

National Park Service
U.S. Department of the Interior



Herbert Hoover National Historic Site
West Branch, Iowa

Fire Management Plan, 2007

Revision of the 2002 Fire Management Plan



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12/18/07

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Summary

When approved this document will supersede the Herbert Hoover National Historic Site Fire Management Plan approved in 2001. Major components include:

- Implementation of Director's Order #18 Wildland Fire Management. USDI, NPS. 2005
- Wildland fire suppression with no use of wildland fire
- Implementation of fire policy established in (1) [Interagency Policy Guidance \(Prescribed Fire, Wildland Fire Use\)](#), (2) [Fire Program Analysis \(FPA\)](#), (3) [Interagency Standards for Fire and Fire Aviation Operations \(Red Book\)](#), (4) [Federal Wildland Fire Policy \(1996\)](#), and (5) [Federal Wildland Fire Management Policy and Program Review Implementation Action Plan Report \(2001\)](#)
- Further implementation of updated policies under the (1) [2001 Federal Wildland Management Policy and Program Review \(USDA/USDI 2001\)](#); (2) [Managing Impacts of Wildfires on Communities and the Environment, and Protecting People and Sustaining Resources in Fire Adapted Ecosystems – A Cohesive Strategy \(USDI/USDA\)](#); and (3) [A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan](#).

This plan is written to provide guidelines for appropriate wildland fire suppression and use of prescribed fire programs at Herbert Hoover National Historic Site. Prescribed fires may be used to reduce hazard fuels, restore the natural vitality and variability of ecosystem, remove or reduce alien species, or conduct research into fire effects.

The effects of fire control as well as land use changes have caused changes to natural patterns of vegetation that occurred in fire adapted ecosystems. The long range goals of Herbert Hoover National Historic Site are (1) to maintain the Natural Zone, which is a Wildland Urban Interface, in a manner that will not threaten public health, public safety, or surrounding properties, and (2) to restore tallgrass prairie as a facsimile of the pre-European settlement ecosystem that existed in eastern Iowa.



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**Herbert Hoover National Historic Site
Fire Management Plan 2007**



I. Introduction

A. Reasons for Developing This Plan

This Fire Management Plan (FMP) outlines actions that will be taken by Herbert Hoover National Historic Site (park) in meeting the fire management goals for the park. This plan satisfies the requirement asserted in *Director's Order 18* (DO-18) that “each park with vegetation capable of burning will prepare a fire management plan to guide a fire management program that is responsive to the park’s natural and cultural resource objectives and to safety considerations for park visitors, employees, and developed facilities.” It serves as a detailed program of action by providing specific guidance and procedures for accomplishing wildland fire management objectives. It addresses wildfire suppression, where protection of structures, cultural resources, and neighboring properties is paramount.

B. Collaborative Processes towards Management Planning

In concert with other bureaus, the National Park Service takes responsibility for the fire management planning and develops policies, guidance, and standards for fire management on park land. Each NPS unit will utilize an adaptive management process to plan, implement, and evaluate the fuels management program. This process should consider the effectiveness of planning and collaborative processes. The adaptive management process is an example of how a park can communicate, collaborate, and coordinate with concerned and interested parties.

The park established and followed a process for communication, collaboration, and coordination for the planning, preparation, implementation, and evaluation of fire management with adjoining and affected federal, state, and local agencies, and private landowners. This provided a forum for raising and resolving issues, exchanging skills and resources, monitoring and evaluating accomplishments, and providing for communication among affected parties.

The principle collaborator in fire management activities is the West Branch Volunteer Fire Department (VFD), whose firefighters are the first responders to wildland fire on site. Because of the proximity to the City of West Branch, Iowa, the city administrator and council collaborated on fire management planning. Additionally, agencies with natural resource responsibilities have assisted in development and reviewed the fire management activities and planning. As in all actions taken at this park, the State Historic Preservation Office has remained an ongoing consultant in the preservation of the park’s cultural resources.

C. Implementation of Federal Fire Management Policy

This plan allows the park to manage natural resources in the most effective and efficient manner, which includes the use of prescribed fire. It will implement fire management policies and help achieve resource management and fire management goals as defined in:

(1) the [2001 Federal Wildland Management Policy and Program Review \(USDA/USDI 2001\)](#); (2) [Managing Impacts of Wildfires on Communities and the Environment, and Protecting People and Sustaining Resources in Fire Adapted Ecosystems – A Cohesive Strategy \(USDI/USDA\)](#); and (3) [A Collaborative Approach for Reducing Wildland Fire](#)



[Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan.](#)

D. Compliance

This document complies with National Environmental Protection Act (NEPA) and requirements of the Iowa State Historic Preservation Office (SHPO). An environmental assessment that analyzed impacts to resources was developed for the 2001 FMP. This 2007 revision of the 2001 FMP serves to fulfill the requirements of DO-18, but it contains no changes to the alternatives selected in 2002 or to the project area or any other factor that might affect the original impact analysis. A Memorandum to File states that the impact analysis from 2001 applies to this 2007 FMP.

Iowa State Historic Preservation Office (SHPO) consultation is documented with the Memorandum to File, and meets Section 106 of the National Historic Preservation Act (NHPA) requirements. Prescribed fire preparations will include consultation with SHPO. This will be completed in the annual meeting between SHPO and park staff in which activities and undertakings for the year are reviewed.

Constant vigilance on the part of park staff and science based reports from the Heartland Network Inventory and Monitoring Program will allow the park to employ adaptive management in the implementation of this FMP. In the event that environmental conditions change over the course of this FMP implementation, consideration will be given to revising or amending this document.

E. Authorities for Implementing this Plan

The Organic Act of the National Park Service (August 25, 1916, Section 102) provides the authority for implementation of this plan. This act states that the primary goal of the National Park Service (NPS) is to preserve and protect the natural and cultural resources found on lands under its management in such manner as will leave them unimpaired for future generations.

The NPS management policies ([DO-18](#), and [Reference Manual 18](#), [RM-18]) provide guidance for FMP development and implementation. The most recent approved versions of these documents should be referenced to check for changes and updates. A new version of RM-18 is expected out "anytime," and all references to RM-18 in this FMP should be checked and updated during the required annual reviews of the plan. The park's fire management objectives conform to the referenced documents. Servicewide fire management policy is expressed in the current revisions of the Director's Orders and attendant Reference Manual, and [Wildland Fire Use Implementation Procedures Reference Guide](#) (May 2005 - Minor Revisions March/April 2006), and is incorporated herein by reference.

Authorities to enter into agreements with other federal bureaus and agencies; with state, county, and municipal governments; and with private companies, groups, corporations, and individuals are cited in [Director's Order #20: Agreements \(DO-20, USDI 1999\)](#). Federal wildland fire policy is established in

[Interagency Policy Guidance \(Prescribed Fire, Wildland Fire Use\)](#)

[Fire Program Analysis \(FPA\)](#)

[Interagency Standards for Fire and Fire Aviation Operations \(Red Book\)](#)



[Federal Wildland Fire Policy \(1996\)](#)

[Federal Wildland Fire Management Policy and Program Review Implementation
Action Plan Report \(2001\)](#)

Statutes cited below authorize and provide the means for managing wildland fire on lands under the jurisdiction of the Department of the Interior, or lands adjacent thereto.

- Organic Administration Act of June 4, 1897 (16 U. S. C. 551)
- Weeks Law, Act of March 1, 1911 (16 U. S. C. 563)
- National Park Service Act of 1916 as amended (67 Stat. 495; 16 U.S.C. 1 et seq.)
- Protection Act of September 20, 1922 (42 Stat. 857; 16 U.S.C. 594)
- Clark-McNary Act of 1928 (45 Stat. 221; 16 U. S. C. 487)
- McSweeney-McNary Act of 1928 (45 Stat. 221; 16 U.S.C. 487)
- Economy Act of June 30, 1932 (47 Stat. 417; 31 U.S.C. 1535)
- Taylor Grazing Act of June 28, 1934 (48 Stat. 1269; 43 U.S.C. 315)
- Oregon and California Act of August 28, 1937 (50 Stat. 875; 43 U.S.C. 1181e)
- Bankhead-Jones Farm Tenant Act of July 22, 1937 (7 U. S. C. 1010 - 1011)
- Federal Property and Administrative Service Act of 1949 (40 U.S.C. 471; et seq.)
- Reciprocal Fire Protection Act of May 27, 1955 (69 Stat. 66; 42 U.S.C. 1856a)
- Clean Air Act of July 14, 1955, as amended (42 U. S. C. 7401 et seq.)
- Multiple-Use Sustained Yield Act of 1960 (16 U. S. C. 528)
- Wilderness Act of 1964 (16 U. S. C. 1131 - 1132)
- National Wildlife Refuge System Administration Act of 1966 as amended (80 Stat. 927; 16 U.S.C. 668dd through 668ee)
- National Environmental Policy Act of 1969 (42 U. S. C. 4321)
- Alaska Native Claims Settlement Act of 1971 (85 Stat. 688; 43 U.S.C. 1601)
- Endangered Species Act of 1973 (16 U. S. C. 1531 - 1544)
- Disaster Relief Act of May 22, 1974 (88 Stat. 143; 42 U.S.C. 5121)
- Federal Fire Prevention and Control Act of 1974 (88 Stat. 1535; 15 U.S.C. 2201)
- National Forest Management Act of 1976 (16 U. S. C. 1600 et seq.)
- Federal Land Policy and Management Act of 1976 (90 Stat. 2743)
- Federal Grant and Cooperative Agreement Act of 1977 (P.L. 950224, as amended by P.L. 97-258, September 13, 1982 (96 Stat. 1003; 31 U.S.C. 6301 thru 6308)
- Alaska National Interest Lands Conservation Act of 1980 (94 Stat. 2371)
- Supplemental Appropriation Act of September 10, 1982 (96 Stat. 837)
- Wildfire Suppression Assistance Act of 1989 (P.L. 100-428, as amended by P.L. 101-11, April 7, 1989), 42 U. S. C. 1856
- Indian Self-Determination and Education Assistance Act (PL 93-638) as amended
- National Indian Forest Resources Management Act (P. L. 101-630 November 28, 1990)
- Tribal Self-Governance Act of 1994 (P.L. 103-413)
- Department of the Interior and Related Agencies Appropriations Act, Fiscal Year 1995 (P.L. 103-332)
- National Wildlife Refuge System Improvement Act of 1997 (P.L. 105-57)
- Federal Financial Assistance Management Act of 1999 (P.L. 106-107)
- Healthy Forest Restoration Act of 2003 (P.L. 108-18, 117 Stat. 1887)
- Tribal Forest Protection Act of 2004 (P.L. 108-287)
- Department of the Interior, Departmental Manual; Part 620: Wildland Fire Management; Chapter 4: Fuels Management and Wildland-Urban Interface Community Assistance
- Department of Agriculture, US Forest Service Manual; FSM 5100: Fire Management; Chapter 5140: Fire Use
- National Historic Preservation Act (1966 as amended)



II. Relationship to Land Management Planning and Fire Policy

Wildland fire once maintained the tallgrass prairie ecosystem in Iowa. Forest cover occurred in floodplains, where moisture content excluded wildfire, but fire prevented the succession of prairie and oak-hickory savanna outside of the moist floodplain. Tallgrass prairie and savanna predominated in the landscape during the last 8000 years until settlement by Euro-Americans in the mid-1800s. This settlement began an unprecedented land use conversion that resulted in 97% of Iowa's tallgrass prairie converted to agricultural purposes.

It is the policy of the NPS to allow natural processes to occur to the extent practical while meeting park unit and Management Zone objectives. The goal of fire management in the NPS system is to restore fire to park ecosystems where appropriate and possible. Wildland fire has been defined as any non-structure fire that occurs in the wildland. Three distinct types of wildland fire have been defined and include wildfire, wildland fire use, and prescribed fire. Wildland fire use is the employment of naturally ignited wildlands to meet management objectives. Prescribed fire is purposefully ignited fire intended to meet management objectives. Use of wildland fire has been defined as either wildland fire use or prescribed fire applications to meet resource objectives.

Wildfire will be met with immediate suppression in this park, because of the proximity of historic buildings and the city of West Branch. Wildland fire use will not be employed at this park, because of the risk to the local infrastructure and property that compose the Wildland Urban Interface (WUI), the small size of the park, and the lack of on site fire personnel to monitor and respond to wildland fire. Prescribed fire will be used in the tallgrass prairie as an important management tool to control exotic weeds and woody vegetation in support of the commemorative appearance of the cultural landscape. It will serve as the principal tool to increase native plant diversity in the prairie community. The desired conditions for the prairie involve maintaining a facsimile of the tallgrass prairie that once covered much of Iowa (General Management Plan 2004 [GMP]). The Resource Stewardship Strategy (RSS) defines parameters that would indicate achievement and maintenance of desired conditions for the reconstructed prairie. It stipulated a target value for plant diversity as measured by a diversity index, and a tolerance level for invasive and exotic plants measured in percent relative cover. Fire has been shown to effectively control some exotic and invasive plants. It also prepares the seedbed for natural and supplemental propagation of prairie plants. By returning nutrients to the soil, fire contributes to the health of the native plant community.

A. NPS Management Policies Concerning Fire Management

Principal considerations in park fire management programs, as stipulated in [Reference Manual-18](#) (RM-18), include

- protection of human life, both employee and public
- protection of facilities and cultural resources
- perpetuation of natural resources and their associated processes

These considerations apply to the park and the surrounding city and landscape. The presence of historic structures in the park, and people and human development in and around the park, require that protection of life and property be a primary concern in fire



management. Prescribed fire reduces the presence of combustible fuels in the prairie and may prevent loss of life or damage to resources inside and adjacent to the park.

This plan complies with the [Management Policies 2006](#), Chapter 4, Natural Resource Management, by guiding a program that

- responds to the park's natural and cultural resource objectives;
- provides for safety considerations for park visitors, employees, and developed facilities;
- addresses potential impacts on public and private neighbors and their property adjacent to the park;
- and protects public health and safety.

All wildland fires will be effectively managed through application of the appropriate strategic and tactical management options as guided by this FMP. Human-ignited fires managed to achieve resource management and fuel treatment objectives, and the smoke they produce, will both be managed to comply with applicable local, state, and federal air quality regulations. The FMP will provide a systematic decision-making process to determine the most appropriate management strategies for all unplanned ignitions and for management-ignited fires that are no longer meeting resource management objectives.

B. Enabling Legislation and Purpose of Herbert Hoover NHS

Herbert Hoover NHS enabling legislation (79 Stat. 510; 16 U.S.C. 1 et seq.; 16 U.S.C. 461-467), authorized August 12, 1965, provided for the preservation in public ownership historically significant properties associated with the life of Herbert Hoover. That included necessary acres of land in or near West Branch. Omnibus act, P.L. 92-272 (86 Stat. 120; April 11, 1972) authorized an increase in the development and land-acquisition ceilings of the site in order to commemorate Herbert Hoover.

According to the enabling legislation, values to be protected include those attributes that memorialize Herbert Hoover, encompassing his Birthplace Cottage (established as a National Historic Landmark in 1965), Gravesite, Presidential Library-Museum, Friends Meeting House, and Blacksmith Shop. Additional values to be protected include the Schoolhouse, statue of Isis, Isaac Miles Farm, Thompson Farm, tallgrass prairie, a tributary to the west branch of Wapsinoc Creek, and the cultural landscape, a dignified setting and representation of the Hoover's neighborhood within the city of West Branch, Iowa. Both the enabling legislation and Organic Act mandate that these values be maintained unimpaired for future generations. Fundamental Resources and Values were established during the development of the Resource Stewardship Strategy (draft, 2006) by a committee of park staff, regional staff, and a regional planner:

- Birthplace Cottage and Grounds: the modest Birthplace Cottage in which Herbert Hoover was born remains a tangible artifact of his humble beginnings.
- Gravesite: the final resting place of Herbert Hoover and his wife Lou Henry Hoover lies on a hillside overlooking the Birthplace Cottage.
- Vista: the vista between the cottage and Gravesite illustrates that anyone can start from a simple life and achieve great things.
- Quaker Meetinghouse: provides visitors an opportunity to experience the quiet contemplative space and values that were important in Hoover's life.
- Serene and Simple Setting: the visitors experience the serenity of the landscape and explore the simplicity of the small town rural character with all of their senses.



Although Fundamental Resources and Values are those things around which the park is based, Other Important Resources and Values not primary to the park's purpose and significance are also important to park management. These Other Important Resources and Values include:

- The statue of Isis and associated formal plantings
- Design of the east façade of the Herbert Hoover Presidential Library
- The cultural landscape, archeology, and other structures
- Park museum collection objects on display
- Natural/rural aesthetic of the reconstructed prairie and adjacent open space
- Reconstructed prairie plant community
- Stream and riparian community
- Setting associated with the Thompson farm
- Thompson farm maintenance facility landscape in harmony with adjacent zones

The 2007 draft RSS defines the natural/rural setting as an Other Important Resource of the park. The setting supports the Fundamental Value of a Serene and Simple Setting which offers visitors the opportunity to explore and experience the peaceful landscape. To achieve this sense of place, the park manages natural resources to meet all applicable laws, policies, and management standards to preserve, but not fully restore the ecosystem, and thus support the commemorative nature of the site. The natural resource component of the RSS addresses the issue of fire management in a general manner. This specific action plan implements fire related management as presented in the Natural Area Zone Comprehensive Strategy of the RSS.

C. General Management Plan (GMP) as It Relates to Wildland Fire

The GMP delineates zones or districts that correspond to management prescriptions in an area-specific context (figure 1). The different prescriptions for resource conditions, visitor experience, and appropriate management activities reflect the suitability of specific areas for specific uses. Some prescriptions may apply parkwide, but the delineation of Management Zones illustrates where there are differences in intended resource conditions, visitor experience, and management activity. The park GMP established seven geographically defined Management Zones within the park, each with its own desired conditions. Fire management activities predominantly refer to the Natural Zone of the park, because fire outside of that zone would generally be structural fire.

Desired conditions are a qualitative description of the integrity and character for a set of resources and values, including visitor experiences, which the NPS has committed to achieve and maintain. Area-specific desired conditions include these qualitative descriptions as well as guidance on visitor experience opportunities and appropriate kinds and levels of management, development, and access (modes of transportation) for each area of the park. The Resource Management section of the GMP states

“The Natural Zone would provide a natural, spacious setting to support the commemoration of Herbert Hoover. The NPS would manage natural resources to meet all applicable laws, policies, and management standards to preserve, but it would not fully restore the ecosystem. Visitors would have the opportunity to experience the influence of the natural world on Herbert Hoover’s life through interpretation, contemplation, and recreation. They would experience opportunities



for personal exploration and discovery. They would have a low probability of encountering staff or other visitors with a high degree of solitude. Simple footpaths would provide access. A modest amount of interpretive programs and media would promote understanding. Recreational walking and cross-country skiing would occur in this zone.”

The achievement and maintenance of these desired conditions is the focus of park management, with the desired conditions for park resources as the objective of a cultural and natural resource stewardship program.

Fire management goals are addressed more specifically in the RSS. The document maintains that NPS will manage resources to provide a natural setting to support the commemorative emphasis of the site, but also specifies the plant diversity parameters and exotic weed level tolerance that would indicate achievement of goals. The Comprehensive Strategies for the Natural Zone include the implementation of the Fire Management Plan.

D. Resource Stewardship Strategy and Fire Management Objectives

The Resource Stewardship Strategy (RSS) nests within the authority of the GMP and relates directly to resource management on the site. The RSS states:

The park’s GMP established desired conditions that serve as the cornerstone for RSS development. The Comprehensive Strategies recommended in this RSS are consistent with the GMP and provide the best science- and scholarship-based approaches to achieving and maintaining desired conditions. Park-level strategic planning remains critical to decision-making on the allocation of park financial and human resources. While the GMP describes the desired conditions that are to be ultimately achieved, the 5-year and annual performance plans (strategic planning) describe what realistically can be achieved based on foreseeable financial and human resources. The RSS provides 10- to 20-year Comprehensive Strategies for a logical, long-term investment in achieving and maintaining desired conditions. The activities comprising these Comprehensive Strategies inform the sequence, duration, and association between recurring and non-recurring actions to be considered during park strategic and implementation planning.

The FMP is an implementation plan under the RSS and defines the actions and undertakings that will be used to attain and maintain desired conditions.



Figure 1: Management zones designated in the GMP.

Herbert Hoover National Historic Site





E. How the FMP will Help Meet GMP and RSS Goals

Implementation of the FMP will support the park by

- reducing the fuel load through prescribed fire and thus reducing the opportunity for wildfire threats to human life and cultural resources in and around the site;
- protecting and conserving the natural and historic resources associated with the life of Herbert Hoover by setting the policies associated with fire suppression and prescribed fire; and
- attaining and maintaining the desired conditions for the Natural Zone by improving conditions in the prairie that permit plant diversity and reduce exotic and invasive plant cover.

Implementation of the FMP will also contribute to meeting goals specified in the Strategic Plan, as part of the requirements of the Government Performance and Results Act. The Strategic Plan specifically addresses the condition of the prairie within Goal Category I, Mission Goal Ia1B concerning preservation of park resources.

Prescribed fire is one of the management tools listed in the work plan to achieve this goal in the prairie. Specifically, fire will improve conditions in the Natural Zone by

- shifting species composition from exotic species (Kentucky bluegrass, smooth brome) to native plant species;
- restoring the mosaic pattern of plant communities associated with different soil and moisture conditions;
- using a natural process that effectively and efficiently contributes to native community management.



III. Wildland Fire Management Strategies

The [2006 Interagency Prescribed Fire Burn Planning and Implementation Procedures Reference Guide](#) stipulates key points for wildland fire policy. Using these points, NPS policies, and park planning documents, the following goals and objectives describe the scope of a wildland fire management program for the park. Wildland fire objectives apply to the area of the park specified as Natural Zone in the GMP and as Fire Management Unit 2 in this plan.

A. General Management Considerations

Fire management activities fall under the oversight of the Midwest Regional Office (MWRO) Fire Management Officer (FMO) and are implemented by the MWRO Fire Staff. Interagency coordination and cooperation is essential for successful implementation of the fire management program at the park. The MWRO Fire Staff coordinates these cooperative agreements and activities. Additionally, the park coordinates agreements for firefighting, protection of structures, and traffic control during fire operations.

1. Appropriate management responses should seek to

- Immediately suppress wildfire throughout the park -- due to the size of the park, cultural resources located within the park, and the close proximity of adjacent private holdings, full and immediate suppression of wildfires through an Appropriate Management Response (AMR) and Minimum Impact Suppression Tactics (MIST) is necessary.
- Limit fire size and contain it within the Fire Management Unit (FMU) – wildland fire will be likely only within FMU 2, where no structural assets and other vulnerable assets are located; by containing the fire to this FMU, assets and neighboring properties are protected.

2. Moreover, responses should be based on:

- Public and firefighter safety
- Cost expenditures that are commensurate with values to be protected
- Protection of cultural, historic, and natural resources
- MIST protocol
- Limiting fire line construction through use of existing barriers such as park roads
- Protection of park improvements (buildings, roads, etc.)
- Preventing fire spread onto private lands.

B. Wildland Fire Management Goals

Goal: Make firefighter and public safety the highest priority of every fire management activity.

Objective: Ensure all wildland fire and prescribed fire operations cause no injuries to the public and limit injuries to firefighters to be consistent with NPS Strategic Plan goals for employee safety.

Protection of human life is reaffirmed as the first priority in wildland fire management. Property and natural/cultural resources jointly become the second priority, with protection decisions based on values to be protected and other considerations.



Strategies:

- Qualified individuals will carry out fire management operations with the safe and skillful application of fire management strategies and techniques, consistent with DO-18 requirements
- All personnel involved in fire management operations will receive a safety briefing describing known hazards and mitigating actions based on Lookouts, Communication, Escape Routes, Safety Zones (LCES), current fire season conditions, and current and predicted fire weather and behavior. Only properly trained and certified personnel will be working on a fire. Other personnel will contribute with crowd control, smoke detection, weather condition assessment, and other aspects that can be accomplished in specified safe zones.
- Park neighbors, visitors, and the local residents will be notified of all planned and, when possible, unplanned fire management activities that have the potential to impact them. A comprehensive list of contacts to be made prior to prescribed burn will be included with each Prescribed Fire Burn Plan ([Appendix E, Table E2](#)).
- All or portions of the park will be closed to the public when fire activity poses a threat to human safety (at the discretion of the park superintendent). Safe zones will be established for visitors during prescribed fires. If the situation should warrant, safe zones will be closed to visitors and visitors will be removed from any potentially dangerous location.

Goal: Manage prescribed and wildland fires in concert with federal, state, and local air quality regulations.

Objective: Ensure air quality thresholds for National Ambient Air Quality Standards are not exceeded and visual quality is not reduced in adjacent air sheds due to fire use activities.

Visibility on the Interstate and highway may not be significantly reduced from smoke.

Strategies:

- Air quality objectives will be incorporated in each Prescribed Fire Burn Plan.
- Particular attention will be given to the hazards associated with the Interstate highway located on the park's southern border and the concerns of city residents on the remaining three sides of the park. Every consideration will be made to limit smoke impacts on the Interstate and the city. This includes go/no go decisions and decisions to extinguish fires if wind conditions alter after ignition.
- Smoke impact mitigation measures will be implemented for prescribed burn and all wildland fire actions.

Goal: Suppress all wildland fires regardless of ignition source to protect the public, check fire spread onto private property and to protect the natural, cultural, and historic resources of the park.

Objective: Contain 95% of wildfires at less than 20 acres in size, wherever suppression will not result in compromising public and firefighter safety or fire suppression will not result in damage that would exceed potential fire damage.

Strategies:

- Prioritize suppression actions on fires or portions of fires that threaten to damage public property.



- Ensure that eligible park staff is trained in wildland fire operations.
- Ensure that NPS staff responsible for fire operations understands fire policy.
- Identify potential sources of unwanted fire on the park and take steps to mitigate their potential impacts.
- Offer a good working relationship with West Branch Volunteer Fire Department that includes opportunities for wildland fire training.

Goal: Manage wildland fires so that park resources (natural, cultural, and improvements) are protected from damage by suppression actions and fire.

Objective: Manage suppression actions so that rehabilitation costs are less than 10% of suppression costs.

Strategies:

- Primary fire suppression responders (West Branch Volunteer Fire Department [VFD]) will be given opportunity for training in Minimum Impact Suppression Tactics (MIST). Every attempt will be made to implement MIST in wildland fire suppression operations.
- Ensure that fire operations personnel, including the local VFD firefighters, are briefed on the park resources and potential damage from fire and suppression actions.
- Have a resource advisor present on all suppression actions.

Goal: Facilitate reciprocal fire management activities through the development and maintenance of cooperative agreements and working relationships with pertinent fire management entities.

Objective: Annually review and modify as necessary agreements with the organizations responsible for wildland fire suppression and collateral public safety duties.

Strategies:

- Coordinate with the following entities:
 - West Branch Volunteer Fire Department (VFD)
 - Public Safety: Cedar County Sheriff, Iowa State Patrol, West Branch Police Department
 - Agencies with similar responsibilities for wildland fire: Department of Natural Resources, Army Corps of Engineers (DOD), US Fish and Wildlife Service (DOI)
- Encourage the use of MIST protocol and assist with firefighter training in techniques used within the park whenever appropriate and feasible.
- Cooperate with adjacent landowners to prevent wildfire on adjacent lands.

Goal: Use prescribed fire where and when appropriate as a tool to meet resource management objectives consistent with NPS policies. Maintain or restore the primary natural resources of the tallgrass prairie and open woodland, and the natural processes by which they are maintained.

Objective: Focus the use of fire to target specific restoration issues within the tallgrass prairie (e.g., woody plant control, biennial weed control, etc.)

Strategies:

- Continue to use fire in 90% of the fire-dependent ecosystems within the park during the next five years to attain and maintain desired conditions.



- Achieve resource objectives, such as
 - Reduce woody plant cover
 - Reduce invasive/exotic grasses and forbs relative cover to levels set forth in the Resource Stewardship Strategy
 - Increase native plant diversity as recommended in the Resource Stewardship Strategy
 - Improve stream bank stability by improving herbaceous cover species that reduce soil erosion.
- Implement hazard fuel reduction burns throughout the prairie to reduce intensity of subsequent unwanted wildland fires.
- Monitor the effects of fire on the ecosystem.

Goal: Reduce wildland fire hazard around developed areas, along interface boundary areas and adjacent to cultural and historic assets.

Objective: Ensure fire does not destroy any administrative or historic structure, nor incur costly damage (rehabilitation costs greater than \$10,000) to any cultural or historic edifice or cultural landscape. Ensure that fire does not escape the park and cause damage to adjacent city or farms.

Strategies:

- Apply mechanical hazard fuel reduction around suppression zones to reduce fire intensity and severity.
- Apply mechanical hazard fuel reduction around vulnerable cultural and historic sites for protection from fire damage
- Employ fire wise landscaping and ground maintenance techniques wherever practical within the scope of preserving the resource as outlined in the park's enabling legislation

C. Wildland Fire Management Options

1. Wildland Fire

The park will suppress all wildland fires that are not purposefully set according to an approved burn prescription. Any prescribed fire that deviates from its prescription will be suppressed. Manual fuel reduction along the boundary, via mowing and removal of brush may reduce fire intensities and the chance that fire will exceed the boundaries. Fire breaks are mowed and maintained along the park's southern and western boundaries. The park's trail system includes mowed paths that can be used as control lines in prescribed or wildfire operations. The stream provides a natural fire break between the largest portion of the prairie and the city on the north side of the park.

a. Wildland Fire Suppression

All wildland fires will be suppressed using Initial Attack actions and using appropriate management response. Management responses to specific wildland fires will be determined through evaluation of public and firefighter safety, fire behavior, values at risk, potential suppression damage, and availability of fire management resources. Management responses will vary from fire to fire and sometimes even along the perimeter of a fire. All available park and local firefighting resources will be utilized as necessary to limit damage to values at



risk, protect private and public lands outside the park boundary, and provide for the health and safety of fire fighters and the public. Appropriate management response options range from containment and monitoring to intense suppression actions on all perimeters of the fire.

b. Wildland Fire Use

One management strategy not available to the park is wildland fires managed for resource benefits (wildland fire use). Wildland fire use is a strategy for allowing naturally ignited wildland fires, to burn as long as the fire meets pre-stated resource management objectives and prescriptive parameters are not exceeded. Due to the small area involved in this park and the surrounding values, a wildland fire use program will not be implemented. It is unlikely that fire use will ever be an option for park units like this one, where an ignition could leave the park in less than one operational period, immediately effecting values outside of the NPS boundary.

2. Prescribed Fire

Prescribed fires are intentionally ignited under predetermined weather and fuel-moisture conditions allowing managers to exert substantial influence over the spread and intensity of the fire. Managers ignite these fires to accomplish resource management objectives and subsequently reduce hazard fuel as well. All prescription parameters, acceptable ranges, and objectives are clearly stated in a Prescribed Fire Burn Plan for each prescribed fire conducted.

a. Hazard Fuel Reduction

Park managers will use fire for hazard fuel reduction within the prairie as needed. These projects will be documented with a written plan approved by the park superintendent. Each plan will describe the fuel hazard and the values at risk. The plan will specify proposed mitigation action with scope of work to be completed, and cost breakdown associated with the mitigation. Firefighter, public, and visitor safety associated with public use areas and travel corridors will be of highest priority, followed by protection of public and private property.

Managers may use fire to meet objectives for hazard fuel management activities outside of developed areas, while maintaining the fire dependency of the ecosystem treated. Managers may select mechanical removal of hazard fuel in areas with excess fuel loads and in areas outside of the Natural Zone. This program will reduce hazard fuel to levels that limit the probability of accidental ignition of fuels and that enable wildland fire suppression forces to control fires with minimal loss of values to be protected, should fire occur.

Although hazard fuel reduction is one objective for prescribed fire, if the prairie is properly managed for ecological values, hazard fuel reduction will not become a pressing need. Mechanical hazard fuel reduction may be necessary prior to a prescribed fire in the vicinity of cultural resources or where woody fuels present a control problem.

b. Plant Community Management

Prescribed fire will be used in support of prairie and open woodland resource management to maintain and restore plant communities, increase plant diversity,



cycle nutrients, and reduce or remove exotic plants. The reconstructed prairie is not recognized as a fully functioning tallgrass prairie system, but it is a facsimile of the tallgrass prairie ecosystem that predominated in Iowa. Using natural processes will ensure that the prairie will continue to progress toward desired conditions established in the General Management Plan.

Managers will use fire in conjunction with other techniques to maximize benefits for Natural Zone restoration in the park. Literature suggests that prescribed fire is not effective in removal of some exotic or invasive species, such as Canada thistle (*Cirsium arvense*) and bullthistle (*Cirsium vulgare*), although results of prescribed fire in control of those species in the park prairie have been fair to good (Christiansen 1984). Managers must time prescribed fire with care when the intention is to reduce populations of cool season grasses, such as smooth brome (*Bromus inermis*) and reed canary grass (*Phalaris arundinacea*). Fire suppresses annuals, such as smartweed (*Polygonum pensylvanicum*) and giant ragweed (*Ambrosia trifida*) if seasonal timing is correct. Proper timing must be employed when fire is used to control biennials, such as white sweet clover (*Melilotis alba*) and wild parsnip (*Pastinaca sativa*). Care must be taken not to burn in either a regular even year or regular odd year pattern that would control one year-class of the biennial and allow the other to flourish.

Similarly, managers must consider the needs of wildlife, such as herpetofauna, birds, and insects that may be impacted by prescribed fire. Generally, there is a concern that prescribed fires not be set too late in the spring as to damage insect, bird, and herpetofauna populations. This is a particular concern in remnant prairies where populations have remained intact over time. Because the park prairie is a reconstruction, this concern is less pressing. Late spring burns will be used to achieve basic resource objectives, such as control of cool season grasses that encroach on the prairie, although the minor impacts on populations of insects, birds, and herpetofauna are acknowledged.

Managers will control woody plants in the prairie and open woodland understory using prescribed fire coupled with other treatments, such as mechanical removal and chemical application as necessary. This combination approach has proved effective at the park. Managers will rely less on costly mechanical removal and chemical application by utilizing prescribed fire regularly as the principal management tool for invasive plant control.

D. Description of Wildland Fire Management Strategies by Fire Management Unit

Fire Management Units (FMUs) are functional areas defined by their uniquely differing fire management objectives. These objectives are consistent with the management prescriptions within the Management Zones established in the GMP (figure 2). Fire management within Management Zones reflects the suitability of specific actions, uses, and functions within those zones.

One 44 acre unit of the park has not been included in this FMP. The Thompson Farm is in life estate and the park does not maintain its grounds or buildings. It is a traditional farm setting with row crops surrounding out-buildings. Fire on this land would be met with suppression by the VFD. The life estate does not permit the park to remove hazard fuels. Once this property comes under park management, it will become the Open Space



Zone and Maintenance Zone. It will receive consideration under an FMP revision at that time.

1. FMU 1

The 60 acres of urban-like lawns and greenway where historic buildings and other structures are located constitute a single FMU. This FMU consists of four Management Zones that fall outside of the Natural Zone; this includes the Commemorative, Recreation, Special Use, and Orientation Zones. The non-contiguous Maintenance and Open Space Zones of the Thompson Farm are under life estate and not actively managed for the natural resources located within the zones. This area will be treated in the same manner as FMU 1 until it becomes part of the park managed assets.

FMU 1 physical description

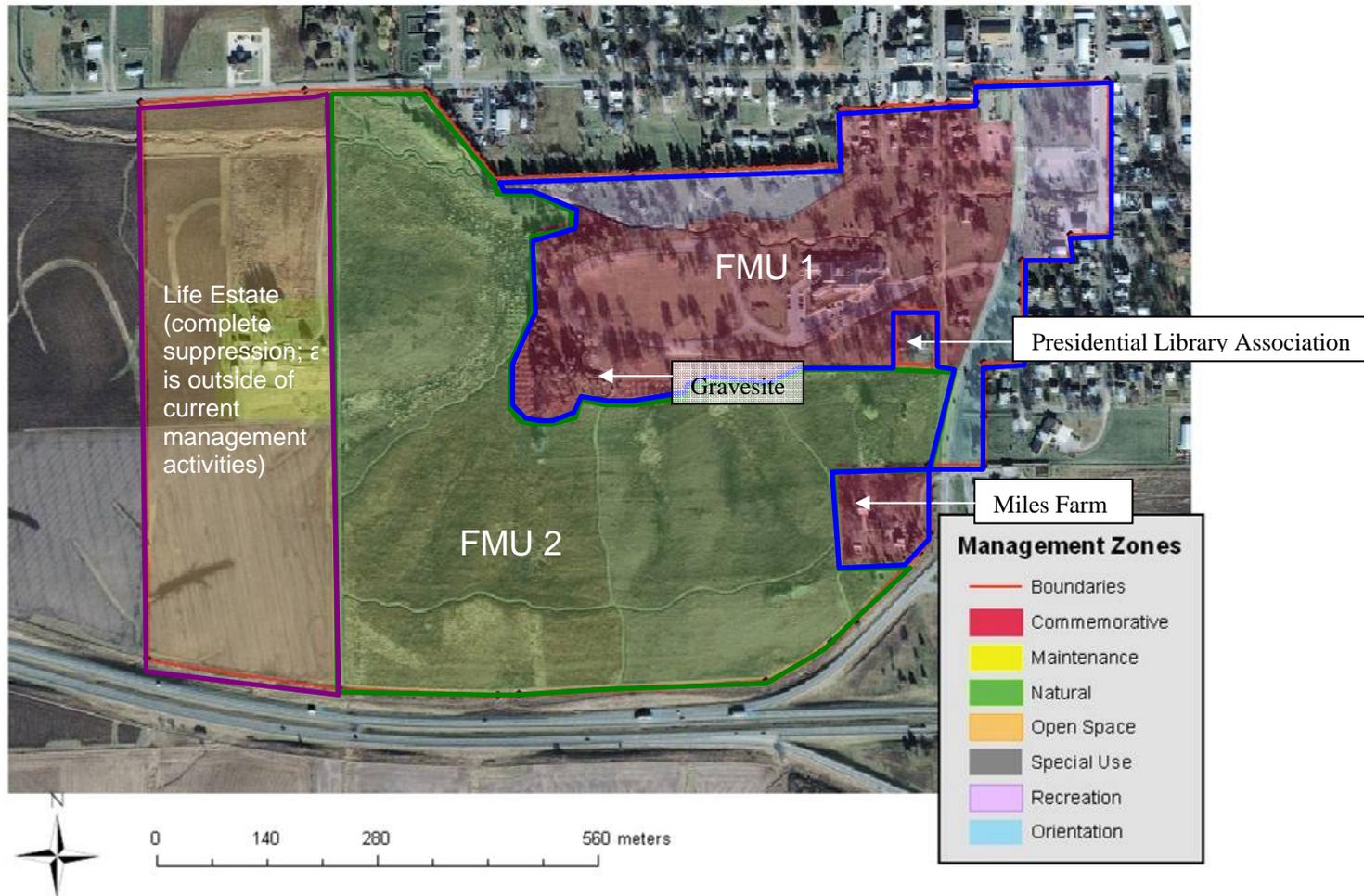
Herbert Hoover NHS is located within the city of West Branch in east-central Iowa. The city has a population of just over 2000 and serves the surrounding rural community. The park's historic core, picnic area, and other visitor services are contiguous with the city of West Branch. The area is relatively flat with 50 acres of mowed grasses and broadly spaced trees. The remaining acreage includes building footprints, parking lots, and roadways. The area lies in the flood plain of a tributary to the west branch of Wapsinonoc Creek. Roads, gravel traces, parking lots, and concrete and board walkways dissect the area. Wildlife in the area consists of species common to rural or suburban yards. No threatened or endangered species are known to exist within FMU 1.

FMU 1 fire management objectives

Because of the proximity to the city, the cultural resources within FMU 1, and the commemorative nature of the area, any and all fire in FMU 1 will be immediately suppressed by the VFD. Therefore, FMU 1 will not receive further description within this FMP.



Figure 2: Fire Management Units





2. FMU 2

The 76-acre reconstructed prairie dating from 1971 associated open woodlands and portions of the nut tree grove, abandoned turf in the early stages of restoration in PMU 1, accessible mid-height prairie near the Gravesite parking, and creek bank constitute FMU 2 and encompasses the Natural Zone, as stated in the draft GMP. The total area is approximately 85-acres.

a. *FMU 2 physical and biological description*

General:

The historic values to be protected are located in the northeast quadrant of the park away from FMU 2. The exceptions to this separation of cultural resources from FMU 2 include the Miles Farm and the Herbert Hoover Presidential Library Association in the southeast quadrant and the Gravesite, located near the north-central boundary of FMU 2. The prairie is considered part of the cultural landscape and a value to be protected.

Interstate freeway borders the southern edge of FMU 2. Farm fields of the Thompson Farm border the western edge. Parkside Drive, freeway entrance ramp, Miles Farm, and Herbert Hoover Presidential Library Association offices border the east edge. Park historic resources and city residences lie along the north. The historic resources and most city residences are separated from FMU 2 by extensive mowed greenway.

Topography and soils:

The topography is typical of the Southern Iowa Drift Plain. Soils originate from loess deposition on top of pre-Illinoian glacial material. Subsequent water erosion provided relief. The prairie consists of gently rolling terrain, which substantially influences microclimates within the unit.

The soils consist of five distinct silty-clay-loam types: Tama silty-clay-loam, Coco-Ely-Judson complex, Colo silty-clay-loam, Downs silty-loam, and Adair clay-loam. These soils have moderate to moderately slow permeability and are susceptible to sheet erosion. Presence of the extensive root structure of prairie plants enhances permeability and prevents sheet erosion.

Climatic conditions:

Temperatures range broadly over the annum with -28°F and 108°F representing the extremes. The average growing season extends over 183 days from April through September. Average precipitation is 36.31 inches with about 60% occurring during the growing season in late spring into summer (recorded by National Weather Service at site #134101, Iowa City).

Air and water quality:

Cedar County is listed in the top 20% of counties with organic chemical air pollution (www.scorecard.org). West Branch is the community within the county with highest concentrations of these pollutants. A single point source of this pollution is not identified, but local topography, proximity to an Interstate



freeway, and local light industry may contribute. No data are available for the park, nor is the source of these published ratings known.

A creek runs through the park from the northwest to the east-central boundaries. Development upstream impacts water quality in the tributary to this west branch of Wapsinonoc Creek. Upstream land uses within the watershed include active development of new residential and business zones, agricultural lands, a golf course, and existing residential housing. The Iowa Department of Natural Resources continues to monitor the stream above and through the park to locate the possible source of high concentrations of fecal coliform bacteria and nitrogen. Levels exceed state standards under the Clean Water Act. The creek floods periodically and shows signs of significant channel scouring (Final Hoover Creek Stream Management Plan and Environmental Impact Statement 2006)

Vegetation:

The reconstructed tallgrass prairie community provides cover on more than 90% of FMU 2. The prairie is divided into seven prairie management units (PMU) based on geographical and environmental factors. Each PMU is delineated by a mowed path, which serves as a firebreak.

Two open woodlands, planted in 1997 and 2000 on the southwest and the north-central portions of the prairie, respectively, make up the remaining cover within FMU 2. The open woodlands are treated as values to be protected. The longevity of the 1997 planting in PMU 5 is in question. Many of the trees were inappropriate selections for the location and have died. Remaining oaks show severe tatters. Fire is allowed to enter this planting, because the size of the oaks indicates a tolerance to fire. Open woodlands should be able to tolerate prescribed fire treatment when boles reach 10 cm diameter breast height. In the future when trees are larger, managers should reconsider the fuel models applied to those areas. Currently, the woodlands do not contribute to the fuel models.

Prairie grasses dominate with 46% relative cover with big blue stem (*Andropogon gerardii*) and Indian grass (*Sorghastrum nutans*) as predominant species. Prairie forbs constitute up to 43% of the cover. No overstory exists in the interior of FMU 2, and the open woodlands are not mature enough to be significant, quantitatively or qualitatively. Fire Behavior Fuel Model 3 (Anderson 1982), Tallgrass, characterizes FMU 2. The recent Scott and Bergan (2005) models GR6 and GR8 further characterize fire behavior in FMU 2.

Wildlife:

Native animals typical for this region are found within the park. Mammals include opossum (*Didelphis virginiana*), red fox (*Vulpes vulpes*), white-tailed deer (*Odocoileus virginianus*), and members of Cricetidae (mouse family), including *Peromyscus spp.* and *Microtus spp.*, plains pocket gopher (*Geomys bursaritus*), eastern cottontail (*Sylvilagus floridanus*), and representatives of Muridae (European mouse and rat), Mustelidae (weasel family), and Sciuridae (squirrels), raccoon (*Procyon lotor*), and eastern mole (*Scalopus aquaticus*) are known to use FMU 2. Eight bat species have been observed. See the mammal inventory in [Appendix C: Table C3](#)



Northern brown snake (*Storeria dekayi dekayi*), eastern garter snake (*Thamnophis sirtalis parietalis*), western ribbon snake (*Thamnophis proximus proximus*), fox snake (*Elaphe vulpine*), and bullsnake (*Pituophis melanoleucus savi*) are believed to inhabit the prairie. No amphibians are verified as occurring in FMU 2, but American toad (*Bufo americanus*) is expected, if not common. All herpetofauna can be impacted by late spring and summer fire. See the herpetofauna inventory in [Appendix C: Table C4](#)

The reconstructed prairie is considered too small to be an important breeding habitat for grassland birds, but numerous neo-tropical migratory birds use the area as a source of food. Species of special interest observed in FMU 2 include grassland obligate species sedge wren (*Cistothorus platensis*), dickcissel (*Spiza americana*), grasshopper sparrow (*Ammodramus savannarum*), Henslow's sparrow (*Ammodramus henslowii*), boblink (*Dolichonyx oryzivorus*), and eastern meadowlark (*Sturnella magna*) [Stravers, et. al. 2004]. Killdeer (*Charadrius vociferous*) are observed passing through or loitering in the mowed pathways. Indigo Bunting (*Passerina cyanea*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), and Eastern Bluebird (*Sialis sialis*) are observed along the edges. An assortment of common species is observed as being either residents or migrants, passing through the prairie. See the bird inventory in [Appendix C: Table C2](#)

Rare, threatened, and endangered species:

No federally listed threatened or endangered species are known to exist on the park. Many of the prairie plants are considered locally rare. Iowa classifies about 150 plant species as rare and many of these are tallgrass prairie species. The Henslow's Sparrow is an Iowa State listed threatened species that was observed in FMU 2. Should future inventory produce evidence of threatened or endangered species, this document will be amended to take them into account.

Cultural resources:

Archeologists have not surveyed FMU 2. The land had been agricultural during Herbert Hoover's years in West Branch and until its conversion to prairie in 1971. The constant tilling and soil disturbance makes the existence of surficial artifacts unlikely. This does not negate the value of any archeology within this area, but in fact may serve to protect the majority of once-surface deposits from damage due to fire and related activities. While the likelihood of significant damage to archeological deposits as a result of burns or burn suppression is low in FMU2, the area has never been inventoried for archeological materials. The Midwest Archeological Center has indicated a desire to inventory the prairie immediately after a prescribed fire, when indicators of potential archeology are most conspicuous.

Cultural resources border the east and north sides of FMU 2. Along the north side, most cultural resources are separated from FMU 2 by large expanses of mowed lawn. The exception is the Gravesite, which is adjacent to the nut tree grove and is a Fundamental Resource. Cultural resources on the west are separated from FMU 2 by agricultural fields and mowed grass.



b. FMU 2: Strategic Management Objectives

Within FMU 2, all wildfires will be suppressed using an appropriate management response with the intent of confining the fire to the smallest area within the FMU. The first priority during these suppression actions will be the safety of personnel and the public, including adjacent landowners. Management of FMU 2 is designed to meet the following FMP objectives:

- Fire fighter and public safety have the highest priority in all fire management activities. Wildland fire and prescribed fire operations will cause no injuries to the public and will limit injuries to firefighters to be consistent with NPS Strategic Plan goals for employee safety.
- Appropriate management response for all wildfires will be rapid containment and suppression to protect the public, check fire spread onto private property and protect the natural, cultural and historic resources of the park. Ninety-five percent of unwanted wildland fires will be contained at less than 20 acres of size. Fire suppression actions will be consistent with Minimum Impacts Suppression Tactics (MIST) and will ensure that rehabilitation costs are less than 10% of suppression cost.
- Prescribed fire will be used to re-establish the dominance of native species and preserve natural processes for the tallgrass prairie. Prescribed fire will be applied to 100% of the tallgrass prairie on a three to five year cycle. Prescribed fire together with other management practices will contribute to attaining target values for prairie plant community diversity and exotic plant relative cover stipulated in the Resource Stewardship Strategy.
- Hazard fuel management will be given important consideration, because of the adjacent cultural and historic values. Prescribed fire and, to a lesser extent, mechanical treatment will be used to reduce hazard fuel build-up, facilitating protection of values at risk. Mechanical hazard fuel reduction will be applied to borders of PMUs to create firebreaks and eliminate hot spots. If fuel loadings are high enough to make control of prescribed fires difficult then a two-stage process will be considered, such as mechanical treatment followed by prescribed fire.
- Prescribed fires will be accomplished under a prescription that minimizes escape possibilities. They will be accomplished in a manner that ensures 100% compliance with National Ambient Air Quality Standards.
- Emphasis will be placed on working relationships with pertinent fire management entities, such as the West Branch Volunteer Fire Department. Cooperative emergency services arrangements will be encouraged. Several of these agreements are in place (Appendix E).

c. FMU 2: Management Considerations

- All fire management activities will consider safety of personnel and the public as the highest priority.
- Park neighbors, park visitors and the local residents will be notified of all fire management activities that have the potential to impact them.
- No fire management operations will be initiated until all personnel involved receive a safety briefing describing known hazards and mitigating actions using Lookouts, Communication Escape Routes, Safety Zones (LCES), current fire season conditions, and current and predicted fire weather and behavior.



- Smoke management procedures for open burning in Iowa will be followed for all prescribed fire operations [[IAC 567—23.2\(455B\)](#)].
- MIST will be employed, including 5% tolerance for mortality among mature trees in adjacent areas.
- No bulldozer or grader use will be allowed unless approved by park superintendent.
- Protection mitigation measures for known historic, biological, and cultural resource sites in or near the project area must be assured before a prescribed burn project is initiated. A archeological inventory is recommended.
- Park superintendent must approve chainsaw use.
- All park closures will be at the discretion of the park superintendent.
- Qualified individuals will carry out fire management operations that promote the safe and skillful application of fire management strategies and techniques.
- All instances of fire will be followed by a submission of Iowa Wildland Fire Report Form ([Appendix E](#)).

d. *FMU 2: Historic Role of Fire*

This FMU does not allow for wildland fire use, even though fire was important to the health of the tallgrass prairie ecosystem. Managers will rely on prescribed fire to mimic the effects of historic wildfire.

Historically, the tallgrass prairie experienced repeated natural fires with frequency of five to 10 years (Wright and Bailey 1982). Most wildfire occurred in late summer, before the fall rains, when fuel was dry from summer heat and grasses were going into dormancy. A second fire season occurred in late winter and early spring during dry years.

Pyne (1982) suggested that pre-settlement fires were started by aboriginal people to refurbish the grasslands for game species. These fires were set in late winter or early spring to promote early greening. Aboriginal people accidentally started wildfires, also. Fires set purposefully and accidentally and natural fire, collectively, maintained the prairie ecosystem.

FMU 2: Wildland Fire Management Situation

Historical weather

Traditionally, eastern Iowa experiences 60% of its annual precipitation (36.31 inches mean recorded National Weather Service at site #134101, Iowa City) in late spring into summer. Historically, the driest season starts in December and runs into February. Minor drought conditions have prevailed over the last 10 years, leading to low soil moisture, particularly in mid to late summer. These drought years have been accompanied by extended periods without rain in the summer months. Precipitation levels since spring 2006 show that the drought may be lessening.

Summer high temperatures are often near 90°F with mean highs in the 80s. Winter lows can drop below 0°F with mean lows in the single digits. Strong winds can pick up quickly. Summer winds come from the south and west, while winter winds are often from the north. Historical high wind values are documented for August. In August of 1997, maximum 5-second wind speed was documented at 79 MPH. Mean annual wind speed is 8.4 MPH, but sustained



winds of 20-30 MPH with gusts of 40-50 MPH are not unusual. Wind actions, coupled with extreme temperatures, dries vegetation in winter and late summer.

Although terrain relief appears slight, updrafts form in rills. Wind speeds will be highest on exposed ridges. On sunny afternoons, wind direction will be parallel to the main slope. Structures and trees may affect wind direction and speed in localized areas.

Fuel characteristics and fire behavior

Only one wildfire has occurred in FMU 2. This was the result of a runaway incinerator fire that burned less than one acre. This threat no longer exists, since trash and yard waste may not be burned in the city or park.

NFDRS Fuel Model N and Fire Behavior Fuel Model 3 apply to FMU 2. Fire spread and intensity characteristics under normal and extreme conditions are summarized in Table 1a. Extreme fire behavior occurs when wind speeds are over 15 MPH or moisture levels drop below 8% in fuel.

Table 1a: National Fire Danger Rating System (NFDRS) Fuel Model N and Fire Behavior Fuel Model 3 (Anderson 1982)

Extreme Conditions¹			
Fuel Model	Rate of Spread	Flame Length	Fire Characteristics
3	264 chains/hr	19 feet	Fires in this fuel model will move extremely fast and have short residence times as these fuels are consumed rapidly. Direct attack is impossible
Normal Conditions²			
Fuel Model	Rate of Spread	Flame Length	Fire Characteristics
3 wind speed of 5mph 8% moisture	104 chains/hr	12 feet	Fires in this model are the most intense of the grass group and display high rates of spread under the influence of wind.

A new fire behavior fuel model was introduced in 2005 (Scott and Burgan 2005). This model provides greater detail in fire behavior based on more specific fuels. Extreme conditions would result in a GR8 (108) fire behavior model and normal conditions would result in a GR6 (106) fire behavior model. Tables 1b and 1c compare the fire behavior for each.

¹ Extreme is for 1 hour fuel moisture of 7% and midflame wind speeds of 10 mph

² Normal is for 1 hour fuel moisture of 10% and midflame wind speeds of 5 mph



Table 1b: Standard Fire Behavior Fuel Models description of FMU 2 fire behavior (Scott and Burgan 2005)

Grass fuel type

Consider using one of these fuel models from the new set...	... if you used one of these models from the original set.		
	1 Short Grass	2 Timber Grass and Understory	3 Tall Grass
GR6	NA	NA	For slightly lower spread rate and comparable flame length
GR8	NA	NA	For comparable spread rate and higher flame length

The primary carrier of fire in GR6 is continuous humid-climate grass. Load is greater than GR5 but depth is about the same. Grass is less coarse than GR5; Fine fuel load (t/ac) 3.5; Characteristic SAV (ft-1) 2006; Packing ratio (dimensionless) 0.00335; Extinction moisture content (percent) 40. See Figure 3 as taken from Scott and Burgan 2005.

The primary carrier of fire in GR8 is continuous, very coarse, humid climate grass. Load and depth are greater than GR6. Spread rate and flame length can be extreme if grass is fully cured; Fine fuel load (t/ac) 7.8; Characteristic SAV (ft-1) 1302; Packing ratio (dimensionless) 0.00316; Extinction moisture content (percent) 30. See Figure 4 as taken from Scott and Burgan 2005.

Figure 3: Fire behavior in GR6 fuel model

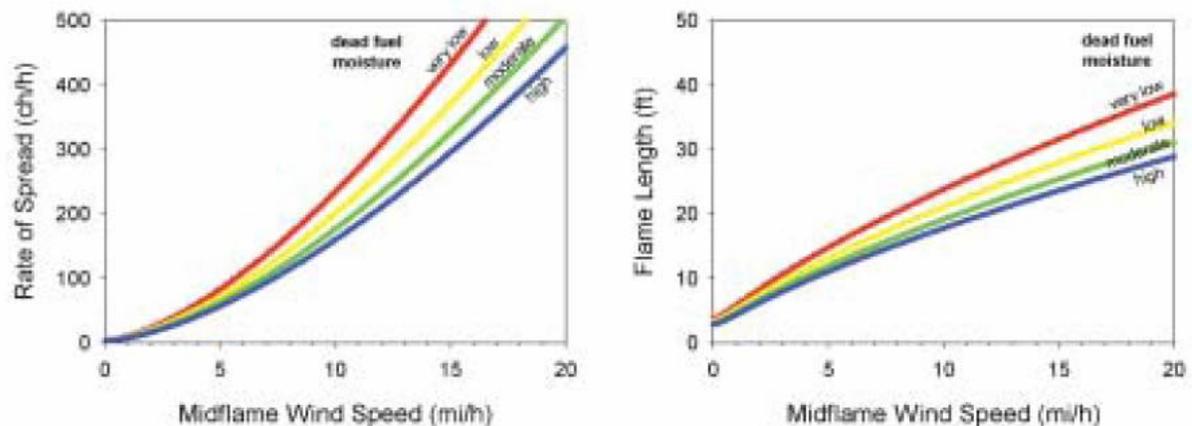
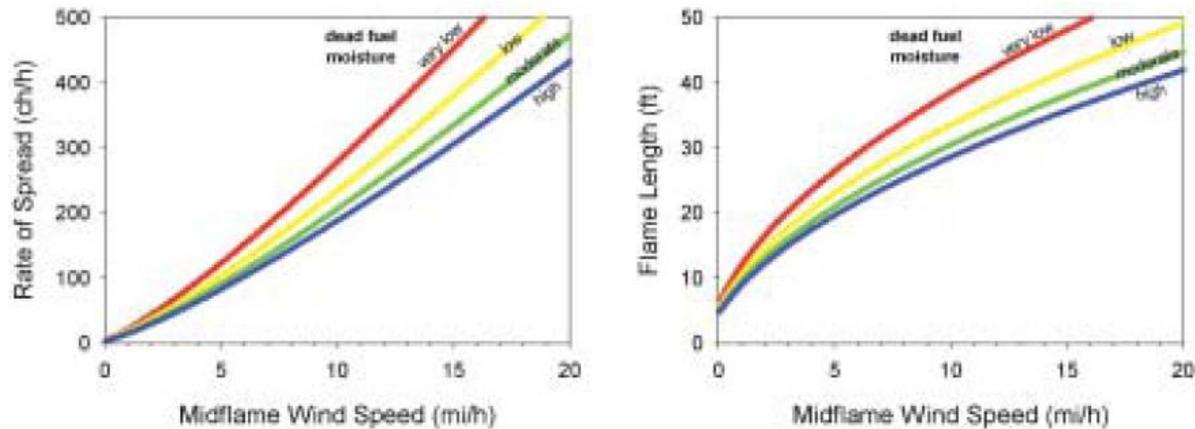




Table 1c: Fuel model parameters (Scott and Burgan 2005)

Fuel model code	Fuel load (t/ac)					Fuel model type	SAV ratio (1/ft)			Fuel bed depth (ft)	Dead fuel extinction moisture (percent)	Heat content (BTU/lb)
	1-hr	10-hr	100-hr	live herb	live wood		dead 1-hr	live herb	live wood			
GR6	0.10	0.00	0.00	3.40	0.00	dynamic	2200	2000	9999	1.5	40	9000
GR8	0.50	1.00	0.00	7.30	0.00	dynamic	1500	1300	9999	4.0	30	8000

Figure 4: Fire behavior in GR8 fuel model





Fuel characteristics

Fire will carry in winter when snow does not appear on the ground. Winds dry standing, dormant vegetation at this time. As winter progresses, fuels are knocked down and less likely to burn because of ground level humidity. Fire can carry in the spring, when there has been no rain for several days with clear skies, and wind to dry the dormant vegetation. Once greening begins, fire will not carry well in the grasses, unless substantial fuels have accumulated. Fire is unlikely during most of the summer months, unless dry conditions have persisted for several weeks. The prairie grasses and forbs are well adapted to drought and will not become senescent unless soil moisture is very low and the Fire Danger Class is in the very high to extreme range. During dry summers, the Keetch-Byrum Drought Index (KBDI) Keetch and Byrum 1968) can be in the 500-700 range and the Palmer Drought Index at the moderate to severe drought stage. Fire can carry well in fall before the autumn rains begin, particularly once warm season grasses enter dormancy. Current drought and fire danger levels can be found at <http://lwf.ncdc.noaa.gov/oa/climate/research/dm/weekly-DM-animations.html>.

Fire regime alteration

The pre-European settlement fire regime can be characterized as frequent/low severity. Fire returned at intervals of about 10 years, eliminating most of the young woody species that had established since the previous fire and rejuvenating perennial grasses and forbs. Aboriginal people set fires to rejuvenate the prairie, thus shortening the fire interval from what lightning strikes would have caused (Pyne 1982). Aboriginal people managed the prairie in this way for many hundreds of years. Fire has been suppressed locally since the mid-1800s and only occurs through prescribed fire.

Woody species have invaded parts of the park prairie when management was not aggressive and prescribed fire was not used. The reestablishment of prescribed fire as a management tool in 1999 has reduced the amount of fuel on the prairie. A reduction in the prescribed fire program would result in the increase of woody and herbaceous fuels, thus shifting the natural fire regime to an infrequent/high severity regime.

Prescribed fire has always been applied in spring. This has caused a lack of spring blooming forb species and does not resemble the natural fire timing. Prescribed fire should be applied to the prairie in the autumn and the spring with an emphasis on autumn for several years. This coupled with planting of spring flowering forb species will add diversity to the prairie and restore a natural fire regime. Additional reason for fall prescribed fire is an immediate need to control white sweet clover (*Melilotus alba*) throughout the prairie. This biennial weed has been rapidly increasing in relative cover since 2003. Fall fire applied in two successive years may be effective in reducing the vegetative phase of white sweet clover.



Control problems

Control problems can be expected on fires burning in peak fire season or when fuels have built over many years. Fires will spread rapidly and be intense when environmental conditions are warm, dry, and windy.

Values to be protected and special concerns

- Cultural resource areas, Historic Core containing three Fundamental Resources, Gravesite (Fundamental Resource), Herbert Hoover Presidential Library-Museum, Herbert Hoover Presidential Library Association, administrative areas, picnic area, and cultural landscapes within the Commemorative and Recreation Zones.
- Urban interface areas adjacent to FMU 2 boundary
- Hazardous fuels along the park boundary, particularly near the Interstate provide a special concern, since accidental ignition from passing traffic could cause wildfire to enter the park
- An archeology inventory needs to take place in order to fully develop effective strategies for protecting cultural resources in FMU2.



IV. Wildland Fire Management Program Components

A. General Implementation Considerations

At Herbert Hoover NHS, the fire management situation requires suppression of all wildfires regardless of cause in both Fire Management Units. NPS Policy requires a [Wildland Fire Implementation Plan](#) (WFIP) Stage 1 Initial Fire Assessment be completed for each fire on NPS land, it is the basis for decision making in fire incidents. This can be a confusing or at least a complex process in parks where suppression is not the only appropriate management response. In a suppression only FMU the process is simplified. Since the FMU structure at this park unit determines suppression is the only appropriate management response across all fire management units, the requirement for a decision checklist as part of the Stage I analysis is considered to be met. Subsequently, the Stage I analysis is satisfied at the programmatic level by the completion of a Strategic Fire Size-Up or “Size-Up Report”, a form taken directly from the appendix section of Interagency Standards for Fire and Fire Aviation Operations 2006 Edition (“Red Book”) and included as Appendix E in this document. The Size-Up Report consists of a information on the fire size, behavior, environmental conditions, fuels, terrain features, existence of special hazards or threats to persons or improvements, and any other factors observed which could affect fire behavior and suppression efforts etc.

Specific WFIP requirements are outlined in Chapter 4 of the [Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide](#). Ultimately, the Superintendent will be responsible for completing the WFIP Stage I, this task can be delegated to any personnel at the park. At Herbert Hoover NHS the Chief Ranger will complete the Size-Up Report.

Water Availability

Water sources for fighting fires are available within the park. Fire hydrants occur at several locations and additional water spigots are available at the Gravesite and within the Historic Core and visitor use areas.

Equipment

The park does not have heavy equipment for use in wildfire or prescribed fire. A cache of Personal Protective Gear and hand tools does exist and is listed in [Appendix E](#). During fire, the Superintendent may authorize the use of other vehicles/equipment for fire fighting needs (i.e. mowers, brush cutters etc.).

Personnel

The park has approximately three firefighters meeting minimum [National Wildfire Coordinating Group](#) (NWCG) qualifications. No staff members have training at levels qualifying them for initial attack on a wildland fire. The proximity of and a General Agreement ([Appendix E](#)) with the West Branch Volunteer Fire Department (VFD) makes a fire crew located at the park unnecessary. Practically speaking, the VFD has fast response time with trained personnel and equipment, which are necessary for a small park where wildland fire could escape boundaries in a short time.



B. Wildland Fire Suppression

1. Range of Potential Fire Behavior

Fire in the park can be fast moving on the surface in light fuels. For more detailed discussion refer to the fire behavior descriptions under [FMU 2](#).

2. Preparedness Actions

a. Prevention/wildland fire use educational activities

Fire prevention includes all activities designed to reduce the number of human-caused wildfires that occur in the park. The objective of the program will be to minimize preventable fires. Prevention activities will consist of prevention signs and reminders, prevention messages through interpreters and staff, and vigilance during periods of very high fire danger.

Fire prevention will be discussed at a selected staff safety meeting in the early spring to make sure all members are aware of concerns and procedures regarding response to fires and actions related to fires in the park. The park may participate in fire prevention and safety fairs at local schools so that the general public is aware of the importance of fire prevention. The park will provide educational messages through local media that explains prescribed fire and provide wildfire prevention in conjunction with prescribed fire management education.

During periods of high fire danger, the general public and park visitors will be informed of conditions through press releases, interpretive media and, if necessary, the posting of signs at the visitor center or other park areas.

b. Annual Training

Annual training will consist of annual firefighter safety refresher training, first aid, and other safety training for appropriate individuals. Basic safety, awareness, and prevention training will occur during staff meetings.

c. Annual Preparedness Activities

- Coordinate with Midwest Region Fire Management Office to request appropriate annual Firefighter Medical Exam for each firefighter.
- Administer pack test to fire personnel annually, as per standards in *RM-18*.
- Pack tests may not be administered until the firefighter gains medical clearance.
- Update and submit fire training and experience records to the Midwest Region Fire Management Office for entry into the Incident Qualifications and Certification System (IQCS) and for a new CY Red Card printout.
- Inventory fire equipment, order needed supplies and update equipment list
- Inspect fire cache and ensure that equipment is ready
- Complete all Prescribed Fire Burn Plans for upcoming season and have approved by park superintendent
- Prepare prescribed fire briefing messages for public notification
- Check the established Midwest Regional Office procedure for utilizing suppression support accounts.
- Review Step-up Plan and emergency preparedness accounts
- Perform prescribed fire treatment if planned for spring of given year
- Implement fire prevention activities as needed
- Monitor fire potential



- Prepare prescribed fire briefing messages for public notification if fall burn is planned
- Perform fall prescribed fire if planned (may extend into November)
- Critique fire season including all fire management activities (i.e. wildland fire suppression, prescribed fires and mechanical fuel treatment, prevention, etc.)
- Evaluate individual performance of staff to correct deficiencies and recommend personnel for training throughout the year.
- Complete fire fighter training
- Annual review and update of FMP every year (comprehensive review and rewrite due every five years)

d. Fire Weather and Fire Danger

Preparedness activities during the fire season will be based on the outputs from the Fire Danger Maps, a product of the Wildland Fire Assessment System. Currently, the Wildland Fire Assessment System is found on the Internet at http://www.wfas.net/component/option,com_frontpage/Itemid,1/. The assessments are based on the National Fire Danger Rating System (NFDRS).

Emergency preparedness describes actions to provide extra capability during times of extreme or unusual fire danger caused by meteorological influences on the park's wildland fuel. Drought indices assist the manager in determining fire danger. They can be found at

<http://lwf.ncdc.noaa.gov/oa/climate/research/dm/weekly-DM-animations.html>.

Fire danger should be monitored when the Palmer Index

(<http://lwf.ncdc.noaa.gov/oa/climate/research/prelim/drought/pdiimage.html>)

reaches moderate drought levels; the Keetch-Byrum Drought Index

(<http://www.wfas.us/content/view/32/49/>) reaches 400; or the Fire Danger Class

(<http://www.wfas.us/content/view/17/32/>) reaches high.

Activities will be based on Burning Index (BI) outputs, as calculated by the National Fire Danger Rating System (NFDRS). The NFDRS is a set of computer programs and algorithms that allow land management agencies to estimate today's or tomorrow's fire danger for a given rating area. The NFDRS characterizes fire danger by evaluating the approximate upper limit of fire behavior in a fire danger rating area during a 24-hour period. The bottom line of the NFDRS in the day-to-day operation of a fire prevention and suppression program is the staffing class.

The Burning Index (BI) is a measure of fire intensity and a determinant in staffing class needs. The BI combines the Spread Component and Energy Release Component to relate the contribution of fire behavior to the effort of containing a fire. The BI has no units, but in general it is 10 times the flame length of a fire. The 90th percentile BI for the park is based on Fuel Model "L" (sub-humid with rainfall deficient during the summer). The area falls into the NFDRS climate class #2.

The park utilizes outputs of the National Weather Service at site #121409, Quad Cities weather forecasting for the Johnson County zone forecast (<http://forecast.weather.gov/MapClick.php?zoneid=IAZ064>). Weather conditions contributing to local fire danger can be monitored through Remote Automated



Weather Stations (RAWS) located nearby and/or within similar environmental conditions. These RAWS sites include:

- Neil Smith RAWS station approximately 100 miles to the west, http://raws.wrh.noaa.gov/cgi-bin/roman/meso_base.cgi?stn=NSWI4&time=GMT
- Stephen State Forest RAWS approximately 110 miles southwest, http://raws.wrh.noaa.gov/cgi-bin/roman/meso_base.cgi?stn=TS568&time=GMT
- Shimek State Forest RAWS 90 miles south, http://raws.wrh.noaa.gov/cgi-bin/roman/meso_base.cgi?stn=TS567&time=GMT

Information from these sites can enhance the understanding of weather and fuels interaction and should be compared to the local weather station data to ensure applicability to the park conditions.

Depending on the BI derived from the daily NFDRS data, predicted fire danger is classified as low, moderate, high, very high, or extreme. A set of staffing classes which have a corresponding set of actions that the park will initiate to meet potential fire danger has been developed and is presented in Table 2 below as the Step-up Plan.

e. Step-up Staffing Plan

The staffing classes relate to the expected severity of fire conditions. The park superintendent or Regional Fire Management Office may choose to increase preparedness-staffing class by one level for unusual events that would increase the potential for wildland fire. Preparedness actions are based on the latest adjective rating and the next day forecast.

Table 2: Staffing levels as determined by the NFDRS

National Fire Danger Rating System staff class levels		
Fire Dangers Level	Staffing Class	Burning Index
Low	I	0 - 5
Moderate	II	6 - 10
High	III	11 – 20
Very High	IV	21-30
Extreme	V	31 and over

Fire conditions that typify each staffing class and the corresponding preparedness actions required are as follows:

Staffing Classes I and II (Low/Moderate)

Funding for preparedness at this level is taken from park operating costs.

Conditions

Fires will present a low to moderate level of control difficulty. Fires occurring at this level may be controlled with existing forces (local VFD). Wind speed and direction will determine speed of fire spread. Fine fuels will be drying.

Preparedness Actions

- Fire weather reviewed daily.



Suppression Actions

- One employee will depart within five minutes for the fire location to confirm location and report size-up.
- Attack forces (primarily VFD) will be dispatched after size-up and upon request of the park or other city official.
- If necessary, assistance will be requested at the discretion of the attack force.

Staffing Class III (High)

Funding for preparedness at this level is taken from park operating costs.

Conditions

Fires will present a moderate level of control difficulty. Light fuels are becoming dry. Heavy fuels are drying. Mop-up will be more difficult and time-consuming.

Preparedness Actions

- All actions specified for Staffing Class I and II days will be conducted.

Suppression Actions

All suppression actions indicated for Staffing Classes I and II will be taken.

Staffing Classes IV and V (Very High/Extreme)

Funding for preparedness at this level is taken from operating funds with assistance from the regional office through the “Step Up” request process. During Step up Staffing during Class IV and V days, a Step Up account can be approved by the MWRO and set up to cover overtime and miscellaneous costs directly associated with the enhanced duty schedule. See RM-18, Chapter 7 for specific information.

Conditions

Fire will present a moderate to high level of control difficulty. Initial attack and reinforcing crews may have difficulty controlling a fire at this level. All fuels are dry. Air temperature is high and humidity is low. Strong gusty winds are possible. Spotting may occur.

Preparedness Actions

- All actions specified for Staffing Class III will be conducted.
- Fire Situation reports will be entered into the NIFC daily before 9:30 A.M.
- Visitor Center personnel will alert the public to fire hazards.
- Interpretive activities will include a fire safety message.
- Emergency preparedness funds (PWE obtained from regional office) may be used to bring staff to required levels. However, regularly scheduled personnel will be used to the extent possible. Any staffing funded in this manner will have to be approved by the Regional FMO
- It is recognized that both nonessential routine activities and project work may be postponed on Staff Class IV and V days.
- Fire danger notices will be posted.
- Park may have sections closed to preserve the safety of visitors.
- Detection staffing is allowed.



Suppression Actions

All actions specified for Staffing Class III days will be taken.

3. Pre-attack Plan

Due to the small size and scope of the fire program at the park, no formal pre-attack plan will be written. However, certain preparations and procedures are established prior to and during the fire season. Some are mentioned in the [Annual Preparedness Activities](#) section, other pre-attack activities are informally discussed among the staff and with the cooperating VFD during fire season.

4. Initial Attack

Initial attack is an aggressive suppression action consistent with firefighter and public safety and values to be protected. Initial attack will be carried out by the local VFD with guidance concerning public safety and values to be protected from park law enforcement and resource management staff and the superintendent.

- a. Priority setting during multiple fire occurrences.

The following will be used to set the priorities:

- Cultural and historic resource map delineating Management Zones
- Park facility map
- Map displaying park location relative to the city

Information that should be used to set incident priorities:

- Restrictions in areas of special concern
- Social and political concerns
- Decision criteria matrix or flowchart including the risk assessment process
- Complexity decision process for transition from Initial Attack to extended action

- b. Criteria for appropriate Initial Attack response consistent with RSS objectives:

- Public and firefighter safety
- Protection of cultural, historic, and natural resources
- Protection of improvements and private property
- Minimum fire line construction and Minimum Impact Suppression Tactics (MIST) will be recommended to firefighters
- Available suppression resources and response times
- Fire danger as determined by fuels, weather, and topography
- Mechanized equipment use only where necessary to support above-listed criteria. Aircraft cannot be deployed in this setting.

- c. Confinement as an Initial Attack suppression strategy

Confinement strategy may be implemented as the Initial Attack action as long as it is not used to meet resource objectives. Confinement is selected to maximize firefighter safety, minimize suppression costs, and maximize availability of critical suppression resources during periods of high fire danger or when highly valued areas are threatened. Confinement strategy may be considered as an element of an Appropriate Management Response.



- d. Typical fire response times
Typical fire response times will vary depending on availability of local firefighters from the City of West Branch, and time of day. During fire season when no other fire activity is occurring and staffing is available, firefighters can respond to the closest road access to fires within 15 minutes. Reinforcements from outside the area can arrive within 30 minutes after request.
- e. Restrictions and special concerns
Initial attack should be aggressive in order to contain the fire as quickly as possible and to keep fires from crossing boundaries and damaging private property. Minimum Impact Suppression Tactics (MIST) will be recommended in efforts to contain wildland fires. Priority would be given to FMU1 in the event of multiple fires. Chainsaw and earth moving equipment use requires permission of the park superintendent
- f. Special issues
Every reasonable effort will be made to encourage and to obtain wildland firefighter training for the VFD, including the use of MIST. The highest priority of the VFD will be to protect firefighter and public safety with protection of park resources as its second priority. Park resource managers and superintendent will recommend tactics and strategies to be used and may select the use of confinement rather than aggressive direct attack as suitable to protect resources.

5. Extended Attack and Large Fire Suppression

- a. Extended attack needs will be determined by considering the following:
 - Threats to life, property, and park resources
 - Availability of suppression forces
 - Current and expected fire behavior
- b. Implementation plan requirements - WFSA development
Follow guidance in [Wildland and Prescribed Fire Policy Implementation Procedures Reference Guide](#) and *RM-18*, in coordinating firefighting efforts by VFD.
- c. Complexity decision process from Initial Attack to Extended Attack
Follow guidance in *RM-18*, Initial and Extended Attack in coordinating firefighting efforts by VFD.

6. Exceeding existing Wildland Fire Implementation Plan

If a wildland fire cannot be controlled during the initial suppression response action, or it otherwise exceeds the first operational period, the VFD will employ a second strategy that meets their protocol with the approval of the superintendent. The superintendent will recommend actions that are consistent with the WFSA.

7. Minimum Impact Suppression Tactics (MIST)

All fire management activities will rely on tactics that incur a minimum amount of resource damage while maintaining the safety of firefighters, personnel and the public as the highest priority. Park superintendent approval is needed for bulldozers



and mechanized equipment. Complete minimum impact guidelines are listed in [RM-18, Chapter 9, Exhibit 2](#). During wildfire suppression, park law enforcement, resource management staff, and superintendent will coordinate VFD actions in a manner consistent with MIST.

8. Rehabilitation

Park staff will recommend actions that ensure suppression activities will be carried out in a manner that results in the least amount of resource damage. After the fire is declared out, park maintenance crews will remove litter, refill dug lines and install erosion control devices if necessary. Maintenance crews will flush cut stumps and remove logs and brush. The severity of the burn and its resultant impact will be considered in determining the need to seed or otherwise re-establish native plant species and cultural landscape. Such efforts regarding landscaping and plants will be in full compliance with NPS [Management Policies 2006](#) and given prior approval of the regional director. A rehabilitation plan, outlining what species are to be planted, techniques to be used, locations and cost estimates will be prepared before any action is taken, according to the guidance in [RM-18, Chapter 12](#), Burned Area Emergency Rehabilitation.

9. Records/Reports

a. [Wildland Fire Implementation Plan](#) (WFIP)

A WFIP will be prepared for every wildland fire and will be the responsibility of the Superintendent to have completed, at this park the task is delegated to the Chief Ranger. As noted earlier in this document, at this park the WFIP requirement will be satisfied at the programmatic level by the completion of a Strategic Fire Size-Up or "Size-Up Report." An acceptable version is included in Appendix E.

b. Individual Fire Reports (DI-1202)

The basic report for documenting a wildland fire is the [Individual Fire Report](#) (DI-1202). Reports are eventually entered electronically into the *Wildland Fire Management Information System (WFMI) maintained by the Bureau of Land Management in Boise, Idaho*. The report is valuable in providing a historical record of the fire regime for the park. These reports are critical because they influence decisions that are made as to where and when to allocate fire resources. It is important that this form document all fires occurring within the boundaries. This includes fires that go out unassisted when the location is known. Incidents, known as Support Actions, where personnel respond to fires outside the park (including out of state), are reported on this form. Fire reports are required for all wildland fires even if the fire did not require suppression. Documenting the fires aids in fire management planning, for example in allocating of resources or in monitoring of trends. Fire reports for fires that occur at the park should be compiled by the Superintendent or his/her delegate. All wildland fire incidents must be documented by an Individual Fire Report. The completed report must be input to the fire reporting program within 10 working days after the fire has been declared extinguished. The MWRO will input the park's fire reports into the system. Fire reports will be sent to the Wildland Fire Specialist at the MWRO so



that the report can be reviewed and entered into the WFMI system as a support action by the MWRO.

- c. A complete fire report will include the following attachments, if applicable:
 - any written policies, guidelines or authority statements signed by the park superintendent
 - copy of the Size-Up Report
 - copies of equipment purchased or personnel request orders
 - all situation maps
 - personnel lists (including Emergency Time slips)
 - press clippings
 - accident reports
 - all weather data reports and records
 - documentation of financial charges
 - rehabilitation plan

d. Fire Experience and Qualifications

The Incident Qualifications and Certification System (IQCS) is the current system for maintaining the fire qualifications of personnel. Records for the park personnel are updated at the MWRO. Experience and Qualifications should be submitted on an IQCS Individual Employee Update form, annually, before the end of January each year to allow for data updates to be entered before the new calendar year fire season starts.

e. Daily Situation Reports

Formal Daily Situation Reports are not required, strong communication between the park and the MWRO is encouraged on those days when the Fire Danger Rating is very high and the park moves into Staging Classes IV and V. If fire funds are being allocated for increased staffing, or when a fire has occurred or is ongoing, communication between the park and the regional office should be occurring. The conditions necessitating Staffing Classes IV and V and the need for fire funds should be logged.

f. Smoke Management Reports

Smoke Management reports are not required by the state of Iowa.

g. Report of Fire

When a report of a fire is received, the following information should be collected from the reporting party:

- Name of reporting party
- Address
- Phone number
- Location of fire and extent
- If fire is reported in person, ask if the reporting party is willing to show the investigating ranger the location, otherwise, determine if the person can be re-contacted if there are additional questions.

h. Resource Order Form, NFES 1470



All assistance requests must be documented on the Resource Order Form, NFES 1470. These forms are designed for verbal transmission over the telephone. The order form is, in essence, an obligating procurement document. If an out-of-park incident management team is ordered, the park superintendent must provide a written limited delegation of authority and a briefing package to the incoming Incident Commander. RM-18 contains examples and outlines to refer to.

i. Year-end Accomplishment

Completion of year-end accomplishment reports is the responsibility of the park personnel with collateral FMO duties and will be coordinated by the chief ranger.

C. Wildland Fire Use

The resource management objectives do not promote or permit management techniques that will maintain desired natural systems within the park through wildland fire use. Even though fire is an integral component of the tallgrass prairie ecosystem, the limited size, on-site cultural resources, proximity to the city, and the adjacent land values will preclude wildland fire use.

D. Prescribed Fire

Planning and execution of this prescribed fire management program will use qualified personnel and will follow the guidelines stated in document [RM-18](#).

Prescribed fire is an important tool to manage vegetation communities and to achieve resource management objectives of the park. Herbert Hoover NHS preserves, protects, and interprets for present and future generations the natural and cultural resources associated with the life of Herbert Hoover in West Branch, Iowa. The tallgrass prairie is an interpretive asset, because native prairie still occurred in the vicinity and played an important role in the heritage of Iowans of the late 1800s. Herbert Hoover's family settled here because of the conditions established by the prairie. The prairie commemorates Herbert Hoover by presenting a part of his heritage and providing an interpretive link to President Hoover's relationship with natural resources. President Hoover was quoted as saying, "My roots are in the soil. . . ."

In addition, the draft GMP identifies the prairie setting as both a cultural and natural resource, and as such should be managed to maintain its integrity. The prairie contributes to the open space and the Fundamental Value of Simple and Serene Setting.

Attempts to restore a native tallgrass prairie have dominated natural resource management actions since 1971. Nonnative grasses and forbs and woody vegetation continue to degrade localized sections of the prairie. Invasive and exotic species tend to increase when the prairie is not actively managed under a fire regime.

Surrounding agricultural land use, land use prior to establishment as a prairie, and proximity of ornamental, non-native plantings contribute to invasion. Reed canary grass and shrubs have become more abundant along the creek banks and in rills of the prairie. Dr. Paul Christiansen's (1984-2004) annual reports on prairie inventory indicate a general improvement in health of the prairie with conspicuous changes in dominance occurring after prescribed fire. He continued to recommend use of prescribed fire and some mechanical and herbicide treatments of woody plants. In areas that are diverse and well populated with native grasses and forbs, natural competition coupled with fire



management appears to be sustaining natives. Seed collection and manual redistribution after a fire may increase diversity in patches where a single species dominates.

Prescribed Fire Management Objectives

Prescribed fire may be used to accomplish hazard fuel reduction and to assist in meeting natural resource management objectives.

Prescribed Fire Priority Area – Tallgrass prairie

Prescribed fire must be used to preserve, restore and maintain these unique and valuable tallgrass prairie habitats. The absence of fire will favor the encroachment of shrubs and exotic species and will increase hazard fuel accumulations.

1. Prescribed Fire Burn Planning and Documentation

a. Annual Activities Needed to Implement the Prescribed Fire Program

The park superintendent must approve Prescribed Fire Burn Plans prior to burn ignition. It is preferable to burn 50% or less of the FMU to maintain animal habitat, wildlife escape zones, and sources for colonization of burned areas.

Prescribed fire unit boundaries are created to utilize the ample natural features, natural fuel breaks (creeks and wet areas), and existing roads and trails for perimeter control. Construction of perimeter fire control lines is discouraged due to impacts to natural resources. The use of mowed fuel breaks for reinforcing perimeter control lines is encouraged. Interior control lines and mechanical fuel treatments (primarily cutting woody vegetation and scattering debris or mowing) may be necessary to protect sensitive natural features within the FMU.

b. Long-term strategy for FMU 2

Table 3 suggests a prescribed fire schedule based on spatial distribution and need for exotic plant suppression. Firing will be conducted primarily with a drip torch. Ignition will occur in spring and autumn. Acreage of PMUs does not include mowed perimeters. Blackening is usually very complete, creating a solid burn pattern within each PMU, but creating a burn mosaic within the PMU is a desirable alternative, also. Therefore, in most cases, no special efforts will be expended to ensure 100% burn coverage. Refer to map in Figure 5 or [Appendix F](#) for PMU locations.

Arrangements should be made with Midwest Archeology Center to complete an inventory subsequent to the next scheduled prescribed fire. The park will arrange for the inventory in cooperation with the FMO. If significant archeological materials are discovered, it may alter the long-term prescribed fire strategy for FMU 2 and result in the writing of a new FMP and Environmental Assessment.



Table 3: Prescribed fire schedule for Prairie Management Units

Year	Unit	Acres	Objectives
2007 spring (FY07)	3, 4, 5, 5a	36	Restoration; 3 and 4 are normal rotation; also biennial and woody treatment
2007 fall (FY08)	1, 2, 7, north half 6	32	Restoration; first fire after overseeding in 1, 7, and north 6
2008 spring (FY08)	3, 4, 5, 5a	36	Restoration; second biennial/woody treatment
2009 fall	1, 7, 6	27	Restoration; treatment of over seeding and normal rotation on south 6
2010 spring	2, 3	37	Restoration; first biennial treatment on 2; normal rotation on 3

This schedule will be adjusted as prairie plant monitoring indicates appropriate for the control of exotic and invasive plants and other prairie management concerns. Although the objectives for all parts of FMU 2 remain consistent throughout PMUs, division into seven PMUs allows managers to maintain wildlife habitat and cover in portions of the prairie, while burning other portions.

Objective for each PMU: Increase diversity and cover of native grasses and forbs, while reducing exotic and invasive species.

PMU 1 Acres: 2.656

Vegetation: Tallgrass prairie with sparse tree cover in flood plain. This area north of the creek was not been included in the 76-acres originally reconstructed as the prairie and requires intensive restoration efforts. Herbicide treatment and overseeding was done in 2005.

PMU 2 Acres: 18.904

Vegetation: Wet meadow tallgrass prairie of varying conditions. This area includes flood plain and land influenced by agricultural drainage, and contains many exotic and invasive species. A portion of the nut tree grove is here.

PMU 3 Acres: 18.653

Vegetation: Tallgrass prairie of variable condition with some quality forb areas. Sparse tree cover intrudes from north and will be protected from fire. Contains portion of the nut tree grove and is contiguous with a newly added half-acre mid-height prairie on its north side.

PMU 4 Acres: 9.130

Vegetation: Tallgrass prairie with grasses well established. Exotic species can enter from south and west.

PMU 5 Acres: 7.238

Vegetation: Tallgrass prairie with grasses well established and a manmade hummock where trees were planted. The manmade hummock introduced weed seed to the unit. The trees are in poor condition.

PMU 5a Acres: .640



Vegetation: Tallgrass prairie originally restored as a forb nursery area.

PMU 6 Acres: 17.149

Vegetation: Tallgrass prairie with low diversity, except along north edge. The northern 10 meters of the unit were added by cessation of mowing without further restoration efforts. In 2005, this area was treated with herbicide in the spring and over seeded. An additional two acres of mid-height prairie, contiguous with the unit's north boundary was added in 2005 as well. Reed canary grass occurs in the drainages.

PMU 7 Acres: 7.451

Vegetation: Tallgrass prairie with low diversity and sparse tree placement. The area was reclaimed from a concrete covered gas station and is a location with many exotic and invasive plants. Restoration efforts in 2005 included prescribed fire, herbicide treatment of cool season grasses, and over seeding. A subsequent drought encumbered treatment.

c. Personnel Needed to Plan and Execute the Prescribed Fire Program

Planning and execution of this prescribed fire management program will use qualified personnel and will follow the guidelines stated in document [RM-18](#). Refer to RM-18 for guiding all aspects related to implementing this prescribed fire program.

Herbert Hoover NHS currently does not have qualified staff to implement prescribed fires. Therefore, the Midwest Region Fire Management Office will coordinate assistance in planning and implementing each of the prescribed fires.

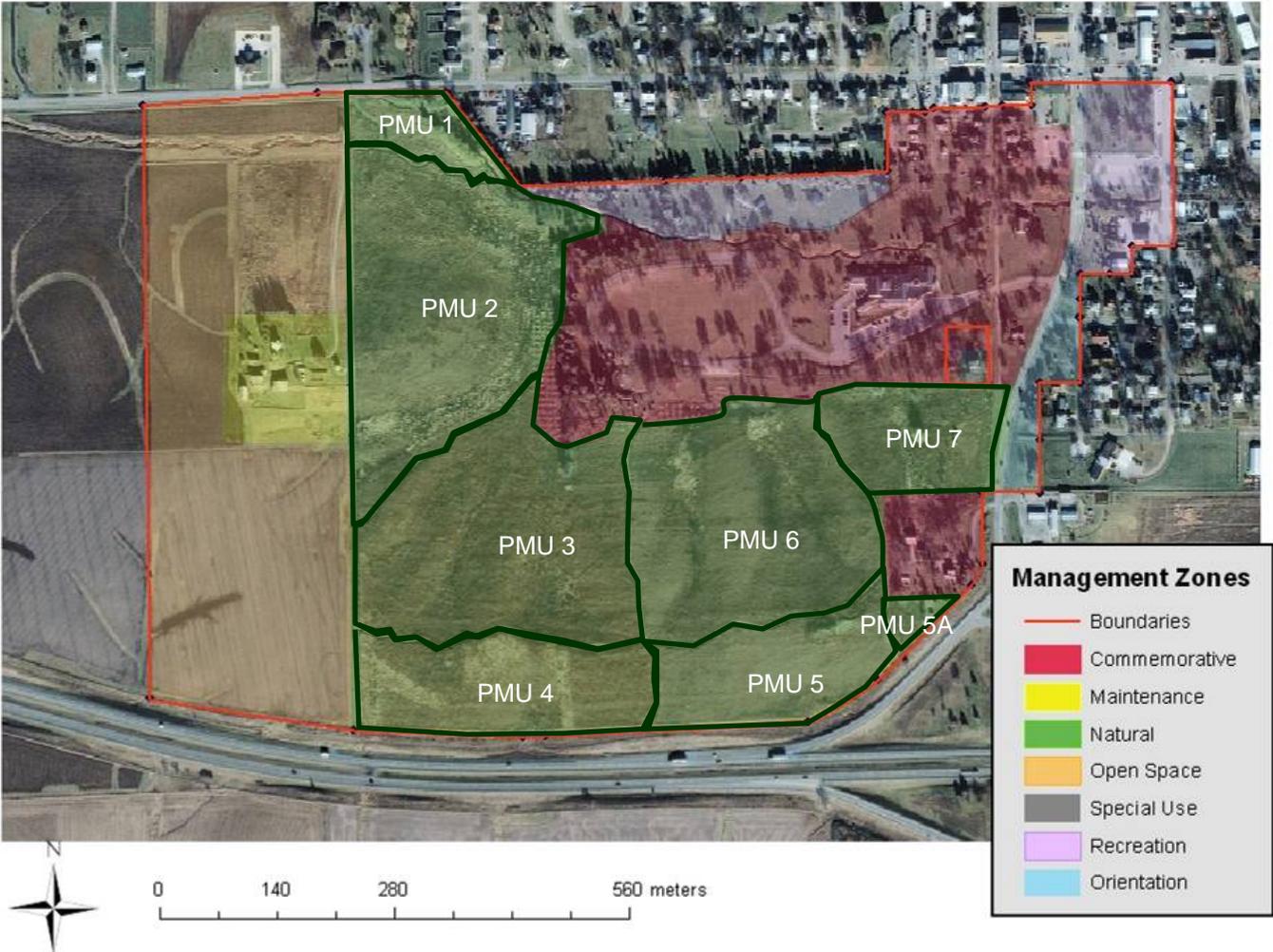
d. Prescribed Fire Behavior, Weather, Monitoring

Prescribed fire behavior must support resource management objectives of individual Prairie Management Units (PMU). A range of fire intensities will be required to meet PMU objectives and vary according to site conditions. Extreme fire behavior may be needed to achieve tree and shrub mortality, especially in areas with sparse surface fuels. Moderate fire behavior may be appropriate in areas with more surface fuels.

Prescribed fires in the spring months target cool-season exotic grasses before warm season grasses have developed. Obtaining conditions that are within prescription is difficult because of spring rains. Wind conditions must be monitored closely in the spring as extremely windy conditions are associated with weather systems at this time of year.



Figure 5: Site map with Management Zones from 2004 GMP with PMUs delineated





Prescribed fire in the fall months replicates the natural fire in the prairie ecosystem and targets cool-season plants coming out of dormancy, seed production of certain exotic species, and seedling destruction. Local restoration specialists feel that fall prescribed fire can be useful to manage certain problems, such as biennial weed propagation. Prairie fuels are dry at this time of year and weather conditions can be favorable for prescribed fire. Winds are generally predictable and moderate. September and October begin to experience rain events, but windows of dry weather occur between storms.

The Heartland Network, Inventory and Monitoring Program, evaluates prescribed fire outcomes based on stated objectives through their long-term vegetation monitoring. The protocol for this monitoring is available at http://www1.nature.nps.gov/im/units/htln/pdf/pubs/HTLN_VSMP_NB.pdf. Monitoring is essential for adaptive management, where qualitative and quantitative changes to resources are measured and used as a tool to guide modifications for subsequent prescription treatments and burn objectives. The monitoring program interfaces with the regional fire effects monitoring program.

e. Prescribed Fire Critique Format

The Burn Boss shall convene an After Action Review for any prescribed fire. A report detailing the actual burn can include any recommendations or changes to the program identified. The report will be submitted to the Superintendent, the Regional Fire Management Officer via the Regional Fuels Management Specialist. The following items, as a minimum, will be reviewed following each prescribed fire operation.

- What worked well?
- What could have been improved?
- Were any unsafe acts noted?
- Were burn objectives met within an acceptable range of results?
- What should be done differently to obtain desired results or get better results?
- Was there any deviation from plan? If so, why?
- Was prescription appropriate?
- Were weather changes a factor?

There are no requirements for prescribed fire critiques. However, it is recommended that a critique be completed annually and/or for any prescribed fire with significant problems (escapes, failure to meet objectives, accidents and/or near misses, etc.). When conducting a critique, ensure that representatives of all participating agencies and divisions are invited. Provide an outline of critique topics to all participants prior to holding the critique. Focus the critique on identification of problems and not persons. Solicit suggestions for improvements to planning and implementation of future prescribed burns.

f. Documentation and Reporting Requirements

See [RM-18 Chapter 10](#), page 39 - 41, and [2006 Interagency Prescribed Fire Burn Planning and Implementation Procedures Reference Guide](#). The regional FMO completes documentation.

See [RM-18 Chapter 10, page 42](#). The Burn Boss completes these reports.



Additionally, the state of Iowa requests voluntary completion of a prescribed fire report. The form is located in Appendix E and will be completed by the chief ranger.

g. *Historic Fuel Treatment*

No specific fuel treatment activities have been completed that affect future prescribed fires. A fire history is included in [Appendix G](#).

h. *Prescribed Fire Burn Plan*

All prescribed fires require, by existing policy, a Prescribed Fire Burn Plan, which is a specific type of implementation plan, completed and approved prior to ignition. The implementation plan is the design and definition of all the activities, resources, limitations, and contingencies required for successful wildland fire management. The Prescribe Fire Burn Plan follows the policies of the National Park Service and Interagency Policy Guidance. They will contain the elements outlined in [RM-18, Chapter 10](#) from the [Interagency Prescribed Fire Burn Planning and Implementation Guide 2006](#). This includes, but is not restricted to:

The *Interagency Prescribed Fire Burn Planning and Implementation Guide 2006* lists the elements required for Prescribed Fire Burn Plans and briefly describes how to develop the contents for each element and the implementation policy that goes along with it. Prescribed fire plans must address the following 21 minimum elements and appendices in the following sequence:

1. Signature page
2. GO/NO-GO Checklists
3. Complexity Analysis
4. Description of the Prescribed Burn Area
5. Goals and Objectives
6. Funding
7. Prescription
8. Scheduling
9. Pre-burn Considerations
10. Briefing
11. Organization and Equipment
12. Communication
13. Public and Personnel Safety
14. Test Fire
15. Ignition Plan
16. Holding Plan
17. Contingency Plan
18. Wildfire Conversion
19. Smoke Management and Air Quality
20. Monitoring
21. Post-burn Activities

Appendices

1. Maps
2. Technical Review Checklist



3. Complexity Analysis
4. Job Hazard Analysis
5. Fire Behavior Modeling Documentation or Empirical Documentation (unless empirical documentation is included in the fire behavior narrative in the Element 7. Prescription)

The Prescribed Fire Burn Plan is continually evaluated and tested to assure objectives are being met. If the objectives are not being met the Contingency Plan, a required component of the Prescribed Fire Burn Plan, is implemented. If the Contingency Plan is successful at bringing the project back within the scope of the Prescribed Fire Burn Plan the project continues. If contingency objectives are not met the prescribed fire is converted to a wildfire and Initial Attack is implemented.

2. Exceeding Prescribed Fire Burn Plan

When burn prescription parameters are exceeded during ignition, containment actions must be taken. In some cases the best containment strategy will be to complete firing of the unit or employ unit check-lines to avoid rapid runs at the unit boundary lines.

If the burn is declared an "escaped fire" and continues into the next operational period, then a Wildland Fire Situation Analysis (WFSA) must be completed and the appropriate management response will be utilized. Spot fires may not constitute an escape if they are contained within standards that are identified in the burn plan.

Decision Criteria Checklist

Refer to [Wildland and Prescribed Fire Management Policy, Implementation Procedures Reference Guide](#) page 43.

Selection of New Strategies

When any of the following conditions occur, the WFSA process will be completed:

- Fire is projected to leave NPS jurisdiction, and the adjoining jurisdiction will not/cannot accept management of the fire.
- Regional Fire Management Officer, with the concurrence of the responsible agency administrator, determines that regional and/or national conditions outweigh potential benefits of the fire and appropriate suppression action is warranted.

Information used to set incident priorities

Priorities for action if a fire requires a new strategy should be based first on safety of the public and firefighters. Secondary priorities include protection of private property and park resources and improvements. Rangers and maintenance staff should identify safety hazards.

The following maps will be available to burn bosses for setting priorities in the event a prescribed burn escapes:

- Map of West Branch, showing the proximity of privately owned buildings
- Park facility map
- Cultural and historic resource map, delineating Management Zones



Implementation Plan Requirements

Use the incident action plan or Prescribed Fire Burn Plan to develop organization. Use strategy and tactics that have been successful in the past. Take care to ensure MIST is not forgotten in the efforts to suppress fire. Appropriate organizational levels will be identified through the WFSA process or by evaluation of in-park capabilities.

3. Air Quality and Smoke Management

a. Pertinent Air Quality Issues

One potential source of controversy for prescribed fires is smoke, as all fires produce airborne particles that contribute to material normally found in the atmosphere. However, fire was part of the pre-settlement environment. With the use of prescribed fires, the time and place can be chosen so that fuel characteristics, atmospheric moisture, velocity and direction of wind, and other weather conditions will cause a minimal impact on nearby communities.

b. Smoke Management Planning and Implementation Measures

The fire management program at the park will seek to minimize adverse environmental effects and will comply with State air quality provisions and any permit requirements in addition to applicable provisions of the Clean Air Act (P.L. 88-206) and related federal regulations. The following smoke management guidelines will be adhered to during all phases of the above program.

- No management fires will be ignited during air pollution alerts, or temperature inversions.
- Fire weather forecasts will be used to predict smoke dispersal upon ignition.
- Burning will be conducted only when conditions will result in rapid smoke dispersal, as reflected in the wind components of the burn prescription.

Smoke will be monitored for effects. The news media will be kept informed on fire conditions and predictions regarding air movements and how they should affect areas surrounding the park.

Smoke issues include:

- Visibility on Interstate-80 and Herbert Hoover Highway
- Smoke that can be pulled into the high school (west of park) air handlers, creating a health hazard
- Smoke that lies over the city to cause a health hazard or nuisance

Permits for open burning are discussed in Iowa Administrative Code Chapter 23: Emission Standards for Contaminants – Open Burning [IAC 567—23.2(455B), <http://www.iowadnr.com/air/prof/asbestos/files/openburningrules.pdf>]. No permits are required by the state (Christine Paulson, Environmental Specialist Senior, DNR - Air Quality Bureau, personal communication).

E. Non-Fire Fuel Treatment Applications

Hazard fuel reduction is not a primary problem at the park. As long as prescribed fire is used as a means of maintaining the fire dependent systems, fuel will not accumulate. The only mechanical treatment of fuels is the mowing of firebreaks throughout the growing season and the removal of excess debris, particularly from the prairie edge prior to



prescribed fire. Mechanical treatment is occasionally done in isolated sections of the prairie to control exotic and invasive woody plants.

F. Emergency Rehabilitation and Restoration

Park staff will recommend actions that ensure suppression activities will be carried out in a manner that results in the least amount of resource damage. After the fire is declared out, park maintenance crews will remove litter, refill disturbed soil and install erosion control devices if necessary. Maintenance crews will flush cut stumps and remove logs and brush. The severity of the burn and its resultant impact will be considered in determining the need to seed or otherwise re-establish native plant species and cultural landscape. Such efforts regarding landscaping and plants will be in full compliance with [NPS Management Policies 2006](#) and given prior approval of the regional director. A rehabilitation plan, outlining what species are to be planted, techniques to be used, locations and cost estimates will be prepared before any action is taken, according to the guidance in [RM-18, Chapter 12](#).

Additionally, guidance in the [Interagency Burned Area Emergency Response Guidebook](#) will be followed in the rehabilitation of the disturbed park land. The purpose of the Interagency Burned Area Emergency Response Guidebook is to provide general operational guidance for emergency stabilization activities after a wildfire. In conjunction with Departmental and agency policy, it is designed to provide agency administrators and emergency stabilization specialists with sufficient information to:

- Understand emergency stabilization policy, standards, and procedures.
- Assess wildfire damage and develop a cost effective plan or report.
- Assess and report accomplishments.

It consolidates and provides an interagency interpretation of emergency stabilization policies, procedures, objectives, and standards where there is Departmental and agency agreement. Individual agency policy and procedure manual guidance can be more but not less restrictive than that presented in the guidebook.



V. Fire Management Organization and Responsibilities

A. Organizational Structure of Park Fire Management Program

Herbert Hoover NHS has a small permanent staff. Much of the responsibility for the fire management operations has been delegated as a collateral duty to the Chief Ranger. The Midwest Regional Office provides fire management oversight for the site. The FMO from the Midwest Regional Office (MWRO) provides oversight and assistance as needed. The Midwest Region Fire Management Office (located in Omaha) was established to provide guidance and technical support for participating national park units.

B. NPS FIRE PROGRAM FUNDING

Currently, all NPS fire funding for the park is managed by the FMO stationed at MWRO. Funding is available for personal protective gear for firefighters and training funds (on an as-needed and available basis) as well as for prescribed fire projects.

The park does not have any NPS fire funded positions. Fire funding does fund approved fire and hazard fuel projects. funding is also authorized for approved fire training, preparedness, suppression, equipment, personal protective equipment, and burned area emergency stabilization and rehabilitation projects.

NPS fire funds are managed through the Midwest Region Fire Management Office. Requests for funding are made from the park to the Regional Fire Management Office.

FIREPRO analysis, the software package associated with budgeting fire funds, may be phased out in the future and be replaced by an interagency system, the Fire Program Analysis (FPA) System. The purpose of FPA is to provide managers of cooperating federal land management agencies with a common interagency process for fire management planning and budgeting to evaluate the effectiveness of alternative fire management strategies through time, in order to meet land management goals and objectives. FPA will reflect fire objectives and performance measures for the full scope of fire management activities. FPA may be the source of fire program funding analysis during the life span of the plan.

[Fire Program Analysis \(FPA\)](#)

C. Fire Management Organization in Relation to Park Organization

The Chief Ranger at the park or designee is responsible for coordinating the fire management program. This entails coordinating with regional FMO on fire and resource management objectives, and all prescribed and wildland fire implementation actions. The Herbert Hoover NHS superintendent or designee gives final approval for Prescribed Fire Burn Plans and other actions as outlined within this FMP. Whenever, the Superintendent or the Chief Ranger travel away from the park they are encouraged to brief and delegate personnel acting authority to approve and execute burn plans in their absence. This will avoid situations where prescribed fire windows are missed because personnel are away from the park. Responsibilities that impact fire activities are as follows:

Park Superintendent

- Responsible for overall operation and management of the park, ensures that Department, Service and park policies are maintained and followed.
- Responsible for overall fire prevention within the park.



- Ensures that all park divisions support the team effort to maintain a fire management program.
- Develops and implements cooperative fire management agreements with other federal, state, and local agencies and with the local landowners.
- Approves Fire Management Plan and all burn plans.
- Responsible for implementation of the Fire Management Plan.

Chief Park Ranger

- Has overall supervisory responsibility for Park-related law enforcement and emergency operations. Also serves as the Resource Manager.
- Supports the fire program by making personnel available for park fire operations.
- Annually reviews and revises (as necessary) this Fire Management Plan prior to commencement of the normal year fire season, to ensure that the planned actions and activities support and implement the Park's Resource Stewardship Strategy. Coordinates, with the MWR Fire Management Officer, fire prevention activities, wildfires, prescribed fires, and post-fire activities occurring within the Park. Completes and submits the WFIP Stage I requirement of a fire SIZE-Up Report.
- Supervises the Park fire staff including two permanent employees and a seasonal fire crew of five and oversees the Park fire cache.
- Ensures all documentation for park fires (including DI-1202 reports) is completed and provided to MWR FMO for input into the national database.
- Coordinates with the MWR Fuels Management Specialist to plan and implement prescribed fires under the Fire Management Plan; assists MWR Fuels Management Specialist in writing prescribed fire plans.
- Coordinates park personnel dispatches for in- and out-of-park fire assignments with MWR Fire Management Office and the Missouri-Iowa Interagency Coordination Center (MO-MOC).

Park Historian

- Ensures that all NEPA documentation is up-to-date annually.

Chief of Interpretation

- Provides basic fire program information to park staff and visitors.
- Ensures that accurate information is incorporated into park publications, interpretive ranger programs, and exhibits.

D. Park Superintendent's Responsibility for Periodic Assessment Signature

The park superintendent is not required to approve by signature periodic assessments for continued wildland fire use because fire use has been determined to be an inappropriate management response at Herbert Hoover and because of multiple factors listed previously in this plan it is most likely that wildland fire use will never be appropriate for this park unit. For additional information see [Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide](#) and [RM-18, Chapter 9](#).

E. Interagency Coordination

Interagency coordination and cooperation is essential for successful implementation of the fire management program at the park. All wildland and prescribed fires will require interagency cooperation. The park relies primarily on Midwest Regional Office staff to



coordinate those cooperative actions. The park will coordinate with the local VFD throughout the year in order to foster an effective professional working relationship.

F. Key Contacts

Table 4: Interagency contacts and phone numbers

Name	Phone Number
City Police	(319) 643-2222
Cedar County Sheriff's Office	(563) 886-2121
Iowa State Patrol (Davenport)	(563) 359-0388
West Branch Fire Dept.	(319) 643-2110
<i>Missouri-Iowa Interagency Coordination Center (MO-MOC)</i>	(573) 341-7484

G. Fire Related Agreements

A General Agreement with the City of West Branch, covering firefighting and emergency services is located in [*Appendix E*](#).



VI. Monitoring

A. Monitoring Requirements

The goal of fire effects monitoring is to determine if the short-term burn objectives and the long-term resource management objectives are achieved. This is generally accomplished through the installation and sampling of permanent vegetation plots. Plots are installed in a PMU and read prior to a prescribed fire. Following the fire, the plots are typically read at the following intervals: immediately following the fire, one year, two years, and ten years after the fire. Monitoring variables are chosen based on objectives outlined in the FMP or monitoring plan. Statistical techniques are used to evaluate if changes in these monitoring variables are significant. If objectives are not being met, adaptive management is used to determine if burn prescriptions or alternative techniques should be employed, or if the objectives should be modified.

The Christiansen surveys from 1984 satisfied this monitoring need until 2005 when they were discontinued. The Heartland Network Inventory and Monitoring Program has taken over fire effects monitoring for Heartland Network parks with prescribed fire use. A report analyzing the effects of fire during a 21 year period is in draft and will be completed by the end of 2007 and will be posted at <http://www1.nature.nps.gov/im/units/htln/reports.cfm>. Methods associated with fire effects monitoring are available at <http://www1.nrintra.nps.gov/im/units/htln/monitoring/plan.cfm>.

B. Fire Monitoring Handbook (FMH) and Deviations from FMH

Fire Monitoring Handbook is the program guide used throughout much of NPS to measure fire effects. Deviations from this protocol are allowed under certain circumstances. The Heartland Network's monitoring protocol has been peer-reviewed and accepted by the NPS. It has been accepted as appropriate fire effect monitoring for the Heartland Network parks.

C. Herbert Hoover NHS Fire Monitoring Plan

The Fire Monitoring Plan is part of the Heartland Network's monitoring program. The park does not supplement this monitoring program.



VII. Fire Research

A. Previous and Ongoing Restoration Research at Herbert Hoover NHS

Research at the park has monitored the restoration of the prairie. Although only two reports specifically address effects of fire on the prairie (Christiansen 1984, 1985), work has followed the dynamics of change within the prairie over years following prescribed fire and periods in which there was no burning (Christiansen 1984 – 1999). Managers used prescribed fire in 1972, but not again until 1984. During this period when managers did not burn, mowing, biological controls, mechanical removal, and chemical applications provided the only means to control exotic and invasive plants. Managers have relied most heavily on fire as the best and most cost effective means of furthering restoration efforts in recent years.

Dr. Paul Christiansen has monitored the prairie vegetation since 1984. His data provide insight to the dynamics of the system relative to the use of fire as a management tool. His 21 years of historic data, relative to fire management actions, has been analyzed and appears in Williams and Leis 2007. Generally speaking, fire has contributed to increases in big bluestem (*Andropogon gerardii*) cover, which was the predominant grass in this area prior to settlement (Landers 1975). Data indicate decreases in some annual and biennial weeds, such as ragweed (*Ambrosia trifida*), Queen Anne's lace (*Daucus carota*), and others, as competition by native perennials has increased. Fire has reduced the cover of smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*), particularly in areas that were reclaimed from lawns.

B. Fire Research Needs and Opportunities

Despite the amount of research conducted on fire in the tallgrass prairie, there remains much that is unknown on this subject. The questions that are most pertinent to fire in the park are:

- What was the historic (pre-settlement) fire regime (frequency and season) in this location?
- What was the historic vegetation composition of the local prairies, savannas, and forests?
- What are the fire effects on fauna (birds, reptiles, amphibians, butterflies) locally?
- What was the historic community structure of the savannas and forested areas locally?
- What are the best, most efficient and effective, techniques of controlling exotic species using a combination of fire, herbicides and mechanical treatments that can be sustained in a small park with limited fiscal resources?

Implementation of this FMP should not be contingent on completion of research of the local fire regime and fire effects on vegetation. A large body of scientific information regarding effects of fire and fire exclusion for tallgrass prairies already exists. Although this research was accomplished in other geographic areas, the results may be applied to the park, taking care to identify site differences and any subtle effects that those differences might cause. Fire effects discussed in the literature appear to be similar to those indicated by the data.



VIII. Public Safety

A. Public Safety Issues

Wildland and prescribed fires can present a hazard to firefighters, the public visiting the park, and adjacent landowners. The safety of all people in the area is the primary concern of the Incident Commander. The business and residential sections of the city create Wildland Urban Interface concerns. Visibility of fire management actions from the Interstate could cause “rubber-necking” and associated hazards. Safety issues go beyond the actual fire to the impacts of smoke on visibility along the bordering Interstate and state highway. Air quality is a safety concern for everyone, especially those with diminished lung capacity or other respiratory problems.

B. Procedures for Mitigating Safety Issues

Usually the entire perimeter of the fire is easily monitored and there is little likelihood that fire will spread far. In these cases, the concern will be to keep the public out of the immediate fire area, so that they will not hinder the suppression activities. Under no circumstance will anyone be permitted near a fire without the appropriate training and personal protective equipment.

In the case of a wildland fire that has potential for rapid spread, there will be a possibility that park visitors will be in areas of danger. Visitors will be informed at the visitor center and Herbert Hoover Presidential Library/Museum front desk regarding the fire and the area where caution should be exercised.

Roads will be closed or ranger escorted convoys established if visibility on park roads is significantly impaired. Temporary closure of the park or a portion may be needed when fire behavior has potential to endanger visitor and employee safety. When a fire threatens to escape from the park or has the potential to do so, adjacent authorities will be given as much advance notice as possible in order to take appropriate action. The West Branch Volunteer Fire Department (VFD) would be immediately available in the case of fire escape and would have the resources to call in surrounding fire departments through mutual aid agreements.

Prescribed fire activities are always preceded by announcements within the community as to potential date for the activities. Residents are encouraged to place contact information on our call list for people with sensitivity to smoke. The local schools and people listed on our call list are contacted on the night before or the day of a prescribed fire so that they can take precautions. Air handlers are turned off at the high school west of the prairie.



IX. Public Information and Education

A. Public Fire Information Capabilities and Needs

As with all park activities, the presence of an informed public can go far in providing support for the fire management program at the park. A concerted effort will be made to educate public about fire concerns at the park, including fire danger messages during periods of drought. Fire management messages will be introduced into interpretive programs where appropriate.

The park will participate in fire education activities in the community, including demonstrations of fire fighting equipment and safety. Park visitors will be made aware of regulations regarding the use of fire within the park. High fire danger notices will be posted at the visitor center. The local media will be informed of fire prevention concerns through news releases, when appropriate. Media access to fire scenes will be facilitated when it is safe to do so. When interest is warranted, a staff member will be designated as the contact person for all information requests.

Notification of intent to use prescribed fire is sent to media through a news release. These news releases contain an educational element in the “why” of the “what” “where” “when” and “why” approach to successful news release writing.

B. Step-up Plan Information Actions

Refer to [*Step-Up Plan in Section IV, C, 2d.*](#)



X. PROTECTION OF SENSITIVE RESOURCES

A. Archeological Sites and Cultural Resources

While major archeological sites have been identified in the park, a full archeological study has not been undertaken. An archeological inventory is needed to identify materials at the surface or shallow subsurface. Fire generally has minimal impact on artifacts located more than two inches below the soil surface. Fire management's greatest impact to archeological resources results from mechanical damage due to vehicle traffic or excavation on fire lines. The areas of greatest archeological importance are located within the historic core area, where fire will be primarily structural and immediately suppressed. Impacts will be mitigated through use of MIST protocols. All unrecorded sites that are discovered during a fire activity will be protected.

Cultural and historic resources of the park are primarily clustered in the northeast corner of the park. The Gravesite and Miles farms are located on the perimeter of the prairie and, therefore, more susceptible to damage from fire escaping the prairie. Heat and smoke could impair the cultural landscape surrounding these structures. Vehicles can access these structures and firebreak lies between these structures and the prairie. Building fire lines could damage tree plantings that are part of the cultural landscape. Impacts will be mitigated through maintaining firebreaks, such as mowed grass, and use of urban-interface mitigation techniques.

B. Natural Resources

Natural Resources will generally benefit from prescribed fire activities. Care should be taken to time fire to do the least damage to vulnerable wildlife species, such as insects, amphibians, reptiles, and breeding birds.

By retaining a regular fire regime, prescribed fires will lessen the potential for wildfire and reduce the severity of wildfire if it occurs. Limiting the severity of the fire will protect soils, perennial vegetation, insects, and some wildlife species. Unpredictable wildland fire may temporarily impact natural resources, such as breeding birds or herpetofauna, but that impact will be short in duration as the area provides excellent habitat that would encourage recolonization.

C. Modern Infrastructure and Developments

Urban-interface mitigation techniques should be applied to prevent or reduce negative impacts to modern developments within the park boundaries.



XI. Fire Critiques and Annual Plan Reviews

Each affected NPS unit is required to review and update their fire management plan annually. An annual review is essential to ensure that the Fire Management Plan continues to conform to current laws, objectives, procedures, and strategies. A plan revision, and NEPA compliance review, is required every five years.

A. Critiques

All wildfires occurring within the park will receive a review by those involved to evaluate such topics as: the initial response, “hotline” (on-going fire incident) review, control methods used, and safety concerns. This review will be conducted by one of the following: the Incident Commander, the Fire Management Officer, or the official who has designated fire program responsibilities. The purpose of this review is to recognize and document actions that were successful and identify and rectify actions that were unsafe or ineffective.

The park superintendent will conduct closeout meetings with Incident Management Teams to ensure a successful transition of the incident back to the park and to identify and evaluate incomplete fire business. Refer to [RM-18, Chapter 13, Exhibit 1](#) for a sample closeout.

A regional or national level fire review may be conducted if one of the following occurs:

- Fire crosses the park boundary into another jurisdiction without the approval of landowner or agency.
- Fire resulted in adverse media attention.
- Fire involved serious injury or death, significant property damage, or has the potential to do so.
- Fire results in controversy involving another agency.

Refer to [Chapter 13, Exhibits 2 & 3 of RM-18](#).

All entrapments and fire shelter deployments will be reported and investigated as soon as possible after the deployment incident. Refer to [Chapter 13, Exhibit 4 & 5 of RM-18](#) for review directions and written outline format.

B. Plan Reviews

An informal fire management program review will be conducted annually to evaluate current procedures and identify any needed changes to the FMP. Changes identified will be documented in the required annual FMP review. Fire effects monitoring information will be used to determine the need for adaptive management. A formal fire management review will be conducted every five years. This review will make certain that the FMP is consistent with the Resource Stewardship Strategies to attain or maintain desired resource conditions.

The park superintendent must approve significant changes to the body of this plan. The only exceptions to this procedure will be grammatical corrections, minor procedural changes, deletions, corrections, and additions to the appendices. Copies of all changes will be promptly forwarded to the Fire Management Program Center. Changes requiring approval and concurrence will be submitted with a new cover sheet for signature and dates, which will replace the original cover sheet upon receipt by the park superintendent.



XII. Consultation and Coordination

Agencies and persons consulted in 2001:

Natural Resources Conservation Services, USDA, Cedar County District, Tipton, IA
State Historic Preservation Office, State of Iowa
U.S. Geological Survey, USDI, Water Resources Division, Iowa City, IA
Doug Alexander, Fire Management Specialist, Midwest Region, NPS
Fred Bird, Fire Management Officer, Midwest Region, NPS
Paul Christiansen, professor emeritus, Cornell College, Mount Vernon, IA
Jim DeCoster, fire ecologist, Midwest Region, NPS
Bill Hunt, Midwest Archeological Center, NPS
Mike Madell, Environmental Compliance Specialist, Midwest Region, NPS
Sherry Middlemis-Brown, biologist, Herbert Hoover National Historic Site, NPS

Persons consulted for this 2007 revision:

Scott Beacham, fuels management specialist, Midwest Region, NPS
Neil Korsmo, chief ranger, Herbert Hoover National Historic Site, NPS
James Mattingly, wildfire specialist, Midwest Region NPS
Paul Mancuso, fuels management specialist, Midwest Region, NPS
Sherry Middlemis-Brown, biologist, Midwest Region, NPS
Cary Wiesner, historian, Herbert Hoover National Historic Site, NPS
State Historic Preservation Office, State of Iowa

This 2007 revision of the Fire Management Plan for Herbert Hoover National Historic Site recommends the same management actions as the previous version. The differences lie nearly entirely in changes to document organization, completion of species inventories, and changes in park staff and park agreements. No substantive changes have been made to decisions or intentions of this implementation plan.



List of Appendices

- A. References Cited**
- B. Acronyms Used and glossary**
- C. Species Lists**
- D. NEPA compliance and NHPA compliance**
- E. Unit Specific information**
 - Fire call up lists*
 - Fire reporting form for state of Iowa*
 - Preparedness inventory*
 - Agreement with Volunteer Fire Department*
 - Size-Up Report*
- F. Site Maps**
- G. Long-term Prescribed Fire and Hazard Fuel Reduction Plan**



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B. Acronyms Used and Glossary

AMR—Appropriate Management Response
BI – Burning Index
DI-1202 – Individual Fire Report form
DO-18 – Director’s Order 18
DOD—Department of Defense\
DOI—Department of The Interior
EMS—Emergency Medical Services
FIREPRO – National Park Service Fire Program
FMH -- Fire Monitoring Handbook
FMO -- Fire Management Office
FMP -- Fire Management Plan
FMU – Fire Management Unit
FPA—Fire Program Analysis
GMP – General Management Plan
HHPLA – Herbert Hoover Presidential Library Association
HHPLM – Herbert Hoover Presidential Library-Museum
IQCS—Incident Qualifications Certification System
KBDI—Keetch Byram Drought Index
LAL – Lightning Activity Level
LCES – Lookouts, Communication, Escape Routes, and Safety Zones (the 4 Fire Orders)
MIST – Minimum Impact Suppression Tactics
MWRO – Midwest Regional Office
NEPA – National Environmental Policy Act
NHPA—National Historic Preservation Act
NIFC -- National Interagency Fire Center
NFDRS – National Fire Danger Rating System
NPS – National Park Service
NWCG – National Wildfire Coordinating Group
PIO--Public Information Officer
PMU – Prairie Management Unit
RAWS—Remote Automated Weather Station
RM-18 – Reference Manual 18
RSS – Resource Stewardship Strategy
SHPO – State Historic Preservation Office
USDA-United States Department of Agriculture
USDI-United States Department of the Interior
VFD – West Branch Volunteer Fire Department
WFIP - Wildland Fire Implementation Plan



- WFMI-- Wildland Fire Management Information (System)
- WFSA - Wildland Fire Situation Analysis
- WUI – Wildland Urban Interface
- Birthplace Cottage – Fundamental Resource of the park within the historic core
- Blacksmith Shop – cultural resource within the historic core
- Friends Meetinghouse – Fundamental Resource within historic core
- Gravesite – Fundamental Resource located next to the Natural Zone, but within the Commemorative Zone
- Historic Core – location of most of the historic buildings, located in the northeast portion of the park within the Commemorative Zone
- Herbert Hoover Presidential Library Association – a private association, one of three entities located at the park, with a mission to commemorate the life of Herbert Hoover
- Herbert Hoover Presidential Library-Museum – a facility of the National Archives and Records Administration, located within the park
- Miles Farm – historic farm structures located on east side of park
- Natural Zone – management zone, delineated in the GMP, containing several significant natural resource values
- Prescribed fire -- purposefully ignited fire intended to meet management objectives.
- Schoolhouse – historic resource located in the historic core
- Thompson Farm -- historic farm structures and fields located on west side of park; these structures belong to NPS, but are part of a lifelong lease and are not functionally part of the park
- Wildland fire use -- the employment of naturally ignited wildlands to meet management objectives



C. Species Lists

Table C1: Plant Species List³

Species	Common name	Plant family
<i>Yucca glauca</i>	soapweed	Agavaceae
<i>Amaranthus arenicola</i>	pigweed	Amaranthaceae
<i>Amaranthus hybridum</i>	green amaranth	Amaranthaceae
<i>Rhus glabra</i>	smooth sumac	Anacardiaceae
<i>Toxicodendron radicans</i>	poison ivy	Anacardiaceae
<i>Angelica atropurpurea</i>	angelica	Apiaceae
<i>Daucus carota</i>	Queen Anne's lace	Apiaceae
<i>Eryngium yuccifolium</i>	rattlesnake master	Apiaceae
<i>Pastinaca sativa</i>	wild parsnip	Apiaceae
<i>Zizia aurea</i>	golden alexanders	Apiaceae
<i>Asclepias syriaca</i>	common milkweed	Asclepiadaceae
<i>Asclepias tuberosa</i>	butterfly weed	Asclepiadaceae
<i>Achillea millefolium</i>	western yarrow	Asteraceae
<i>Ambrosia artemisiifolia</i>	common ragweed	Asteraceae
<i>Ambrosia trifida</i>	giant ragweed	Asteraceae
<i>Antennaria neglecta</i>	field pusseytoes	Asteraceae
<i>Arctium minus</i>	common burdock	Asteraceae
<i>Aster azureus</i>	sky-blue aster	Asteraceae
<i>Aster ericoides</i>	heath aster	Asteraceae
<i>Aster laevis</i>	smooth blue aster	Asteraceae
<i>Aster novae-angliae</i>	New England aster	Asteraceae
<i>Aster pilosus</i>	hairy aster	Asteraceae
<i>Aster sp.</i>	aster	Asteraceae
<i>Brickellia eupatorioides</i>	false boneset	Asteraceae
<i>Cirsium arvense</i>	Canada thistle	Asteraceae
<i>Cirsium discolor</i>	field thistle	Asteraceae
<i>Cirsium vulgare</i>	bull thistle	Asteraceae
<i>Conyza canadensis</i>	horseweed	Asteraceae
<i>Coreopsis palmata</i>	tickseed	Asteraceae
<i>Coreopsis tinctoria</i>	golden coreopsis	Asteraceae
<i>Coreopsis tripteris</i>	tall tickseed	Asteraceae
<i>Echinacea pallida</i>	pale coneflower	Asteraceae
<i>Echinacea purpurea</i>	purple coneflower	Asteraceae
<i>Erechtites hieracifolia</i>	fireweed	Asteraceae
<i>Erigeron annuus</i>	annual fleabane	Asteraceae
<i>Erigeron strigosus</i>	Daisy fleabane	Asteraceae
<i>Helenium autumnale</i>	sneezeweed	Asteraceae

³ Christiansen, P. 1984 – 1999. Prairie Inventory, Herbert Hoover National Historic Site, unpublished reports.



Species	Common name	Plant family
<i>Helianthus annuus</i>	common sunflower	Asteraceae
<i>Helianthus tuberosus</i>	Jerusalem artichoke	Asteraceae
<i>Helianthus grosseserratus</i>	saw-tooth sunflower	Asteraceae
<i>Heliopsis helianthoides</i>	ox-eye	Asteraceae
<i>Lactuca canadensis</i>	wild lettuce	Asteraceae
<i>Lactuca serriola</i>	prickly lettuce	Asteraceae
<i>Liatris aspera</i>	rough blazing star	Asteraceae
<i>Ratibida pinnata</i>	yellow coneflower	Asteraceae
<i>Rudbeckia hirta</i>	black-eyed Susan	Asteraceae
<i>Rudbeckia triloba</i>	brown-eyed Susan	Asteraceae
<i>Senecio plattensis</i>	prairie ragwort	Asteraceae
<i>Silphium integrifolium</i>	rosinweed	Asteraceae
<i>Silphium laciniatum</i>	compass plant	Asteraceae
<i>Silphium perfoliatum</i>	cup plant	Asteraceae
<i>Silphium terebinthinaceum</i>	prairie dock	Asteraceae
<i>Solidago canadensis</i>	tall goldenrod	Asteraceae
<i>Solidago gigantea</i>	smooth goldenrod	Asteraceae
<i>Solidago rigida</i>	stiff goldenrod	Asteraceae
<i>Sonchus oleraceus</i>	common sow thistle	Asteraceae
<i>Taraxacum officinale</i>	dandelion	Asteraceae
<i>Tragopogon dubius</i>	goat's-beard	Asteraceae
<i>Vernonia fasciculata</i>	ironweed	Asteraceae
<i>Corylus americana</i>	hazlenut	Betulaceae
<i>Lithospermum canescens</i>	hoary puccoon	Boraginaceae
<i>Barbarea vulgaris</i>	yellow rocket	Brassicaceae
<i>Capsella bursa-pastoris</i>	Shepard's purse	Brassicaceae
<i>Lepidium densiflorum</i>	peppergrass	Brassicaceae
<i>Lobelia spicata</i>	spiked lobelia	Campanulaceae
<i>Lonicera tatarica</i>	Tartarian honeysuckle	Caprifoliaceae
<i>Sambucus canadensis</i>	elderberry	Caprifoliaceae
<i>Cerastium sp.</i>	field chickweed	Caryophyllaceae
<i>Saponaria officinalis</i>	bouncing bet	Caryophyllaceae
<i>Chenopodium album</i>	lamb's quarters	Chenopodiaceae
<i>Tradescantia sp.</i>	spiderwort	Commelinaceae
<i>Calystegia sepium</i>	field bindweed	Convolvulaceae
<i>Ipomea sp.</i>	morning glory	Convolvulaceae
<i>Cornus foemina ssp racemosa</i>	gray dogwood	Cornaceae
<i>Cornus stolonifera</i>	red-osier dogwood	Cornaceae
<i>Carex spp.</i>	sedge	Cyperaceae
<i>Equisetum arvense</i>	common horsetail	Equisetaceae
<i>Astragalus canadensis</i>	milk vetch	Fabaceae
<i>Baptisia lactea</i>	white wild indigo	Fabaceae
<i>Dalea candida</i>	white prairie clover	Fabaceae
<i>Dalea purpurea</i>	purple prairie clover	Fabaceae



Species	Common name	Plant family
<i>Desmodium canadense</i>	showy tick-trefoil	Fabaceae
<i>Lespedeza capitata</i>	round-headed bush clover	Fabaceae
<i>Lotus corniculatus</i>	bird's-foot trefoil	Fabaceae
<i>Medicago lupulina</i>	black medic	Fabaceae
<i>Melilotus alba</i>	white sweet clover	Fabaceae
<i>Melilotus officinalis</i>	yellow sweet clover	Fabaceae
<i>Trifolium hybridum</i>	alsike clover	Fabaceae
<i>Trifolium pratense</i>	red clover	Fabaceae
<i>Trifolium repens</i>	white clover	Fabaceae
<i>Quercus alba</i>	white oak	Fagaceae
<i>Quercus bicolor</i>	swamp white oak	Fagaceae
<i>Quercus borealis</i>	northern red oak	Fagaceae
<i>Quercus macrocarpa</i>	bur oak	Fagaceae
<i>Hypericum sp.</i>	St. John's wort	Hypericaceae
<i>Sisyrinchium campestre</i>	blue-eyed grass	Iridaceae
<i>Carya ovata</i>	shagbark hickory	Juglandaceae
<i>Juglans nigra</i>	black walnut	Juglandaceae
<i>Physostegia parviflora</i>	obedient plant	Lamiaceae
<i>Morus alba</i>	white mulberry	Moraceae
<i>Fraxinus pennsylvanica</i>	green ash	Oleaceae
<i>Pinus strobus</i>	eastern white pine	Pinaceae
<i>Oenothera villosa</i>	gray evening primrose	Onagraceae
<i>Plantago spp.</i>	plantain	Plantaginaceae
<i>Platanus occidentalis</i>	sycamore	Plantanaceae
<i>Agrostis gigantea</i>	redtop	Poaceae
<i>Alopecurus carolinianus</i>	common foxtail	Poaceae
<i>Andropogon gerardii</i>	big bluestem	Poaceae
<i>Bouteloua curtipendula</i>	side-oats grama	Poaceae
<i>Bromus inermis</i>	smooth brome	Poaceae
<i>Dactylis glomerata</i>	orchard grass	Poaceae
<i>Elymus canadensis</i>	Canada wildrye	Poaceae
<i>Panicum virgatum</i>	switchgrass	Poaceae
<i>Phalaris arundinacea</i>	reed canary grass	Poaceae
<i>Poa pratensis</i>	Kentucky bluegrass	Poaceae
<i>Schizachyrium scoparium</i>	little bluestem	Poaceae
<i>Setaria faberi</i>	giant foxtail	Poaceae
<i>Sorghastrum nutans</i>	Indian grass	Poaceae
<i>Polygonum aviculare</i>	knotweed	Polygonaceae
<i>Rumex crispus</i>	curly dock	Polygonaceae
<i>Potentilla arguta</i>	tall cinquefoil	Rosaceae
<i>Rosa multiflora</i>	multiflora rose	Rosaceae
<i>Verbascum thapsus</i>	common mullein	Scrophulariaceae
<i>Veronica sp.</i>	speedwell	Scrophulariaceae
<i>Veronicastrum virginicum</i>	Culver's root	Scrophulariaceae



Species	Common name	Plant family
<i>Physalis heterophylla</i>	ground cherry	Solanaceae
<i>Physalis virginiana</i>	ground cherry	Solanaceae
<i>Solanum americanum</i>	black nightshade	Solanaceae
<i>Solanum carolinense</i>	horse nettle	Solanaceae
<i>Ulmus pumila</i>	Siberian elm	Ulmaceae
<i>Viola pratincola</i>	common blue violet	Violaceae
<i>Viola sp.</i>	violet	Violaceae
<i>Parthenocissus quinquefolia</i>	Virginia creeper	Vitaceae
<i>Vitis riparia</i>	riverbank grape	Vitaceae

Table C2: Breeding bird list

Species	⁴ Probability of Breeding from Jackson, et al. 1996	⁵ Classification & Confirmation from Stravers, et al. 2004
American Kestrel	Probable	<i>Resident</i>
Ring-necked Pheasant	Confirmed	<i>Resident</i>
Northern Bobwhite	Possible	<i>Resident</i>
Killdeer	Probable	<i>N.Amer. Migrant</i>
Mourning Dove	Confirmed	<i>N.Amer. Migrant</i>
Yellow-billed Cuckoo	Probable	
Eastern Screech Owl	Probable	
Great Horned Owl	Probable	
Common Nighthawk	Probable	
Chimney Swift	Probable	<i>Neotropical Migrant</i>
Ruby-throated Hummingbird	Probable	<i>Neotropical Migrant</i>
Red-headed Woodpecker	Confirmed	
Downy Woodpecker	Probable	<i>Resident</i>
Northern Flicker	Probable	<i>N.Amer. Migrant</i>
Eastern Wood Peewee	Possible	<i>Neotropical Migrant</i>
Willow Flycatcher	Possible	
Horned Lark	Possible	
Purple Martin	Probable	<i>Neotropical Migrant</i>
Tree swallow	Possible	<i>N.Amer. Migrant</i>
Northern Rough-winged Swallow	Confirmed	<i>Neotropical Migrant</i>
Barn Swallow	Confirmed	<i>Neotropical Migrant</i>
Blue Jay	Confirmed	<i>Resident</i>
American Crow	Possible	<i>Resident</i>

⁴ Jackson, L.S., C. A. Thompson and J.J. Dinsmore. 1996. *The Iowa Breeding Bird Atlas*. Univ. Iowa Press. 484 pp. (for state block #582, Herbert Hoover National Historic Site, 1985-1990)

⁵ Stravers, Jon W., Kelly J. McKay, Thomas W. McClenahan. 2004. Avian surveys at Herbert Hoover National Historic Site. Technical Report NPS/HTLN/HEHO/ P2106020891.



Species	⁴ Probability of Breeding from Jackson, et al. 1996	⁵ Classification & Confirmation from Stravers, et al. 2004
Black-capped Chickadee	Confirmed	<i>Resident</i>
Brown Creeper	Possible	
House Wren	Confirmed	<i>Neotropical Migrant</i>
American Robin	Confirmed	<i>N.Amer. Migrant</i>
Gray Catbird	Possible	<i>Neotropical Migrant</i>
Brown Thrasher	Confirmed	<i>N.Amer. Migrant</i>
Cedar Waxwing	Probable	<i>N.Amer. Migrant</i>
European Starling	Confirmed	<i>Resident</i>
Warbling Vireo	Possible	<i>Neotropical Migrant</i>
Yellow Warbler	Possible	<i>Neotropical Migrant</i>
Common Yellowthroat	Probable	<i>Neotropical Migrant</i>
Northern Cardinal	Probable	<i>Resident</i>
Indigo bunting	Probable	<i>Neotropical Migrant</i>
Dickcissel	Confirmed	<i>Neotropical Migrant</i>
Chipping Sparrow	Probable	<i>Neotropical Migrant</i>
Field Sparrow	Possible	<i>N.Amer. Migrant</i>
Vesper Sparrow	Probable	
Savannah Sparrow	Possible	
Grasshopper Sparrow	Probable	<i>Neotropical Migrant</i>
Song Sparrow	Possible	<i>N.Amer. Migrant</i>
Bobolink	Probable	<i>Neotropical Migrant</i>
Red-winged Blackbird	Confirmed	<i>N.Amer. Migrant</i>
Eastern Meadowlark	Probable	<i>N.Amer. Migrant</i>
Western Meadowlark	Confirmed	
Common Grackle	Confirmed	<i>N.Amer. Migrant</i>
Brown-headed Cowbird	Probable	<i>N.Amer. Migrant</i>
Orchard Oriole	Probable	
Northern Oriole (Baltimore)	Confirmed	<i>Neotropical Migrant</i>
American Goldfinch	Probable	<i>N.Amer. Migrant</i>
House Sparrow	Confirmed	<i>Resident</i>
House Finch	Possible	<i>Resident</i>
Canada Goose		<i>N.Amer. Migrant</i>
Double-crested Cormorant		<i>N.Amer. Migrant</i>
Great-blue Heron		<i>N.Amer. Migrant</i>
Great Crested Flycatcher		<i>Neotropical Migrant</i>
Henslow's Sparrow		<i>N.Amer. Migrant</i>
Mallard		<i>N.Amer. Migrant</i>
Red-bellied Woodpecker		<i>Resident</i>



Species	⁴ Probability of Breeding from Jackson, et al. 1996	⁵ Classification & Confirmation from Stravers, et al. 2004
Red-eyed Vireo		<i>Neotropical Migrant</i>
Rock Dove		<i>Resident</i>
Sedge Wren		<i>N.Amer. Migrant</i>

Table C3: Mammal inventory⁶

A=Abundant C= Common U= Uncommon

⁷“Old” = status prior to inventory and “New” = status after inventory such that: a “1” = expected, “2” = observed (documented within the National Historic Site); “0” = not expected; “?” = questionable status; Author = whether species was documented.

Order: Family	Scientific Name	Common Name	Abundance	Old	New	Author
Artiodactyla: Cervidae	<i>Odocoileus virginianus</i>	White-tailed deer	U	2	2	Yes
Carnivora: Canidae	<i>Canis latrans</i>	Coyote	-	1	1	No
	<i>Urocyon cinereoargenteus</i>	Gray fox	-	1	1	No
	<i>Vulpes vulpes</i>	Red fox	U	2	2	Yes
Felidae	<i>Lynx rufus</i>	Bobcat	-	1	1	No
Mustelidae	<i>Mephitis mephitis</i>	Striped skunk	?	2	2	Yes
	<i>Mustela erminea</i>		-	Na	1	No
	<i>Mustela frenata</i>	Long-tailed weasel	-	1	1	No
	<i>Mustela nivalis</i>	Least weasel	-	1	1	No
	<i>Mustela vison</i>	Mink	?	2	2	Yes
	<i>Spilogale putorius</i>	Spotted skunk	-	1	1	No
	<i>Taxidea taxus</i>	Badger	-	1	1	No
Procyonidae	<i>Procyon lotor</i>	Raccoon	C	2	2	Yes
Chiroptera: Vespertilionidae	<i>Eptesicus fuscus</i>	Big brown bat	U	2	2	Yes
	<i>Lasionycteris noctivagans</i>	Silver-haired bat	-	1	1	No
	<i>Lasiurus borealis</i>	Red bat	C	Na	2	Yes
	<i>Lasiurus cinereus</i>	Hoary bat	-	Na	1	No
	<i>Myotis keenii</i>	Keen's bat	-	1	1	No
	<i>Myotis lucifugus</i>	Little brown bat	?	1	2	Yes
	<i>Myotis sodalis</i>	Indiana bat	-	1	0	-
	<i>Pipistrellus subflavus</i>	Eastern pipistrelle bat	U	1	2	Yes

⁶ Robbins, Lynn. 2005. Inventory of Distribution, Composition, and Relative Abundance of Mammals, including Bats, at Herbert Hoover National Historic Site. Technical Report NPS/HTLN/HEHO/ J6370040013

⁷ Boetsch, J., M. DeBacker, P. Hughes, D. Peitz, L. Thomas, G. Wagner, and B. Witcher. 2000. A study plan to inventory vascular plants and vertebrates: Heartland Network, National Park Service.



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Order: Family	Scientific Name	Common Name	Abundance	Old	New	Author
Insectivora: Soricidae	<i>Blarina brevicauda</i>	Short tailed shrew	-	1	1	No
	<i>Cryptotis parva</i>	Least shrew	-	1	1	No
	<i>Sorex cinereus</i>	Masked shrew	C	1	2	Yes
Talpidae	<i>Scalopus aquaticus</i>	Eastern mole	U	Na	2	Yes
Lagomorpha: Leporidae	<i>Lepus townsendii</i>	White-tailed jackrabbit	-	1	0	-
	<i>Sylvilagus floridanus</i>	Eastern cottontail	C	2	2	Yes
Marsupalia: Didelphidae	<i>Didelphis virginiana</i>	Opossum	-	1	1	No
Rodentia: Castoridae	<i>Castor canadensis</i>	Beaver	-	1	1	No
Geomyidae	<i>Geomys bursarius</i>	Plains pocket gopher	U	1	2	Yes
Muridae	<i>Microtus ochrogaster</i>	Prairie vole	C	1	2	Yes
	<i>Microtus pennsylvanicus</i>	Meadow vole	A	2	2	Yes
	<i>Microtus pinetorum</i>	Woodland vole	-	1	1	No
	<i>Mus musculus</i>	House mouse	-	1	1	No
	<i>Ondatra zibethicus</i>	Muskrat	-	2	1	No
	<i>Peromyscus leucopus</i>	White-footed mouse	C	2	2	Yes
	<i>Peromyscus maniculatus</i>	Deer mouse	C	2	2	Yes
	<i>Rattus norvegicus</i>	Norway rat	-	1	1	No
	<i>Reithrodontomys megalotis</i>	Harvest mouse	C	2	2	Yes
	<i>Synaptomys cooperi</i>	Southern bog lemming	-	1	1	No
Sciuridae	<i>Glaucomys volans</i>	Southern flying squirrel	-	1	1	No
	<i>Marmota monax</i>	Woodchuck	C	2	2	Yes
	<i>Sciurus carolinensis</i>	Gray squirrel	C	2	2	Yes
	<i>Sciurus niger</i>	Fox squirrel	C	2	2	Yes
	<i>Spermophilus franklinii</i>	Franklin's ground squirrel	-	2	?	No
	<i>Spermophilus tridecemlineatus</i>	13-lined ground squirrel	C	2	2	Yes
	<i>Tamias striatus</i>	Eastern chipmunk	-	2	1	No
Dipodidae	<i>Zapus hudsonius</i>	Meadow jumping mouse	U	Na	2	Yes



Table C4: Herpetofauna inventory⁸

“Old” = prior the inventory and “New” = status after the inventory; “Author” = whether voucher exists. Values for Old and New follow Boetsch et al (2000): “1” = expected, “2” = observed (documented within the park), “3” = not expected species list but were observed, and “4” = extinct or regionally extirpated species. ⁹

Amphibians Order: Family	Scientific Name	Common Name	Old	New	Author
Anura: Bufonidae	<i>Bufo americanus</i>	American toad	2	?	No
Hylidae	<i>Acris crepitans</i>	Cricket frog	1	?	No
	<i>Hyla chrysoscelis/versicolor</i>	Gray treefrog	1	?	No
	<i>Pseudacris crucifer</i>	N. spring peeper	1	?	No
	<i>Pseudacris triseriata</i>	Western chorus frog	1	?	No
Ranidae	<i>Rana blairi</i>	Plains leopard frog	1	?	No
	<i>Rana catesbeiana</i>	Bullfrog	1	?	No
	<i>Rana clamitans</i>	Green frog	1	?	No
	<i>Rana palustris</i>	Pickerel frog	1	?	No
	<i>Rana pipiens</i>	N. leopard frog	1	?	No
Caudata: Ambystomatidae	<i>Ambystoma texanum</i>	Smallmouth salamander	1	?	No
	<i>Ambystoma tigrinum</i>	E. tiger salamander	1	?	No
Salamandridae	<i>Notophthalmus viridescens</i>	Central newt	1	?	No
Reptilia Testudines: Chelydridae	<i>Chelydra serpentina</i>	Snapping turtle	1	1	No
Emydidae	<i>Chrysemys picta</i>	Painted turtle	1	1	No
	<i>Emydoidea blandingii</i>	Blanding’s turtle	1	?	No
	<i>Graptemys geographica</i>	Map turtle	1	?	No
	<i>Terrapene ornata</i>	Ornate box turtle	1	?	No
Trionychidae	<i>Trionyx muticus</i>	Smooth softshell	1	1	No
	<i>Trionyx spinifer</i>	Spiny softshell	1	1	No
Squamata: Colubridae	<i>Coluber constrictor</i>	Racer	1	?	No
	<i>Diadophis punctatus</i>	Ringneck snake	1	?	No
	<i>Elaphe obsoleta</i>	Black rat snake	1	?	No
	<i>Elaphe vulpina</i>	Fox snake	1	2	Yes
	<i>Heterodon platyrhinos</i>	E. hognose snake	1	?	No
	<i>Lampropeltis calligaster</i>	Prairie kingsnake	1	?	No

⁸ Richtsmeier, Rebecca. 2004. A Herpetofaunal Inventory of Herbert Hoover National Historic Site. Technical report NPS/HTLN/P6370020218

⁹ Boetsch, J., M. DeBacker, P. Hughes, D. Peitz, L. Thomas, G. Wagner, and B. Witcher. 2000. A study plan to inventory vascular plants and vertebrates: Heartland Network, National Park Service.



Amphibians Order: Family	Scientific Name	Common Name	Old	New	Author
	<i>Lampropeltis triangulum</i>	Milk snake	1	?	No
	<i>Nerodia sipedon</i>	Northern water snake	1	1	No
	<i>Pituophis melanoleucus</i>	Bull snake	2	?	No
	<i>Regina grahami</i>	Graham's crayfish snake	1	?	No
	<i>Storeria dekayi</i>	Brown snake	1	2	Yes
	<i>Storeria occipitomaculata</i>	Redbelly snake	1	?	No
	<i>Thamnophis proximus</i>	Western ribbon snake	3	?	No
	<i>Thamnophis radix</i>	Plains garter snake	1	2	Yes
	<i>Thamnophis sirtalis parietalis</i>	Garter snake	na	1	No
	<i>Thamnophis sirtalis sirtalis</i>	Garter snake	2	1	No
	<i>Tropidoclonion lineatum</i>	Lined snake	1	?	No
Viperidae	<i>Sistrurus catenatus</i>	Massasauga	1	?	No

D. NEPA and NHPA compliance

See Memorandum to File, Fire Management Plan 2007



E. Unit Specific Information

1. Fire call-up list

Table E1: Fire call-up list

Name	Phone Number	Purpose
West Branch Fire Dept.	319-643-2110	fire fighting
Herbert Hoover Presidential Library Association	319-643-5327	evacuation
Herbert Hoover Presidential Library Museum	319-643-5301	evacuation
City Police	319-643-2222	public safety
Cedar County Sheriff's Office	563-886-2121	public safety
Iowa State Patrol (Davenport)	563-359-0388	public safety
City Offices	319-643-5888	public safety
West Branch Community Schools	319-643-7213	public safety
Midwest Region Fire Management	402-661-1754	fire reporting – at time of fire
Missouri/Iowa Interagency Coordination Center 401 Fairgrounds Rd Rolla, MO 65401	Phone: 573-341-7484 Fax: 573-426-6800	fire reporting – at time of fire and follow up
Iowa Department of Natural Resources – Shawn Meier	563-886-1235 (Mobile) 563-530-6121	fire reporting – at time of fire and follow up
Iowa Department of Natural Resources – Gail Kantak	Gail.Kantak@dnr.state.ia.us	fire report form – after fire

Table E2: Call-up list for prescribed fire (include in prescribed fire plan)

Name	Phone Number	Mandatory/Optional	When
All of the contacts listed above and those below			
Cookson Memorial Home	319-643-2325	M	day before
Crestview Care Center	319-643-2551	M	day before
West Branch Ford	319-643-2123	M	day before
West Branch Times	319-643-2131	M	day before
All Residents of Main Street Place	Door-to-door	O	evening before
West Branch Community Schools	319-643-7213	M	week before
Hoover Elementary School	319-643-7211	M	day before
WB Middle School	319-643-5324	M	day before
WB high School	319-643-7216	M	day before
City Offices	319-643-5888	M	day before
Community State Bank	319-643-3155	M	day before
Additional residents requesting call		M	day before

2. Fire reporting form for state of Iowa – following this page

IOWA WILDLAND FIRE REPORT FORM

PLEASE SUBMIT TO Iowa DNR Fire Supervisor Gail Kantak

FAX: 515-223-1131 or E-MAIL: Gail.Kantak@dnr.state.ia.us

1. State: <p style="text-align: center;">IOWA</p>	2. County: Cedar	3. Fire Department: West Branch Volunteer Fire Department
4. Contact:		5. Location of Fire: Herbert Hoover National Historic Site Parkside Dr. West Branch, IA 52358
Phone:		
E-Mail:	neil_korsmo@nps.gov	
6. Date of Fire:		7. # & Type of apparatus used:

8. FIRE CAUSE	LINE #	TOTAL ACRES BURNED
a. Lightening	1	
b. Campfire	2	
c. Smoking	3	
d. Debris Burning (Controlled Burn that got out of control)	4	
e. Arson	5	
f. Equipment Use	6	
g. Railroads	7	
h. Children	8	
i. Miscellaneous	9	
j. Controlled Burn that DID NOT get out of control	10	

9. INJURIES:

10. NOTES:



3. Preparedness inventory

Table E3: Preparedness inventory

revised 10-23-2008

Item	New	Used	Total
<i>Shirts:</i>			
Small	3	4	7
Medium	6	8	14
Large	6	6	12
XLarge	2	6	8
XL Long	2		2
<i>Pants:</i>			
sz8	6		6
sz10	1		1
28x30	3		3
sz30	4		4
sz32	3		3
sz34	15		15
sz36	4		4
sz38	7		7
sz40	1		1
<i>Neckguard</i>			6
<i>Red Vest</i>			1
<i>Gloves:</i>			
Small			0
Medium			6
Large			1
XLarge			1
<i>Goggles:</i>			
Clear Plastic			7
Black Rubber			5
<i>Helmets:</i>			
2008, Bullard Co, ANSI Class C			3
<i>Shelters:</i>			
New Fire Shelter Large			1
New Fire Shelter Regular			1
<i>Packs, Belts and Harnesses:</i>			
Red Line Packs			4
Yellow Line Packs			7
Red Gear Packs			8
Chest Radio Harness			3
<i>Miscellaneous:</i>			
First Aid Kits			6
Water Bottles			32
Canvas Bottle Carriers			38



Item	New	Used	Total
Yellow Bottle Carriers			8
Heavy Duty Head Lamps			8
Panasonic Head Lamps			10
<i>Gear for Deployment:</i>			
Sleeping Bags			6
Foam Sleeping Mats			6
Inflatable Mattresses			8
2 Person Tent			1
Propane Camp Stove			1
2 Liter Propane Canister			1
External Frame Backpacks			2
24 pk AA Batteries			2
Rain Poncho			1
1 Gallon Canteen			1
Traveler's Alarm Clock			1
Disposable Ear Plugs			10 pr.
<i>Gear for Training:</i>			
Fire training videos (asst)			7

4. Agreement with City of West Branch, Volunteer Fire Department
(see following inserted pages)

FIREFIGHTING/EMERGENCY MEDICAL SERVICE ASSISTANCE

Agreement Number M6470070001

West Branch 1 of 7

General Agreement between

**The United States Department of the Interior
National Park Service, Herbert Hoover National Historic Site**

and the

West Branch Fire/Rescue Department, City of West Branch, Iowa

This General Agreement is entered into by and between the National Park Service (hereinafter "NPS"), United States Department of the Interior, acting through the Superintendent of Herbert Hoover National Historic Site (hereinafter "Park"), and the City of West Branch, Iowa, acting through its West Branch City Fire Chief.

ARTICLE I – BACKGROUND AND OBJECTIVES

The objective of this Agreement is to establish the terms and conditions under which the parties will provide mutual assistance in preventing, detecting, and suppressing structural fires, wildfires, providing emergency medical services (EMS) operations on lands within the Park's boundaries, within the City of West Branch, and in the immediate surrounding area.

Currently the NPS is primarily responsible for conducting fire prevention, detection, and providing EMS operations on federally owned land within the Park. The West Branch Fire Department is primarily responsible for conducting fire prevention, detection, and suppression of structural and wildland fire, providing EMS, and for conducting search and rescue operations within the City of West Branch, on federally owned land within the park boundary, and in the immediate surrounding area (including non-federally owned land within the Park's boundaries).

ARTICLE II - AUTHORITY

This Agreement is entered into under the authority of *42 U.S.C. §1856a (1994)*.

**GENERAL AGREEMENT
FIREFIGHTING/EMERGENCY MEDICAL SERVICE ASSISTANCE**

**Agreement Number M6470070001
West Branch 2 of 7**

ARTICLE III – STATEMENT WORK

A. The NPS agrees to:

1. Furnish, when requested by the West Branch Fire Department, qualified NPS employees, and fire and EMS equipment to assist in EMS and suppression of wildfires within the City of West Branch or in the immediate surrounding area whenever the furnishing of such assistance does not seriously impact the conduct of Park business. Authorized NPS employees will be deemed to be acting within the scope of their federal employment when responding to calls from the fire department.
2. Provide federal worker's compensation coverage for authorized NPS employees who respond to calls with the West Branch Fire Department.
3. Provide to the West Branch Fire Department an annual familiarization tour of the Park's facilities, equipment, and access points.
4. Provide opportunities for Fire and EMS personnel to receive training held in the local area sponsored by the NPS.

B. The City of West Branch agrees to:

1. Furnish available qualified EMS or Fire personnel, fire equipment, and rescue equipment to suppress structural fires and wildfires on federally owned land within the Park.
2. Provide worker's compensation coverage for qualified members of the West Branch Fire Department who respond to calls from the fire department within the park.
3. Provide to the NPS an annual familiarization tour of the West Branch Fire Department's facilities and equipment.
4. Provide opportunities for NPS personnel to receive training held in the local area sponsored by the Fire Department.

**GENERAL AGREEMENT
FIREFIGHTING/EMERGENCY MEDICAL SERVICE ASSISTANCE**

**Agreement Number M6470070001
West Branch 3 of 7**

C. The parties further agree as follows:

1. Each party will provide to the other party a list of responsible persons, with telephone numbers, to be contacted in an emergency. At least once a year, or more often if necessary, each party will provide the other party with an updated list of such persons and telephone numbers.
2. Each party will provide to the other party copies of current fire management plans for their areas of primary responsibility, including maps of areas involved and descriptions of special or extraordinary actions to be taken.
3. Only Minimum Impact Suppression Tactics will be used when fighting wildfires within the Park. No chainsaws or ground-disturbing equipment such as graders or bulldozers will be used without the permission of the NPS Superintendent or his/her designee.
4. After notifying the other party of a fire's discovery, either party may take immediate action to suppress a fire in the other party's area of primary responsibility in order to save life or property.
5. Each party to this Agreement waives all claims against the other party for compensation for loss, damage, personal injury, or death occurring in consequence of the performance of this Agreement unless the actions which cause such loss, damage, personal injury, or death are intentional or a result of gross reckless, or wanton behavior.
6. Neither party to this Agreement will reimburse the other party for all or any part of the cost incurred by such party in providing fire protection pursuant to this Agreement.
7. Nothing in this Agreement will be construed as obligating the NPS to expend in any one fiscal year any sum in excess of the monies appropriated by Congress and allocated by the NPS for the performance of this Agreement.

**GENERAL AGREEMENT
FIREFIGHTING/EMERGENCY MEDICAL SERVICE ASSISTANCE
Agreement Number M6470070001
West Branch 4 of 7**

ARTICLE IV – TERM OF AGREEMENT

This Agreement will be effective for a period of five years from the date of final signature, unless it is terminated earlier by one of the parties pursuant to Article X that follows.

ARTICLE V – KEY OFFICIALS

A. Key officials are essential to ensure maximum coordination and communications between the parties and the work being performed. They are:

1. For the NPS:
Superintendent

Herbert Hoover National Historic Site
P.O. Box 607
West Branch, Iowa 52358
(319)-643-2541

2. For the City of West Branch, Iowa:
West Branch City Fire Chief

City of West Branch
105 So. Second Street
West Branch, Iowa 52358
(319)-643-2110 or 643-5888

B. Communications - The City will address any communication regarding this Agreement to the key official with a copy to the Contracting Officer, and to the Superintendent of the area. Communications that relate solely to routine operational matters described in the current work plan may be sent only to the Superintendent.

c. Changes in Key Officials - Neither the NPS nor the City may make any permanent change in a key official without written notice to the other party reasonably in advance of the proposed change. The notice will include a justification with sufficient detail to permit evaluation of the impact of such a change on the scope of work specified within this Agreement. Any permanent change in key officials will be made only by modification to this Agreement.

**GENERAL AGREEMENT
FIREFIGHTING/EMERGENCY MEDICAL SERVICE ASSISTANCE
Agreement Number M6470070001
West Branch 5 of 7**

ARTICLE VI – FUNDING

Funds will not be exchanged under this Agreement. In-kind services will be exchanged as set forth in Article III.

ARTICLE VII – PRIOR APPROVAL

Not applicable.

ARTICLE VIII – REPORTS AND/OR OTHER DELIVERABLES

Upon request and to the full extent permitted by applicable law, the parties will share with each other final reports of incidents involving both parties.

ARTICLE IX – PROPERTY UTILIZATION

Unless otherwise agreed to in writing by the parties, any property furnished by one party to the other will remain the property of the furnishing party. Any property furnished by the NPS to the City of West Branch during the performance of this Agreement will be used and disposed of as set forth in NPS Property Management Regulations.

ARTICLE X – MODIFICATION AND TERMINATION

- A. This Agreement may be modified only by a written instrument executed by the parties.
- B. Either party may terminate this Agreement by providing the other party with thirty (30) days advance written notice. In the event that one party provides the other party with notice of its intention to terminate, the parties will meet promptly to discuss the reasons for the notice and to try to resolve their differences.

ARTICLE XI – STANDARD CLAUSES

A. Civil Rights

During the performance of this Agreement, the participants will not discriminate against any person because of race, color, religion, sex, or national origin. The participants will take affirmative action to ensure that applicants are employed without regard to their race, color, sexual orientation, national origin, disabilities, religion, age, or sex.

**GENERAL AGREEMENT
FIREFIGHTING/EMERGENCY MEDICAL SERVICE ASSISTANCE
Agreement Number M6470070001
West Branch 6 of 7**

B. Promotions

The City of West Branch will not publicize or otherwise circulate promotional material (such as advertisements, sales brochures, press releases, speeches, still and motion pictures, articles, manuscripts, or other publications) which states or implies Governmental, Departmental, bureau, or Government employee endorsement of a product, service, or position which the City of West Branch represents. No release of information relating to this Agreement may state or imply that the Government approves of the City of West Branch's work product or considers the City of West Branch's work product to be superior to other products or services.

C. Public Information Release

All releases of public information will be handled through designated Public Information Officers (PIO) of the NPS or the West Branch Fire Department. Information released will be approved by the park Superintendent and/or the West Branch Fire Chief prior to release to the public. All sensitive information will be coordinated between the park Superintendent and Fire Chief, and their respective PIO prior to release. The West Branch Fire Department must obtain prior approval from the park Superintendent or his/her designee for any public information release which refers to the Department of the Interior, or to any bureau, park unit, or employee (by name or title), or to this agreement. The specific text, layout, photographs, etc of the proposed release must be submitted with the request for approval.

D. Publications of Results of Studies

No party will unilaterally publish a joint publication without consulting the other party. This restriction does not apply to popular publication of previously published technical matter. Publications pursuant to this Agreement may be produced independently or in collaboration with others; however, in all cases proper credit will be given to the efforts of those parties contributing to the publication. In the event no agreement is reached concerning the manner of publication or interpretation of results, either party may publish data after due notice and submission of the proposed manuscripts to the other. In such instances, the party publishing the data will give due credit to the cooperation but assume full responsibility for any statements on which there is a difference of opinion.

**GENERAL AGREEMENT
FIREFIGHTING/EMERGENCY MEDICAL SERVICE ASSISTANCE
Agreement Number M6470070001
West Branch 7 of 7**

ARTICLE XII – SIGNATURES

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date(s) set forth below.

FOR THE NATIONAL PARK SERVICE:

Signature: *Cheryl A. Schreier*

Name: *Cheryl A. Schreier*

Title: Superintendent Herbert Hoover National Historic Site

Date: *May 22, 2007*

FOR THE CITY OF WEST BRANCH, IOWA:

Signature: *Ty Daermann*

Name: *Ty DOERMANN*

Title: West Branch City Administrator

Date: *5/24/07*

Signature: *Dick Stoolman*

Name: *DICK STOOLMAN*

Title: West Branch City Fire Chief

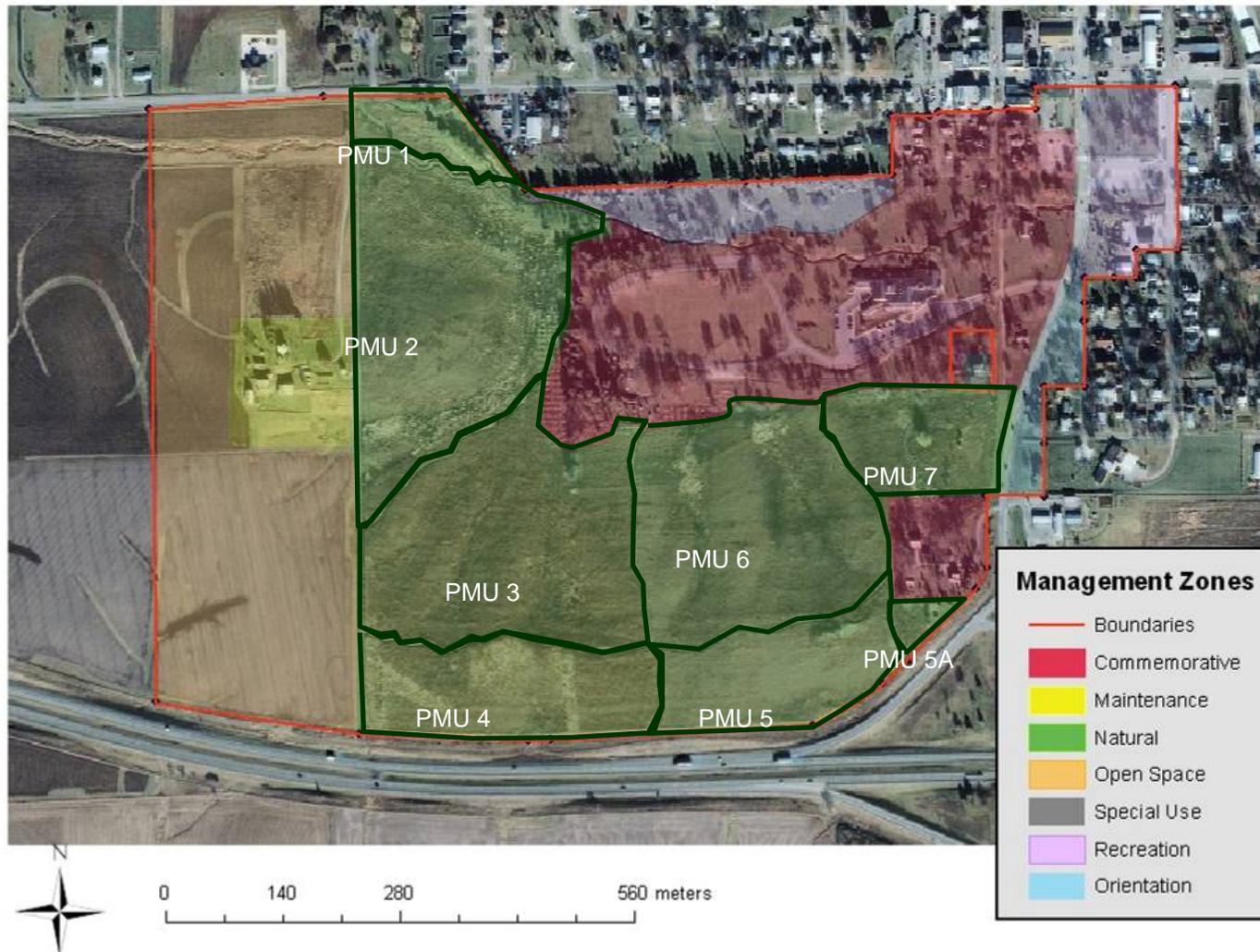
Date: *5-24-07*

Size Up Report

- Incident Name** – All incidents
- Incident Commander** – All incidents
- Incident Type** – Wildland fire, vehicle accident, hazardous materials (HazMat), search and rescue, etc.
- Incident Status** – Fire-creeping, running, spotting, crowning: Vehicle-blocking road, over side, etc.
- Location** – Use landmarks, legal, or lat/long.
- Jurisdiction** – Agency with jurisdiction
- Radio Frequencies** – All incidents
- Incident Size** – Fire and HazMat
- Fuel Type** – Fire incidents only
- Wind Speed and Direction** – All incidents
- Slope and Aspect** – Fire and HazMat
- Best Access** – All incidents
- Special Hazards or Concerns** – For air and ground units
- Additional Resource Needs** – Personnel and equipment



F. Site Maps with Management Zones from 2004 GMP with PMUs Delineated



G. Long-term Prescribed Fire and Hazard Fuel Reduction Plan

1. Multi-year prescribed fire schedule (see [Appendix F](#) for maps)

Table H1: Prescribed fire schedule

Year	Unit	Acres	Justification
2007 fall (FY08)	2, 6	36	Normal rotation
2008 spring (FY07)	3, 4, 5, 5a	36	3 and 4 are normal rotation; 5 is biennial and woody treatment
2008 fall (FY08)	1, 2, 7, north replanted area 6	32	First fire after overseeding in 1, 7; biennial treatment of 2 and north 6
2009 spring (FY08)	3, 4, 5, 5a	36	Second biennial/woody treatment
2009 fall	1, 7, 6	27	Treatment of over seeding and normal rotation on south 6
2010 spring	2, 3	37	First biennial treatment on 2; normal rotation on 3
2011 spring	4, 5, 5a, 2	34	Normal rotation on 4, 5; second biennial treatment on 2 going to 18 month rotation

Green indicates important timing to target biennials in a concerted effort to meet natural resource objectives. Deviation from the schedule may require significant changes to subsequent years. Yellow indicates the first year of an 18 month rotation, which puts the entire prairie into the desired three year recurrence fire regime. Eventually the fire regime may extend to 5 years, provided hazard fuel and invasive plant control has been achieved.

This schedule will be adjusted as prairie plant monitoring indicates appropriate for the control of exotic and invasive plants. Although the objectives for all parts of FMU 2 remain consistent throughout PMUs, division into seven PMUs allows managers to maintain wildlife habitat and cover in portions of the prairie, while burning other portions.

Objective for each PMU: Increase diversity and cover of native grasses and forbs, while reducing exotic and invasive species.

PMU 1 Acres: 2.656

Vegetation: Tallgrass prairie with sparse tree cover in flood plain. This area north of the creek was not been included in the 76-acres originally reconstructed as the prairie and requires intensive restoration efforts. Herbicide treatment and overseeding was done in 2005.

PMU 2 Acres: 18.904

Vegetation: Wet meadow tallgrass prairie of varying conditions. This area includes flood plain and land influenced by agricultural drainage, and contains many exotic and invasive species. A portion of the nut tree grove is here.

PMU 3 Acres: 18.653

Vegetation: Tallgrass prairie of variable condition with some quality forb areas. Sparse tree cover intrudes from north and will be protected from fire. Contains portion of the nut tree grove and is contiguous with a newly added half-acre mid-height prairie on its north side.

PMU 4 Acres: 9.130

Vegetation: Tallgrass prairie with grasses well established. Exotic species can enter from south and west.

PMU 5 Acres: 7.238

Vegetation: Tallgrass prairie with grasses well established and a manmade hummock where trees were planted. The manmade hummock introduced weed seed to the unit. The trees are in poor condition.

PMU 5a Acres: .640

Vegetation: Tallgrass prairie originally restored as a forb nursery area.

PMU 6 Acres: 17.149

Vegetation: Tallgrass prairie with low diversity, except along north edge. The northern 10 meters of the unit were added by cessation of mowing without further restoration efforts. In 2005, this area was treated with herbicide in the spring and over seeded. An additional two acres of mid-height prairie, contiguous with the unit's north boundary was added in 2005 as well. Reed canary grass occurs in the drainages.

PMU 7 Acres: 7.451

Vegetation: Tallgrass prairie with low diversity and sparse tree placement. The area was reclaimed from a concrete covered gas station and is a location with many exotic and invasive plants. Restoration efforts in 2005 included prescribed fire, herbicide treatment of cool season grasses, and over seeding. A subsequent drought encumbered treatment.

2. Hazard Fuels reduction areas and schedule

Hazard fuel reduction will be given priority in PMU 2, 3, 5a, 6, and 7, because of the adjacent cultural and historic values. Mechanical hazard fuel reduction will be applied around vulnerable natural and cultural values for protection from fire damage. Natural values to be protected include the nut tree grove located at the edge of PMU 2, 3, and 6. Prescribed fire and mechanical treatment will be used in the interior of FMU 2 to reduce hazard fuel build-ups that occur, facilitating protection of values at risk and recycling nutrients back into the soil.

Mechanical hazard fuel reduction will be applied to borders of PMUs to create firebreaks. This is the first step in a fuels reduction program followed by prescribed fire. Prairie Management Units along the Interstate (PMU 4 and 5) are at risk for fire entering from the Interstate. Fuels must be kept low and a mechanical hazard fuel reduction must be maintained in the form of a mowed fire break between the Interstate and prairie.

Table H2: Hazard fuel reduction schedule

Year	Unit	Acres	Justification
2007 fall (FY08)	2, 6	36	Normal rotation for fuel reduction
2008 spring (FY07)	3, 4, 5, 5a	36	3 and 4 are normal rotation
2008 fall (FY08)	1, 2, 7 , north replanted area 6	32	First fire after overseeding in 1, and 7 will reduce fuels in areas near cultural resources
2009 spring (FY08)	3, 4, 5, 5a	36	Woody plant and fuels reduction
2009 fall	1, 7, 6	27	Woody plant reduction for 1 and 7, and normal rotation on south 6
2010 spring	2, 3	37	Woody plant reduction on 2; normal rotation on 3
2011 spring	4, 5, 5a, 2	34	Normal rotation on 4, and 5; woody fuels reduction on 2

3. Rx-Fire History

Reports suggest that there may have been a burn in 1972, but no data exist.

Burn units kept changing over the years. Fires have been in the spring, but exact dates are not available in the records.

Table H3.1: Early fires based on the 1984 Burn Units, used in 1984 and 1985

Year	BU I	BU II	BU III	BU IV	BU V	BU VI
1984	17 acres	20	10	21	Proposed but not confirmed in report	
1985	unconfirmed	17.3	7.4	19.6	3.4	

Figure H1: 1984 Burn units

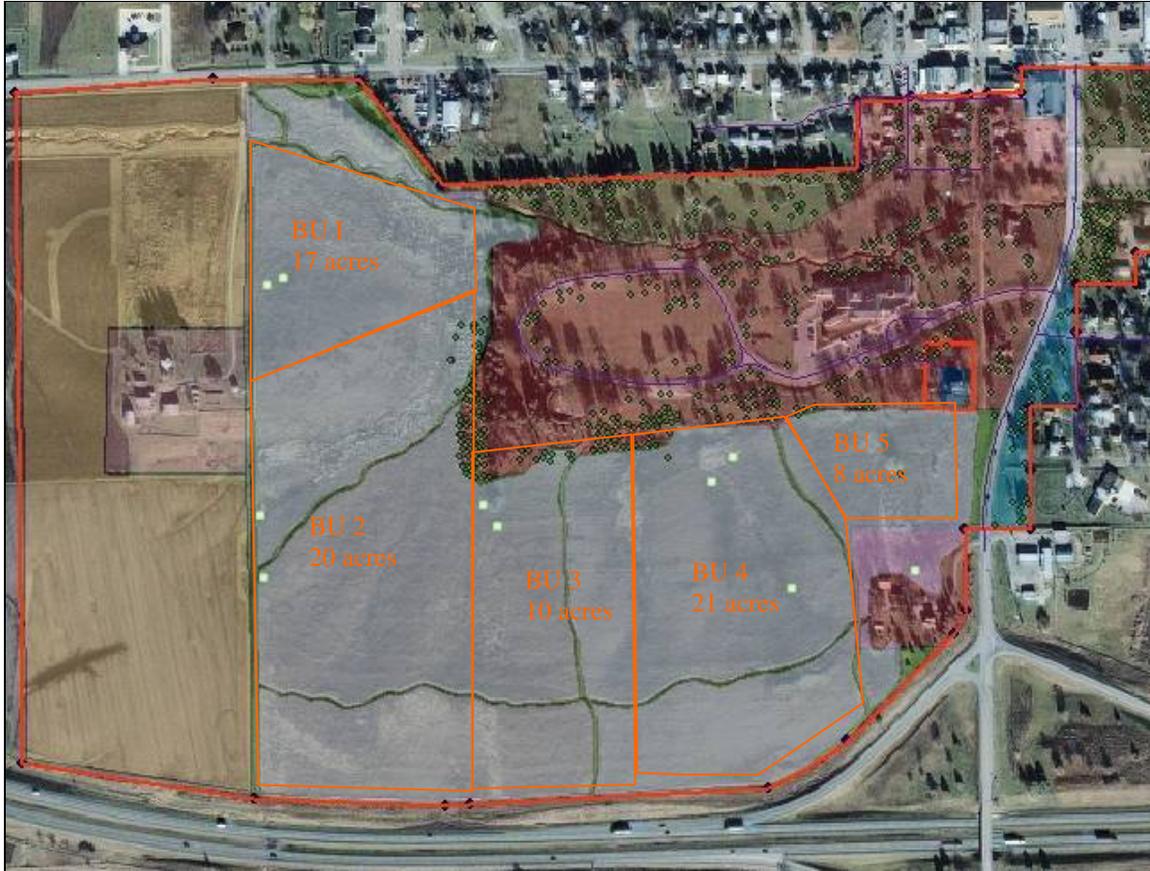


Table H3.2: Fires based on the 1990 Burn Units

There was a difference with numbering the burn units in 1990. What was BU IV became BU VI.

Year	BU I	BU II	BU III	BU IV	BU V	BU VI
1990	1 6	18 north 6 south	I think that BU II south is BU III	1.4 (later VI A&B)	0.4 nursery plot	X

Figure H2: Burn map for 1990

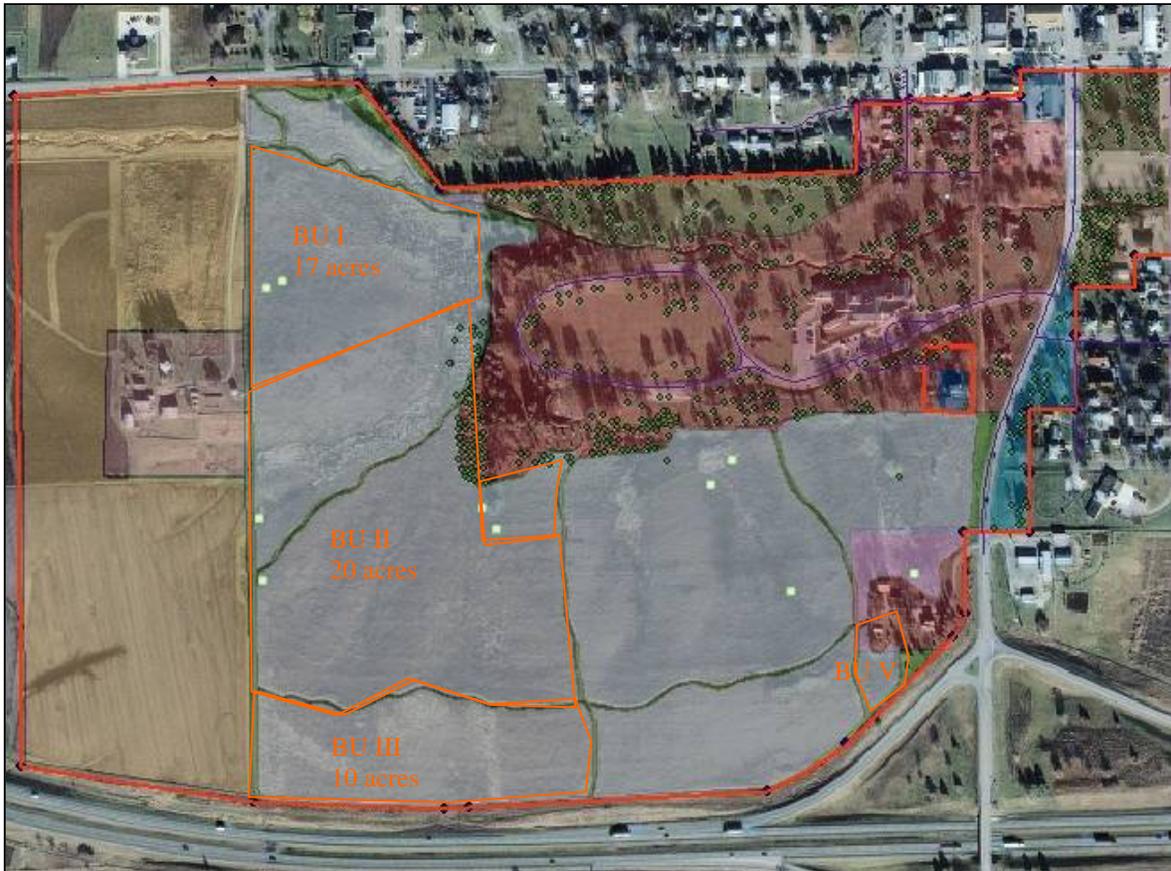


Table H3.3: Fires based on the 1991 Burn Units and confirmed acreage

Year	BU I	BU II	BU III	BU IV	BU V	BU VI
1991	12	2.2 note small square	21		0.4	
1992, May 6		21.5		2.3		Unit A 2.3
1992, May 28				7.3		Unit B 1.5
1993	14.4		15.6			
1994	16					
1999		X		X		X
2000	X		X		X	X

Figure H3: Burn map for 1991-2000

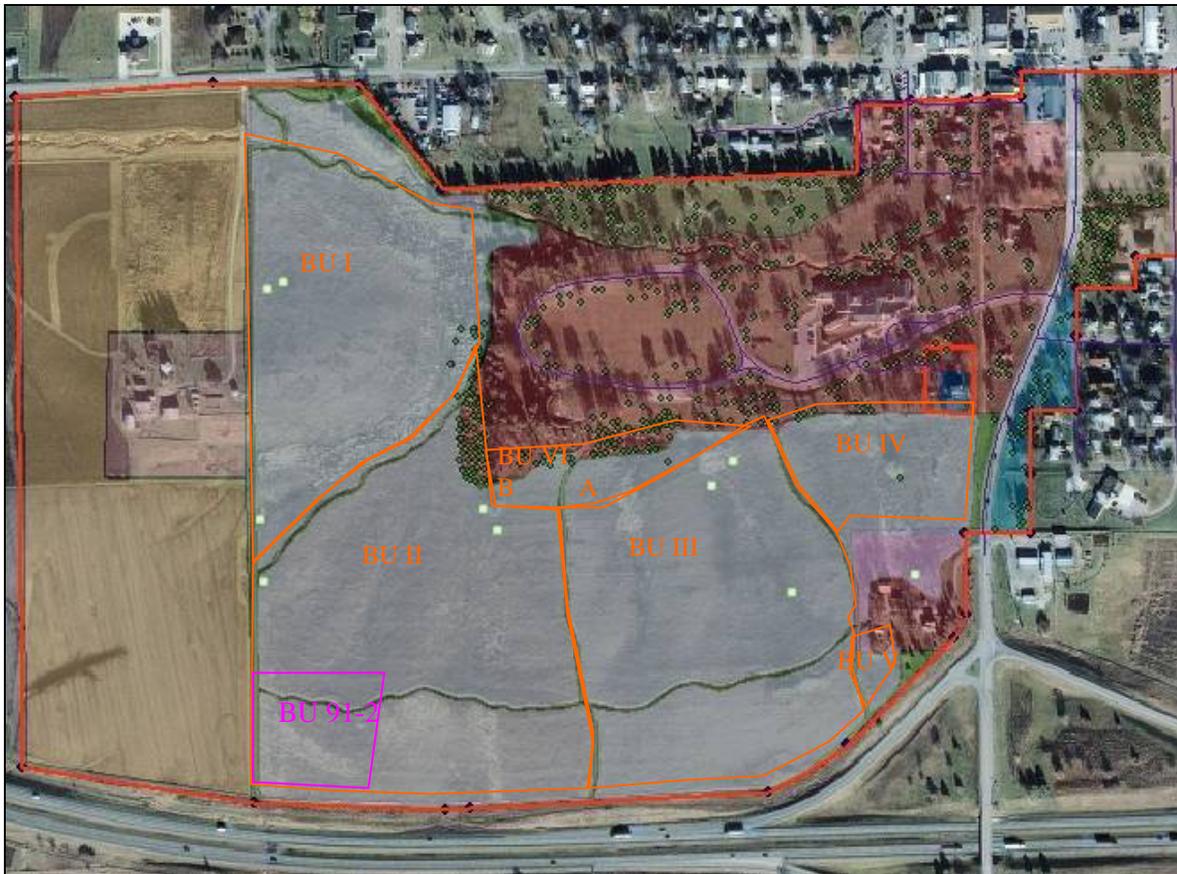


Table H3.4: Rx-fire completed and confirmed from 2001 to present

Year	PMU 1	PMU 2	PMU 3	PMU 4	PMU 5	PMU 6	PMU 7
May 8, 2001			X	X			X
2002	X	X			X	X	
2004	X				X (5 & 5A)	X	X
2005	X	X	X	X			X

Figure H4: Burn map for 2001 to present

