



# Elements Common to Alternatives 2-5

The following elements would be common to all preliminary alternative concepts (2-5):

- Develop and implement a defined archeological site prioritization process based on importance of each site and the risk the site faces from threats
- Implement selective recovery of artifacts uncovered by burrowing mammal activity. All artifact recovery would follow the existing policy related to staff finds and collection of objects for the museum
- Comply with National Park Service museum facility standards outlined in 36 CFR 76
- Develop a research plan to guide future research activities at the park
- Continue tribal consultation and coordination and enhance tribal involvement in park activities through the following:
  - Employ tribal monitors when archeological data recovery is deemed necessary
  - Involve tribal members in interpretive programs, archeological monitoring, development of site prioritization criteria, ethnographic research, and management decisions
  - Host events for tribal elders and involve tribal youth in park programs
- Seek public and private partnerships to achieve management objectives, opportunities for information sharing and/or enter into agreements with federal, state, or local jurisdictions to further resource protection
- Develop an inadvertent discovery plan for compliance with Native American Graves Protection and Repatriation Act
- Complete a condition assessment of the museum collections
- Implement a monitoring program to determine the effectiveness of management actions taken towards achieving the plan objectives





# Alternative 5

Management intervention to address impacts from riverbank erosion, burrowing mammals, or woody vegetation encroachment would be targeted to the sites with the greatest importance. Management actions would be focused on maximizing in-place protection using a broader range of techniques that may impact natural resources. The following actions would comprise Alternative 5:



## Riverbank Erosion Management

- Implement a full suite of stabilization techniques as described for Alternative 4 for high priority sites
- Monitor to identify areas for archeological recovery and documentation at low or moderate priority sites
- Maintain existing bank stabilization projects



## Burrowing Mammal Management

- Implement a full suite of control techniques as described for Alternative 4 at high priority sites
- No action on low or moderate priority sites
- Continue selective recovery of exposed artifacts



## Vegetation Management

- Use full suite of management techniques as described for Alternative 4 for high priority sites
- Implement management activities as outlined in the Exotic Plant Management Plan and Fire Management Plan for low and moderate priority sites



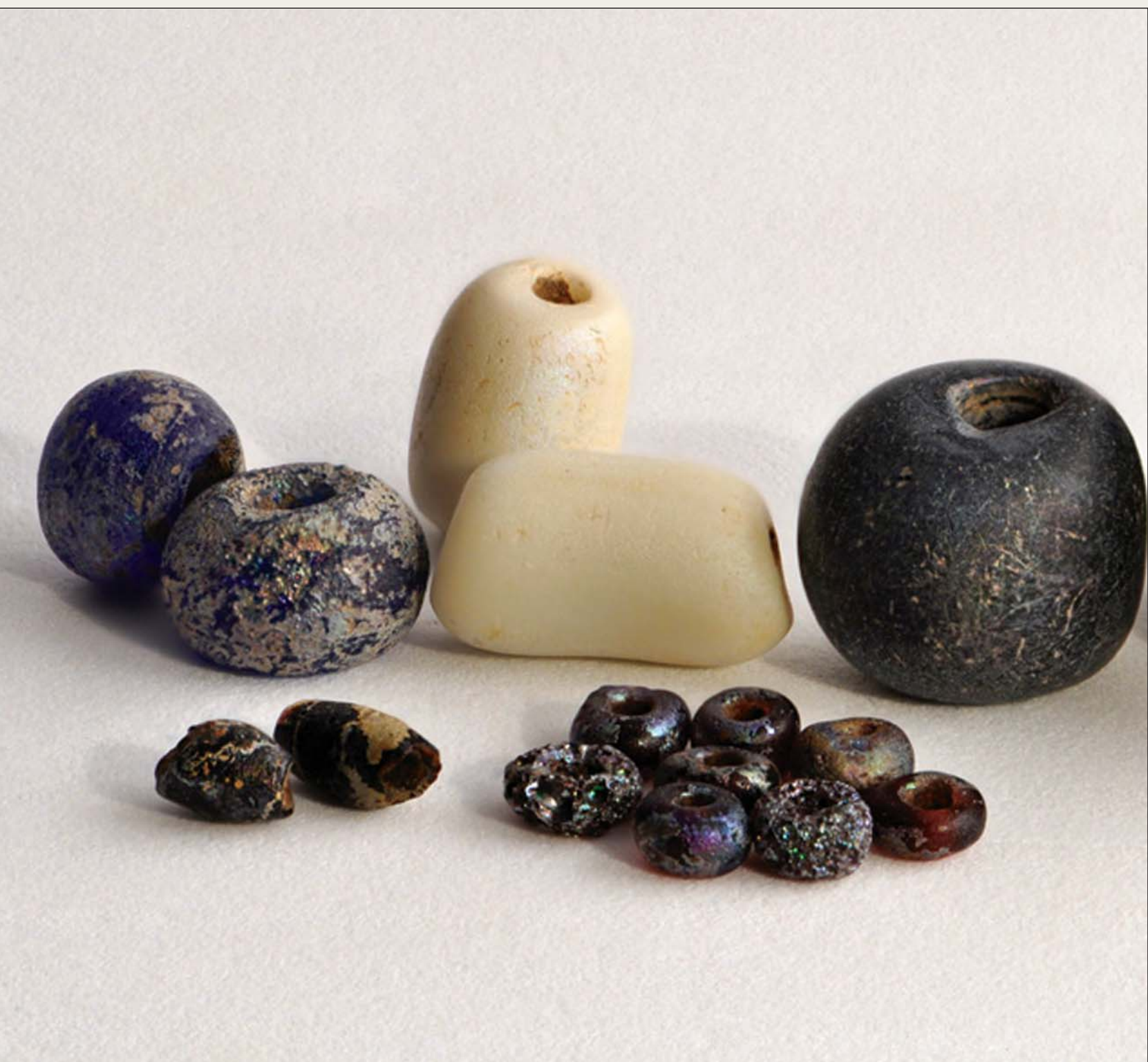
## Infrastructure

- Relocate road or provide alternative access point if high priority sites are being impacted
- Relocate maintenance facilities outside of park if high priority sites are being impacted
- Expand visitor center to accommodate growth in interpretation activities or maintenance facilities Plan and Fire Management Plan for low and moderate priority sites



## Museum Collections

- Increased museum storage to accommodate growth



## Research and Interpretation

- Prioritize research activities for archeological sites not being protected by management actions
- Perform data collection activities at low priority sites to address knowledge gaps on the importance of those sites
- Focus interpretation on park's management actions
- Reduce or limited access to high priority sites





# Alternative 4

Management actions would be focused on maximizing in-place protection of sites using a broader range of techniques that may impact natural resources. Financial resources would first be applied to high priority archeological sites, management intervention could be taken at moderate and low priority sites to address threats to resources. The following actions would comprise Alternative 4:



## Riverbank Erosion Management

- Implement “hard” bank stabilization techniques or soil bioengineering
- Use flow deflection techniques such as hard points, cribs, or dikes
- Use energy reduction techniques such as vanes or grade control
- Use geotechnical methods such as grading the bank to allow for a more gradual slope
- Implement channel reconfigurations



## Burrowing Mammal Management

- Modify habitat to make areas less desirable
- Continue lethal trapping
- Install repellants such as moth balls or plants; electronic, magnetic, and vibrating nuisances
- Improve habitats for natural predator populations such as hawks, owls, or snakes
- Install fumigants such as aluminum phosphide and various gas cartridges
- Set chemical control traps using toxic baits



## Vegetation Management

- Use chemical treatments such as herbicides to remove vegetation
- Use mechanical treatments including cutting/mowing and removal of woody vegetation
- Use biological treatments such as introduction of a biological agent
- Implement prescribed fire
- Stock grazing animals such as cattle or goats to remove grasses and brushy vegetation



## Infrastructure

- Relocate and expand maintenance facilities
- Maintain roads at existing locations to the maximum extent possible; relocate if necessary to minimize impacts
- Expand visitor center to support enhanced maintenance facilities



## Museum Collections

- Minimal growth to museum collection from archeological recovery activities



## Research and Interpretation

- Maintain current visitor center and curation facilities
- Focus interpretation and research on methods to preserve sites in place and low impact research methods (e.g. geophysical exploration)
- Expand collection of ethnographic data and analyses of existing collections
- Limited sub-surface investigations; increased interpretation for non-invasive investigations





# Alternative 3

Management intervention to address impacts from threats would be targeted at archeological sites with the greatest importance. Techniques causing the fewest impacts to natural resources and incorporating low-impact bioengineering techniques would be used. The following actions would comprise Alternative 3:



## Riverbank Erosion Management

- Implement bank stabilization projects using soil bioengineering techniques (i.e. “soft” stabilization) for high priority sites
- Install rip-rap for toe protection on high priority sites
- Monitor low or moderate priority sites to identify areas for archeological recovery and documentation



## Burrowing Mammal Management

- Control high priority sites with habitat modification, lethal trapping, plant repellants, nuisance techniques, or natural predators
- Cease management for low or moderate priority site



## Vegetation Management

- Use prescribed burns, cutting and removal of woody plants, mowing, chemical treatment, biological controls, grazing (e.g. cattle, goats, horses), haying, replacement of existing vegetative cover, hydroseeding/seed mats, soil augmentation for high priority sites
- Manage via actions outlined in the Exotic Plant Management Plan and Fire Management Plan for low or moderate priority sites
- Revegetate with native species only



## Infrastructure

- Limit county road r8 to existing grade and right-of-way
- Cease protection measures for all other road routes including County Road 37
- Maintain current visitor center
- Locate maintenance facilities outside of park



## Museum Collections

- Expand storage capacity to address anticipated collection growth from archeological recovery activities



## Research and Interpretation

- Focus on site preservation, use of minimally invasive techniques, expansion of the ethnographic data collection, and analysis of existing collection
- Implement minimal disturbance archeological recovery actions and sampling strategy
- Focus interpretation on communicating the park’s management plan including the potential for archeology to provide information on human adaptation to climate change





# Alternative 2

No new management actions would be taken to prevent current threats. Park staff would focus on monitoring and identifying archeological sites that are being impacted and archeological recovery and mitigation would be implemented based on site importance. The following actions would comprise Alternative 2:



## Riverbank Erosion Management

- Cease new bank stabilization projects
- Cease maintenance of existing bank stabilization projects
- Monitor to identify sites with high threat of being impacted
- Continue archeological recovery and documentation of artifacts



## Burrowing Mammal Management

- Cease current lethal gopher trapping



## Vegetation Management

- Implement the Exotic Plant Management Plan and Fire Management Plan
- Continue native prairie restoration outside of established village sites
- Continue mowing on the three main village sites



## Infrastructure

- Maintain existing park facilities
- Seek alternative access to the maintenance facilities if County Road 18 failed
- Cease protection measures for all other routes including County Road 37



## Museum Collections

- Increased space to house larger collections and provide public interpretation
- Expand storage capacity to accommodate an increase in archeological artifacts
- Expand visitor center and museum curation facility
- Encourage public involvement in research activities and interpretation
- Create additional lab space



## Research and Interpretation

- Focus research efforts on archeological recovery such as geophysical exploration and mapping, large scale excavations and ethnographic research
- Use virtual tools for site interpretation
- Focus on communicating the park’s management approach and connection to tribes
- Expand interpretive exhibits
- Develop lab space that is accessible to the public for interpretation and educational purposes





# Alternative 1

The National Environmental Policy Act (NEPA) requires federal agencies to fully evaluate and consider a range of reasonable alternatives that address the purpose of and need for action. Alternatives under consideration must include a “no-action” alternative in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.14).

## Alternative 1: No Action Alternative

Current management of archeological resources would continue, management of threats would be primarily reactionary. Specific management actions would include:



### Riverbank Erosion Management

- Implement stabilization projects as reactionary measures during emergency events
- Maintain existing bank stabilization projects
- Monitor active erosion areas
- Perform archeological recovery to the extent possible



### Burrowing Mammal Management

- Continue lethal gopher trapping
- Recover unusual, rare, or desirable archeological items excavated by burrowing mammals



### Vegetation Management

- Continue the Exotic Plant Management Plan and Fire Management Plan
- Excluded prescribed fire from high density artifact areas including the village sites
- Monitor vegetation annually
- Continue mowing on the three main village sites
- Hold periodic prescribed fires for archeological research purposes



### Infrastructure

- Maintain existing park facilities
- Relocate trails in response to riverbank erosion.
- Maintain bank stabilization project protecting County Road 18
- Maintain the replica earthlodge
- Pursue repairs to the visitor center to address water infiltration issues



### Archeological Resources Management

- Assess and monitor archeological site conditions
- Implement small scale and site-specific research projects
- Adhere to current Park policy for staff finds and collection of objects for the museum collection
- Continue site interpretation and maintenance activities including: mowing visitor trails, interpretive programs, and special events educational activities
- Develop and implement an inadvertent discovery plan for compliance with Native American Graves Protection and Repatriation Act



### Museum Collections

- Continue collection, recording, and storing artifacts and follow existing procedures