hughes 1995; Hughes and Stewart 1997), the nomination form of Pipestone National Monument to the National Register of Historic Places (NPS 1976), and consultations with American Indians.

Landscape Periods

Three periods are suggested below as a guide to narrate changes in the landscape setting over time. The activity of quarrying catlinite pipestone is focused upon, and incorporated into, the names of the landscape periods, as the prime cultural behavior that occurs and has occurred since time immemorial in what is now the national monument.

- Prehistoric Quarrying into the Historic Period
- Historic Quarrying during European–American Settlement until the Beginning of the Mission 66 Program in the National Monument (1874–1957)
- Quarrying since Mission 66 (1957–present)

Prehistoric Quarrying into the Historic Period. Prehistoric quarrying before European contact took place in a tallgrass prairie setting with few or no trees along Pipestone Creek. Fine remnants of the tallgrass prairie constitute the main prehistoric context of the prehistoric element of the ethnographic landscape, in association with the quartzite ledge along which ancient, more recent, and contemporary quarrying sites are located. Some of the national monument's terrain could be incorporated into a prehistoric context that also would include certain archeological sites such as two petroglyph locations that remain in situ in the national monument, along with an area of ancient quarries. The glacially deposited granite boulders known as the Three Maidens could contribute to the prehistoric context. This rock formation was the site of numerous petroglyphs that were removed in the late 19th century before Pipestone National Monument was established. The petroglyphs now constitute part of the national monument's museum collections. In general, however, the prehistoric context would call attention to relatively unspoiled natural features, including, most notably, patches of remnant tallgrass prairie.

The relatively treeless features would be reminiscent of George Catlin's somewhat impressionistic 1836 painting entitled *Pipestone Quarry on the Coteau des Prairies, Minnesota*. This painting represents the area shortly after European contact but has attributes of the prehistoric scene that continued through the Early Indian Reservation Period (1858–1874); that is, until the influx of European–American settlers. Quarrying during this period reflects a continuation of the prehistoric quarrying landscape features in that it was relatively treeless in a prairie setting, as already mentioned, with debris from the quarrying presumably scattered on the ground. It is believed that there would have been no appreciable buildup of rubble piles as landscape features, as in Catlin's painting. This pattern apparently continued from the 1830s through the 1850s, when an 1858–1859 treaty reserved the catlinite pipestone quarries for the Yankton Sioux as an Indian reservation, into the 1870s, when Euro–American settlement began to change things.

Historic Quarrying during Euro–American Settlement until the Beginning of the Mission 66 Program in the National Monument (1874–1957). The scene surrounding quarrying changed in association with Euro–American settlement and

development. This includes the latter part of the Indian reservation period (1874–1929), when a railroad traversed it in 1884 and when part of it was taken to found the Pipestone Indian School in 1890. The Pipestone Indian School directed that the Winnewissa Falls be dynamited to reduce its height (circa 1908–1912), and the school administered an Indian unit of the Civilian Conservation Corps (CCC) in 1933–1942. The Civilian Conservation Corps created trails and built stone bridges in the area that was established as Pipestone National Monument in 1937.

Homesteading began in the 1870s, and the prairies surrounding the quarrying area were cultivated as farmland. Some of this happened on the Indian reservation because the reservation had not at first been adequately mapped and surveyed to prevent homesteaders from intruding. What became the city of Pipestone was surveyed as a townsite in 1874.

Beginning in 1879, railroads came, and ultimately four railroads passed through Pipestone, Minnesota. The first train to enter the town arrived in November 1879. It was a work train of the Southern Minnesota Railroad, which was a division of the Chicago, Milwaukee, and Saint Paul Railroad. Other railroads were the Chicago, Saint Paul, Minneapolis, and Omaha Railroad; the Chicago and Northern Railroad; and the Burlington, Cedar Rapids, and North Railway. The latter came to traverse what is now the national monument. It was built through the Indian reservation in 1884 without permission. It became the Chicago, Rock Island, and Pacific Railroad in 1903; operations ceased in 1967. A historic context would relate to the visible but abandoned grass-covered bed of this railroad, without rails and ties, running north and south in the eastern part of the national monument. Quarrying from 1884 through 1967 would have been carried out within sights and sounds of the railroad.

The railroads encouraged settlement by moving farm produce to markets, making it more difficult to preserve the land around the catlinite pipestone quarries as an Indian reservation. Congress established a residential Indian school, the Pipestone Indian School, on the reservation in 1890. By 1893 it was operational. It was closed in 1953. Part of the property now houses the Minnesota West Community and Technical College, a campus of which came to Pipestone in 1967. In the late 19th century, Pipestone townspeople lobbied for the Indian school as an economic stimulus. Similar motives were behind the local and state support for the establishment of the national monument in 1937, and 30 years later for the college.

One historic context has to do with the reduction in the height of Winnewissa Falls by several feet at some point between 1908 and 1912. The Pipestone Indian School caused this to happen to reduce flooding and thereby increase the amount of arable land upstream. This was important to the Indian school since, as a residential vocational institution, it aimed to be self-supporting through farming. The change to the falls changed the ethnographic landscape. The falls is one among many places where offerings of tobacco and other items are left. Winnewissa Falls remains a marker of the quartzite ledge as Pipestone Creek flows over it, but it has lost some of its prehistoric height, if not its ethnographic stature. Its ethnographic importance remains as a central focus of American Indian origin stories in the national monument, which are associated with the spiritual significance of the catlinite pipestone quarries as sacred ground.

Another historic context relates to the Indian unit of the Civilian Conservation Corps, which was associated with the Indian school. The work performed by the CCC Indian Division, also known as a program of Indian Emergency Conservation Works (IECW), was supervised by the superintendent of the Pipestone Indian School. That is, the Indian Emergency Conservation Works was under the general supervision of Superintendent James W. Balmer and under the immediate supervision of R. W. Hellwig and then J. H. Mitchell. The IECW program began in January 1934.

By December 1934, detailed supervision was in the hands of Mitchell (Murray 1965, 48–49; Mitchell 1934, 25–29). IECW projects included road, a trail, fencing work, and constructing a dam, presumably on Pipestone Creek, which created a lake on the prairie near the quarries. Stone work was part of the trail work, including stone steps cut and incorporated into elevated parts of the trails and mini-bridges of stone in the lower parts of the trails (Mitchell 1934, 27–29).

This Indian IECW–CCC unit also planted trees (shown on some maps as "tree plantations"), remnants of which may be evident in the northwest of the present-day national monument. The "greening" or "treeing" of the quarrying landscape, to which the Civilian Conservation Corps contributed, is associated with Euro–American settlement. Various shrubs and some hardwood trees started to appear, and they were valued as shade trees growing along Pipestone Creek. Seemingly brought in by the settlers, purposefully or inadvertently, this growth of trees along Pipestone Creek became evident in the 1880s and reflected the preferences of some settlers for eastern woodland landscapes. The shade generally was welcomed and is correlated with the beginning of the general quarrying area being perceived as suitable for a national monument, to include activities for recreation. In 1919, with the permission of the Indian school, a bathhouse for recreational bathing and boating was built adjacent to Indian Lake, northwest of the present boundaries of the national monument.

Landscape changes relate not only to the presence of the railroad and the growing presence of trees, but also to the appearance of rubble piles from the catlinite quarrying. Substantial rubble piles may have been part of the cultural landscape earlier than this. Rubble piles are noticeable in Catlin's 1863 painting of the quarries, and they appear in an 1873 photograph of the quarry line taken from the vicinity of Winnewissa Falls. This attests to considerable quarrying activity before the founding of the community of Pipestone.

The establishment of the national monument in 1937 to protect and preserve the quarrying and to commemorate the quarries emphasizes the continued importance of the catlinite quarries to American Indians and to the nation. The historic context is quarrying in modern times. For 30 years after the national monument was established, quarrying continued within the sight and sound of the railroad. A 1947 map shows the Chicago, Rock Island, and Pacific Railroad running north and south through the eastern part of the national monument. A 1965 booklet shows a similar notation (Murray 1965, 31). Railroad operation did not cease until 1967.

The Mission 66 program, whose configuration marks the present-day national monument, is discussed below. Possible remnant trails and roads need to be investigated to determine how visitors gained access to the national monument and toured it before the Mission 66 program began in 1957.

Quarrying Since Mission 66 (1957–present). The Mission 66 program was responsible for building the present-day visitor center in 1957–1958, according to a "centralize and circulate" philosophy. The idea was to direct visitors to a central place in a unit of the national park system, orient them, and then redirect their experiences of the unit from that location. The current trail system has overtones from earlier CCC activities, which included "carving" the rock steps in the trail to reach the 1838 inscription in rock near Winnewissa Falls. The inscription was related to the expedition of that year by Joseph Nicolas Nicollet and John Charles Frémont. The current trail system is centered in the Circle Trail (which loops out of the visitor center) and stems from 1957–1958 and Mission 66 and constitutes the historic context.

Today, quartzite and pipestone rubble piles from catlinite quarrying continue to grow as landscape elements. In addition, since the 1970s, pumping hoses have become part of the landscape. These are relatively large hoses attached to portable gasoline-powered water

pumps to pump water out of the quarries. Pumping is done not only in spring and early summer but also into summer and autumn if the amount of precipitation from that winter and spring requires it. The amount and duration of pumping of groundwater filling the quarries depends on how much snow and rain are received by the national monument and environs in any one year. Pumping is done so that quarrying can continue during times when the quarriers traditionally would have waited to quarry until the water went down. That could have been middle to late summer or even sometime in autumn. One pump usually is used per quarry. The pumps make a lot of noise, loudly and constantly droning on and on for days at a time. Like the reality of the pumping hoses as visual intrusions, pump noise has become a noticeable part of the "soundscape" aspect of the landscape.

The contemporary landscape is a mixture of older and newer elements, as was described above through the suggested landscape periods over time. Modern quarriers for various personal and cultural purposes have access to the surviving landscape features mentioned as characteristic of each of the three landscape periods. Such access is part of how the quarriers and other American Indians use the national monument in the context of an ethnographic landscape.

Ethnographic Resources

The following may be identified as ethnographic resources in the national monument:

The Quarries
The Three Maidens
Winnewissa Falls
The Oracle
Old Stone Face / Leaping Rock
Pipestone Creek
Petroglyphs

These ethnographic resources are regarded as sacred sites by some American Indians (Hughes 1995; Hughes and Stewart 1997). It is important to note that American Indian individuals, not tribes, do the quarrying in accordance with the establishing legislation. Permits to quarry, discussed elsewhere in this document, are issued to individuals, not to tribes. It is generally understood that the area of the quarries always has been a place, since time immemorial, where individuals of all tribes could go in peace to quarry. Presumably this was so even at times when one tribe or another might have regarded the quarries as within territory over which they had political hegemony, including the period of the Yankton Sioux Indian reservation, 1858 –1929, as mentioned earlier.

The idea of the quarries as a place of peace seemingly was incorporated in the 1937 enabling legislation of the national monument by reserving "to Indians of all tribes. . . the quarrying of the red [catlinite] pipestone." There are ancient, historic, and contemporary contexts involving the quarries. That is, certain locations of ancient quarries have been identified by archeologists. Historic quarries not currently being worked are generally identifiable by rubble piles adjacent to them. Quarries under excavation will often be recognizable by hand tools and other equipment like wheelbarrows nearby, if the quarrier himself is not at work down in the quarry.

The Three Maidens constitute five to seven (depending on how one counts from the original three that split off into more boulders) glacially deposited large boulders within the boundaries of the national monument. They are held to be sacred by many American Indians. Prehistorically, several petroglyphs on Sioux quartzite slabs were associated with the Three Maidens. Charles H. Bennett removed the petroglyphs from their original location around the Three Maidens in 1888 and 1889. Nineteen quartzite slabs featuring many petroglyphs are now part of the national monument's museum collections, as is described in more detail below (p. 120).

In general terms, a tradition of placing offerings is associated with the Three Maidens and

may go back to prehistoric times. Ethnographically today, some American Indian individuals sometimes place at the Three Maidens pieces of sage, bundles of tobacco, and other offerings of personal items or food.

Origin stories about how certain American Indian peoples came to be on earth are associated with the Three Maidens rock formation, as well as similar stories about the symbolism of the rock formation itself. Origin stories also are associated with Winnewissa Falls and nearby Old Stone Face / Leaping Rock and The Oracle, which are aspects of the same rock formation. Offerings of sage and tobacco and other items are seemingly just as likely to be found around Winnewissa Falls, Old Stone Face / Leaping Rock, and The Oracle as at the Three Maidens because of similar sacredness. Offerings may be left all over the national monument.

Sweat lodges, vision quests, and quarrying, with accompanying rituals and ceremonies, constitute the major cultural uses of the national monument within the category of ethnographic resources. The national monument is one ethnographic resource and landscape, with ethnographic elements such as the quarries, the Three Maidens, Winnewissa Falls and the related formations of Old Stone Face / Leaping Rock, and The Oracle.

In national register terms, no ethnographic resources have been identified per se as traditional cultural properties eligible for listing or listed in the National Register of Historic Places. Additional consultations with American Indians should be conducted by NPS personnel who are alert to this possibility. That is, attention should be paid to the specific possibility of amending the existing national register nomination form by adding traditional cultural property language. As noted elsewhere in this document, Pipestone National Monument, with the Three Maidens as a contributing element, is already listed in the National Register of Historic Places.

HISTORIC STRUCTURES AND CULTURAL LANDSCAPES

National Register of Historic Places Listings

The house of the superintendent of the Pipestone Indian School (1890–1953) was listed in the National Register of Historic Places on April 5, 1993. It is an early 20th century two-story structure built in 1907 of local Sioux quartzite. The architect was R. K. Hafsus. The house sits on the grounds of what today is the Pipestone Campus of the Minnesota West Community and Technical College. A few years ago the state of Minnesota transferred title to this historic property to the Keepers of the Sacred Tradition of Pipemakers. This American Indian organization, founded in the town of Pipestone in 1996, would welcome preservation help for the structure, which is moldering in poor condition and will continue to deteriorate unless it is stabilized or more beneficially rehabilitated.

The October 15, 1966, listing of Pipestone National Monument in the National Register of Historic Places is for the entire national monument. It emphasizes the cultural importance of catlinite quarrying, with many contributing elements such as the quarries themselves, Winnewissa Falls, and the rock formations known as the Old Stone Face / Leaping Rock, the Oracle, and the Three Maidens. The need is noted to update the National Register of Historic Places nomination form to integrate salient ethnographic, landscape, archeological, and historic features not included in the existing nomination. Also please note that some of the resources of Pipestone National Monument have "double coverage," so to speak, in that the Pipestone petroglyph slabs and their petroglyph contents are contributing elements of a multiple property district based on the theme of American Indian rock art in the state of Minnesota. This was listed in the National Register of Historic Places on November 14, 1996 (Dudzik 1995a, 1995b).

Eligibility for National Register of Historic Places

As part of the general management plan process, cultural resource specialists in the Midwest Regional Office of the National Park Service have evaluated the Mission 66 development at Pipestone National Monument for eligibility for listing in the National Register of Historic Places. They determined that the visitor center, the parking lot, the entrance road, aspects of the interpretive Circle Trail, and the two houses north of the Three Maidens rock formation meet the national register criteria for historic significance plus those for exceptional significance for properties less than 50 years old. The Minnesota state historic preservation office concurred with this determination of eligibility on June 30, 2003, in a letter to the superintendent of the national monument. These historic features are being treated as eligible, and it is anticipated that a nomination to the National Register of Historic Places will be forthcoming, perhaps as an amendment to the existing 1966 listing of the national monument as a whole.

No Historic Cultural Landscapes Documented

No historic cultural landscapes have been documented at Pipestone National Monument through cultural landscape reports or inventories. A cultural landscape is identified and determined eligible for the National Register of Historic Places concurrently by the National Park Service and the state historic preservation officer. An NPS database known as the Cultural Landscape Automated Inventory Management System (CLAIMS) is an evaluation and documentation process for reaching a determination of national register eligibility. Some units of the national park system have used the CLAIMS process to identify preliminarily potential cultural landscapes for further study. The National Park Service has not so identified any potential cultural landscapes for Pipestone National Monument. However, suggested here is a preliminary list of historic contexts that might guide future thinking about potential cultural landscapes.

This list is intended only to stimulate further work. Any cultural landscapes implied here through historic contexts would be in the "potential" category because they are like topics to be considered on the subject when more information is available and further discernment is possible. The list is not intended to substitute for CLAIMS consideration, not even at an initial level, which in CLAIMS terminology would be the 0 (zero) level of inventory entry, nor is it intended to substitute for a much-needed cultural landscape study. Further study of cultural landscapes will be called for through an implementation plan after this *General Management Plan* is completed.

A separate study will be undertaken to determine whether all or parts of Pipestone National Monument meet the definition of a cultural landscape. It is also possible that an ethnographic component exists at the national monument. Such a designation could affect the activities now undertaken at the national monument and could change the way it is managed. Preliminary data have been incorporated into this draft plan. Should the study be completed before the plan is finalized, it will be incorporated into the plan.

The national monument is considered one resource and landscape in the passages below. A narrative suggests cultural landscape periods indicative of continuity and change over time.

Landscape Setting

On the north central plains, Pipestone National Monument is situated on the western slope of the divide between the drainages of the Missouri and Mississippi rivers. It straddles the valley of Pipestone Creek, which is a tributary of the Big Sioux River. The landscape of Pipestone National Monument and the surrounding area are gently rolling, with a

scattering of rock outcrops. Along the boundaries of the national monument are farmlands and development. Before the settlement period, tallgrass prairie and associated plants were prevalent. This vegetation still exists in several areas within the boundaries. As European–Americans moved to the region, farmlands along the edges of the quarries began to intrude on the tallgrass prairie. The CCC period in history brought the planting of several tree plantations and landscape planting work along a portion of the creek, as well as in several other areas.

Historic Contexts

The following list of suggested historic contexts can in turn be used to suggest potential historic cultural landscapes. Please note that the landscape before European–American settlement, emphasizing the importance of the native tallgrass prairie, is described under "Ethnographic Resources," beginning on page 108.

- **European–American Settlement (1870s–1890s).** The completion of a public lands survey of the Pipestone area in 1870 inaugurated a new era in settlement. By September of that year, the public domain in the area was being claimed by homesteaders. The disturbance of remnant farmlands could be contrasted with unspoiled remaining remnants of tallgrass prairie.
- **Railroad Era (1884–1967).** As is described in more detail in the "Ethnographic Resources" section below, a railroad ran through the area that is now Pipestone National Monument from 1884 to 1967, influencing the quarrying environment. An abandoned railroad bed with neither railroad ties nor tracks is evidence of this period.
- **Pipestone Indian School (1890–1953).** Circa 1908–1912, the Indian school caused Winnewissa Falls to be reduced by several feet in a successful effort to increase the amount of farmland upstream, as was described on page 111. The school administered the CCC unit that created trails and bridges in the national monument and also influenced CCC work in creating tree plantations.
- **Civilian Conservation Corps Era (1933–1942).** The extant landscape features include trail bridge and trail work in what is now the national monument. There are possible remnants of tree plantations, and there is evidence of no longer extant dams built to influence the flow of Pipestone Creek.
- **Mission 66 (1957–1969).** Mission 66 was the largest capital development program ever executed in the history of the national park system. The Mission 66 program built the physical plant at Pipestone National Monument, including the 1957–1958 visitor center. Highlights of the program were the centralization of functions, the circulation of visitors, and the presence of modern facilities to serve visitors and NPS staff. At Pipestone, orienting first-time visitors was the emphasis of the program, which also included staff housing and maintenance facilities. Another development began in the late 1960s that was directed toward creating a climate of inclusion, and the visitor center was expanded to include a cultural center, which was completed and dedicated in 1972. Trail concepts and construction were modified to fit the Mission 66 philosophy of centralizing and circulating. This development still is functioning and intact.

MUSEUM COLLECTIONS AND ARCHIVES

In the past, three themes predominated at Pipestone National Monument for interpreting the national monument and guiding collections management. To paraphrase, these three dealt with the following topics:

1. the cultural, social, religious, and economic importance of the Pipestone quarries

2. the geology of the quarries
3. the natural history of the national monument

Two themes were added later, and the wording was changed. The current five interpretive themes are delineated in a list beginning on page 24. To paraphrase, those themes deal with the following topics:

1. the pipes themselves in the context of their important ceremonial, religious, and secular roles in American Indian life
2. the ancient and continuing process of hand quarrying the catlinite pipestone
3. the cultural and natural landscapes that reflect what is now the national monument as a sacred and spiritual place for American Indians
4. the national monument as a special gathering place for American Indians over time
5. natural resources that provide a setting for certain cultural resources, as well as a tallgrass prairie ecosystem, the remnant of which may be relatively small but is an excellent example of undisturbed tallgrass prairie

The Number and Nature of Collections

The purpose of the museum collections and archives is to support the national monument's interpretive themes and to assist in research and resource management programs. The national monument's museum collections total some 54,324 catalogued items.

The ***cultural history collection*** draws upon three disciplines, as follows:

- **Archeology with Archives.** This category consists of artifacts and other specimens collected primarily during archeological surveys by Paul Beaubien in 1949 and John Sigstad in 1965–1966. The archival records are associated with papers that document the archeological excavations and collections. There are some gaps in this category.
- **Ethnography.** The category of ethnography encompasses artifacts, materials, and objects that represent the pipe culture and other interpretive themes involving the following tribal groups: Omaha, Ponca, Ojibwa, Sac and Fox, Winnebago, and Sioux. Future collections will be focused on items made from catlinlite pipestone, but also artwork, quillwork, beadwork, leatherwork and other items of material culture. Some American Indians have expressed concern about the display and sale of pipestone articles; this is discussed further in appendix A. The disposition of ethnographic objects to American Indians follows NPS guidelines on the return or repatriation of items from the national monument's collection, similar to such considerations under the Native American Graves Protection and Repatriation Act (NAGPRA).
- **History with Archives.** The "history with archives" collection comprises documents, photographs, and objects that relate to the establishment of the national monument. It also includes paintings on linen from the 1880s, D. F. Barry photos of famous people like Sitting Bull, and paintings with American Indian themes. The national monument's collection recognizes gaps in the photographs available, the need to secure materials about the history of the Pipestone Indian School, and the role played by its administrators. The latter influenced how the area was developed before Congress designated Pipestone National Monument in 1937. The collection also needs materials related to the pipemaking community in Flandreau, South Dakota, after the turn of the 19th to the 20th century.

The ***natural history collection*** is guided by the national monument's scope of research and interpretive themes, as well as by National Park Service guidelines. Economy of choice is

a factor, too, given the lack of adequate curatorial and storage space, that is, of preservation facilities for museum collections.

The natural history collection draws mainly upon two disciplines, botany and geology, but it also includes entomology. The national monument has a fairly large insect collection that is housed in the resource operations building in a museum cabinet but with no environmental controls or monitoring.

- **Botany.** The botany category consists of lichens collected by T. W. Vinyard (Wilson and Vinyard 1984) and two vascular plant collections, one collected by Dennis Disrud (NPS 1966) and the other by Donald A. Becker (Becker, Bragg, and Sutherland 1986). Moss, liverworts, and fungi still are needed for the plant collection. The commitment is to establish a permanent database about native versus exotic plants to compare and assist with the restoration of the prairie. The category could conceivably be larger, to include zoology along with botany under biology, but no animal species are stored or have been stored in the national monument. However, with the new NPS Vital Signs Inventory and Monitoring (VSIM) initiative, more natural biological species may be added to the national monument's collection. The housing of the specimens is yet to be determined; that is, whether it will be at the national monument or in another facility.
- **Geology.** The geology category comprises approximately a dozen catlinite, quartzite, and granite samples that are on exhibit. The commitment here is to collect catlinite pipestone, Sioux quartzite, and non-catlinite pipestone samples from other sources for comparison purposes to reflect the national monument's thematic focus.

The national monument controls ***special collections***, which are outstanding in their historical importance. They focus on catlinite pipes or other pipestone objects, and they include other objects of American Indian material culture. The dates that can be ascertained range from 1850 to 1930. The collections are as follows:

- **The James H. Austin Collection** contains objects of material culture made by local American Indians at the turn of the 19th–20th century. Objects have been traced to more than 25 different tribal groups in the Upper Plains.
- **The Edward Butts Collection**, which was acquired in 1964, consists of a number of valued pipes that reputedly belonged to various Upper Plains Indian chiefs of the 19th and 20th centuries. (Many of these have been identified as NAGPRA items — see p. 117).
- **The Albert Heath Collection,** like the Austin collection, contains a number of pipes representative of various Plains Indian tribes of the 19th and 20th centuries.
- **The James N. Gundersen Collection,** acquired recently in 2004, contains samples of catlinite and other types of pipestone. This collection shows how pipestone pipes or other pipestone objects can be traced through mineral analysis to the catlinite of Pipestone National Monument or to other quarries of other source pipestone. The collection is now housed in Lincoln, Nebraska, to be catalogued at the NPS Midwest Archeological Center on behalf of the national monument.

Collections Management

Museum records and collections that are not on display are kept in the "clean room" in the back of the visitor/cultural center. This room is an insulated modular structure. Access to the clean room is strictly limited and controlled, and anyone who enters the clean room must write his/her purpose and use of the room in a logbook.

The state of preservation of the museum collections ranges from fair to excellent. No objects have been found to need urgent attention by a conservator. Museum records are kept in a four-drawer fire-rated filing cabinet with a key lock.

There is no cultural resource specialist or museum curator on the staff of Pipestone National Monument, which makes it difficult for the national monument to meet NPS requirements for the management of collections and the museum. Curatorial tasks such as reconciling museum records and upgrading storage are the responsibility of the resource program manager. There is no scheduled program for documenting changes in the conditions of the objects.

Storage and exhibit space limitations restrict additions to the ethnographic and history collections.

The Clean Room and Museum Storage. The clean room has been the sole collection storage area for approximately 14 years. Its exterior dimensions are 14′ 6″ x 8′ 9″, and its interior dimensions are 13′ 9″ x 8′ 7″. A sealed locked door is situated at one end, and there are no windows. There is an electrical outlet inside, near the door. The lighting is fluorescent, and the lights are turned on only while someone is in the room.

Approximately two-thirds of the national monument's objects are stored in the clean room. It is not used for noncuratorial activities. There is no environmental control equipment to control the climatic conditions inside. The available space in the clean room is adequate to meet current storage needs; working in this space without leaving the door open is difficult. All items are stored in standard metal cabinets or placed on a storage rack.

The condition of the objects in the clean room varies from fair to excellent. The national monument's 1996 "Collections Management Plan" gives details about the specifics of the varying conditions for items in the clean room.

Security. The exterior and interior of the visitor center are protected by a security system, but the clean room is not protected by a separate security alarm. Many of the enclosed displays on exhibit are under a security system. No theft of museum objects has been reported, but over the years there has been some vandalism of exhibits on display in the museum part of the visitor center.

Fire Protection. A general agreement was completed in 2001 between the Pipestone Volunteer Fire Department and Pipestone National Monument. A fire detection system at the national monument consists of ionization type smoke detectors (one is inside the clean room), which are linked via telephone line to an offsite central monitoring station. There is no automatic buildingwide fire-detection and fire-suppression system. Handheld fire extinguishers are located throughout the visitor center. There is a fire-resistant filing cabinet for collections records in the clean room. No hazardous materials are stored in or near the clean room.

Temperature and Relative Humidity. A digital datalogger in the clean room is checked monthly for changes in temperature and humidity. Additional dataloggers have been placed in the museum; they are monitored monthly.

Light. Many light-sensitive objects on exhibit are exposed to excessive light levels. There is no way to monitor the light levels, because the national monument has no light meter.

Ultraviolet Radiation. Some steps have been taken to protect against ultraviolet radiation, such as placing UV-filtering sleeves on fluorescent lamps, but not all fluorescent lamps in the museum have these protective sleeves. The national monument has no instrument to test periodically for UV radiation.

Dust and Pollution. Live demonstrations of pipemaking in the cultural center have created an indoor air pollution problem. Two sets of particulate filters in the heating, ventilating, and air conditioning system collect catlinite-pipestone dust, although they are not designed for this purpose. This system does not effectively collect all the dust particles, and the staff spends much time trying to clean up the pipestone dust throughout the visitor center, including the museum collections. However, this does not pose a health risk, according to the results of tests completed in 2001 by a U.S. Department of the Interior health inspector (USDI, Off. of Sec., Off. of Occup. Safety and Health 2001).

Pest Management. The area around the clean room and collections is well maintained, which decreases the likelihood of pests entering the clean room. However, pests can get into museum displays through the lighting panels in the display units. Steps have been put in place to follow the provisions of the national monument's 2003 "Integrated Pest Management Plan."

Curatorial Workspace. There is no workspace dedicated to curatorial activities. Individuals working on collections need to find a vacant desk to complete tasks. Many actions that normally would be done in a curatorial workspace are often completed in the clean room.

Museum Exhibits. Collections are exhibited in the visitor center and the Upper Midwest Indian Cultural Center and associated gallery. The cultural center was constructed in 1972 as an addition to the visitor center.

Exhibits in Visitor Center. There are a number of wall-mounted exhibit cases, a free standing case, interpretive panels, and a diorama. These exhibits, which are more than 45 years old, do not meet current curatorial and conservation standards. They are poorly designed, and there is poor accessibility for lamp maintenance and housekeeping. There is a concern about whether the mounting technique of pipes is culturally appropriate. Another concern is about the adequacy of the temperature and humidity controls for the artifacts on display.

The historic pipes on display are in good condition. The metallic components of the pipes have oxidized, although there are no signs of copper-based corrosion. Some porcupine quills have faded over time. The diorama is in good condition, and the geologic features are stained and superficially polished from handling by visitors over time.

Upper Midwest Indian Cultural Center

Two areas in the Upper Midwest Indian Cultural Center provide exhibit space. The area in front of the demonstration booths consists of a free-standing exhibit case for a mounted golden eagle, two eagle feather headdresses, and a feathered staff and the contemporary artwork mounted on the walls. The headdresses, feathered staff, and mounted golden eagle are in good condition. The second area is the gallery, which contains many wall-mounted cases that surround a free-standing cylindrical exhibit case in the center of the room. The cases contain a variety of pipestone carvings and beaded leather objects that are in good condition. Some of these objects are on loan to the national monument.

Petroglyphs

A Pipestone resident and businessman, Charles H. Bennett (1846–1926), removed more than 30 petroglyph slabs from around the Three Maidens in 1888 and 1889. By 1946, 17 of these Three Maidens petroglyph slabs had been donated to the national monument by the Pipestone Old Settlers Society, the group to which Bennett had willed them. Bennett founded the Old Settlers Society in 1888 for historic preservation. It became the Pipestone County Historical Society in 1963, when it was incorporated as a nonprofit educational organization. The national monument owns two more similar (but not Three Maidens)

petroglyph slabs (Dudzik 1995a; Thiessen 2002; Thiessen and Bailey 2000).

At one time the petroglyphs were just outside the visitor center along the south leg of the Circle Trail; later they were moved into the visitor center for better protection. The petroglyphs do not appear to have suffered from the annual freeze/thaw cycles while they were outside, although some have suffered from vandalism when visitors have marked on them. In their present location in the cultural center, the petroglyph slabs are minimally protected, but visitors are constantly warned not to handle, stand, walk, or sit on them. A condition assessment of the petroglyphs has been completed, and the national monument staff is working on a contract to interpret, protect, and display them. Affiliated tribes have been invited to provide input on this project.

NATURAL RESOURCES

SETTING

The most significant natural resources of the national monument are the Sioux quartzite rock formation with associated pipestone (catlinite), 20 acres of associated Sioux quartzite prairie, 160 acres of remnant tallgrass prairie, Pipestone Creek, including Winnewissa Falls, and the glacial boulders that make up the Three Maidens.

A number of studies and research about the national monument's natural resources have been conducted — surveys of plants, lichens, birds, small mammals, insects, reptiles, amphibians, and fishes. In addition, the national monument has a mammal species list derived from observations and aquatic macroinvertebrate monitoring data. The German scientist Karl Geyer, who was part of the Nicollet expedition to the Pipestone region in the 1800s, derived the first botanical description of the Pipestone region. His journal is stored at the Smithsonian Institution in Washington, D.C.

In the late 1980s the U.S. Geological Survey conducted an evaluation of the pipestone resources at the national monument. Additional research has been completed on the mineralogical characterization of the pipestone.

SIOUX QUARTZITE ROCK FORMATION

There are several unique geologic features at Pipestone National Monument — the Sioux quartzite outcrops, the pipestone or catlinite, and the large glacial boulders known as the Three Maidens. The Sioux quartzite outcrops affect the national monument's vegetation.

Sioux quartzite, old metamorphosed sandstone, is the national monument's dominant geologic feature. The rock is exposed in many places in the upper Midwest region (Minnesota, North Dakota, Iowa) as well as in the national monument. It forms a prominent escarpment (cliff face) trending south-north through the eastern part of the national monument. The escarpment ranges from a few feet to 20 feet. The quartzite is very hard, rosy pink in color, and highly jointed. Pipestone (catlinite), a soft red clay stone, is found in layers sandwiched between the quartzite seams more than 10 feet below the surface. Glacial markings are found on many of the exposed quartzite rocks, and large blocks of talus lie near the base of the escarpment.

The Sioux quartzite is also exposed to a lesser degree in other areas of the national monument. A low escarpment bisects the southern part of the national monument from near Lake Hiawatha to the entrance road. Other smaller outcrops occur along Pipestone Creek and along intermittent drainages or small scour basins scattered about the national monument.

VEGETATION

Sioux Quartzite Prairie

The outcrops make a unique habitat for many plant species not found elsewhere in the prairie; therefore, this group of species is known as the Sioux quartzite prairie. They are described as follows in the memorandum of understanding between the National Park Service and the Minnesota Natural Heritage register:

> A distinctive assemblage of plant species, ranging from xeric to hydric, is associated with the various microhabitats found on Quartzite rock surfaces. The endangerment status of this natural community type has not been determined. The rock outcrop flora, however, appears to be fairly well protected from threat due to its unsuitability for other uses.

The Sioux quartzite prairie at Pipestone National Monument represents one of the least

disturbed examples of this rare community type globally (NPS 2001a). The Nature Conservancy has designated the 20 acres of Sioux quartzite prairie type as "endangered throughout its range" and cites the pipestone outcrops as one of the few intact examples of this rare community type. The combination of water-retaining swales and the arid environment of the thin soils results in the outcrops supporting many species at the eastern edge of their range. Prescribed fire and manual exotic weed control are employed as management tools in this community. The memorandum of understanding between the National Park Service and the Minnesota Natural Heritage register says the following:

> Sioux Quartzite . . . . Prairies display diverse species assemblages within small geographic areas due to the varied depth of the bedrock which determines soil depth and moisture availability. A range of dry to wet-mesic prairie is commonly found on Quartzite prairie areas. The Natural Heritage Program considers the Sioux Quartzite Prairie landform to be threatened in the state. Examples which maintain their presettlement features are now limited to a few small areas. Much of the original tall grass prairie found on Sioux Quartzite bedrock has been converted to pasture. Intensive grazing has resulted in replacement of the native prairie flora with weedy invaders. Quartzite prairie has also been destroyed by cultivation in areas where Quartzite exposures are less numerous and cropping is feasible. The remaining intact Sioux Quartzite Prairies typically have had a history of light grazing or annual mowing for hay.

Remnant Tallgrass Prairie

The remnant tallgrass prairie (160 acres) surrounding the pipestone quarries is a part of the once extensive Coteau des Prairie, or high prairie. The tallgrass prairie at Pipestone supports more than 500 native vascular plant species, including the western prairie fringed orchid, federally listed as threatened. Most of the prairie in North America has been converted to agricultural uses, leaving only small, isolated undisturbed remnants such as the one at Pipestone. Presettlement estimates for tallgrass prairie nationwide are 100 million hectares, of which only 1/10 of 1% remains. Of the 1/3 of Minnesota that once was covered by tallgrass prairie, less than 1% remains. Historically, much of the prairie was treeless because large wildfires occurred at frequent intervals. Prairie restoration activities at Pipestone, such as exotic weed control, prescribed burns, collection of seed, and reseeding, are making progress. The tallgrass prairie community is culturally significant as the historic background of the pipestone quarries. More recently the prairie has become recognized as significant to regional biodiversity (NPS 2001a).

Restored Tallgrass Prairie

The restored tallgrass prairie plant community covers an area where tallgrass prairie has died out and been replaced with exotic species such as smooth brome and bluegrass. Plant species that have been introduced to an area by humans rather than through natural migration are termed exotics. Plant species, both exotics and natives, are considered weeds when they interfere with human activities or welfare. Tallgrass prairie is being restored at the national monument by reducing the number and extent of exotic plants and reseeding areas with native seed of tallgrass prairie plants. To protect the genetic strains of species in the national monument, all seeding is done with seed collected in the national monument.

A goal of the national monument is to maintain and restore the vista that historically surrounded the Pipestone quarries while retaining the biodiversity of the tallgrass prairie. A component of this goal is the restoration of tallgrass prairie communities. Prescribed burning was first used in prairie management at the national monument in 1971, and since

then sections of Pipestone have been burned each year. The national monument has been divided into quadrants, and one quadrant is burned each spring on a rotating basis. These burns have been highly successful in restoring the dominance of native prairie species such as big bluestem in some areas of the national monument. Burning has not eliminated weeds such as Canada thistle or sweet clover and some difficult areas of introduced pasture grasses such as Kentucky bluegrass. In addition to prescribed fires and the manual removal of exotics, some spot spraying with approved chemicals has been used, as well as mowing.

Restoration efforts in the 1990s focused on introducing native grass and forb species into smooth brome (exotic) dominated fields. Exotics and persistent weeds predominate in formerly cultivated land, along the old railroad right-of-way, and in other disturbed areas. Vegetation in these areas consists of several exotic pasture and lawn grasses and legumes, including smooth brome (*Bromus inermis*), red clover (*Trifolium pratensis*), and Kentucky bluegrass (*Poa pratensis*), plus weedy species such as white and yellow sweet clover (*Melilotus alba* and *M. officinalis*), quackgrass (*Agropyron repens*), leafy spurge (*Euphorbia esula*), Canada thistle (*Cirsium arvense*) and musk thistle (*Carduus nutans*).

An alien plant ranking system (APRS) "helps identify those species that have the most serious impact — those on a site of limited distribution or off site with a high potential to invade . . ." (Hiebert 2001). Such a study done for Pipestone found 70 alien species at the national monument, with 11 of them requiring management. The current plant database for the national monument lists more than 90 exotics. The plants of greatest concern are common buckthorn (*Rhamnus carthartica*), leafy spurge, and smooth brome. Of somewhat less concern are yellow sweet clover and musk thistle and reed canary grass (*Phalaris arundinacea*). The national monument's active exotic weed control program tracks the number of exotic weeds that are removed annually.

Since 1993 Pipestone National Monument has been part of the Prairie Cluster Long-Term Ecological Monitoring Program, now the Heartland Network Inventory and Monitoring Network. This program has established monitoring at the national monument for the tallgrass prairie ecosystem and sensitive plant species. Results from the monitoring provide valuable information for making management decisions relating to prairie restoration.

Oak Savanna/Woodland Areas

In addition to the Sioux Quartzite prairie, remnant tallgrass prairie, and restored tallgrass prairie described above, woodland areas are of interest in planning. The wooded areas at the national monument are primarily along the stream corridor and along the escarpment. These areas have become more dominant since European settlement and the exclusion of fire on the landscape. The national monument controls the expansion of the wooded areas into the prairie through the use of prescribed burns, but the prescribed fires are not intense enough to remove the well-established trees in these areas.

WETLANDS AND RIPARIAN CORRIDOR

The National Wetlands Inventory and map shows no wetland in Pipestone National Monument; however, the national monument does contain wetlands. The state of Minnesota has prepared wetlands maps for the state. However, they provide less detail about wetland areas at the national monument than the "Prairie Management Plan" prepared for the national monument (Becker, Bragg, and Sutherland 1986). No survey of jurisdictional and other wetlands has been prepared for Pipestone National Monument.

The "Prairie Management Plan" for Pipestone National Monument found that wetlands — including Pipestone Creek, ponds, intermittent drainageways, and marsh — occupy about 8% of the national monument (Becker, Bragg,

and Sutherland 1986). The exotic reed canary grass dominates the shorelines of Pipestone Creek, Lake Hiawatha, and other ponds along the stream. It also dominates two deep wetland basins along the eastern boundary. More than 30 years ago it was observed that the shoreline of Lake Hiawatha was dominated by Carex, Scirpus, Calamagrostis, Cicuta, and Asclepias (Stevens 1969). A comparison of floristic studies from 1967 and 1982–83 indicates that it is likely that 40 native plant species of the national monument were extirpated. Approximately 75% of those species were wetland species.

The area near the southern part of the eastern boundary still contains wetlands in apparent natural condition, which are dominated by cordgrass, sedges, rushes, and hydric forbs. In many areas in the national monument, small scour ponds or ephemeral pools are located in drainageways where the outlets are controlled by rock outcrops. Many of these ponds and drainageways have been heavily grazed in the past and have been invaded by quackgrass and smooth brome, but those in the tallgrass prairie north and east of the main road contain many native wetland species.

FLOODPLAINS

The Federal Emergency Management Agency mapped the floodplains at Pipestone National Monument in 1991. The resulting flood insurance rate map shows about one-third to one-half of the national monument in the 100-year floodplain, but no base flood elevations are determined. Base floodplain elevations have been determined for a small portion on either side of Pipestone Creek (Main Ditch) above the falls on the eastern side of the national monument. The 100-year floodplain is on either side of Pipestone Creek. An area about 250 feet wide along the eastern boundary of the national monument, which extends from 9th street to about 250 feet north of the Main Ditch, is within the 100-year floodplain, with base flood elevations calculated at 1,718–1,719 feet. The rest of the national monument lies within the 500-year floodplain or areas of 100-year flood, with average depths of less than 1 foot, or with drainage areas less than 1 square mile.

The visitor center / headquarters is in the 100-year floodplain area, for which no base flood elevations were determined. The employee housing is outside the 500-year floodplain, although floodwaters have been known to come inside the houses. The maintenance outdoor equipment storage area is in the floodway of the Main Ditch. It appears that most of the western part of the USFWS property north of the national monument would be in the 100-year floodplain, although the map does not show this. The private property on the south side of the national monument appears to be outside the 500-year floodplain, or areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile.

Flash flooding in the national monument along Pipestone Creek occurs relatively frequently following heavy rainfalls, the quick melting of accumulated winter snows, or a combination of rainfall on already saturated ground. The situation is exacerbated by the fact that much of the national monument is underlain by rock layers that make it difficult for water to drain into the earth. Instead, water forms a sheet that drains across the national monument to the west. In particularly bad floods, water can come over the escarpment in places other than Winnewissa Falls, causing major damage to resources such as trails. The bridge at Winnewissa Falls has been regularly damaged during floods.

Frequent flash-flooding causes several adverse impacts. Sediments have nearly filled Lake Hiawatha, and less than 2 feet of water storage is left in the lake. Aquatic macroinvertebrates on rocks in the stream are also dislodged, resulting in reduced stream productivity. In the floodplain; biota are exposed to chemical pollutants, and debris detracts from aesthetics of the site.

HYDROLOGY

Pipestone Creek enters the national monument from the east, cascades over the Sioux quartzite escarpment as a waterfall, and flows into a small impoundment. From there it meanders northwesterly across the glacial valley until it exits the north boundary. Above the falls, the creek was channelized in the early 1900s to help drain agricultural lands and decrease the chance of flooding upstream. It now flows well below its original creek bed. The channel to the falls, which is roughly 21 feet wide and 5 feet deep, drains approximately 30,000 acres of land. Pipestone Creek starts upstream about 13 miles and eventually flows into the Lower Big Sioux River. According to measurements taken in 1984, the discharge of the creek ranges approximately from 1 to 88 cubic feet per second (cfs).

More information about Pipestone Creek's water quality is available under "Water Quality" in the section on "Impact Topics Considered but Dismissed from Further Consideration" (see page 18).

SOILS

Soils in the national monument are derived from glacial-derived tills, loess, and alluvium. The Sioux quartzite is too hard to weather significantly. During glaciation, till was initially deposited over the bedrock to depths of a few inches to 10 feet thick. Later, as the glacial ice advanced and waned along the Coteau edge to the east, wind-blown sediment was transported to the Coteau and covered most of the thin till by about 1–6 feet of loess. Large boulders, or glacial erratics, were transported to the national monument by the glacial ice from granite bedrock areas along the Minnesota Valley to the north. The Three Maidens are the largest of these deposits. Small amounts of glacial outwash buried by loess are found in the national monument just east of the escarpment. Alluvium transported from upstream parts of the watershed is found along the Pipestone Creek floodplain. (Ojakangas and Matsch 1982; NPS 1983).

The soils in Pipestone National Monument are variable in depth, fertility, and productivity. Thirteen soil types have been mapped in the national monument (USDA, SCS 1976). They generally have medium to high erosion hazard. The land on which the visitor center and houses were built is somewhat limited for the construction of buildings without basements because of the shrinking and swelling of the soil and because the bedrock is near the soil surface.

WILDLIFE

Many mammals have been extirpated from the area, including bison, wolf, elk, and Richardson's ground squirrel. Among birds formerly known in the national monument, the whooping crane and McCown's longspur are now considered extinct in Minnesota (Minn. DNR 1973).

Native species observed at the site are white-tailed deer, white-tail jackrabbit, eastern cottontail, woodchuck, striped skunk, raccoon, badger, red fox, thirteen-lined ground squirrel, pocket gopher, eastern mole, woodland and prairie deer mice, voles, shrews, and weasels. Mink, muskrat, and beaver also have been observed near streams and lakes. Harvest mice and prairie voles were captured by Snyder (1986).

Birds are abundant in the national monument; well over 100 species were recorded in a 1984–85 study (Snyder 1986). Winter or resident birds include juncos, tree sparrows, bluejays, downy woodpeckers, and chickadees. Common summer birds are robins, brown thrashers, bobolinks, meadowlarks, nighthawks, kingfishers, goldfinches, yellow warblers, red-winged blackbirds, mourning doves, mallard ducks, and blue winged teal. The nonnative ring-necked pheasant and wild turkeys also are present. Great blue and green-backed herons and American woodcock also

can be observed at times. Migrant birds are numerous in spring and fall.

Reptiles known to occupy the national monument are snapping and painted turtles, prairie skinks, and garter snakes. Leopard and chorus frogs are found in or near water bodies, as is the tiger salamander. The American toad can be found throughout the national monument.

Fish observed in the creek and lakes include northern pike, white sucker, sunfish, bullheads, and bass. Various minnows and shiners, including the Topeka shiner (federally listed as endangered), also can be found here.

The Prairie Cluster Long-Term Ecological Monitoring Program has been actively monitoring macroinvertebrates in Pipestone Creek since 1997 as indicators of stream health and water quality.

Development in the national monument and the presence of visitors and employees interrupt wildlife habitat and alter wildlife movement.

THREATENED OR ENDANGERED SPECIES AND SPECIES OF SPECIAL CONCERN

The western prairie fringed orchid (*Platanthera praeclara*) was federally listed as a threatened species in 1989. A recovery plan for the species was written and approved by the U.S. Fish and Wildlife Service in 1996. It occurs in scattered, usually small populations (fewer than 250 individuals) in moist prairies in Nebraska, Kansas, Missouri, Iowa, Minnesota, North Dakota, and Manitoba (USFWS 1996). The western prairie fringed orchid is threatened by the loss of tallgrass prairie to cropland, fragmentation of remaining prairie, the obstacle that croplands present to the free movement of hawkmoths (orchid pollinators) between orchid populations, and pesticide drift from nearby cropland, which can kill hawkmoths. The long-term survival of this tallgrass prairie species requires both protecting its habitat and ensuring the survival of the orchid's only pollinator, the long-tongued hawkmoth.

The western prairie fringed orchid, which was not identified at Pipestone National Monument until the early 1990s, is found in a wet prairie/sedge meadow community. To determine the possible effects of management actions such as prescribed fire and climate variations on the orchid population, a monitoring program was initiated at Pipestone in 1993 as part of the Prairie Cluster Long-Term Ecological Monitoring Program. The objective of the orchid monitoring is to report annual trends in the status and distribution of the population based on a count, maps of flowering plants, and demographic study of marked plants.

The annual numbers of flowering plants have ranged from 0 to 221 (in 2003). At Pipestone, the results of demographic monitoring of marked plants suggest that late spring fires can detrimentally affect that year's flowering population, although three years later the highest flowering count was made. The national monument staff has determined that the orchid population will not be burned in the late spring to avoid damage to orchids that have emerged. There is no designated critical habitat for this species.

The endangered Topeka shiner (*Notropis topeka*), found in prairie rivers and streams, is known to occur in the national monument. In 2001, the Long-Term Ecological Monitoring Program initiated monitoring for the Topeka shiner following guidelines established by the U.S. Fish and Wildlife Service. Critical habitat, including Pipestone Creek within the national monument, has been identified. The critical habitat would be affected by some actions described in this plan.

The state of Minnesota maintains a list of endangered, threatened, and special concern species. The list for Pipestone is in table 1, page 22.

Most of the state-listed species at Pipestone are associated with the Sioux quartzite prairie. See Appendix C for more information about these species.

VISITOR USE AND EXPERIENCE

EXPERIENCING THE RESOURCES

At present most visitors approach the entry road to Pipestone National Monument by traveling north from the town of Pipestone along U.S. Highway 75, then turning west onto 9th Street NE, which becomes Reservation Avenue in the national monument. Many visitors stop at the Three Maidens area to learn about the significance of this rock formation from the wayside exhibit near the parking pullout. Some visitors who stop here also use the picnic tables.

Farther down the entrance road, signs direct visitors to the visitor center and its parking area. These directional and identification signs note that the national monument is a U.S. fee area and that an entrance/user fee is collected inside the visitor center.

After paying their entrance/user fees at the visitor center information desk, many visitors look through the national monument's exhibit area and see the audiovisual program. Between April and October, craftworkers demonstrate pipemaking in the Upper Midwest Indian Cultural Center in the back of the visitor center, using stone from the Pipestone quarries. Almost all visitors go to the visitor center to see these demonstrations. Many visitors buy pipes, other craft items, and educational materials from the gift shop in the cultural center. The gift shop is operated year-round by the Pipestone Indian Shrine Association, the national monument's cooperating association.

After seeing the visitor center and demonstration area (which shows pipestone, the national monument's premier resource, being made into pipes and other craft items), visitors are ready to experience first-hand the national monument's other resources.

FREEDOM TO GO AT ONE'S OWN PACE

Nearly all the opportunities for visitors to experience can be enjoyed at each visitor's own pace. Visits by school classes and other educational groups are more structured because of school and bus schedules and because of the timing of some of the curriculum-based education programs.

The exhibits, the cultural demonstrations, and the sales area in the visitor center all can be experienced at one's own pace. The audiovisual program is available on request in winter and is offered on the half-hour during the rest of the year.

Outside the visitor center, visitors can walk the 0.75-mile Circle Trail at their own pace by following the Circle Trail guide booklet (which is for sale or loan at the information desk in the visitor center), reading the six wayside exhibits along the Circle Trail, listening to rangers or volunteers who occasionally rove the trail, walking the trail without any interpretive messages, or any combination of these. The Circle Trail, which is wheelchair accessible except along the ridgeline, allows visitors to see and gain understanding from the quarry north of the visitor center, the demonstration quarry south of the visitor center, Pipestone Creek, Hiawatha Lake, Winnewissa Falls, the quartzite bluffs, the Nicollet inscription and marker, and a restored prairie.

ORIENTATION AND INTERPRETATION

Orientation to the national monument is available only in the visitor center from the ranger or volunteer at the information desk. There are three wayside exhibits along the Circle Trail and one each at the Nicollet marker and the demonstration quarry. The NPS brochure for the national monument provides some orientation, but its only map is

of the region; it does not provide specific orientation to the national monument.

The interpretive media inside the visitor center date from the Mission 66 era of the mid-1960s, and although a few minor changes have been made since then, the exhibits and the audiovisual program look dated and contain some outdated information. The wayside exhibits, messages, graphics, and photographs need to be updated. The brochure is accurate, but it also needs to be updated.

Curriculum-based education programs are offered to schools and other groups in spring and autumn.

SAFETY

Safety concerns at Pipestone National Monument are centered on the trails and the possibility of someone falling on the trails. The primary Circle Trail is paved with asphalt and described as "wheelchair accessible" in the brochure, but the trail's surfaces are cracked and uneven, and it is doubtful that it would be rated accessible by the Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines. The stone steps on a spur trail off the Circle trail, which leads up and down the quartzite cliffs, are uneven at best. The stone steps leading down into the demonstration quarry just south of the visitor center are uneven and slippery when wet. The brochure and one wayside exhibit warn visitors not to climb into any of the national monument's quarry pits.

The native prairie, which visitors walk past along the Circle Trail and see from the entrance road, is maintained by prescribed burns set each spring. Visitor warnings are posted during all prescribed burns.

All parking areas, the visitor center, and the restrooms are wheelchair accessible. Two wheelchairs are available at the visitor center for visitors.

SOCIOECONOMIC ENVIRONMENT

PIPESTONE COUNTY

The study area for the *General Management Plan / Environmental Impact Statement* for Pipestone National Monument has been defined as Pipestone County, Minnesota. This plan describes economic conditions throughout the study area.

Income

The labor force in Pipestone County in 2000 consisted of 5,077 people over the age of 16, with an unemployment rate of 1.6%. The most important sectors of the economy in Pipestone County were services, 14.3% of the total earnings of all persons in the county (14.6 in 1990); state and local government, 14.2% of earnings (16.1% in 1990); and farm, 13.3% of earnings (20.5% in 1990).

The yearly payroll for Pipestone National Monument (both permanent and temporary employees) in 2002 was approximately $570,000. Aside from national monument staff, numerous individuals depend on Pipestone National Monument for all or part of their yearly income.

For this assessment, economic conditions in the study area generally are represented by the change in per capita income, as shown in table 6.

Population and Housing

Three incorporated communities exist within Pipestone County: Edgerton, population 1,037; Jasper, population 558; and Pipestone, population 4,359. The county population was 9,895. School enrollment was 2509 students. Population trends for the county, the state, and the nation are compared in table 7.

In 2000, 96.7% of the population in Pipestone County was white; 1.5%, American Indian. The median household income was $31,909, and per capita income was $16,450 (U.S. Bureau of the Census 1999). Per capita income was 65% of the statewide average and 76% of the national average. Living below the poverty level were 9.5% of the county population, compared with 7.9% for Minnesota and 12.4% for the nation.

Pipestone County had a total of 4,434 housing units in 2000, 4,069 of which were occupied (92%). About 53% were owner occupied. The median rent in the county was $365 per month, and the median home value was $49,000.

There were 100 hotel/motel rooms in Pipestone, with an occupancy rate of approximately 80%–85% during the summer months. There were approximately 50 recreational vehicle (RV) sites.

TABLE 6: PIPESTONE COUNTY PER CAPITA INCOME CHANGE, 1959–1999

Location	1959	1969	1979	1989	1999	% Change
Pipestone County	$ 4,783	$ 7,110	$ 9,265	$10,050	$16,450	244 %
Minnesota	6,804	9,561	12,485	14,389	23,198	240 %
United States	7,259	9,816	12,224	14,420	21,587	197 %

TABLE 7: POPULATION TRENDS IN THE STUDY AREA 1960–2000

Location	1960	1970	1980	1990	2000	% Change
Pipestone County	13,605	12,791	11,690	10,491	9,895	– 37 %
Minnesota	3,413,864	3,804,971	4,075,970	4,375,099	4,919,479	+ 44 %
United States	179,323,175	203,211,926	226,545,805	248,709,873	281,421,906	+ 57%

FEES AND VISITATION

Pipestone National Monument is officially a fee area, but fees are collected only at the visitor center. No fees are required of American Indians. Visitors are counted at the visitor center at the time of entry, and those who do not enter the visitor center do not pay the fee and are not counted. An additional multiplier of 2.5 is added to the yearly attendance figure to account for visitors who did not enter at the visitor center and so were not counted. Visitors in this category would be those who use the picnic area, those attending the Sun Dance ceremonies, those who use the national monument trails after hours, and anyone else who enters the national monument but does not enter the visitor center. Visitation from 1990 through 2003 is compared in table 8.

TABLE 8: VISITATION, 1990–2003

Year	Total Visits	%Change
1990	108,000	—
1991	120,000	+ 10.00
1992	122,412	+ 1.97
1993	108,263	+ 13.07
1994	116,889	+ 7.38
1995	104,834	+ 11.50
1996	95,917	– 9.30
1997	88,812	– 8.00
1998	90,832	+ 2.22
1999	90,395	– 0.48
2000	94,343	+ 4.18
2001	88,131	– 7.05
2002	84,295	– 4.40
2003	82,600	– 2.77
2004	83,123	+ .63

ECONOMIC INFLUENCES OF THE NATIONAL MONUMENT

Several businesses at or near the entrance to Pipestone National Monument are dependent on the national monument. They are the Pipestone Indian Shrine Association, a commercial campground, and a large gift shop operation. Other private businesses, such as restaurants and fast food outlets, are farther from the national monument but depend on it to supplement local business.

Quarriers either sell the raw pipestone or carve it into items for sale. They are not allowed to sell raw pipestone or the items they make directly to national monument visitors onsite, but they may do so offsite. Demonstrators are paid to carve items onsite, and they then sell them through the Shrine Association sales outlet. Pipestone articles and other craft items worth more than $160,000 were purchased from quarriers or demonstrators in 2002 and sold by the Shrine Association. No accounting is available of the value of other items sold by quarriers outside of the Pipestone Indian Shrine Association.

In addition, the Pipestone Indian Shrine Association sells other items such as books, postcards, and clothing. The proceeds from sales support projects that benefit visitors or national monument resources. The Pipestone National Monument superintendent proposes such projects to the board of directors of the association. These funds may not be used for personal services or for operating costs of the national monument.

According to a visitor services project study (VSP) sample commissioned by the National Park Service in 2002 (week of July 7–13), most visitors spent one to two hours at Pipestone National Monument. Of the visitors questioned, 63% spent one night within 25 miles of the national monument, 20% spent two nights, 11% spent three nights, and 7% spent four or more nights. Fifty-three percent of the overnight stays were in hotels, motels, or lodges and 33% were in campgrounds or trailer parks (NPS 2003b).

The study also found that the average per capita expenditure within the surrounding 25 miles was approximately $44. Assuming the sample week to be typical, and assuming a like number of visitors for the whole year 2002 as in 2001, national monument visitors spent approximately $3.877 million within 25 miles of Pipestone National Monument (according to the visitor services project study). Because 71% of the visitors interviewed said that Pipestone was either their primary destination or

one of several destinations, $2.753 million could be directly attributable to the national monument.

The same data from the July 7–13, 2002, study were entered into the money generation model (MGM) developed by the National Park Service and Michigan State University (http://planning.nps.gov/mgm/) to produce additional information.

Local day visitors contributed 20% of the overall visitation to the national monument; day visitors from other regions, 40%; visitors staying at lodges, 20%; and visitors staying at campsites, 19%. On average, visitors spent $70 per party per day in the local area ("party" refers to a single person or a group enjoying the site together as opposed to the $44 per individual estimated in the visitor services project study cited above). The total visitor spending was estimated to be $2.27 million in 2001. That was about half a million dollars less than was estimated by the visitor services project study (above, $2.753 million).

Using the more conservative $2.27 million figure and the assumptions of the money generation model, the money spent by visitors had a direct economic effect in the Pipestone community of $3,030,000 in direct sales, $1,080,000 in personal income (wages and salaries), $1,650,000 in value added, and 91 jobs. As visitor spending circulated through the local economy, secondary effects created 14 jobs and $300,000 more in personal income.

In sum, visitors to Pipestone National Monument spent $2,270,000 in 2002, which supported a total of $3,920,000 in sales, $1,380,000 in personal income, 105 jobs, and $2,210,000 in value added. (Also see tables 9 and 10.)

TABLE 9: LOCAL ECONOMIC INFLUENCES FROM VISITATION TO PIPESTONE NATIONAL MONUMENT

	Local Day Visitors	Non-Local Day Visitors	Hotel Visitors	Camp or Other Visitors	Total
Recreation Visits	17,829	34,921	18,202	17,163	88,115
Segment Shares	20%	40%	20%	19%	99%
Party Days	7,532	14,368	7,081	6,865	35,846
Average Spending	$27	$41	$106	$106	$70
Total Spending (millions)	$0.20	$0.59	$0.75	$0.73	$2.27

TABLE 10: ECONOMIC IMPACTS OF VISITOR SPENDING BY SECTORS

Sector	Sales (millions)	Personal Income (millions)	Jobs	Value Added (millions)
Direct Effect				
Motel, Hotel, Cabins, Bed & Breakfast	$0.52	$0.15	13	$0.23
Campsites	$0.49	$0.14	13	$0.21
Restaurants and Bars	$0.66	$0.21	21	$0.29
Admissions and Fees	$0.54	$0.19	17	$0.31
Retail	$0.62	$0.32	23	$0.50
Other	$0.20	$0.07	4	$0.11
Total	$3.03	$1.08	91	$1.65
Secondary Effect				
	$0.89	$0.30	14	$0.56
Total Effect	**$3.92**	**$1.38**	**105**	**$2.21**

ENVIRONMENTAL CONSEQUENCES



METHODOLOGY FOR ANALYZING ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

The planning team based the impact analysis and the conclusions in this chapter largely on a review of existing literature and studies, information provided by experts in the National Park Service and other agencies, and national monument staff insights and professional judgment. The team's method of analyzing impacts is further explained below. It is important to remember that all the analyses include mitigating measures to minimize or avoid impacts. If mitigating measures were not applied as described in the "Alternatives" chapter (beginning on page 41), the potential for resource impacts and the magnitude of those impacts would increase.

Effects can be direct, indirect, or cumulative. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later or farther away, but are still reasonably foreseeable. Cumulative effects are discussed below.

Intensity is the degree to which a resource would be beneficially or adversely affected. The criteria that were used to rate the intensity of the impacts for each resource topic are presented later in this section under each topic heading.

Duration refers to how long an effect would last. For the purposes of this document, the planning team used the following terms to describe the duration of the effects:

> *Short term:* The effect would last less than two years (one year for cultural resources), normally during construction and recovery.
>
> *Long term:* The effect would last more than two years (one year for cultural resources), normally from operations.

PROJECTS THAT MAKE UP THE CUMULATIVE IMPACT SCENARIO

The regulations of the Council on Environmental Quality (CEQ), which implement the National Environmental Policy Act of 1969 (42 USC 4321 et seq.), require assessment of cumulative effects in the decision-making process for federal projects. Cumulative effects are defined as follows in 40 CFR 1508.7:

> the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

Cumulative effects are determined by combining the effects of each alternative with other past, present, and reasonably foreseeable future actions. Therefore, it is necessary to identify and describe the actions of other ongoing or reasonably foreseeable future projects at the national monument and, if applicable, the surrounding region.

To determine potential cumulative impacts, projects in the area surrounding Pipestone National Monument were identified. The area included land within 1 mile of the boundary of the national monument, including nearby lands administered by the city of Pipestone, the state community college system, other state agencies, and the U.S. Fish and Wildlife Service (the area along the north boundary of the national monument, including Indian Lake). For socioeconomic impacts, Pipestone County was the area of impact, because socioeconomic information is available by county.

Projects were determined by meetings and telephone calls with county and city governments and state land managers as well as national monument staff. Potential projects identified as cumulative actions included any

planning or development activity that was currently being implemented or that would be implemented in the reasonably foreseeable future.

These cumulative actions are evaluated in the cumulative impact analysis in conjunction with the impacts of each alternative to determine if they would have any additive effects on a particular cultural resource, natural resource, visitor use, or the socioeconomic environment. Because most of these cumulative actions are in the early planning stages, the evaluation of cumulative effects was based on a general description of the project.

Past Actions

The following past actions could contribute to cumulative effects.

Agriculture. Agriculture in the region and the associated development of Pipestone town-building that began in the 1880s started changing the landscape from the indigenous prairie scene that George Catlin saw in 1836 when he visited the pipestone quarries. These changes are described for potential cultural landscapes under "landscape periods" in the "Affected Environment" chapter, beginning on page 110.

Through the building of small dams and dynamiting and reducing by 8 feet the height of Winnewissa Falls, agriculture has influenced the ethnographic and historic cultural landscape associated with the falls and Pipestone Creek. Development continues today, with more residential development proposed adjacent to the national monument's southern boundary, as well as some commercial development proposed adjacent to its eastern boundary. On the eastern boundary, the addition of an assisted living facility for the elderly is in progress. Other commercial development in that area could possibly include an industrial park.

Agriculture in and outside of the national monument has greatly reduced native plants in favor of food crops and vegetation that cattle prefer for food. This in turn has led to the alteration of soil and the loss of soil through erosion. Fences have been built in the national monument and elsewhere to limit the movement of animals, mainly cattle. Along with farming has come the use of herbicides to kill unwanted plant species and the introduction of exotic species of plants.

The national monument's limited use of herbicides to control exotics contributes to herbicide use in the area. In addition, natural hydrology and landforms have been modified to create dams and stock tanks to provide water for nonnative animals. Tiles have been installed to drain wetlands to increase dry land for growing crops. Whether this was done in the national monument is not known. In the summer of 1995, the farm field on the southern boundary of Pipestone National Monument was tiled to aid water drainage; it was retiled in 2003. The national monument lies in the path of these drained waters. Wetlands in the national monument may have been filled to create the Circle Trail.

Development. Development has included the Indian school, of which the national monument used to be a part, and the remnant track bed of a railroad that was built later. There are also residential subdivisions on the national monument's boundaries. The city of Pipestone's presence influenced the removal of all the petroglyphs from the base of the Three Maidens, changing that ethnographic cultural landscape, and it is important to museum collections today.

The visitor center is close to the quarry line, and its presence may have changed the way some American Indians use the site. In addition, all structures are incongruous with the quarrying cultural landscape.

Upstream Use of Pipestone Creek. The watershed of Pipestone Creek has been modified to suit the purposes of local communities

and agriculture. A combination of flat terrain and moist climate has created a situation prone to flooding. Before Pipestone National Monument was established, the creek had been ditched and diked in an ongoing effort to reduce flooding in the adjacent community. The base level of the creek at the waterfall in the national monument was lowered by 8 feet between 1910 and 1912 to increase the tillable land upstream.

Current and Future Actions

Current actions and those projected for the future also could contribute to cumulative effects.

Increased development is occurring along the south and east sides of the national monument. On the south, housing is being developed, with the potential for runoff flowing into the national monument. An assisted living center has been completed on the east side of Hiawatha Avenue. Light industrial development is expected on other lands owned by the city on the east side. The county recently received approval to construct a family services agency building on a 7-acre plot adjacent to the Pipestone Creek ditch. Runoff from these lands flows generally westerly, eventually reaching the national monument.

On the west side of Hiawatha Avenue, south of the Minnesota West Community and Technical College and between Hiawatha Avenue and the national monument is a 15.3-acre tract of land owned by the local school district but zoned R-3 (multifamily and agricultural). Although these lands are subject to flooding, they could be developed following drainage and fill work.

In southwestern Minnesota, and particularly in Pipestone County, there is a trend toward the development of wind farms and individual wind turbines averaging 200 feet or more in height. A wind tower is visible in the southwestern viewshed from all over the national monument. Further development of wind farms and individual turbines is likely. This could result in serious cumulative visual impacts on the cultural and ethnographic landscapes, as well as on the visitor experience and visitors' understanding of the national monument.

An ongoing project at the national monument is restoring natural native prairie vegetation as much as possible. It will continue as funding permits.

IMPAIRMENT OF RESOURCES

In addition to determining the environmental consequences of the alternatives, NPS policy requires that the potential effects be analyzed to determine whether or not proposed actions would impair the resources or values of the park system unit (in this case, Pipestone National Monument) (NPS *Management Policies 2006,* section 1.4). The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve resources and values. NPS managers must always seek ways to avoid or minimize, to the greatest degree practicable, adverse impacts on the resources and values.

However, the laws do give the National Park Service the management discretion to allow impacts on the resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service this management discretion, that discretion is limited by the statutory requirement that the National Park Service must leave the resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of the resources and values, including the

opportunities that otherwise would be present for the enjoyment of those resources or values. An impact on any resource or value may constitute impairment. An impact would be most likely to constitute an impairment if it affected a resource or value whose conservation would be (a) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the national park system unit, (b) key to its natural or cultural integrity or to opportunities to enjoy it, or (c) identified as a goal in its general management plan or other relevant NPS planning documents.

Impairment might result from NPS management activities, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the national monument. In this document, a determination about impairment is made in the conclusion section for each impact topic in the "Environmental Consequences" chapter, except that impairment findings are unnecessary for visitor use and experience and for the socioeconomic environment.

METHODOLOGY FOR ASSESSING EFFECTS ON CULTURAL RESOURCES

Effects on Cultural Resources and Section 106

In this document, the effects on cultural resources —historic structures, cultural landscapes, and ethnographic resources as traditional cultural properties eligible for the National Register of Historic Places, and museum collections and archives — are described in terms of type (beneficial or adverse), context (site-specific, local, or regional effects), duration (short term — less than one year, long term — more than one year, or permanent), and intensity (negligible, minor, moderate, or major). This is consistent with the CEQ regulations, which implement the National Environmental Policy Act (NEPA).

These impact analyses also are intended to comply with NEPA requirements and the requirements of section 106 of the National Historic Preservation Act of 1966, as amended. In accordance with the regulations of the Advisory Council on Historic Preservation on implementing section 106 (36 CFR 800, "Protection of Historic Properties"), the impacts on cultural resources were identified and evaluated by (a) determining the area of potential effects; (b) identifying cultural resources present in the area of potential effects that either are listed in or are eligible to be listed in the National Register of Historic Places; (c) applying the criteria of adverse effect to affected cultural resources either listed in or eligible to be listed in the national register; and (d) considering ways to avoid, minimize, or mitigate adverse effects.

Under the regulations of the Advisory Council on Historic Preservation, a determination of either *adverse effect* or *no adverse effect* must also be made for affected cultural resources either listed in the National Register of Historic Places or eligible to be listed in the national register. An adverse effect occurs whenever an impact would alter, directly or indirectly, any characteristic of a cultural resource qualifying it for inclusion in the National Register of Historic Places in a manner that would diminish the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the possible actions of an alternative that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, "Assessment of Adverse Effects"). A determination of no adverse effect could mean there would be an effect, but that the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the National Register of Historic Places.

CEQ regulations and NPS Director's Order 12, *Conservation Planning, Environmental Impact Analysis, and Decision-making,* also call for a discussion of the appropriateness of

mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact. For example, would the intensity of an impact be reduced from major to moderate or minor? Any resultant reduction in the intensity of an impact by mitigation, however, is an estimate of the effectiveness of mitigation under NEPA only. It does not suggest that the level of effect as defined by section 106 would be similarly reduced. Although adverse effects under section 106 may be mitigated, the effect would remain adverse.

A "Section 106 Summary" is included in the impact analysis sections for historic structures, cultural landscapes as ethnographic resources, and ethnographic resources as traditional cultural properties eligible for the national register cultural resources. (Section 106 summaries are not included for museum collections and archives because such resources generally are ineligible to be listed in the national register.) These summaries are intended to meet the requirements of section 106 and to assess the effects of the undertaking on cultural resources, based on the criterion of effect and criteria of adverse effect found in the regulations of the Advisory Council on Historic Preservation.

Intensity — Cultural Landscapes

For a cultural landscape to be listed in the National Register of Historic Places, it must meet one or more of the following criteria of significance: (a) it is associated with events that have made a significant contribution to the broad patterns of our history; (b) it is associated with the lives of persons significant in our past; (c) it embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or it possesses high artistic value or represents a significant and distinguishable entity whose components may lack individual distinction; (d) it has yielded, or may be likely to yield, information important in prehistory or history (*National Register* Bulletin, "How to Apply the National Register Criteria for Evaluation"). The landscape also must have integrity of those patterns and features — spatial organization and landforms, topography, vegetation, circulation networks, water features, and structures or buildings, site furnishings or objects — necessary to convey its significance (*Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for the Treatment of Cultural Landscapes*).

For purposes of analyzing potential impacts on cultural landscapes, the thresholds of change for the intensity of an impact are defined as follows:

Negligible — The effect would be at the lowest levels of detection: barely perceptible and not measurable. For section 106 purposes, the determination of effect would be *no adverse effect.*

Minor — **Adverse Effect:** The actions would alter a pattern(s) or feature(s) of the cultural landscape but would not diminish the overall integrity of the a landscape. For section 106 purposes, the determination of effect would be *adverse effect.* **Beneficial Effect:** Preservation of landscape patterns and features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for the Treatment of Cultural Landscapes.* For section 106 purposes, the determination of effect would be *no adverse effect.*

Moderate — **Adverse Effect:** The actions would alter pattern(s) or feature(s) of a cultural landscape diminishing the overall integrity of the landscape. For section 106 purposes, the determination of effect would be *adverse effect.* A memorandum of agreement would be executed among the National Park Service and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). The mitigative measures identified in the memorandum of

agreement would reduce the intensity of impact from major to moderate. **Beneficial Effect:** The action would result in the rehabilitation of a landscape or its patterns and features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for the Treatment of Cultural Landscapes.* For section 106 purposes, the determination of effect would be *no adverse effect.*

Major — **Adverse Effect:** The actions would alter a defining pattern(s) or feature(s) of a cultural landscape, diminishing its overall integrity. For section 106 purposes, the determination of effect would be *adverse effect.* The National Park Service and applicable state or tribal historic preservation officer would be unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b). **Beneficial Effect:** The action would result in the restoration of a landscape or its patterns and features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for the Treatment of Cultural Landscapes.* For section 106 purposes, the determination of effect would be *no adverse effect.*

Intensity — Ethnographic Resources

Certain important questions about human culture and history can be answered only by gathering information about the cultural content and context of cultural resources. Questions about contemporary peoples or groups, their identity, and heritage have the potential to be addressed through ethnographic resources. As defined by the National Park Service, an ethnographic resource is a site, structure, object, landscape, or natural resource feature assigned traditional, legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

Some places of traditional cultural importance may be eligible for inclusion in the National Register of Historic Places as traditional cultural properties because of their association with cultural practices or beliefs of a living community that are (a) rooted in that community's history and (b) important in maintaining the continuing cultural identity of the community (*National Register Bulletin, Guidelines for Evaluating and Documenting Traditional Cultural Properties*). For purposes of analyzing potential impacts on ethnographic resources, the thresholds of change for the intensity of an impact are defined below.

Negligible — The effect(s) would be barely perceptible and would neither alter resource conditions (such as traditional access or site preservation) nor alter the relationship between the resource and the affiliated group's body of practices and beliefs. For section 106 purposes, the determination of effect on traditional cultural practices would be *no adverse effect.*

Minor — **Adverse Effect:** The effect(s) would be slight but noticeable, but the action would neither appreciably alter resource conditions (such as traditional access or site preservation) nor alter the relationship between the resource and the affiliated group's body of practices and beliefs. For section 106 purposes, the determination of effect on traditional cultural practices would be *no adverse effect.* **Beneficial Effect:** The action would allow access to and/or accommodate a group's traditional practices or beliefs. For section 106 purposes, the determination of effect on traditional cultural practices would be *no adverse effect.*

Moderate — **Adverse Effect:** The effect(s) would be apparent and would alter resource conditions. Something would interfere with traditional access, site preservation, or the relationship between the resource and the affiliated group's practices and beliefs, even though the group's practices and beliefs would survive. For section

106 purposes, the determination of effect on traditional cultural practices would be *adverse effect*. **Beneficial Effect:** The action would facilitate traditional access and/or accommodate a group's practices or beliefs. For section 106 purposes, the determination of effect on traditional cultural practices would be *no adverse effect*.

Major — **Adverse Effect:** The effect(s) would be apparent and would alter resource conditions. Something would block or greatly affect traditional access, site preservation, or the relationship between the resource and the affiliated group's body of practices and beliefs to the extent that the survival of a group's practices and/or beliefs would be jeopardized. For section 106 purposes, the determination of effect on traditional cultural practices would be *adverse effect*. **Beneficial Effect:** The action would encourage traditional access and/or accommodate a group's practices or beliefs. For section 106 purposes, the determination of effect on traditional cultural practices would be *no adverse effect*.

Intensity — Historic Structures

For a structure to be listed in the National Register of Historic Places, it must meet one or more of the following criteria of significance: (a) associated with events that have made a significant contribution to the broad patterns of our history; (b) associated with the lives of persons significant in our past; (c) embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value, or represent a significant and distinguishable entity whose components may lack individual distinction; (d) have yielded, or may be likely to yield, information important in prehistory or history. In addition, the structure must possess integrity of location, design, setting, materials, workmanship, feeling, association (National Register Bulletin, *How to Apply the National Register Criteria for Evaluation*). For purposes of analyzing potential impacts on historic structures, the thresholds of change for the intensity of an impact are defined as follows:

Negligible — The effect would be at the lowest levels of detection: barely measurable with no perceptible consequences. For section 106 purposes, the determination of effect would be *no adverse effect*.

Minor — **Adverse Effect:** The actions would alter a feature(s) of a structure but would not diminish the overall integrity of the resource. For section 106 purposes, the determination of effect would be *no adverse effect*. **Beneficial Effect:** The action would stabilize or preserve features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. For section 106 purposes, the determination of effect would be *no adverse effect*.

Moderate — **Adverse Effect:** The actions would alter a feature(s) of a structure, diminishing the overall integrity of the resource. For section 106 purposes, the determination of effect would be *adverse effect*. A memorandum of agreement would be executed among the National Park Service and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). The mitigative measures identified in the memorandum of agreement would reduce the intensity of impact from major to moderate. **Beneficial Effect:** rehabilitation of a structure in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. For section 106 purposes, the determination of effect would be *no adverse effect*.

Major — **Adverse Effect:** The actions would alter a pattern(s) or feature(s) of a structure, diminishing the overall integrity of the resource. For section 106 purposes, the determination of effect would be

adverse effect. The National Park Service and applicable state or tribal historic preservation officer would be unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b). **Beneficial Effect:** Restoration of a structure in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. For section 106 purposes, the determination of effect would be *no adverse effect*.

Intensity — Museum Collections and Archives

Museum collections (historic artifacts, natural specimens, and archival and manuscript material) may be threatened by fire, theft, vandalism, natural disasters, and careless acts. The preservation of museum collections is an ongoing process of preventive conservation, supplemented by conservation treatment when necessary. The primary goal is the preservation of artifacts in as stable condition as possible to prevent damage and to minimize deterioration. For purposes of analyzing potential impacts, the thresholds of change for the intensity of an impact are defined as follows:

Negligible — The effect would be at the lowest level of detection: barely measurable with no perceptible consequences, either adverse or beneficial, to museum collections.

Minor — **Adverse Effect:** The actions would affect the integrity of few items in the museum collection but would not degrade the usefulness of the collection for future research and interpretation. **Beneficial Effect:** The action would stabilize the current condition of the collection or its constituent components to minimize degradation.

Moderate — **Adverse Effect:** The actions would affect the integrity of many items in the museum collection and diminish the usefulness of the collection for future research and interpretation. **Beneficial Effect:** The actions would improve the condition of the collection or its constituent parts from the threat of degradation.

Major — **Adverse Effect:** The actions would affect the integrity of most items in the museum collection and destroy the usefulness of the collection for future research and interpretation. **Beneficial Effect:** The actions would secure the condition of the collection as a whole or its constituent components from the threat of further degradation.

METHODOLOGY FOR ASSESSING EFFECTS ON NATURAL RESOURCES

For natural resources, effects on the integrity of natural systems are discussed, including remnant tallgrass prairie, restored tallgrass prairie, mesic crystalline bedrock prairie wetlands and riparian corridor, floodplains, hydrology, soils, wildlife, and threatened or endangered species. Wetlands are "lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface" (USFWS 1979). Floodplains are defined by the NPS *Floodplain Management Guideline* (1993a) as "the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, and including, at a minimum, that area subject to temporary inundation by a regulatory flood." Threatened or endangered species are those listed by the U. S. Fish and Wildlife Service as threatened or endangered under the Endangered Species Act. The state of Minnesota also lists threatened and endangered species and species of special concern.

Information on known resources was compiled. Where possible, map locations of sensitive resources were compared with the locations of proposed developments and modifications. Predictions about short-term and long-term site impacts were based on previous

studies of the effects on natural resources resulting from visitors and facility development. Sociological studies comparing the deterrent effects of signs versus ranger presence on sites were also considered in this analysis.

The definitions below assume that mitigation would be implemented. For this document, the planning team qualitatively evaluated the impact intensity for natural resources.

Vegetation

The following categories were used to evaluate the potential impacts on remnant tallgrass prairie, mesic crystalline bedrock prairie, and restored tallgrass prairie:

Negligible — The effect would result in no measurable or perceptible changes in plant community size, integrity or continuity.

Minor — The effects would be measurable or perceptible and local within a relatively small area The overall viability of the plant community would not be affected and, if left alone, would recover.

Moderate — The actions would cause a change in the plant community (abundance, distribution, quantity, or quality); however, the impact would remain local

Major — The effects on plant communities would be substantial, highly noticeable, and long term.

Wetlands and Riparian Corridor

The following categories were used to evaluate the potential impacts on wetlands and the riparian corridor:

Negligible — The effects on wetlands would not be measurable or perceptible.

Minor — The effects on wetlands would be local and slightly detectable.

Moderate — The effects on wetlands would be clearly detectable, and the action could have an appreciable effect on natural processes.

Major — The effects on wetlands would be highly noticeable, and the action would have a substantial influence on natural processes.

Floodplains

The following categories were used to evaluate the potential impacts on floodplains:

Negligible — The effects on the ability of the floodplain to function normally would not be measurable or perceptible.

Minor — The effects on the ability of the floodplain to function normally would be local and slightly detectable.

Moderate — The effects on the ability of the floodplain to function normally would be clearly detectable, and the action could have an appreciable effect on natural processes.

Major — The effects on the ability of the floodplain to function normally would be highly noticeable, and the action would have a substantial influence on natural processes.

Hydrology

The following categories were used to evaluate the potential impacts on hydrology:

Negligible — Hydrology would not be affected, or the changes either would be nondetectable or, if detected, would result in effects that would be considered slight and local.

Minor — The changes in hydrology would be measurable, although they would be small and local. No mitigating measures

associated with hydrology would be necessary.

Moderate — The changes in hydrology would be measurable and long-term but relatively local. Mitigating measures associated with hydrology would be necessary, and they probably would be successful.

Major — The changes in hydrology would be readily measurable, would have substantial consequences, and would be noticed on a regional scale. Mitigating measures would be necessary, and their success would not be guaranteed.

Soils

The following categories were used to evaluate the potential impacts on soils:

Negligible — Soils would not be affected, or the effects would be below or at the lower levels of detection. Any effects on soil productivity or fertility would be slight.

Minor — The effects on soils would be detectable. The effects on soil productivity or fertility would be small, as would the area affected. If mitigation was needed to offset adverse effects, it would be relatively simple to implement and probably would be successful.

Moderate — The effects on soil productivity or fertility would be readily apparent, and it probably would result in a change in the soil character over a relatively wide area. Mitigating measures probably would be necessary to offset adverse effects, and they probably would be successful.

Major — The effects on soil productivity or fertility would be readily apparent; there would be a substantial change in the character of the soil over a large area in and outside of the national monument. Extensive mitigating measures to offset adverse effects would be needed, and their success could not be guaranteed.

Wildlife

The following categories were used to evaluate the potential impacts on wildlife:

Negligible — The effects on wildlife or their habitats would not be measurable or perceptible.

Minor — The effects on wildlife or their habitats would be detectable, although they probably would be local and of little consequence to the population of the species.

Moderate — The effects on wildlife or their habitats would be readily detectable and local, with consequences at the population level.

Major — The effects on wildlife or their habitats would be obvious, and there would be substantial consequences on wildlife populations in the region.

Threatened or Endangered Species and Species of Special Concern

The following categories were used to evaluate the potential impacts on threatened or endangered species or species of special concern:

Negligible — The action would result in a change to a population or individuals of a species that would be so small that it would not be of any measurable or perceptible consequence to the population, or other changes would be so small that they would not be measurable or perceptible.

Minor — The action would result in a change to a population or individuals of a species that, if measurable, would be small and local, or other changes would be slight but detectable.

Moderate — The action would result in a change to a population or individuals of a species that would be measurable but local.

Major — The action would result in a change to a population or individuals of a species that would be measurable and would result in a consequence to the population.

METHODOLOGY FOR ASSESSING EFFECTS ON VISITOR USE AND EXPERIENCE

The discussions of visitor use and experience in this document cover the effects on visitor enjoyment, freedom to go at one's own pace, orientation and interpretation, and visitor access. For analysis purposes, impact intensities for visitor experience impact topics have been defined as follows:

Negligible — The effect on visitors would be barely detectable, or the action would not occur in primary resource areas or would affect few visitors.

Minor — An adverse or beneficial effect on visitors would be slight but detectable, or the action would not occur in primary resource areas or would affect few visitors.

Moderate — An adverse or beneficial effect on visitors would be readily apparent, or the action would occur in primary resource areas or would affect many visitors.

Major — An effect on visitors would be severely adverse or exceptionally beneficial, or the action would occur in primary resource areas or would affect the majority of the visitors.

METHODOLOGY FOR ASSESSING EFFECTS ON THE SOCIOECONOMIC ENVIRONMENT

The discussion of socioeconomic effects consists of the effects of each alternative on quarriers and demonstrators, businesses, and the community. The following information and assumptions were used to analyze impacts.

- **Quarriers and Demonstrators.** An impact would occur when an action described in this plan changed some aspect of the workers' job to make it easier or more difficult to earn a living.
- **Businesses.** An impact would occur when an action would be likely to increase or decrease the amount of revenue likely for businesses directly dependent upon the national monument.
- **Community.** An impact would occur when an action would be likely to increase or decrease employment or revenue within the local or regional economy.

For analysis purposes, the intensities for impacts on quarriers and demonstrators, businesses, and the community will be defined as follows:

Negligible — The effect would not be detectable, and there would be no discernible effect on the socioeconomic environment.

Minor — The effect would be slightly detectable, but the overall socioeconomic environment would not be affected.

Moderate — The effect would be clearly detectable, and there could be an appreciable effect on the socioeconomic environment.

Major — Actions would have a substantial, highly noticeable influence on the socioeconomic environment.

METHODOLOGY FOR ASSESSING EFFECTS ON NATIONAL MONUMENT OPERATIONS

In the impact analysis, the effects of the alternatives were evaluated on the following

aspects of operations: staffing, maintenance, facilities, emergency response time, and the ability to enforce national monument regulations. The analysis was conducted in consideration of how national monument operations might vary under the different alternatives. The analysis is qualitative rather than quantitative because of the conceptual nature of the alternatives; consequently, professional judgment was used to reach reasonable conclusions as to the intensity, duration, and type of each potential impact.

For analysis purposes, impact intensities for national monument operations have been defined as follows:

Negligible —National monument operations would not be affected, or the effect would be at or below the lower levels of detection, and the action would not cause an appreciable effect on national monument operations.

Minor — The effects would be detectable, but would be of a magnitude that there would not be an appreciable effect on national monument operations.

Moderate — The effect would be readily apparent, and the action would result in a substantial change in national monument operations that would be noticeable to the staff and the public.

Major — The effects would be readily apparent, and the action would result in a substantial change in national monument operations that would be noticeable to the staff and the public, and operations would be markedly different from existing operations.

Beneficial effects would improve NPS operations and/or facilities. **Adverse effects** would negatively affect NPS operations or facilities and could hinder the staff's ability to provide adequate services and facilities to visitors and staff. Some effects could be beneficial for some operations and adverse or neutral for others.

IMPACTS OF THE NO-ACTION ALTERNATIVE

CULTURAL RESOURCES

Cultural Landscapes

As the setting for continuity or change, the prairie is an important character-defining feature of the potential cultural landscapes (see suggested historic landscape contexts, p. 116). After this plan is completed, the National Park Service would conduct cultural landscape inventories. If the reports from those inventories indicated that prairie components are contributing elements of the character-defining features of the potential historic cultural landscapes, which might be correlated with the suggested historic landscape contexts, the prairie restoration underway would be continued. This restoration involves the recovery of native plant species. Under the no-action alternative, the restoration would be continued in conjunction with maintaining and preserving the remnant tallgrass prairie. This would result in a long-term minor to moderate beneficial effect on cultural landscapes.

Cumulative Effects. Agricultural development and construction in and around Pipestone National Monument have previously affected potential cultural landscapes both in the national monument and in the general vicinity. These activities have disturbed or changed the prairie setting and ultimately reduced the amount of surviving tallgrass prairie. Areas where such activities have occurred are the Pipestone Indian School and its successor, the Minnesota West Community and Technical College north and northeast of the national monument and subdivisions to the east, south, and west, as well as agricultural areas farther outside the boundaries. The long-term adverse effects on the tallgrass prairie as the setting in cultural landscapes have ranged from minor to moderate.

Reasonably foreseeable future actions that could occur throughout the region — for example, continued subdivision and proposed commercial development — also would disturb cultural landscapes outside the national monument by damaging or destroying remnant tallgrass prairie patches that might otherwise remain and altered prairie lands that might be restored by the recovery of native plant species. The long-term regional impacts on the prairie components of cultural landscapes from agricultural development and construction would range from minor to major.

In the region, the Nature Conservancy has a property called Hole in the Mountain near the town of Lake Benton north of the national monument where prairie restoration is underway through the recovery of native plant species. Prairie restoration is underway in the USFWS/MDNR Pipestone Wildlife Management Area immediately north of the national monument. Similar programs are in place to the southwest at Split Rock Creek State Park and to the southeast at Blue Mounds State Park. The latter is where a bison herd is maintained in a prairie setting. These programs would result in a moderate long-term beneficial effect on associated cultural landscapes.

Because there would be no adverse impacts on cultural landscapes associated with the no-action alternative, this alternative would not contribute to the minor to major range of adverse and long-term cumulative effects in the region. However, remnant prairie preservation and prairie restoration from the recovery of native plant species would result in long-term minor to moderate beneficial effects on potentially eligible national register landscapes in the national monument. Therefore, the no-action alternative would contribute to the moderate long-term beneficial cumulative effects on cultural landscapes in the region.

Section 106 Summary. After applying the criteria of adverse effects of the Advisory Council on Historic Preservation (36 CFR

800.5), "Assessment of Adverse Effects," the National Park Service concludes that there would be no adverse effect on the eight cultural landscapes that are potentially eligible for the national register.

Conclusion. Restoration would continue in conjunction with maintaining and preserving the remnant tallgrass prairie. This would result in a long-term minor to moderate beneficial effect on cultural landscapes.

Remnant prairie preservation and prairie restoration from the recovery of native plant species would result in long-term minor to moderate beneficial effects on potentially eligible national register landscapes in the national monument.

There would be no impairment of the national monument's cultural landscapes or values.

Ethnographic Resources

As the setting for continuity or change, the prairie is an important character-defining feature of the three potential landscape periods of the overall potential ethnographic landscape (see p. 110). After this plan is completed, the National Park Service would conduct cultural landscape inventories. If the reports from those inventories indicated that prairie components are contributing elements of the character-defining features of the potential ethnographic landscape, which might be correlated with the three landscape periods, the prairie restoration underway would be continued. This restoration involves the recovery of native plant species. Under the no-action alternative, the restoration would be continued in conjunction with maintaining and preserving the remnant tallgrass prairie. This would result in a long-term minor to moderate beneficial effect on the ethnographic landscape because American Indians value the prairie as the setting for traditional pipestone quarrying.

Because the current visitor use pattern would continue, inadvertent visitor chance encounters with American Indians would continue. This could be distracting and intrusive to American Indians placing offerings like sage, tobacco, food, and personal items at the Three Maidens rock formation. The clustering together of the picnic area and restroom structure close to the Three Maidens causes people to congregate at times and occasionally to interfere inadvertently with American Indian spiritual practices. The effects on traditional American Indian use of the Three Maidens as an ethnographic resource caused by inadvertent visitor intrusion would be minor, adverse, and long term.

American Indian access to the Three Maidens during the Hiawatha Pageant has been improved in recent years through national monument negotiations with the Hiawatha Club so that the rock formation is not used intrusively as a pageant component. However, the summer use of the Three Maidens in the Hiawatha Pageant would continue on the relevant weekends. The effects on traditional use of the Three Maidens as an ethnographic resource from the use by special permit of the Hiawatha Club for the Hiawatha Pageant would be minor, adverse, and long term.

American Indian access to the ethnographic resources associated with the Circle Trail — the Leaping Rock, Winnewissa Falls, and the Oracle — would remain unchanged because the Circle Trail would remain unchanged. Intrusion on American Indian practitioners from visitors walking along the trail could be occasional and inadvertent. The effects from such visitor intrusion on traditional use of these ethnographic resources would be minor, adverse, and long term.

The two annual Sun Dances would continue to take place, and the area in the national monument designated for this ceremonial purpose would continue to serve as a place of cultural expression. To American Indians who feel that continuing the Sun Dances here would be culturally appropriate because it is

spiritually connected to the site, the effects would be minor, beneficial, and long term in relation to their concept of traditional cultural identity. To American Indians who believe that continuing the Sun Dance here would not be culturally appropriate because it apparently is not a traditional Sun Dance site, the effects would be moderate, adverse, and long term in relation to their opinions about traditional cultural identity.

The north quarry line would remain a location for sweat lodges, and it still would be closed to visitors. Although visitors still would be directed to stay on designated trails, they occasionally stray off the trails, inadvertently intruding on American Indian practitioners using sweat lodges. This occasional and inadvertent intrusion would apply to sweat lodge users in the areas of the north and Sun Dance quarries. The effects from such visitor intrusion on American Indian use of the sweat lodges would range from negligible to minor and be adverse and long term.

Cumulative Effects. The ethnographic landscape of Pipestone National Monument means a prairie background setting for the ongoing but traditional American Indian quarrying in what is now the national monument. Other ethnographic landscapes in the region could be associated with the bison herd maintained by the state of Minnesota in Blue Mounds State Park or with simply restoring prairie to patches of preagricultural landscape in Split Rock Creek State Park. Prairie preservation and restoration contributes to such landscapes.

Agricultural development and construction around Pipestone National Monument have previously affected the prairie setting both in the national monument and in the general vicinity. These activities have disturbed or changed the prairie setting and ultimately reduced the amount of surviving tallgrass prairie. Areas where such activities have occurred are the Pipestone Indian School and its successor, the Minnesota West Community and Technical College north and northeast of the national monument and subdivisions to the east, south, and west, as well as agricultural areas farther outside the boundaries.

Reasonably foreseeable future actions occurring throughout the region — for example, continued subdivision and proposed commercial development — also could disturb the prairie setting outside the national monument by threatening any remnant tallgrass prairie patches that might remain and any altered prairie lands that might be restored by the recovery of native plant species. Regional long-term adverse effects on the tallgrass prairie as a setting reminiscent of a time before European-American settlement, agriculture, and development have ranged and continue to range from minor to major.

In the region, the Nature Conservancy has a property called Hole in the Mountain near the town of Lake Benton north of the national monument. Prairie restoration is underway in that area through the recovery of native plant species. Prairie restoration also is underway in the USFWS/MDNR Pipestone Wildlife Management Area immediately north of the national monument. Similar programs are in place to the southwest at Split Rock Creek State Park and to the southeast at Blue Mounds State Park (where a bison herd is maintained). These programs would result in moderate long-term beneficial effects on potential ethnographic landscapes associated with traditional scenes.

The development of a parklike environment for American Indians to quarry catlinite pipestone through the Pipestone Indian School and then as a national monument has meant change in American Indian access to ethnographic resources. That change generally has been caused by the development of trails, bridges, and parking lots to make physical access more convenient to various ethnographic resources. To the extent that American Indians value convenience (for example, to help the elderly participate in activities), the long-term effects on ethnographic resources from the past and at present were minor to

moderate and beneficial. To the extent that the natural setting contributes to the value of American Indian traditional use (there is some evidence from NPS observation of American Indian practitioners that it does) and that there has been a change in the setting away from nature associated with development, the long-term effects on ethnographic resources from the past and at present were minor to moderate and adverse.

Traditional American Indian practices associated with ethnographic resources, which happen to be all natural resources at Pipestone National Monument, are subject to inadvertent distraction from encounters by visitors. Past visitor use patterns have resulted in such encounters, which have caused long-term minor adverse impacts on American Indian practitioners.

Development has affected ethnographic resources outside of the national monument by making potential ethnographic resources harder to identify because of changes brought about by agriculture and home and commercial development. Various rock art sites, including Pipestone National Monument, show the importance of the state of Minnesota as a rock art district worthy of listing in the National Register of Historic Places, which happened on November 14, 1996.

In Minnesota, in the region around the national monument, the following locations could contain ethnographic resources relevant to American Indians: Blue Mounds State Park, Jeffers Petroglyphs State Historic Site, Split Rock Creek State Park, and the USFWS land administered by the Minnesota Department of Natural Resources, which is just north of the national monument. Jeffers Petroglyphs State Historic Site is the only one that maintains an ongoing program of consultation with American Indians to identify ethnographic resources (as does Pipestone National Monument). The fact that some ongoing American Indian consultations are underway and continuing is beneficial. More ethnographic information should result, which would be a minor long-term beneficial effect.

The existing conditions at the national monument would remain unchanged under the no-action alternative; therefore, this alternative would not contribute to the adverse impacts on regional ethnographic resources from other actions. Prairie preservation and restoration would be part of the continuing management under this alternative, which would result in minor to moderate long-term beneficial effects on the ethnographic landscape. These effects would contribute to similar minor to moderate long-term beneficial effects on regional ethnographic landscapes that would result from various efforts toward prairie restoration outside the national monument.

Section 106 Summary. Since the "Affected Environment" chapter suggests that traditional cultural properties (ethnographic resources eligible to be listed in the National Register of Historic Places) may be represented at the national monument by the entire national monument or by individual resources, in accordance with the criteria of adverse effect of the Advisory Council on Historic Preservation (36 CFR 800.5), the determination of effect on traditional cultural properties would be *no adverse effect.*

Conclusion. Prairie preservation and restoration would result in minor to moderate beneficial effects on the ethnographic landscape. The distraction of traditional American Indian practitioners at ethnographic resources by inadvertent interruptions from non-Indian visitors would result in long-term minor adverse effects on traditional use associated with ethnographic resources. Continuing the two annual Sun Dances would result in either a long-term minor beneficial effect or a long-term moderate adverse effect, depending on the perspective of the person rendering the opinion. There would be no impairment of the national monument's resources and values.

Historic Structures

Under the no-action alternative, the house that once was the residence of the superintendent of the Pipestone Indian School neither would be acquired by the National Park Service nor would receive preservation and interpretation from the National Park Service. The building would remain in poor condition and become worse by continuing to molder and deteriorate. The organization that owns it, the Keepers of the Sacred Tradition of Pipemakers, lacks the funds to stabilize and rehabilitate this structure, which is listed in the National Register of Historic Places. There are no prospects for such treatment without monetary and technical help from an entity like the National Park Service with expertise in historic preservation. Not even routine preservation maintenance is being performed at present. Without intervention, the long-term adverse effects would range from moderate today to major over time.

The Mission 66 visitor center, a national register eligible structure, would continue to be used as a visitor center. Routine preservation maintenance would continue to be undertaken, resulting in a minor long-term beneficial effect.

Cumulative Effects. Past actions in the national monument have included the development of trails, bridges, and parking lots and the construction of maintenance facilities and two houses now used as a resource management office and a residence for a law enforcement ranger. Placing the visitor center in a central location on the Circle Trail was consistent with the "centralize and circulate" thinking of the Mission 66 era. The development of that trail has affected the way visitors use the visitor center, but since the center was centrally placed, development in the national monument has not affected the historic fabric of this late 1950s Mission 66 structure, unless the 1970s addition of space for the Indian Shrine Association is viewed in that light. However, adding that space was consistent with the Mission 66 philosophy because it allowed visitors to watch American Indian pipestone carvers at work.

The ability for visitors to interact with and learn from the demonstrators becomes part of the centralized aspect of the visitor experience. The 1970s addition enhanced the function of the historic fabric and is part of historic significance of the visitor center's eligibility in its own right for the National Register of Historic Places. The historic fabric of the structure could be threatened by its apparent location in the 500-year and 100-year floodplains. However, past flooding of Pipestone Creek suggests that any serious damage would be unlikely, although damage could still result. Vandalism has not been a problem at the visitor center.

Actions expected in the region in the reasonably foreseeable future, such as continued subdivision and commercial development, have no potential to affect historic structures in the national monument. Such actions would result in a negligible effect, if any, on historic structures outside the national monument, except that this economic activity appears to be generating no funding to preserve the Indian School superintendent's house, which is listed in the National Register of Historic Places. However, historic preservation efforts are in place in the city of Pipestone and other towns in Pipestone County to rehabilitate and adaptively reuse the late 19th century business and municipal architecture characterized by local Sioux quartzite as the predominant building material.

The routine preservation maintenance of the national monument's visitor center and that long-term minor beneficial effect on that structure from this no-action alternative would contribute overall to the long-term moderate beneficial cumulative effects on historic structures in the region.

Section 106 Summary. After applying the criteria of adverse effect of the Advisory Council on Historic Preservation (36 CFR 800.5), the National Park Service concludes that

implementing the no-action alternative would cause no adverse effect on the national register-eligible Mission 66 visitor center.

Conclusion. The historic Mission 66 visitor center structure would continue to be preserved, a minor long-term beneficial effect. Without preservation intervention, the effects on the Pipestone Indian School superintendent's house would range from moderate today to major over time, and they would be adverse and long term.

Because there would be no major adverse effects on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Pipestone National Monument, (2) key to its natural or cultural integrity or opportunities for its enjoyment, or (3) identified as a goal in its general management plan or other relevant NPS planning documents, the national monument's resources or values would not be impaired.

Museum Collections and Archives

The portions of the national monument's museum collections and archives that are in the visitor center would continue to be housed in the visitor center under adequate museum standards for fire detection and suppression but without adequate temperature and humidity control. Improper lighting in some displays would continue to affect the collections on display. Under the no-action alternative, the long-term effects would be minor and adverse, based on the lack of temperature and humidity control and the improper lighting of the displays in the visitor center.

Although historically the visitor center never has been subject to flooding and although prompt efforts would be made to remove the museum collections and archives if periodic Pipestone Creek flooding was perceived to threaten the curatorial and collections storage area in the visitor center, it must be assumed that the integrity of many items in the collections and archives could be diminished by water damage. If such flooding took place, the long-term adverse impacts on museum collections and archives would range from moderate to major. The intensity of the adverse impact would depend on the amount and rate of flooding and on whether sufficient warning had been received to enable the national monument staff to implement the evacuation plan that is in place to protect the collections and archives. It also would depend on how high from the floor particular artifacts and documents or photographs were stored in relation to the height of the water entering the storage area.

Conclusion. Museum collections and archives generally would continue to be secure under this alternative, but long-term moderate to major adverse impacts on these resources could result unless the threat of flooding was eliminated. The museum collections and archives eventually would have to be moved to quarters with more space, presumably to another institution in the region. Negligible to minor short-term adverse impacts would be brought about by the risk of moving artifacts, specimens, and documents, and there would be moderate long-term beneficial effects from acquiring new space for curation, research, and storage and from eliminating the threat of flooding.

NATURAL RESOURCES

Vegetation

Remnant Tallgrass Prairie. Remnant prairie is a habitat type that has survived despite other uses having taken place. It is made up of Sioux quartzite prairie, mesic crystalline bedrock prairie, and oak savanna/woodland. In this document, the effects on the remnant prairie as a whole will be described under "remnant tallgrass prairie." Effects specific to mesic crystalline bedrock prairie will be described under that heading. The alternatives would not affect the other two components of remnant tallgrass prairie, Sioux quartzite

prairie and oak savanna/woodland because no actions would be proposed in these areas, including no development.

In the national monument, the remnant prairie habitat type is fragmented by the entrance road, the visitor center, parking, the Circle Trail, restrooms, the picnic area, a residence, a house used for administrative offices, and a garage. Fragmentation would continue to allow the invasion of exotics along corridors separating segments of prairie and to decrease the success of efforts to control exotics. Several areas that otherwise probably would be vegetated with remnant prairie would continue to be occupied by the structures listed above.

The adjacent lands on the national monument's boundaries would continue to provide seed and other means of introducing exotic species into remnant prairie in the national monument.

Holding Sun Dances in the northern end of the national monument would continue to degrade remnant prairie. Heavy use in this zone would continue to denude native vegetation and increase the encroachment of exotics. Mowing and trampling of the site during its use would continue to decrease fuel loading and fuel continuity, reducing the prairie's ability to carry fire, an important means of enhancing the preservation of the prairie ecosystem. Continued use of the northern part of the remnant prairie for large gatherings would increase the potential for losing native plants.

Overall, despite the fragmentation of habitat, the occupancy of habitat by national monument structures and heavy visitor use in a large area of the national monument, ongoing efforts to restore tallgrass prairie would result in a moderate beneficial effect on remnant tallgrass prairie because these systematic efforts would increase the abundance, distribution, quantity, and quality of the habitat in the national monument.

Mesic Crystalline Bedrock Prairie. The no-action alternative would not result in any effects on mesic crystalline bedrock prairie except those described for remnant tallgrass prairie and restored tallgrass prairie.

Restored Tallgrass Prairie. The restored tallgrass prairie plant community covers an area where tallgrass prairie died out but is being restored by members of the national monument staff, who work to reduce exotic plants and reseed areas with native seed of tallgrass prairie plants. In the national monument, there are corridors at the edge of this habitat type for the entrance of exotics, including part of the entrance road, the visitor center, a parking area, the Circle Trail, restrooms, the picnic area, and adjacent lands on all sides of the national monument. These corridors would continue to allow the invasion of exotics and to decrease the success of efforts to control exotics.

Holding Sun Dances in the northern end of the national monument would continue to degrade remnant prairie, which is crossed by vehicles and foot traffic between the USFWS/MDNR land on the national monument's north boundary and the Sun Dance grounds. Heavy use in the remnant prairie habitat would continue to denude native vegetation and increase the encroachment of exotics. Continued use of the northern part of the remnant prairie for large gatherings would hinder efforts to restore the prairie.

Overall, despite the existence of corridors for the entrance of exotic plants and heavy use in the remnant tallgrass prairie, ongoing efforts to restore tallgrass prairie would result in a moderate beneficial effect on the restored tallgrass prairie because these systematic efforts would increase the abundance, distribution, quantity, and quality of the habitat in the national monument.

Cumulative Effects. Agriculture and development have greatly reduced native prairie plants. Plants have been affected by being displaced, and habitat has been lost through

agricultural uses and the introduction of nonnative plants.

The development of some private lands for residential or commercial uses (such as lands west of, on, or near the national monument's boundaries in nearby communities) could increase runoff, wind erosion, exotics, and soil compaction and alter soil regimes.

Past adverse effects on vegetation from agriculture and development covered wide areas. The effects of current and anticipated future actions outside the national monument, in conjunction with the effects of the no-action alternative, would produce major long-term adverse impacts on tallgrass prairie. Most impacts would result from development outside the national monument, which might or might not be mitigated. The actions of the no-action alternative would contribute a minuscule increment to the overall cumulative effect.

Conclusion. Overall, despite the fragmentation of habitat, the occupancy of habitat by national monument structures, the presence of corridors for the entrance of exotic plants, heavy visitor use in a large area of the national monument, and ongoing efforts to restore tallgrass prairie would result in a moderate beneficial effect on tallgrass prairie because these systematic efforts would increase the abundance, distribution, quantity, and quality of the habitat in the national monument.

The vegetative resources of Pipestone National Monument would not be impaired by the actions of the no-action alternative.

Wetlands and Riparian Corridor

Wetlands near the picnic area, parking, and restrooms on the southern boundary of the national monument would continue to be subject to foot traffic from visitors and staff. The entrance road would continue to prevent water flow from one wet area to another. The natural functioning of these wetlands would continue to be compromised by visitor use. Because changes in the areas involved would be local and only slightly detectable and would not appreciably affect natural processes, this continuing adverse impact on wetlands would be long term and minor.

Cumulative Effects. Some wetlands in and outside the national monument have been filled or drained to make more land available for growing crops. There could be increased runoff into the monument from the tiled farm field on the southern boundary. If this occurred, wetlands in the national monument might be increased in number or size (NPS 1998b). The presence of tiles over a wide area (perhaps including the national monument) and continued heavy use of Pipestone Creek would continue to result in major long-term reductions in wetland areas and in the beneficial values of wetlands in the national monument, as well as upstream and downstream.

The severe hydrological alterations of the creek's watershed have increased sediment deposition, causing a change in both floral and faunal composition along the creek corridor.

Cattle and other farm animals probably have been allowed to use some wetland and riparian areas in and near the national monument. These practices decrease wetland areas and degrade natural and beneficial wetland values in exchange for benefit to agricultural uses. NPS structures and visitor uses in wetland areas contribute to the loss of natural and beneficial values.

Further development in wetlands outside the national monument for residential, agricultural, or commercial uses would decrease the area in which natural and beneficial wetland values would be preserved.

The past effects of agriculture and urbanization on wetlands covered wide areas and were major and adverse. The continuing use of agricultural and other chemicals that make their way into Pipestone Creek contributes to adverse impacts on wetlands along the creek.

The effects on wetlands from current and anticipated future actions outside the national monument, along with the effects of the no-action alternative, would be moderate, long term, and adverse. Most impacts would result from development actions outside the national monument, which might or might not be mitigated. The effects from the no-action alternative would contribute a minuscule increment to the overall cumulative effect.

Conclusion. Continued foot traffic in the wetlands near the picnic area, parking, and restrooms on the southern boundary of the national monument would result in long term minor adverse effects on wetlands. The national monument's wetland resources would not be impaired by the actions of the no-action alternative.

Floodplains

Natural and Beneficial Floodplain Values. Because some maintenance activities are housed at national monument headquarters in or near the 100-year floodplain, fuel used in maintenance vehicles and equipment could enter floodwaters if there should be a 100-year flood. In a 100-year flood, the volume of floodwater would be expected to be large compared to approximately 200 gallons of fuel that could enter the floodwaters from the maintenance area. This would mean that the potential damage to vegetation and soils along the path of floodwaters would be small. The effect on natural and beneficial floodplain values from such an occurrence would be minor, adverse, and short term.

Flooding. With national monument headquarters (with administrative, visitor center, maintenance, and curatorial functions), an employee residence, a house used for administrative offices, and a garage continuing to occupy the 100-year floodplain, if there was a flood, the floodwaters would be only slightly impeded because the floodplain is extensive. This continuing adverse effect on the floodplain's ability to function normally during flooding would be minor and long term.

If there was a flood, visitors and employees at headquarters could be injured by floodwaters, as could employees and others at the employee residence or at the house used as an administrative facility. Although the possibility of loss of life would be extremely small, there could be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse effects on the visitors, employees, and property involved.

If this alternative was selected for implementation, a statement of findings for floodplains would be prepared because locating employee residences within the 100-year floodplain is contrary to NPS policy, as is placing curatorial facilities or fuel storage in the 500-year floodplain. The statement of findings would explain why the best available option would be to leave the structures and functions in the floodplain, and it would describe mitigating measures that would be undertaken to reduce the impacts.

Cumulative Effects. The heavy use and ditching of Pipestone Creek upstream have greatly reduced the extent of the floodplain and the natural and beneficial values of floodplains in the national monument.

Cattle and other farm animals probably have been allowed to use some riparian areas in and near the national monument. This practice degrades natural and beneficial floodplain values in exchange for benefits to agricultural uses. NPS structures and visitor uses in floodplain areas contribute to the loss of natural and beneficial values.

Further development in floodplains and wetlands outside the national monument for residential, agricultural, or commercial uses would decrease the area in which natural and beneficial floodplain values would be preserved. The natural and beneficial values of

floodplain areas would continue to be compromised by development at national monument headquarters, the residence, the house used for administrative offices, and the storage of hazardous chemicals at headquarters.

Channel adjustment upstream could send water down a path toward the visitor center. Channel changes upstream of the national monument also could direct flow over the bluff in areas other than the existing channel, causing the flow to be directed toward the building (NPS 2003c).

The past effects of agriculture and urbanization on floodplains covered wide areas and were adverse. The effects on floodplains from current and anticipated future actions outside the national monument, along with the effects of the no-action alternative, would be moderate, long term, and adverse. Most impacts would result from agricultural and development actions outside the national monument, which might or might not be mitigated. The effects from the no-action alternative would contribute only a minuscule increment to the overall cumulative effect.

Conclusion. The continuing effects on natural and beneficial floodplain values from the no-action alternative would be minor, adverse, and long term, and the continuing effects on the floodplains' ability to function normally during flooding also would be minor, adverse and long term. Although the possibility of loss of life would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse effects on the visitors, employees, and property involved.

The national monument's floodplain resources would not be impaired by the actions of the no-action alternative.

Hydrology

If pumping water out of the quarries in the spring has affected hydrology, those impacts would continue to be undetected.

The bridge over Pipestone Creek near Winnewissa Falls would continue to impede floodwaters. This local impact would occur intermittently and last until floodwaters subsided. Because the staff of the national monument has determined that mitigation is required, the effect from the bridge is classified as moderate. Mitigation would be expected to be successful.

Cumulative Effects. The area's hydrology has been greatly altered by the heavy use and ditching of Pipestone Creek upstream, the removal of water with wells, quarrying on adjacent land, the use of tiles to drain areas near and possibly within the national monument, the reduction of the height of Winnewissa Falls in the national monument, and residential and commercial development.

The past effects on hydrology from draining land and altering water flows for agriculture and urbanization covered wide areas, were adverse to natural water flow, and restricted the distribution of surface water through the surrounding landscape. The effects on hydrology of current and anticipated future actions inside and outside the national monument, in conjunction with the impacts of the no-action alternative, would be moderate, long term, and adverse. Most impacts would result from agricultural use and development actions outside of the national monument, which might or might not be mitigated. The actions of this alternative would contribute a minuscule increment to the overall cumulative impact.

Conclusion. Floodwater would continue to be impeded by the bridge over Pipestone Creek near Winnewissa Falls, a moderate intermittent impact.

Soils

Under the no-action alternative, soil would be disturbed by ongoing maintenance such as road maintenance, revegetation, restoration, repair of buildings and utility systems, and large group activities in the northern part of the national monument. These actions would be restricted to the minimum area required. All the areas that would be affected have been previously disturbed. Sites with soil disturbance would undergo accelerated wind and water erosion, at least temporarily, until drainage structures were fully operational and vegetation had recovered in cleared areas. To conserve the available organic matter, topsoil, where present, would be retained and replaced. The work occurring in disturbed areas would result in minor long-term adverse impacts on soils.

Foot traffic on trails, in the picnic area, and in the Sun Dance ground would continue to compact soils, decrease permeability, alter soil moisture, and diminish water storage capacity, all of which would increase erosion and change the natural composition of vegetation. Altered vegetative composition would change the soil chemistry. Where foot traffic is heavy, the trails have been paved, and visitors are encouraged to stay on the maintained trails. Trail rehabilitation would include special design methods in areas where soils are easily eroded by wind and water. These impacts already have occurred to some degree because all the areas involved have been disturbed; consequently, soil erosion by wind and water, as well as soil nutrient transport, would be minor long-term adverse impacts.

Development has wholly or partially eliminated the direct inflow of water and diverted precipitation from some natural drainages. Soils have been compacted by foot traffic. These adverse effects would continue but would be minimized by management actions such as visitor education about the impacts of off-trail use, site hardening and trail paving, and restoring affected sites as funding became available. Most of these impacts already have occurred in the developed areas; consequently, impacts such as the inflow of water being eliminated, precipitation being diverted from natural drainages, and the compaction of soils would be minor, long term, and adverse.

Cumulative Effects. Agriculture has led to the erosion of soils by removing native vegetation. This, along with tilling the soil, has left soils exposed to erosion by wind and water. The future development of some private lands (such as those along or near the national monument borders and in the city of Pipestone) for residential use, tourism, or other uses could increase runoff, wind erosion, and soil compaction and alter soil regimes.

The past effects on soils from agriculture covered wide areas and were adverse. The effects on soils from current and anticipated future actions inside and outside the national monument, in conjunction with the effects of the no-action alternative, would be moderate and adverse because they would change the character of the soils over a relatively wide area. Mitigating measures that the national monument staff would undertake to offset the adverse effects are described in the "Soils" table under "Management Requirements for Natural Resources" (p. 30) and under "Ground Disturbance/Soils" in the section about mitigation (p. 87). Most impacts would result from development outside of the national monument, which might or might not be mitigated. The effects from the no-action alternative would contribute only a minuscule increment to the overall cumulative effect.

Conclusion. Soil disturbance from such things as ongoing maintenance would result in minor adverse long-term impacts on soils. The effects from development such as eliminating inflow of water, diverting precipitation from natural drainages, and soil compaction would be minor, long term, and adverse. The soil resources of Pipestone National Monument would not be impaired by the actions of the no-action alternative.

Wildlife

The no-action alternative would result in the disturbance of wildlife by ongoing maintenance such as road repair, revegetation, and restoration. However, there would be no change in the amount of wildlife habitat in the national monument under the no-action alternative. Development in the national monument would continue to occupy a small area.

Wildlife habitat would continue to be fragmented by roads, trails, and facilities. Wildlife habits and movement would continue to be altered by employees and visitors. People still would concentrate at the quarries, monument headquarters, the Circle Trail, and the picnic area. Twice a year, large gatherings involving many activities would take place in the northern part of the national monument. People would continue to disturb wildlife and degrade habitat. These intermittent adverse effects would be minor and long term.

Cumulative Effects. Agriculture and development have greatly reduced the number of native animals. Wildlife have been affected by being displaced and killed as vermin, and habitat has been lost through agricultural uses and the introduction of nonnative animals. Wildlife continues to be disrupted by development and human activity.

The future development of some private lands (such as those along or near the national monument borders and in communities) for residential, commercial, or other uses could alter wildlife habitat and habits and cause the loss of wildlife in some areas. Water use in these developments for residential or other uses could reduce the amount of water available for wildlife.

The past effects on wildlife from agriculture and development covered wide areas and were adverse. The effects on wildlife from current and anticipated future actions outside the national monument, in conjunction with the effects of the no-action alternative, would be moderate, long term, and adverse. Most impacts would result from development actions outside of the national monument, which might or might not be mitigated. The effects from the no-action alternative would contribute only a minuscule increment to the overall cumulative effect.

Conclusion. Overall, the fragmentation of wildlife habitat and the alteration of wildlife movement from the no-action alternative would continue to result in a long-term minor adverse effect. The wildlife resources of Pipestone National Monument would not be impaired by the actions of the no-action alternative.

Threatened or Endangered Species and Species of Special Concern

Topeka Shiner. The no-action alternative would not result in any changes in the habitat of the Topeka shiner in the national monument. The national monument staff would continue efforts to ensure that water quality in the creek would not be degraded by the actions of employees or visitors. The continuation of current trends would not affect the Topeka shiner or its critical habitat.

Western Prairie Fringed Orchid. The no-action alternative would not result in any changes in the habitat of the western prairie fringed orchid. Some of the orchids are in areas that visitors use, and these uses would continue. Because the orchids persist in the area, they must be reasonably tolerant of the activity level that has been occurring. The continuation of current trends would have no effect on the orchid.

Cumulative Effects. Agriculture and development have greatly reduced native plants and animals, including threatened and endangered species. The Topeka shiner has been affected by habitat destruction, degradation, modification, and fragmentation caused by siltation, reduced water quality, tributary impoundment, stream channelization, in-stream gravel mining, and changes in stream hydrol-

ogy. The species also has been affected by introduced predaceous fishes.

The western prairie fringed orchid has lost habitat (tallgrass prairie) to cropland, and the orchid's remaining habitat has been fragmented. "Mowing, haying, and grazing prevent the plants from flowering, stalling seed production" (Talley 2004). Croplands present an obstacle to the free movement of hawkmoths (the orchid's only pollinator) between orchid populations, and pesticide drift from nearby cropland can kill hawkmoths.

The future development of some private lands (such as those along or near the national monument's borders and in communities) for residential, commercial, or other uses could affect Topeka shiner or western prairie fringed orchid by altering suitable habitat.

The past effects of agriculture and urbanization on threatened or endangered species have been major and adverse. The effects on threatened or endangered species from current and anticipated future actions outside of the national monument, along with the effects of the no-action alternative, are not known because the locations of species outside the national monument in areas that might be affected are not known. Given the lack of information about impacts outside of the national monument, it is not possible to assess the relative magnitude of the effects of the no-action alternative, combined with current and anticipated future actions outside of the national monument.

Conclusion. Overall, the continued presence of development in the national monument, continued clearing of the road edges, and human disturbance would have no effect on the Topeka shiner or the western prairie fringed orchid. The threatened and endangered species of Pipestone National Monument would not be impaired by the actions of the no-action alternative.

VISITOR USE AND EXPERIENCE

Under the no-action alternative, the visitor experience at Pipestone National Monument would continue to be concentrated into the prime resource areas — the Three Maidens area, the visitor center area, the Circle Trail, the quarries, and the prairie.

Three Maidens Area

In the Three Maidens area is a picnic area next to the Three Maidens formation. The picnic area provides a recreational opportunity that would continue to have a long-term minor beneficial effect on visitors.

Conclusion. The no-action alternative would result in long-term minor beneficial effects on visitors in the Three Maidens area.

Visitor Center Area

The exhibits in the existing visitor center are historically inaccurate, difficult to maintain, culturally offensive to some, and inadequate in space and design. The inadequacies of these exhibits would hinder visitors' understanding of the national monument and therefore would continue to cause long-term major adverse effects on visitors.

The information desk in the visitor center is inadequate in space and design, and occasionally it becomes overcrowded. The inadequate design sometimes discourages visitors from asking for information they need. Therefore, under the no-action alternative the information desk would continue to cause long-term moderate adverse impact on visitors.

Demonstrations of pipemaking and other crafts by American Indians would continue to be offered in the demonstration area in the visitor center. The opportunity to experience these traditional activities would continue to result in a long-term major beneficial effect on visitors.

The restrooms in the visitor center are fully accessible to all visitors after renovations and updating of the sinks and fixtures was done in spring and summer 2003. Occasionally they become overcrowded. Therefore, the long-term impact on visitors under the no-action alternative would be moderate and adverse.

Conclusion. The no-action alternative would result in (a) long-term major adverse impacts on visitors viewing exhibits in the visitor center; (b) long-term major beneficial effects on visitors enjoying and learning from the pipestone carving demonstrations in the visitor center; and (c) long-term moderate adverse impacts on visitors using the restrooms in the visitor center.

Circle Trail Area

The Circle Trail loops past a few quarry sites, along Pipestone Creek, past Hiawatha Lake to Winnewissa Falls and the Nicollet marker, then it circles back to the visitor center area past the edge of the prairie remnant and south quarry line. The trail offers an important recreational and interpretive opportunity, and its long-term effect on most visitors would continue to be major and beneficial.

However, there are inappropriate maintenance storage areas near the start of the trail, and inappropriate practices occur near the start of the trail. Some of the trail is inaccessible to visitors in wheelchairs. These situations degrade the visual and scenic quality of the trail experience and prevent some visitors with mobility impairments from experiencing the entire trail; therefore, the long-term effects on some visitors from these inappropriate practices and storage areas would continue to be moderate and adverse.

Conclusion. The no-action alternative would cause (a) long-term major beneficial effects on visitors walking most of the Circle Trail and (b) long-term moderate adverse impacts on visitors walking the part of the Circle Trail near the maintenance areas.

Quarry Area

The quarry trail passes through an area of active quarry sites. The opportunity to observe these traditional quarrying activities would continue to result in a long-term moderate beneficial effect on visitors.

Prairie Area

The Circle Trail loops past the edge of the prairie remnant, allowing visitors to closely observe its species of vegetation. A wayside exhibit along this section of trail increases visitors' knowledge and understanding of the prairie remnant. Therefore, the long-term effect on most visitors would continue to be major and beneficial.

The entry road skirts the edge of the prairie remnant, allowing visitors to observe it from a distance; therefore, the long-term effect on most visitors would continue to be minor and beneficial.

Conclusion. Continuing the existing management of visitor services under the no-action alternative would cause (a) long-term major beneficial effects on visitors viewing the prairie area when walking the Circle Trail, at the Three Maidens area, at the cultural demonstrations in the visitor center, and at the quarries and the prairie remnant. It would result in (b) long-term minor beneficial effects on visitors viewing the prairie area from vehicles going to and from the visitor center via the entry road. However, continuing the existing conditions in the visitor center and some inappropriate practices along the Circle Trail would result in long-term adverse impacts on the visitor experience.

SOCIOECONOMIC ENVIRONMENT

Quarriers and Demonstrators

Continuing the current management should have no discernible effect on quarriers and demonstrators during the 15–20 year life of

this plan. It would not affect quarriers' ability to quarry, the ease of quarrying, or the supply of pipestone available to demonstrators.

Businesses

The no-action alternative would not involve any actions that would either stimulate revenue growth or cause it to decrease in businesses that are directly dependent on the national monument. Such businesses might have some advantage over similar businesses at a greater distance from the national monument, but quantifying that advantage would be difficult.

Community

Under the no-action alternative, the national monument could hire more seasonal or permanent employees as NPS funding initiatives or budget increases allowed. It is also possible that unfunded mandates could cause the national monument to reduce the number of employees to meet budget constraints. Purchases made in the community by the national monument would continue at approximately the current level.

Eleven permanent employees and as many as 10 seasonal employees work at Pipestone National Monument, depending on funding levels. As many as 6 part-time demonstrators also are employed. The Pipestone Indian Shrine Association (the cooperating association) employs 2 full-time workers. The total employment for Pipestone County in 2003 was 3,913. According to an NPS study (see p, 132), 118 jobs in the county were either directly or indirectly attributable to the national monument. Therefore, the effect of employment at the national monument on the county economy would continue to be moderate, long term, and beneficial.

The national monument's operating budget for 2005 was $793,000. The value of goods manufactured in Pipestone County in 1997 was approximately $97 million. The value of retail sales in the county in 1997 was approximately $94 million. The NPS Money Generation Model (see p. 133) estimates that Pipestone National Monument contributed $7.51 million into the community directly or indirectly. Therefore, the effect of the national monument on the Pipestone County economy would continue to be moderate, long term, and beneficial.

Cumulative Effects. Although past actions have affected socioeconomic resources, no actions in the no-action alternative would result in a new perceptible socioeconomic effect. The actions, together with those in the cumulative effect scenario, would not add appreciably to cumulative effects.

Conclusion. The no-action alternative would have no effect on quarriers or demonstrators.

The no-action alternative would result in a negligible long-term effect on businesses that are directly dependent on the national monument.

Because the employment and expenditures of the national monument are small compared to the county economy as a whole, the impacts of national monument employment and expenditures under this alternative would continue to be negligible, long term, and beneficial.

NATIONAL MONUMENT OPERATIONS

Maintenance

Maintenance facilities would continue to be cramped, with inadequate work space and inadequate storage for tools, small equipment, and supplies. Office space would continue to be in makeshift space not intended for offices. Vehicles and large items would continue to be stored outdoors year-round.

Facilities

The visitor center / administration / maintenance building would continue to operate with inadequate space for offices, curation, library, restrooms, and storage. The sales area would continue to lack space for displays, storage, and staff offices. Trails would be maintained, and the posts and railings would be removed from the bridge near Winnewissa Falls before winter and any predicted flooding. As structures continued to age, the maintenance staff might have more difficulty keeping up with structural deterioration.

Emergency Response Time

A law enforcement ranger would continue to live in one of the houses near the entrance to the national monument and would be available to respond to emergencies on the site. The staff of the visitor center / administration building would remain close to the trails and quarries. There would be no change in distance for city fire, police, or emergency vehicles.

Ability to Enforce Regulations

A law enforcement ranger would continue to be on the national monument staff to patrol trails and help visitors in emergencies. Visitors still would be able to bypass the visitor center, where the entry fee is collected. Laws and regulations would be enforced at the same level as at present.

Conclusion. The no-action alternative would result in long-term moderate adverse impacts on maintenance and facilities. There would be no change in emergency response time or in the ability of the national monument staff to enforce regulations.

UNAVOIDABLE ADVERSE IMPACTS

The following paragraphs describe the more important (moderate and major intensity) adverse impacts would result from this alternative. These are residual impacts that would remain after mitigation was implemented. The negligible and minor impacts are described in the foregoing analysis.

To those American Indians who believe that the national monument is not a traditional Sun Dance site, continuing to allow Sun Dances to take place under the no-action alternative would be culturally inappropriate and would thus constitute a moderate, adverse, and long-term impact in relation to their world-view — about revitalizing and reinforcing their traditional cultural identity.

With no preservation intervention, the Pipestone Indian School superintendent's house would continue to deteriorate. The effects on that structure would range from moderate today to major over time, and they would be adverse and long term.

Museum collections and archives could be subject to water damage if Pipestone Creek flooded. It appears that the visitor center is within the 100-year floodplain and the 500-year floodplain, and the visitor center would remain in its present location under this no-action alternative; therefore, flooding could occur. Historically the visitor center never has flooded, and although prompt efforts would be made to remove the museum collections and archives, if periodic Pipestone Creek flooding was perceived to threaten the curatorial and collections storage area in the visitor center, it is assumed that the integrity of many items in the collections and archives could be diminished because of water damage from flooding. If such flooding took place, the long-term adverse effects on museum collections and archives would be moderate.

Although the possibility of loss of life from flooding would be extremely small, there could be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse effects on the visitors, employees, and property involved.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The loss of integrity of many items in the national monument's museum collections and archives that could result if flooding took place would be irreversible and irretrievable.

Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse effects on the visitors, employees, and property involved. Any loss of life would be irretrievable.

RELATIONSHIPS OF SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

As was described on page 54, this no-action alternative would continue to preserve cultural resources (quarries, the visitor center, Sun Dances, the Three Maidens, and museum collections). It also would preserve and restore tallgrass prairie.

The occupation of the floodplains at headquarters, the employee residence, and the house used for offices would cause a long-term reduction in the natural beneficial values of the floodplain and would prevent it from functioning naturally.

The visitor center, the fuel storage building, the museum collections, and two houses used as an employee residence and for administration all would remain in the floodplain. All these resources could be damaged by flooding. Fuel in the fuel storage building could be released into floodwaters, potentially damaging natural resources. Although the possibility of loss of life would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse impacts on the visitors, employees, and property involved.

Noise, artificial lighting, and human activities associated with ongoing visitor and administrative use of the national monument would prevent natural prairie ecosystems and wildlife populations from reaching their full potential in size and population density. The quarrying of pipestone by Indians of all tribes as provided for in the enabling legislation would continue to reduce the quantity of this natural resource at the national monument.

IMPACTS OF ALTERNATIVE 1

CULTURAL RESOURCES

Cultural Landscapes

Before constructing any facilities or trail changes (for example, involving the Circle Trail, which probably contains features of all eight potential cultural landscapes), the National Park Service would undertake more site-specific study of the affected landscapes. This would be done to ensure that character-defining features (topography, vegetation, circulation, spatial organization, land use, natural systems and elements, historic structures and views, and small-scale elements) would not be affected or that the effects would be minimal. The potential adverse effects on cultural landscapes from such construction would be long term but of negligible to minor intensity.

As was mentioned earlier, as part of the general management plan process, NPS cultural resource specialists from the Midwest Regional Office evaluated the Mission 66 development at the national monument for eligibility for listing in the National Register of Historic Places and determined that several properties meet the national register criteria for historic significance. (see p. 115). The Minnesota state historic preservation office concurred with this determination in June 2003. These historic features are being treated as eligible, and it is anticipated that they will be nominated to the national register (see p. 115).

The Mission 66 visitor center, a contributing feature of the Mission 66 (1957–1969) cultural landscape, would be removed and razed under this alternative. The long-term effects on that national register-eligible cultural landscape would be major and adverse. It is likely that a memorandum of agreement would be executed among the National Park Service, the Minnesota state historic preservation officer, and the Advisory Council on Historic Preservation (if necessary) in accordance with 36 CFR 800.6(b). Mitigation identified in the memorandum of agreement would reduce the intensity of impact from major to moderate. Removing the visitor center from the potential ethnographic landscape, whose status is yet undetermined as a traditional cultural property eligible for the National Register of Historic Places, would be a moderate to major long-term beneficial effect on the "Prehistoric Quarrying into the Historic Period" aspect of the ethnographic landscape.

The status of the potential ethnographic landscape as a traditional cultural property is still undetermined. To be considered a *traditional cultural property*, an ethnographic resource must be listed in or eligible for listing in the National Register of Historic Places. A minor long-term beneficial effect would result from removing the visitor center from the potential ethnographic landscape.

Cumulative Effects. Agricultural development and construction in and around Pipestone National Monument have previously affected potential cultural landscapes both in the national monument and in the general vicinity. These activities have disturbed or changed the prairie setting and ultimately reduced the amount of surviving tallgrass prairie. Areas where such activities have occurred are the Pipestone Indian School and its successor, the Minnesota West Community and Technical College north and northeast of the national monument and subdivisions to the east, south, and west, as well as agricultural areas farther outside the boundaries. The long-term adverse effects on the tallgrass prairie as the setting in cultural landscapes have ranged from minor to major.

Reasonably foreseeable future actions that could occur throughout the region — for example, continued subdivision and proposed commercial development — also would disturb cultural landscapes outside the national monument by damaging or destroying

remnant tallgrass prairie patches that might otherwise remain and altered prairie lands that might be restored by the recovery of native plant species. The long-term regional adverse impacts on the prairie components of cultural landscapes from agricultural development and construction would range from minor to major.

Prairie restoration is underway through the recovery of native plant species at the Nature Conservancy's Hole in the Mountain property near the town of Lake Benton. Prairie restoration also is underway in the USFWS/MDNR Pipestone Wildlife Management Area north of the national monument. Similar programs are in place to the southwest at Split Rock Creek State Park and to the southeast at Blue Mounds State Park (where a bison herd is maintained). These programs would lead to a moderate long-term beneficial effect on associated cultural landscapes.

Remnant prairie preservation and prairie restoration from the recovery of native plant species would result in long-term minor to moderate beneficial effects on landscapes in the national monument that are potentially eligible for the national register. Alternative 1 would contribute to the overall moderate beneficial long-term cumulative effects on cultural landscapes in the region from prairie restoration.

The potential effects on landscapes eligible for national register listing that could not be avoided could be adverse. Such effects would range in intensity from minor to major, depending on the scope of the potential actions and the landscape features and patterns affected. Because implementing alternative 1 would result in razing the Mission 66 visitor center, this alternative would contribute a long-term major adverse impact to the overall cumulative minor to major adverse impacts of other past, present, and reasonably foreseeable actions.

Section 106 Summary. After applying the criteria of adverse effect of the Advisory Council on Historic Preservation (36 CFR 800.5, "Assessment of Adverse Effects"), the National Park Service concludes that implementing alternative 1 would cause a long-term adverse effect on the Mission 66 cultural landscape, which is eligible for the national register. Razing the Mission 66 visitor center would alter a character-defining feature of the cultural landscape and diminish the integrity of the landscape to the extent that its national register eligibility would be jeopardized. Before razing the visitor center, the National Park Service would negotiate a memorandum of agreement with the Minnesota state historic preservation officer about mitigating the adverse effect on the Mission 66 cultural landscape. The contributing CCC features constructed by students of the Pipestone Indian School would not be affected because the current trail system to which these features are integral would remain in place, and the proposed new trail segment would not disturb them.

Conclusion. Seven of the eight potential cultural landscapes would not be adversely affected by the actions of alternative 1. Removing the visitor center from the potential ethnographic landscape, whose status is yet undetermined as a traditional cultural property eligible for the National Register of Historic Places, would result in a moderate to major long-term beneficial effect on the "Prehistoric Quarrying into the Historic Period" aspect of the ethnographic landscape. There would be major long-term adverse effects on one historic cultural landscape.

Because there would be no major adverse effects on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Pipestone National Monument; (2) key to its natural or cultural integrity or opportunities for its enjoyment, or (3) identified as a goal in its general management plan or other relevant NPS planning documents, the national monument's resources or values would not be impaired.

Ethnographic Resources

Visitors could be intrusive to American Indian individuals placing offerings like sage, food, and personal items at the nearby Three Maidens rock formation. The effects from occasional, inadvertent intrusion on traditional use of the Three Maidens as an ethnographic resource would be minor, adverse, and long term.

The picnic area and restrooms near the Three Maidens rock formation would be removed as a source of inadvertent visitor intrusion, and the summer use of the Three Maidens as a component of the Hiawatha Pageant would cease, ending a specially permitted intrusion. This would be a minor long-term beneficial effect.

Although there would be new trails creating a new circulation pattern, including new access to the Circle Trail, that trail itself would remain unchanged. Therefore, American Indian access for similar religious reasons as above to the ethnographic resources associated with the Circle Trail — the Old Stone Face / Leaping Rock, Winnewissa Falls, and the Oracle rock formation — would be unchanged. Visitors walking along the trail occasionally would inadvertently intrude on American Indian practitioners. The effects caused by such inadvertent visitor intrusion on traditional use of these ethnographic resources would be minor, adverse, and long term.

The two annual Sun Dances would continue to take place, even if limited somewhat by the establishment of carrying capacity numbers for the land. The area in the national monument designated for this ceremonial purpose would continue to serve as a place of cultural expression. To American Indians who feel that continuing the Sun Dance here would be culturally appropriate because it seems to be a good modern site for a Sun Dance, the effects would be minor, beneficial, and long-term in relation to their concept of traditional cultural identity. To American Indians who feel that continuing the Sun Dance in this place would not be culturally appropriate because it apparently is not a traditional Sun Dance site, the effects would be moderate, adverse, and long term in relation to their opinions about revitalizing and reinforcing their traditional cultural identity.

The north quarry line would remain a location for sweat lodges, and it still would be closed to visitors. Although visitors still would be directed to stay on designated trails, they occasionally stray off the trails, inadvertently intruding on American Indian practitioners using sweat lodges. This occasional and inadvertent intrusion would apply to sweat lodge users in the areas of the north and Sun Dance quarries. The effects from such visitor intrusion on American Indian use of the sweat lodges would range from negligible to minor and be adverse and long term.

This occasional and inadvertent intrusion from straying visitors would apply to quarriers in the area of the main quarries and in the Sun Dance quarry area. During the two times of summer when the two different Sun Dances are performed, visitors are welcome at the Sun Dance ceremonies as long as they observe the protocols. Occasionally and inadvertently, wandering visitors intrude inappropriately during Sun Dances. The effects from such visitor intrusion on American Indian use of the sweat lodges in the northern sweat lodge area, the quarries in the main quarry area, and the Sun Dances in the Sun Dance area as ethnographic resources would range from negligible to minor and be adverse and long term. However, overall in this alternative, the effects from reducing the chances of visitor intrusion on American Indian use of the sweat lodges as ethnographic resources by requiring all of them to be placed in a more remote location would be minor, beneficial, and long term.

Overall, visitors walking among the quarries could cause occasional and inadvertent intrusions on American Indian practitioners working the main quarries or the Sun Dance quarry. The effects from visitor intrusion on the traditional use of the quarries as

ethnographic resources would be minor, adverse, and long term.

Cumulative Effects. The ethnographic landscape of Pipestone National Monument is prairie background setting for the ongoing but traditional American Indian quarrying in what is now the national monument.

Agricultural development and construction in and around Pipestone National Monument have previously affected the prairie setting both in the national monument and in the general vicinity. These activities have disturbed or changed the prairie setting and ultimately reduced the amount of surviving tallgrass prairie. Areas where such activities have occurred are the Pipestone Indian School and its successor, the Minnesota West Community and Technical College north and northeast of the national monument and subdivisions to the east, south, and west, as well as agricultural areas farther outside the boundaries. Regional long-term adverse effects on the tallgrass prairie as a setting reminiscent of a time before European–American influences continue to range from minor to major.

Reasonably foreseeable future actions occurring throughout the region — for example, continued subdivision and proposed commercial development — also could disturb the prairie setting outside the national monument by threatening any remnant tallgrass prairie patches that might remain and any altered prairie lands that might be restored by the recovery of native plant species.

In the region, prairie restoration through the recovery of native plant species is underway at the Nature Conservancy's Hole in the Mountain property near Lake Benton. Prairie restoration also is underway in the USFWS/MDNR Pipestone Wildlife Management Area north of the national monument. Similar programs are in place at Split Rock Creek State Park, Touch the Sky Prairie in Rock County, and at Blue Mounds State Park (where a bison herd is maintained). These programs would result in moderate long-term beneficial effects on potential ethnographic landscapes associated with traditional scenes.

The development of a parklike environment for American Indians to quarry catlinite pipestone through the Pipestone Indian School and then as a national monument has meant change in American Indian access to ethnographic resources. That change generally has been caused by the development of trails, bridges, and parking lots to make physical access to various ethnographic resources more convenient. To the extent that American Indians value convenience (for example, to help the elderly participate in activities), the long-term effects on ethnographic resources from the past and at present were minor to moderate and beneficial. To the extent that the natural setting contributes to the value of American Indian traditional use (there is some evidence from NPS observation of American Indian practitioners that it does) and that there has been a change in the setting away from nature associated with development, the long-term effects on ethnographic resources from the past and at present were minor to moderate and adverse.

Traditional American Indian practices associated with ethnographic resources (which happen to be all natural resources at Pipestone National Monument) are subject to inadvertent distraction from encounters by visitors. Past visitor use patterns have resulted in such encounters, which have caused long-term negligible to minor adverse impacts on American Indian practitioners.

Development has affected ethnographic resources outside of the national monument by making identifying potential ethnographic resources harder because of changes brought about by agriculture and home and commercial development. Various rock art sites, including Pipestone National Monument, show the importance of the state of Minnesota as a rock art district worthy of listing in the National Register of Historic Places, which happened on October 15, 1996.

In Minnesota, in the region around the national monument, the following locations could contain ethnographic resources relevant to American Indians: Blue Mounds State Park, Jeffers Petroglyphs State Historic Site, Split Rock Creek State Park, and the USFWS land administered by the Minnesota Department of Natural Resources, which is just north of the national monument. Jeffers Petroglyphs State Historic Site is the only one that maintains an ongoing program of consultation with American Indians to identify ethnographic resources (as does Pipestone National Monument). The fact that some ongoing American Indian consultations are underway and continuing is beneficial. More ethnographic information should result, which would be a minor long-term beneficial effect.

Removing the picnic area and restrooms near the Three Maidens rock formation under alternative 1 would contribute a long-term minor beneficial effect to the cumulative effects of other past, present, and reasonably foreseeable actions. Although alternative 1 would contribute both adverse and beneficial effects to such cumulative effects, and these would be small components of any overall cumulative effect, the overall contribution to cumulative effects would be beneficial.

Section 106 Summary. Since the "Affected Environment" chapter suggests that traditional cultural properties (ethnographic resources eligible to be listed in the National Register of Historic Places) may be represented at the national monument by the entire national monument or by individual resources, in accordance with the criteria of adverse effect of the Advisory Council on Historic Preservation (36 CFR 800.5), the determination of effect on traditional cultural properties would be *no adverse effect*.

Conclusion. The inadvertent distracting access of visitors to ethnographic resources in the presence of traditional practitioners would mean that the effects on traditional use associated with ethnographic resources would be minor, adverse, and long term. Removing the picnic area and restrooms near the Three Maidens rock formation would result in a long-term minor beneficial effect. Continuing the two annual Sun Dances would result in either a long-term minor beneficial effect or a moderate adverse effect, depending on the perspective of the person rendering the opinion.

Because there would be no major adverse effects on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Pipestone National Monument, (2) key to its natural or cultural integrity or opportunities for its enjoyment, or (3) identified as a goal in its general management plan or other relevant NPS planning documents, the national monument's resources or values would not be impaired.

Historic Structures

If the visitor center function was moved out of the national monument, the national register-eligible Mission 66 visitor center building would be razed. The effect on this historic structure would be major, adverse, and long term. The National Park Service would not take this action before consulting with the state historic preservation officer and identifying appropriate mitigation; for example, architectural, historical, and photographic documentation.

A memorandum of agreement (MOA) between the National Park Service and the state historic preservation office would be sought in accordance with 36 CFR 800.6(b). If necessary the Advisory Council on Historic Preservation also would be included in the memorandum of agreement. The MOA mitigative measures would reduce the intensity of the impacts on the visitor center building from major to moderate, but the effects would remain adverse and long term. However, if the visitor center function was relocated to downtown Pipestone in a historic building or buildings of Sioux quartzite, it would result in a

long-term moderate beneficial effect on the city's and county's historic preservation program by promoting the rehabilitation and use of historic buildings.

With the Pipestone Indian School superintendent's house not being acquired by the National Park Service under alternative 1, the National Park Service could contribute to the preservation and rehabilitation of this historic structure (see appendix F). Any rehabilitation assistance would necessitate conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. With much of the external historic fabric — the façade —preserved and the interior possibly redesigned (to make the building serve visitors and staffers better), the effects on this structure would be moderate, beneficial, and long term. These actions would be taken only after development of a Memorandum of Agreement with the State Historic Preservation Officer.

Cumulative Effects. Past actions in the national monument were the development of trails, bridges, and parking lots and the construction of maintenance facilities and two houses now used as a resource management office and a residence for a law enforcement ranger. Placing the visitor center in a central location on the Circle Trail was consistent with the "centralize and circulate" thinking of the Mission 66 era. The development of that trail has affected the way visitors use the visitor center, but since the center was centrally placed, development in the national monument has not affected the historic fabric of this late 1950s Mission 66 structure, unless the 1970s addition of space for the Pipestone Indian Shrine Association is viewed in that light. However, adding that space was consistent with the Mission 66 philosophy because it allowed visitors to watch American Indian pipestone carvers at work. The ability for visitors to interact with and learn from the demonstrators has become part of the centralized aspect of the visitor experience. The 1970s addition enhanced the function of the historic fabric and is part of historic significance of the visitor center's eligibility in its own right for the National Register of Historic Places. The historic fabric of the structure could be threatened by its apparent location in the 500-year and 100-year floodplains. However, past flooding of Pipestone Creek suggests that any serious damage would be unlikely, although damage still could result. Vandalism has not been a problem at the visitor center.

Actions expected in the region in the reasonably foreseeable future, such as continued subdivision and commercial development, have no potential to affect historic structures in the national monument. Such actions would result in a negligible effect, if any, on historic structures outside the national monument, except that this economic activity appears to be generating no funding to preserve the Indian School superintendent's house, which is listed in the National Register of Historic Places. However, under this alternative the National Park Service would help the owners of the Indian School superintendent's house preserve and interpret the structure. This would contribute to the historic preservation efforts that are in place in the city of Pipestone and other towns in the County to rehabilitate and adaptively reuse the late 19th century business and municipal architecture characterized by the use of local Sioux quartzite as the predominant building material.

Preserving and interpreting the Pipestone Indian School superintendent's house under alternative 1, pending available funding, would complement the razing of the national monument's visitor center and relocating the visitor center function. If the visitor center function was relocated to downtown Pipestone in a historic building or buildings of Sioux quartzite, it would result in a long-term moderate beneficial effect on the city's and county's historic preservation program by promoting the rehabilitation and use of historic buildings.

NPS help in preserving and interpreting the Pipestone Indian School superintendent's house also would contribute a long-term moderate beneficial effect on local and regional historic preservation. The cumulative impacts associated with alternative 1 would be long term and both adverse and beneficial.

Razing the Mission 66 visitor center would contribute a long-term major adverse impact to any overall cumulative impact. However, those adverse impacts would be partially offset by the long-term moderate beneficial effects of the other actions. In addition, the adverse effect caused by razing the visitor center would be reduced from major to moderate through a memorandum of agreement with the state historic preservation officer for mitigation. Although implementing alternative 1 would result in both adverse and beneficial effects, its overall contribution to cumulative effects would be adverse.

Section 106 Summary. After applying the criteria of adverse effects of the Advisory Council on Historic Preservation (36 CFR 800.5), the National Park Service concludes that implementing alternative 1 would result in an adverse effect on the national monument's historic properties listed in or eligible to be listed in the National Register of Historic Places, namely the Mission 66 visitor center. Before razing the Mission 66 visitor center, Pipestone National Monument would negotiate and execute a memorandum of agreement with the Minnesota state historic preservation officer in accordance with 36 CFR 800.6 (c), "Resolution of Adverse Effects: Memorandum of Agreement." The memorandum of agreement would stipulate how the adverse effect would be mitigated, for example, by documenting and recording the structure before it was demolished. It is expected that the mitigative measures identified in the memorandum of agreement would reduce the intensity of the adverse impact from major to moderate. Assuming technical assistance is available (see appendix F), the National Park Service also concludes that implementing alternative 1 would have no adverse effect on the national register-listed Pipestone Indian School superintendent's house.

Conclusion. Razing the Mission 66 visitor center building would cause a major long-term adverse effect. Rehabilitating the Pipestone Indian School superintendent's house would result in a moderate beneficial long-term effect on that historic structure.

Although razing the Mission 66 visitor center would be a permanent, adverse impact of major intensity and long-term duration, there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Pipestone National Monument, (2) key to its natural or cultural integrity or opportunities for its enjoyment, or (3) identified as a goal in its general management plan or other relevant NPS planning documents; therefore, the national monument's resources or values would not be impaired.

Museum Collections and Archives

Relocating the visitor center away from the national monument under alternative 1 and including in the new quarters a section designed and rehabilitated to meet state-of-the-art museum standards would result in the following effects on museum collections and archives: The effects from the risk involved in moving artifacts, specimens, and archives would be negligible to minor, adverse, and short term. Every effort would be made to ensure the protection of all objects during the move and reinstallation. Having essential additional space for future curation, research, and storage — better protected and environmentally controlled — and being free of the current location in the 100-year and 500-year floodplains would result in moderate to major long-term beneficial effects

Cumulative Effects. In the past and at present the national monument's museum collections

and archives have been at risk by being housed in the visitor center, which is in the floodplain. If Pipestone Creek flooded, the long-term adverse impacts on museum collections and archives would range from moderate to major. The intensity of the impact would depend on the amount and rate of flooding, whether there was sufficient warning to enable the staff to implement the evacuation plan that is in place for protecting the collections and archives, and how high from the floor particular artifacts and documents or photographs were stored in relation to the height of the water entering the storage area. However, in alternative 1, relocating the museum collections and archives away from the national monument (in a relocated and rehabilitated visitor center, possibly in downtown Pipestone) would result in long-term moderate beneficial effects because the threat of flooding would be eliminated.

Conclusion. Museum collections and archives would be better secured under alternative 1. Negligible to minor adverse short-term impacts would result from the risk of packing, moving, storing, and reinstalling the artifacts, specimens, and documents to newly rehabilitated quarters. Moderate long-term beneficial effects would result from providing new state-of-the-art space for museum collections and archives away from the national monument, possibly in downtown Pipestone, to conduct future curation, research, and storage.

Because there would be no major adverse effects on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Pipestone National Monument, (2) key to its natural or cultural integrity or opportunities for its enjoyment, or (3) identified as a goal in its general management plan or other relevant NPS planning documents, the national monument's resources or values would not be impaired.

NATURAL RESOURCES

Vegetation

Remnant Tallgrass Prairie. Remnant prairie has survived despite other uses having taken place. It is made up of Sioux quartzite prairie, mesic crystalline bedrock prairie, and oak savanna/woodland. In this document, the effects on the remnant prairie as a whole will be described under remnant tallgrass prairie. Effects specific to mesic crystalline bedrock prairie will be described under that heading. The alternatives would not affect the other two components of remnant tallgrass prairie, Sioux quartzite prairie and oak savanna/woodland.

Placing most of the national monument in the prairie preservation zone would decrease the fragmentation of the remnant prairie (by removing facilities), improving its sustainability. The decrease in fragmentation would reduce the number of corridors for the invasion of exotics and improve the success of exotic control.

Establishing a carrying capacity for the 8-acre Sun Dance area in the ceremonial use zone at the north end of the prairie might reduce the twice-annual degradation of the remnant prairie. Heavy use in this zone would continue to denude native vegetation and increase the encroachment of exotics. Mowing and trampling of the site during its use would continue to decrease fuel loading and fuel continuity, which would reduce the ability of the prairie to carry fire, an important means of enhancing the preservation of the prairie ecosystem. Continued use of the northern part of the remnant prairie for large gatherings would increase the potential for the loss of native plants. However, managing use within a carrying capacity would control the intensity of use, potentially causing measurable improvement in the condition of native plants in the 8-acre area. The effect would be minor, long term, and beneficial.

Removing the visitor center, parking, and the road from the visitor center to the south quarry entrance, two houses, a residential area road, and a garage, would allow the restoration of approximately 6 acres of remnant prairie. The increase in abundance and distribution of remnant prairie and the reduction in fragmentation would be a minor long-term beneficial effect on remnant tallgrass prairie.

Acquiring the school district's land on the northeast boundary of the monument and intensively managing it would make it possible to restore 15.3 acres of farm fields, exotic trees, and buckthorn to remnant prairie and further buffer the prairie in the national monument from the invasion of exotic species. The increase in the abundance and distribution of remnant tallgrass prairie would result in a minor long-term beneficial effect on this community type.

Mesic Crystalline Bedrock Prairie. Removing the entrance road from the south quarry entrance to the visitor center, the visitor center itself, and the parking area and restoring natural contours west of the south quarry line would improve water flow through the national monument, potentially restoring historic soil moisture levels in the mesic prairie, a potential moderate long-term beneficial effect.

There would be a slight loss of mesic crystalline bedrock prairie, about 0.25 acre, from constructing a 6-car parking area for south quarry line access. Converting the maintenance storage area to parking would result in no net change in the mesic crystalline bedrock prairie. Overall, this loss of about 0.25 acre of prairie would not affect the overall viability of the plant community and would be a minor long-term adverse impact on the prairie.

Restored Tallgrass Prairie. The restored tallgrass prairie plant community covers an area where tallgrass prairie was lost to agricultural activities but is being restored by national monument staff, who reduce the numbers and extent of exotic plants and reseed areas with native seed of tallgrass prairie plants.

The restored tallgrass prairie would be increased in size through intensively managing most of the national monument in the prairie preservation zone. The National Park Service would coordinate and cooperate with the U.S. Fish and Wildlife Service and the Minnesota Department of Natural Resources on prescribed burns, managing prairie and exotic species, Sun Dances, and access to the northern quarries, as well as on trash removal and possibly law enforcement. This could result in a substantial increase in the abundance and distribution of the prairie community, a major long-term beneficial effect.

There would be a loss of about 1 acre of restored prairie from converting the maintenance storage area above the falls to parking, a prairie overlook, a kiosk, restrooms, and a national monument entrance. A loss of about 0.5 acre of restored prairie would result from building a trail from the new parking area to Winnewissa Falls. The new trail would increase the fragmentation of this community for the length of the trail. These effects, which would occur over a relatively small area, would be minor, long term, and adverse.

Cumulative Effects. Agriculture and development have greatly reduced native prairie plants. Plants have been affected by being displaced, and habitat has been lost through agricultural uses and introduction of nonnative plants.

In the past, flourishing exotic plants on the adjacent USFWS/MDNR land north of the national monument were a source of seed that was dispersed to the national monument.

The development of some private lands for residential or commercial uses (such as those east and south of the national monument boundary) could increase runoff, wind erosion, the number of exotics, and soil compaction and could alter soil regimes.

The past impacts of agriculture and development on vegetation covered wide areas and were adverse. The effects of current and anticipated future actions outside the national monument, in conjunction with the impacts of this alternative, would result in major long-term adverse impacts on tallgrass prairie. Most of the impacts would result from development outside of the national monument, which might or might not be mitigated. The actions of this alternative would contribute only a minuscule increment to the overall cumulative impact.

Conclusion. Acquiring the school district lands and restoring 15.3 acres to remnant prairie, managing the use of the 8-acre Sun Dance area within a carrying capacity, and removing 6 acres of development, followed by the restoration of remnant tallgrass prairie, would result in a minor long-term beneficial effect on this community type.

Removing the entrance road from the south quarry entrance to the visitor center, removing the visitor center and parking area, and restoring natural contours west of the south quarry line would improve water flow through the national monument, potentially restoring historic soil moisture levels in the mesic crystalline bedrock prairie — a potential moderate long-term beneficial effect.

Increasing the size of the restored tallgrass prairie would cause a substantial increase in the abundance and distribution of the prairie community, a major long-term beneficial effect.

Wetlands and Riparian Corridor

Before the design was begun for the removal of the visitor center, roads, parking, a garage, and residences, wetland areas would be delineated with the use of the Cowardin system (as described in U.S. EPA 1989). Wetland areas would be avoided in the removal of facilities and the restoration of sites, and filled wetlands on the sites would be restored if feasible. Should it be infeasible to avoid wetlands during the removal and restoration, the planning team would prepare a statement of findings for wetlands in cooperation with the Water Resources Division of the National Park Service to explain why the impact would be unavoidable and describe mitigating measures that would be used.

More intensive exotic control would improve the condition of native riparian vegetation. There would be potential for an increase in wetland habitat following the removal of the visitor center, the entrance road from the visitor center to south quarry entrance, and associated road drainage structures, two houses, a garage, and a road — and the restoration of natural contours. This would be a minor long-term beneficial effect.

Cumulative Effects. Some wetlands in and outside of the national monument have been filled to make more land available for growing crops. These practices decrease wetland areas and degrade natural and beneficial wetland values in exchange for benefit to agricultural uses. NPS structures and visitor uses in wetland areas contribute to the loss of natural and beneficial values.

The presence of tiles over a wide area, perhaps including the national monument, and continued heavy use of Pipestone Creek would continue to result in major long-term reductions in wetland area and in beneficial values of wetlands in the national monument and upstream and downstream of the national monument. Further development in wetlands outside the national monument for residential, agricultural, or commercial uses would decrease the area in which natural and beneficial wetland values would be preserved.

The severe hydrological alterations of the creek's watershed have increased sediment deposition, causing a change in both floral and faunal composition along the creek corridor.

The past impacts of agriculture and urbanization on wetlands covered wide areas and were

major and adverse. The continuing use of agricultural and other chemicals that make their way into Pipestone Creek contributes to adverse impacts on wetlands along the creek. The impacts on wetlands from other current and anticipated future actions, in conjunction with the impacts of this alternative, would be moderate, long term, and adverse. Most impacts would result from development actions outside the national monument, which might or might not be mitigated. The actions of this alternative would contribute only a minuscule increment to the overall cumulative impact.

Conclusion. The actions of alternative 1 would have an appreciable effect on natural processes and a minor long-term beneficial effect on wetlands, including those in the riparian corridor. The wetlands resources in the national monument, including those in the riparian corridor, would not be impaired by the actions of this alternative.

Floodplains

Natural and Beneficial Floodplain Values. Removing the visitor center (including the fuel storage building, the museum collections and parking area, the road from the visitor center to the south quarry entrance, the employee residence, the house used for administrative offices, the garage, and the residential area road) from the floodplain would allow for the restoration of natural and beneficial floodplain values in the area of these facilities. The natural functioning of the floodplain would be restored over about 6 acres. Replacing the maintenance outdoor equipment storage area with a visitor parking area, a kiosk, an overlook, and restrooms above the falls and adding a small parking area at the south quarry entrance would place additional impermeable surfaces within the 100-year floodplain, reducing natural and beneficial floodplain values. There would be a net gain of about 5 acres of reduced development in the floodplain, and natural and beneficial floodplain values would be restored. This would be a minor beneficial long-term effect on natural and beneficial floodplain values.

Flooding. Removing the visitor center (including the fuel storage building, the museum collections and parking area, the road from the visitor center to the south quarry entrance, the employee residence, the house used for administrative offices, and the garage) from the floodplain would mean that these facilities no longer would restrict floodwaters or decrease permeability in the floodplain. Removing the fuel storage facility at the visitor center and removing the maintenance function from the area would prevent the potential spilling of fuels used in maintenance vehicles and equipment into floodwaters in the event of a 100-year flood.

More impermeable surfaces would be placed within the 100-year floodplain by replacing the maintenance storage area with a paved visitor parking area, an overlook, a kiosk, and restrooms above the falls and by adding a small parking area at the south quarry entrance. This would cover about 1 acre, decreasing the permeability of areas within the floodplain. Together, these actions would cause a local impact on flooding. The net removal of about 5 acres of buildings and impermeable surfaces would have a minor long term beneficial effect on flooding.

Under alternative 1, removing the visitor center, parking, the entrance road, an employee residence, and a house used for administrative offices would mean that few visitors and employees would be at risk from flooding. Some would be at risk if they were in the new parking area that would replace the maintenance storage area, in the small parking area at the south quarry entrance, on the Circle Trail, or in or near the quarries. Although the possibility of loss of life would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse impacts on the visitors, employees, and property involved.

If this alternative was selected for implementation, a statement of findings for floodplains would be prepared because locating a large parking area (such as the one at the site of the maintenance storage area) within the 100- year floodplain is contrary to NPS policy. The statement of findings would explain why the best available alternative would be to remove most facilities from the floodplain, leave part of the entrance road in the floodplain, and construct a new parking area for visitor access within the 100-year floodplain. It also would describe mitigating measures that would be undertaken to reduce the impacts.

Cumulative Effects. The heavy use and ditching of Pipestone Creek upstream have greatly reduced the extent of the floodplain and the natural and beneficial values of floodplains in the national monument.

Cattle and other farm animals probably have been allowed to use some riparian areas in and near the national monument. This practice degrades natural and beneficial floodplain values in exchange for benefits to agricultural uses. NPS structures and visitor uses in floodplain areas contribute to the loss of natural and beneficial values.

Further development in floodplains and wetlands outside the national monument for residential, agricultural, or commercial uses would decrease the area in which natural and beneficial floodplain values would be preserved.

Under this alternative, the natural and beneficial values of floodplain areas would continue to be compromised by the development at national monument headquarters, the employee residence, the house used for administration, and the storage of hazardous chemicals at headquarters.

The past impacts of agriculture and urbanization on floodplains covered wide areas and were adverse. Impacts on floodplains from current and anticipated future actions inside and outside the national monument, in conjunction with the impacts of this alternative, would be moderate, long term, and adverse. Most impacts would result from agricultural use and development actions outside of the national monument, which might or might not be mitigated. The actions of alternative 1 would contribute a minuscule increment to the overall cumulative effect.

Conclusion. The net removal of about 5 acres of buildings and impermeable surfaces would cause a minor long term beneficial effect on natural and beneficial floodplain values. The continuing impact on the floodplains' ability to function normally during flooding would be minor, adverse, and long term.

Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse impacts on the visitors, employees, and property involved. The national monument's floodplain resources would not be impaired by the actions of this alternative.

Hydrology

Removing the visitor center, the parking area, the road from the visitor center to the south quarry entrance, two houses, a garage, and the associated road and recontouring the area would partially restore water flow patterns across the national monument. Acquiring the school district lands south of the Minnesota West Community and Technical College on the national monument's eastern boundary would maintain water flow patterns because development would not occur and remnant prairie would be restored. Overall, this would be a moderate long-term local beneficial effect on hydrology.

Cumulative Effects. The area's hydrology has been greatly altered by the heavy use and ditching of Pipestone Creek upstream, the removal of water with wells, quarrying on

adjacent land, the use of tiles to drain areas near and possibly within the national monument, the reduction of the height of Winnewissa Falls in the national monument, and residential and commercial development.

Under this alternative, removing the development and acquiring the school district lands south of the Minnesota West Community and Technical College would maintain or improve water flow patterns. The past effects on hydrology from draining land and altering water flows for agriculture and urbanization covered wide areas, were adverse to natural water flow, and restricted the distribution of surface water through the surrounding landscape.

The effects on hydrology from current and anticipated future actions inside and outside the national monument, in conjunction with the impacts of this alternative, would be moderate, long term, and adverse. Most impacts would result from agricultural use and development actions outside the national monument, which might or might not be mitigated. The actions of this alternative would contribute a minuscule increment to the overall cumulative impact.

Conclusion. Alternative 1 would result in a moderate long-term local beneficial effect on hydrology. The national monument's hydrologic resources would not be impaired by the actions of alternative 1.

Soils

Establishing carrying capacities based on acceptable levels of resource impact might reduce soil compaction if the carrying capacities were set below the current levels of use. Ceremonies attended by large groups of people (450 or more people on 8 acres once each summer and 50 people once each summer) compact soils at the ceremonial grounds. The compacting is greater in areas of heavy, concentrated use such as the kitchen / cooking structure area and the sweat lodge fire ring. Soils would continue to be sterilized in areas of fire rings used for cooking and sweat lodges. Establishing a carrying capacity for the ceremonial area based on acceptable levels of resource impact would result in a minor beneficial long-term effect on soil at the ceremonial ground (8 acres).

Removing development at the visitor center, the parking area, the entrance road to the south quarry entrance, a residence, a house used for offices, and a garage would remove impermeable surfaces from about 6 acres of soil, allowing it to function more naturally. If grading the site was required, some of the soil profile would be permanently lost. However, it is possible that regrading would affect only fill that was brought in for the construction of the visitor center. Removing these facilities would result in a minor beneficial long-term effect on soils.

Converting the maintenance outdoor equipment storage area to a paved parking area and adding a small parking area at the south quarry entrance would compact and cover soils on about 1 acre with an impermeable surface. If grading of the parking area site was required, some of the soil profile would be permanently lost. Overall, this would be a minor long-term adverse impact on soils.

Constructing a trail from the new parking area to the top of Winnewissa Falls would result in about 0.5 acre of soil disturbance and would cover about 0.5 acre of soil with an impermeable surface. Soil productivity would be reduced because the impermeable surface would prevent natural soil processes from occurring, a long-term minor adverse impact.

Cumulative Effects. Agriculture has led to the erosion of soils by removing native vegetation. This, along with tilling the soil, has left soils exposed to erosion by wind and water.

The future development of some private lands (such as those on or near national monument borders and in the city of Pipestone) for residential, tourist-related, or other uses could

increase runoff, wind erosion, and soil compaction and alter soil regimes.

The past effects on soils from agriculture covered wide areas and were adverse. This alternative would result in an overall minor beneficial long-term effect on about 14 acres and a minor long-term adverse effect on 1.5 acres. The effects on soils from current and anticipated future actions inside and outside of the national monument, in conjunction with the effects of this alternative, would be moderate and adverse because they would change the character of the soils over a relatively wide area, and mitigating measures probably would be necessary to offset adverse effects. Most effects would result from development outside the national monument, which might or might not be mitigated. The actions of alternative 1 would contribute a minuscule increment to the overall cumulative effect.

Conclusion. Establishing a carrying capacity for the ceremonial area (about 8 acres) and removing facilities from about 6 acres would cause a minor long-term beneficial effect on soils. If grading of sites was necessary as part of restoration, some of the soil profile would be permanently lost, a minor long-term adverse effect on soil. Converting the maintenance outdoor equipment storage area to parking (about 1 acre), adding a small parking area at the south quarry entrance, and constructing a trail would cause a minor long-term adverse impact on soils.

The national monument's soil resources would not be impaired by the actions of this alternative.

Wildlife

Under this alternative, the size and connectivity of the prairie would be increased by

- placing most of the national monument in the prairie preservation zone
- developing a cooperative agreement with the U.S. Fish and Wildlife Service and the Minnesota Division of Wildlife to cooperatively manage adjacent boundary lands as one contiguous prairie preservation zone while conforming to the designated purpose of each agency
- acquiring the school district lands south of Minnesota West Community and Technical College on the national monument's eastern boundary (15.3 acres) and managing this land as prairie
- removing the visitor center, the parking area, part of the main road, two houses, a garage, and the maintenance storage area (6 acres) and managing this land as prairie

These actions would improve habitat for many faunal groups such as birds, reptiles, amphibians, and insects. Paving the maintenance storage area for parking would result in the loss of about 1 acre of disturbed, low quality habitat. Overall, there would be a net gain of about 6 acres of habitat, a moderate long-term beneficial effect on wildlife.

Mowing about 8 acres and holding Sun Dances on about 8 acres in the ceremonial use zone at the northern end of the national monument would continue to degrade remnant prairie, thereby degrading wildlife habitat and reducing cover and forage. Because wildlife could use the area during the rest of the year, this would be a continuing minor long-term adverse impact on wildlife. Establishing a carrying capacity for the Sun Dance grounds might mitigate the adverse impact on wildlife to some degree, depending on the capacity determined. This small local effect would be minor, beneficial, and long term.

Cumulative Effects. Agriculture and development have greatly reduced the numbers of native animals. Animals have been affected by being displaced and killed as vermin, and habitat has been lost through agricultural uses and the introduction of nonnative animals. Wildlife continues to be disrupted by development and human activity.

The development of some private lands (such as those on or near the national monument boundary and in communities) for residential, commercial, or other uses could alter wildlife habitat and habits and cause the loss of wildlife in some areas.

The past impacts of agriculture and development on wildlife covered wide areas and were adverse. The impacts on wildlife from current and anticipated future actions outside the national monument, in conjunction with the impacts of this alternative, would be moderate, long term, and adverse. Most of the impacts would result from development actions outside the national monument, which might or might not be mitigated. The actions of alternative 1 would contribute a minuscule increment to the overall cumulative impact.

Conclusion: A net gain of about 6 acres of habitat would cause a moderate long-term beneficial effect on wildlife. Establishing a carrying capacity for the Sun Dance grounds might mitigate the continuing minor long-term adverse impact on wildlife to some degree.

The national monument's wildlife resources would not be impaired by the actions of alternative 1.

Threatened or Endangered Species and Species of Special Concern

Topeka Shiner. This fish, listed as endangered by the federal government, occupies prairie rivers and streams. The U.S. Fish and Wildlife Service has listed Pipestone Creek within the Monument as part of the critical habitat for the fish.

Removing most development from the national monument would not change the habitat of the Topeka shiner in the national monument. The Pipestone National Monument staff would continue efforts to ensure that the water quality of Pipestone Creek would not be degraded by staff or visitor actions.

This alternative would not have any effect on the Topeka shiner or on critical habitat downstream.

Western Prairie Fringed Orchid. This federally listed threatened plant lives on mesic (moist) prairies and sedge meadows. Removing houses and part of the access road and subsequently restoring the natural vegetation would reduce human disturbance of mesic crystalline bedrock prairie, thus improving orchid habitat. This action would result in a minor beneficial long-term effect on the orchid.

A small portion of orchid habitat south of the entrance road would be at risk for loss because of placing it in the quarry zone. If this alternative was chosen to be the new management plan for Pipestone National Monument, before implementing the alternative, the National Park Service, in consultation with the U.S. Fish and Wildlife Service, would evaluate the potential effects on the orchid and ways to mitigate those effects. The consultation and mitigation would ensure that there would be no adverse effect on the orchid.

Removing the sewer and water lines beneath the site that the orchids occupy might result in the destruction of some or all of the orchids, a moderate long-term adverse effect on the orchids. At the beginning of the planning or design process for removing the lines, the National Park Service, in consultation with the U.S. Fish and Wildlife Service, would evaluate the potential effects on the orchid and ways to mitigate those effects. Examples of potential mitigation are allowing the sewer and water lines to remain underground in the vicinity of the orchids or transplanting the orchids during the line removal and replanting them afterward. This alternative would not affect the orchids.

Cumulative Effects. Agriculture and development have greatly reduced native plants and animals, including threatened and endangered species. The Topeka shiner has been affected by habitat destruction, degradation,

modification, and fragmentation resulting from siltation, reduced water quality, tributary impoundment, stream channelization, in-stream gravel mining, and changes in stream hydrology. The species also can be affected by introduced predaceous fishes.

The western prairie fringed orchid has lost habitat (tallgrass prairie) to cropland, and its remaining habitat has been fragmented. "Mowing, haying, and grazing prevent the plants from flowering, stalling seed production" (Talley 2004). Croplands present an obstacle to the free movement of hawkmoths (the orchid's only known pollinator) between orchid populations, and pesticide drift from nearby cropland can kill hawkmoths.

The development of some private lands, such as those on or near the national monument boundary, as well as development in nearby communities for residential, commercial, or other uses, could affect the Topeka shiner or the western prairie fringed orchid by altering suitable habitat. Water use for the developments or for activities not requiring development could reduce the amount of water available for habitat for these species.

The past impacts on threatened and endangered species from agriculture and urbanization have been major and adverse. The effects on threatened and endangered species from current and anticipated future actions outside the national monument, in conjunction with the impacts of alternative 1, are not known because the locations of species outside the national monument in areas that might be affected are not known. Given the lack of information about impacts outside the national monument, it is not possible to assess the relative magnitude of the impacts of alternative 1 combined with current and anticipated future actions outside the national monument.

Conclusion. This alternative would have no effect on the Topeka shiner.

Removing houses and part of the access road and restoring natural vegetation would reduce human disturbance of the orchid habitat, causing a long-term minor beneficial effect. If the U.S. Fish and Wildlife Service determined that the orchid might be affected by removing the sewer and water lines from beneath one site occupied by orchids or by placing a small part of orchid habitat in the quarry zone, the National Park Service would develop mitigating measures in consultation with that agency to ensure that there would be no impacts on the orchid.

The threatened and endangered species of Pipestone National Monument would not be impaired by the actions of alternative 1.

VISITOR USE AND EXPERIENCE

There would be a change in the visitor experience at Pipestone National Monument under alternative 1. Three small visitor service areas around the national monument's perimeter — a restroom facility, a new entrance road, and a prairie overlook — would affect visitor access into the prime resource area.

Three Maidens Area

The Three Maidens zone would be combined with the quarry zone in alternative 1, with this area reverting to prairie. The long-term effect on visitors from seeing the formation and other natural resources in their natural prairie setting would be major and beneficial.

New Entrance Area

New exhibits would be available only in an offsite facility a few miles from the national monument under alternative 1. This would make visitors' access to the exhibits a little more difficult, and some visitors might not see the exhibits until after they had visited the national monument. Therefore, the long-term effect on visitors to the new exhibit area would be moderate and adverse. However,

the interpretive themes of the national monument would be presented better by the new exhibits at the offsite facility. They would be presented in a historically accurate, easy to maintain, culturally unbiased manner that would be both interactive and compelling in design. Therefore, there would be a long-term major beneficial effect on the overall visitor experience.

A new, adequately sized information desk would enable the national monument staff to serve visitors more efficiently under alternative 1, alleviating occasional overcrowding. Therefore, the long-term effect on visitors would be moderate and beneficial.

There would continue to be a demonstration area in the new offsite visitor facility. Visitors would have the opportunity to see American Indians making pipes and demonstrating other crafts. There would be a long-term major beneficial effect on visitors from this change.

New, fully accessible modern restrooms would be available at both the new entrance and the kiosk area and along the entrance road. This would be a long-term major beneficial effect on the visitor experience.

Circle Trail Area

A new trail leading from the new entrance to a location above Winnewissa Falls would connect to the existing Circle Trail, which still would loop past the Nicollet marker, Winnewissa Falls, Pipestone Creek, Hiawatha Lake, the quarry sites, and the prairie remnant. The trail would give access to all the resources in the national monument, with minimal impact on the landscape. The effect on the visitor experience from this new trail would be major, long term, and beneficial.

Quarry Area

Modifying the existing trails where feasible and making features along the quarry trails fully accessible would result in a long-term moderate beneficial effect on visitors.

Prairie Area

The Circle Trail still would loop past the edge of the prairie remnant under alternative 1, allowing visitors to observe the species of vegetation closely. This would continue to be a major beneficial effect on the visitor experience. The new prairie overlook off County Road 67 would give visitors a sweeping view of the remnant prairie, a major beneficial effect on most visitors.

Conclusion. Alternative 1 would result in long-term major beneficial effects on the visitor experience at the Three Maidens area, the exhibits in the new offsite visitor facility, the restroom accommodations, the Circle Trail area, and the prairie remnant. There would be long-term moderate beneficial effects on the visitor experience at the information desk and the quarry area. A long-term moderate adverse effect on visitors would result in this alternative from the effects on visitors' ability to find the new offsite visitor center.

SOCIOECONOMIC ENVIRONMENT

Quarriers and Demonstrators

Removing the visitor center from the current location and truncating the entrance road would cause some minor inconvenience to quarriers because the distance between some quarries and the restrooms would be greater. Likewise, quarriers who now park their vehicles at the visitor center parking area would have to park near the south quarry line trail entrance, then use wheelbarrows or similar devices to move the stone and tools from quarry to vehicle. The south quarry line then would be more desirable for quarriers wanting quicker access to vehicles, and the north quarry line would be more desirable for those wanting solitude. Alternative 1 would

not affect the availability of any quarries or the current permitting process. There would be no economic effect on quarriers.

Demonstrators would move into a new visitor center facility. Their numbers would be expected to remain the same.

Businesses

Alternative 1 would result in a negligible effect on businesses that are directly dependent on the national monument, such as the campground and the gift shop across Hiawatha Avenue from the national monument entrance.

If the Pipestone Indian Shrine Association remained in the visitor center, relocating the visitor center outside the national monument would result in a negligible effect on that organization. If the organization did not relocate with the visitor center, there could be a minor adverse effect on its business because visitors would have to make extra effort to seek out the new location. This could affect impulse buying by visitors.

It is unlikely that any changes would be seen in other businesses farther from the national monument, since presumably these businesses depend on the national monument but not necessarily on the visitor center.

Community

There would be some economic effect on the community of Pipestone when the visitor center and maintenance facilities were moved out of the national monument and into the city. These effects would result from space being leased that otherwise might remain empty. The impact would be greater if either or both of these facilities involved new construction.

Some additional monies could be generated in the local community during the construction of a new entrance, trails, and a new prairie overlook and by removing parts of the existing entrance road, existing housing, the visitor center, and parking. These monies would come from the salaries of construction workers, who would purchase goods and services.

The ranger who now lives in employee housing in the national monument would move to existing housing in Pipestone. The land south of Minnesota West Community and Technical College that would become part of the national monument is already school property exempt from the county tax rolls.

Cumulative Effects. Although past actions have affected socioeconomic resources, no actions in this alternative would result in a new perceptible socioeconomic effect. The actions, together with those in the cumulative effect scenario, would not add appreciably to cumulative effects.

Conclusion. Alternative 1 would cause a minor long-term inconvenience to some quarriers, and it would cause no impact on demonstrators. It would not result in any economic effects.

Alternative 1 would result in a negligible long term adverse effect on businesses that are dependent on the national monument. Should the Pipestone Indian Shrine Association move to another location, the effect would likely be minor.

Development activities included in alternative 1 would result in a minor short-term beneficial effect on the local and regional economy from construction dollars filtering into the local community.

NATIONAL MONUMENT OPERATIONS

Maintenance

The maintenance facility would be moved out of the national monument under this alternative. This would allow the staff to make better use of the current space. Better organization

would be necessary to minimize the need for traveling between the national monument and the maintenance facility. There would be more communication by cell phone and radio to coordinate activities between administrative divisions. The new maintenance facility would be adequately sized and equipped to fulfill its function. Visitors would continue to see the maintenance employees performing the everyday tasks of mowing, site work, trail maintenance, and building repairs. However, some functions would take place offsite, such as construction activities, painting, and the storage of vehicles and building supplies. More employees would be available year-round, but especially during the visitor season.

Facilities

Most visitor services, demonstrations, sales, and administrative functions would be moved outside the national monument boundaries. This would make it possible to return to prairie conditions the former site of the visitor center and parking, along with two houses and a garage near the entrance. The new facilities would be designed to offer the most modern visitor experience and up-to-date administrative working conditions. The sales and demonstration areas also would be adequately sized and designed to fully accommodate those functions.

With some functions moved outside the boundary, visitors might go directly to the national monument without realizing that the visitor center is not on the site. Having seen the site, visitors might then decide to forgo seeing the visitor center. Such visitors then would leave without gaining a full understanding of the significance of the site or its story. They also would miss seeing the cultural demonstrators and exhibits and the Pipestone Indian Shrine Association, with its many educational and craft items.

There would be a new visitor entrance to the national monument under alternative 1. Visitors would park above the falls, pay their fee at a kiosk and restroom facility, and be informed about the national monument and its visitor center offsite. In this way, national monument managers would have an opportunity to greet visitors at the entrance and orient them to the site.

A second, more restricted entrance would allow quarriers to park closer to the quarries. This would ease transport of supplies and quarried materials. Visitors with disabilities also would be able to reach the site on this more accessible trail. This would preclude the need for a separate accessible trail from the top of the falls to the Circle Trail.

More than other alternatives, this alternative would require the presence of staff throughout the national monument to help visitors and offer interpretation because the visitor center would not be onsite.

Emergency Response Time

The response to accidents and emergencies could take somewhat longer under this alternative, with visitors seeking out national monument employees to summon assistance from offsite. There would not be a central location, as at present, where visitors could go for assistance. However, once called, emergency vehicles should take no more time than at present to provide assistance.

Ability to Enforce Regulations

Having no ranger housed onsite in this alternative would limit the ability of staff to monitor the site 24 hours a day. Any deterrence that might exist as a result of that presence would be removed. However, entrances would be gated to control access to the national monument after visitor hours. Only staff and quarriers would be expected to use the site after hours. Otherwise there would be no change in the ability of the national monument to enforce regulations.

Conclusion. The construction of new facilities under alternative 1 would result in major long-term beneficial effects. The development of new maintenance facilities and the improved quality of the work accomplished would cause long-term moderate beneficial effects. There would be no change in the national monument's ability to enforce laws and regulations. Moving maintenance away from the site would result in a long-term negligible adverse impact on the efficiency of maintenance activities. Having the visitor center offsite would cause a long-term moderate adverse impact on visitor services. Long-term minor adverse impacts could occur when visitors sought assistance in emergency situations.

UNAVOIDABLE ADVERSE IMPACTS

The following paragraphs describe the more important (moderate and major intensity) adverse impacts that would result from this alternative. These are residual impacts that would remain after mitigation was implemented. The negligible and minor impacts are described in the foregoing analysis.

Because the Mission 66 visitor center, a contributing feature of the Mission 66 (1957–1969) cultural landscape, would be removed and razed under alternative 1, the effects on that national register-eligible cultural landscape would be major, adverse, and long term.

To those American Indians who believe that the national monument is not a traditional Sun Dance site, continuing to allow Sun Dances to take place under alternative 1 would be culturally inappropriate and would thus constitute a moderate, adverse, and long term impact in relation to their world-view about revitalizing and reinforcing their traditional cultural identity.

Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse effects on the visitors, employees, and property involved. Any loss of life would be irretrievable.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The loss of the Mission 66 visitor center cultural landscape (described above) and the building itself would be irreversible and irretrievable.

Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse effects on the visitors, employees, and property involved. Any loss of life would be irretrievable.

If grading at any of the sites (for construction or restoration) was necessary, some of the original soil profile could be permanently lost, an irreversible impact.

RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Through the removal of the visitor center, parking, the north-south part of the entrance road, and the house used as offices, this alternative would preserve the cultural resources for which the monument was set aside (see "National Monument Purpose," p. 24) for the long term. The preservation of the setting, site history, and spiritual significance of the national monument would be greatly enhanced. The landscape would be restored to very near the landscape of the Prehistoric Quarrying into the Historic Period (see p. 110). Removing the national register-eligible Mission 66 visitor center building under this alternative would result in a long-term major adverse impact on that structure. The tallgrass prairie would be preserved and restored on

the sites where buildings, parking, and roads once stood, decreasing fragmentation.

Removing the facilities described would enable the national monument staff to restore natural and beneficial floodplain values over about 3 acres more than in the no-action alternative. Removing the structures mentioned above and the museum collection from the floodplain would greatly reduce potential damage from flooding compared to the no-action alternative. The chance of fuels spilling into floodwaters would be removed.

Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse effects on the visitors, employees, and property involved. In this alternative there would be much less risk to employees and visitors than in alternatives in which the listed structures would remain in the floodplain because in alternative 1 there would be no visitors or employees in the visitor center, the fuel storage building, the parking area or the converted house. Visitors on the trails and quarries would continue to be at risk in alternative 1.

Continuing visitor activities would reduce the long-term productivity of the environment.

Noise, artificial lighting, and human activities associated with ongoing visitor use of the national monument would prevent natural prairie ecosystems and wildlife populations from reaching their full potential in size and population density. The quarrying of pipestone by American Indians of all tribes as provided for in the enabling legislation would continue to reduce the quantity of pipestone at the national monument.

IMPACTS OF ALTERNATIVE 2

CULTURAL RESOURCES

Cultural Landscapes

Before constructing any facilities or trail changes (for example, involving the Circle Trail, which probably contains features of all eight potential cultural landscapes), the National Park Service would undertake more site-specific study of the affected landscapes to ensure that character-defining features (topography, vegetation, circulation, spatial organization, land use, natural systems and elements, historic structures and views, and small-scale elements) would not be affected or that the effects would be minimal. The potential adverse effects on cultural landscapes from such construction would be long term and of negligible to minor intensity.

Removing and relocating the footbridge below Winnewissa Falls in the CCC-era cultural landscape would benefit that landscape because removing this nonhistoric bridge and erecting a new bridge downstream of the falls, in closer alignment to both the historic trail and the original bridge's stone foundations, would return the area around the falls to more of a semblance of its historic appearance. These actions also would reestablish more traditional views of the falls, enabling the national monument staff to interpret and visitors to visualize how the Winnewissa Falls area once was oriented and functioned. The long-term effects on the CCC-era cultural landscape would be beneficial and of moderate intensity.

Cumulative Effects. Agricultural development and construction in and around Pipestone National Monument — the Pipestone Indian school and its successor, Minnesota West Community and Technical College north and northeast of the national monument and subdivision developments along the national monument's eastern and southern borders, as well as agriculture in surrounding areas farther outside the national monument's boundaries — have previously affected potential cultural landscapes both in the national monument and in the general vicinity. These effects resulted because the development and construction disturbed or changed the prairie setting and ultimately reduced the amount of surviving tallgrass prairie. The long-term adverse effects on the tallgrass prairie as the setting in cultural landscapes have ranged from minor to major.

Reasonably foreseeable future actions occurring throughout the region (for example, continued subdivision and proposed commercial development) also would disturb cultural landscapes outside the national monument's boundaries. These actions could damage or destroy patches of remnant tallgrass prairie that might remain and altered prairie lands that might be restored by the recovery of native plant species. The long-term regional impacts on the prairie components of cultural landscapes from agricultural development and construction would be adverse and range from minor to major.

In the region, prairie restoration through the recovery of native plant species is underway at the Nature Conservancy's Hole in the Mountain property near Lake Benton. Prairie restoration also is underway in the USFWS/MDNR Pipestone Wildlife Management Area north of the national monument. Similar programs are in place at Split Rock Creek State Park and at Blue Mounds State Park (where a bison herd is maintained). These programs would result in moderate long-term beneficial effects on associated cultural landscapes.

Remnant prairie preservation and prairie restoration from the recovery of native plant species would result in long-term minor to moderate beneficial effects on cultural landscapes in the national monument that are potentially eligible for the national register. Alternative 2 would contribute to the overall

moderate beneficial long-term cumulative effects on cultural landscapes in the region from prairie restoration.

The potential effects on landscapes eligible for national register listing that could not be avoided could be adverse. Such effects would range in intensity from minor to major, depending on the scope of the potential actions and the landscape features and patterns affected. In alternative 2, relocating the 1998 bridge and building a new bridge downstream would improve the historic and traditional view of Winnewissa Falls, a moderate beneficial effect on the CCC-era potential cultural landscape. Although a small component, that contribution would be moderate and beneficial to the cumulative effects of other past, present, and reasonably foreseeable actions.

Section 106 Summary. After applying the criteria of adverse effects of the Advisory Council on Historic Preservation (36 CFR 800.5, "Assessment of Adverse Effects"), the National Park Service concludes that implementing alternative 2 would have no adverse effect on the eight potential national register-eligible cultural landscapes.

Conclusion. Implementing alternative 2 would result in a long-term moderate beneficial effect on the CCC-era cultural landscape. There would be no impairment of the national monument's cultural landscapes or values.

Ethnographic Resources

Visitors could be intrusive to American Indian individuals placing offerings like sage and personal items at the Three Maidens rock formation. Although visitor parking would be rearranged to place it more along the entry road and away from the picnic area, there would be little change in the visitor use pattern. The picnic area and the restroom near the Three Maidens would continue to attract visitors. American Indian access to the Three Maidens during the Hiawatha Pageant has been improved in recent years through national monument negotiations with the Hiawatha Club so that the rock formation is not used intrusively as a pageant component. However, the summer use of the Three Maidens in the Hiawatha Pageant would continue on the relevant weekends. The effects on the traditional use of the Three Maidens as an ethnographic resource from inadvertent visitor intrusion and from the Hiawatha Pageant would be minor, adverse, and long term.

Access acceptable to American Indians would be needed for religious reasons similar to those discussed above for the Circle Trail's ethnographic resources. Rerouting the Circle Trail would involve relocating the footbridge in front of Winnewissa Falls over Pipestone Creek to a spot downstream to preserve the viewshed and "frame" the falls better for a picturesque view for visitors, somewhat at a distance rather than close up.

Accommodating American Indian access to the Circle Trail's ethnographic resources would change under this alternative in that part of the trail would be rerouted. However, off-trail access for American Indians would continue to be accommodated to Winnewissa Falls as well as to the other ethnographic resources associated with the Circle Trail — the Old Stone Face / Leaping Rock and the Oracle rock formation.

Relocating the bridge could inhibit access to Winnewissa Falls because getting close to the falls via the existing bridge would be altered to accommodate less close, less convenient access at a new bridge downstream. However, observations of American Indians by NPS personnel indicate that bridge access to the falls is not necessarily preferred; the preferred way seems to be to approach either side of the falls by way of the natural setting without benefit of the existing bridge. Without the bridge being so near the falls, the setting would be more natural and thus more traditional. Correspondingly, off-trail access to the falls through adjacent natural settings would be more traditional as well. Therefore,

there would be long-term moderate beneficial effects on traditional use of Winnewissa Falls as an ethnographic resource because the setting and associated access (without the modern bridge close at hand) would be more like the past situation before any changes were made by European–American influences.

Under this alternative, visitors walking along the Circle Trail might occasionally and inadvertently intrude on American Indians on their way to approach Winnewissa Falls with offerings or to place offerings at the Old Stone Face / Leaping Rock or the Oracle rock formations. The effects from such visitor intrusion on American Indian use of these ethnographic resources would be negligible to minor, adverse, and long term.

The two annual Sun Dances no longer would take place, and the area in the national monument designated for this ceremonial purpose no longer would serve as a place of cultural expression. To American Indians who believe that continuing the Sun Dances here would be culturally appropriate because it is an appropriate modern site for a Sun Dance, the effects would be moderate, adverse, and long term in relation to their opinions about revitalizing and reinforcing their traditional cultural identity.

To American Indians who believe that continuing the Sun Dance here would not be culturally appropriate because the national monument apparently is not a traditional Sun Dance site, the effects would be moderate, beneficial, and long term in relation to their opinions about revitalizing and reinforcing their traditional cultural identity.

The north quarry line would remain a location for sweat lodges, and it still would be closed to visitors. Although visitors still would be directed to stay on designated trails, they occasionally stray off the trails, inadvertently intruding on American Indian practitioners using sweat lodges. This occasional and inadvertent intrusion would apply to sweat lodge users in the areas of the north and Sun Dance quarries. The effects from such visitor intrusion on American Indian use of the sweat lodges would range from negligible to minor and be adverse and long term.

Cumulative Effects. The ethnographic landscape of Pipestone National Monument is a prairie background setting for the ongoing but traditional American Indian quarrying in what is now the national monument. Other ethnographic landscapes in the region could be associated with the bison herd maintained by the state of Minnesota in Blue Mounds State Park or with simply restoring prairie to patches of preagricultural landscape in Split Rock Creek State Park. Prairie preservation and restoration contributes to such landscapes.

Agricultural development and construction in and around Pipestone National Monument have previously affected the prairie setting both in the national monument and in the general vicinity. These activities have disturbed or changed the prairie setting and ultimately reduced the amount of surviving tallgrass prairie. Areas where such activities have occurred are the Pipestone Indian School and its successor, the Minnesota West Community and Technical College north and northeast of the national monument and subdivisions to the east and south, as well as agricultural areas farther outside the boundaries. Regional long-term adverse effects on the tallgrass prairie as a setting reminiscent of a time before European–American influences continue to range from minor to major.

Reasonably foreseeable future actions occurring throughout the region — for example, continued subdivision and proposed commercial development — also could disturb the prairie setting outside the national monument by threatening any remnant tallgrass prairie patches that might remain and any altered prairie lands that might be restored by the recovery of native plant species.

The development of a parklike environment for American Indians to quarry catlinite pipestone through the Pipestone Indian School

and then as a national monument has meant change in American Indian access to ethnographic resources. That change generally has been caused by the development of trails, bridges, and parking lots to make physical access to various ethnographic resources more convenient. To the extent that American Indians value convenience (for example, to help the elderly participate in activities), the long-term effects on ethnographic resources from the past and at present were minor to moderate and beneficial. To the extent that the natural setting contributes to the value of American Indian traditional use (there is some evidence from NPS observation of American Indian practitioners that it does) and that there has been a change in the setting away from nature associated with development, the long-term effects on ethnographic resources from the past and at present were minor to moderate and adverse.

Traditional American Indian practices associated with ethnographic resources (which happen to be all natural resources at Pipestone National Monument) are subject to inadvertent distraction from encounters by visitors, a long-term negligible to minor adverse impact on the practitioners. Past visitor use patterns have resulted in such encounters, which have caused long-term negligible to minor adverse impacts on American Indian practitioners.

Development has affected ethnographic resources outside of the national monument by making identifying potential ethnographic resources harder because of changes brought about by agriculture and home and commercial development. The state of Minnesota has designated various rock art sites throughout the state, including those in Pipestone National Monument, as a rock art district worthy of listing in the National Register of Historic Places (listed on November 14, 1996).

In Minnesota, in the region around the national monument, the following locations could contain ethnographic resources relevant to American Indians: Blue Mounds State Park, Jeffers Petroglyphs State Historic Site, Split Rock Creek State Park, and the USFWS land administered by the Minnesota Department of Natural Resources, which is north of the national monument. Jeffers Petroglyphs State Historic Site is the only one that maintains an ongoing program of consultation with American Indians to identify ethnographic resources (as does Pipestone National Monument). The fact that some ongoing American Indian consultations are underway and continuing is beneficial. More ethnographic information should result, which would be a minor long-term beneficial effect.

Implementing alternative 2 would contribute both long-term minor to moderate adverse impacts and long-term minor to moderate beneficial effects to the overall cumulative effects of other past, present, and reasonably foreseeable actions.

Section 106 Summary. Since the "Affected Environment" chapter suggests that traditional cultural properties (ethnographic resources eligible to be listed in the National Register of Historic Places) may be represented at the national monument by the entire national monument or by individual resources, in accordance with the criteria of adverse effect of the Advisory Council on Historic Preservation (36 CFR 800.5), the determination of effect on traditional cultural properties would be *no adverse effect.*

Conclusion. The inadvertent distracting access of visitors to ethnographic resources in the presence of traditional practitioners would result in effects on traditional use associated with ethnographic resources under alternative 2 that would be minor, adverse, and long term. Relocating the bridge at Winnewissa Falls could benefit American Indians' traditional use of the falls, resulting in a moderate long-term beneficial effect.

Removing the picnic parking area near the Three Maidens rock formation and expanding the Three Maidens interpretive pullout would result in a long-term minor beneficial effect on the traditional use of the Three Maidens

because access would be accommodated without inadvertent distractions from picnicking visitors. Discontinuing the two annual Sun Dances would be either a long-term moderate adverse effect or a long-term moderate beneficial effect, depending on the perspective of the person rendering the opinion.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Pipestone National Monument, (2) key to its natural or cultural integrity or to opportunities for its enjoyment, or (3) identified as a goal in its general management plan or other relevant NPS planning documents, the national monument's resources or values would not be impaired.

Historic Structures

For the visitor center and museum collections functions to be improved and remain in situ in the national monument, the Mission 66 visitor center building would be rehabilitated. The rehabilitation of this national register-eligible structure would be done in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. Because much of the external historic fabric — the façade — would be preserved while the interior was redesigned, the effects on this structure would be moderate, beneficial, and long term. This action would be taken only after consultation with the state historic preservation officer.

With NPS acquisition and rehabilitation of the Pipestone Indian School superintendent's house under alternative 2, the national monument boundary would be adjusted to include that house. The rehabilitation of that national register-listed historic structure would be carried out in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. With much of the external historic fabric — the façade —preserved and the interior redesigned (to make the building serve visitors and staffers better), the effects on this structure would be moderate, beneficial, and long term. These actions would be taken only after consultation with the state historic preservation officer.

Cumulative Effects. Past actions in the national monument were the development of trails, bridges, and parking lots and the construction of maintenance facilities and two houses now used as an administrative office and a residence for a law enforcement ranger. Placing the visitor center in a central location on the Circle Trail was consistent with the "centralize and circulate" thinking of the Mission 66 era. The development of that trail has affected the way visitors use the visitor center, but since the center was centrally placed, development in the national monument has not affected the historic fabric of this late 1950s Mission 66 structure, unless the 1970s addition of space for the Upper Midwest American Indian Cultural Center is viewed in that light. However, adding that space was consistent with the Mission 66 philosophy because it allowed visitors to watch American Indian pipestone carvers at work. The ability for visitors to interact with and learn from the demonstrators has become part of the centralized aspect of the visitor experience.

The 1970s addition enhanced the function of the historic fabric and is part of the historic significance of the visitor center's eligibility in its own right for the National Register of Historic Places. The historic fabric of the structure could be threatened by its apparent location in the 500-year and 100-year floodplains. However, past flooding of Pipestone Creek suggests that any serious damage would be unlikely, although damage still could result. Vandalism has not been a problem at the visitor center.

Actions expected in the region in the reasonably foreseeable future, such as continued subdivision and commercial development, have no potential to affect historic structures in the national monument. Such actions would result in a negligible effect, if any, on historic structures outside the national monument.

Under this alternative the National Park Service would acquire, preserve, and interpret the Pipestone Indian School superintendent's house. This would contribute to the historic preservation efforts that are in place in the city of Pipestone and other towns in the county to rehabilitate and adaptively reuse the late 19th century business and municipal architecture characterized by the use of local Sioux quartzite as the predominant building material.

Under alternative 2, NPS preservation and interpretation of the Pipestone Indian School superintendent's house would complement the rehabilitation of the national monument's visitor center. Rehabilitating both of those structures would contribute moderate beneficial long-term effects to the overall cumulative long-term moderate beneficial effects on historic structures from reasonably foreseeable present and future actions in the region.

The potential effects on landscapes eligible for listing in the National Register of Historic Places that could not be avoided could be adverse. Such potential effects would range in intensity from minor to moderate, depending on the scope of the potential actions and the landscape features and patterns affected. Because the potential impacts on cultural landscapes under alternative 2 would be mostly negligible (that is, to seven of the eight potential cultural landscapes) implementing alternative 2 would contribute only minimally to the impacts of other actions and would be a small component of any overall cumulative impact. The exception would be the new bridge to be built downstream of the falls, with a moderately beneficial effect on the CCC-era potential cultural landscape. That contribution would be moderate and beneficial to the cumulative effects of other actions.

Section 106 Summary. After applying the criteria of adverse effects of the Advisory Council on Historic Preservation (36 CFR 800.5), the National Park Service concludes that implementing alternative 2 would result in no adverse effect on the Mission 66 visitor center, a structure eligible to be listed in the National Register of Historic Places. The National Park Service also concludes that implementing alternative 2 would cause no adverse effect on the national register-listed Pipestone Indian School superintendent's house.

Conclusion. Rehabilitating the historic Mission 66 visitor center building and the Pipestone Indian School superintendent's house would result in moderate beneficial long-term effects on those structures. There would be no impairment of the national monument's resources or values.

Museum Collections and Archives

Under alternative 2, expanding the space for museum collections and archives into a facility designed to meet state-of-the-art museum standards (in a rehabilitated visitor center) would result in both beneficial and adverse effects. The rehabilitated facility would include a storage area raised to be out of possible flood levels from the 100-year and 500-year floodplains of Pipestone Creek. The risk involved in moving and reinstalling artifacts, specimens, and archives would result in negligible to minor short-term adverse effects, but every effort would be made to ensure the protection of all objects during the move and reinstallation. Having more space for better protected and environmentally controlled curation, research, and storage, along with being out of the floodplains, would result in moderate to major long-term beneficial effects.

Cumulative Effects. In the past and at present the national monument's museum collections

and archives have been at risk by being housed in the visitor center , which is in the floodplain. If Pipestone Creek flooded, the long-term adverse impacts on museum collections and archives would range from moderate to major. The intensity of the impact would depend on the amount and rate of flooding, whether there was sufficient warning to enable the staff to implement the evacuation plan that is in place for protecting the collections and archives, and how high from the floor particular artifacts and documents or photographs were stored in relation to the height of the water entering the storage area. However, in alternative 2, rehabilitating and expanding the space for museum collections in a rehabilitated visitor center and adding "off the floor" storage cabinets would result in long-term moderate beneficial effects because the threat of flooding would be eliminated.

Conclusion. Museum collections and archives would be better secured under alternative 2. Negligible to minor short-term adverse impacts would result from the risk of packing, storing, and moving the artifacts, specimens, and documents to newly rehabilitated quarters. Moderate long-term beneficial effects would result from providing new state-of-the-art space for museum collections and archives in a rehabilitated visitor center in the national monument to conduct future curation, research, and storage.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Pipestone National Monument, (2) key to its natural or cultural integrity or to opportunities for its enjoyment, or (3) identified as a goal in its general management plan or other relevant NPS planning documents, the national monument's resources or values would not be impaired.

NATURAL RESOURCES

Vegetation

Remnant Tallgrass Prairie. Remnant prairie has survived despite other uses having taken place. It is made up of Sioux quartzite prairie, mesic crystalline bedrock prairie, and oak savanna/woodland. The effects that apply to the remnant prairie as a whole will be described under remnant tallgrass prairie. Effects specific to mesic crystalline bedrock prairie will be described under that heading. The actions of the alternatives would not affect the other two components of remnant tallgrass prairie, Sioux quartzite prairie and oak savanna/ woodland.

In the national monument, this habitat type is fragmented by the entrance road, the visitor center, parking, the Circle Trail, restrooms, a picnic area, a residence, a house used for administrative offices, and a garage. Fragmentation would continue to allow the invasion of exotics along corridors separating segments of prairie and to decrease the success of efforts to control exotics.

The presence of development and increased use in the quarry zone would be likely to increase exotic invasion into remnant prairie. This effect, which would occur in a relatively small area, would be minor, long term, and adverse. A small loss of remnant prairie would be caused by the promotion of more quarrying activity.

Acquiring the school district lands south of Minnesota West Community and Technical College on the national monument's eastern boundary would increase the prairie preservation zone by 15.3 acres. This would provide a better buffer for the remnant prairie compared to existing conditions. The quality of the remnant prairie would improve in a local area, a minor long-term beneficial effect.

Removing the ceremonial use in the north end of the national monument would improve the condition of the remnant prairie by allowing it

to recover from twice yearly mowing in preparation for the gatherings and trampling by large groups of up to 500 people. The encroachment of exotics would decrease. Ending the mowing and trampling in this area would allow fuel loads and fuel continuity to recover to a natural state in which the former ceremonial area could carry fire, enhancing the preservation of the prairie ecosystem. The potential for the loss of native plants to be caused by ceremonial use would be eliminated. This action would cause an increase in the abundance of and quality of the remnant prairie in the area where the Sun Dances take place. The effect would be moderate, long term, and beneficial.

Mesic Crystalline Bedrock Prairie. Pumping water out of the quarries to extend the quarrying season might remove water from the prairie. Studies are proposed to determine if this is the case.

Restored Tallgrass Prairie. This plant community covers an area where tallgrass prairie died out but is being restored by members of the national monument staff, who reduce the numbers and extent of exotic plants and reseed areas with native seed of tallgrass prairie plants.

The size of the restored tallgrass prairie would be increased by removing the maintenance storage area (approximately 1 acre) and managing it for prairie preservation. Acquiring the school district lands south of Minnesota West Community and Technical College on the national monument's eastern boundary (15.3 acres) and managing all but 2 acres for prairie preservation would increase the size of the restored tallgrass prairie by about 13 acres. These two actions would increase the restored tallgrass prairie by 14 acres. Extending the quarrying zone beyond current limits would result in a decrease of up to 2 acres of restored tallgrass prairie.

Building a new maintenance facility and a maintenance storage area inside the national monument boundary on land acquired just south of Minnesota West Community and Technical College would cover about 2 acres, reducing the amount of the parcel that could be restored to prairie (the prairie would not be able to recover in the area covered by development).

The area of restored tallgrass prairie managed for prairie preservation would be increased by 100 acres on USFWS/MDNR land to be acquired and 14 acres at the restored maintenance storage area and south of Minnesota West Community and Technical College. It would be decreased by 2 acres from extending the quarry zone. Thus, the increase in area would be much larger than the decrease. Overall, the changes would be expected to increase the abundance and distribution of restored tallgrass prairie, a major long-term beneficial effect on restored tallgrass prairie.

Cumulative Effects. Agriculture and development have greatly reduced native prairie plants. Plants have been affected by being displaced, and habitat has been lost through agricultural uses and the introduction of nonnative plants.

The development of some private lands for residential or commercial uses (such as those near the national monument boundary) could increase runoff, wind erosion, and soil compaction and alter soil regimes.

The past effects of agriculture and development on tallgrass prairie covered wide areas and were adverse. The effects of current and anticipated future actions outside the national monument, in conjunction with the effects from the actions of this alternative, would result in major long-term adverse impacts on tallgrass prairie. Most of the impacts would result from development outside the national monument, which might or might not be mitigated. The actions of alternative 2 would contribute a minuscule increment to the overall cumulative effect.

Conclusion. Overall, the effects on remnant and restored tallgrass prairie would be long

term, major, and beneficial. The national monument's tallgrass prairie resources would not be impaired by the actions of this alternative.

Wetlands and Riparian Corridor

Alternative 2 would not involve any change from existing conditions in wetlands.

Cumulative Effects. Because there would be no effects on wetlands and riparian corridors from this alternative, no actions would combine with past, present, or future actions by others to result in cumulative impacts on wetlands and the riparian corridor.

The severe hydrological alterations of the creek's watershed have increased sediment deposition, causing a change in both floral and faunal composition along the creek corridor.

Conclusion. There would be no impact on wetlands or the riparian corridor. The national monument's wetlands, including the riparian corridor, would not be impaired by the actions of this alternative.

Floodplains

Natural and Beneficial Floodplain Values. Keeping the visitor center, parking, picnic areas, restrooms, an employee residence, and a house used for administrative offices within the 100-year floodplain would prevent the restoration of natural and beneficial floodplain values such as groundwater recharge and maintaining an open floodplain to carry floodwaters. Keeping structures in the floodplain, continuing to store the museum collection within the 500-year floodplain, and retaining employee residences within the 100-year floodplain are contrary to NPS policy. If this alternative was selected, a statement of findings for floodplains would be prepared as part of this document to explain why there would be no practicable alternative to leaving facilities in the 100-year floodplain, housing an employee in the 100-year floodplain, and storing the museum collections in the 500-year floodplain. The effects on the ability of the floodplain to function normally would be local and slightly detectable, a minor adverse long-term impact.

Removing the maintenance facility, including fuel and other storage, from their current locations in the 100-year floodplain would reduce the likelihood of fuels and other hazardous material spilling into floodwaters.

Before constructing a maintenance facility on acquired land just south of the Minnesota West Community and Technical College, the National Park Service would conduct a study to determine whether the site is out of the 100-year floodplain. Should the site prove to be in the floodplain, before constructing the facility the national monument would prepare a statement of findings for floodplains to explain why there would be no practicable alternative to constructing a maintenance facility and a maintenance storage area in the 100-year floodplain. Storing fuel and other toxic chemicals at the new maintenance area within the 500-year floodplain would also require the preparation and approval of a statement of findings for floodplains.

Flooding. The visitor center with its headquarters, administrative, and curatorial functions would continue to occupy the 100-year floodplain. One employee residence, a house used for administrative offices, and a garage would remain in the 100-year floodplain. A potential new maintenance area might also be in the floodplain. Because the floodplain is extremely broad and floodwaters would be only slightly impeded by development in the floodplain, this continuing effect on the floodplain's ability to function normally during flooding would be minor, adverse, and long term.

Visitors and employees at the headquarters and employees and others at the residence or at the house used as an administrative facility could be injured by floodwaters. Although the possibility of loss of life would be extremely

small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse effects on the visitors, employees, and property involved.

Cumulative Effects. The heavy use and ditching of Pipestone Creek upstream have greatly reduced the extent of the floodplain and the natural and beneficial values of floodplains in the national monument.

Cattle and other farm animals probably have been allowed to use some riparian areas in and near the national monument. This practice degrades natural and beneficial floodplain values in exchange for benefits to agricultural uses. NPS structures and visitor uses in floodplain areas contribute to the loss of natural and beneficial values.

Further development in floodplains and wetlands outside the national monument for residential, agricultural, or commercial uses would decrease the area in which natural and beneficial floodplain values would be preserved. Channel adjustments upstream could send water down a path toward the visitor center. Channel changes upstream of the national monument also could direct flow over the bluff in areas other than the existing channel, causing the flow to be directed toward the visitor center (NPS 2003c).

Under alternative 2 the natural and beneficial values of floodplain areas would continue to be compromised by development at national monument headquarters, the residence, and the house used for administration.

The past impacts of agriculture and urbanization on floodplains covered wide areas and were adverse. Impacts on floodplains from current and anticipated future actions inside and outside of the national monument, in conjunction with the impacts of alternative 2, would be moderate, long term, and adverse. Most of the effects would result from agricultural use and development outside the national monument, which might or might not be mitigated. The actions of alternative 2 would contribute a minuscule increment to the overall cumulative impact.

Conclusion. The effects of alternative 2 on the ability of the floodplain to function normally would be local and slightly detectable, a minor adverse long-term effect.

Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse impacts on the visitors, employees, and property involved.

The national monument's floodplain resources would not be impaired by the actions of alternative 2.

Hydrology

Increasing quarrying activities and associated pumping might change the level of the water table and soil moisture availability. A study is underway to identify the consequences of increased quarrying and pumping. If unacceptable resource impacts were detected, pumping would be discontinued. Should this occur, the impact would be measurable (a fall in the water table), and mitigation would be necessary to protect important plants and animals. This potential impact would be minor, short term, and adverse.

Relocating the falls bridge farther downstream would reduce the backup of water at the present location of the bridge, which floods the bridge and parts of the trail. Removing the restrictions to the creek's natural flow would have a relatively local effect that would be moderate, long term, and beneficial.

Acquiring the school district lands south of Minnesota West Community and Technical College on the national monument's eastern

boundary would maintain or improve water flow patterns. This would be a moderate long-term beneficial effect on hydrology.

Cumulative Effects. The area's hydrology has been greatly altered by the heavy use and ditching of Pipestone Creek upstream, removing water by the use of wells, and commercial quarrying of Sioux quartzite on adjacent land. It also has been affected by using tiles to drain areas near and possibly within the national monument, reducing the height of Winnewissa Falls, and residential and commercial development.

Under alternative 2, continued monitoring of the water table level when quarries were being pumped would help determine if pumping would cause unacceptable resource impacts. If so, pumping would be discontinued to protect the resources. Relocating the bridge across Pipestone Creek farther downstream would restore a more natural flow in the creek. Acquiring the school district lands south of Minnesota West Community and Technical College on the national monument's eastern boundary would maintain or improve water flow patterns.

The past impacts of draining land and altering water flows for agriculture and urbanization on hydrology covered wide areas, were adverse to natural water flow, and restricted the distribution of surface water through the surrounding landscape. The effects on hydrology from current and anticipated future actions inside and outside the national monument, in conjunction with the effects of this alternative, would be moderate, long term, and adverse. Most effects would result from agricultural use and development actions outside the national monument, which might or might not be mitigated. The actions of this alternative would contribute a minuscule increment to the overall cumulative effect.

Conclusion. Continued pumping of the quarries could lower the water table or decrease soil moisture, a potential minor short-term adverse effect that could be mitigated by discontinuing pumping. Relocating the falls bridge farther downstream would remove a restriction to the natural flow of the creek, a moderate long-term beneficial effect.

Acquiring the school district lands south of Minnesota West Community and Technical College on the national monument's eastern boundary would maintain or improve water flow patterns, a moderate long-term beneficial effect on hydrology.

The national monument's hydrologic resources would not be impaired by the actions of this alternative.

Soils

Expanding the visitor center and potentially constructing a maintenance facility and a maintenance storage area on acquired land just south of Minnesota West Community and Technical College would cause additional soil compaction on about 2 acres. If grading was necessary, some of the natural soil profile would be lost, a long-term minor adverse impact. The removal and restoration of the current maintenance storage area would eliminate soil compaction, allowing for natural soil processes and below-ground primary productivity to return on about 1 acre. Discontinuing the Sun Dance ceremony would eliminate the twice annual compaction of the soil in an 8-acre area by up to 600 people and some of their vehicles, allowing natural soil processes and below-ground primary productivity of the soils to return. Overall, there would be a minor long-term beneficial effect on soils.

Cumulative Effects. Agriculture has led to the erosion of soils by removing native vegetation. This, along with tilling the soil, has left soils exposed to erosion by wind and water.

The future development of some private lands for residential, tourist-related, or other uses (such as those on or near the national monument's borders and in the city of Pipestone)

could increase runoff, wind erosion, and soil compaction and alter soil regimes.

The past effects on soils from agriculture covered wide areas and were adverse. The effects on soils from current and anticipated future actions inside and outside the national monument, in conjunction with the impacts of alternative 2, would be moderate and adverse because they would change the character of the soils over a relatively wide area, and mitigating measures probably would be necessary to offset adverse effects. Most impacts on soils would result from development outside of the national monument, which might or might not be mitigated. The actions of this alternative would contribute only a minuscule increment to the overall cumulative effect.

Conclusion. Implementing alternative 2 could result in a long-term moderate adverse effect on about 3 acres of soil at the visitor center and potential new maintenance facility, and a long-term minor beneficial effect on about 8 acres at the Sun Dance site and 1 acre at the maintenance storage area. The soil resources of the national monument would not be impaired by the actions of alternative 2.

Wildlife

Under alternative 2 the size and connectivity of the prairie would be increased by the following actions:

- placing most of the national monument in the prairie preservation zone
- acquiring the USFWS/MDNR land (100 acres) on the northwest boundary of the national monument and managing it as prairie
- acquiring the school district land (15.3 acres) south of Minnesota West Community and Technical College on the eastern boundary of the national monument and managing it as prairie
- removing the outdoor maintenance storage area (1 acre)

This would improve habitat for many faunal groups such as birds, reptiles, amphibians, and insects. Habitat for wildlife would be improved in most of the national monument, but the most intensive improvement would take place on 116 acres. Overall, the improvement of 116 acres of wildlife habitat, which would benefit wildlife, would be easy to detect, long term, and local. Populations would be expected to increase, a moderate long-term beneficial effect on wildlife.

Because the mowing of about 8 acres would not be permitted, nor would Sun Dances on about 8 acres in the prairie restoration zone at the north end of the national monument, the remnant prairie would be able to recover from past use. This would increase cover and forage and improve wildlife habitat. Wildlife would be able to use the area all year without being displaced, a moderate long-term beneficial effect on wildlife.

Cumulative Effects. Agriculture and development have greatly reduced the numbers of native animals. Animals have been affected by being displaced and killed as vermin, and habitat has been lost through agricultural uses and the introduction of nonnative animals. Wildlife continues to be disrupted by development and human activity.

The development of some private lands (such as those on or near the national monument boundary and in communities) for residential, commercial, or other uses could alter wildlife habitat and habits and cause the loss of wildlife in some areas. Water use in these developments for residential or other uses could reduce the amount of water available for wildlife.

The past impacts of agriculture and development on wildlife covered wide areas and were adverse. The impacts on wildlife from current and anticipated future actions outside the national monument, in conjunction with the impacts of this alternative, would be moderate, long term, and adverse. Most of the impacts would result from development actions

outside the national monument, which might or might not be mitigated. The actions of alternative 1 would contribute a minuscule increment to the overall cumulative impact.

Conclusion. A moderate long-term beneficial effect on wildlife would result from a net gain of about 116 acres of wildlife habitat (from acquiring the USFWS/MDNR land, acquiring the school district land, removing the outdoor maintenance storage area, and managing the acquired areas as prairie). Because the mowing of the Sun Dance ground (8 acres) no longer would be permitted, nor would holding Sun Dances, the remnant prairie would be able to recover, a moderate long-term beneficial effect on wildlife.

The national monument's wildlife resources would not be impaired by the actions of alternative 2.

Threatened or Endangered Species and Species of Special Concern

Increased quarrying and associated pumping might change the area's hydrology by lowering the water table and decreasing soil moisture availability. If pumping would result in unacceptable resource impacts on, for example, the Topeka shiner in Pipestone Creek or its designated critical habitat downstream or the western prairie fringed orchid, it would be discontinued. There would be a potential short-term minor adverse impact on threatened and endangered species.

Removing the bridge over Pipestone Creek and replacing it farther downstream would not be undertaken without consultation with the U.S. Fish and Wildlife Service. Mitigation developed during these consultations would be incorporated into the design and specifications for the removal and construction. Examples of potential mitigation are performing demolition and construction at times of the year that would minimize impacts on the shiner or minimizing the amount and duration of work in the creek. It is expected that bridge demolition and construction would not affect the Topeka shiner.

Cumulative Effects. Agriculture and development have greatly reduced native plants and animals, including threatened and endangered species. The Topeka shiner has been affected by habitat destruction, degradation, modification, and fragmentation resulting from siltation, by reduced water quality, tributary impoundment, stream channelization, in-stream gravel mining, and changes in stream hydrology. The species also can be affected by introduced predaceous fishes.

The western prairie fringed orchid has lost habitat (tallgrass prairie) to cropland, and its remaining habitat has been fragmented. "Mowing, haying, and grazing prevent the plants from flowering, stalling seed production" (Talley 2004). Croplands present an obstacle to the free movement of hawkmoths (the orchid's only known pollinator) between orchid populations, and pesticide drift from nearby cropland can kill hawkmoths.

The development of some private lands (such as those on or near the national monument boundary) in nearby communities for residential, commercial, or other uses could affect the Topeka shiner or the western prairie fringed orchid by altering suitable habitat. Water use for the developments or for activities not requiring development could reduce the amount of water available for habitat for these species.

The past effects on threatened and endangered species from agriculture and urbanization have been major and adverse. The effects on threatened and endangered species from current and anticipated future actions outside of the national monument, in conjunction with the effects from this alternative, are not known because the locations of species outside of the national monument in areas that might be affected are not known. Given the lack of information about effects outside of the national monument, it is not possible to assess the relative intensity of the impacts of

this alternative compared to current and anticipated future actions outside of the national monument.

Conclusion. Increased quarrying and associated pumping might change the area's hydrology by lowering the water table and decreasing soil moisture availability. If pumping resulted in unacceptable impacts on, for example, the Topeka shiner in Pipestone Creek and the western prairie fringed orchid, it would be discontinued. There would be a potential short-term minor adverse impact on threatened and endangered species.

The national monument's threatened and endangered species and species of special concern would not be impaired by the actions of this alternative.

VISITOR USE AND EXPERIENCE

The focus of the visitor experience under alternative 2 would be on the quarries and the quarriers, the methods used in the quarrying process, the items created, and their importance in American Indian culture. The effects on the visitor experience under this alternative would depend on interpretation and an enlarged visitor center.

Three Maidens Area

The Three Maidens zone would revert to prairie with a trail to guide and control access. This would result in a long-term moderate beneficial effect on visitors.

New Visitor Center Area

The new exhibits at the expanded onsite visitor center would interpret the themes in a historically accurate, easy to maintain, culturally unbiased manner that would be both interactive and compelling in design. The overall result of this would be a long-term major beneficial effect on the visitor experience.

The new, adequately sized information desk in the expanded visitor center would enable the staff to serve visitors more efficiently. This would result in a long-term major beneficial effect on the visitor experience.

Keeping (and possibly enlarging) the existing demonstration area in the expanded visitor center, along with improved interpretation and exhibits, would offer visitors continued opportunities to see American Indians making pipes and demonstrating other crafts. Visitor understanding and appreciation of the pipemaking process is the primary reason for these demonstrations. This would result in a major long-term beneficial effect on the visitor experience.

New, enlarged, fully accessible modern restrooms at the enlarged visitor center would result in a long-term major beneficial effect on the visitor experience.

Circle Trail Area

Keeping the existing Circle Trail and modifying it where possible, making features more accessible, along with replacing the current bridge with one built farther downstream, would result in a long-term major beneficial effect on the visitor experience.

Quarry Area

Constructing new trails for better access and interpretation of the quarries and other features under this alternative would result in a long-term major beneficial effect on visitors.

Prairie Area

The continued opportunities under alternative 2 for visitors to closely observe the vegetative species of the prairie remnant from the Circle Trail would result in a continued long-term major beneficial effect on the visitor experience. The continued ability of visitors to observe the prairie remnant from a distance from the entry road (which skirts the edge of

the prairie remnant) would cause a long-term minor beneficial effect on the visitor experience.

Conclusion. Alternative 2 would result in major beneficial effects on the visitor experience at the new visitor center exhibits, the information desk, the demonstration area, the restrooms, the quarry area, the prairie area, and the Circle Trail. There would be moderate long-term beneficial effects on the visitor experience at the Three Maidens area. This alternative would cause no adverse effects on the visitor experience.

SOCIOECONOMIC ENVIRONMENT

Quarriers and Demonstrators

Expanding the visitor center at the current location would have no effect on the quarrying of pipestone or the terms of the quarriers' permits. Demonstrators would have a more attractive area in which to work in the enlarged visitor center but a negligible increase in earnings.

Businesses

There probably would not be much change in businesses that are dependent on the national monument (such as the campground and the gift shop on Hiawatha Avenue across from the entrance to the national monument) from the development included in alternative 2. A larger visitor center might encourage visitors to stay in the community longer, but it probably would not add substantially to their business.

The Pipestone Indian Shrine Association would benefit from a larger, more attractive sales area in the visitor center, along with more storage space. Businesses farther from the national monument (such as restaurants and hotels) probably would not be affected by the actions of alternative 2.

Community

Alternative 2 would cause some short-term economic effects on the community of Pipestone during the construction of a larger visitor center and a new bridge below the falls. These effects would result from the purchase of building materials in the local community, workers staying in local hotels and eating at local restaurants, and the purchase of clothing and incidental items by workers. The land south of the Minnesota West Community and Technical College is school land, which is exempt from the county tax rolls.

Cumulative Effects. Although past actions have affected socioeconomic resources, no actions in this alternative would result in a new perceptible socioeconomic effect. The actions, together with those in the cumulative effect scenario, would not add appreciably to cumulative effects.

Conclusion. Alternative 2 would cause a negligible long-term beneficial economic effect on quarriers and demonstrators.

Alternative 2 would result in a minor long-term socioeconomic effect on businesses that are directly dependent on the national monument.

Alternative 2 would result in a short-term minor beneficial socioeconomic impact on the local and regional economy.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Pipestone National Monument, (2) key to its natural or cultural integrity or to opportunities for its enjoyment, or (3) identified as a goal in its general management plan or other relevant NPS planning documents, the national monument's resources or values would not be impaired.

NATIONAL MONUMENT OPERATIONS

Maintenance

The maintenance facility would be moved out of the national monument, allowing the visitor center to be expanded into the current maintenance area. The new maintenance facility would be adequately sized and equipped to fulfill its function. Visitors would continue to see the maintenance employees performing their everyday tasks of mowing, site work, building repairs, and trail maintenance. However, some functions would take place offsite, such as construction activities, painting, and the storage of vehicles and building supplies. More employees would be available year-round, but especially during the visitor season.

Facilities

Enlarging the visitor center and administration building would consolidate all the national monument functions but maintenance into one structure, making interaction between staff divisions easier. Adequate space for offices, library, storage, and meetings would allow the employees to carry out their responsibilities more efficiently. Visitors would have an opportunity to learn more in the rehabilitated visitor center with upgraded exhibits and more interpretation. The demonstration area and the Pipestone Indian Shrine Association sales area would be updated and enlarged to meet visitor needs.

Emergency Response Time

Having a law enforcement ranger continue to live in one of the houses near the national monument entrance would make the ranger available to respond to emergencies on the site. The staff of the visitor center / administration building would remain close to trails and quarries. The increase in staff presumably would make assistance more readily available. There would be no change in distance for city fire, police, or emergency vehicles.

Ability to Enforce Regulations

Continuing to house a ranger on the site would make some after-hours monitoring available. The ranger would continue to patrol the trails and help visitors in emergencies. Visitors still would be able to bypass the visitor center, where the entrance fee is collected. Laws and regulations would be enforced at the same level as at present.

Conclusion. Adding high-quality new facilities would result in long-term major beneficial effects. Moving the maintenance facility offsite would improve the ability of the visitor center to serve visitors' needs, a long-term moderate beneficial effect. Having the law enforcement ranger continue to live on the site and increasing the national monument staff would make more people available to respond to emergencies, a long-term negligible beneficial effect. There would be no long-term change in the ability of the national monument to enforce regulations.

UNAVOIDABLE ADVERSE IMPACTS

The following paragraphs describe the more important (moderate and major intensity) adverse impacts that would result from this alternative. These are residual impacts that would remain after mitigation was implemented. The negligible and minor impacts are described in the foregoing analysis.

To those American Indians who believe that the national monument is a traditional Sun Dance site, discontinuing the Sun Dances under alternative 2 would be culturally inappropriate and would thus constitute a moderate, adverse, and long-term impact in relation to their world-view about revitalizing and reinforcing their traditional cultural identity. Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse effects on

the visitors, employees, and property involved.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Alternative 2 would result in no irreversible and irretrievable commitments of cultural resources.

Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse impacts on the visitors, employees, and property involved. Any loss of life would be irretrievable.

If grading was necessary (for construction or restoration) at any of the sites, including additions to the visitor center or for the new maintenance facility on land acquired from the Pipestone Area School District south of Minnesota West Community and Technical College, some of the original soil profile could be permanently lost, an irreversible impact.

RELATIONSHIPS OF SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Enlarging the headquarters would increase the adverse impact on natural and beneficial floodplain values compared to the no-action alternative. The continued occupation of the floodplain by the headquarters, the fuel storage building, the parking area, the entrance road, an employee residence, and a house used for administration would continue a long-term loss of natural and beneficial values of the floodplain and would prevent the floodplain from functioning naturally.

Rehabilitating and enlarging the Mission 66 visitor center would result in a long-term beneficial effect on its preservation while keeping it very near the quarries. Discontinuing the twice annual Sun Dances would remove this relatively recent use from the national monument, enhancing the preservation of the tallgrass prairie and improving wildlife habitat. It might have an adverse impact on people who attend the Sun Dances until they could find another location for this activity. The quality of the restored prairie would be enhanced on about 114 acres and diminished on about 2 acres, a major long-term beneficial effect on the tallgrass prairie community.

There would be a long-term reduction in the natural beneficial values of the floodplain, and it would be prevented from functioning naturally because of the presence in the floodplain of the enlarged headquarters/visitor center, the fuel storage building, an employee residence, and a house used for administration. All these resources could be damaged by flooding. Fuel in the fuel storage building could be released into floodwaters, potentially damaging natural resources. Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse effects on the visitors, employees, and property involved.

Continuing visitor activities would reduce the long-term productivity of the environment.

Noise, artificial lighting, and human activities associated with ongoing visitor and administrative use of the national monument would prevent natural prairie ecosystems and wildlife populations from reaching their full potential in size and population density. Quarrying of pipestone by Indians of all tribes, as provided for in the enabling legislation, would continue to reduce the quantity of this natural resource at the national monument.

IMPACTS OF ALTERNATIVE 3

CULTURAL RESOURCES

Cultural Landscapes

Before constructing any facilities or trail changes (for example, involving the Circle Trail, which probably contains features of all eight potential cultural landscapes), the National Park Service would undertake more site-specific study of the affected landscapes to ensure that character-defining features (topography, vegetation, circulation, spatial organization, land use, natural systems and elements, historic structures and views, and small-scale elements) would not be affected or that the effects would be minimal. The potential adverse effects on cultural landscapes from such construction would be long term and of negligible to minor intensity.

Removing and relocating the footbridge below Winnewissa Falls in the CCC-era cultural landscape would benefit that landscape because removing this nonhistoric bridge and erecting a new bridge downstream of the falls, in closer alignment to both the historic trail and the original bridge's stone foundations, would return the area around the falls to more of a semblance of its historic appearance. These actions also would reestablish a more traditional view of the falls, better enabling the national monument staff to interpret and visitors to visualize how the Winnewissa Falls area once was oriented and functioned. The effects on the CCC-era cultural landscape would be beneficial, long term, and of moderate intensity.

Cumulative Effects. Agricultural development and construction in and around Pipestone National Monument — the Pipestone Indian school and its successor, Minnesota West Community and Technical College north and northeast of the national monument and subdivision developments along the national monument's eastern and southern borders, as well as agriculture in surrounding areas farther outside the national monument's boundaries — have previously affected potential cultural landscapes both in the national monument and in the general vicinity. These effects resulted because the development and construction disturbed or changed the prairie setting and ultimately reduced the amount of surviving tallgrass prairie. The long-term adverse effects on the tallgrass prairie as the setting in cultural landscapes have ranged from minor to major.

Reasonably foreseeable future actions occurring throughout the region (for example, continued subdivision and proposed commercial development) also would disturb cultural landscapes outside the national monument's boundaries. These actions would damage or destroy patches of remnant tallgrass prairie that might remain and altered prairie lands that might be restored by the recovery of native plant species. The long-term regional impacts on the prairie components of cultural landscapes from agricultural development and construction would be adverse and range from minor to major.

In the region, prairie restoration through the recovery of native plant species is underway at the Nature Conservancy's Hole in the Mountain property near Lake Benton. Prairie restoration also is underway in the USFWS/MDNR Pipestone Wildlife Management Area north of the national monument. Similar programs are in place at Split Rock Creek State Park and at Blue Mounds State Park (where a bison herd is maintained). These programs would result in long-term moderate beneficial effects on associated cultural landscapes.

Remnant prairie preservation and prairie restoration from the recovery of native plant species would result in long-term minor to moderate beneficial effects on cultural landscapes in the national monument that are potentially eligible for the national register. Alternative 3 would contribute to the overall

moderate beneficial long-term cumulative effects on cultural landscapes in the region from prairie restoration.

The potential effects on landscapes eligible for national register listing that could not be avoided could be adverse. Such effects would range in intensity from minor to major, depending on the scope of the potential actions and the landscape features and patterns affected.

Section 106 Summary. After applying the criteria of adverse effects of the Advisory Council on Historic Preservation (36 CFR 800.5, "Assessment of Adverse Effects"), the National Park Service concludes that implementing alternative 3 would have no adverse effect on the eight potential national register-eligible cultural landscapes.

Conclusion. Implementing alternative 3 would result in a long-term moderate beneficial effect on the CCC-era cultural landscape. There would be no impairment of the national monument's cultural landscapes or values.

Ethnographic Resources

Visitors could be intrusive to American Indian individuals placing offerings like sage and personal items at the Three Maidens rock formation. The picnic area and restroom structure near the Three Maidens would continue to attract visitors. American Indian access to the Three Maidens during the Hiawatha Pageant has been improved in recent years through national monument negotiations with the Hiawatha Club so that the rock formation is not used intrusively as a pageant component. However, the summer use of the Three Maidens in the Hiawatha Pageant would continue on the relevant weekends. The effects on the traditional use of the Three Maidens as an ethnographic resource from inadvertent visitor intrusion and from the Hiawatha Pageant would be minor, adverse, and long term.

Access for American Indians to the Old Stone Face / Leaping Rock, the Oracle, and Winnewissa Falls would remain relatively unchanged. Without the bridge being so near the falls, the setting would be more natural and thus more traditional. Therefore, there would be long-term moderate beneficial effects on traditional use of Winnewissa Falls as an ethnographic resource because the setting and associated access (without the modern bridge close at hand) would be more like the past situation before any changes were made by European–American influences.

Under this alternative, visitors walking along the Circle Trail might occasionally and inadvertently intrude on American Indians on their way to approach Winnewissa Falls with offerings or to place offerings at the Old Stone Face / Leaping Rock or the Oracle rock formations. The effects from such visitor intrusion on American Indian use of these ethnographic resources would be minor, adverse, and long term.

The two annual Sun Dances would take place, even if limited somewhat by the establishment of carrying capacity numbers for the land. The area in the national monument designated for this ceremonial purpose would continue to serve as a place of cultural expression. To American Indians who believe that continuing the Sun Dances here would be culturally appropriate because it is an appropriate modern site for a Sun Dance, the effects would be minor, beneficial, and long term in relation to their concept of traditional cultural identity. To American Indians who believe that continuing the Sun Dance here would not be culturally appropriate because the national monument apparently is not a traditional Sun Dance site, the effects would be moderate, adverse, and long term in relation to their opinions about traditional cultural identity.

The sweat lodges would remain in their current locations on the north quarry line and farther north in the Sun Dance quarry area, so they would remain unchanged. Although visitors still would be directed to stay on

designated trails, they occasionally stray off the trails, inadvertently intruding on American Indian practitioners using sweat lodges. This occasional and inadvertent intrusion would apply to sweat lodge users in the areas of the north and Sun Dance quarries. The effects from such visitor intrusion on American Indian use of the sweat lodges would range from negligible to minor and be adverse and long term.

During the two times of the summer when the two different Sun Dances are performed, visitors are welcome at the Sun Dance ceremonies as long as they observe the protocols. Occasionally and inadvertently, wandering visitors intrude inappropriately during Sun Dances. The effects from such visitor intrusion on American Indian use of the sweat lodges in the sweat lodge areas, the quarries in the main quarry area and in the Sun Dance quarry area, and the Sun Dances in the Sun Dance area as ethnographic resources would be minor, adverse, and long term.

Overall, visitors walking among the quarries would occasionally intrude inadvertently on American Indian practitioners working the main quarries or the Sun Dance quarry. The effects of such inadvertent intrusion on traditional use of the quarries as ethnographic resources would be minor, adverse, and long term.

Cumulative Effects. The ethnographic landscape of Pipestone National Monument is a prairie background setting for the ongoing but traditional American Indian quarrying in what is now the national monument. Other ethnographic landscapes in the region could be associated with the bison herd maintained by the state of Minnesota in Blue Mounds State Park or with simply restoring prairie to patches of preagricultural landscape in Split Rock Creek State Park. Prairie preservation and restoration contributes to such landscapes.

Agricultural development and construction in and around Pipestone National Monument have previously affected the prairie setting both in the national monument and in the general vicinity. These activities have disturbed or changed the prairie setting and ultimately reduced the amount of surviving tallgrass prairie. Areas where such activities have occurred are the Pipestone Indian School and its successor, the Minnesota West Community and Technical College north and northeast of the national monument and subdivisions to the east and south, as well as agricultural areas farther outside the boundaries. Regional long-term adverse effects on the tallgrass prairie as a setting reminiscent of a time before European–American influences continue to range from minor to major.

Reasonably foreseeable future actions occurring throughout the region — for example, continued subdivision and proposed commercial development — also could disturb the prairie setting outside the national monument by threatening any remnant patches of tallgrass prairie that might remain and any altered prairie lands that might be restored by the recovery of native plant species.

The development of a parklike environment for American Indians to quarry catlinite pipestone through the Pipestone Indian School and then as a national monument has meant change in American Indian access to ethnographic resources. That change generally has been caused by the development of trails, bridges, and parking lots to make physical access to various ethnographic resources more convenient. To the extent that American Indians value convenience (for example, to help the elderly participate in activities), the long-term effects on ethnographic resources from the past and at present were minor to moderate and beneficial. To the extent that the natural setting contributes to the value of American Indian traditional use (there is some evidence from NPS observation of American Indian practitioners that it does) and that there has been a change in the setting away from nature associated with development, the long-term effects on ethnographic resources from the past and at present were minor to moderate and adverse.

Traditional American Indian practices associated with ethnographic resources (which happen to be all natural resources at Pipestone National Monument) are subject to inadvertent distraction from encounters by visitors, a long-term negligible to minor adverse impact on the practitioners. Past visitor use patterns have resulted in such encounters, which have caused long-term negligible to minor adverse impacts on American Indian practitioners.

Development has affected ethnographic resources outside of the national monument by making identifying potential ethnographic resources harder because of changes brought about by agriculture and home and commercial development. Various rock art sites, including Pipestone National Monument, show the importance of the state of Minnesota as a rock art district worthy of listing in the National Register of Historic Places, which happened on November 14, 1996.

In Minnesota, in the region around the national monument, the following locations could contain ethnographic resources relevant to American Indians: Blue Mounds State Park, Jeffers Petroglyphs State Historic Site, Split Rock Creek State Park, and the USFWS land administered by the Minnesota Department of Natural Resources, which is north of the national monument. Jeffers Petroglyphs State Historic Site is the only one that maintains an ongoing program of consultation with American Indians to identify ethnographic resources (as does Pipestone National Monument). The fact that some ongoing American Indian consultations are underway and continuing is beneficial. More ethnographic information should result, which would be a minor long-term beneficial effect.

Implementing alternative 3 would contribute both long-term minor to moderate adverse effects and long-term minor to moderate beneficial effects to the overall cumulative effects of other past, present, and reasonably foreseeable actions.

Section 106 Summary. Since the "Affected Environment" chapter suggests that traditional cultural properties (ethnographic resources eligible to be listed in the National Register of Historic Places) may be represented at the national monument by the entire national monument or by individual resources, in accordance with the criteria of adverse effect of the Advisory Council on Historic Preservation (36 CFR 800.5), the determination of effect on traditional cultural properties would be *no adverse effect.*

Conclusion. The inadvertent distracting access of visitors to ethnographic resources in the presence of traditional practitioners would mean that the effects on traditional use associated with ethnographic resources under alternative 3 would be minor, adverse, and long term. This would include the effects from expanding the Three Maidens parking lot. Relocating the bridge at Winnewissa Falls would not inhibit access and traditional use of the falls because the trail and trail abutments would remain, resulting in a moderate long-term beneficial effect. Continuing the two annual Sun Dances would be either a long-term moderate adverse effect or a long-term moderate beneficial effect, depending on the perspective of the person rendering the opinion.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Pipestone National Monument, (2) key to its natural or cultural integrity or to opportunities for its enjoyment, or (3) identified as a goal in its general management plan or other relevant NPS planning documents, the national monument's resources or values would not be impaired.

Historic Structures

For the visitor center functions to be improved and remain in situ in the national monument, the Mission 66 visitor center

building would be rehabilitated. The rehabilitation of this national register-eligible structure would be done in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. Because much of the external historic fabric — the façade — would be preserved while the interior was redesigned, the effects on this structure would be moderate, beneficial, and long term. This action would be taken only after consultation with the state historic preservation officer.

Although the National Park Service would not acquire the Pipestone Indian School superintendent's house under alternative 3, the agency would contribute to its preservation and interpretation to the extent possible (see appendix F). Any rehabilitation assistance for this national register-listed historic structure would necessitate conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. With much of the external historic fabric — the façade —preserved and the interior redesigned (to make the building serve visitors and staffers better), the effects on this structure would be moderate, beneficial, and long term. These actions would be taken only after consultation with the state historic preservation officer.

Cumulative Effects. Past actions in the national monument were the development of trails, bridges, and parking lots and the construction of maintenance facilities and two houses now used for administrative offices and a residence for a law enforcement ranger. Placing the visitor center in a central location on the Circle Trail was consistent with the "centralize and circulate" thinking of the Mission 66 era. The development of that trail has affected the way visitors use the visitor center, but since the center was centrally placed, development in the national monument has not affected the historic fabric of this late 1950s Mission 66 structure, unless the 1970s addition of space for the Upper Midwest American Indian Cultural Center is viewed in that light. However, adding that space was consistent with the Mission 66 philosophy because it allowed visitors to watch American Indian pipestone carvers at work. The ability for visitors to interact with and learn from the demonstrators has become part of the centralized aspect of the visitor experience.

The 1970s addition enhanced the function of the historic fabric and is part of historic significance of the visitor center's eligibility in its own right for the National Register of Historic Places. The historic fabric of the structure could be threatened by its apparent location in the 500-year and 100-year floodplains. However, past flooding of Pipestone Creek suggests that any serious damage would be unlikely, although damage still could result. Vandalism has not been a problem at the visitor center.

Actions expected in the region in the reasonably foreseeable future, such as continued subdivision and commercial development, have no potential to affect historic structures in the national monument. Such actions would result in a negligible effect, if any, on historic structures outside the national monument. Nevertheless, historic preservation efforts are in place in the city of Pipestone and in other towns in the county to rehabilitate and adaptively reuse the late 19th century business and municipal architecture characterized by the use of local Sioux quartzite as the predominant building material.

Under alternative 3, NPS assistance to the owners of the Pipestone Indian School superintendent's house in preserving and interpreting that structure could occur. Along with the long-term moderate beneficial effect on the national monument's historic structure, the actions of alternative 3 would contribute overall to the long-term cumulative moderate beneficial effects on historic structures in the region.

Section 106 Summary. After applying the criteria of adverse effects of the Advisory Council on Historic Preservation's (36 CFR 800.5), the National Park Service concludes that implementing alternative 3 would have no adverse effect on the Mission 66 visitor center, a structure eligible to be listed in the National Register of Historic Places. The National Park Service also concludes that implementing alternative 3 would not result in any adverse effect on the national register-listed Pipestone Indian School superintendent's house.

Conclusion. Rehabilitating the historic Mission 66 visitor center building and the Pipestone Indian School superintendent's house would result in moderate beneficial long-term effects on those structures. There would be no impairment of the national monument's structures or values.

Museum Collections and Archives

The museum collections and archives would be located within the visitor center in an area above the 500-year floodplain. The visitor center would contain a section designed and rehabilitated to meet state-of-the-art museum standards. The effects from the risk involved in moving artifacts, specimens, and archives within the visitor center would be negligible to minor, adverse, and short term. Every effort would be made to ensure the protection of all objects during the move and reinstallation. Having more space for better protected and environmentally controlled curation, research, and storage, along with being out of the floodplains, would result in moderate to major long-term beneficial effects.

Cumulative Effects. In the past and at present the national monument's museum collections and archives have been at risk by being housed in the visitor center, which is in the floodplain. If Pipestone Creek flooded, the long-term adverse impacts on museum collections and archives would range from moderate to major. The intensity of the effect would depend on the amount and rate of flooding, whether there was sufficient warning to enable the staff to implement the evacuation plan that is in place for protecting the collections and archives, and how high from the floor particular artifacts, documents, or photographs were stored in relation to the height of the water entering the storage area. However, in alternative 3, relocating the collections and archives in an area of the visitor center that is out of the floodplain would result in long-term moderate beneficial effects because the threat of flooding would be eliminated.

Conclusion. Museum collections and archives would be better secured under alternative 3. Negligible to minor short-term adverse impacts would result from the risk of packing, moving, storing, and reinstalling the artifacts, specimens, and documents to a newly rehabilitated area of the visitor center. Moderate long-term beneficial effects would result from providing new state-of-the-art space for museum collections and archives. Alternative 3 would not result in any impairment of the national monument's museum collections and archives or values.

NATURAL RESOURCES

Vegetation

Remnant Tallgrass Prairie. Remnant prairie is a habitat type that has survived despite other uses having taken place.

Opening a demonstration quarry would result in the loss of a small area of remnant prairie, a negligible long-term adverse impact.

Establishing a carrying capacity for the 8-acre Sun Dance area in the ceremonial use zone at the north end of the prairie might reduce the twice-annual degrading of the remnant prairie. Heavy use in this zone denudes some areas by removing native vegetation and increases the encroachment of exotics. Mowing of the site before use and trampling during its use decrease fuel loading and fuel continuity, thereby reducing the ability of the prairie to

carry fire, an important means of enhancing the preservation of the prairie ecosystem. Continued use of the northern part of the remnant prairie for large gatherings would increase the potential for the loss of native plants. Managing use within a carrying capacity would potentially cause measurable effects within the 8-acre area, a minor long-term beneficial effect.

Acquiring the school district land on the northeast boundary of the national monument and intensively managing it would make it possible to restore 15.3 acres of farm fields, exotic trees, and buckthorn to remnant prairie and further buffer the prairie in the national monument from the invasion of exotic species. The increase in the abundance and distribution of remnant tallgrass prairie would result in a minor long-term beneficial effect on this community type.

The amount of seed and other agents of introduction of exotic species on the USFWS/MDNR land on the national monument's north boundary would be reduced by developing a cooperative agreement with the U.S. Fish and Wildlife Service and the Minnesota Department of Natural Resources for the management of 100 acres of their land. This, in turn, would reduce the introduction of exotic species from that land into remnant prairie in the national monument. This would be a moderate long-term beneficial effect on tallgrass prairie on the USFWS/MDNR land and in the national monument.

Carrying capacities would be established on the basis of acceptable levels of resource impact. Establishing a carrying capacity for ceremonies attended by large groups of people (450 people on 8 acres once each summer and 50 people once each summer) might reduce the degradation of remnant prairie if carrying capacities were set below current levels of use. Ceremonies denude native vegetation and increase the encroachment of exotics. Mowing before such concentrated use of the site decreases fuel loading and fuel continuity. This reduces the ability of the prairie to carry fire, an important means of enhancing the preservation of the prairie ecosystem.

The continued use of the northern part of the remnant prairie for large gatherings increases the potential for losing native plants. However, managing use within a carrying capacity based on acceptable levels of resource impact potentially would control the intensity of use, resulting in a measurable improvement in the condition of native plants in the 8-acre area. The long-term effect would be minor and beneficial.

Overall, despite the fragmentation of habitat, the occupancy of habitat by national monument structures, and heavy visitor use in a large area of the national monument, ongoing efforts to restore tallgrass prairie would result in a moderate beneficial effect on remnant tallgrass prairie because these systematic efforts would increase the abundance, distribution, quantity, and quality of the habitat in the national monument.

Mesic Crystalline Bedrock Prairie. There would be a slight loss of mesic crystalline bedrock prairie, about 0.25 acre, from consolidating the picnic area parking with the Three Maidens parking area and removing the picnic area parking. This loss of about 0.25 acre from increasing the size of the parking area would not affect the overall viability of the plant community and would be a minor short-term adverse impact on the prairie. Prairie would be restored in the current parking area for the picnic area and adjacent to the Three Maidens formation.

Restored Tallgrass Prairie. The restored tallgrass prairie plant community covers an area where tallgrass prairie died out but is being restored by members of the national monument staff, who work to reduce exotic plants and reseed areas with native seed of tallgrass prairie plants. The restored tallgrass prairie would be increased in size by partnering with the U.S. Fish and Wildlife Service and the Minnesota Department of Natural Resources to restore about 100 acres of prairie

on USFWS/MDNR land northwest of the national monument. This would be a large increase in the abundance and distribution of the prairie community, a moderate long-term beneficial effect.

Establishing a carrying capacity for the 8-acre ceremonial ground based on acceptable levels of resource impact might reduce the degradation of this area of prairie if the carrying capacities were set below the current levels of use. The participants in large ceremonies that take place twice each year — up to a total of 500 people — denude the soil of native vegetation and increase the encroachment of exotics. The continued use of the northern part of the remnant prairie for large gatherings would hinder efforts to restore the prairie. However, managing use within a carrying capacity would potentially reduce measurable impacts on the area, a minor long-term beneficial effect.

Overall, despite the existence of corridors for the entrance of exotic plants and heavy use in the restored tallgrass prairie, ongoing efforts to restore tallgrass prairie would result in a moderate beneficial effect on the restored tallgrass prairie because these systematic efforts would increase the abundance, distribution, quantity, and quality of the habitat in the national monument.

Cumulative Effects. Agriculture and development have greatly reduced native prairie plants. Plants have been affected by being displaced, and habitat has been lost through agricultural uses and the introduction of nonnative plants.

The development of some private lands for residential or commercial uses (such as lands on, or near the national monument's boundaries) could increase runoff, wind erosion, exotics, and soil compaction and alter soil regimes.

Past adverse effects on vegetation from agriculture and development covered wide areas. The effects of current and anticipated future actions outside the national monument, in conjunction with the effects of this alternative, would produce major long-term adverse impacts on tallgrass prairie. Most of these effects would result from development outside the national monument, which might or might not be mitigated. The actions of this alternative would contribute only a minuscule increment to the overall cumulative effect.

Conclusion. Overall, despite the fragmentation of habitat, the occupancy of habitat by national monument structures, the presence of corridors for the entrance of exotic plants, and short-term heavy visitor use in an 8-acre area of the national monument managed within a carrying capacity, ongoing efforts to restore tallgrass prairie would result in a moderate beneficial effect on tallgrass prairie because these systematic efforts would increase the abundance, distribution, quantity, and quality of the habitat in the national monument.

The vegetative resources of Pipestone National Monument would not be impaired by the actions of this alternative.

Wetlands and Riparian Corridor

Wetlands near the picnic area, parking, and restrooms on the southern boundary of the national monument would continue to be subject to foot traffic from visitors and staff. The entrance road would continue to prevent water flow from one wet area to another. The natural functioning of these wetlands would continue to be compromised by development and visitor use. Because changes in the areas involved would be local and only slightly detectable and would not appreciably affect natural processes, this continuing adverse impact on wetlands would be long term and minor.

Before the design for the visitor center was begun, wetland areas would be delineated with the use of the Cowardin system (U.S. EPA 1989). Wetland areas would be avoided

during construction. Should it be infeasible to avoid wetlands while rehabilitating the visitor center, the planning team would prepare a statement of findings for wetlands in cooperation with the Water Resources Division of the National Park Service to explain why the impact would be unavoidable and describe mitigating measures that would be used to reduce the impacts.

Cumulative Effects. Some wetlands in and outside of the national monument (scattered over about 30,000 acres) have been filled or drained (using tiles) to make more land available for growing crops. Wetlands have been filled and drained for residential uses on about 1 square mile surrounding the national monument. NPS structures and visitor uses in wetland areas contribute to the loss of natural and beneficial values.

Past practices of draining and filling wetlands in the area have caused a major long-term reduction in wetland areas and degraded natural and beneficial wetland values in exchange for benefit to agricultural, residential, and commercial uses. These continuing impacts affect the national monument, surrounding agricultural land, and surrounding residential and commercial areas.

Future filling or draining of wetlands in or outside of the national monument for agricultural, residential, or commercial uses would decrease the area in which natural and beneficial wetland values would be preserved. There could be increased runoff into the national monument from the tiled farm field on the southern boundary. If this occurred, wetlands in the national monument might be increased in number and or size. (NPS 1998b).

The severe hydrological alterations of the creek's watershed have increased sediment deposition, causing a change in both floral and faunal composition along the creek corridor.

The past effects of agriculture and urbanization on wetlands covered wide areas and were major and adverse. The continuing use of agricultural and other chemicals that make their way into Pipestone Creek contributes to adverse impacts on wetlands along the creek. The effects on wetlands from other current and an future actions outside the national monument, along with the effects of this alternative, would be moderate, long term, and adverse. Most impacts would result from agricultural and development actions outside of the national monument, which might or might not be mitigated. The effects from this alternative would contribute only a minuscule increment to the overall cumulative effect.

Conclusion. Continued foot traffic in the wetlands near the picnic area, parking, and restrooms on the southern boundary of the national monument would result in long-term minor adverse effects on wetlands.

The national monument's wetland resources would not be impaired by the actions of this alternative.

Floodplains

Natural and Beneficial Floodplain Values. Removing the fuel storage building and the maintenance storage area from the floodplain would allow for the restoration of natural and beneficial floodplain values in the area of these facilities. The natural functioning of the floodplain would be restored over about 1 acre. There would be a net gain of about 1 acre of reduced development in the floodplain and restoration of natural and beneficial floodplain values. This would be a minor beneficial long-term effect on natural and beneficial floodplain values.

Keeping the visitor center, the parking and picnic areas, restrooms, and employee residences within the 100-year floodplain would prevent the restoration of natural and beneficial floodplain values such as groundwater recharge and maintaining an open floodplain to carry floodwaters. Keeping structures in the floodplain and retaining employee residences within the 100-year floodplain are contrary to

NPS policy. If this alternative was selected, a statement of findings for floodplains would be prepared as part of this document to explain why there would be no practicable alternative to leaving facilities, including employee housing, in the 100-year floodplain. The effects on the ability of the floodplain to function normally would be local and slightly detectable, a minor long-term adverse impact.

Flooding. Removing the fuel storage building near the visitor center and removing the maintenance storage area near the east boundary of the national monument from the floodplain would mean that these facilities no longer would restrict floodwaters or decrease permeability in the floodplain. Removing the fuel storage facility at the visitor center would prevent the spilling of fuels used in maintenance vehicles and equipment into floodwaters in the event of a 100-year flood. The net removal of about 1 acre of buildings and impermeable surfaces would have a minor long-term beneficial effect on flooding.

The visitor center (with its visitor center and law enforcement functions) would continue to occupy the 100-year floodplain. Two employee residences and a garage would remain in the 100-year floodplain. Because the floodplain is broad and the floodwaters are only slightly impeded by development in the floodplain, this continuing effect on the floodplain's ability to function normally during flooding would be minor, adverse, and long term.

Moving the maintenance function outside the boundary of the national monument would mean that fewer employees would be at risk from flooding. Some would continue to be at risk in the visitor center, at the two employee residences, and on trails and in quarries within the monument. There would be no reduction in the number of visitors at risk from flooding. Although the possibility of loss of life would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse impacts on the visitors, employees, and property involved.

Cumulative Effects. The alteration and ditching of Pipestone Creek upstream and its use to carry rural and city runoff and stormwater have greatly reduced the extent of the floodplain and the natural and beneficial values of floodplains in the national monument.

Cattle and other animals probably have been allowed to use some riparian areas in and near the national monument. This practice degrades natural and beneficial floodplain values in exchange for benefits to agricultural uses. NPS structures and visitor uses in floodplain areas contribute to the loss of natural and beneficial values.

Further development in floodplains and wetlands outside the national monument for residential, agricultural, or commercial uses would decrease the area in which natural and beneficial floodplain values would be preserved.

Under this alternative, the natural and beneficial values of floodplain areas would continue to be compromised by development at national monument headquarters, the two houses, and the garage.

The past impacts of agriculture and urbanization on floodplains covered wide areas and were adverse. The effects on floodplains from current and anticipated future actions inside and outside of the national monument, in conjunction with the effects of this alternative, would be moderate, long term, and adverse. Most of the effects would result from agricultural use and development outside the national monument, which might or might not be mitigated. The actions of this alternative would contribute a minuscule increment to the overall cumulative effect.

Conclusion. The net removal of about 1 acre of buildings and impermeable surfaces would cause a minor long-term beneficial effect on

natural and beneficial floodplain values. Keeping the visitor center, the parking and picnic areas, restrooms, and residences within the 100-year floodplain would prevent the restoration of natural and beneficial floodplain values and continue to affect the floodplain's ability to function normally during flooding, a minor long-term adverse impact.

Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse impacts on the visitors, employees, and property involved.

The national monument's floodplain resources would not be impaired by the actions of this alternative.

Hydrology

Water flow patterns across the national monument would be partially restored by removing the fuel storage building near the visitor center, removing the maintenance storage area, and recontouring the area. This would be a minor long-term beneficial effect on hydrology.

Relocating the falls bridge farther downstream would reduce the backup of water at the existing location of the bridge, which floods the bridge and parts of the trail. Removing the restrictions to the creek's natural flow would result in a relatively local effect that would be moderate, long term, and beneficial.

Acquiring the school district lands south of Minnesota West Community and Technical College on the national monument's eastern boundary (15.3 acres) would maintain or improve water flow patterns. This would be a moderate long-term beneficial effect on hydrology.

Cumulative Effects. The area's hydrology has been greatly altered by the ditching of Pipestone Creek upstream, the removal of water by the use of wells, quarrying on adjacent land, the use of tiles to drain areas near and possibly within the national monument, the reduction of the height of Winnewissa Falls, and residential and commercial development.

Under this alternative, removing the fuel storage building and the outdoor maintenance storage area and acquiring the school district lands south of Minnesota West Community and Technical College on the national monument's eastern boundary would maintain or improve water flow patterns.

The past effects on hydrology from draining land and altering water flows for agriculture and urbanization covered wide areas, were adverse to natural water flow, and restricted the distribution of surface water through the surrounding landscape. The effects on hydrology from current and anticipated future actions inside and outside the national monument, in conjunction with the effects of this alternative, would be moderate, long term, and adverse. Most effects would result from agricultural use and development actions outside of the national monument, which might or might not be mitigated. The actions of this alternative would contribute a minuscule increment to the overall cumulative effect.

Conclusion. Alternative 3 would result in a moderate long-term local beneficial effect on hydrology.

The national monument's hydrologic resources would not be impaired by the actions of this alternative.

Soils

Establishing a carrying capacity for the 8-acre ceremonial ground based on acceptable levels of resource impact might reduce the degradation of this area of prairie if the carrying capacities were set below the current levels of use.

The participants in large ceremonies that take place twice each year — up to 500 people — compact soils at the ceremonial grounds. The compacting is greater in areas of heavy, concentrated use such as the kitchen/cooking structure and the sweat lodge fire ring. Soils would continue to be sterilized in areas of fire rings that are used for cooking and sweat lodges. Establishing a carrying capacity for the ceremonial area based on acceptable levels of resource impact would result in a minor beneficial long-term effect on soils at the ceremonial ground (8 acres).

Removing the fuel storage building and the maintenance storage area near the national monument's eastern boundary would remove impermeable surfaces from about 1 acre of soil, allowing the soil to function more naturally. If grading of either site was necessary, some of the soil profile would be permanently lost. However, it is possible that regrading would affect only the fill that was brought in for constructing the visitor center. Removing these facilities would cause a minor beneficial long-term effect on soils.

Cumulative Effects. Agriculture has led to the erosion of soils by removing native vegetation. This, along with tilling the soil, has left soils exposed to erosion by wind and water.

The future development of some private lands (such as those on or near national monument borders and in the city of Pipestone) for residential, tourist-related, or other uses could increase runoff, wind erosion, and soil compaction and alter soil regimes.

The past effects on soils from agriculture covered wide areas and were adverse. This alternative would result in an overall minor beneficial long-term effect on about 9 acres. The effects on soils from current and anticipated future actions inside and outside of the national monument, in conjunction with the effects from alternative 3, would be moderate and adverse because they would change the character of the soils over a relatively wide area, and mitigating measures probably would be necessary to offset adverse effects. Most effects would result from agricultural use and development outside the national monument, which might or might not be mitigated. The actions of this alternative would contribute only a minuscule increment to the overall cumulative effect.

Conclusion. Establishing a carrying capacity for the ceremonial area (about 8 acres) and removing facilities from about 1 acre would cause a minor long-term beneficial effect on soils. If grading at the fuel storage building or maintenance storage area was necessary, some of the soil profile could be permanently lost, a minor long-term adverse effect on soil.

The national monument's soil resources would not be impaired by the actions of this alternative.

Wildlife

Under this alternative, the size and connectivity of the prairie would be increased by

- placing most of the national monument in the prairie preservation zone
- developing a cooperative agreement with the U.S. Fish and Wildlife Service and the Minnesota Division of Wildlife for prescribed burns, managing prairie and exotic species, Sun Dances, and access to the northern quarries, as well as for trash removal and possibly law enforcement on their land adjacent to the national monument's northwest boundary
- acquiring the school district land south of Minnesota West Community and Technical College on the national monument's northeastern boundary and managing it as prairie
- removing the fuel storage building near the visitor center and the maintenance storage area near the eastern boundary and managing the land as prairie

This would improve habitat for many faunal groups such as birds, reptiles, amphibians, and insects. Overall this net gain of about 116 acres of habitat would result in a moderate long-term beneficial effect on wildlife.

Depending on the carrying capacity determined, establishing a carrying capacity for the Sun Dance grounds might mitigate the adverse impacts on wildlife (degrading wildlife habitat and reducing cover and forage caused by mowing 8 acres and holding large gatherings there twice a year. This small local effect would be minor, beneficial, and long term.

Cumulative Effects. Agriculture and development have greatly reduced the numbers of native animals. Animals have been affected by being displaced and killed as vermin, and habitat has been lost through agricultural activities and the introduction of nonnative animals. Wildlife continues to be disrupted by development and human activity.

The development of some private lands for residential, commercial, or other uses (such as lands on or near the national monument boundary and in communities) could alter wildlife habitat and habits and cause the loss of wildlife in some areas. Water use in these developments for residential or other uses could reduce the amount of water available for wildlife.

The past impacts of agriculture and development on wildlife covered wide areas and were adverse. The effects on wildlife from current and anticipated future actions outside the national monument, in conjunction with the impacts of this alternative, would be moderate, long term, and adverse. Most effects would result from development actions outside the national monument, which might or might not be mitigated. The actions of this alternative would contribute a small increment to the overall cumulative effect.

Conclusion. A net gain of about 15.3 acres of habitat would result in a moderate long-term beneficial effect on wildlife. Establishing a carrying capacity for the Sun Dance grounds might mitigate the adverse impact of holding the Sun Dances to some degree, depending on the capacity determined, a minor long-term beneficial effect.

The wildlife resources of the national monument would not be impaired by the actions of alternative 3.

Threatened or Endangered Species and Species of Special Concern

Opening a demonstration quarry and the associated increase in pumping might change the area's hydrology by lowering the water table and decreasing soil moisture availability. If monitoring of water levels in drill holes indicated a decrease in water levels or if monitoring of species numbers in the national monument indicated a decrease in species numbers, pumping would be stopped. In that case, the National Park Service would consult with the U.S. Fish and Wildlife Service about whether decreases in water levels would be expected to cause adverse impacts on the species or whether decreased species numbers might result from reduced water levels in the area or from some other factor. If necessary, the national monument would develop a mitigation plan in consultation with the U.S. Fish and Wildlife Service.

If pumping would result in unacceptable impacts on the Topeka shiner in Pipestone Creek or its designated critical habitat or on the western prairie fringed orchid, it would be discontinued. There would be a potential short-term minor adverse effect on threatened and endangered species.

Removing the bridge over Pipestone Creek and replacing it farther downstream would not be undertaken without consultation with the U.S. Fish and Wildlife Service. Mitigation developed during these consultations would be incorporated into the design and specifications for removing and constructing the bridge. Examples of potential mitigation

are performing demolition and construction at times of the year that would minimize impacts on the shiner or minimizing the amount and duration of work in the creek. It is expected that bridge demolition and construction would have no effect on the Topeka shiner.

Cumulative Effects. Agriculture and development have greatly reduced the numbers of native plants and animals, including threatened and endangered species. The Topeka shiner has been affected by habitat destruction, degradation, modification, fragmentation resulting from siltation, reduced water quality, tributary impoundment, stream channelization, in-stream gravel mining, and changes in stream hydrology. The species also can be affected by introduced predaceous fishes.

The western prairie fringed orchid has lost habitat (tallgrass prairie) to cropland, and its remaining habitat has been fragmented. "Mowing, haying, and grazing prevent the plants from flowering, stalling seed production" (Talley 2004). Croplands present an obstacle to the free movement of hawkmoths (the orchid's only known pollinator) between orchid populations, and pesticide drift from nearby cropland can kill hawkmoths.

The development of some private lands in nearby communities for residential, commercial, or other uses (such as lands on or near the national monument boundary) could affect the Topeka shiner or the western prairie fringed orchid by altering suitable habitat. Water use for the developments or for activities not requiring development could reduce the amount of water available for habitat for these species.

The past effects on threatened and endangered species from agriculture and urbanization have been major and adverse. The effects on threatened and endangered species from current and anticipated future actions outside of the national monument, in conjunction with the effects from this alternative, are not known because the locations of species outside of the national monument in areas that might be affected are not known. Given the lack of information about effects outside of the national monument, it is not possible to assess the relative intensity of the impacts of this alternative compared to current and anticipated future actions outside of the national monument.

Conclusion. Adding a demonstration quarry and the associated pumping might change the area's hydrology by lowering the water table and decreasing soil moisture availability. There would be a potential short-term minor adverse impact on threatened and endangered species even though pumping would be stopped if impacts were identified.

Demolishing the bridge and reconstructing it farther downstream would not be expected to have any effect on the Topeka shiner.

The national monument's threatened and endangered species and species of special concern would not be impaired by the actions of alternative 3.

VISITOR USE AND EXPERIENCE

The focus of the visitor experience under alternative 3 would be the melding of the most advantageous features of alternatives 1 and 2. This alternative would result in the reestablishment of the prairies in the national monument. The quarries and quarriers would be interpreted, as would the methods used in the quarrying process, the items created, and their importance in American Indian culture.

Three Maidens Area

Allowing the Three Maidens zone to revert to prairie and establishing a trail to guide and control access would result in a moderate beneficial effect on the visitor experience.

Visitor Center Area

Updated exhibits at the rehabilitated visitor center would improve the interpretation of the themes in a historically accurate, easy to maintain, culturally unbiased manner. This would result in a moderate beneficial effect on the visitor experience.

Keeping the existing demonstration area in the rehabilitated visitor center and adding a demonstration area nearby to interpret the quarrying process would result in a moderate beneficial effect on the visitor experience.

Adding accessible restrooms to the rehabilitated visitor center would result in a minor beneficial effect on visitors.

Circle Trail Area

Keeping the existing Circle Trail and modifying it where possible, making features more accessible, along with moving the bridge downstream and redesigning it to make it less obtrusive would result in a long-term major beneficial effect on the visitor experience.

Prairie Area

The continued opportunity under alternative 3 for visitors to closely observe the vegetative species of the prairie remnant from the Circle Trail would result in a continued major beneficial effect on the visitor experience. The continued opportunity for visitors to observe the prairie remnant from a distance from the entry road (which skirts the edge of the prairie remnant) would cause a minor beneficial effect on the visitor experience.

Cumulative Effects. Alternative 3 would result in major beneficial effects on the visitor experience at the demonstration areas, the Circle Trail, and the quarry and prairie areas. There would be moderate beneficial effects on the visitor experience at the Three Maidens area and the exhibits in the expanded visitor center, as well as minor beneficial effects from the restrooms. This alternative would not have any adverse effects on the visitor experience.

Alternative 3 would result in major beneficial effects on the visitor experience from (1) keeping and modifying the existing Circle Trail and moving the bridge downstream and redesigning it to make it less obtrusive, and (2) the continued opportunity for visitors to closely observe the vegetative species of the prairie remnant from the Circle Trail.

There would be moderate beneficial effects from (1) allowing the Three Maidens zone to revert to prairie and establishing a trail to guide and control access, (2) the updated exhibits and improved interpretation at the rehabilitated visitor center, and (3) keeping the existing demonstration area in the rehabilitated visitor center and adding a quarrying demonstration area behind the visitor center.

Adding accessible restrooms to the rehabilitated visitor center and continuing opportunity for visitors to observe the prairie remnant from the entry road would result in a minor beneficial effect on visitor experiences.

SOCIOECONOMIC ENVIRONMENT

Quarriers and Demonstrators

Rehabilitating the visitor center would not affect the quarrying of pipestone or the terms of the quarriers' permits. Demonstrators would have a more attractive work area in the visitor center but a negligible increase in earnings.

Businesses

Businesses that are dependent on the national monument (such as the campground and the gift shop across Hiawatha Avenue from the entrance to the national monument) would not be changed by the development included

in alternative 3 because they are dependent on the national monument but not necessarily on the visitor center. A rehabilitated visitor center might encourage visitors to stay in the community longer, but it probably would not add substantially to their business. The Pipestone Indian Shrine Association would benefit from a larger, more attractive sales area in the visitor center that might increase sales somewhat. Businesses farther from the national monument (such as restaurants and hotels) probably would not be affected by the actions of alternative 3.

Community

Alternative 3 would result in some beneficial economic effects on the Pipestone community from construction activity associated with rehabilitating the visitor center. Land south of Minnesota West Community and Technical College is school land exempt from the county tax rolls.

Cumulative Effects. Although past actions have affected socioeconomic resources, no actions in this alternative would result in a new perceptible socioeconomic effect. The actions, together with those in the cumulative effect scenario, would not add appreciably to cumulative effects.

Conclusion. Alternative 3 would result in no effect on quarriers. Although the working conditions for demonstrators probably would be improved, there would be a negligible increase in earnings.

Alternative 3 would result in a negligible long-term beneficial socioeconomic effect on businesses that are directly dependent on the national monument.

Alternative 3 would result in a long-term minor beneficial socioeconomic effect on the local and regional economy.

NATIONAL MONUMENT OPERATIONS

Maintenance

Moving the maintenance function out of the national monument would allow the expansion of the visitor center into the current maintenance area. The new maintenance facility would be adequately sized and equipped to fulfill its function. Visitors would continue to see the maintenance employees performing their everyday tasks of mowing, site work, building repairs, and trail maintenance. However, some functions would take place offsite, such as construction activities, painting, and the storage of vehicles and building supplies. More employees would be available year-round, but especially during the visitor season.

Facilities

The work areas of the national monument staff would be divided into two facilities, the visitor center and the offsite maintenance facility. Should it be necessary, one of the converted houses could be used for overflow office space. This would continue the current heavy reliance on radio, telephones, and cell phones. Having adequate space for offices, library, storage, and meetings would allow the employees to carry out their responsibilities more efficiently. Updating the demonstration area and the Pipestone Indian Shrine Association sales area would better meet visitors' needs. The rehabilitated visitor center, with upgraded exhibits and more interpretation, would give visitors an opportunity to learn more about the national monument.

Emergency Response Time

Having a law enforcement ranger continue to live in one of the houses near the national monument entrance would make the ranger available to respond to emergencies on the site. The staff of the visitor center /

administration building would remain close to trails and quarries. The increase in staff presumably would make assistance more readily available. There would be no change in distance for city fire, police, or emergency vehicles.

Ability to Enforce Regulations

Continuing to house a ranger on the site would make some after-hours monitoring available. The ranger would continue to patrol the trails and help visitors in emergencies. Visitors still would be able to bypass the visitor center, where the entrance fee is collected. Laws and regulations would be enforced at the same level as at present.

Conclusion. Adding high-quality new facilities would result in long-term major beneficial effects. Adding a new offsite maintenance facility would remove conflicting sights and sounds and improve the national monument's ability to serve visitors' needs, a long-term moderate beneficial effect. Having the law enforcement ranger continue to live on the site and increasing the national monument staff would make more people available to respond to emergencies, a long-term negligible beneficial effect. There would be no change in the ability of the national monument to enforce regulations.

UNAVOIDABLE ADVERSE IMPACTS

The following paragraphs describe the more important (moderate and major intensity) adverse impacts that would result from this alternative. These are residual impacts that would remain after mitigation was implemented. The negligible and minor impacts are described in the foregoing analysis.

To those American Indians who believe that the national monument is not a traditional Sun Dance site, continuing to allow Sun Dances to take place under alternative 3 would be culturally inappropriate and would thus constitute a moderate, adverse, and long-term impact in relation to their world-view about revitalizing and reinforcing their traditional cultural identity.

Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but a flood could cause major adverse effects on the visitors, employees, and property involved.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

For cultural resources there would be no irreversible and irretrievable commitments of resources.

Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but flooding could cause major adverse impacts on the visitors, employees, and property involved. Any loss of life would be irretrievable.

RELATIONSHIPS OF SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Rehabilitating the Mission 66 visitor center would result in a long-term beneficial effect on its preservation, but it would continue to be an intrusion on the landscape of the Prehistoric Quarrying into the Historic Period, a long-term moderate to major impact. Moving the museum collections to a more secure location within the visitor center would enhance their preservation. Managing the Sun Dance ground within a carrying capacity would benefit tallgrass prairie.

There would be a continued long-term reduction in the natural beneficial values of the floodplain, and it would be prevented from functioning naturally because of the presence in the floodplain of the headquarters/visitor

center, an employee residence, and a house used for administration. All these resources could be damaged by flooding.

Although the possibility of loss of life from flooding would be extremely small, there would be some danger to visitors and employees. Severe flooding has been infrequent, and the risks would be minor to moderate, but a flood could cause major adverse effects on the visitors, employees, and property involved.

Continuing visitor activities would reduce the long-term productivity of the environment.

Noise, artificial lighting, and human activities associated with ongoing visitor and administrative use of the national monument would prevent natural prairie ecosystems and wildlife populations from reaching their full potential in size and population density.

The quarrying of pipestone by Indians of all tribes, as provided for in the enabling legislation, would continue to reduce the quantity of this natural resource at the national monument.

CONSULTATION AND COORDINATION WITH OTHERS



PUBLIC INVOLVEMENT

This *Draft General Management Plan / Environmental Impact Statement* for Pipestone National Monument reflects thoughts presented by the National Park Service, American Indian groups, and the public. Consultation and coordination among the agencies and the public were vitally important throughout the planning process. The general public had two primary avenues to participate during the development of the plan: participation in public meetings and responses to newsletters.

AMERICAN INDIAN INVOLVEMENT

The section on the scoping process (p. 4) contains detailed information about the specific dates of notices and meetings and when government-to-government American Indian consultations were conducted. Consultations with American Indians began with letters sent initially to 27 tribes and follow-up telephone contact with tribal governments. Thirteen more tribes were contacted as their interest in Pipestone National Monument was identified. Because there were 40 identified Indian tribes with an interest in Pipestone National Monument, each tribe was asked about its interest in being involved in the planning process and how its members wanted to be consulted. All tribes indicated they wanted to be kept on the mailing list for newsletters and the draft plan. Several tribes identified specific individuals to represent them.

Meetings were conducted with individuals and with tribal entities on the basis of the level of interest that each showed in the plan alternatives as described in the newsletters. Written comments about the newsletters also were solicited.

PUBLIC MEETINGS AND NEWSLETTERS

Public meetings and newsletters were used to inform the general public and governmental entities and to keep them involved in the planning process for Pipestone National Monument. A mailing list was compiled that consisted of members of government agencies, nongovernmental groups, businesses, legislators, local governments, and interested citizens.

The notice of intent to prepare an environmental impact statement was published in the *Federal Register* on September 25, 2000. A news release on September 29, 2000, announced the beginning of the planning process and invited the public to open houses at the visitor center on October 11 and 12. These meetings helped the planning team determine issues and concerns that should be addressed in the plan.

A short newsletter explaining the planning process was issued in February 2002. A news release was published in April 2002 to update the public about the progress of the planning effort. A third newsletter published in June 2002 outlined the alternative concepts and sought public comment.

The draft Pipestone National Monument General Management Plan was made available to the public on February 28, 2007. The Notice of Availability for the draft plan was published on March 16, 2007. Public review officially closed on May15, 2007. The general management plan was mailed to everyone on the park mailing list, which includes a total of 273 individuals, agencies, and organizations.

During the review period four open houses were held in four locations in Minnesota and South Dakota. The public meetings were held in locations close to the reservations of culturally affiliated tribes and in population centers near Pipestone National Monument. These meetings helped the planning team to answer questions of the public and understand any concerns raised by the plan. The first open house was held the afternoon

and evening of February 20 at the Performing Arts Center in Pipestone with 32 in attendance. The second was held the afternoon and evening of February 21 in Pierre, South Dakota at the South Dakota State Historical Society. One person attended. The third open house was held at the Chamber of Commerce in Yankton, South Dakota on February 22. A total of 7 people attended during the two sessions that were held from 2:00 to 5:00 and from 6:00 to 8:30. The third open house was held the afternoon of February 23 in Marshall, Minnesota at Southwest Minnesota State University. No one attended. The open houses were announced in local newspapers, via news releases to the park mailing list. Notice was provided to local television and radio stations.

In addition, the National Monument Superintendent met with a group of 15 Lakota and Dakota elders on March 15, with the Pipestone County Commissioners on April 3, and with 22 Lower Brule elders on May 6.

Twenty-five (25) letters were received in response to the public review. Four (4) official responses were received from Indian tribes. Responses were received from city and county government officials and state and federal agencies.

CONSULTATION

Agencies that have direct or indirect jurisdiction over historic properties are required by section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 470, et. seq.) to take into account the effect of any undertaking on properties in or determined eligible for inclusion in the National Register of Historic Places. To meet the requirements of the regulations of the Advisory Council on Historic Preservation on implementing section 106 (36 CFR 800, "Protection of Historic Properties"), the National Park Service sent letters to the Minnesota state historic preservation officer (SHPO) and the Advisory Council on Historic Preservation in October 2000, inviting their participation in the planning process. All the newsletters were sent to both offices with a request for comments.

Under the terms of stipulation VI.E of the 1995 programmatic agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, the National Park Service will work with the Minnesota state historic preservation officer to determine which actions qualify as programmatic exclusions under IV.A and B and which other undertakings will require further review and comment under 36 CFR 800.4-6.

The following table identifies the actions that were considered and the determination that was reached about whether further SHPO consultation would or would not be required for each.

TABLE 11: FUTURE NATIONAL HISTORIC PRESERVATION ACT COMPLIANCE REQUIRED FOR IMPLEMENTATION OF SPECIFIC ACTIONS (PREFERRED ALTERNATIVE)

Action	Compliance Requirement
Maintenance moved out of national monument; cooperative maintenance agreement with other public or private entity to house operations; if not possible, then contract for or lease space.	No further SHPO consultation needed.
Visitor center and two Mission 66 houses removed.	Needs further consultation with the SHPO and development of an MOA.
Remnant prairie managed to preserve its significance; restored prairie managed to recover native plant species	No further SHPO consultation needed.
American Indian ceremonial use unchanged; Three Maidens grounds restored to prairie; Hiawatha Club use of Three Maidens ceased.	Needs further SHPO consultation.
Picnic area and restrooms removed.	No further SHPO consultation needed.
NPS assists with preservation of Indian School superintendent's house.	No further SHPO consultation required, but NPS will consult with SHPO as part of memorandum of agreement on demolition of the National Register eligible visitor center and associated cultural landscape.
School district lands south of Minnesota West Community and Technical College on eastern boundary acquired; prairie restored.	No further SHPO consultation needed.
Cooperative agreement among NPS, USFWS, and MDNR to coordinate mutually beneficial land management activities.	Needs further SHPO consultation if ethnographic resources as traditional properties or cultural landscapes found eligible for national register.
Existing trails upgraded with rerouting; new trails possible to connect the Circle Trail to the new entrance.	Needs further SHPO consultation.
Continued NPS efforts to control exotic species in national monument; NPS would work with owners of adjacent property to identify and eradicate exotics.	No further SHPO consultation needed.
Sun Dances still permitted; modifications of use might be made on the basis of impact and sustainability of resources.	No further SHPO consultation needed.
Superintendent's Indian Advisory Committee established.	No further SHPO consultation needed.

TRIBES, AGENCIES, AND ORGANIZATIONS TO WHICH THIS DOCUMENT WAS SENT

Director's Order 12 requires a listing of all agencies, organizations, and people who receive copies of the plan. A list of individual recipients may be kept in the project file rather than being listed in the back of the plan if that list is more than three pages. A complete list is available from the National Park Service, Denver Service Center, 12795 West Alameda Parkway, P.O. Box 25287, Denver, CO 80225-0287

Federal Agencies and Officials

Advisory Council on Historic Preservation
U.S. Department of Agriculture
    Natural Resource Conservation Service
U.S. Department of the Interior
    U.S. Fish and Wildlife Service
    National Park Service
        Badlands National Park
        Effigy Mounds National Monument
        Grand Portage National Monument
        Keweenaw National Historical Park
        Mississippi National Scenic Riverway
        Saint Croix National Scenic Riverway
        Voyageurs National Park
U.S. Environmental Protection Agency
Honorable Norm Coleman, Senator
Honorable Mark Dayton, Senator
John Kline, Representative to Congress

Affiliated American Indian Tribes

Cheyenne River Sioux Tribe
Crow Creek Sioux Tribe
Flandreau Santee Sioux Tribe
Fort Peck Assiniboine and Sioux Tribes
Iowa Tribe of Kansas and Nebraska
Iowa Tribe of Oklahoma
Lower Brule Sioux Tribe
Lower Sioux Indian Tribe
Oglala Sioux Tribe
Omaha Tribe of Nebraska
Otoe-Missouria Tribe
Ponca Tribe of Nebraska
Ponca Tribe of Oklahoma
Prairie Island Indian Tribe
Rosebud Sioux Tribe
Santee Sioux Nation
Shakopee Mdewakanton Nation
Sisseton-Wahpeton Oyate Tribe
Spirit Lake Tribe
Standing Rock Sioux Tribe
Three Affiliated Tribes
Upper Sioux Community of Minnesota
Yankton Sioux Tribe

Other American Indian Tribes and Organizations

Caddo Indian Tribe of Oklahoma, Chairperson
Devil's Lake Sioux Tribe
Eastern Band of Cherokee, Principal Chief
Fond du Lac Band of Minnesota Chippewa
Keepers of the Sacred Tradition of Pipemakers
Little Feather Indian Center
Nez Perce Tribe, Chairperson
Northern Cheyenne Tribe, President
Osage Nation, President
Pipestone Indian Shrine Association
Red Cliff Band of Lake Superior Chippewa
Sac & Fox Nation of Missouri, Chairperson
Sac & Fox Nation of Oklahoma, Principal Chief
Sac & Fox Tribe of the Mississippi in Iowa, Chairperson
Shoshoni Tribe, Chairperson
United Sioux Tribes

State Agencies and Officials and Parks

Minnesota Department of Health
Minnesota Department of Natural Resources
Minnesota Department of Tourism
Minnesota Department of Transportation, Passage Coordinator
Minnesota Pollution Control Agency
Minnesota State Historic Preservation Officer, Dr. Nina Archabal
Minnesota West Community and Technical College
State of Minnesota Indian Affairs Council
Governor Tim Pawlenty
Senator Jim Vickerman

Hon. Doug Magnus, Minnesota House of Representatives
Bigstone Wildlife Refuge
Blue Mounds State Park
Camden State Park
Jeffers Petroglyphs State Historic Park
Lake Shetek State Park
Split Rock Creek State Park

Local Agencies and Officials

Pipestone County Attorney
Pipestone County Auditor
Pipestone County Extension
Pipestone County Fair
Pipestone County Museum
Pipestone County Treasurer
Pipestone County Recorder of Deeds
Pipestone County School District
Pipestone County Soil and Water Conservation District
Pipestone County Sheriff
Mayor of Pipestone
Pipestone Building and Zoning Administrator
Pipestone City Administrator
Pipestone Community Library
Pipestone Convention and Visitors Board
Pipestone Parks and Recreation Director
Pipestone Heritage Preservation Commission

Organizations and Businesses

Ambulance Association
American Indian Movement, Minneapolis
American Indian Studies Program
Association on American Indian Affairs
Boy Scouts of America
Calumet Chapter 51
Cattlemen's Association
Center for Rural and Regional Studies
Chapter C, PEO
Cub Scouts, Boy Scouts of America
Farm Bureau
Fire Department, Pipestone
Flying Arrow Ranch
Fort Pipestone
Girl Scouts U.S.A.
Hiawatha Club
Hiawatha Snowblazers
Historic Pipestone
Historical Society
Indian Shrine Association
Jaycees
Keepers of the Sacred Tradition of Pipemakers
Kiwanis Club
Little Feather Indian Center
Master Gardeners/Home Study
MCCL
Medical Auxiliary
The Nature Conservancy
Pheasants Forever
Pipestone Chamber of Commerce
Pipestone Golden Kiwanis
Pipestone Lions Club
Pipestone RV Campground
Pipestone Publishing Company
Pork Producers
Pottawatomie Cultural Center and Museum
Red Cross
Reliant Energy–Minnegasco
Sagio Club
Senior Citizen Center
Sioux Valley Southwest Electric
SWST Cultural Affairs Committee
Travelers Council
Truine Chapter #51
Veterans of Foreign Wars Auxiliary
Veterans of Foreign Wars Post 3814
Williams Pipeline Company
XCEL Energy-Northern States Power

Media

Argus *Leader*
Brookings *Register*
Buffalo Ridge *Gazette*
Dell Rapids *Tribune*
Edgerton *Enterprise*
Flandreau Santee Sioux *Executive*
Indian Country Today
KARL-KKCK-KMHL Radio
KDLT-TV
KELO-TV
KLOH
KRSW-FM
KSFY-TV
KTTW-FOX-TV
Lakota Times
Marshall *Independent*
Minneapolis *Star–Tribune*

Moody County *Herald*
Murray County *Herald*
South Dakota Public Broadcasting
Tollefson Publishing
Tyler *Tribune*
Worthington *Daily Globe*

Consultation and Coordination Record

7/15/00	Lower Brule Sioux Tribal Council, elders, and Cultural Resource Committee members visit Pipestone National Monument.
8/25/00	Pipestone National Monument superintendent met with Ms. Kathy Bolin, Passage Coordinator at Minnesota Department of Transportation, to discuss "International Prairie Passage Route."
9/25/00	*Federal Register* notice published.
9/25/00	Press release announcing beginning of general management plan (GMP) process.
9/29/00	Press release announcing public meetings on the GMP.
10/2000 and 2001	Letters and GMP data mailed to 40 tribes inviting participation. Pipestone NM staff made followup calls to confirm interest in receiving documents or briefings as plans became available. (Original letters to 27 tribes in October 2000; letters to 13 more tribes in 2001).
10/02/00	Letter to Advisory Council on Historic Preservation inviting participation in planning process.
10/02/00	Letter to Minnesota state historic preservation officer (SHPO) inviting participation in planning process.
10/02/00	Letter to Field Supervisor, U.S. Fish and Wildlife Service, Ecological Services Field Office, notifying of GMP and requesting list of federally listed species.
10/02/00	Letter to all people on NM mailing list inviting them to open houses.
10/02/00	Letter to Joseph Schelhass, president of Hiawatha Club, notifying him of GMP and inviting participation in open houses.
10/03/00	Letter to State Representative Richard Mulder to attend open houses.
10/11/00	Open House at Pipestone National Monument, 4–6 p.m.
10/12/00	Open House at Pipestone National Monument, 7–9 p.m.
10/27/00	Superintendent called Myron Williams, Sisseton-Wahpeton Tribe, and asked him to put out word on GMP. All welcome to provide input.
10/30/00	Lower Brule Sioux Tribal Council elders and Cultural Resource Committee members return to Pipestone NM to meet with national monument staff and GMP team captain to discuss their impressions of the national monument and the GMP and to advise the NM about issues of sacredness.
11/08/00	Letter from U.S. Fish and Wildlife saying that two T&E species possible in the NM (Topeka shiner, endangered, and western prairie fringed orchid, threatened).
11/17/00	Letter from Minnesota SHPO requesting involvement in planning process.
12/01/00	Letter to Minnesota Department of Natural Resources, Natural Heritage and Nongame Research Program, Section of Ecological Services, requesting information about state-listed species in Pipestone County.
12/12/00	List of species and native plant communities in the county provided by Minnesota Department of Natural Resources, Natural Heritage and Nongame Research Program, Section of Ecological Services. List of species and native plant communities in the county provided by Minnesota Department of Natural Resources, Natural Heritage and Nongame Research Program, Section of Ecological Services.
12/28/00	Letter from Pipestone Indian Shrine Association giving ideas, comments, and suggestions for GMP.
1/10/01	Letter from Larry Van Horn, DSC planning team, responding to a request from Scott Jones of the Lower Brule Tribe regarding American Indian Religious Freedom Act.
1/11/01	Letter from Advisory Council on Historic Preservation acknowledging the GMP and outlining the group's participation.
1/12/01	Telephone call to Minnesota SHPO arranging meeting to discuss SHPO involvement.
1/22/01	Tribal Chair Dallas Ross, Upper Sioux Community of Minnesota, came to Pipestone to discuss issues and review GMP process with superintendent.
02/02/01	Pipestone NM published short newsletter explaining GMP, telling schedule, and explaining how people can get involved. Newsletter sent to national monument's mailing list.
02/12/01	Jolene Arrow, Yankton Sioux Tribe, called about GMP because Jerry Flute, Association on American Indian Affairs, had alerted her. Fax and copies of original GMP mailing sent to her.
2/13–16/2001	GMP meetings at Performing Arts Center. DSC and NM team, as well as Bill Supernaugh, superintendent of Badlands NP.

2/20/01	Pipestone NM superintendent conferred with Paul Dobbs, Minnesota West Community and Technical College, about Pipestone Indian school Superintendent's. house, discussed ownership issues and how it was transferred.
2/20/01	Superintendent conferred with Bud Johnston, Keepers of the Sacred Tradition of Pipemakers, discussed ownership of superintendent's house and how it was transferred.
2/26/01	Telephone call between Larry Van Horn, DSC planning team, and Dennis Gimmstad, Minnesota state historic preservation office, to discuss SHPO involvement in planning process.
3/03/01	Superintendent met with Flandreau Santee Sioux, Santee Sioux, and Chuck Derby, Little Feather Interpretive Center, to discuss national monument management and GMP issues.
3/20/01	Letter from Pipestone NM superintendent to Dennis Gimmstad, Minnesota state historic preservation office, outlining GMP progress and following up on conversations of 1/12/01 and 2/26/01.
4/02/01	Jolene Arrow, Yankton Sioux Tribe, asked Pipestone NM superintendent to present GMP and national monument management issues to a group meeting at Fort Randall, SD.
4/23/01	Letter from Dennis Gimmstad, Minnesota state historic preservation office to Pipestone NM superintendent regarding SHPO involvement in the GMP.
4/25/01	Meeting about pipestone quarries at Pipestone NM hosted by the Yankton Sioux at the Fort Randall Casino/Hotel. Members of many other Sioux Tribes included. Topics discussed were GMP, Government Performance and Results Act (GPRA), and national monument management. Pipestone NM superintendent and team captain spoke about the GMP, answered questions about NM management and operation. Regional anthropologist and NM chief ranger also attended.
4/2701	Telephone call between Minnesota state historic preservation office and Pipestone NM superintendent to discuss GMP.
5/2/01	Yankton Tribal Chair designated Jolene Arrow as contact.
5/23/01	Myron Williams, Sisseton-Wahpeton Tribe, discussed with superintendent forming a consultative group.
6/28/01	Minnesota SHPO visited Pipestone NM for a day. Team captain and planning team also visited. GMP discussed.
7/3/01	Jolene Arrow, Yankton Sioux Tribe, called to discuss previous meeting.
7/13/01	Superintendent briefed Mick Myers, executive director, Pipestone Chamber of Commerce, on GMP.
7/16/01	Superintendent briefed County Commissioner Jack Keers on GMP.
7/19/01	Superintendent briefed Pipestone Mayor Bill Ellis on GMP.
7/24/01	Superintendent briefed Vern Long on GMP.
8/02/01	Superintendent briefed Chuck Derby, Little Feather Interpretive Center, on GMP and other issues.
1/30/02	Telephone conversation with Jim Jones, MN Indian Affairs Council, to discuss GMP. Follow-up letter and background materials on GMP sent 2/05/02.
2/2002	Two articles and an editorial in the *Argus Leader* newspaper about GMP following input from Pipestone NM superintendent and staff.
2/14/02	Meeting with Lower Brule Sioux Tribal Council and Elder Council at Pipestone NM.
2/22/02	Radio interview of superintendent with KDCR, Sioux Center, Iowa, about GMP.
2/22/02	Letter from Red Cliff Band of Lake Superior Chippewas Tribal Council to NM superintendent, designating Keepers of the Sacred Tradition of Pipemakers to represent the band on the GMP.
3/04/02	Letter from Pipestone NM superintendent to Chairman, Red Cliff Band of Lake Superior Chippewas confirming their 2/22/02 letter and assuring that they would remain on the mailing list.
4/01/02	Letter to Tribal Chairman, Sisseton-Wahpeton Sioux Tribe, acknowledging request that Chuck Derby function as the tribe's liaison to the GMP.
4/03/02	Letter from Pipestone NM superintendent to Chairman, Fond du Lac Band of Minnesota Chippewa Indians, to discuss GMP.
4/03/02	News release telling status of GMP.
5/29/02	Conversation between Pipestone NM superintendent and a staff writer, Minneapolis *Star Tribune* about GMP.
5/29/02	Letter to Tribal Chairman, Sisseton-Wahpeton Sioux Tribe, acknowledging request that. Joe Williams, Cultural Committee of the Sisseton-Wahpeton Tribe, and. Chuck Derby, Little Feather Interpretive Center, function as tribe's liaison to GMP team.
5/30/02	Meeting with Minnesota West Community and Technical College CEO Paul Dobbs about GMP.
6/02/02	Pipestone NM published newsletter describing progress to date and outlining alternative concepts to be expanded on in GMP.
7/16/02	Pipestone NM superintendent spoke at a meeting of Hiawatha Club about GMP, NPS policy and laws dealing with sacred sites, and possible impacts on the Hiawatha Pageant.

8/05/02	Letter from Tribal Council of the Sisseton-Wahpeton Tribe, Lake Traverse Reservation, to Pipestone NM superintendent transmitting three tribal council resolutions individually designating the Three Maidens, Leaping Rock, and the Oracle as sacred sites.
10/19/02	Meeting with Lower Brule Sioux at Pipestone NM.
3/19/03	Superintendent briefed City Administrator on possible partnerships and space needs.
4/24/03	Superintendent briefed Paul Dobbs, CEO, Minnesota West Community and Technical College.
4/29/03	Superintendent briefed Chuck Derby, Sisseton-Wahpeton Liaison, on GMP.
5/01/03	Superintendent briefed Cally Eckles, staff person for Congressman Gutknecht, about national monument and GMP.
5/6–7/03	Superintendent attended meeting hosted by the Lower Brule Sioux at Lower Brule, SD and gave GMP briefing and status of GMP. Other tribes represented were Yankton, Rosebud, Three Affiliated Tribes, Standing Rock, and Pine Ridge.
5/21/03	Superintendent briefed Joe Williams, Sisseton-Wahpeton Liaison, on GMP.
11/26/04	Elders and some council members of the Lower Brule Sioux visited national monument. They were given an update on draft GMP status and provided handouts on establishing act, proposed mission, purpose, significance statements, and interpretive themes.
3/25/05	Superintendent briefed Sisseton-Wahpeton tribal GMP liaison Chuck Derby on status of plan.
3/31/05	Superintendent had telephone discussion with Sisseton-Wahpeton tribal liaison Joe Williams on draft GMP and sent pipestone geology study.
7/1/05	Letters were sent to each of the 23 affiliated tribes transmitting recently completed studies: *Native American Cultural Affiliations and Traditional Association Study,* and *The Ever-Changing Pipestone Quarries.* Status of draft GMP was stated, and an invitation was extended requesting liaison representative designations.
10/12/05	Sisseton-Wahpeton Tribal Historic Preservation Officer, Mr. Frankie Johnson, and several other tribal members visited the national monument. Superintendent extended an invitation to discuss the draft GMP at a later time. Upon their request, a national monument *Strategic Plan* was sent.
10/12/05	Letters were sent to each of the 23 affiliated tribes requesting a preferred method for conducting government-to-government relations for the draft GMP and the designation of a preferred tribal contact person. One response dated December 6 was received from the Standing Rock Sioux Tribe.
12/6/05 – 12/9/05	Telephone contacts were made with 22 of the affiliated tribes for designated contacts. Contact persons were recorded for future reference in disseminating plans.

SUBSTANTIVE COMMENTS AND NPS RESPONSES

Following are reprinted letters containing substantive comments and NPS responses to those comments.

COMMENTS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAY 15 2007

REPLY TO THE ATTENTION OF:

B - 19J

Superintendent Jim LaRock
Pipestone National Monument
36 Reservation Avenue
Pipestone, Minnesota 56164-1269

Re: Comments on the Draft Environmental Impact Statement for the Pipestone National Monument General Management Plan, Pipestone County, Minnesota, CEQ No. 20070091

Dear Mr. LaRock:

In accordance with United States Environmental Protection Agency (US EPA) responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, we have reviewed the Draft Environmental Impact Statement (DEIS) for the Pipestone National Monument (PNM) General Management Plan.

The National Park Service is developing a General Management Plan to guide future decisions regarding this unique Minnesota resource. Catlinite is the stone quarried by American Indians from prehistoric times at this site, apparently one of only a few in the country, for the making of ceremonial pipes. This, along with several related landforms, have made the park area a sacred site for multiple tribes who still come to practice various traditions and rights. In 1937, a comparatively small National Monument was created to protect this cultural resource. A now historic, but functionally inadequate structure, was built as a visitor's center in the middle of the landform. A nearby Pipestone Indian School building is a registered National Historic Landmark, and has directly related significance to the PNM, but is presently not part of PNM. Global, national and state threatened and endangered species are located within PNM, contributing to its unique prairie landscapes and the historic Nicollet Expedition biology site. Neighboring developments and land uses threaten the PNM's sacred integrity, functions, and environmental resources. Past decisions, limited resources and philosophically divergent planning goals at national, state and local levels continue to threaten the maintenance and functionality of the monument's most significant resources.

US EPA has not participated in any earlier scoping initiatives for this project, which began in 2000. Local and Indian Tribe stakeholders have been actively pursued to obtain their participation in the scoping process. A list of Park Service and stakeholder concerns was developed and potential actions for addressing them were formulated. These were developed into two alternative plans for long range management of the park. A stakeholders meeting was

RESPONSES

Responses to United States Environmental Protection Agency

1. In the Memorandum of Agreement (MOA) with the Minnesota State Historic Preservation Officer (SHPO) detailing mitigation measures the National Park Service will undertake in removing the Pipestone Visitor Center, the National Park Service will provide technical assistance and will commit to search for preservation funding for the stabilization and restoration of the Superintendent's house. This may include-at some point in the future, should other options prove unsuccessful-the National Park Service assuming ownership of the house through a minor boundary adjustment, legislation, donation, or any other practical vehicle. One of the options the National Park Service will pursue is stabilization and preservation funding through the Centennial Challenge Program, with the premise that matching funds would come from the State of Minnesota and local sources, and in-kind assistance would come from the college. Future uses of the Superintendent's house could be as an interpretive center telling the story of the Indian Schools using the Pipestone Indian School as an example, or to house office space for tribal uses. The owners of the Superintendent's house, Minnesota West Community and Technical College, will be invited to be signatory to the MOA, and the MOA will be included as an appendix in the final General Management Plan.

then held to negotiate a third compromise plan. Alternatives presented in this DEIS include a no-action "baseline," two diverse proposals, and a fourth "blended" alternative.

Our review of the Pipestone National Monument Draft General Management Plan proposal as presented in this DEIS raises several concerns. The following is a brief discussion of those concerns.

1. 1) The Indian School Superintendent's House and its immediate one-acre lot is presently owned by an Indian representative group, Keepers of the Fire. Although they have genuine concern for this site, they have no authority or mechanisms for raising financial support sufficient to maintain this registered National Historic Structure. The surrounding property (school house land) used to be part of this school grounds, and is elevated, affording vistas of the PNM. It is presently owned by the Minnesota West Community and Technical College. This college has developed a modest active campus just north of this site. College or other development of the school house land, surrounding the Indian School House, is a real possibility. Such development would adversely impact the PNM and preclude future incorporation into the functions of the PNM, yet purchase of this property was not discussed in the DEIS. Only a 15.3 acre parcel further south of this parcel is considered. We suggest a supplemental DEIS or the final EIS consider an alternative that would include obtaining this school house land as well as the 15.3 acre parcel, both to provide buffering protection for the PNM's globally significant environment nearby and for optimizing PNM functions as suggested below in item 2.

235

2) A significant difference between the alternatives considered involves demolition or retaining in place the Reservation Avenue Entrance Drive, parking lot(s) and the existing "historic" visitor's center. This latter facility is described in the DEIS as multiply modified within the past fifty years, functionally inadequate to the point of needing considerable upgrading /modification as proposed, and requiring construction of a berm within the floodplain for protection from annual and flash flooding. Two additional houses described as historically significant are located near the entrance of the PNM, just off Reservation Avenue. These are located within a significant wetlands area of the PNM where the fringed prairie orchid, an endangered species, is currently reestablishing a presence.

The DEIS presents (beginning on page 24) "...the conditions prescribed by laws, regulations, and policies most pertinent to the planning and management of the national monument...". These citations highlight avoiding further harm, promoting protection of and whenever possible restoration of previously impacted/degraded prairie, wetland, floodplain and significant species within the PNM. Did the Park Service consider the option of moving and restoring the visitor center and entrance houses at another location, rather than demolishing them? This, similar to alternative 1, would allow restoring an uninterrupted prairie at the center of the PNM and at the present entrance area. One possible relocation site for moving these structures is to a setting on the school house land mentioned in 1) above. This could improve prairie vistas and perhaps orientation for visitors, consolidate a visitor's introduction to the historic and cultural resources of the PNM, improve user fee operations, and provide a reasonable site to relocate/consolidate maintenance functions as well.

Alternatives 2 and 3 discuss anticipated impacts from remodeling the visitor's center and entrance houses in place. The DEIS presentation of alternatives 2 and 3 does not include meaningful consideration of the continued, cumulative and intentional maintenance of invasive

species with fertilizers, weed controls and such around the buildings and parking lots. The fact that the entrance road and abandoned railway are known significant routes of invasive species impacting the prairies is not addressed. The DEIS indicates that alternative 1 would remove a variety of visitor and support functions off-site, but does not discuss possible locations nor the impacts associated with moving these functions off-site. Please include such information in the final EIS.

Wherever these functions are ultimately located, the final EIS should consider modifying the structures to incorporate "green architecture." The Park Service could commit to retaining the historical nature of these buildings while using energy efficient and ecological design features, such as efficient heating, cooling, insulation, lighting, vegetated swales, and permeable pavements, by incorporating their use in this ideal setting.

3) Maintenance is currently conducted from several buildings, including the visitor's center, an entrance road house, and a structure adjacent to Pipestone Creek off Hiawatha Avenue and overlooking the Sioux Quartzite Escarpment. All three of these sites threaten important PNM ecological holdings, are responsible for some degree of run-off and spill impacts and complicate best management practices. Alternative 1 proposes moving the present structure on the escarpment "off-site" and replacing it with a parking-trailhead area with restrooms. While some impacts of this revised use are briefly presented, the questions of how the restrooms will avoid contributing to the creek impairment, how parking lot spills and run-off will be mitigated, and what impacts the relocated maintenance structure will have are not adequately addressed.

4) The DEIS mentions a growing concern for developments of neighboring properties surrounding the PNM. While the possibility of selectively expanding PNM to obtain a "buffer" zone is presented with respect to a portion of bordering lands to the north and a small northeast area, impacts to the west, south and east sides are only acknowledged. Given the importance and uniqueness of the PNM to the local economy, the state and national preservation inventory, and its sacredness to multiple tribal groups, we recommend a supplemental DEIS or the final EIS present specific ways of addressing neighboring developments with city and state planning groups. The possibility of PNM expansion to create buffer zones, easement purchases or agreements, or participation in local planning programs to better represent the PNM concerns are some opportunities that should be more completely presented. Although protecting vistas is a problematic effort, zoning which designates preservation of prime farmland with limitations to tower and bulk structures may be possibilities for at least the western and northern views into and across this prairie setting.

5) Mr. Thomas Bramscher of our Water Division is investigating the status of the impaired Pipestone Creek, its restoration process, and development of a Total Maximum Daily Load (TMDL). These considerations might be expedited in light of this creek's impacts upon the PNM.

6) The DEIS makes several references to bringing trails up to park service standards. A supplemental draft or final EIS should discuss what those standards are and what impacts such enhancement could have. We recommend that they could include the use of permeable surfaces

to minimize run-off, bioswale adaptations to the adjacent lands, and reasonable adoption of handicap accessability considerations.

7) Appendix E (page 255) mentions the abandoned Soo Line Railway right-of-way that traverses the PNM south to north along the east edge of the Sioux Escarpment. Because this is another major pathway for invasive species and directly challenges the historic and environmentally significant Nicollet biological site, a supplemental DEIS or final EIS should address its impacts and possible mitigation.

8) The PNM is a sacred site for tribal cultures who find great significance in and seek the solace of silence. Park user experience is typically a concern of the NPS. Since one aspect of prairie is its soft sounds, the supplemental DEIS or final EIS should address noise as an issue. The sounds from traffic, the use of loud pumps to drain quarry pits, ongoing maintenance methods, and now the possibility of nearby wind energy turbines are among the conditions that should be discussed in this plan.

We commend the Park Service for your extensive efforts to reach out to tribal stakeholders. We also commend your efforts to negotiate with adjacent land managers to address invasive species encroaching along the northern edge of the PNM. Community outreach is clearly a significant factor in the survival of the PNM setting; we encourage your continued efforts there.

Our review of this DEIS has identified concerns in several critical areas. Based upon these human and natural environmental concerns and the information we request to be provided in a supplemental DEIS or the final EIS, we have assigned a rating of "EC-2" (environmental concerns, insufficient information). Please refer to the enclosed Summary of Rating Definitions Sheet. This rating will be published in the Federal Register.

We appreciate the opportunity to review and comment on this DEIS for the Pipestone Draft General Management Plan. We would welcome questions or greater participation in considering alternatives suggested in our comments. Please feel free to contact me or Norm West of my staff at 312-353-5692 or west.norman@epa.gov. Specific questions concerning the water issues should be addressed to Tom Bramscher at 312-886-6753, or bramscher.thomas@epa.gov.

Sincerely,

Kenneth A. Westlake, Chief
NEPA Implementation Section
Office of Science, Ecosystems and Communities

COMMENTS

RESPONSES

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS sate, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate
The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alterative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information
The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

COPY

MINNESOTA HISTORICAL SOCIETY

State Historic Preservation Office

May 15, 2007

Mr. M. James LaRock
U.S. Dept. of the Interior
National Park Service
Pipestone National Monument
36 Reservation Avenue
Pipestone, MN 56164-1269

Re: Pipestone National Monument Draft General Management Plan/EIS
Pipestone County
SHPO Number: 2007-1201

Dear Mr. LaRock:

Thank you for the opportunity to review and comment on the above report. It has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and the Procedures of the Advisory Council on Historic Preservation (36CFR800).

The discussion on pages 104 through 199 of the report provides a general background on the cultural resources of the monument – a crucial foundation of a management plan for a place like Pipestone. Of the five types of cultural resources found at the monument, four – archaeological sites, cultural landscapes, ethnographic resources, and historic structures – may meet National Register criteria as contributing elements. The discussion acknowledges that some of these resource types have been more thoroughly evaluated than others. For example, a number of archaeological investigations have been completed over a 120-year period, and a recent archaeological overview report has been completed. Structures and buildings that have been evaluated include the Mission 66 developments of the monument and the Pipestone Indian School Superintendent's Residence. While some individual ethnographic resources in the monument have been identified, they have not been fully evaluated under National Register criteria. Ethnographic and historic cultural landscapes have not been systematically surveyed, and need more study as contributing elements of the monument. The section provides a number of recommendations to address these identification/evaluation needs. This issue is of great importance.

1. Due to the unequal nature of resource information on the full range of contributing elements within the monument, we have some concerns about the Section 106 assessments of effect for the various types of resources under each alternative. It does not seem that the current level of information is sufficiently detailed to enable sound Section 106 determinations of effect. For example, the discussion of the effects of alternative 3 on cultural landscapes on page 203 acknowledges that potential effects on the cultural landscape that cannot be avoided could be adverse, but the next paragraph

Responses to the State Historic Preservation Office

1. We appreciate the comments of the State Historic Preservation Office (SHPO) on the adequacy of information in the Environmental Impact Statement. We recognize that not all resources have been completely inventoried, and the significance of all cultural resources and their roles as contributing elements within the Monument are not entirely known. However, we note that the purpose of the Draft Environmental Impact Statement is not a formal determination of effect. The intent of circulating the Draft Environmental Impact Statement for comment is to gain information on the sufficiency of the data gathered, and the reasonableness of the evaluation of impacts.

COMMENTS

2. cont. concludes that alternative 3 will have no adverse effect on eight potential cultural landscapes (which have been identified but have not yet been fully described). Considering these kinds of issues, we do not feel that we can concur in the determinations of effect at this time. It is also difficult for us to assess the analysis of future compliance requirements in Table 11 on page 224, without knowing what National Register eligible contributing elements of the monument might be affected by the listed actions.

3. Finally, we have some specific concerns related to the Indian School Superintendent's Residence. The report establishes the importance of this National Register listed property to the history of the monument. We recognize that there can be a range of productive treatment options for historic buildings that may not be in federal ownership, but that may be important for preservation and interpretive purposes. However, we do not believe that the level of effort reflected in alternatives 1 and 3 (as explained in appendix F on page 258) for this building is sufficient to produce effective results. Appendix F proposes funding for the house from the Historic Preservation Fund allocation to the State Historic Preservation Office. In reality, grant funds for rehabilitation projects have not been available from this source since 1983, and are not expected to be available again in the near future without a significant increase in the federal appropriation. Clearly, more than "advice" is needed if the future of this endangered property is to be addressed. Active work on developing a viable new use for the property and on securing the necessary funding to implement that use is needed. (See our website at http://www.mnhs.org/shpo/planning/primer.pdf for guidelines in conducting a Reuse Study.) We also note that adherence to the Secretary of the Interior's Rehabilitation Standards would only be required if the work is funded or permitted by a federal agency, if the building is federally owned, or if the federal tax credits are being pursued. We would recommend that, should NPS decide not to acquire the house, you might consider a preservation easement that would ensure appropriate treatment in the future.

We look forward to visiting Pipestone National Monument and working with you and your staff to discuss the General Management Plan and other future initiatives. Contact Dennis Gimmestad at 651-259-3456 with any questions or concerns.

Sincerely,

Britta L. Bloomberg
Deputy State Historic Preservation Officer

cc: Don Stevens, NPS Midwest Office

RESPONSES

2. The GMP process is designed to provide a vision for the management of the Monument for the next 15 to 20 years. As such, the desired future conditions described within the General Management Plan tend to be directions the Monument will take in achieving the goals identified in the plan. Implementation of the general management plan will entail additional planning for specific actions to accomplish some of the goals and recommendations of the plan through the implementation phase. At that time, specific actions with specific impacts will be detailed. Each implementation phase will have its own compliance action, including adherence to the consultation requirements with the SHPO. However, at this level of planning, the implementation of the preferred alternative is not likely to have a direct adverse effect on cultural resources, keeping in mind the need for further planning and consultation.

3. In response to the lack of information specific to cultural landscapes, the Monument initiated an ethnographic landscape assessment in 2005. This report is scheduled to be finalized in early 2008. Although still in draft form, the current version of the report identifies a single cultural landscape; the report will assess the history of the Monument and the built elements within that landscape. Once complete, the report will address alternatives for management of that landscape and the State Historic Preservation Office will be provided an opportunity to review and comment on that report. In terms of data gaps with other cultural resources, the Monument will be working to acquire the necessary survey information before taking any actions that may impact these resources.

Minnesota Department of Natural Resources

500 Lafayette Road
St. Paul, Minnesota 55155-40

COPY

April 12, 2007

Mr. Jim LaRock, Superintendent
Pipestone National Monument
36 Reservation Ave.
Pipestone, MN 56164-1269

RE: Draft General Management Plan / Environmental Impact Statement for Pipestone National Monument

Dear Mr. LaRock:

The Department of Natural Resources (DNR) has reviewed the Draft General Management Plan / Environmental Impact Statement (DGMP/EIS) for Pipestone National Monument (PNM), Pipestone County, MN. We offer the following comments for your consideration.

Sioux Quartzite Rock Formation and Sioux Quartzite Prairie (p. 17)
The document references a Minnesota Department of Natural Resources (DNR) report (1983b) that states, "The rock outcrop flora, however, appears to be fairly well protected from threat due to its unsuitability for other uses (Minn. DNR 1983b)." This statement does not represent the most recent findings of the department, which has conducted botanical surveys of rock outcrops over the past twenty years. The Minnesota County Biological Survey (MCBS) Unit within the DNR has documented that heavy grazing of livestock on rock outcrop vegetation can cause degradation and, in extreme cases, the elimination of many associated rock outcrop species. Furthermore, in recent years, many rock outcrops in southwestern Minnesota are being mined for the production of rock, sand and gravel. We recommend the statement in quotes be removed from the document and replaced with the MCBS Unit comments.

1.

Threatened or Endangered Species and Species of Special Concern (pp. 19-21)
The following statement in the DGMP/EIS is incorrect: "two species have been dismissed because the national monument has no documented observations of them: the Dakota skipper and a lichen (*Buella nigra*) (p. 20)." The accompanying table, Table 1, Special Status Species and Critical Habitat at PNM (p. 21), also contains erroneous information about these species. Earlier documents sent by the DNR, as found in Appendix C, pp. 241-250, show that the lichen, *Buella nigra*, was last observed in 1999 and the Dakota skipper, *Hesperia dacotae*, in 1947, on PNM.

Enclosed please find an up-do-date Minnesota Natural Heritage and Nongame Research Program record of Element Occurrences (rare natural features) within PNM (March 7, 2007). Although the new report shows that some dates of observation have changed, it reaffirms the presence of species listed in the original report of December 12, 2000 that was included in the draft document. Our up-to-date records show that the last observation for *Buella nigra* was May 14, 1999, and *Hesperia dacotae*, July 7, 1968.

As the records indicate, management for the Dakota skipper should be considered in the DGMP/EIS because prairie management issues would affect a latent population of this butterfly. A species reintroduction may be feasible, considering the quality of prairie habitat in the park.

DNR Information: 651-296-6157 • 1-888-646-6367 • TTY: 651-296-5484 • 1-800-657-3929

An Equal Opportunity Employer

Printed on Recycled Paper Containing a Minimum of 10% Post Consumer Waste

Responses to Minnesota Department of Natural Resorces

1. Updated species occurrence information has been incorporated into the Final Environmental Impact Statement. The management actions proposed in the Draft General Management Plan / Draft Environmental Impact Statement would have no effect on either of the species, Buellia nigra (a crustose lichen) and Oarisma poweshiek (Poweshiek skipperling). The lichen occurs in areas that will not be affected by fire or construction or other projects proposed in the Draft General Management Plan / Draft Environmental Impact Statement. The effects of fire on insects such as the poweshiek have been ongoing at the Monument since 1971 when the prescribed fire program began. The Fire Management Plan outlines and implements methods to protect pollinators from the impacts of fire. While the details of resource management are not a topic of the General Management Plan, copies of the Monument's Fire Management Plan/ Environmental Assessment, Prairie Management Plan, and Resource Management Plan are available upon request

COMMENTS

Mr. LaRock
April 12, 2007
Page 2

As listed in Appendix C, on p. 241, Dr. Gerald Wheeler documented *Buellia nigra* in PNM in 1999. Dr. Wheeler's description is as follows: "NW edge of Pipestone, ca. 0.8 miles west of route 75 near summit of a precipitous west-facing quartzite outcrop, with *Pleopsidium flavum, Dimelaena oreina, Aspicilia cinerea, Candelariella vitellina.* Plants infrequent on lower terrace and not observed on upper terrace." This record is also represented as a point in the spatial data in the Rare Features Database of the Minnesota Natural Heritage Information System (see the March 7, 2007 report). Prior to 1997, *Buellia nigra* had been known from only three locations in the world. Dr. Wheeler's 1997-1999 surveys located 18 new locations, mostly on crystalline bedrock outcrops along the Minnesota River. For additional information, please see the following publication, "Wheeler, G.A. 1999. New localities for *Buellia nigra* in Minnesota and the first report of this crustose lichen from South Dakota." The Michigan Botanist 38: 51-56.

The Poweshiek skipperling, *Oarisma poweshiek* (Hesperiidae), has been found in the vicinity of PNM and is likely a resident of its prairie habitat. According to the Minnesota Natural Heritage and Nongame Research Program, the species is presently listed as a Species of Special Concern but it is proposed for re-listing as Threatened. Minnesota's List of Endangered, Threatened, and Special Concern Species is currently open for public review. The Poweshiek skipperling has a long history of broad distribution throughout prairie remnants of western MN but extensive surveys in 2003-2006 found this species in very few locations. The Northern Prairie Wildlife Research Station (USGS) ranks the Powesheik skipperling as one of the rarest skipper species in North America with its range restricted to the native tallgrass prairie of the Dakotas and Western Minnesota. This species is in need of conservation because of the loss of native habitat to crop production. For additional information on this species, please refer to the following document: "Selby, G. 2005. Status assessment and conservation guidelines: Poweshiek Skipperling (Oarisma poweshiek (Parker) (Lepidoptera: Hesperiidae). Prepared for Twin Cities Field Office, U.S. Fish and Wildlife Service, Bloomington, MN. 53 p."

Alternatives Including the Preferred Alternative (pp. 41-99)
The management goals of both Alternatives 1 and 3 do not include the ownership transfer of the Pipestone WMA to the National Park Service but promote the development of a closer working relationship with the Minnesota Department of Natural Resources on issues regarding the management of Pipestone WMA. The DNR would support the implementation of either of these options.

Alternative 2 proposes to enlarge PNM by adding the property presently managed as the Pipestone Wildlife Management Area (WMA). In addition, a 15-acre parcel on the northeast side of the monument would be added. The DNR Section of Wildlife has leased and managed the 113.4-acre Pipestone WMA on the behest of the US Fish and Wildlife Service since the 1950's and considers the WMA an important area for hunting and fishing. Therefore, the DNR Section of Wildlife would not support the National Monument acquisition of this parcel. Since the existing National Monument property is not open to the public for hunting, the area occupied by Pipestone WMA also would likely be closed to hunting and fishing. When the U.S. Fish and Wildlife Service purchased the Pipestone WMA property, its original intent was to allow public hunting and other recreational opportunities. The Pipestone Wildlife Management Area serves as an important site for promoting hunter and angler recruitment, since the WMA is in close proximity to the city of Pipestone. It is crucial that these opportunities remain available to the public. If ownership were transferred to the National Park Service, the Department of Natural Resources would urge the administrators continue to allow the present suite of outdoor recreation activities.

RESPONSES

Land Acquisition (pp. 42-43)
On pages 20-21, it is noted that The Nature Conservancy classifies the plant community type associated to Sioux quartzite outcrops as an endangered ecosystem. In this context, acquisition of nearby private lands that contain the same plant community type should be included in one of the alternatives.

The ridge of Sioux Quartzite outcrops continues north from the National Monument through Pipestone WMA and extends for nearly a mile farther northward on private land through the west side of Section 36, T107N, R46W (Troy Township). This part of Troy 36 contains a privately owned pasture. With permission of the landowner, Minnesota County Biological Survey (MCBS) surveyed the Troy 36 rock outcrops and found several of the very rare rock outcrop plant species that are found in PNM. Species occurring on the private land included: *Marsilea vestita, Limosella aquatica, Buchloe dactyloides,* and *Opuntia humifusa (macrorhiza)*. In spite of grazing impacts, this pasture has a good diversity of common native prairie and rock outcrop species associated with the rock exposures. MCBS concluded that this tract is a high priority for conservation action. The DGMP/EIS should include directives to pursue discussions with the Troy 36 landowner. The discussions should provide the landowner with information on the rare features found on his property and the significance of his land. The potential to develop a conservation easement or to purchase the land should be discussed with the landowner. The lands could become part of the WMA or be managed as part of the National Monument. Our records show that companies interested in mining the bedrock have approached this landowner. So far he has refused to negotiate a contract with them. Given that this pasture is part of the same bedrock system as found in the National Monument and that it is adjacent to the present WMA/National Monument, we recommend that the PNM plan mention the presence of this significant parcel and the need to work with the landowner on its conservation.

Pipestone Wildlife Management Area (pp. 46-47)
The following comment is in reference to this statement: "The landscape and resources are similar to those of the national monument, but this land is not actively managed as prairie (p. 46, 2nd paragraph)." In fall 2003, 55 acres of native prairie was restored using native seed harvested from the nearby Terrace WMA. To enhance the native prairie vegetation, prescribed burns are conducted on the unit at approximate 5-year intervals (a burn is planned for spring 2007).

The following comment is in reference to this statement: "Continuing the current management practices would not resolve concerns for the spread of exotic plant species….(p. 46, last paragraph)." Since 2005, the DNR has increased buckthorn removal efforts on the Pipestone WMA by clearing stems with an ASV loader mounted with a brusher unit. In addition, buckthorn trees were manually cut and Garlon was applied to stumps. The DNR treats noxious weeds, primarily consisting of Canada thistles, on an annual basis. Thistle patches are treated with Transline or Milestone chemical, by mowing, or by hand cutting. Other routine maintenance activities (i.e., sign posting, trash removal, etc.) are completed on the WMA as needed. More work still needs to be done to improve the native prairie habitat and control the re-growth and invasion of exotic species, but DNR continues to work toward that goal.

Prairie Restoration Zone (pp. 50)
The DGMP/EIS presents useful prescriptions for management of the Prairie Preservation Zone. In addition, the DGMP/EIS should contain recommendations that a management plan for the prairie zone be developed and circulated to conservation biologists for review. The prairie management plan should include a detailed listing of constraints, tasks, actions, and schedules involved in meeting objectives. Two downloadable documents found on the Society for Ecological Restoration International Web site (http://SER.org) may provide useful information

COMMENTS

for developing the plans. The names of the documents are "The SER Primer on Ecological Restoration" and "Guidelines for Developing and Managing Ecological Restoration Projects."

We recommend that the management designs for the Prairie Preservation Zone include considerations of how land treatments affect invertebrate and other sensitive prairie flora and fauna, especially when considering the application of prescribed fire. One issue that needs to be clarified is the extent to which the prairie zone is burned. Only a fraction of the prairie should be burned in any one year and burned areas should be allowed enough time to be re-colonized by invertebrate fauna before the remaining unburned area is subjected to burning. The restricted burning regime should be standard practice regardless of whether the Dakota skipper is present. Additional constraints are described in the following comment.

Threatened or Endangered Species and Species of Special Concern (pp. 125-126)
The plan reports that late spring fires affect the flowering success of the Western Prairie Fringed Orchid. However, with the variable weather patterns in recent years, "late spring" is a relative term. In their recent publication devoted to understanding the relationship of orchid growth at PNM to fire and climate, Willson *et al.* [1] recommend burning in early to mid-May, "before the orchids are fully emerged." Results of ongoing phenological studies by the MN DNR at Blue Mounds State Park, near Luverne, Minnesota, indicate that orchids may emerge earlier than the period reflected in the Willson study. For example, in 2005, half of 50 monitored orchids at Blue Mounds State Park had emerged to heights between 1.5 and 7 cm by May 6, with 9 orchids already emerged to heights in excess of 1/5 cm on the first monitoring date of April 18.[2] In an era of changing climate, it would be more appropriate to establish the burndate on the basis the spring growth of orchids, allowing burning only if the orchids have not emerged from dormancy. The DGMP/EIS should state that areas containing orchids would not be burned "after orchid emergence" instead of "in late spring."

2. There is a typographical error in the last paragraph on page 125. The scientific name of Topeka shiner is *Notropis topeka*. The paragraph also contains text that reads [the Topeka shiner has] "...not been found in the annual census since 1999." However, Hope R. Dodd (see contact information below) found the Topeka shiner in the park during a collecting trip to PNM on August 29, 2006.

The Preferred Alternative (Alternative 3) would have the most pronounced impact on Topeka Shiner and the White Prairie Fringed Orchid of any of the alternatives. The Preferred Alternative should be further refined to incorporate the new findings and additional measures should be taken to minimize impacts of the plan on these rare species.

Through its permit program, the DNR has received a fish community data set of collections made in 2006 in PNM. In case the NPS has not received this data set, we are providing contact

[1] Gary D. F. Willson , Adnan Akyuz, and Manda J. Page. Precipitation and fire effects on flowering of a threatened prairie orchid. Natural Resource Year in Review, 2005. http://www2.nature.nps.gov/YearinReview/02_N.html This document link is functional Accessed February 22, 2007

[2] Judith Beckman. Unpublished phenology data. Minnesota Natural Heritage and Nongame Research Program, Minnesota Department of Natural Resources, Box 25, 500 Lafayette Road, St. Paul, MN 55155-4025.

RESPONSES

2. The information regarding the Topeka shiner on page 125 has been corrected.

Mr. LaRock
April 12, 2007
Page 5
information for the collector: Hope R. Dodd, Fisheries Biologist, Department of Biology, Missouri State University, 901 S. National Avenue, Springfield, MO 65897 417-836-3163.

Thank you for the opportunity to review this document. Please contact me with any questions regarding this letter.

Sincerely,

Ronald Wieland, Senior Planner
Environmental Review Unit
Division of Ecological Services
(651) 259-5115

Enclosure –Element Occurrences within PNM

c: Mark Matuska, Steve Colvin, Todd Kolander, Matt Langan, Lisa Joyal, Wendy Krueger, Richard Baker, Nancy Sather, Robert Dana, Fred Harris, John Schladweiler

ERDB#20070570-0001
D:\DNR_Comments\DNR_Comments_ Pipestone GMP EIS_final.doc

RESPONSES

COMMENTS

Minnesota Natural Heritage & Nongame Research Program
Short Record Report of Element Occurrences within Pipestone National Monument
T106N R46W Sections 1 & 2
Pipestone County

Element Name and Occurrence Number	Federal Status	MN Status	State Rank	Global Rank	Last Observed Date
Pipestone County, MN					
Ammodramus henslowii (Henslow's Sparrow) #2 Location Description: T106N R46W S2, T106N R46W S12, T106N R46W S1		END	S1B	G4	1980-11-10-PRE
Bacopa rotundifolia (Water-hyssop) #7 Location Description: T106N R46W S2, T106N R46W S12, T106N R46W S11, T106N R46W S1		SPC	S3	G5	1963-09-10
Buchloe dactyloides (Buffalo Grass) #1 Location Description: T106N R46W S2, T106N R46W S12, T106N R46W S11, T106N R46W S1		SPC	S3	G4G5	1961-09-29
Buchloe dactyloides (Buffalo Grass) #3 Location Description: T106N R46W S2, T106N R46W S12, T106N R46W S11, T106N R46W S1		SPC	S3	G4G5	1954-09-15
Buchloe dactyloides (Buffalo Grass) #7 Location Description: T106N R46W S1, T106N R46W S12, T107N R46W S35, T107N R46W S36		SPC	S3	G4G5	1979-06-27
Buellia nigra (A Species of Lichen) #19 Location Description: T107N R46W S36, T106N R46W S1		END	S1	G1G2	1999-05-14
Buellia nigra (A Species of Lichen) #20 Location Description: T106N R46W S1		END	S1	G1G2	1999-05-13
Cyperus acuminatus (Short-pointed Umbrella-sedge) #2 Location Description: T107N R46W S36, T107N R46W S35, T106N R46W S1, T106N R46W S11, T106N R46W S12, T106N R46W S2, T106N R46W S3		THR	S2	G5	1961-09-11
Hesperia dacotae (Dakota Skipper) #26 Location Description: T107N R46W S36, T106N R46W S2, T106N R46W S12, T106N R46W S24, T106N R46W S11, T106N R46W S1, T107N R46W S35	C	THR	S2	G2	1968-07-07
Heteranthera limosa (Mud Plantain) #2 Location Description: T106N R45W S6, T106N R46W S12, T106N R46W S1		THR	S2	G5	1956-09-11
Isoetes melanopoda (Blackfoot Quillwort) #2 Location Description: T106N R46W S1		END	S1	G5	1979-06-26
Limosella aquatica (Mudwort) #1 Location Description: T106N R46W S1, T106N R46W S12		SPC	S3	G5	1979-06-27
Limosella aquatica (Mudwort) #4 Location Description: T106N R46W S2, T106N R46W S12, T106N R46W S1		SPC	S3	G5	1963-06-18
Marsilea vestita (Hairy Water Clover) #2 Location Description: T106N R46W S12, T106N R46W S1, T107N R46W S36		END	S1	G5	1946-06-20

RESPONSES

COMMENTS

Minnesota Natural Heritage & Nongame Research Program
Short Record Report of Element Occurrences within Pipestone National Monument
T106N R46W Sections 1 & 2
Pipestone County

Element Name and Occurrence Number	Federal Status	MN Status	State Rank	Global Rank	Last Observed Date
Pipestone County, MN					
Native Plant Community, Undetermined Class #596 Location Description: T106N R46W S2, T106N R46W S1		N/A	SNR	GNR	1983-08-08
Native Plant Community, Undetermined Class #626 Location Description: T107N R46W S36, T106N R46W S2, T106N R46W S1, T107N R46W S35		N/A	SNR	GNR	1983
Notropis topeka (Topeka Shiner) #1 Location Description: T107N R46W S35, T106N R46W S1, T106N R46W S2	LE	SPC	S3	G3	~~2005-07-31~~ August 29, 2006 ROW
Opuntia macrorhiza (Plains Prickly Pear) #5 Location Description: T107N R46W S36, T106N R46W S1, T106N R46W S2, T107N R46W S35, T107N R46W S26		SPC	S3	G5	1967-06-09
Plantago elongata (Slender Plantain) #1 Location Description: T106N R46W S1		THR	S2	G4	1967-06-09
Platanthera praeclara (Western Prairie Fringed Orchid) #40 Location Description: T106N R46W S1, T106N R46W S2	LT	END	S1	G2	2006-07
Schedonnardus paniculatus (Tumblegrass) #3 Location Description: T106N R45W S6, T107N R45W S30, T107N R46W S35, T107N R46W S25, T106N R46W S1, T107N R46W S36, T107N R45W S31		SPC	S3	G5	1959-06-16
Schedonnardus paniculatus (Tumblegrass) #4 Location Description: T106N R46W S2, T106N R46W S12, T106N R46W S11, T106N R46W S1		SPC	S3	G5	1954-09-14

Records Printed = 22

YANKTON SIOUX TRIBE
LAND OF THE FRIENDLY PEOPLE OF THE SEVEN COUNCILS FIRES 1858

Yankton Sioux Tribe

COPY

Box 248
Marty, SD 57361
(605) 384-3804 / 384-3641
FAX (605) 384-5687

May 31st 2007

Jim LaRock
National Park Service
Superintendent Pipestone National Monument
36 Reservation Avenue
Pipestone, Minnesota 56164

Mr. LaRock:

248

The Yankton Sioux Tribe has approved of comments for the "Draft General Management Plan/Enviromental Impact Statement: Pipestone National Monument, or " Oico Tun'kan'duta" Pipestone Quarry. We also want to state that we are still in consultation according to Section 106 process with the National Park Service.

These comments were approved by the Yankton Sioux Tribe Tribal General Council at a Emergency Meeting held on May 29th 2007.

If there are any questions that you may have, please feel free to contact this office at 605-384-3641, Ext.# 248.

Lisa Arrow
Secretary, Business and Claims Committee
Yankton Sioux Tribe

cc: file
cc: YST Business and Claims Committee

OFFICERS:
ROBERT COURNOYER, CHAIRMAN
HAN COURNOYER, JR., VICE CHAIRMAN
LISA ARROW, SECRETARY
JOHN W. SULLY, SR., TREASURER

Business and Claims Committee YST

MEMBERS:
TERRY BRUGUIER, SR.
DARRELL E. DRAPEAU
DENNIS RUCKER
EVERDALE SONG HAWK
BRENDA ZEPHIER

YANKTON SIOUX TRIBE
LAND OF THE FRIENDLY PEOPLE OF THE SEVEN COUNCIL FIRES 1858

Yankton Sioux Tribe

Box 248
Marty, SD 57361
(605) 384-3804 / 384-3641
FAX (605) 384-5687

OFFICIAL COMMENTS SUBMITTED BY:
The Ihanktonwan Dakota/Nakota or
Yankton Sioux Tribe of the Oceti Sakowin (Seven Council Fires)
"Keepers of the Quarry"

Of

Marty, South Dakota
May 29, 2007

Concerning the
"Draft General Management Plan/Environmental Impact Statement: Pipestone National Monument, or "Oicu Tun'kan'duta" Pipestone Quarry

Approved by the General Council of the Ihanktonwan at a Special Meeting held regarding this issue on May 29, 2007

OFFICERS:
ROBERT COURNOYER, CHAIRMAN
STEPHAN COURNOYER, JR., VICE CHAIRMAN
LISA ARROW, SECRETARY
JOHN W. SULLY, SR., TREASURER

Business and Claims Committee YST

MEMBERS:
TERRY BRUGUIER, SI
DARRELL E. DRAPEA
DENNIS RUCKER
EVERDALE SONG HA
BRENDA ZEPHIER



Further hearings on the Red Pipestone Quarry land claim, Pipestone Minnesota, September 30, 1927. Philip Deloria is standing in the fifth row from the bottom, on the left. National Archives.

Responses to the Yankton Sioux Tribe

1. See response **2** to the Bureau of Indian Affairs.

OFFICIAL POSITION OF THE IHANKTONWAN GENERAL COUNCIL OF THE OCETI SAKOWIN (SEVEN COUNCIL FIRES) IN REGARD TO THE PIPESTONE QUARRY

The Ihanktonwan Dakota/Nakota Band of the Oceti Sakowin makes it known to all parties, federal, state, international and all other relevant bodies; that we consider the Treaty of 1858 and the 1892 Agreement as coerced documents produced by the United States Government under extreme duress of the Ihanktonwan People. These documents were obtained through starvation methods, confinement and threat of annihilation of our Nation.

An act of dehumanization took place, when the United States government declared us incompetent to conduct our own affairs. Any agreement obtained through coercion is considered null and void by virtue of the fact that it was obtained under duress in an inhumane way. Unilateral agreements like the Treaty of 1858 and the 1892 Agreement violate the principle of prior, free and informed consent. This was demonstrated clearly by repeated votes and re-votes which were forced upon the Yankton People until a government-desired vote was achieved. The White Swan community was the last to sign the 1892 Agreement, saying "You've killed us, we've starved, until we have no choice but to sign." Children were starving.

With these principles in place, we continue to assume our responsibilities over the management of the Pipestone Quarry in an active way, based on an inherent aboriginal responsibility and right as "keepers of the Quarry". This inherent responsibility is recognized and respected by the Oceti Sakowin (Seven Council Fires).

We take this responsibility with great seriousness. We choose to exercise this responsibility with the greatest of caution and commitment. Further, with the support of the Oceti Sakowin, we are prepared to pursue appropriate methods to protect the Quarry for the current generations and the unborn.

General Council Statement, May 29, 2007

AMENDED COMMENTS SUBMITTED REGARDING THE PIPESTONE QUARRY MANAGEMENT
May 29, 2007

I. INTRODUCTION The Yankton Dakota, i.e., *Ihaŋk'toŋwaŋ* "Camps at the End," are historically acknowledged as the *kíciyuhapi* "keepers" of the pipestone quarry, which in Dakota is called *ćaŋɑ(n)úhupa śa k'a pi* "to dig red pipes," or *ćaŋuŋ ók'e*; or *oícu tuŋ'kaŋ'duta* "Pipestone Quarry."For generations the Yankton Dakota, and their relatives the Mdewakaŋtoŋ'waŋ "Dwellers of the Spirit Lake," Waȟpe'kute "Leaf Shooters," Waȟpetoŋwaŋ "Leaf Dwellers," Sisi'toŋwaŋ "Slimy Ones," Ihaŋk'toŋwaŋla "Little Camps at the End," Sicáŋġu "Burnt Thigh," Oglála "Scatters their Own," Mnikówoju "Plants beside Water," Itázipcó "Without Bow," Húŋkpapa "Camps on the End of Horns," Sihá Sápa "Blackfeet," Oóohenuŋpa "Two Boilings," and the Pa baksá "Cut Head,"; other Teton/Dakota/Nakota and displaced Oceti Sakowin Bands, such as the Santee/Isanti "knife village" have suffered cultural and emotional harm as a result of the taking of the Pipestone reservation by the U.S. government, and its subsequent development into a National Park. Virtually all other Oceti Sakowin Bands (Seven Council Fires) considered the Pipestone Quarry as a place of peace, gathering and holiness. Even the bands who fled north from the government into Canada, continue to maintain their connections with Pipestone. Beginning with Henry T. Davis, the first known homesteader to settle on lands within the reservation, the Yankton have always opposed any intrusions into the reservation by non-Indians. The Yankton Dakota and their relatives listed above, all hold the *ćaŋ(n)dúhupa śa k'a pi* "to dig red pipes," and the associated rock formation called *witaŋ'śna ya'mni mni* "three maidens," as a *kabda'ya* "holy place." Circa 1878 the Yankton lodged an official complaint with their Agent, Major Andrews, concerning intrusions into the reservation by non-Indian homesteaders, and whites quarrying stone for retail purposes. The Yankton have never given up their treaty right to access the quarry and procure the sacred red stone commonly called in Dakota, *we oyáte kiŋ* "the blood of the people," i.e., catlinite. This presence of the Ihanktonwan at Pipestone has taken place since time immemorial, and will continue.

II. RECOMMENDATIONS

The following commentary is provided by the Ihanktonwan Dakota/Nakota Sioux Tribe of Indians, Marty, South Dakota, concerning the management of Pipestone Quarry in Pipestone County, Minnesota. After careful review of the current management situation, the Ihanktonwan make the following recommendations:

A. In making these comments we reserve the right to raise compelling issues at a later date. We submit these recommendations under protest with the knowledge in mind, that we were coerced and starved into signing for the sale of the Pipestone Quarry. This historical trauma exists in our current families and we steadfastly

will continue to seek remedies for the return of Pipestone to the Oceti Sakowin (Seven Council Fires).

B. **We seek to obtain a global moratorium on the sale of Pipestone. It is the life-blood of our people and should not be sold for tourism purposes. Pipestone is "wakan", or holy to our people. According to our Dakota laws, it is illegal to sell pipestone in any form for anything due to its holy and endangered status. It is important to remind all that the Ihanktonwan guard the sacred red pipestone as it was gifted to our people by the White Buffalo Calf Woman, which has reiterated this as the "most sacred of sacred places" for the Oceti Sakowin.**

C. **We are in a consultation process and status at this time, according to Section 106. We can be afforded the necessary time to pursue this process to mutual satisfaction.**

D. **After the submission of these comments we advise that Pipestone schedule an on-site consultation with us to discuss the recommendations. We request that the National Park Service seek consultation funds to assist the tribes in travel costs to consult at Pipestone.**

E. **We recommend that the Canadian Dakota/Nakota Tribes be invited to the consultation process as they pray at Pipestone, utilize the quarry and were originally part of the Oceti Sakowin. We can provide names to the Pipestone Monument Staff.**

2. **F.** **By a wide consensus, the Ihanktonwan recommend that there be no Sundances at the Pipestone Quarry. This is a strong recommendation.**

3. **G.** **After reviewing the Archaeological Study of Pipestone, the Yankton strongly desire and require the agency to fund a Yankton Sioux comprehensive TRADITIONAL CULTURAL PROPERTY SURVEY of the Pipestone National Monument area. The TCP survey will consist of identifying traditional cultural property sites lying with in the boundaries of the national monument by utilizing the Identification and Typing System for Traditional Cultural Properties "ITS-TCPS;" a unique Lakota TCP survey methodology and taxonomy designed to locate and identify a Dakota/Lakota TCP or site. Other Yankton oral history and site information will be integrated by elders into this taxonomy. A**

2. The Monument is required to comply with the American Indian Religious Freedom Act (the Act) as amended (Public Law 95-341, 42 U.S.C. 1996 and 1996a). The Act protects and preserves for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites. As such, Sun Dances will be permitted within the Monument grounds though issuance of a Special Use Permit. The Monument encourages open dialog between Sun Dance organizers and concerned tribes and citizens to resolve this issue.

3. The request for funding of a Traditional Cultural Property (TCP) Survey is considered a desirable addition of information for the management of Monument resources. The Monument's need for additional cultural/ethnographic information is already mentioned in the alternatives (pages 57, 65, 72, and 79). Funding will be sought to complete such a project and usual government procurement procedures would be followed to secure a contractor to complete the study.

COMMENTS

3. **recent archaeological inventory and overview of Pipestone National Monument was conducted by Scott, Thiessen, Richner, and Stadler (Scott et.al,2006) which characterizes the national monument as both a historic and archaeological resource. The Yankton are contesting this sole characterization, however, and the Yankton are asserting that a traditional cultural property survey and study of the quarry area be performed by the Yankton and underwritten financially, by the Park Service Agency in order to determine which localities and places within the national monument are identified by the Yankton and their relatives as sites and remind them that the whole area is considered a TCP, including documented, undisclosed and undiscovered redstone areas; including water rights. This is a Sacred Site in entirety.**

4. **H. The Yankton also officially request that National Park Service integrate into their on-going funding appropriations, the creation of a minimum of two full-time tribal persons to be employed at Pipestone as on-site "keepers of the quarry" designated to work for the tribal management of Pipestone. It is preferable that these individuals be Yankton, in line with our tribal responsibility; however qualifications and cultural background can have an impact, from other tribes. Job descriptions would be created and funding sought if necessary from Congress, much like the Spaulding Interpretive Center of the Nez Perce; or worked into the current Pipestone budget requests. These individuals would work closely with the Tribal Consultation/Transition Group and the Pipestone Management.**

5. **I. The Yankton recommend and respectfully request that the Hiawatha Pageant be moved to a different location. There is no indication in the management plan that a carrying capacity study will be undertaken to determine how much human use occurring in the Three Maidens area during the pageant could occur before the environmental integrity of the site is damaged. According to the Pipestone Chamber & Visitor Center website "....the annual Hiawatha Pageant draws thousands of visitors to Pipestone..." (no author specified, 2007). The overflow of pageant visitors into the reservation must impact the environment of the Three Maidens site area to some degree, and yet there is no mention of this human impact to a traditional cultural property sacred site lying within the complex boundaries of the reservation that is culturally affiliated to the Yankton and their relatives. We insist that a carrying capacity study be undertaken on the Three Maidens site area. Quarriers recognize that this site is an offering site that they pray at before digging pipestone.**

RESPONSES

3. Ethnobotanical information has already been obtained by the 2003 ethnobotany study completed by the University of Arizona. The study included interviews with members of various tribes including Yankton elders.

4. The establishment of a Superintendent's Indian Advisory Committee called for in the Draft General Management Plan should fulfill the desire of the Yankton tribe to be more closely involved in the management of the Monument. The current base budget of the Monument does allow for the filling of these positions; however, adding additional unfunded positions is not possible at this time. Yankton tribal members as well as members of other tribes are encouraged to apply for National Park Service positions as they are advertised. We will continue to forward seasonal and permanent position openings to all the tribal offices.

5. The Hiawatha Pageant occurs on property not owned or managed by the National Park Service. Efforts to work with the Hiawatha Club to reduce the impact of the pageant on the Three Maidens sacred site have been made and will continue to be pursued as described under Alternative 1 (page 65). The previous response to the request for a carrying capacity study of the Hiawatha pageant also applies to this comment.

J. The Yankton recommend that the ethnobotany/plant management staff consult with medicinal plant and spiritual practitioners convened by the Yankton to make recommendations for the current plants present and those being restored. These comments will be incorporated into the Traditional Cultural Property Survey work.

K. After careful review of the Draft General Management Plan, by and large the Yankton Sioux Tribe favors and endorses most of the elements of Alternative #1, as described in the DGM/EIS beginning on page 59, WITH THESE EXCEPTIONS:

1. No sundances at the quarry
2. No pageant recommended at the Three Maidens area or anywhere on the site, or where the stone lies.

For the Yankton people, Alternative #1 within the DGM/EIS is the only proposed federal undertaking that is endorsable by the tribe. Alternative #1 provides an opportunity to have the landscape of the reservation restored as much as possible to its prehistoric natural setting natural setting through the process of removing the visitor center and associated parking lot from among the quarries, and initiate a prairie restoration project within the vacated area to reintroduce native grasses and plants.

Alternative #1 emphasizes reducing development within the national monument which is a strategy wholly supported by the Yankton. All efforts to end development within the reservation, to preserve the natural phenomenological setting of the quarries, to preserve the native history of the site, *a history which provides the cultural significance for it that helped establish and maintains pipestone as a national monument,* and preserve the spiritual significance of the monument as a source of sacred red pipestone, are the kinds of federal undertakings that the Yankton favor.

L. Lastly, the Yankton favor the development of an Indian Consultation / Transition Team to oversee the preservation of the Pipestone Quarries from a Native Perspective and management presence.

In conclusion, these comments are officially submitted by the Yankton Tribal (Ihanktonwan) General Council in consultation with the Tribal Cultural Committee, the Treaty Steering Committee, Sundance leaders and Pipestone Run families present at a Tribal Consultation meeting with Pipestone Monument staff on May 14, 2007 at Ft. Randall Casino on the Yankton Reservation. Individual tribal

COMMENTS	RESPONSES
members of quarrier families, a woman's society, other societies and those invested in the protection of Pipestone also submitted comments. Other Tribes such as the Santee, the Sisseton, and the Lower Sioux were also in support of the Yankton position at this consultation on May 14, 2007. Other tribes of the Oceti Sakowin have advised us that they will be submitting tribal resolutions in support of the Yankton position once these comments are approved by the official governing body of our tribe, the General Council. **These comments have been reviewed, accepted and approved for submission to Pipestone Management purposes, by the General Council of the Ihanktonwan Dakota/Nakota on May 29, 2007.** **(See attached meeting notes from Official Tribal Consultation held on May 14, 2007, requested by the Tribe with Pipestone Monument Officials for input and comments. The Tribe initiated Sec 106 consultation at that time. See following notes.)**	

D OF THE FRIENDLY PEOPLE
OF THE
SEVEN COUNCILS FIRES
1961

Box 248
Marty, SD 57361
(605) 384-3804 / 384-3641
FAX (605) 384-5687

Official Comments Submitted By:
THE CULTURAL COMMITTEE OF THE
Ihanktonwan Dakota/ Yankton Sioux Tribe
"Keepers of the Pipestone Quarry"
Of
Marty, South Dakota
May 14, 2007

Concerning the
"Draft General Management Plan/Environmental Impact Statement: Pipestone National Monument, Pipestone County, Minnesota

At a Tribal Consultation held on May 14, 2007
Ft. Randall Casino, Wagner, SD

OFFICERS:
ERT COURNOYER, CHAIRMAN
COURNOYER, JR., VICE CHAIRMAN
ISA ARROW, SECRETARY
W. SULLY, SR., TREASURER

Business and Claims Committee YST

MEMBERS:
TERRY BRUGUIER, SR.
DARRELL E. DRAPEAU
DENNIS RUCKER
EVERDALE SONG HAWK
BRENDA ZEPHIER

402 661 1982 P.1
NPS/MWRO 2ND FLOOR
AUG-22-2007 10:45

COMMENTS

RESPONSES



Further hearings on the Red Pipestone Quarry land claim, Pipestone Minnesota, September 30, 1927. Philip Deloria is standing in the fifth row from the bottom, on the left. National Archives.

The following commentary is provided by the Ihanktonwan Dakota/Yankton Sioux Tribe of Indians, Marty, South Dakota, concerning the "Draft General Management Plan/Environmental Impact Statement: Pipestone National Monument, Pipestone County, Minnesota." After careful review of the DGM/EIS[1] the Yankton Sioux Tribe favors and endorses the implementation of Alternative #1 as described in the DGM/EIS beginning on pp. 59. The Yankton Dakota, i.e., *Ihaŋk´toŋwaŋ* "Camps at the End," are historically acknowledged as the *kíciyuhapi* "keepers" of the pipestone quarry, which in Dakota is called *ćaŋd(n)úhupa śa k'a pi* "to dig red pipes," or *ćaŋuŋ ók'e*; or *oícu tuŋ'kaŋ'duta* "Pipestone Quarry."

For generations the Yankton Dakota, and their relatives the Mdewakaŋtoŋ´waŋ "Dwellers of the Spirit Lake," Waȟpe´kute "Leaf Shooters," Waȟpetoŋwaŋ "Leaf Dwellers," Sisi´toŋwaŋ "Slimy Ones," Ihaŋk´toŋwaŋla "Little Camps at the End," Sicáŋgu "Burnt Thigh," Oglála "Scatters their Own," Mnikówoju "Plants beside Water," Itázipcó "Without Bow," Húŋkpapa "Camps on the End of Horns," Sihá Sápa "Blackfeet," Oóohenuŋpa "Two Boilings," and the Pa baksá "Cut Head,"; other Teton/Dakota/Nakota and displaced Oceti Sakowin Bands, such as the Santee/Isanti "knife village" have suffered cultural and emotional harm as a result of the taking of the Pipestone reservation by the U.S. government, and its subsequent development into a National Park. Virtually all other Oceti Sakowin Bands (Seven Council Fires) considered the Pipestone Quarry as a place of peace, gathering and holiness. Even the bands who fled north from the government, continue to maintain their connections with Pipestone. Beginning with Henry T. Davis, the first known homesteader to settle on lands within the reservation, the Yankton have always opposed any intrusions into the reservation by non-

[1] Draft General Management Plan/Environmental Impact Statement

COMMENTS

RESPONSES

Indians. The Yankton Dakota and their relatives listed above, all hold the *ćaŋ(n)dúhupa śa k'a pi* "to dig red pipes," and the associated rock formation called *witaŋ'śna ya'mni mni* "three maidens," as a *kabda'ya* "holy place." Circa 1878 the Yankton lodged an official complaint with their Agent, Major Andrews, concerning intrusions into the reservation by non-Indian homesteaders, and whites quarrying stone for retail purposes. The Yankton have never given up their treaty right to access the quarry and procure the sacred red stone commonly called in Dakota, *we oyáte kiŋ* "the blood of the people," i.e., catlinite. Under Article 8, of the 1858 Treaty with the Yankton Sioux, April 19, 1858, (11 Stat., 743), ratified February 16, 1859, and proclaimed February 26, 1859, the Yankton secured their right to continue quarrying the stone.

> "*ARTICLE 8: The said Yancton Indians shall be secured in the free and unrestricted use of the red pipe-stone quarry, or so much thereof as they have been accustomed to frequent and use for the purpose of procuring stone for pipes; and the United States hereby stipulate and agree to cause to be surveyed and marked so much thereof as shall be necessary and proper for that purpose, and retain the same and keep it open and free to the Indians to visit and procure stone for pipes so long as they shall desire.*"

Note: This Treaty agreement precedes all other statements such as the one made on page 42 of the Draft Management Plan which states that pipestone quarrying is reserved to "individual Indians of all Tribes", not to particular tribes. It must be clear that although other Tribes have access to this holy place, other Tribes of the Seven Council Fires "Oceti Sakowin" clearly support that the Yanktons were and continue to be the "kicuyhapi" of the pipestone quarry. This recognition and responsibility is humbly recognized by the Ihanktonwan; and in fact certain protocols were observed humbly.

For the Yankton people, Alternative #1 within the DGM/EIS is the only proposed federal undertaking that is endorsable by the tribe. Alternative #1 provides an opportunity to have the landscape of the reservation restored as much as possible to its prehistoric natural setting through the process of removing the visitor center and associated parking lot from among the quarries, and initiate a prairie restoration project within the vacated

area to reintroduce native grasses and plants. Alternative #1 emphasizes reducing development within the national monument which is a strategy wholly supported by the Yankton. All efforts to end development within the reservation, to preserve the natural phenomenological setting of the quarries, to preserve the native history of the site, *a history which provides the cultural significance for it that helped establish and maintains pipestone as a national monument*, and preserve the spiritual significance of the monument as a source of sacred red pipestone, are the kinds of federal undertakings the Yankton Dakota favor.

1. 261

Alternative #1 also proposes that the ceremonial use zone located on the north boundary line of the reservation would undergo seeding with locally harvested tallgrass prairie plant species, and actively remove nonnative plant species from the zone (DGM/EIS, 2006:63). Such proposed activities as this are supported by the Yankton, however, there is this following statement contained within the Ceremonial Use Zone section:

> "A carrying capacity study would be undertaken to determine how much human use could occur within the zone before it would cause environmental damage. After this determination, ceremonial events would *not be allowed* [Yankton emphasis] to exceed the maximum capacity. Identifying and enforcing the carrying capacity would allow the natural healing of the site between uses." (DGM/EIS, 2006:63)

The purpose of this carrying capacity study within the ceremonial use zone would be to determine the human carrying capacity of the zone. Regarding this proposed study the Yankton categorically **reject** the idea that such a study be undertaken as it equates and characterizes Native American people who attend the annual Gathering of the Sacred Pipes Sundance with livestock. The Yankton and their relatives, and Native American

1. The prescribed carrying capacity study of the Sun Dance grounds will seek to ensure the continued availability of the property for ceremonial/religious uses over time. The study will assess the qualities of the property that are most valued to the Sun Dance attendees, assess what impacts are occurring to the property as a result of the use, and define acceptable levels of damage. We consider this study to be an assessment of both social values and resource values that will sustain the use of this property for religious events over time. It is not meant to reduce the use of the property or limit religious practices.

   A carrying capacity study at the Hiawatha grounds is not warranted. The portion of the pageant that occurs on federal property is negligible; the majority of use is on property owned solely by the Hiawatha Club. The Monument has already lessened the impacts of the pageant by limiting certain uses of the Three Maidens through the annual permit process. Adoption of Alternative 1 would eliminate contact with the Three Maidens during the production of the Hiawatha Pageant (page 65).

COMMENTS

RESPONSES

1. cont.

people as a whole, are not *ptegdéška/pte yanampi* "tame cattle" to be counted, husbanded, or culled. This study recommendation is one of the most paternalistic, asinine, culturally insensitive, and racist statements ever contained within a federal document. Invoking the phrase: "…Identifying and enforcing the carrying capacity would allow the *natural healing of the site* [Yankton emphasis] between uses…" (DGM/EIS, 2006:63) is interpreted by the Yankton as a poor, thinly veiled, tactless attempt by the federal agency to impose upon Native Americans accessing the ceremonial use zone for ceremonial purposes, regulatory practices which would empower the agency with an ability to hinder, limit, and/or prevent Native Americans from annually congregating and performing a traditional ceremonial activity. The Yankton state that it is imperative that this language pertaining to the proposed carrying capacity study must be stricken from Alternative #1 as it is **not**, repeat, **not**, supported by the Yankton.

For the record, there is language in Alternative #1 which states that the Hiawatha Club would under a restricted permit continue to use the Three Maidens area during the Hiawatha Pageant which indicates the agency regulating use of the area. However, there is no indication that a carrying capacity study will be undertaken to determine how much human use occurring in the Three Maidens area during the pageant could occur before the environmental integrity of the site is damaged. According to the Pipestone Chamber of Commerce & Visitor Center website "…the annual Hiawatha Pageant draws thousands of visitors to Pipestone…" (no author specified, 2007). The overflow of pageant visitors into the reservation must impact the environment of the Three Maidens site area to some degree, and yet there is no mention of this human impact to a traditional cultural property sacred site lying within the complex boundaries of the reservation that is culturally

1. cont.

affiliated to the Yankton and their relatives. If the agency is determined to carryout its proposed carrying capacity study of the ceremonial use zone, then the Yankton must insist upon a similar carrying capacity study is undertaken on the Three Maidens site area as well. Quarriers recognize that this site is still an offering site to dig pipestone.

The Ihanktonwan endorse the creation of a superintendant's Indian consultation group, however the question the meaning of "informal consultation group."? This must be framed and acceptable to the Tribes beforehand.

As stated above, and reiterated here, the Yankton Sioux Tribe of Indians, favors and endorses the implementation of Alternative #1 as described in the DGM/EIS, however, excluding the language describing the proposed carrying capacity study

2.

described on page 63. Additionally the Yankton Sioux Tribe desires and requests the agency to fund a Yankton Sioux comprehensive traditional cultural property survey of the Pipestone National Monument. The TCP survey will consist of identifying traditional cultural property sites lying within the boundaries of the national monument by utilizing the Identification and Typing System for Traditional Cultural Properties "ITS-TCPS;" a unique Lakota TCP survey methodology and taxonomy designed to locate and correctly identify a Lakota TCP or a Lakota TCP site. A recent archaeological inventory and overview of Pipestone National Monument was conducted by Scott, Thiessen, Richner, and Stadler (Scott et. al, 2006) which characterizes the national monument as both a historic and archeological resource. The Yankton are not contesting this characterization, however, the Yankton are asserting that a traditional cultural property survey and study of the national monument performed by the Yankton Sioux Tribe be undertaken, and underwritten financially, by the agency in order to determine which localities and places

263

2. The request for funding of a Traditional Cultural Property (TCP) Survey is considered a desirable addition of information for the management of Monument resources. The Monument's need for additional cultural/ethnographic information is already mentioned in the alternatives (pages 57, 65, 72, and 79). Funding will be sought to complete such a project and usual government procurement procedures would be followed to secure a contractor to complete the study.

Ethnobotanical information has already been obtained by the 2003 ethnobotany study completed by the University of Arizona. The study included interviews with members of various tribes including Yankton elders.

COMMENTS

2. within the national monument are identified by the Yankton and their relatives as sacred sites, offering sites, and gathering sites.

3. The Yankton also officially request that National Park Service funding provide for the creation of a minimum of one/preferably twofull-time tribal person(s) to be employed at Pipestone as on-site "keepers of the quarry" designated to work with the tribal management of Pipestone. It is preferable that these individuals be Yankton, in line with our Tribal responsibility; however qualifications and cultural background can have an impact, from other tribes. A job description would need to be created and funding sought in Congress, much like the Spaulding Interpretive Center of the Nez Perce; or worked into the current Pipestone budget request. These individuals would work closely and cooperatively with the Tribal Consultation Group and the Pipestone Management.

Yankton Tribal Members and elders also object to the sale of Pipestone items for tourist exploitation purposes at the visitor center. The sale of pipestone is akin to the sale of Jesus's garments in Christian religion. The pipestone is considered "wakan" or holy to our people.

These comments are officially submitted by the Tribal Cultural Committee at a requested Consultation, including other interested Tribes, with Pipestone Management Staff at Ft. Randall Casino, on Ihanktonwan lands on May 14, 2007.

It is further recognized that individual families (tiwahe); extended families (tiyospaye); individual family quarrier representatives; Sundance families; Pipestone Sacred Run families; Ihanktonwan Treaty Steering Committee Representative and individual members of the Ihanktonwan will be present at this meeting and will be invited to present their individual oral comments for the record. This document however is the

RESPONSES

3. The establishment of a Superintendent's Indian Advisory Committee called for in the Draft General Management Plan should fulfill the desire of the Yankton tribe to be more closely involved in the management of the Monument. The current base budget of the Monument does allow for the filling of these positions; however, adding additional unfunded positions is not possible at this time. Yankton tribal members as well as members of other tribes are encouraged to apply for National Park Service positions as they are advertised. We will continue to forward seasonal and permanent position openings to all the tribal offices.

official Tribal position with added comments from Yankton relatives present. We plan to provide more indepth comments after the requested TRADITIONAL CULTURAL PROPERTY SURVEY is conducted and completed and the Tribal Consultation Groups is formed. These two events will provide for addendums to this document.

For additional tribal comments concerning the DGM/EIS please contact: Yankton Sioux Tribe Cultural Committee, Marty, South Dakota, eagletrax@hotmail.com.

Evelyn Blackmoon

Faith Spotted Eagle

Sharon Drappeau

Michael Rouse

David Arrow

Mabel (Judy) Honomichle

Glen Drapeau

Meeting Notes, May 14, 2007 @Ft. Randall Casino
Participant list attached.

During introductions someone said we should also be consulting with the Canadian Bands.

Faith Spotted Eagle read a prepared statement from the Cultural Committee. The statement is not from the tribe as a whole. Others with different opinions may voice them.

Darryl Drapeau: More land should be acquired if it has Pipestone on it.

Wyatt Thomas: Add more property if it contains Pipestone. I am here to support the Yankton, the keepers of the quarries. This process is important but it will take time. Wyatt will report back to his tribal chair about this meeting but had to leave at about 3:30.

Faith Spotted Eagle: We (the Yankton) will need to get the approval of the General Council on official comments.

Evelyn Blackmoon: The elected committee has the authority. Major issues like this need an emergency meeting of the General Committee. I would like to call for a GC meeting on this issue.

Vince Two Eagles: Be careful in dealing with the government, they have lied many times in the past. We were forced to sign treaties. I don't think we should submit comments officially from the tribe. Where do they (government) get the right to take this property and do what they want with it?

Faith Spotted Eagle: We request 2 weeks additional time to provide comments; May 29.

1. G. Drapeau: I am speaking personally of my own opinions. I cannot attend a GC meeting this week.
When the rights to the Pipestone quarries were relinquished, there were only 26 signatures on it. That could not have been the result of a General Committee decision. As *keepers*, we had no right to sell it as it belonged to all the tribes. We would have had to have permission from them as well.
The Sundance does not belong at Pipestone. I would like to see the Visitor Center moved away from the quarries like Alternative 1 shows. I want visitors to stay away from the quarries and women too when they are in their moon.
(History) Someone from the tribe would watch over the quarries and people outside of the seven council fires would come to ask for stone. The Ihanktowan would have

Responses to the Pipestone Tribal meeting

1. The Monument is required to comply with the American Indian Religious Freedom Act (the Act) as amended (Public Law 95-341, 42 U.S.C. 1996 and 1996a). The Act protects and preserves for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites. As such, Sun Dances will be permitted within the Monument grounds though issuance of a Special Use Permit. The Monument encourages open dialog between Sun Dance organizers and concerned tribes and citizens to resolve this issue.

1. ceremonies and prayers to decide if they should give them stone. If a decision was made to give them the stone; the keepers would lay it on the ground in front of them and tell them of 6the significance of the stone and how to treat it; they would explain the responsibility of having the stone. If they took the stone, they would take the responsibility for it.
We were entrusted with the quarries. The government knew if they got us out of the quarries, the entire nation would be conquered. And it was. If we can get the quarries back, our whole nation can be reunited.
To the other tribal reps here—tell your councils to submit a resolution that states the Yankton never had the right to sell the quarries.
Get the Sundance out of the Pipestone quarry area.

Frank Sanchez: Does the National Park Service honor treaties? What is their trust responsibility as far as the head of the park service?
There is a lot of misinterpretation about treaties and us as a people. Our tribe has split many times. We have had to struggle and fight in court for our rights and what we believe in. The agreements/treaties were illegal and we are still in court. The allotment process was illegal. In 1858 they enacted the allotment process here and shouldn't have done that. They justified it by eminent domain. We are forced to react to these illegalities. The National Park Service should put their resources into addressing these larger issues. We need more time to comment. We should request a congressional hearing on the quarries. We need the entire nation to address these questions.

Chris Mato (Upper Sioux but speaking personally): Pipestone is the most sacred site in North America. AIRFA provides us with access to sacred sites but what right does the government have to tell us what we can do at those sites?

Dennis Gill: I am concerned about the quality of the stone. The stone is brittle. Now you need to dig deep to get it. The stone is only for pipes. The issue is not just with the Yankton. The Yankton are the keepers of that land. The quarries are the center of the Lakota, Nakota, Dakota nation.

Pam Halvorson, speaking for Lower Sioux tribal governmentl: Request 4 weeks additional time for comment, until June 11.

2. Izzy Zephier: I disagree with the Sundance at Pipestone. The Yankton need to be involved with the quarries. First we need to get rid of drugs and alcohol so we can heal. The prophecy of the resurgence of the red nation is up to us to fulfill.

D. Derossier speaking for the Sisseton-Whapeton government: The Yankton are the keepers of the quarries. I will report on this meeting to my council.

Vine Marks: We need more time to comment. We need to speak as one oyate.

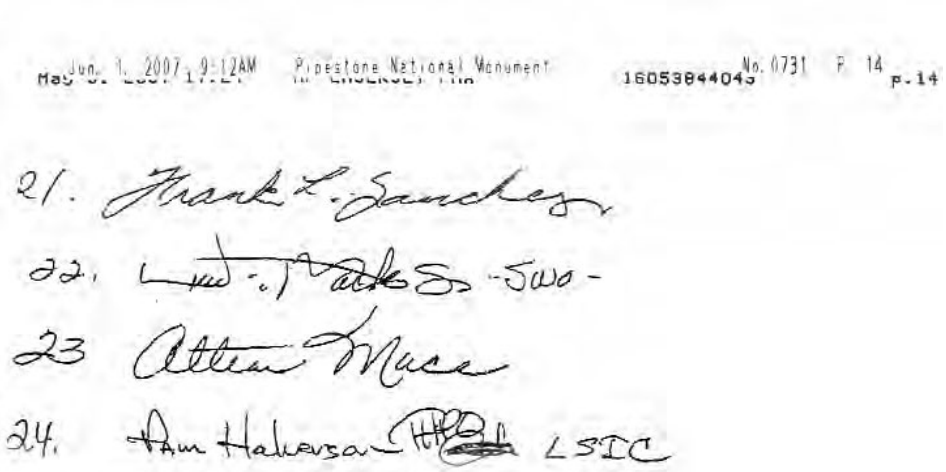
2. The Monument is required to comply with the American Indian Religious Freedom Act (the Act) as amended (Public Law 95-341, 42 U.S.C. 1996 and 1996a). The Act protects and preserves for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites. As such, Sun Dances will be permitted within the Monument grounds though issuance of a Special Use Permit. The Monument encourages open dialog between Sun Dance organizers and concerned tribes and citizens to resolve this issue.

COMMENTS

RESPONSES

Sign-Sheet for PIPESTONE TRIBAL MEETING / Consultation May 14, 2007.

	Name	Tribe	Phone #	E-mail
1.	Mike Archambeau		491-1539	17 smoke Sign
2.	[illegible]			
3.	John Rouse		481-0477	
4.	M. Judy Honsinger		384-4201	
5	[illegible]		487-7031	sharon_d99@y
6	Kevin Larose		491-1605	
7.	Maria Joseph		491-4784	mjoseph22_2@ hotmail
8.	Allen Hall		491-3353	
9.	Margaret Zephier			
10.	Mike Two Eagles		320-564-4348(h)	
11.	Chris McGinnis		320-894-0286(cell)	
	Upper Sioux Community Granite Falls, MN 56241			
12	Francis Bernier	Thunderhawk Oyate	(605)491-4602	N/A
	Darrell Drapeau			
	Evelyn Blackmoon			
13	FISH			
14.	Brent Bradley Jr.			
15.	G. Wagner - Pipestone NM			
16.	Wayne Hamm		402-857-2772 -	oyatejanjin@ yahoo.com
	Tina LaRock		607-825-5464	Pipestone
18	Dennis Gill Sr		605 268 0211	paintsHimself yello@ yahoo.com
19	David Crum Jr.		605-487-4132	
20	Diane Desrosiers		605-698-4972	dyantancer@yahoo.com


Jun. 1. 2007 9:12AM Pipestone National Monument No. 0731 P. 14
16053844045 p.14

21. Frank L. Sanchez

22. [illegible] -SWO-

23 Allen Mace

24. Pam Halverson LSIC

INDIAN SHRINE ASSOCIATION · PIPESTONE
PIPESTONE NATIONAL MONUMENT
www.authenticpipestone.com
P.O. Box 727 • Pipestone, Minnesota 56164
507-825-5463 Fax: 507-825-2903
888-209-0418

May 5, 2007

Superintendent
National Park Service
Pipestone National Monument
36 Reservation Ave.
Pipestone, MN 56164

Dear Supt. LaRock:

Thank you for reviewing the Draft General Management Plan (GMP) at the last meeting of the board of Pipestone Indian Shrine Association (PISA). As a cooperating association of the park service serving Pipestone National Monument, PISA, of course, has a keen interest in all things related to the Monument. We thank you for making copies of the draft GMP available to board members and for taking your personal time to go over the plan alternatives and answer questions at our board meeting. We were glad that we were able to comment during the early stages of the draft process and are appreciative of the opportunity to comment at this juncture.

The board decided that members might make their own comments individually, but the board would also present a comment letter representing the view of PISA as a whole.

The board generally agrees with Alternative Three, the park service's preferred alternative. The board members are very much opposed to Alternative One.

1. While agreeing with Alternative Three, PISA urges that the park service actually acquire the superintendent's house. The house is integral to the Pipestone Indian School and the association believes its preservation should be ensured and the history of the Indian School interpreted for future generations.

PISA also believes that the wildlife area adjacent to the Monument grounds on the northwest should be acquired by the park service and added to the Monument. The inclusion of this land, as well as land on the northeast edge of the Monument, is logical and appropriate.

Responses to the Pipestone Indian Shrine

1. In the Memorandum of Agreement (MOA) with the Minnesota State Historic Preservation Officer (SHPO) detailing mitigation measures the National Park Service will undertake in removing the Pipestone Visitor Center, the National Park Service will provide technical assistance and will commit to search for preservation funding for the stabilization and restoration of the Superintendent's house. This may include-at some point in the future, should other options prove unsuccessful-the National Park Service assuming ownership of the house through a minor boundary adjustment, legislation, donation, or any other practical vehicle. One of the options the National Park Service will pursue is stabilization and preservation funding through the Centennial Challenge Program, with the premise that matching funds would come from the State of Minnesota and local sources, and in-kind assistance would come from the college. Future uses of the Superintendent's house could be as an interpretive center telling the story of the Indian Schools using the Pipestone Indian School as an example, or to house office space for tribal uses. The owners of the Superintendent's house, Minnesota West Community and Technical College, will be invited to be signatory to the MOA, and the MOA will be included as an appendix in the final General Management Plan.

The association would also recommend that a trail system on the perimeter of the park or north of the quarry line be developed. This would greatly add to park enjoyment and provide additional opportunity for interpretation and education. In that same regard, we would urge inclusion of a drive-off for interpretation of the prairie area, on the north side of the park.

PISA also believes that the two houses along Reservation Ave. should be removed. These interrupt the landscape and are inappropriate as well as obtrusive.

The association believes that the Sun Dance and other religious activities of Native groups should be accommodated as much as possible. The board recommends that the park service closely monitor the Sun Dance activity effects on park resources and work with groups to keep environmental detriments to a minimum.

PISA very much supports rehabilitating the Visitor Center and would like to see more space and interpretation available to enhance visitor education and enjoyment.

Sincerely,

Mike Morgan
Executive Director
Pipestone Indian Shrine Association

COMMENTS

May 9, 2007

Supt Jim LaRock
Pipestone National Monument
Pipestone, MN
56164

Dear Supt. LaRock:

I am pleased to submit a comment letter representing the collective view of Friends of Pipestone National Monument. Again our thanks for the time you have spent with the group during this process and for your presentation on the GMP. The Friends board members have reviewed the plan and may be making personal comments beyond this letter from the group as a whole.

1. The consensus of board members is that we support Alternative Three, the preferred alternative, albeit with some suggestions and refinements.

One of these is that we think the park service should actually acquire the superintendent's house. The house is about all that is left of the Pipestone Indian School. The Friends group feels the house needs to be saved and be developed as the focal point for interpretation of the history of the school.

The Friends would also like the park service to consider removal of the two houses near the entrance to the park. They mar the landscape and are not appropriate to the park experience.

Our group also believes that the park service should acquire additional land. This would include the land immediately to the northeast and the Wildlife Management area to the northwest. This would be natural extension of the park to incorporate resources proper to National Park Service stewardship.

The acquisition of this land would also help make possible a trail system which the group feels is missing and not mentioned in Alternative 3. The Friends think a trail system, with interpretation, could be added if land is acquired to the northeast. The trail could be extended to pretty much encompass the perimeter of the park. This would greatly add to visitor education and enjoyment.

We think it important that the prairie continue to receive attention as an important park resource. A trail system would aid in education and interpretation of the prairie. Another big aid would be a drive off interpretation area on the north side of the park. We hope such a drive-off will be part of any management alternative finally selected.

The group concurs in moving the maintenance function off-site. We would like to see the Visitor Center rehabilitated and/or enlarged to provide more exhibits and interpretation as that, too, would provide greater visitor education and enjoyment.

RESPONSES

Responses to the Friends of Pipestone National Monument

1. 15.1

In the Memorandum of Agreement (MOA) with the Minnesota State Historic Preservation Officer (SHPO) detailing mitigation measures the National Park Service will undertake in removing the Pipestone Visitor Center, the National Park Service will provide technical assistance and will commit to search for preservation funding for the stabilization and restoration of the Superintendent's house. This may include-at some point in the future, should other options prove unsuccessful-the National Park Service assuming ownership of the house through a minor boundary adjustment, legislation, donation, or any other practical vehicle. One of the options the National Park Service will pursue is stabilization and preservation funding through the Centennial Challenge Program, with the premise that matching funds would come from the State of Minnesota and local sources, and in-kind assistance would come from the college. Future uses of the Superintendent's house could be as an interpretive center telling the story of the Indian Schools using the Pipestone Indian School as an example, or to house office space for tribal uses. The owners of the Superintendent's house, Minnesota West Community and Technical College, will be invited to be signatory to the MOA, and the MOA will be included as an appendix in the final General Management Plan.

The Friends group is very appreciative of the work of the Park Service, you and your staff in behalf of Pipestone National Monument. Thank you for the opportunity to work with you and be part of management draft plan process. We look forward to many years of partnership with the Park Service for the betterment of Pipestone National Monument.
Sincerely,

Charles L Draper

Chuck Draper
Interim Chair
Friends of Pipestone National Monument

FEB 8 2007

Mr James LaRock, Supt
BIA
Pipestone, Minn 56164

Pipestone Minn 56164
Feb 6 2007

Dear Mr. James LaRock

Enclosed is our quarry permit application we filled them out, our reservation number never changed in the same for years past.

If any disagreement please let me know who received your big book, we are reading it and if you wish to consult with any one of us, just let us know.

Thank you!

Sincerely
Shirley Ecks

1. As I Shirley Ecks do not like all these Indian doings in and back when we quarry I was years + years ago, Sun dance is bred in the Black Hills, I was told by our ancestors

Response to Shirley Ecks

1. The Monument is required to comply with the American Indian Religious Freedom Act (the Act) as amended (Public Law 95-341, 42 U.S.C. 1996 and 1996a). The Act protects and preserves for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites. As such, Sun Dances will be permitted within the Monument grounds though issuance of a Special Use Permit. The Monument encourages open dialog between Sun Dance organizers and concerned tribes and citizens to resolve this issue.

COPY

Jim LaRock
05/18/2007 02:08 PM CDT

To: Sheryl Baerenwald/PIPE/NPS@NPS
cc:
Subject: Fw: Review Comments, Pipestone Draft GMP

These should be treated as any comments are. Copies to Sandra and Craig and one for our files. Thanks.

Jim LaRock
National Park Service
Superintendent, Pipestone National Monument
36 Reservation Avenue
Pipestone, MN 56164
(507) 825-5464
----- Forwarded by Jim LaRock/PIPE/NPS on 05/18/2007 02:07 PM -----

John Sowl
05/17/2007 04:44 PM CDT

To: Jim LaRock/PIPE/NPS@NPS
cc:
Subject: Review Comments, Pipestone Draft GMP

Hi Jim,

Thank you for the opportunity to review and comment on your draft GMP. My comments are in attached below. Please don't hesitate to contact me with any questions you might have regarding these comments.

Best wishes on the final outcome of your GMP!

John
402.661.1872

Draft GMP-EA; PIPESTONE Review Comments JHS.doc

Review Comments on the Draft General Management Plan/Environmental Impact Statement: Pipestone National Monument

15 May 2007

General Comments:

A review of the draft GMP and its alternatives left me with a significant number of questions regarding why certain decisions were made to develop the alternatives as presented, aside from the No Action alternative. While not privy to the discussions and meeting comments associated with the development of this draft GMP over the years and intending *no* disrespect toward the monument staff, planning team, or their product, my collective comments and thoughts in this regard are presented below for your consideration and action, along with the possibility of a fourth alternative that consolidates many of the stated concerns while recognizing other opportunities. Although I disagree with its conclusions as presented within the draft GMP, I commend the planning team for working hard while under constraints to make every effort to conserve the monument's resources.

1. Pipestone National Monument has operated under a 1966-vintage Master Plan, and other minor adjustments, since its inception. Because of this, I was quite disappointed to read within the draft GMP – its *first* GMP – that the monument's preferred alternative was essentially to remain, by and large, mostly the same as it has been over all these years with only relatively minor adjustments to its facilities, land resources, and to the original 41 year-old Mission 66 centric orientation of the entire operation. Why, in practicality, should more financial resources be sunk into an out-of-date, debilitated, and physically inadequate visitor facility set in the very middle of the monument's key resource feature to the disruption of the monument's natural and cultural landscapes and, to American Indians, the overall sacredness of the site? With the NPS Centennial celebration looming in 2016, this GMP is probably the last big opportunity before that date to think outside of the box and boldly position the monument for the Service's new century. In the end, it's just as easy to select one scenario over another for the final preferred alternative.

The Pipestone situation is directly analgous to that of Homestead National Monument in 1999. They too were developing their GMP with thoughts of sticking with their current, inadequate Mission 66 visitor center, *etc.*, which, like Pipestone's, was located within the 100-year floodplain. In the end, however, they decided to rethink the situation and now are poised to open a new, improved visitor center outside of the hazard zone.

My opinion is based on the draft GMP's description of the existing visitor center as having so many inadequacies for meeting the monument's needs, while being in need of so many repairs, that it is most curious why the planning team has not opted to dramatically rethink the *status quo*, seize this moment in time, and put forward a proposal to construct a new facility to *fully* address the shortcomings, not simply to rework the current situation. In this case, this could translate into

1. a new up-to-date, energy-efficient visitor center designed to fully accommodate the monument's needs while consolidating a number of now disparate functions. These variations in thinking are enough to form an **Alternative 4**, the main features of which can be summarized as follows:

Responses to John Sowl

1. The suggested 4th alternative is very similar to the Draft Alternative 1. The notable exceptions are retaining the current Reservation Avenue in its entirety, upgrading of all trails within the Monument to Americans with Disabilities Act (ADA) standards, and locating of a new visitor center at the southeastern corner of the Monument.

Location of the new visitor center will be analyzed and determined through additional study and appropriate environmental compliance. The proposed site and other potential locations have not been formally evaluated for impacts to resources; the selection of a site is outside the scope of this document.

The retention of Reservation Avenue is not warranted under the proposed 4th alternative as the parking for quarriers is provided for at the southern terminus of the south quarry trail. The trail will also be widened to accommodate a small maintenance vehicle to assist in the movement of tools and quarried stone at the request of individual quarriers. The widening of the trail will also put the south quarry trail in compliance with ADA standards for trails. Other legs of the trail do not afford an opportunity to be ADA compliant due to the steepness of the escarpments and their location near sensitive plant communities and ethnographic/archeological resources. Access to sites and vistas will be afforded to handicapped visitors in other ways while retaining the historic qualities of the Circle Trail.

Potential Alternative 4

Visitor Services/Administrative Zone:
Same as under Alternative 3: Administrative Zone and Visitor Center Zone EXCEPT:

- Remove visitor services and administration from the center of the primary resources to 1) help preserve the sacredness of the area, as envisioned by American Indians, and 2) to help preserve and enhance the natural and cultural landscape of the quarry area and its setting within the monument.
- Two zones consolidated.
- Develop a new, state-of-the-art energy-efficient visitor center to address congestion at the monument and one that consolidates visitor services, museum and interpretation; cooperative association; pipestone carving demonstrations; collections, archives and curation; administrative functions and offices (including law enforcement), public restrooms and outside picnic area.
- Locate the new visitor center to the southeastern corner of the monument off the entrance road to replace the two houses near the entrance and constructed on a berm above the 500-year floodplain, but careful not to adversely impact any threatened, endangered, or otherwise sensitive species or environmental features.
- Remove the existing visitor center but keep its entrance road. Redesign the present parking area to reduce its "footprint," if possible, for greater efficiency and possibly terminate in a smaller cul-de-sac end design.
- Relocate maintenance facility to location near Minnesota West Community and Technical College.
- Remove public restrooms and parking lot from the Three Maidens area and incorporate into new visitor center.
- A new public prairie overlook would be developed along the western boundary of the monument.
- All trails through the monument would be upgraded to be fully ADA compliant.
- A new ADA-compliant trail segment would be established extending west from this new visitor center/administration complex, but careful not to adversely impact any threatened, endangered, or otherwise sensitive species or environmental features, to the nearby south quarry line where a demonstration quarry would be developed both to interpret the quarrying process for visitors and to teach new quarries the basic quarrying techniques.

Prairie Preservation Zone:
Same as in Alternative 3: Preferred Alternative, BUT

- Rehabilitate the old visitor center area and redesigned parking area to native prairie.
- Rehabilitate the public restroom and parking area near the Three Maidens to native prairie.
- Relocate trail bridge above the falls and across the channelized portion of Pipestone Creek
- or remove the bridge altogether and redesign the southern portion of the trail to create a new loop segment between the below the falls and the old visitor center area and south along the quarry line.
- The 18-acre area of former community college land bordering on the northeastern corner of the monument would be added to the monument and managed as Prairie Preservation Zone.

Quarry Zone:
Same as in Alternative 3: Preferred Alternative.
Ceremonial Use Zone:
Same as in Alternative 3: Preferred Alternative.

Three Maidens Zone:
Mostly the same as in Alternative 3: Preferred Alternative EXCEPT

- Public restrooms, picnic area and parking would be removed to the new visitor center locale on the site of the current two NPS houses.

Natural Resources
Same as in Alternative 3: Preferred Alternative.

Cultural Resources
Same as in Alternative 3: Preferred Alternative.

Boundary Adjustments

- The monument would seek to acquire the 18-acre area of former community college land bordering on the northeastern corner of the monument to preserve the archeological evidence of a pipestone work area. Once incorporated into the monument, the area would be managed as Prairie Preservation Zone. This can be accomplished without a prior Boundary Study since the 18 acres represent less than 10% of the monument's total area.
- A Boundary Study would be requested to examine the feasibility and suitability of expanding the monument's boundaries to include 1) the adjacent Pipestone Wildlife Management Area from the US Fish and Wildlife Service, and 2) the former Pipestone Indian School superintendent's house located on the Metropolitan West Community and Technical College campus.

Please add a map showing the 100 and 500-year floodplain boundaries to the GMP.

As the artificial Lake Hiawatha on Pipestone Creek probably does not provide habitat benefits for the Topeka shiner, and may actually contribute to that species stress within the monument, please consider the removal of the impoundment and lake for the long term benefit of this species.

Specific Comments:

Alternative 1

The nicest aspect of this alternative is that it removes the monument's administrative and most visitor service facilities from within the monument while restoring native vegetation in its place. Therefore, the monument's natural resources are maximized to concentrate on its purpose, the pipestone quarries and their environment. However my experience, for a variety of reasons, suggests a significant benefit from retaining some of these facilities – particularly visitor centers – relatively near to the resource(s) being interpreted, but not overwhelming them or assuming primacy.

Visitor Services Zone:

p.59: The proposed new entrance area on the east side of monument land would continue to be within the 100-year floodplain resulting in a potential risk to NPS structures and, to a small extent, to park staff. Therefore, this does not appear to be a good long-term solution

Retention of the public restrooms near the Three Maidens appears to represent a certain disrespect (although unintentional) toward these sacred rocks and toward American Indian people who perform rituals near the rocks as well as a potential disruption of the sacred atmosphere from visitors. If the restrooms are retained, that action would appear to call into question the true sacredness of the site to non-Indians. Therefore, consultation with the affected American Indian community to seek their clearance for this design feature is recommended.

The concept of creating a public prairie overlook on the west side of the monument is excellent. It should help visitors better understand the physical context of the pipestone quarries within an admittedly small remnant of their natural environment.

2.

Ceremonial Use Zone:

p.63, para.2: Would reseeding of the Sun Dance sight take place every year prior to the dance? If so, it does not make financial or resource sense to reseed the area every year only to have it severely impacted by the ceremonial activities every year. Even though the area's carrying capacity would be determined first, what are the political ramifications if carrying capacity dictates that only a handful of people can participate out of the many who desire to participate? It does not seem possible that even this stated policy on carrying capacity can avoid long term environmental degradation of the site. Please consider that if these activities do result in long term resource degradation to the site, can the ceremonial activities be moved to a less impact-prone area? Should Sun Dance activities continue to be allowed on the monument, as it's not part of the monument's legislated purpose?

Alternative 2

Administrative Zone:

p. 67, para.1: Please consider that installation of a new maintenance facility within the newly acquired land along Hiawatha Avenue to the south of the Minnesota West Community and Technical College could adversely impact lithic scatters and the pipestone work site – or other potential pipestone-related cultural resources -- within this parcel. It also could establish a visual intrusion between the newly acquired Pipestone Indian School's superintendent's house and the monument's natural and, potentially, cultural landscapes. In addition, this area is apparently within the 100-year floodplain or has the potential to flood. In light of these reasons, please reconsider the placement of a new maintenance facility in this locale.

Visitor Services Zone:

2. The Monument is required to comply with the American Indian Religious Freedom Act (the Act) as amended (Public Law 95-341, 42 U.S.C. 1996 and 1996a). The Act protects and preserves for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites. As such, Sun Dances will be permitted within the Monument grounds though issuance of a Special Use Permit. The Monument encourages open dialog between Sun Dance organizers and concerned tribes and citizens to resolve this issue.

p.67, para.1: Please describe exactly what measures would be used to help protect the redeveloped visitor center from flooding?

p.67, para.2: Please make appropriate analysis within the "Impacts" section (unless I've missed it) that the stated adjustments to the visitor center area would probably enlarge the development "footprint" within this zone which could adversely affect both natural and cultural resources as well as their landscapes within the monument.

Prairie Preservation Zone:

p. 67: Although the acquisition of the USFWS/MDNR land adjacent to the monument would undoubtedly make a fine addition to the monument's Prairie Preservation Zone and could benefit the natural and possibly cultural landscapes of the monument, the draft GMP does not make a strong or convincing case that such an acquisition is necessary. After all, these additional 100 or so acres are already protected by federal ownership with additional state management, albeit to support hunting and not strictly to preserve prairie. In addition, it is noted that additional pipestone deposits reside within these acres (see comment below under "Quarry Zone"). Please consider an alternate arrangement whereby the NPS has first write of refusal if the USFWS and MDNR do not want to retain these acres. Also, please consider requesting a Boundary Study to determine the feasibility and suitability of such an addition to the monument.

Quarry Zone:

p.68, para.2: Under this alternative the monument acquires the USFWS/MDNR land to the north and northwest of the current monument boundary. If the purpose for acquiring this land is to provide additional quarry resources for future American Indian quarriers (as the pipestone deposit extends through this area and connects to the monument's deposit), it would make sense to *first* make a formal determination that the pipestone in this "new" deposit is of acceptable quality to be quarried *before* undergoing a boundary adjustment and acquiring the land.

RESOURCE PROTECTION: Cultural Resources:

p.72, left column, para.3: Implementation of the action described the first sentence would undoubtedly provide an unimpeded view of the Winnewissa Falls. However, the proposed relocation of the Winnewissa Falls bridge to a site below the falls would locate the bridge within a braided reach of Pipestone Creek. Assuming that the park wants to retain the natural morphology of the creek through the monument, a new bridge at this location would probably have to be exceptionally wide to accommodate the natural shifting of the braided channel over time while allowing for public transit. This fact could possibly render such a bridge impractical, uneconomical, an adverse impact to natural (and possibly cultural) resources by virtue of a larger developmental "footprint," and a visual intrusion on the natural/cultural landscape. Please consider relocating the Winnewissa Falls bridge to a location upstream from the falls to provide a narrower crossing in conjunction with a minor realignment of the existing trail – together with appropriate adjustments to the trail's approach slopes to meet ADA requirements – to incorporate the bridge. Adoption of this suggestion could not only result in a potentially smaller, less expensive bridge than below the falls that takes advantage of the channelized portion of Pipestone Creek, but should help the park avoid the yearly replacement of the bridge and should help to reduce or avoid any high water-related damages.

In addition, please consider that another option would be to reconsider the need for a bridge altogether. Perhaps the major southern portion of the monument's trail system could be made into a loop with a new segment sited to parallel Pipestone Creek on its south side. This would connect the trail near the Winnewissa Falls with the visitor center OR back south along the South Quarry Line.
p.72, left column, para.4: Wouldn't the action described in this paragraph, if implemented, significantly modify the original Mission 66 structure to the point where it loses a significant amount of its integrity? The draft GMP states that the 1970 addition was in keeping with the Mission 66 concept for visitor facilities, however this proposed modification appears to go beyond even that. Please address this under the "Impacts" section.

p.72, right column, para.1: First, the draft GMP paints a picture of some real flooding potential for the monument, particularly up front in the plan and associated with the No Action alternative. Now in this paragraph, the draft GMP states that flooding would be an "...unlikely but real possibility...", seemingly down-playing the risk. Yet the GMP states (p. 154) "Foreseeable future actions that could occur throughout the region" that could adversely affect natural resources and cultural landscapes include continued subdivision and proposed commercial developments. With these changes, as well as the possibility of more frequent and intense storm events as a result of future climatic changes, the hydrologic characteristics of the Pipestone Creek watershed will probably also change to increase runoff from developed surfaces, resulting in greater flooding potential for the creek and, by extension, the monument. This, in turn, would increase the potential for significant damage to the monument's visitor center and its collections and archives. Please adjust the draft GMP to remove these inconsistencies.

This paragraph also states that while the curation and storage areas would be raised, presumably above the 100 *and* 500-year floodplain levels, the collections and archives would, nevertheless, continue to be protected by the actions recommended in the (existing?) national monument's emergency operations plan. So if this plan would continue to protect these resources, what's the point and extraordinary benefits from paying to elevate the structure now? In addition, elevating the structure as described will also raise the prominence and visibility of development within the monument's natural and cultural landscapes, thus possibly detracting from these resources Please adjust the draft GMP to take these considerations into account

Alternative 3: PREFERRED ALTERNATIVE

Administrative Zone:

p.74, Management Zones, Administrative Zone, para.1 and 2: Please consolidate the verbiage in these two paragraphs into one as they both are saying about the same thing.

p. 74, para.2: The draft GMP states that the second house within this zone could also be used for collections storage or additional office space. Yet this house, as well as the first house within this zone, are probably situated within the floodplain. Therefore, this sight and these facilities, as they are now, would provide no additional safety for personnel and collections from potential flooding. Therefore, please reconsider this option.

Visitor Services Zone:

COMMENTS

Why did the planning team decide to retain the Mission 66-era visitor center within the Preferred Alternative? The GMP states that the present facility has a list of structural and environmental health and safety problems (e.g., leaks, catlinite dust) together with design short-comings (overall cramped and dated with inadequate visitor "processing" or curation space, etc.) for accommodating the current level of activities. Most troubling of all, the building is situated within the 100-year floodplain, thus potentially endangering the monument's collections and archives and, to a reduced extent, the staff, demonstrators and public during flood events. The GMP states (p. 154) "Foreseeable future actions that could occur throughout the region" that could adversely affect natural resources and cultural landscapes include continued subdivision and proposed commercial developments. With these changes, as well as the possibility of more frequent and intense storm events as a result of future climatic changes, the hydrologic characteristics of the Pipestone Creek watershed will probably also change to increase runoff from developed surfaces, resulting in greater flooding potential for the creek and, by extension, the monument. This, in turn, would increase the potential for significant damage to the monument's visitor center and its collections and archives.

After reading the proposal for the Administrative Zone and particularly for the visitor center, one strongly comes away with the question "If (1) the visitor center's fabric needs so much maintenance attention, (2) its design is inadequate to meet today's -- and the foreseeable future's – visitor and operational needs, (3) it's situated within both the 100 and 500-year floodplains of the site, and (4) it's architecturally significant as a small park example of Mission 66 architecture but removing it from the monument would result in no adverse effect, then why doesn't the monument simply tear down the present structure and build a new designed-to-suit visitor and administration facility away from the primary resources and out of the flood hazard zone, instead of throwing more money into the old, inadequate structure?" According to the 106 Compliance analysis presented in the draft GMP, the present visitor center is only significant and on the National Register as an example of Mission 66-style small park visitor facilities. Since this structure has no significance to the monument's legislated purpose, the analysis states that removal of the structure, after undergoing mitigation through documenting and recording the structure, would result in only a moderate adverse effect on the National Register-listed structure (p. 170, Section 106 Summary). Therefore, interpretation of this analysis is that the removal of the current visitor center, while sorely regretted by some, would not be an insurmountable achievement for the overall improvement of the monument's visitor services function together with its collections and archives storage and curation, particularly in light of the facility's many short-comings.

Prairie Preservation Zone:

p. 75, para.4: Regarding a new bridge below Winnewissa Falls, see comment under Alternative 2, RESOURCE PROTECTION: Cultural Resources above.

Three Maidens Zone:

Retention of the public parking lot and restrooms near the Three Maidens appears to represent a certain disrespect (although unintentional) toward these sacred rocks and toward American Indian people who perform rituals near the rocks as well as a potential disruption of the sacred atmosphere from visitors. If the parking lot and restrooms are retained, that action would appear to call into question the true sacredness of the site to non-Indians. The draft GMP states (next paragraph) that the Three Maidens area "...should be a place of quiet contemplation and

RESPONSES

respect...and visitors would be asked to help preserve that atmosphere." Keeping a parking lot and restrooms near the rocks for visitor use does not appear to be consistent with the sanctity of the Three Maidens area. Therefore, consultation with the affected American Indian community to seek their clearance for this design feature is recommended.

RESOURCE PROTECTION: Cultural Resources:

p.80, left column, para.2: Regarding a new bridge below Winnewissa Falls, see comment under Alternative 3, Prairie Preservation Zone above.

p.80, left column, para.3: Regarding renovation of the existing visitor center, see comment under Alternative 2, RESOURCE PROTECTION: Cultural Resources, p. 72, left column, para.4 and under Alternative 3; Visitor Services Zone above.

3. p.80, left column, para.5: The draft GMP's proposal to acquire the Pipestone Indian School's superintendent's house does not appear to directly support or fulfill the specific legislated purpose identified within the establishing legislation of the monument and, therefore, should probably not be considered. However, the Indian school does have a long and close historical relationship with the monument, even though it represents a different, but extremely important, story, which is of the forced assimilation and systematic destruction of American Indian culture through the mechanism of Indian schools. The question seems to be if this story is or can be better represented at another NPS unit within the system or at a location outside of the NPS system. Please consider requesting a Boundary Study to determine the feasibility and suitability of this potential addition to the monument.

RESOURCE PROTECTION: Natural Resources:

p.80, para.4: Implementation of the action described the first sentence would undoubtedly provide an unimpeded view of the Winnewissa Falls. However, the proposed relocation of the Winnewissa Falls bridge to a site below the falls would locate the bridge within a braided reach of Pipestone Creek. Assuming that the park wants to retain the natural morphology of the creek through the monument, a new bridge at this location would probably have to be exceptionally wide to accommodate the natural shifting of the braided channel over time while allowing for public transit. This fact could possibly render such a bridge impractical, uneconomical, an adverse impact to natural (and possibly cultural) resources by virtue of a larger developmental "footprint," and a visual intrusion on the natural/cultural landscape. Please consider relocating the Winnewissa Falls bridge to a location upstream from the falls to provide a narrower crossing in conjunction with a minor realignment of the existing trail – together with appropriate adjustments to the trail's approach slopes to meet ADA requirements – to incorporate the bridge. Adoption of this suggestion could not only result in a potentially smaller, less expensive bridge than below the falls that takes advantage of the channelized portion of Pipestone Creek, but should help the park avoid the yearly replacement of the bridge and should help to reduce or avoid any high water-related damages.

Please consider that another option would be to reconsider the need for a bridge altogether and allow visitors to view the falls from one of the downstream trail alignments. Perhaps the major southern portion of the monument's trail system could be made into a loop with a new segment

3. In the Memorandum of Agreement (MOA) with the Minnesota State Historic Preservation Officer (SHPO) detailing mitigation measures the National Park Service will undertake in removing the Pipestone Visitor Center, the National Park Service will provide technical assistance and will commit to search for preservation funding for the stabilization and restoration of the Superintendent's house. This may include-at some point in the future, should other options prove unsuccessful-the National Park Service assuming ownership of the house through a minor boundary adjustment, legislation, donation, or any other practical vehicle. One of the options the National Park Service will pursue is stabilization and preservation funding through the Centennial Challenge Program, with the premise that matching funds would come from the State of Minnesota and local sources, and in-kind assistance would come from the college. Future uses of the Superintendent's house could be as an interpretive center telling the story of the Indian Schools using the Pipestone Indian School as an example, or to house office space for tribal uses. The owners of the Superintendent's house, Minnesota West Community and Technical College, will be invited to be signatory to the MOA, and the MOA will be included as an appendix in the final General Management Plan.

COMMENTS	RESPONSES
sited to parallel Pipestone Creek on its south side. This would connect the trail near the Winnewissa Falls with the visitor center OR back south along the South Quarry Line.	
AFFECTED ENVIRONMENT:	
p.123, Floodplains: The GMP states that the existing visitor center/headquarters and maintenance facility are situated within the 100-year floodplain, with the employee housing located outside of the 500-year floodplain, yet prone to some flooding. The GMP would greatly benefit from the addition of a map showing both monument elevations and the boundaries of the 100 and 500-year floodplains in the area of the monument.	
p. 125, right column, para. 3, line 2: Please ensure that the species name for the Topeka shiner is correct.	
p. 159 and elsewhere in this chapter: The GMP states that the monument has experienced the effects from altered local hydrology over time with a resultant occasional flooding and its related sediment deposits, particularly into Lake Hiawatha. It is also stated that the lake may have approximately two feet of capacity remaining to absorb any additional sedimentation. Consequently, please discuss the possibility and resulting associated impacts if that lake may need to be dredged in the near future or if is removed altogether, since it is a man-made impoundment.	
p. 193-194: This chapter does not appear to address the associated impacts to wetlands and floodplains from the proposed installation of a pedestrian bridge somewhere below Winnewissa Falls. Please adjust this section to analyze these impacts.	
p. 209-212: See comment for p. 193-194 above. Please adjust this section to analyze these impacts.	

APPENDIXES, SELECTED BIBLIOGRAPHY, PREPARERS, INDEX



APPENDIX A: RELATIONSHIPS WITH AMERICAN INDIANS

TRIBES TRADITIONALLY ASSOCIATED WITH PIPESTONE NATIONAL MONUMENT

In the glossary of its publication *Management Policies* 2006 the National Park Service defines *traditionally associated peoples* as follows:

> **Traditionally associated peoples** – may include park neighbors, traditional residents, and former residents who remain attached to a park area despite having relocated. For purposes of these *Management Policies,* social/ cultural entities such as tribes, communities, and kinship units are "traditionally associated" with a particular park when (1) the entity regards park resources as essential to its development and continued identity as a culturally distinct people; (2) the association has endured for at least two generations (40 years); and (3) the association began prior to establishment of the park (NPS 2006b).

The identification of an American Indian tribe as traditionally associated with Pipestone National Monument means that a contemporary link of interest from the present to the past — known as cultural affiliation — exists between the tribe and the national monument. The status of *traditionally associated* does not affect the national monument's enabling legislation about who enjoys quarrying rights, which, as mentioned on the following page and elsewhere in the document in the reprinted legislation, expressly reserves the right to quarry the pipestone "to Indians of all tribes." In the section on public involvement and Native American consultation, the American Indian tribes included in the list of tribes, agencies, and organizations to which this document was sent overlap in many instances but are not exactly congruent with the tribes listed below as traditionally associated tribes and possibly traditionally associated tribes.

Through previous ethnographic and ethnohistorical evidence, eight federally recognized American Indian tribes have been previously identified through studies and NPS staff as having cultural affiliation with the national monument. A more recent study completed in mid 2004 recognized that an additional 15 tribes were affiliated with the national monument. Therefore, 23 tribal names officially appear in the list of federally recognized tribes in the *Federal Register*, vol. 70, no. 226, November 25, 2005. A federally recognized tribe means that American Indian tribes in this category are eligible to receive services from the Bureau of Indian Affairs of the U. S. Department of Interior. Affiliation is limited to federally recognized tribes.

The study completed by the University of Arizona at Tucson includes two volumes: *Native American Cultural Affiliation and Traditional Association Study* (Zerdano andBasaldú 2004*)* and *The Everchanging Pipestone Quarries, Sioux Cultural Landscapes and Ethnobotany of Pipestone National Monument, Minnesota*, (Toupal et al. 2004). The former study provided indications about tribal affiliation but failed to definitively detail affiliated tribes until it was provided by letter of April 28, 2005.

Federally Recognized Tribes Culturally Affiliated with Pipestone National Monument	
1.	Cheyenne River Sioux Tribe
2.	Crow Creek Sioux Tribe
3.	Flandreau Santee Sioux Tribe
4.	Fort Peck Assiniboine and Sioux Tribes
5.	Iowa Tribe of Kansas and Nebraska
6.	Iowa Tribe of Oklahoma
7.	Lower Brule Sioux Tribe
8.	Lower Sioux Indian Tribe
9.	Oglala Sioux Tribe
10.	Omaha Tribe of Nebraska
11.	Otoe-Missouria Tribe
12.	Ponca Tribe of Nebraska
13.	Ponca Tribe of Oklahoma
14.	Prairie Island Indian Tribe
15.	Rosebud Sioux Tribe
16.	Santee Sioux Nation
17.	Shakopee Mdewakanton Nation
18.	Sisseton-Wahpeton Oyate Tribe
19.	Spirit Lake Tribe
20.	Standing Rock Sioux Tribe

21. Three Affiliated Tribes
22. Upper Sioux Community of Minnesota
23. Yankton Sioux Tribe

The staff of Pipestone National Monument conducts government-to-government relations with those of the affiliated tribes who so desire. Consultation was recently completed with interested tribes for design and construction of a display for the national monument's petroglyphs collection. The staff aims for effective communication and the sharing of information and knowledge about mutual interests in the national monument. These include concerns about planning and operations for the national monument and managing cultural and natural resources. Consultations are also conducted with individuals from the Dakotah Community of Pipestone, Minnesota, which is not a federally recognized but is consulted as a matter of courtesy and policy (NPS 2006b).

The National Park Service recognizes that indigenous peoples may well have traditional interests and rights in lands now under NPS management, as well as concerns and contributions to make for the future through the scoping process for general management plans of the national park system. Related to tribal sovereignty, the need for government-to-government Native American consultations stems from the historic power of Congress to make treaties with American Indian tribes as sovereign nations. Consultations with American Indians and other Native Americans, such as Native Hawaiians and Alaska Natives, are required by various federal laws, executive orders, regulations, and policies. They are needed, for example, to comply with section 106 of the National Historic Preservation Act of 1966, as amended (most recently in 1992). The implementing regulations of the Council on Environmental Quality for the National Environmental Policy Act of 1969 also call for Native American consultations.

INDIAN TRUST RESOURCES

The planning process of the National Park Service requires the evaluation of potential Indian trust resources in planning documents. That is, are Indian trust resources present or not? Should the red catlinite pipestone in Pipestone National Monument be regarded as an Indian trust resource, or the national monument itself? The lands comprising Pipestone National Monument in southwestern Minnesota are not held in trust by the secretary of the interior for the benefit of American Indians because of their status as American Indians. The National Park Service has considered whether, when in 1937 Congress created the national monument and "reserved to Indians of all tribes . . . the quarrying of the red pipestone" within the national monument, the pipestone became a trust resource for the benefit and use of Indians or tribes. The National Park Service has concluded that it did not. In other words, the enabling legislation's reservation of the quarrying of pipestone "to Indians of all tribes" did not establish an Indian trust resource just because it was being done on behalf of American Indians.

The text of the act — "An Act to Establish the Pipestone National Monument in the State of Minnesota of August 25, 1937" — is reprinted elsewhere in this document. Section 1 establishes that Congress created the national monument "for the benefit and enjoyment of the people of the United States." Section 2 says that the national monument "shall be managed by the National Park Service under the direction of the Secretary of the Interior consistent with the provisions of the Organic Act" ("An Act to Establish a National Park Service") of August 25, 1916. The Organic Act requires the Secretary of the Interior through the National Park Service "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" of all Americans.

It is section 3 of the 1937 enabling legislation that speaks of "the quarrying of the red pipestone" as "reserved to Indians of all tribes." Section 3 adds that the quarrying is to occur "under regulations to be prescribed by the Secretary of the Interior." The National Park Service believes that "the quarrying of the red pipestone . . . reserved to Indians of all tribes . . . under regulations to be prescribed by the Secretary of the Interior" recognized a historic and cultural use of the resource. But such recogni-

tion does not translate into the creation of a trust resource because the quarrying is to take place in the context of first managing and preserving the pipestone for the benefit of all Americans as required by both the Organic Act and the enabling legislation.

The current regulations are reprinted below, as follows. They are published in the *Code of Federal Regulations* (36 CFR 7.42) as stated in the volumes revised as of July 1, 2000, and first published for Pipestone National Monument in the *Federal Register* (34 FR 5377) on March 19, 1969.

Code of Federal Regulations. Volume 36, Part 7, Section 42, Pipestone National Monument (36 CFR 7.42).

(a) An American Indian desiring to quarry and work 'catlinite' pipestone shall first secure a permit from the Superintendent. The Superintendent shall issue a permit to any American Indian applicant, Provided, that: (1) In the judgment of the Superintendent, the number of permittees then quarrying or working the pipestone is not so large as to be inconsistent with preservation of the deposit and (2) a suitable area is available for conduct of the operation. The permit shall be issued without charge and shall be valid only during the calendar year in which it is issued.

(b) An American Indian desiring to sell handicraft products produced by him, members of his family, or by other Indians under his supervision or under contract to him, including pipestone articles shall apply to the Superintendent. The Superintendent shall grant the permit provided that (1) in his judgment the number of permittees selling handicraft products is not so large as to be inconsistent with the enjoyment of visitors to the Pipestone National Monument and (2) a suitable area is available for conduct of the operation. The permit shall be issued without charge and shall be valid only during the calendar year in which it is issued.

THE PERMITTING PROCESS TO QUARRY PIPESTONE

The superintendent of Pipestone National Monument requires that an individual applying for an annual permit to quarry pipestone show proof of affiliation with a federally recognized American Indian tribe. More than one person may quarry at the same site. Any person assisting the quarrier at a site must also validate his or her status as a member of a federally recognized American Indian tribe.

No permits are issued to tribes. The 1937 enabling legislation clearly states that pipestone quarrying is reserved to individual "Indians of all tribes," not to particular tribes.

CONSULTATION FOR THE NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT OF 1990 (NAGPRA)

Museum collections have been inventoried for items covered by NAGPRA, such as human remains, funerary objects, and sacred or other objects of cultural patrimony. Neither human remains nor associated funerary objects have ever been part of the collections at Pipestone National Monument. The NPS "Servicewide NAGPRA Summary" of 1993 indicates 20 pipestone pipes that could be objects of cultural patrimony. They might be pipes of such individuals as Red Dog, Kills Spotted Horse, Short Bull, Rushing Bear, Dull Knife, Wolf Robe, Spotted Tail, Hollow Horn Bear, Crow Dog, Kicking Bear, White Eagle, Jack Red Cloud, American Horse, Red Cloud, Rain in the Face, Chief Joseph, Sitting Bull, Big Snake, Black Dog, and Roan Horse. One might be a council pipe.

The affiliated and other federally recognized tribes that might be linked to these pipes were notified according to NAGPRA procedures as to their possible provenance with an invitation to discuss the idea of cultural patrimony. These pipes are part of the Edward Butts Collection of Kansas City, which the national monument acquired in 1964 through the Pipestone Indian Shrine Association. The documentation linking them to these people is unclear. Nevertheless, one response was received and duly considered, with repatriation resulting in 1999 of the Roan Horse pipe, catalog number 904 in the Pipestone National Monument collections. It was returned to Raymond Lasley, Sr., of the Osage Tribe of Oklahoma, a grandson of Chief Roan Horse. The national monument remains open to NAGPRA discussions with tribes that would wish to assert claims of cultural patrimony with regard to these pipes. If there are no further claims, all of the mandates of NAGPRA should be met.

APPENDIX B: ESTABLISHING LEGISLATION

ACT OF AUGUST 25, 1937, ESTABLISHING PIPESTONE NATIONAL MONUMENT:

An Act To establish the Pipestone National Monument in the State of Minnesota, approved August 25, 1937 (50 Stat. 804)

(a) Establishment; boundaries

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the lands lying in Pipestone County, Minnesota, within the area hereinafter described are dedicated and set apart as a national monument for the benefit and enjoyment of the people of the United States, under the name of the ''Pipestone National Monument'': Beginning at a point twenty-two and four-tenths feet north and forty-five and eight one-hundredths feet west of the southwest corner of section 1, township 106 north, range 46 west, fifth principal meridian; thence north one thousand six hundred and fifty-five feet; thence north eighty-nine degrees fifteen minutes east, seven hundred and eight feet; thence north no degrees forty-five minutes west, six hundred and seven and three-tenths feet; thence north sixty-two degrees five minutes east, nine hundred and eighty-seven and one-tenth feet; thence south twenty-seven degrees fifty-five minutes east, two hundred and sixty-four and five-tenths feet; thence south eighty-eight degrees nineteen minutes east, nine hundred and sixty-seven and five-tenths feet; thence south no degrees twenty-four minutes east, one hundred and forty-four and three-tenths feet; thence south eighty-three degrees forty-three minutes west, four hundred and seventy-two and four-tenths feet; thence south two degrees seventeen minutes east, two thousand two hundred and forty-nine feet; thence south eighty-nine degrees twenty minutes west, four hundred and fifty-eight and two-tenths feet; thence south no degrees no minutes east, one hundred and one and one-tenth feet; thence south ninety degrees no minutes west, one hundred and thirty-seven and two-tenths feet; thence north no degrees no minutes west, one hundred feet; thence south eighty-nine degrees twenty minutes west, one thousand six hundred and eighty-three and eight-tenths feet to the point of beginning; containing approximately one hundred and fifteen and eighty-six one-hundredths acres, including concourse, excluding from the area described herein forty-seven one-hundredths acres, constituting a right-of-way of the Chicago, Rock Island and Pacific Railway. (16 U.S.C. sec.445c)

(b) Administration, protection, and development

The administration, protection, and development of such monument shall be exercised under the direction of the Secretary of the Interior by the National Park Service, subject to the provisions of an Act entitled “An Act to establish a National Park Service, and for other purposes,” approved August 25, 1916, as amended. (16 U.S.C. sec. 445c)

(c) Quarry rights of Indians

The quarrying of the red pipestone in the lands described in subsection (a) of this section is expressly reserved to Indians of all tribes, under regulations to be prescribed by the Secretary of the Interior. (16 U.S.C. sec. 445c.)

ACT OF JUNE 18, 1956 ADDING LANDS TO PIPESTONE NATIONAL MONUMENT:

An Act To authorize the addition of certain lands to the Pipestone National Monument in the State of Minnesota, approved June 18, 1956 (70 Stat. 290)

Acquisition of additional lands, Pipestone School Reserve and non-Federal land; redefining of boundaries; quarry rights of Indians

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior is authorized to add to the Pipestone National Monument such part of the Pipestone school reserve, not exceeding two hundred and fifty acres, as he deems necessary to protect archeological remains, to acquire by purchase or condemnation not exceeding ten acres of non-Federal land, as he deems necessary to improve the boundary and administration of the Pipestone National Monument Federal land, and to redefine the exterior boundaries of the Pipestone National Monument to include the lands so transferred and acquired pursuant to this section. All lands added to the Pipestone National Monument pursuant to this section shall be subject to the provisions of subsections 2 and 3 of the Act of August 25, 1937 (50 Stat. 804). (16 U.S.C. section 445d).

APPENDIX C: THREATENED OR ENDANGERED SPECIES AND SPECIES OF SPECIAL CONCERN

The state of Minnesota maintains a list of endangered, threatened, and special concern species. Under "Threatened or Endangered Species and Species of Special Concern" (p. 19), the species for this area are shown, with a discussion of which have been considered in this document and which have been dismissed from further consideration.

All the state-listed species at Pipestone are associated with the Sioux quartzite prairie. They are as follows:

Endangered	Threatened	Of Special Concern
blackfoot quillwort	short-pointed umbrella-sedge	water-hyssop
hairy water clover	mud plantain	buffalo grass
	slender plantain	mudwort
		plains prickly pear
		tumble grass

The Prairie Cluster Long Term Ecological Monitoring Program is designing a protocol to monitor sensitive species located in the Sioux quartzite habitat. The following descriptions of state-listed plants come from the 1983 memorandum of understanding between the state of Minnesota and the National Park Service. The descriptions for the memorandum were prepared by Welby Smith, Botanist, Natural Heritage Program.

Blackfoot quillwort is a fern at the northern extent of its range in Minnesota. According to the state of Minnesota, it appears to be rare or local over most of its range and may be extinct in neighboring states. It is known to occur at two sites in Minnesota. It is found only in ephemeral pools that form in depressions in Sioux Quartzite outcrops. This species was first collected in Pipestone National Monument in 1979.

Hairy water clover is a fern that reaches the eastern edge of its range in Minnesota. It has been found in three locations in the state, most recently in 1963. The plant may survive in low numbers or may have succumbed to heavy grazing by cattle. It occurs in prairie pools and water-filled depressions in Sioux quartzite. It was collected at Pipestone National Monument in 1938 and 1946. It could not be found in 1979, but it may persist in low numbers.

Short-pointed umbrella-sedge (called Tapeleaf flatsedge in the memorandum) did occur at three locations in Minnesota, but at the time of the memorandum, none could be located at the known locations. The species, which appears to be restricted to a limited habitat, is threatened by cattle grazing and quarrying. In 1983 it was thought possible that populations might persist at Pipestone and Blue Mounds State Park. All three of the collections are from the margins of shallow pools on quartzite outcrops. It was collected at Pipestone in 1938 and 1961 but could not be located in 1979 and 1980. A few individuals may persist.

Mud plantain is a small aquatic species first collected in 1945. It was collected in or near Pipestone in 1956. Repeated searches of both these sites have failed to find the species. A few may persist at these sites or in similar habitats nearby. The greatest threat to this species is heavy grazing of its habitat by dairy cattle. Both known populations of this species are associated with shallow rock pools formed in depressions in Sioux quartzite outcrops.

Water hyssop is an aquatic species, wide-ranging in North America but restricted ecologically and geographically in Minnesota. There have been six documented populations in Minnesota from six counties in the southwestern and west-central part of the state. Most populations occur in shallow pools on quartzite and granite outcrops. The other populations are found in mud flats at the margins of receding ponds in the prairie region of the state. A specimen was collected in 1963 from Pipestone National Monument, but it has not been found there

in recent years. It may persist in a dormant condition during dry periods.

Buffalo grass is a characteristic Great Plains species that reaches the eastern limit of its natural range in Minnesota. Although it can withstand cattle grazing on western rangelands, Minnesota populations appear to be susceptible to grazing and are quite small. Native Minnesota populations may also be threatened by nonnative strains introduced from farther west. This is basically a species of dry prairies and plains, but all of the known Minnesota populations are restricted to thin soil on quartzite outcrops. The species was first collected at the monument in 1954 and has been verified several times in recent years. The population is not large but is well established.

Mudwort is a small aquatic species that ranges throughout much of the continent to the north and west of Minnesota. Within Minnesota it appears to be quite rare. There have been only five documented occurrences in four counties on the western edge of the state. Many of the populations are relatively small and may have trouble persisting. It is uncertain why the genus is so rare, but it may be related to the ephemeral nature of its habitat. Three of the five occurrences are from granite or quartzite outcrops, where they are found at the edge of depression pools. The remaining two populations are from the margin of a prairie pool and the edge of a small river. This species was first collected at Pipestone National Monument in 1963 and verified in 1979. The population is small but appears to be well established.

Plains prickly pear is typical of dry prairies and plains in the south-central and southwestern United States. However, it is local in Minnesota, where it reaches the northern limit of its range in the Upper Minnesota Valley. There are currently 16 known populations in Minnesota and 2 believed recently extinct. Unlike the common Opuntia cactus (*Opuntia fragilis*), prickly pear is not usually favored by grazing or other disturbances, although it does persist under light-to-moderate grazing. All the populations in Minnesota occur on granite or quartzite outcrops. The species was first collected at the monument in 1895, with many subsequent collections. It is well established at the site although not notably abundant.

Tumble grass is a common western species that reaches the eastern limit of its natural range in southwestern Minnesota. It has been collected at only four locations since its discovery in the state in 1895. It appears to be tolerant of grazing but requires areas of sparse vegetation where competition from other species is minimal. Of the four documented populations in Minnesota, three occur on quartzite outcrops. The habitat of the fourth population was described by the collector as an "alkalai prairie." The first documented occurrence in Pipestone National Monument is believed to have been in 1895. It was collected again at the monument in 1954 and 1959, but not since. Although its occurrence at the site has not been recently verified, it is believed likely to persist there.

Slender Plantain is a western species that reaches the eastern edge of its range in Minnesota and appears to have very specific habitat requirements. This species was first collected at the national monument in 1931 and again in 1962. It could not be relocated in 1979 or 1980 and its present status is uncertain. It may persist in low numbers.

Although some of these species have not been found recently, protecting the Sioux quartzite outcrops from development would protect any that may still occur but are in such small numbers they cannot be found easily.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Twin Cities Field Office
4101 East 80th Street
Bloomington, Minnesota 55425-1665

NOV - 8 2000

COPY

Mr. James LaRock, Superintendent
U.S. Department of the Interior
National Park Service
Pipestone National Monument
36 Reservation Avenue
Pipestone, Minnesota 56164-1269

Dear Mr. LaRock:

This concerns your October 2, 2000, letter requesting U.S. Fish and Wildlife Service comments on federally endangered or threatened species associated with the preparation of a General Management Plan (GMP) for Pipestone National Monument in Pipestone County, Minnesota.

The following federally-listed threatened (T) and endangered (E) species are listed for Pipestone County:

Species	Scientific Name	Habitat
Topeka shiner (E)	*Notropis topeka*	prairie rivers & streams
Western prairie fringed orchid (T)	*Platanthera praeclara*	mesic prairies & sedge meadows

There is no designated critical habitat for the above species. There are also no Candidate Species listed or proposed for listing in the project area at this time.

In accordance with Section 7(c) of the Endangered Species Act of 1973, as amended, it is the responsibility of the Federal agency to determine if its actions "may affect" listed species or critical habitat. We note that the above species are identified in your letter and are located within the Monument boundaries. We concur with your intent to include these species and any related impacts from the GMP in the required Environmental Impact Statement.

We also recommend that you contact the Minnesota Department of Natural Resources concerning any state-listed species which may occur within Pipestone County.

These comments have been prepared under the authority of the Endangered Species Act of 1973, (16 U.S.C. 1531-1543), as amended. We appreciate the opportunity to offer our comments on this project. Please contact Mr. Gary Wege at 612/725-3548 extension 207 if you have any questions or require additional information.

Sincerely,

For Russell D. Peterson
Field Supervisor

cc: Minnesota Department of Natural Resources, St. Paul, Minnesota

Minnesota Department of Natural Resources
Natural Heritage & Nongame Research Program, Section of Ecological Services
500 Lafayette Road
St. Paul, Minnesota 55155-40_25

December 12, 2000

Kristin Legg
Resource Manager
National Park Service
Pipestone National Monument
36 Reservation Ave
Pipestone MN 56164

Dear Ms. Legg:
Enclosed is the information you requested regarding known rare features in both Pipestone County and in the National Monument area, there are 2 printouts for each. The first printout is a summary list of the species and native plant communities that have been located and the second is an index of each separate occurrence sorted by legal description. I have also included an explanation of the different fields on the printouts. If you have any questions or need additional information about any of the records, please contact me at the phone number or e-mail address below.

I hope this information will be useful for your planning process. Thank you for contacting us on this matter.

Sincerely,

Sharron Nelson

Sharron Nelson
Asst Database Manager
Natural Heritage and Nongame Research Program
Phone: 651-296-8324
Fax: 651-296-1811
E-mail: Sharron.Nelson@DNR.state.MN.US

encl.

DNR Information: 651-296-6157 • 1-888-646-6367 • TTY: 651-296-5484 • 1-800-657-3929

An Equal Opportunity Employer
Who Values Diversity

Printed on Recycled Paper Containing a
Minimum of 10% Post-Consumer Waste

Pipestone National Monument

LIST OF KNOWN RARE FEATURES IN PIPESTONE NATIONAL MONUMENT

Minnesota Natural Heritage Database — SORTED BY CLASS AND ELEMENT NAME — 14:06 Tuesday, DECEMBER 12, 2000 — 1
Element Occurrence Records — MnDNR, Natural Heritage and Nongame Research Program — Copyright 2000 State of Minnesota DNR

Federal Status	MN(legal) Status	Global Rank	Last Observed	# of Occurs.	Element Name (Common Name)
					NATURAL COMMUNITIES
			1983	1	MESIC PRAIRIE (SOUTHWEST) CRYSTALLINE BEDROCK SUBTYPE
					ANIMALS
	END	G4		1	AMMODRAMUS HENSLOWII (HENSLOW'S SPARROW)
	THR	G2G3	1947	1	HESPERIA DACOTAE (DAKOTA SKIPPER)
	SPC	G2	1998	1	NOTROPIS TOPEKA (TOPEKA SHINER)
					PLANTS
	NON	G5	1962	1	ALOPECURUS CAROLINIANUS (CAROLINA FOXTAIL)
	NON	G4	1954	1	ATRIPLEX GLABRIUSCULA (SMOOTHISH ORACH)
	SPC	G5	1963	1	BACOPA ROTUNDIFOLIA (WATER-HYSSOP)
	SPC	G4G5	1979	2	BUCHLOE DACTYLOIDES (BUFFALO GRASS)
	END	G1G2	1999	1	BUELLIA NIGRA (A SPECIES OF LICHEN)
	NON	G5	1999	2	CERASTIUM BRACHYPODUN (MOUSE-EAR CHICKWEED)
	THR	G5	1961	1	CYPERUS ACUMINATUS (SHORT-POINTED UMBRELLA-SEDGE)
	NON	G5	1963	1	ELATINE TRIANDRA (THREE STAMENED WATERWORT)
	THR	G5	1956	1	HETERANTHERA LIMOSA (MUD PLANTAIN)
	NON	G5	1967	1	HORDEUM PUSILLUM (LITTLE BARLEY)
	END	G5	1979	1	ISOETES MELANOPODA (BLACKFOOT QUILLWORT)
	SPC	G5	1979	2	LIMOSELLA AQUATICA (MUDWORT)
	END	G5	1946	1	MARSILEA VESTITA (HAIRY WATER CLOVER)
	NON	G5	1999	1	MYOSOTIS VERNA (FORGET-ME-NOT)
	NON	G5	1999	2	MYOSURUS MINIMUS (MOUSETAIL)
	SPC	G5	1967	1	OPUNTIA MACRORHIZA (PLAINS PRICKLY PEAR)
	THR	G4	1967	1	PLANTAGO ELONGATA (SLENDER PLANTAIN)
LT	END	G2	1984	1	PLATANTHERA PRAECLARA (WESTERN PRAIRIE FRINGED ORCHID)
	SPC	G5	1954	1	SCHEDONNARDUS PANICULATUS (TUMBLEGRASS)

ELEMENTS PRINTED = 23

Minnesota Natural Heritage Database — KNOWN RARE FEATURES FROM THE NATURAL HERITAGE DATABASE IN PIPESTONE COUNTY — 13:43 Tuesday, DECEMBER 12, 2000 — 1
Element Occurrence Records — SORTED BY CLASS AND ELEMENT NAME
MnDNR, Natural Heritage and Nongame Research Program — Copyright 2000 State of Minnesota DNR

Federal Status	MN(legal) Status	Global Rank	Last Observed	# of Occurs.	Element Name (Common Name)
					NATURAL COMMUNITIES
			1999	2	CALCAREOUS SEEPAGE FEN (SOUTHWEST) PRAIRIE SUBTYPE
			1984	9	DRY PRAIRIE (SOUTHWEST) HILL SUBTYPE
			1986	1	DRY PRAIRIE (SOUTHWEST) SAND-GRAVEL SUBTYPE
			1983	4	MESIC PRAIRIE (SOUTHWEST) CRYSTALLINE BEDROCK SUBTYPE
					ANIMALS
					ACRIS CREPITANS (NORTHERN CRICKET FROG)
	END	G5	1939	1	AMMODRAMUS HENSLOWII (HENSLOW'S SPARROW)
	END	G4		1	ATRYTONE AROGOS (AROGOS SKIPPER)
	SPC	G3G4	1996	2	BARTRAMIA LONGICAUDA (UPLAND SANDPIPER)
	NON	G5	1990	2	CRYPTOTIS PARVA (LEAST SHREW)
	SPC	G5	1986	1	EMYDOIDEA BLANDINGII (BLANDING'S TURTLE)
	THR	G4	1989	3	FUNDULUS SCIADICUS (PLAINS TOPMINNOW)
	SPC	G4	1997	7	HESPERIA DACOTAE (DAKOTA SKIPPER)
	THR	G2G3	1996	7	HESPERIA LEONARDUS PAWNEE (PAWNEE SKIPPER)
	SPC	G4T4	1978	1	HESPERIA OTTOE (OTTOE SKIPPER)
	THR	G3G4	1995	2	LANIUS LUDOVICIANUS (LOGGERHEAD SHRIKE)
	THR	G5	1995	2	MICROTUS OCHROGASTER (PRAIRIE VOLE)
	SPC	G5	1968	1	NOTROPIS TOPEKA (TOPEKA SHINER)
LE	SPC	G2	1999	34	OARISMA POWESHEIK (POWESHEIK SKIPPER)
	SPC	G2G3	1996	5	REITHRODONTOMYS MEGALOTIS (WESTERN HARVEST MOUSE)
	NON	G5	1947	2	SPEOTYTO CUNICULARIA (BURROWING OWL)
	END	G4	1989	1	SPEYERIA IDALIA (REGAL FRITTILARY)
	SPC	G3	1997	7	
					PLANTS
	NON	G5	1962	1	ALOPECURUS CAROLINIANUS (CAROLINA FOXTAIL)
	SPC	G5T5?	1986	1	ARISTIDA PURPUREA VAR. LONGISETA (RED THREE-AWN)
	NON	G4	1954	2	ATRIPLEX GLABRIUSCULA (SMOOTHISH ORACH)
	SPC	G5	1963	1	BACOPA ROTUNDIFOLIA (WATER-HYSSOP)
	SPC	G3	1985	1	BOTRYCHIUM CAMPESTRE (PRAIRIE MOONWORT)
	SPC	G4G5	1979	3	BUCHLOE DACTYLOIDES (BUFFALO GRASS)
	END	G1G2	1999	2	BUELLIA NIGRA (A SPECIES OF LICHEN)
	NON	G5	1999	4	CERASTIUM BRACHYPODUM (MOUSE-EAR CHICKWEED)
	THR	G5	1961	2	CYPERUS ACUMINATUS (SHORT-POINTED UMBRELLA-SEDGE)
	SPC	G4	1985	2	CYPRIPEDIUM CANDIDUM (SMALL WHITE LADY'S-SLIPPER)
	NON	G5	1963	1	ELATINE TRIANDRA (THREE STAMENED WATERWORT)
	THR	G5	1956	1	HETERANTHERA LIMOSA (MUD PLANTAIN)
	NON	G5	1967	2	HORDEUM PUSILLUM (LITTLE BARLEY)
	END	G5	1979	1	ISOETES MELANOPODA (BLACKFOOT QUILLWORT)
	SPC	G5	1979	2	LIMOSELLA AQUATICA (MUDWORT)
	END	G5	1963	2	MARSILEA VESTITA (HAIRY WATER CLOVER)
	NON	G5	1999	3	MYOSOTIS VERNA (FORGET-ME-NOT)
	NON	G5	1999	3	MYOSURUS MINIMUS (MOUSETAIL)
	SPC	G5	1967	1	OPUNTIA MACRORHIZA (PLAINS PRICKLY PEAR)
	THR	G4	1967	1	PLANTAGO ELONGATA (SLENDER PLANTAIN)
LT	END	G2	1999	2	PLATANTHERA PRAECLARA (WESTERN PRAIRIE FRINGED ORCHID)
	THR	G5	1988	2	RHYNCHOSPORA CAPILLACEA (HAIR-LIKE BEAK-RUSH)
	SPC	G5	1959	2	SCHEDONNARDUS PANICULATUS (TUMBLEGRASS)

Flora of the northern United States and Canada

County

Minnesota Natural Heritage Database
Element Occurrence Records

KNOWN RARE FEATURES FROM THE NATURAL HERITAGE DATABASE IN PIPESTONE COUNTY
SORTED BY CLASS AND ELEMENT NAME
MnDNR, Natural Heritage and Nongame Research Program

13:43 Tuesday, DECEMBER 12, 2000 2
Copyright 2000 State of Minnesota DNR

Federal Status	MN(legal) Status	Global Rank	Last Observed	# of Occurs.	Element Name (Common Name)
					PLANTS
	NON	G5	1988	2	TRIGLOCHIN PALUSTRIS (MARSH ARROW-GRASS)

RECORDS PRINTED = 45

Pipestone National Monument

Minnesota Natural Heritage Database
Element Occurrence Records

INDEX OF KNOWN RARE FEATURES IN PIPESTONE NATIONAL MONUMENT
SORTED BY TOWNSHIP, RANGE AND SECTION
MnDNR, Natural Heritage and Nongame Research Program

14:07 Tuesday, DECEMBER 12, 2000 1
Copyright 2000 State of Minnesota DNR

COUNTY NAME	TWP	RNG	SECTION	FED STATUS	MINN STATUS	S RANK	ELEMENT and OCCURRENCE NUMBER	MANAGED AREA
PIPESTONE	T106N	R46W	NESW01		NON		ALOPECURUS CAROLINIANUS (CAROLINA FOXTAIL) #3	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	01		END		AMMODRAMUS HENSLOWII (HENSLOW'S SPARROW) #2	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	01		NON		ATRIPLEX GLABRIUSCULA (SMOOTHISH ORACH) #1	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	NESW01		SPC		BACOPA ROTUNDIFOLIA (WATER-HYSSOP) #7	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SESW01		SPC		BUCHLOE DACTYLOIDES (BUFFALO GRASS) #3	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SESW01		SPC		BUCHLOE DACTYLOIDES (BUFFALO GRASS) #7	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	NESWSW01		END		BUELLIA NIGRA (A SPECIES OF LICHEN) #20	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	NESWSW01		NON		CERASTIUM BRACHYPODUM (MOUSE-EAR CHICKWEED) #10	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SESW01		NON		ELATINE TRIANDRA (THREE STAMENED WATERWORT) #8	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	OW01		THR		HESPERIA DACOTAE (DAKOTA SKIPPER) #42	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	NESW01		THR		HETERANTHERA LIMOSA (MUD PLANTAIN) #2	PIPESTONE NATIONAL MONUME
PIPESTONE	T105N	R46W	SENW01		NON		HORDEUM PUSILLUM (LITTLE BARLEY) #5	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SESW01		END		ISOETES MELANOPODA (BLACKFOOT QUILLWORT) #2	PIPESTONE NATIONAL MONUME
PIPESTONE	T105N	R46W	SESW01		SPC		LIMOSELLA AQUATICA (MUDWORT) #1	PIPESTONE NATIONAL MONUME
PIPESTONE	T105N	R46W	NESW01		SPC		LIMOSELLA AQUATICA (MUDWORT) #4	PIPESTONE NATIONAL MONUME
PIPESTONE	T105N	R46W	SESW01		END		MARSILEA VESTITA (HAIRY WATER CLOVER) #2	PIPESTONE NATIONAL MONUME
PIPESTONE	T105N	R46W	SW01			S1	MESIC PRAIRIE (SOUTHWEST) CRYSTALLINE BEDROCK SUBTYPE #6	PIPESTONE NATIONAL MONUME
PIPESTONE	T105N	R46W	NESWSW01		NON		MYOSOTIS VERNA (FORGET-ME-NOT) #3	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SESW01		NON		MYOSURUS MINIMUS (MOUSETAIL) #6	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	NESWSW01		NON		MYOSURUS MINIMUS (MOUSETAIL) #36	PIPESTONE NATIONAL MONUME
PIPESTONE	T105N	R46W	SW01	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #1	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SENW01		SPC		OPUNTIA MACRORHIZA (PLAINS PRICKLY PEAR) #5	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SENW01		THR		PLANTAGO ELONGATA (SLENDER PLANTAIN) #1	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SWSW01		SPC		SCHEDONNARDUS PANICULATUS (TUMBLEGRASS) #4	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	02		NON		CERASTIUM BRACHYPODUM (MOUSE-EAR CHICKWEED) #1	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	02		THR		CYPERUS ACUMINATUS (SHORT-POINTED UMBRELLA-SEDGE) #2	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SESE02	LT	END		PLATANTHERA PRAECLARA (WESTERN PRAIRIE FRINGED ORCHID) #39	PIPESTONE NATIONAL MONUME

RECORDS PRINTED = 27

Pipestone County

Minnesota Natural Heritage Database
Element Occurrence Records

KNOWN RARE FEATURES FROM THE NATURAL HERITAGE DATABASE IN PIPESTONE COUNTY
SORTED BY TOWNSHIP, RANGE AND SECTION
MnDNR, Natural Heritage and Nongame Research Program

13:45 Tuesday, DECEMBER 12, 2000
Copyright 2000 State of Minnesota DNR

COUNTY NAME	TWP	RNG	SECTION	FED STATUS	MINN STATUS	S RANK	ELEMENT and OCCURRENCE NUMBER	MANAGED AREA
PIPESTONE	T105N	R44W	0SSE13		SPC		SPEYERIA IDALIA (REGAL FRITTILARY) #27	
PIPESTONE	T105N	R44W	SW13		SPC		SPEYERIA IDALIA (REGAL FRITTILARY) #28	
PIPESTONE	T105N	R44W	NE14		NON		BARTRAMIA LONGICAUDA (UPLAND SANDPIPER) #302	
PIPESTONE	T105N	R44W	1314			S3	DRY PRAIRIE (SOUTHWEST) HILL SUBTYPE #74	
PIPESTONE	T105N	R44W	17	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #22	
PIPESTONE	T105N	R44W	20	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #23	
PIPESTONE	T105N	R44W	2227	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #21	
PIPESTONE	T105N	R44W	212728		END		ACRIS CREPITANS (NORTHERN CRICKET FROG) #8	
PIPESTONE	T105N	R44W	SWSW33	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #40	
PIPESTONE	T105N	R44W	NE33	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #56	
PIPESTONE	T105N	R45W	NE01	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #82	
PIPESTONE	T105N	R45W	NE21	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #69	
PIPESTONE	T105N	R45W	SESE25	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #41	
PIPESTONE	T105N	R45W	SE27SW26	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #81	
PIPESTONE	T105N	R46W	NWSW15			S3	DRY PRAIRIE (SOUTHWEST) HILL SUBTYPE #32	SPLIT ROCK CREEK RECREATI
PIPESTONE	T105N	R46W	15		NON		REITHRODONTOMYS MEGALOTIS (WESTERN HARVEST MOUSE) #12	SPLIT ROCK CREEK RECREATI
PIPESTONE	T105N	R46W	0W15		SPC		SPEYERIA IDALIA (REGAL FRITTILARY) #92	SPLIT ROCK CREEK RECREATI
PIPESTONE	T105N	R46W	20		NON		CERASTIUM BRACHYPODUM (MOUSE-EAR CHICKWEED) #2	
PIPESTONE	T105N	R46W	20		THR		CYPERUS ACUMINATUS (SHORT-POINTED UMBRELLA-SEDGE) #1	
PIPESTONE	T105N	R46W	0SNE21			S1	MESIC PRAIRIE (SOUTHWEST) CRYSTALLINE BEDROCK SUBTYPE #9	
PIPESTONE	T105N	R46W	29		NON		HORDEUM PUSILLUM (LITTLE BARLEY) #6	
PIPESTONE	T105N	R46W	29		END		MARSILEA VESTITA (HAIRY WATER CLOVER) #1	
PIPESTONE	T105N	R46W	SE29	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #79	
PIPESTONE	T105N	R46W	SWNE32	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #6	
PIPESTONE	T105N	R46W	SW35	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #80	
PIPESTONE	T106N	R44W	NW07		SPC		FUNDULUS SCIADICUS (PLAINS TOPMINNOW) #2	CASEY JONES WMA
PIPESTONE	T106N	R44W	NW07	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #3	CASEY JONES WMA
PIPESTONE	T106N	R44W	NE08		SPC		FUNDULUS SCIADICUS (PLAINS TOPMINNOW) #1	CASEY JONES WMA
PIPESTONE	T106N	R44W	NE08	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #2	CASEY JONES WMA
PIPESTONE	T106N	R44W	NWNW17		SPC		FUNDULUS SCIADICUS (PLAINS TOPMINNOW) #9	
PIPESTONE	T106N	R44W	NWNW17	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #42	
PIPESTONE	T106N	R44W	SESE28			S1	CALCAREOUS SEEPAGE FEN (SOUTHWEST) PRAIRIE SUBTYPE #13	BURKE WMA
PIPESTONE	T106N	R44W	0SSE28		THR		EMYDOIDEA BLANDINGII (BLANDING'S TURTLE) #123	BURKE WMA
PIPESTONE	T106N	R44W	SE28		SPC		FUNDULUS SCIADICUS (PLAINS TOPMINNOW) #4	BURKE WMA
PIPESTONE	T106N	R44W	SESE28		THR		RHYNCHOSPORA CAPILLACEA (HAIR-LIKE BEAK-RUSH) #37	BURKE WMA
PIPESTONE	T106N	R44W	SESE28		NON		TRIGLOCHIN PALUSTRIS (MARSH ARROW-GRASS) #42	BURKE WMA
PIPESTONE	T106N	R44W	NE32	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #5	
PIPESTONE	T106N	R44W	SW33	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #31	
PIPESTONE	T106N	R46W	NESW01		NON		ALOPECURUS CAROLINIANUS (CAROLINA FOXTAIL) #3	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	01		END		AMMODRAMUS HENSLOWII (HENSLOW'S SPARROW) #2	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	01		NON		ATRIPLEX GLABRIUSCULA (SMOOTHISH ORACH) #1	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	01		NON		ATRIPLEX GLABRIUSCULA (SMOOTHISH ORACH) #2	
PIPESTONE	T106N	R46W	NESW01		SPC		BACOPA ROTUNDIFOLIA (WATER-HYSSOP) #7	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SESW01		SPC		BUCHLOE DACTYLOIDES (BUFFALO GRASS) #3	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SESW01		SPC		BUCHLOE DACTYLOIDES (BUFFALO GRASS) #7	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SWNWNW01		END		BUELLIA NIGRA (A SPECIES OF LICHEN) #19	PIPESTONE WMA
PIPESTONE	T106N	R46W	NESWSW01		END		BUELLIA NIGRA (A SPECIES OF LICHEN) #20	PIPESTONE NATIONAL MONUME
PIPESTONE	T106N	R46W	SENWNW01		NON		CERASTIUM BRACHYPODUM (MOUSE-EAR CHICKWEED) #9	PIPESTONE WMA

KNOWN RARE FEATURES FROM THE NATURAL HERITAGE DATABASE IN PIPESTONE COUNTY
SORTED BY TOWNSHIP, RANGE AND SECTION
MnDNR, Natural Heritage and Nongame Research Program

Minnesota Natural Heritage Database
Element Occurrence Records

13:45 Tuesday, DECEMBER 12, 2000 2
Copyright 2000 State of Minnesota DNR

COUNTY NAME	TWP	RNG	SECTION	FED STATUS	MINN STATUS	S RANK	ELEMENT and OCCURRENCE NUMBER	MANAGED AREA
PIPESTONE	T105N	R46W	NESWSW01		NON		CERASTIUM BRACHYPODUM (MOUSE-EAR CHICKWEED) #10	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SESW01		NON		ELATINE TRIANDRA (THREE STAMENED WATERWORT) #8	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SW01		THR		HESPERIA DACOTAE (DAKOTA SKIPPER) #42	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	NESW01		THR		HETERANTHERA LIMOSA (MUD PLANTAIN) #2	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SENW01		NON		HORDEUM PUSILLUM (LITTLE BARLEY) #5	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SESW01		END		ISOETES MELANOPODA (BLACKFOOT QUILLWORT) #2	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SESW01		SPC		LIMOSELLA AQUATICA (MUDWORT) #1	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	NESW01		SPC		LIMOSELLA AQUATICA (MUDWORT) #4	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SESW01		END		MARSILEA VESTITA (HAIRY WATER CLOVER) #2	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SW01			S1	MESIC PRAIRIE (SOUTHWEST) CRYSTALLINE BEDROCK SUBTYPE #6	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	NE02NW01			S1	MESIC PRAIRIE (SOUTHWEST) CRYSTALLINE BEDROCK SUBTYPE #7	PIPESTONE WMA
PIPESTONE	T105N	R46W	NESWSW01		NON		MYOSOTIS VERNA (FORGET-ME-NOT) #3	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	01		NON		MYOSOTIS VERNA (FORGET-ME-NOT) #4	
PIPESTONE	T105N	R46W	SENWNW01		NON		MYOSOTIS VERNA (FORGET-ME-NOT) #14	PIPESTONE WMA
PIPESTONE	T105N	R46W	SESW01		NON		MYOSURUS MINIMUS (MOUSETAIL) #6	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SENWNW01		NON		MYOSURUS MINIMUS (MOUSETAIL) #35	PIPESTONE WMA
PIPESTONE	T105N	R46W	NESWSW01		NON		MYOSURUS MINIMUS (MOUSETAIL) #36	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SW01	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #1	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SENW01		SPC		OPUNTIA MACRORHIZA (PLAINS PRICKLY PEAR) #5	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SENW01		THR		PLANTAGO ELONGATA (SLENDER PLANTAIN) #1	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	0SSW01	LT	END		PLATANTHERA PRAECLARA (WESTERN PRAIRIE FRINGED ORCHID) #40	PIPESTONE NATIONAL MONU
PIPESTONE	T105N	R46W	SWSW01		SPC		SCHEDONNARDUS PANICULATUS (TUMBLEGRASS) #4	PIPESTONE NATIONAL MONU
PIPESTONE	T106N	R46W	02		NON		CERASTIUM BRACHYPODUM (MOUSE-EAR CHICKWEED) #1	PIPESTONE NATIONAL MONU
PIPESTONE	T106N	R46W	02		THR		CYPERUS ACUMINATUS (SHORT-POINTED UMBRELLA-SEDGE) #2	PIPESTONE NATIONAL MONU
PIPESTONE	T106N	R46W	SESE02	LT	END		PLATANTHERA PRAECLARA (WESTERN PRAIRIE FRINGED ORCHID) #39	PIPESTONE NATIONAL MONU
PIPESTONE	T106N	R46W	SESW05	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #74	
PIPESTONE	T106N	R46W	NENW12		SPC		BUCHLOE DACTYLOIDES (BUFFALO GRASS) #1	
PIPESTONE	T106N	R46W	NENE18	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #61	
PIPESTONE	T106N	R46W	24		THR		HESPERIA DACOTAE (DAKOTA SKIPPER) #27	
PIPESTONE	T106N	R46W	24		SPC		OARISMA POWESHEIK (POWESHEIK SKIPPER) #8	
PIPESTONE	T106N	R45W	2324		SPC		SPEYERIA IDALIA (REGAL FRITTILARY) #91	
PIPESTONE	T107N	R44W	0708			S3	DRY PRAIRIE (SOUTHWEST) HILL SUBTYPE #73	
PIPESTONE	T107N	R44W	SW27	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #26	
PIPESTONE	T107N	R44W	28		SPC		FUNDULUS SCIADICUS (PLAINS TOPMINNOW) #5	
PIPESTONE	T107N	R44W	28	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #24	
PIPESTONE	T107N	R44W	30	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #25	
PIPESTONE	T107N	R44W	NE31		SPC		FUNDULUS SCIADICUS (PLAINS TOPMINNOW) #3	TERRACE WMA
PIPESTONE	T107N	R44W	NE31	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #4	TERRACE WMA
PIPESTONE	T107N	R44W	33		SPC		FUNDULUS SCIADICUS (PLAINS TOPMINNOW) #6	
PIPESTONE	T107N	R45W	SW08	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #71	
PIPESTONE	T107N	R46W	NENW06	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #73	
PIPESTONE	T107N	R46W	13		NON		REITHRODONTOMYS MEGALOTIS (WESTERN HARVEST MOUSE) #17	
PIPESTONE	T107N	R46W	SE1SSW14	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #72	
PIPESTONE	T107N	R46W	NW22	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #32	
PIPESTONE	T107N	R46W	NENE29	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #75	
PIPESTONE	T107N	R46W	0ENE35			S1	MESIC PRAIRIE (SOUTHWEST) CRYSTALLINE BEDROCK SUBTYPE #8	
PIPESTONE	T107N	R46W	SE35	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #70	
PIPESTONE	T107N	R46W	36		THR		HESPERIA DACOTAE (DAKOTA SKIPPER) #26	

KNOWN RARE FEATURES FROM THE NATURAL HERITAGE DATABASE IN PIPESTONE COUNTY

Minnesota Natural Heritage Database
Element Occurrence Records

SORTED BY TOWNSHIP, RANGE AND SECTION
MnDNR, Natural Heritage and Nongame Research Program

13:45 Tuesday, DECEMBER 12, 2000
Copyright 2000 State of Minnesota DNR

COUNTY NAME	TWP	RNG	SECTION	FED STATUS	MINN STATUS	S RANK	ELEMENT and OCCURRENCE NUMBER	MANAGED AREA
PIPESTONE	T107N	R46W	36		SPC		SCHEDONNARDUS PANICULATUS (TUMBLEGRASS) #3	
PIPESTONE	T107N	R47W	NW13	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #27	
PIPESTONE	T108N	R44W	NE20			S3	DRY PRAIRIE (SOUTHWEST) HILL SUBTYPE #29	
PIPESTONE	T108N	R44W	22		SPC		CYPRIPEDIUM CANDIDUM (SMALL WHITE LADY'S-SLIPPER) #84	
PIPESTONE	T108N	R44W	NE33OS0S28			S3	DRY PRAIRIE (SOUTHWEST) HILL SUBTYPE #158	
PIPESTONE	T108N	R44W	SE29OWSW28		THR		HESPERIA DACOTAE (DAKOTA SKIPPER) #43	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	NE32SE29			S3	DRY PRAIRIE (SOUTHWEST) HILL SUBTYPE #9	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	SE29		SPC		OARISMA POWESHEIK (POWESHEIK SKIPPER) #83	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	30		END		SPEOTYTO CUNICULARIA (BURROWING OWL) #28	
PIPESTONE	T108N	R44W	NWSE32		SPC		ARISTIDA PURPUREA VAR. LONGISETA (RED THREE-AWN) #24	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	OWNE32		SPC		ATRYTONE AROGOS (AROGOS SKIPPER) #16	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	NWSENE32		SPC		BOTRYCHIUM CAMPESTRE (PRAIRIE MOONWORT) #2	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	SWSE32		SPC		CYPRIPEDIUM CANDIDUM (SMALL WHITE LADY'S-SLIPPER) #137	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	NWSE32			S3	DRY PRAIRIE (SOUTHWEST) HILL SUBTYPE #10	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	NWSE32			S2	DRY PRAIRIE (SOUTHWEST) SAND-GRAVEL SUBTYPE #11	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	NE32		THR		HESPERIA DACOTAE (DAKOTA SKIPPER) #44	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	NWSE32		THR		HESPERIA DACOTAE (DAKOTA SKIPPER) #56	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	NWSE32		THR		HESPERIA OTTOE (OTTOE SKIPPER) #19	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	NWNW32		THR		LANIUS LUDOVICIANUS (LOGGERHEAD SHRIKE) #140	
PIPESTONE	T108N	R44W	OENE32		SPC		OARISMA POWESHEIK (POWESHEIK SKIPPER) #84	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	NWSE32		SPC		OARISMA POWESHEIK (POWESHEIK SKIPPER) #85	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	OWNE32		SPC		OARISMA POWESHEIK (POWESHEIK SKIPPER) #158	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	NWSE32		SPC		SPEYERIA IDALIA (REGAL FRITTILARY) #95	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	OENE32		SPC		SPEYERIA IDALIA (REGAL FRITTILARY) #162	PRAIRIE COTEAU SNA
PIPESTONE	T108N	R44W	NW33		SPC		ATRYTONE AROGOS (AROGOS SKIPPER) #45	
PIPESTONE	T108N	R44W	SWNW33		NON		BARTRAMIA LONGICAUDA (UPLAND SANDPIPER) #383	
PIPESTONE	T108N	R44W	NW33			S3	DRY PRAIRIE (SOUTHWEST) HILL SUBTYPE #159	
PIPESTONE	T108N	R44W	OW28NWNW33			S3	DRY PRAIRIE (SOUTHWEST) HILL SUBTYPE #160	
PIPESTONE	T108N	R44W	NW33		THR		HESPERIA DACOTAE (DAKOTA SKIPPER) #28	
PIPESTONE	T108N	R44W	NW33		SPC		HESPERIA LEONARDUS PAWNEE (PAWNEE SKIPPER) #13	
PIPESTONE	T108N	R44W	NWNW33		THR		HESPERIA OTTOE (OTTOE SKIPPER) #2	
PIPESTONE	T108N	R44W	NW33		SPC		SPEYERIA IDALIA (REGAL FRITTILARY) #96	
PIPESTONE	T108N	R45W	SWNW18	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #77	
PIPESTONE	T108N	R45W	NE22NW23	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #78	
PIPESTONE	T108N	R45W	NWNE28	LE	SPC		NOTROPIS TOPEKA (TOPEKA SHINER) #76	
PIPESTONE	T108N	R46W	NENW01			S1	CALCAREOUS SEEPAGE FEN (SOUTHWEST) PRAIRIE SUBTYPE #3	ALTONA WMA
PIPESTONE	T108N	R46W	NESENW01		THR		EMYDOIDEA BLANDINGII (BLANDING'S TURTLE) #121	ALTONA WMA
PIPESTONE	T108N	R46W	NENW01		THR		RHYNCHOSPORA CAPILLACEA (HAIR-LIKE BEAK-RUSH) #33	ALTONA WMA
PIPESTONE	T108N	R46W	NENW01		NON		TRIGLOCHIN PALUSTRIS (MARSH ARROW-GRASS) #40	ALTONA WMA
PIPESTONE	T108N	R46W	SENE11		THR		EMYDOIDEA BLANDINGII (BLANDING'S TURTLE) #404	
PIPESTONE	T108N	R46W	NW22		SPC		CRYPTOTIS PARVA (LEAST SHREW) #2	
PIPESTONE	T108N	R46W	NW22		SPC		MICROTUS OCHROGASTER (PRAIRIE VOLE) #16	HOLE-IN-THE-MOUNTAI
PIPESTONE	T108N	R46W	33		THR		LANIUS LUDOVICIANUS (LOGGERHEAD SHRIKE) #5	

RECORDS PRINTED - 139

Rare Features Database Print-outs: An Explanation of Fields

The Rare Features database is part of the Natural Heritage Information System,
and is maintained by the Natural Heritage and Nongame Research Program,
a unit within the Section of Ecological Services,
Minnesota Department of Natural Resources (DNR).

Please note that the print-outs are copyrighted and may not be reproduced without permission*

Field Name: [Full (non-abreviated) field name, if different]. Further explanation of field.

-C-

CBS Site: [County Biological Survey site number]. In each county, the numbering system begins with 1.

CLASS: A code which classifies features by broad taxonomic group: NC = natural community; SA = special animal; SP = special plant; GP = geologic process; GT = geologic time; OT = other (e.g. colonial waterbird colonies, bat hibernacula).

Cty: [County]. Minnesota counties (ordered alphabetically) are numbered from 1 (Aitkin) to 87 (Yellow Medicine).

CURRENT STATUS: Present protection status, from 0 (owner is not aware of record) to 9 (dedicated as a Scientific and Natural Area).

-D-

DNR Region: 1=NW, 2=NE, 3=E Central, 4=SW, 5=SE, 6= Minneapolis/St. Paul Metro.

DNR Quad: [DNR Quadrangle code]. DNR-assigned code of the U.S. Geologic Survey topographic map on which the rare feature occurs.

-E-

ELEMENT or Element: See "Element Name (Common Name)"

Element Name (Common Name): The name of the rare feature. For plant and animal species records, this field holds the scientific name, followed by the common name in parentheses; for all other elements (such as plant communities, which have no scientific name) it is solely the element name.

EO RANK: [Element Occurrence Rank]. An evaluation of the quality and condition of natural communities from A (highest) to D (lowest).

EO Size: [Element Occurrence Size]. The size in acres (often estimated) of natural communities.

-F-

FED STATUS: [Federal Status]. Status of species under the Federal Endangered Species Law: LE=endangered, LT=threatened, C=species which have been proposed for federal listing.

Federal Status: See "FED STATUS"

Forestry District: The Minnesota DNR's Division of Forestry district number.

-G-

GLOBAL RANK: The abundance of an element globally, from G1 (critically imperiled due to extreme rarity on a world-wide basis) to G5 (demonstrably secure, though perhaps rare in parts of its range). Global ranks are determined by the Conservation Science Division of The Nature Conservancy.

-I-

INTENDED STATUS: Desired protection status. See also "CURRENT STATUS." If a complete list of protection status codes is needed, please contact the Natural Heritage Program.

-L-

LAST OBSERVED or Last Observed Date or Last Observation: Date of the most recent record of the element at the location.

Latitude: The location at which the occurrence is mapped on Natural Heritage Program maps. NOTE: There are various levels of precision in the original information, but this is not reflected in the latitude/longitude data. For some of the data, particularly historical records, it was not possible to determine exactly where the original observation was made (e.g. "Fort Snelling", or "the south shore of Lake Owasso"). Thus the latitude/longitude reflect the mapped location, and not necessarily the observation location.

Legal: Township, range and section numbers.

Long: [Longitude]. See NOTE under "Latitude"

-M-

MANAGED AREA or Managed Area(s): Name of the federally, state, locally, or privately managed park, forest, preserve, etc., containing the occurrence, if any. If this field is blank, the element probably occurs on private land. If "(STATUTORY BOUNDARY)" occurs after the name of a managed area, the location may be a private inholding within the statutory boundary of a state forest or park.

Map Sym: [Map Symbol].

MN STATUS: [Minnesota Status]. Legal status of plant and animal species under the Minnesota endangered species law: END=endangered, THR=threatened, SPC=special concern, NON= no legal status, but rare and may become listed if declines continue. This field is blank for natural communities and colonial waterbird nesting sites, which have no legal status in Minnesota, but are tracked by the database.

-N-

NC Rank: [Natural Community Rank].

-O-

Occ #: [Occurrence Number]. The occurrence number, in combination with the element name, uniquely identifies each record.

OCCURRENCE NUMBER: See "Occ #"

OF OCCURS: The number of records existent in the database for each element within the area searched.

Ownership: Indicates whether the site is publicly or privately owned; for publicly owned land, the agency with management responsibility is listed.

-P-

Precision: Precision of locational information of occurrence: C (confirmed) = known within 1/4 mile radius, U (unconfirmed) = known within 1/2 mile, N (non-specific) = known within 1 mile, G (general) = occurs within the general region, X (unmappable)=location is unmappable on USGS topographic quadrangles (often known only to the nearest county), O (obscure/gone)=element no longer exists at the location.

PS: [Primary Section]. The section containing all or the greatest part of the occurrence.

-Q-

Quad Map: See "DNR Quad"

-R-

Rec #: [Record number].

RNG or Rng: [Range number].

-S-

SECTION or Section: [Section number(s)]. Some records are given only to the nearest section (s), but most are given to the nearest quarter-section or quarter-quarter-section (e.g., SWNW32 denotes the SW1/4 of the NW1/4 of section 32). A "0" is used as a place holder when a half-section is specified (e.g., 0N03 refers to the north 1/2 of section 3). When a occurrence crosses section boundaries, both sections are listed, without punctuation (e.g., the NE1/4 of section 19 and NW1/4 of section 20 is displayed as "NE19NW20").

Site: A name which refers to the geographic area within which the occurrence lies. If no name for the area exists (a locally used name, for example), one is assigned by the County Biological Survey or the Natural Heritage Program.

Source: The collector or observer of the rare feature occurrence.

S RANK: [State Rank]. A rank assigned to the natural community type which reflects the known extent and condition of that community in Minnesota. Ranks range from 1 (in greatest need of conservation action in the state) to 5 (secure under present conditions). A "?" following a rank indicates little information is available to rank the community. Communities for which information is especially scarce are given a "U", for "rank undetermined". The ranks do not represent a legal status. They are used by the Minnesota Department of Natural Resources to set priorities for research, inventory and conservation planning. The state ranks are updated as inventory information becomes available.

State Status: See "MN STATUS"

-T-

TWP or Twp: [Township number].

-V-

Verification: A reflection of the reliability of the information on which the record is based. The highest level of reliability is "verified," which usually indicates a collection was made or, in the case of bird records, nesting was observed. Plant records based on collections made before 1970 are unverified.

Voucher: The museum or herbarium where specimens are maintained, and the accession number assigned by the repository. In the case of bald eagles, this is the breeding area number.

-W-

Wildlife Area: The Minnesota DNR's Section of Wildlife administrative number.

Data Security

Locations of some rare features must be treated as sensitive information because widespread knowledge of these locations could result in harm to the rare features. For example, wildflowers such as orchids and economically valuable plants such as ginseng are vulnerable to exploitation by collectors; other species, such as bald eagles, are sensitive to disturbance by observers. For this reason, we prefer that publications not identify the precise locations of vulnerable species. We suggest describing the location only to the nearest section. If this is not acceptable for your purposes, please call and discuss this issue with the Environmental Review Specialist for the Heritage and Nongame Research Program at 651/296-7863.

Revised 11/2000

APPENDIX D: CORRESPONDENCE WITH MINNESOTA STATE HISTORIC PRESERVATION OFFICE

United States Department of the Interior

NATIONAL PARK SERVICE
Pipestone National Monument
36 Reservation Avenue
Pipestone, Minnesota 56164-1269

IN REPLY REFER TO:



May 29, 2003

H32(PIPE)

Dr. Nina Archabal
State Historic Preservation Officer
Minnesota Historical Society
345 Kellogg Boulevard, West
St. Paul, Minnesota 55102-1906

Dear Dr. Archabal:

We evaluated the National Park Service Mission 66 development at Pipestone National Monument, Pipestone County, Minnesota, to determine its eligibility for the National Register of Historic Places. We believe that the visitor center/Upper Midwest American Indian Cultural Center, entrance road, parking lot, interpretive circle trail, and two park residences are contributing resources and, as a whole, constitute a historic landscape site within the existing Pipestone National Monument Historic District. In addition, we think that they qualify under Criteria Consideration G: Properties that Have Achieved Significance Within the Past Fifty Years.

The evaluation is submitted on National Register of Historic Places continuation sheets, and we anticipate officially amending the nomination after the completion of a Cultural Landscape Report that will begin sometime in fiscal year 2004 and take approximately three years to complete.

In the meantime, we compiled the attached progress report on the current results of research underway to further identify the historic resources, including archeological and ethnographic features, at the Monument. In conversations with Dennis Gimmestad and Susan Roth in your Historic Preservation Office, they indicated that they would like to see the Mission 66 evaluation presented within the context of the more holistic understanding of the cultural resources at Pipestone National Monument. This progress report provides a quick overview of the state of the knowledge of cultural resources at the Monument. This information and any new information available after the completion of the Cultural Landscape Report will be integrated into the amendment to the nomination.

It is important for our general management planning process to evaluate the Mission 66 resources at this time. Please review the documentation on the Mission 66 development and sign in the space provided below if you concur with our determination of eligibility. If you have any questions, please contact Senior Historian Donald L. Stevens, Jr. at 402-514-9353 in our Midwest Regional Office.

Sincerely,

M. James LaRock
Superintendent

Enclosures

We concur with your determination of eligibility of the Pipestone Mission 66 Development as described in the National Register of Historic Places documentation dated April 21, 2003.

State Historic Preservation Officer
Ian R. Stewart, Deputy State Historic Preservation Officer

Date 6/30/03

Cc:
All without attachments
Donald L. Stevens, Jr., Senior Historian MWRO
Susan Roth, national Register Program, Minnesota SHPO
Dennis Gimmestad, Government Compliance Program, Minnesota SHPO

MINNESOTA HISTORICAL SOCIETY

STATE HISTORIC PRESERVATION OFFICE

November 17, 2000

COPY

Mr. M James LaRock
U.S. Department of the Interior
National Park Service
Pipestone National Monument
36 Reservation Avenue
Pipestone, MN 56164-1269

RE: Pipestone National Monument; General Management Plan and Environmental Impact Statement
Pipestone, Pipestone County
SHPO Number: 2001-0091

Dear Mr. LaRock:

Thank you for your letter regarding the initiation of a General Management Plan for the Pipestone National Monument.

We are certainly interested in participating in this process, although staff limitations probably preclude us serving as a full member of the team. We would ask that you schedule a consultation with us early to determine an appropriate and helpful level of involvement. This discussion should result in a specific understanding as to when and how we will be involved as the planning process proceeds.

We look forward to working with you. Contact us at 651-296-5462 with questions or concerns.

Sincerely,

Dennis A. Gimmestad
Government Programs and Compliance Officer



MINNESOTA HISTORICAL SOCIETY

STATE HISTORIC PRESERVATION OFFICE

July 19, 2002

Mr. M. James LaRock
U.S. Dept. of the Interior
National Park Service
Pipestone National Monument
36 Reservation Avenue
Pipestone, MN 56164-1269

RE: Pipestone National Monument; General Management Plan and Environmental Impact Statement
Pipestone, Pipestone County
SHPO Number: 2001-0091

Dear Mr. LaRock:

Thank you for submitting us your preliminary alternative concepts for the general management plan.

As we have discussed with you and other NPS staff, the monument includes cultural resources from several different periods of use. We recognize that, in some cases, the management plan may need to emphasize certain categories of cultural resources over others, depending on their relationship to the purpose and significance of the park, and to other considerations, including tribal and public input and the National Historic Preservation Act.

What is most important at this juncture is that the effort to update the information on the range of cultural resources at the monument is completed promptly, so that clear information about the variety and types of resources is available as the planning process proceeds. We look forward to reviewing the results of these efforts.

Contact us at 651-296-5462 with questions or concerns.

Sincerely,

Dennis A. Gimmestad
Government Programs and Compliance Officer

Cc: Troy Strom, Pipestone HPC
Don Stevens, National Park Service Omaha

345 KELLOGG BOULEVARD WEST • SAINT PAUL, MINNESOTA 55102-1906 • TELEPHONE: 651-296-6126

APPENDIX E: STATEMENT OF FINDINGS — FLOODPLAINS

STATEMENT OF FINDINGS FOR *GENERAL MANAGEMENT PLAN / ENVIRONMENTAL IMPACT STATEMENT,* PIPESTONE NATIONAL MONUMENT

Introduction

In accordance with Executive Order (EO) 11988, "Floodplain Management" and NPS guidelines for implementing the order, the National Park Service has evaluated the flood hazards for development in Pipestone National Monument and has prepared this statement of findings. As an integral part of the effort to develop a general management plan for the national monument, this statement contains descriptions of the flood hazard, alternatives, and mitigating measures for the continued use of this area. More details about future actions and environmental impacts are available in the *General Management Plan / Environmental Impact Statement.*

Description of Site

Pipestone Creek enters the national monument from the east, cascades over the Sioux quartzite escarpment as a waterfall, and flows into a small impoundment. From there it meanders northwesterly across the glacial valley until it exits at the north boundary. Above the falls, the creek was channeled in the early 1900s to help drain agricultural lands and decrease the chance of flooding upstream. Now it flows well below its original bed. The channel to the falls, which is roughly 21 feet wide and 5 feet deep, drains about 30,000 acres of land. Pipestone Creek starts upstream about 13 miles and eventually flows into the Lower Big Sioux River. According to measurements taken in 1984, the discharge of the creek ranges from about 1 to 88 cubic feet per second (cfs).

Within a few hundred feet of Pipestone Creek, a Mission 66 visitor center / maintenance facility / administrative headquarters was developed roughly in the center of the national monument along the quarry line. The quarry line is a north-south layer of Sioux quartzite rock where American Indians quarried a thin layer of pipestone (catlinite).

The Federal Emergency Management Agency mapped floodplains at Pipestone National Monument in 1991. The resulting flood insurance rate map indicates that about one-third to one-half of the national monument is in the 100-year floodplain. A small portion of the floodway of the main channel lies between the Soo Line Railway and Hiawatha Avenue, east of the national monument. Base flood plain elevations were determined for this area.

A wide corridor along the main channel is in the 100-year floodplain. That corridor extends from the northwest boundary of the national monument to within about 250 feet of the eastern boundary, but no base flood elevations were determined. An area approximately 250 feet wide along the eastern boundary is within the 100-year floodplain. That area extends from 9th Street to about 250 feet north of the main channel. Its base flood elevations were calculated at 1718–1719 feet. The rest of the monument lies within the 500-year floodplain or areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile.

Description of Preferred Alternative

This statement of findings addresses the NPS proposal to remove the visitor center and associated development including the two houses near the entrance. The picnic grounds, and restroom facilities near the Three Maidens rock formation, would be removed.

New facilities will be developed including a new restroom facility near the western end of the Circle Trail and a new Visitor Center in an area that will be determined following detailed study of available locations and potential impacts.

The use of the Sun Dance grounds by American Indians would continue. The National Park Service would continue to rehabilitate and preserve

the native prairie, which is the setting for the quarries and their interpretation.

Area Flooding Characteristics

The visitor center / maintenance / headquarters facility is in the 100-year floodplain, for which no base flood elevations have been determined. The two houses are in the area for which base flood elevations have been calculated at 1718–1719 feet. The maintenance storage yard is in the floodway of the main channel. It appears that most of the western part of the USFWS property north of the national monument also is within the 100-year floodplain.

Flash flooding in the national monument along Pipestone Creek is relatively frequent. Such flooding is most likely to occur after a quick spring thaw over frozen soils or after a severe summer thunderstorm. Flooding of bridges and trails is frequent, with rare flows causing floodwaters to overtop the escarpment south of Winnewissa Falls.

Several adverse impacts can result from frequent flash flooding. Sediments have nearly filled Lake Hiawatha, and less than 2 feet of water storage is left in the lake. Periphyton on rocks in the stream are dislodged, resulting in reduced stream productivity. In the floodplain, biota are exposed to chemical pollutants from upstream, and debris detracts from the site's aesthetics.

JUSTIFICATION FOR USE OF THE FLOODPLAIN

Why Facilities in Floodplain Would Be Retained

The visitor center / maintenance / headquarters facility would be removed from the floodplain. The two houses are exactly at the calculated flood elevation of 1,718–1,719 feet and will also be removed.

Under NPS procedures for implementing EO 11988, all other facilities such as parking areas, trails, maintenance storage areas, and picnic areas may be within the 100-year floodplain.

Alternatives Considered in the *General Management Plan / Environmental Impact Statement*

Retaining the visitor center at its current location the national monument was considered, as was expanding it at the present location.

SITE-SPECIFIC FLOOD RISK; MINIMIZING HARM TO FLOODPLAIN VALUES AND RISK TO LIFE OR PROPERTY

To protect lives, the staff of Pipestone National Monument periodically closes trails that could be flooded. The national monument could be closed completely to visitors during a 100-year or greater event. The staff monitors weather reports and follows standard operating procedures for handling trail closures. Such procedures include posting signs explaining the hazards, assigning rangers to alert visitors to the danger, and clearing the trails to ensure that no visitors are present.

The new restroom facility along the western leg of the Circle Trail will be constructed in the 100-year floodplain. The facility will be located in an area that has historically not flooded. A berm will be constructed around it to prevent floodwaters from damaging the structure.

The natural and beneficial values of floodplains (moderation of floodwaters, maintenance of water quality, and groundwater recharge) would not be affected by retaining the existing facilities. Minimal improvements to groundwater recharge would result from removing the structures and associated impervious paved surfaces.

SUMMARY

The National Park Service has determined that removing the visitor facilities and two houses from the floodplain of Pipestone Creek is the most desirable alternative.

APPENDIX F: THE NATIONAL HISTORIC PRESERVATION ACT AND NPS ASSISTANCE

The National Historic Preservation Act of 1966, as amended, provides a mechanism for federal agencies to help private entities with the preservation of structures in or eligible for inclusion in the National Register of Historic Places.

Federal agencies can provide technical assistance in the form of advice. This is the type of assistance envisioned within this plan for the Pipestone Indian School superintendent's house. National monument staff and NPS regional staff would provide recommendations on types of materials or products that should be used for preservation work. They could also provide some on-site evaluative services based on expertise and available time providing judgments on building condition and uses.

National monument staff could help with grant applications for funding. However, no funding from the government to a private entity would be involved.

Funds are provided yearly by the National Park Service to each state historic preservation officer to oversee the granting of funds to organizations for historic preservation purposes. Grants would be requested by the property owner and, if accepted, overseen by the state historic preservation officer. In the case of the Pipestone Indian School superintendent's house, any funding for design or bricks and mortar preservation would have to come from this or some other funding source. No funding directly from Pipestone National Monument would occur.

SELECTED BIBLIOGRAPHY

Abbott, Kathryn A.
1996 "Hiawatha" In *Encyclopedia of American Indians,* edited by Frederick E. Hoxie, 245–246. Boston: Houghton Mifflin.

Ager, Jerald
1996 "Geology of the Pipestone Quarry." Coteau Heritage, Journal of the Pipestone County [MN] Historical Society 2 (1, April 1989): 2–5.

Anfinson, Scott F.
1997 *Southwestern Minnesota Archaeology*: 12,000 Years in the Prairie Lake Region. Saint Paul: Minnesota Historical Society Press. Minnesota Prehistoric Archaeology Series, no. 14.

Becker, Donald A., Thomas B. Bragg, and David M. Sutherland
1986 "Prairie Management Plan: Pipestone National Monument." Prepared by Ecosystems Management, Elkhorn, NE.

Bray, Edmund C., and Martha Coleman Bray, editors and translators
1993 *Joseph N. Nicollet on the Plains and Prairies: The Expeditions of 1838–1839, with Journals, Letters, and Notes on the Dakota Indians.* Saint Paul: Minnesota Historical Society Press. First published in 1976.

Davis, John Wayne
1934 "A History of the Pipestone Reservation and Quarry in Minnesota." M.S. thesis, University of Colorado at Boulder.

Draper, Chuck, editor
1984 *A History of Pipestone County [MN]: Information Gathered by the Book Committee and Edited by the Editorial Committee.* Dallas, TX: Taylor Publishing Company. Prepared for the Pipestone County Historical Society, Pipestone, MN (copyright holder).

Dudzik, Mark J.
1995a "American Indian Rock Art, State of Minnesota." National Register of Historic Places nomination form prepared by Mark J. Dudzik, March 18, 1995. Omaha, NE: sponsored by the Midwest Regional Office, National Park Service. This rock art district, state of Minnesota, was listed in the National Register of Historic Places on November 14, 1996.

1995b "Visions in Stone: The Rock Art of Minnesota." *Minnesota Archaeologist* 54: 99–108.

Fish, Larry
2001 "Indian Schools' Mark Indelible: Exhibit Explores Rules, Paternalism." *Denver Post,* July 15, 2001, 26A.

Halvorson V.
1983 Personal correspondence with superintendent of Pipestone National Monument in June 1983.

Hiebert, Ron
2001 "Prioritizing Weeds: The Alien Plant Ranking System." *Conservation Biology in Practice*. 2 (1, Winter 2001): 36–38.

Hoxie, Frederick E.
1996 "Calumet." In *Encyclopedia of North American Indians.,* edited by Frederick E. Hoxie, 98. Boston: Houghton Mifflin.

Hughes, David T.
1995 "Perceptions of the Sacred: A Review of Selected Native American Groups and Their Relationships with the Catlinite Quarries" [at Pipestone National Monument, Minnesota]. Prepared by Anthropological Research Laboratories, Wichita State University. Wichita, KS, under contract for the Midwest Archeological Center, National Park Service, Lincoln, NE.

Hughes, David T., and Alice J. Stewart
1997 "Traditional Use of Pipestone National Monument: Ethnographic Resources of Pipestone National Monument." Prepared by Anthropological Research Laboratories, Wichita State University. Wichita, KS, under contract for the Midwest Archeological Center, National Park Service, Lincoln, NE.

Linch, Lyle K.
1954 *The History of the Pipestone Indian Shrine and National Monument.* Compiled for the Pipestone Shrine Association. Pipestone, MN: Pipestone National Monument.

Mahon,. John K.
1967 *History of the Second Seminole War, 1835–1842*. Gainesville, FL: University of Florida Press.

Matusky, Julia Gedeon
2001 "The Great Peace of Montreal, 1701." *The Beaver, Canada's History Magazine* 81(3, June–July 2001): 8–11.

Minnesota Department of Natural Resources, Natural Heritage and Nongame Research Program
1973 *Minnesota Proposed List of Endangered, Threatened, and Special Concern Plants and Animals*.

1983a Letter of November 16, 1983, transmitting the memorandum of understanding that would place Pipestone National Monument on the Minnesota Natural Heritage Register. Signed by Barbara Coffin, Coordinator, Natural Heritage Program. Prepared by Section of Ecological Services.

1983b Memorandum of understanding for inclusion of Pipestone National Monument on the Minnesota Natural Heritage Register. Includes species status sheets prepared by Welby Smith, Botanist, Natural Heritage Program.

1985 "Sioux Quartzite Prairie Element Abstract," prepared by Keith Wendt.

2000 Natural Heritage Database, Element Occurrence Records "List of Known Rare features in Pipestone National Monument, Sorted by Class and Element Name."

Minnesota Pollution Control Agency
1984 *Chapter 7050: Classification and Standards for Waters of the State*. Saint Paul. Cited in Becker, Bragg, and Sutherland "Prairie Management Plan."

Mitchell, J. H.
1934 "The Pipestone Quarry, or Restoring an Ancient Indian Shrine." In *Indians at Work: A News Sheet for Indians and the Indian Service* 2 (8, December 1934): 25–29. Pipestone, MN: The Pipestone Indian School, Bureau of Indian Affairs, U.S. Department of the Interior.

Moore, Robert J., Jr.
1997 Native Americans: A Portrait: The Art and Travels of Charles Bird King, George Catlin, and Karl Bodmer. New York: Stewart, Tabori, and Chang.

Murray, Robert A.
1965 *A History of Pipestone National Monument, Minnesota*. Pipestone, MN: Pipestone Indian Shrine Association.

Nabokov, Peter
1995 "Lineal Descendants of Former Owners of Pipes in Collections of Pipestone National Monument." Prepared by Loendorf and Associates, Las Cruces, NM, for the Midwest Archeological Center, National Park Service, Lincoln, NE.

1996 "Tobacco." In *Encyclopedia of North American Indians,* edited by Frederick E. Hoxie, 633–635. Boston: Houghton Mifflin.

National Park Service, U.S. Department of the Interior
1955 "Notes on the Archeology of Pipestone National Monument," by Paul L. Beaubien. Manuscript on file at Midwest Archeological Center, Lincoln, NE.

1964 "Master Plan for the Preservation and Use of Pipestone National Monument," by Carl R. Stoddard. Pipestone, MN.

1966 "A Vascular Plant Collection, Pipestone National Monument," by Dennis Disrud. Pipestone, MN.

1971 "Report on Archeological Salvage, Upper Midwest Cultural Center and Six-Unit Apartment Complex, Pipestone National Monument," by Roy W. Reaves III. Prepared by Northeast Region, Philadelphia, PA.

1973 "Interpretive Prospectus, Pipestone National Monument, Minnesota," by. Russell J. Hendrickson, *William T. Ingersoll, Cecil D. Lewis Jr., and Jon B. Montgomery. Harpers Ferry, WV: Harpers Ferry Center.

1976 Pipestone National Monument nomination form, National Register of Historic Places, by David Arbogast. Omaha, NE: Midwest Regional Office. Form recorded July 2, 1976, by Keeper of the National Register of Historic Places, Washington, DC. [The national monument was originally listed in the national register on October 15, 1966. (Form updated April 13, 1976.)]

National Park Service, U.S. Department of the Interior (continued)

1983 *Evaluation of Catlinite Resources: Pipestone National Monument, Minnesota,* by G. B. Morey. Prepared by Midwest Region, Omaha, NE. Report MWR-4.

1984 "Water Quality Study, Pipestone: National Park Service Staff Research Investigation," by Denise Stocks.

1986 "Prairie Management Plan: Pipestone National Monument."

1988 *Trails Management Handbook*, by Lennon Hooper. Denver Service Center. Available on the Internet at <www.bea.doc.gov/bea/regional/bearfacts/index.htm>.

1993a *Floodplain Management Guideline.* Washington, DC.

1993b *Guiding Principles of Sustainable Design.*

1993c "Servicewide Summary of Unassociated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony, Native American Graves Protection and Repatriation Act of 1990". Prepared by Cultural Resources Division.

1996 "Archeological Survey of a Controlled Burn at Pipestone National Monument, Pipestone County, Minnesota," by Caven P. Clark. Lincoln, NE: Midwest Archeological Center. Technical report 40.

1998a *Director's Order 28: Cultural Resource Management.* Washington.

1998b *National Park Service Procedural Manual 77-1: Wetland Protection.* Technical report NPS/NRWRD/TRTR098/203. Denver.

1998c "Resources Management Plan: Pipestone National Monument."

1999a Annual Report, Fiscal Year 1998. From Inventory and Monitoring Program. Available on the Internet at <http://www.nature.nps.gov/pubs/I&M/title.htm>.

1999b "Great Plains Prairie Cluster, Prairie and Grassland Biome," by L. Thomas, (Cluster I&M Coordinator), M. DeBacker, S. Jenkins, L. Thomas, G. Wilson, B. Rizzo, E. Schneider, D. Debinski, S. Mahady, and A. Powell.

2000a *Annual Status Report, 1999: Plant Community Monitoring for Pipestone National Monument,* by Mike DeBacker and Karola Milekush. Prairie Cluster Long-Term Ecological Program.

2000b *Annual Status Report, 1999: Western Prairie Fringed Orchid Monitoring for Pipestone National Monument,* by Gary D. Wilson, U.S. Geological Survey, Biological Resources Division, Northern Prairie Research Center. Missouri Project Office. Program Report 99-003, Great Plains Prairie Cluster Long-Term Ecological Program.

2000c "Grassland Bird Inventory of Seven Prairie Parks," by A. N. Powell. Final Report to the Great Plains Prairie Cluster Long-term Ecological Monitoring Program, Wilson Creek National Battlefield, Republic, Missouri.

National Park Service, U.S. Department of the Interior (continued)

2000d "Mission 66 Visitor Centers: The History of A Building Type," by Sarah Allaback Washington, DC: Park Historic Structures and Cultural Landscapes Program, Cultural Resources Stewardship and Partnerships Division.

2000e *Strategic Plan for Pipestone National Monument, October 1, 2001–September 30, 2005*.

2001a *Conceptual Framework, Monitoring Components, and Implementation of an NPS Long-term Ecological Monitoring Program,* by L. P. Thomas, M. D. Debacker, J. R. Boetsch, and D. G. Peitz. Prairie Cluster Prototype Program Status Report, Wilson's Creek National Battlefield, Springfield, MO.

2006b *Management Policies 2006*.

2001c "Ethnographic Landscapes," by Michael J. Evans, Alexa Roberts, and Peggy Nelson. In *People and Places: The Ethnographic Connection. A Special Issue of CRM* [Cultural Resource Management]: *A Journal of the National Park Service* 24 (5): 53–56.

2001d "Plant Help." E-mail message regarding slender plantain, a species listed as threatened by the state, from Mike Debacker, NPS Great Plains Prairie Cluster, to Kristin Legg, Resource Manager, Pipestone National Monument.

2002 Trip report for travel to Pipestone National Monument on June 10–12, 2002, by Richard Inglis, Hydrologist, Water Operations Branch, Water Resources Division. September 16.

2003a M. James LaRock, superintendent, Pipestone National Monument, to Dr. Nina Archabal, Minnesota state historic preservation officer, May 29, 2003, regarding request for concurrence, determination of eligibility for listing in the National Register of Historic Places of the Mission 66 structures and features in the national monument. On file at Pipestone National Monument.

2003b "Pipestone National Monument Visitor Study: Summer 2002, " by Margaret Littlejohn and Steven J. Hollenhorst. Visitor Services Project Report 135.

2003c Gary M. Smillie, hydrologist, Water Resources Division, National Park Service, e-mail message to Mary Magee, Denver Service Center, January 3, 2003, regarding Pipestone flood hazard.

National Park Service and U.S. Geological Survey, U.S. Department of the Interior

1996 "Prairie Cluster Long-term Ecological Monitoring (LTEM) Program, submission to NPS Annual Report, Inventory and Monitoring Program, Fiscal Year 1996." Prepared by NPS and USGS, Biological Resources Division.

Ojakangas, R. W., and C. L. Matsch

1982 *Minnesota's Geology*. Minneapolis: University of Minnesota Press.

Pond, Samuel W.

1986 *The Dakota or Sioux in Minnesota: As They Were in 1834*. Saint Paul: Historical Society Press. First published in 1908 by Minnesota Historical Society, Saint Paul. Minnesota Historical Collections 12.

Powers, William K.
1977 *Oglala [Lakota] Religion*. Lincoln: NE. University of Nebraska Press. A Bison book.

Rothman, Hal K., and Daniel K. Holder
1992 "Managing the Sacred and the Secular: An Administrative History of Pipestone National Monument." Report prepared for the National Park Service Midwest Regional Office by Hal K. Rothman and Associates,. Henderson, NV, under contract.

Seig, Louis
1999 *Tobacco, Peace Pipes, and Indians: The Ceremonial Use of Tobacco*. Palmer Lake, CO: Filter Press.

Sigstad, John S.
1970 "A Report of the Archaeological Investigations, Pipestone National Monument 1965 and 1966." *Journal of the Iowa Archaeological Society* 17 (December 1970): 1–51.

Snyder, Ellen J.
1986 "Small Mammal Habitat Use and Some Population Parameters of *Microtus pennsylvanicus* and *Sorex cinereus* at Pipestone National Monument. Prepared for the National Park Service by Iowa State University, Ames, IA.

Soil Conservation Service, U.S. Department of Agriculture
1976 *Soil Survey of Pipestone County, Minnesota*. Maps included.

Stevens, O. A.
1969 "Pipestone National Monument in Minnesota." *Rhodora,* 195–7.

Talley, Jenell
2004 "Little Orchid on the Prairie." *National Parks: The Magazine of the National Parks Conservation Association* 78 no. 2 (Spring): 60–61.

Thiessen, Thomas D.
2002 "The Pipestone Petroglyphs." Talk presented at the February 26, 2002, meeting of the Kiwanis Club of Pipestone, Pipestone, Minnesota. Ethnohistorian and archeologist from Midwest Archeological Center, National Park Service, Lincoln, NE.

Thiessen, Thomas D., and Charles R. Bailey
1999 "The Pipestone Petroglyphs." Paper presented at the 1999 meeting of the International Rock Art Congress, Ripon College, Ripon, Wisconsin on May 27, 1999. In possession of the authors at NPS Midwest Archeological Center, Lincoln, NE, and Upper Midwest Rock Art Research Association, Brooklyn Center, MN.

2000 "The Pipestone Petroglyphs." In *Proceedings of the 1999 Meeting of the International Rock Art Congress, Ripon College, Ripon, Wisconsin May 27, 1999,* edited by Peggy J. Whitehead and Lawrence L. Loendorf, 115–126. Tucson, AZ: American Rock Art Research Association.

Tiller, Veronica E. Velarde
1996 *Tiller's Guide to Indian Country: Economic Profiles of American Indian Reservations*. Albuquerque NM: Bow-Arrow Publishing Company.

Toupal, Rebecca S., Richard W. Stoffle, Nathan O'Meara, and Jill Dumbauld
2004 "The Everchanging Pipestone Quarries: Sioux Cultural Landscapes and Ethnobotany of Pipestone National Monument, Minnesota." Vol. 2 of "Ethnohistorical and Ethnobotanical Study." Prepared by Bureau of Applied Research in Anthropology, University of Arizona, for the National Park Service under cooperative agreement. Tucson, AZ.

U.S. Department of the Interior, Office of the Secretary, Office of Occupational Safety and Health
2001 Memo to Superintendent, Pipestone National Monument, from Industrial Hygienist, subject "Silica Exposure Monitoring" September 28, 2001.

U.S. Environmental Protection Agency
1998 Environmental Justice Guidance. From the Internet at <http://es.epa.gov/oeca/ofa/ejepa.html>.

U.S. Environmental Protection Agency (continued)
1979 *Classification of Wetlands and Deepwater Habitats of the United States*. Prepared for the USFWS by Lewis M. Cowardin (USFWS), Virginia Carter (USGS), Francis C. Golet (Univ. of RI), and Edward T. LaRoe (NOAA). Reprint 1992. Washington, DC.

1989 Classification of Wetlands and Deep Water Habitats of the United States. Prepared for the USFWS by Lewis M. Cowardin (USFWS), Virginia Carter (USGS), Francis C. Golet (Univ. of RI), and Edward T. LaRoe (NOAA). Reprint 1992. Washington, DC.

U.S. Fish and Wildlife Service, U.S. Department of the Interior
1996 "Western Prairie Fringed Orchid Recovery Plan," Fort Snelling, MN.

2002a "Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Topeka Shiner." *Federal Register* (August 21, 2002) vol. 67, no. 162. USDI, Fish and Wildlife Service, 30 CFR 17.

2002b *For Lack of a Moth, the Orchid is Lost.*" Feature Series, vol. II, no. 4. From USFWS Internet site, November 1, 2002.

2002c *U.S. Fish and Fish and Wildlife Service Publishes Updated List of Candidates for Endangered Species Act Listing* June 13, 2002, from the Internet at <fws-news@lists.fws.gov>.

U.S. Geological Survey, U.S. Department of the Interior
1998 *Regional Landscape Ecosystems of Michigan, Minnesota, and Wisconsin*. Sub-Section II.2.3., Ivanhoe-Worthington Coteau: Ground Moraine and stagnation moraine; tallgrass prairie. Accessed on the Internet in June 2003 at <http://www.npwrc.usgs.gov/resource/1998/rlandscp/s2-2-3.htm>.

Wilson, Gary D., and Timothy W. Vinyard
1984 "Changes in the Lichen Flora of Pipestone National Monument, Minnesota." *The Prairie Naturalist* 8(1): 9–14.

Woolworth, Alan R., editor
1983 "The Red Pipestone Quarry of Minnesota: Archaeological and Historical Reports." *Minnesota Archaeologist* 42 (1 and 2): 1–137

Zedeño, Maria Nieves and Robert Christopher Basaldú
2004 "Native American Cultural Affiliation and Traditional Association Study, Pipestone National Monument, Minnesota." Vol. 1 of "Ethnohistorical and Ethnobotanical Study." Prepared by Bureau of Applied Research in Anthropology, University of Arizona, for the National Park Service under cooperative agreement. Tucson, AZ.

PREPARERS OF THE DOCUMENT

PLANNERS AND PREPARERS, NATIONAL PARK SERVICE

Denver Service Center

Craig Cellar, Anthropologist/Planner. Job Captain, overall project coordination. B.A. (History), B.A. (Anthropology), two years toward M.A. in Anthropology. Thirty-two years with the National Park Service.

Mary Magee, Natural Resource Specialist. Responsible for description and analysis of impacts on natural resources. B.S. (Biology). Thirty years with the National Park Service.

Karen Vaage, Landscape Architect. Responsible for analysis of design, visual resources, circulation, and construction costs. B.L.A. (Landscape Architecture and Environmental Planning), M.L.A. (Landscape Architecture). Twenty-three years with the National Park Service.

Larry Van Horn, Cultural Resource Management Specialist. Responsible for description and analysis of impacts on cultural resources. B.A. (History), M.A. (Anthropology), Ph.D. (Anthropology). Twenty-eight years with the National Park Service.

Harpers Ferry Center

Don Kodak, Interpretive Planner. Responsible for description and analysis of interpretive, information, and orientation media. Eighteen years with the National Park Service.

Pipestone National Monument

Jim LaRock, Superintendent. Core Planning Team. Responsible for overall park management, including planning. B.S. (Landscape Architecture). Thirty-two years with the National Park Service.

Sheryl Baerenwald, Administrative Technician. Extended Planning Team. Fifteen years with the National Park Service.

Alice Erickson, Park Ranger (retired). Extended Planning. Team, responsible for interpretation. Thirty years with the National Park Service.

Kristin Legg, Chief of Resources, Core Planning Team. B.S. (Biology), M.S. (Fish and Wildlife Management). Fifteen years with the National Park Service.

Glen Livermont, Chief of Visitor Services and Protection. Core Planning Team. Twenty-six years with the National Park Service.

Sue Reiss, Maintenance Worker. Extended Planning Team. Twenty years with the National Park Service.

David Trieff, Maintenance Worker Supervisor (deceased). Core Planning Team. Fifteen years with the National Park Service.

Sylvia Vogt, Administrative Officer. Core Planning Team. Twenty-five years with the National Park Service.

Gia Wagner, Biologist-Resource Program Manager, Core Planning Team. B.S. (Biology), M.S. (Environmental Biology). Thirteen years with the National Park Service.

Keweenaw National Historical Park

Abby Sue Fisher, Curator. Extended Planning Team. PhD 1992. Thirteen years with the National Park Service.

Midwest Region

Michael Evans, Regional Anthropologist. Consultant. B.S. (Sociology), M.A. (Sociology), Ph.D. (Anthropology). Eleven years with the National Park Service.

Sändra Washington, Regional Chief of Planning. Extended Planning Team. B.S. (Natural Resources), M.A. (Natural Resources). Fifteen years with the National Park Service.

Sherda Williams, Cultural Landscape Architect. Extended Planning Team. B.S. (Forestry), M.L.A. (Landscape Architecture). Thirteen years with the National Park Service.

Wilson's Creek National Battlefield

Lisa Thomas, Ecologist, Prairie Cluster, Long-term Ecological Monitoring Program. Extended Planning Team. M.A. (Ecology). Fifteen years with the National Park Service.

PEER REVIEWERS, NATIONAL PARK SERVICE

Noel Poe, Superintendent, Theodore Roosevelt National Park.

Bill Supernaugh, Superintendent, Badlands National Park.

PUBLICATION SERVICES, NATIONAL PARK SERVICE, DENVER SERVICE CENTER

Ruth Eitel, Visual Information Specialist
Lou Layman, Writer-Editor
Linda Ray, Visual Information Specialist
Sandy Schuster, Writer-Editor

INDEX

Access, 10, 51, 116, 186, 203

Accessibility, 128

Advisory Council, 4, 15, 25, 26, 27, 64, 138, 139, 141, 147, 150, 151, 164, 165, 168, 170, 186, 188, 190, 203, 205, 207, 224, 226, 228

Advisory Council on Historic Preservation, 4, 25, 26, 27, 64, 138, 139, 141, 147, 150, 151, 164, 165, 168, 170, 186, 188, 190, 203, 205, 207, 224, 226, 228

agreements, 26, 33

air quality, 20, 29

American Indian Movement, 107, 227

American Indian Religious Freedom Act, 25, 26, 228

American Indians, i, iii, v, 3, 8, 9, 12, 13, 14, 16, 17, 23, 24, 26, 27, 41, 43, 46, 47, 49, 50, 55, 56, 58, 63, 64, 68, 71, 79, 85, 92, 105, 106, 107, 108, 110, 111, 112, 115, 116, 130, 136, 148, 149, 150, 159, 162, 166, 167, 168, 180, 183, 184, 186, 187, 188, 198, 200, 203, 204, 205, 218, 223, 285, 286, 307, 312, 313, 314

archeological resources, 15, 25, 35, 44, 45, 46, 51, 104, 105, 106

Archeological Resources Protection Act, 25

Archives, 93, 114, 115, 142, 152, 170, 190, 207

birds, 46, 120, 124, 177, 196, 214

bison, 82, 124, 147, 149, 165, 167, 185, 187, 202, 204

boundaries, i, v, 9, 42, 65, 72, 80, 85, 104, 110, 111, 114, 136, 147, 149, 153, 154, 164, 167, 182, 185, 187, 202, 204, 209, 288, 289

boundary adjustment, 65, 72, 80

buffalo, 20, 290

Bureau of Indian Affairs, 285, 314

camping, 106

campsites, 62, 76, 85, 105, 131

carrying capacity, vi, ix, 36, 41, 62, 76, 94, 96, 166, 171, 173, 176, 177, 178, 203, 207, 208, 209, 212, 213, 214, 218

catlinite, i, iii, 3, 16, 23, 24, 44, 49, 51, 56, 71, 104, 105, 106, 108, 109, 110, 111, 115, 116, 118, 120, 149, 167, 187, 204, 286, 287, 307

CCC, vii, viii, 92, 109, 110, 114, 165, 185, 186, 190, 202, 203

CEQ, 19, 135, 138

Circle Trail, 3, 9, 11, 44, 52, 55, 56, 58, 63, 68, 79, 98, 110, 113, 119, 127, 128, 136, 148, 151, 153, 158, 159, 160, 164, 166, 169, 174, 180, 182, 185, 186, 187, 189, 191, 198, 199, 202, 203, 206, 216

Civilian Conservation Corps, vii, 109, 110, 114

construction, 12, 15, 18, 20, 29, 30, 37, 52, 85, 86, 87, 99, 114, 124, 135, 139, 141, 147, 149, 151, 164, 165, 167, 169, 176, 181, 182, 183, 185, 187, 189, 197, 199, 200, 201, 202, 204, 206, 210, 215, 217, 286, 319

cooperating association, i, iv, v, vi, viii, 10, 11, 37, 58, 66, 75, 82, 127, 161

Council on Environmental Quality, 19, 135, 286

counties, 290, 291

cultural landscapes, 11, 13, 14, 25, 27, 28, 35, 55, 63, 85, 92, 104, 108, 113, 114, 136, 138, 139, 147, 148, 164, 165, 185, 186, 190, 202, 203, 225

cultural resources, iii, 7, 13, 15, 26, 37, 41, 42, 104, 106, 108, 115, 135, 138, 139, 140, 163, 183, 201, 218, 319

ecosystem, 24, 29, 31, 32, 33, 45, 115, 122, 153, 171, 192, 208

education, viii, ix, 55, 64, 68, 74, 75, 79, 88, 90, 91, 127, 128, 157, 225

employment, 27, 99, 145, 161

endangered species, 23, 24, 29, 31, 32, 44, 45, 52, 97, 142, 158, 159, 178, 179, 197, 198, 214, 215

Endangered Species Act, 14, 21, 24, 32, 86, 142, 318

environmentally preferable alternative, 83, 84

erosion, 31, 38, 76, 85, 86, 124, 136, 154, 157, 172, 176, 177, 192, 195, 196, 209, 213

ethnographic resources, viii, 13, 25, 26, 27, 55, 63, 64, 68, 71, 79, 92, 104, 106, 108, 111, 112, 138, 139, 140, 148, 149, 150, 166, 167, 168, 186, 187, 188, 203, 204, 205, 225

exotic species, 10, 24, 29, 31, 32, 33, 42, 43, 52, 58, 90, 121, 136, 153, 172, 208, 213, 225

fee collection, 9, 58

fires, ix, 35, 58, 74, 122, 125

fishes, 120, 159, 179, 197, 215

flooding, i, iv, vi, vii, ix, 10, 30, 45, 66, 72, 80, 88, 93, 95, 105, 109, 123, 124, 137, 151, 152, 155, 156, 162, 163, 169, 171, 174, 175, 183, 184, 189, 191, 193, 194, 200, 201, 206, 207, 211, 212, 218, 219, 307, 308

floodplains, i, iv, vii, ix, 14, 29, 30, 56, 64, 71, 80, 86, 95, 105, 123, 142, 143, 151, 155, 156, 163, 169, 170, 175, 189, 190, 193, 194, 206, 207, 211, 307, 308

floods, 123, 194, 212

Forest Service, 35

geologic features, 118, 120

geology, 115, 116, 230

goals, 23, 27, 28

gravel, 18, 158, 179, 197, 215

grazing, 19, 121, 159, 179, 197, 215, 290, 291

hunting, iv, 10, 46, 106

impairment, 31, 92, 137, 138, 148, 150, 186, 190, 203, 207

Indian School superintendent's house, i, iv, v, viii, 8, 63, 64, 74, 80, 90, 151, 169, 225

interpretation, i, iv, v, vi, vii, viii, ix, 4, 7, 8, 9, 14, 37, 41, 49, 51, 52, 55, 56, 62, 63, 64, 66, 67, 68, 74, 75, 76, 79, 80, 88, 90, 91, 98, 142, 145, 151, 182, 190, 198, 200, 206, 216, 217, 225, 308, 319

interpretive themes, 79, 115, 180, 230

landowners, 13, 18, 33, 64, 72, 80

management prescriptions, 48

management zones, 48

Minnesota Department of Natural Resources, i, iv, vi, ix, 4, 10, 33, 46, 58, 61, 74, 150, 168, 172, 188, 205, 208, 226, 228, 313

mitigation, 13, 30, 85, 139, 143, 144, 156, 157, 162, 168, 170, 178, 183, 194, 197, 200, 214, 218

mitigative measures, 139, 141, 168, 170

museum collections, i, iv, v, vii, viii, 25, 28, 56, 64, 71, 74, 75, 80, 88, 93, 104, 108, 111, 115, 116, 117, 118, 136, 138, 139, 142, 152, 162, 163, 170, 171, 174, 189, 190, 191, 193, 207, 218

National Environmental Policy Act, 13, 83, 135, 138, 286

National Historic Preservation Act, 13, 24, 25, 26, 27, 64, 86, 138, 224, 286, 309

national monument headquarters, 30, 155, 156, 175, 194, 211

National Register of Historic Places, 8, 15, 24, 25, 26, 27, 43, 55, 56, 58, 63, 64, 71, 79, 80, 83, 105, 108, 112, 113, 138, 139, 140, 141, 150, 151, 164, 165, 167, 168, 169, 170, 188, 189, 190, 205, 206, 207, 224, 309, 312, 314, 316

Native American Graves Protection and Repatriation Act, 26, 28, 115, 315

Native Americans, 286, 314

natural resources, i, iii, vi, 3, 4, 13, 16, 23, 25, 29, 30, 35, 37, 41, 51, 52, 74, 90, 115, 120, 142, 143, 150, 163, 167, 179, 188, 201, 205, 286, 319, 326

natural sounds, 29, 34, 49, 50, 51

nonnative, 10, 45, 46, 49, 61, 67, 76, 86, 124, 136, 154, 158, 172, 177, 192, 196, 209, 214, 291

nonnative species, 45, 49

NPS Organic Act, 35

parking, i, iv, v, vii, viii, 8, 15, 31, 48, 50, 51, 52, 58, 61, 62, 63, 66, 67, 68, 71, 75, 76, 79, 88, 89, 91, 92, 94, 95, 96, 113, 127, 128, 149, 151, 153, 154, 155, 167, 169, 172, 173, 174, 175, 176, 177, 180, 181, 182, 183, 184, 186, 188, 189, 191, 193, 201, 204, 205, 206, 208, 209, 210, 212, 308

pipemaking, 12, 68, 79, 115, 118, 127, 159, 198

pipes, i, iii, 3, 23, 28, 56, 68, 71, 104, 115, 116, 118, 127, 180, 198, 287

pipestone, i, iii, v, vi, 3, 7, 8, 10, 11, 12, 13, 16, 17, 23, 24, 27, 42, 43, 44, 46, 51, 56, 58, 63, 66, 67, 71, 75, 104, 105, 106, 108, 109, 110, 111, 115, 116, 118, 120, 121, 127, 130, 136, 148, 149, 151, 160, 161, 163, 167, 169, 184, 187, 189, 199, 201, 204, 206, 216, 219, 229, 230, 285, 286, 287, 288, 307

Pipestone County, i, 3, 19, 42, 118, 129, 135, 137, 151, 161, 227, 228, 288, 312, 315, 317

Pipestone Indian School, i, vi, vii, 8, 23, 43, 44, 46, 55, 56, 58, 63, 66, 71, 72, 93, 105, 109, 112, 114, 115, 147, 149, 151, 152, 162, 164, 165, 167, 169, 170, 187, 189, 190, 204, 206, 207, 309, 314

Pipestone Indian Shrine Association, 99, 127, 130, 161, 169, 181, 182, 199, 200, 217, 226, 228, 287, 314

Pipestone Wildlife Management Area, i, iv, 10, 46, 147, 149, 165, 167, 185, 202

pollution, 29, 30, 31, 32, 33, 42, 45, 118

prairies, vi, vii, 21, 52, 89, 109, 125, 178, 215, 291

public involvement, 41, 285

purpose, iii, 3, 4, 13, 23, 34, 42, 63, 67, 74, 76, 82, 106, 115, 116, 118, 137, 148, 166, 177, 187, 203, 230

quarries, i, iii, v, vi, 3, 8, 10, 11, 12, 13, 18, 20, 23, 27, 31, 41, 49, 55, 58, 61, 62, 63, 64, 66, 67, 68, 72, 74, 75, 76, 79, 80, 86, 95, 98, 104, 105, 106, 107, 108, 109, 110, 111, 112, 114, 115, 116, 121, 127, 136, 149, 156, 158, 159, 160, 162, 163, 166, 172, 174, 180, 182, 184, 187, 192, 195, 198, 200, 201, 204, 211, 213, 215, 218, 229, 308

quarrying, i, vi, vii, viii, 3, 8, 12, 13, 16, 23, 24, 42, 43, 46, 49, 51, 62, 63, 66, 67, 68, 75, 76, 82, 91, 97, 98, 104, 106, 107, 108, 109, 110, 111, 112, 114, 115, 136, 148, 149, 156, 160, 161, 163, 167, 175, 184, 187, 191, 192, 194, 195, 197, 198, 199, 204, 212, 215, 216, 219, 285, 286, 287, 288, 290

recreation, 35, 45, 110, 326

research, v, vi, vii, viii, ix, 7, 24, 25, 26, 32, 33, 52, 55, 58, 63, 66, 68, 75, 82, 88, 93, 107, 115, 120, 142, 152, 170, 171, 190, 191, 207

sacred sites, i, 25, 27, 111, 229, 230

sacredness, 12, 41, 82, 107, 112, 228

scoping, 11, 13, 41, 82, 223, 286

section 106, 64, 86, 138, 139, 140, 141, 224, 286

SHPO, 7, 224, 225, 228, 229

socioeconomic environment, 17, 136, 138, 145

soils, vii, 13, 14, 18, 19, 24, 29, 31, 32, 33, 44, 46, 86, 87, 96, 121, 124, 142, 144, 155, 157, 176, 177, 195, 196, 213, 308

soundscape, 111

species of special concern, 32, 142, 144, 198, 215

state historic preservation office, 4, 7, 15, 25, 26, 27, 56, 64, 71, 79, 85, 105, 113, 164, 165, 168, 170, 189, 206, 224, 228, 229, 309, 316

state historic preservation officer, 4, 25, 26, 27, 56, 64, 71, 79, 85, 105, 113, 164, 165, 168, 170, 189, 206, 224, 228, 309, 316

Sun Dances, i, iv, v, vi, vii, viii, 50, 51, 55, 61, 62, 76, 90, 92, 96, 107, 148, 150, 153, 162, 163, 166, 168, 172, 177, 183, 187, 189, 192, 196, 197, 200, 201, 203, 204, 205, 213, 214, 218, 225

sweat lodges, 50, 51, 55, 62, 67, 76, 149, 166, 176, 187, 203, 204, 213

threatened or endangered species, 9, 13, 14, 87, 142, 144, 159

Three Maidens formation, iv, 8, 10, 51, 56, 67, 76, 159, 208

Topeka shiner, 9, 14, 19, 21, 45, 86, 97, 125, 158, 159, 178, 179, 197, 198, 214, 215, 228

traditional use, vii, 41, 55, 64, 68, 79, 92, 148, 150, 166, 167, 168, 186, 187, 188, 203, 204, 205

trails, i, iv, v, viii, ix, 9, 12, 15, 18, 27, 28, 38, 48, 49, 51, 55, 61, 62, 64, 67, 68, 75, 76, 79, 85, 86, 90, 109, 110, 114, 123, 128, 130, 149, 151, 157, 158, 162, 166, 167, 169, 180, 181, 184, 187, 188, 189, 198, 200, 204, 206, 211, 218, 225, 308

tribes, iii, 4, 8, 15, 16, 23, 25, 27, 41, 42, 82, 85, 104, 106, 107, 111, 116, 119, 163, 184, 201, 219, 223, 228, 230, 285, 286, 287, 288

U.S. Fish and Wildlife Service, i, iv, vi, ix, 4, 10, 14, 19, 21, 33, 35, 42, 46, 58, 61, 74, 86, 87, 97, 125, 135, 172, 177, 178, 179, 197, 208, 213, 214, 226, 228, 318

U.S. Geological Survey, 120, 315, 316, 318

Upper Midwest Indian Cultural Center, 11, 66, 118, 127

USFWS, i, iv, vi, vii, ix, 10, 46, 66, 67, 72, 75, 90, 96, 123, 125, 142, 147, 149, 150, 153, 165, 167, 168, 172, 185, 188, 192, 196, 197, 202, 205, 208, 209, 225, 292, 308, 318

USGS, 316, 318

vegetation, iv, ix, 3, 10, 13, 18, 29, 31, 32, 35, 49, 51, 85, 87, 97, 106, 114, 120, 136, 137, 139, 153, 154, 155, 157, 160, 164, 171, 173, 176, 178, 179, 180, 185, 195, 202, 207, 208, 209, 213, 291

views, 11, 33, 43, 164, 185, 202

viewshed, 42, 137, 186

visitor experience, i, iii, 3, 4, 14, 24, 34, 35, 36, 38, 41, 48, 51, 74, 84, 98, 137, 145, 151, 159, 160, 169, 179, 180, 182, 189, 198, 199, 206, 215, 216

visitors with disabilities, v, 24, 61, 62, 67, 88, 89

water quality, 12, 13, 18, 24, 31, 42, 45, 61, 64, 66, 72, 75, 80, 86, 124, 125, 158, 178, 179, 197, 215, 308

western prairie fringed orchid, 9, 14, 19, 42, 86, 87, 97, 121, 125, 158, 159, 179, 197, 198, 214, 215, 228

wetlands, vi, 10, 14, 29, 30, 31, 32, 33, 86, 94, 122, 123, 136, 142, 143, 154, 155, 173, 174, 175, 193, 194, 209, 210, 211

wildlife, i, vi, 10, 14, 32, 33, 46, 52, 96, 125, 142, 144, 158, 163, 177, 178, 184, 196, 197, 201, 214, 219, 326

Winnewissa Falls, i, iv, v, vii, ix, 3, 18, 44, 55, 58, 62, 63, 68, 71, 72, 75, 79, 80, 85, 86, 88, 89, 90, 92, 95, 109, 110, 111, 112, 114, 120, 123, 127, 136, 148, 156, 160, 162, 166, 172, 176, 180, 185, 186, 187, 188, 195, 202, 203, 205, 212, 225, 308

Yankton Sioux, 7, 106, 107, 108, 111, 226, 228, 229, 285

Yankton Sioux Tribe of South Dakota, 107

zones, 48, 51





As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS D-27A February 2008 / Printed on recycled paper.